LIST OF FILES

HOUSE SPECIAL COMMITTEE ON FISHERIES, 2013-2014 (SCOMM 176)

MEMBERS:

REPRESENTATIVE SEATON, CHAIR
REPRESENTATIVE FEIGE
REPRESENTATIVE GATTIS
REPRESENTATIVE HERRON
REPRESENTATIVE JOHNSON
REPRESENTATIVE OLSON
REPRESENTATIVE KREISS-TOMPKINS

Established by HR 3, 2013

LIST OF FILES (PAGE 1)

01/29/13 Overviews (4): Invasive Species and Tsunami Marine Debris

01/31/13 Update: University of Alaska Fisheries, Seafood and Maritime Initiative. Report to the Legislature also available online:
http://www.alaska.edu/fsmi/resources/
2013 Jan: FSMI Liaison's Report to the Legislature

01/31/13 Overview: Short Term Commercial Crew Members License

02/05/13 Overview: Alaska Department of Fish and Game Presentation of Foregone Harvest of Salmon

02/07/13 Presentation: World and Alaska Salmon Markets

02/14/13 Overview: Derelict Vessels on State Lands

02/19/13 Overview: Chinook Salmon Bycatch

02/19/13 Presentation: Herring and Fish Protein Marketing Project

02/21/13 Overview: Sea Otter Science

02/28/13 Overview: Chinook Salmon Bycatch #2

01/28/14 Overview: Alaska Department of Fish and Game, Division of Commercial Fisheries

02/04/14 Overview: Department of Revenue Tax Division - Salmon Product Development Tax Credit

02/06/14 Overview: Alaska Seafood Marketing Institute

02/20/14 Presentation: Sea Otter Impacts in S.E. Alaska; Invasive Species in Sitka; and Interagency MOU

03/06/14 Presentation: Community Fishing Associations

03/11/14 Mariculture Industry Overview

04/15/14 Presentation: Observations of Sea Star Wasting Syndrome in Alaska

Confirmations 2013

Confirmations 2014

HB 18

HB 49

HB 89

HB 98

HB 110

HB 143

HB 177

HB 192

HB 201

HB 204

HB 386

HCR 25

HJR 5

HR 6

SB 54

01/29/13 Overviews (4): Invasive Species and Tsunami Marine Debris

<TARGET><BILL></BILL><SUBJECT>01-29-13 Overviews (4) Invasive Species and Tsunami Marine Debris</SUBJECT><COMM>HFSH28</COMM></TARGET>

Department of Fish and Game Invasive Species Program: 2013

Status Report

House Fisheries Committee
January 29, 2013

Overview

- Invasive species are…
- Effects they impose
- Pathways: Getting from there to here
- Species of concern
  - History of infestation, Response actions, Status
    - Didemnum vexillum, colonial tunicate
    - Northern pike in Southcentral
- Monitoring efforts statewide
- Prevention and Outreach

Invasive Species

- An organism introduced outside its native range that can damage environments, cause economic hardship, or pose risk to human health.

- Not all nonnative species can sustain populations in their new environment. They require
  - an agreeable host environment;
  - few to no natural predators, parasites or diseases;
  - an abundance of food that lacks defenses against the newcomer;
  - ability to out-compete native species in similar trophic levels.

Effect on Native Species

- Invasive species:
  - Out-compete native species for habitat, food, space.
  - Degrade or destroy habitats required by native organisms.
  - Upset ecosystem functions, such as food webs, and predator/prey interactions.
  - Limit commercial, recreational, and subsistence activities such as fishing, hunting, wildlife viewing, boating, etc.

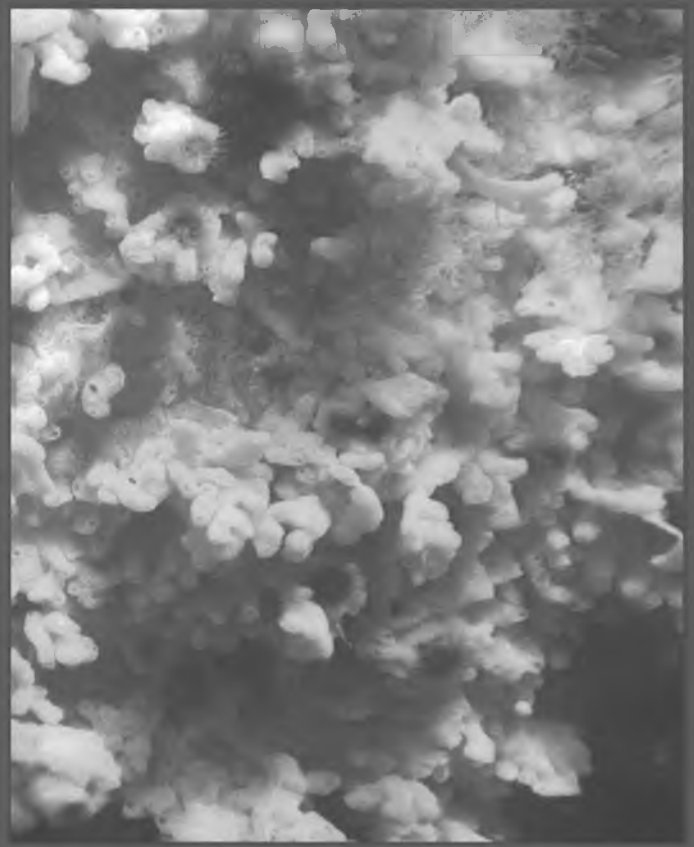
Pathways for Introduction

- Invasive species arrive in Alaska many ways:
  - Human-mediated: Shipping, recreational vessels and gear, floatplanes, floating infrastructure, release of unwanted animals and plants, illegal stocking, aquaculture transfers and escapees.
  - Natural pathways: Ocean and river currents, cross-basin connections such as high water events, larval distribution.



Didemnum vexillum (D.vex)

Colonial tunicate found growing on nets used in the production of oysters





Whiting Harbor is a man-made embayment located adjacent to the Sitka airport and near the USCG base.

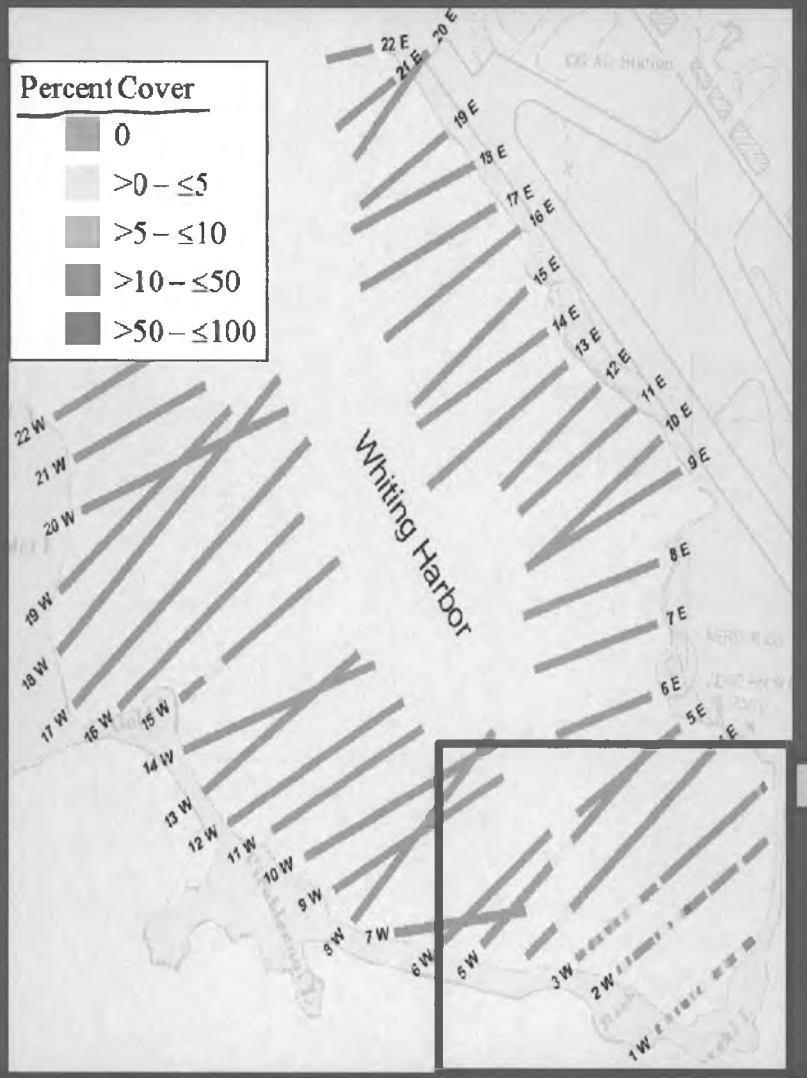
History



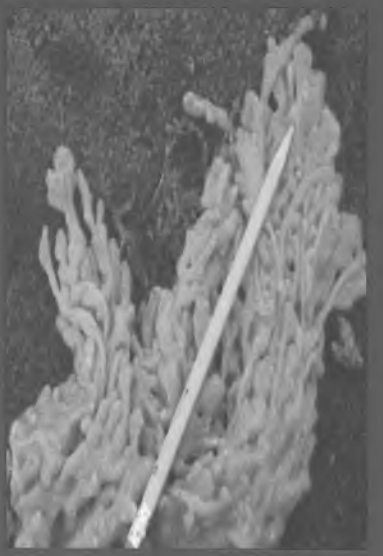
D. vex

- 2010: First detection during BioBlitz.
- 2010- present: Outreach to aquatic farmers, agencies, stakeholder groups, the public.
- 2010- 2012: ADF&G annual survey to map distribution, coordinate response team, decommission aquatic farm.
- 2011 & 2012: Restrict commercial and subsistence fisheries access and request public avoid the area.
- 2012: Rapid Response Plan completed.
- 2012: Legislature approves $500K CIP.

2011 Survey and Distribution









D. vex: Removing the Source

- Bag and remove lantern nets: Aug. early Sept. 2011
- Major clean up effort to remove aquatic farm infrastructure from the water: November 2011
- **Collaborative effort:** City of Sitka, DNR, UAS, Sitka Tribe, SERC, SSSC, USFWS, USFS, BLM, USCG, local volunteers





D. vex: Decommissioning

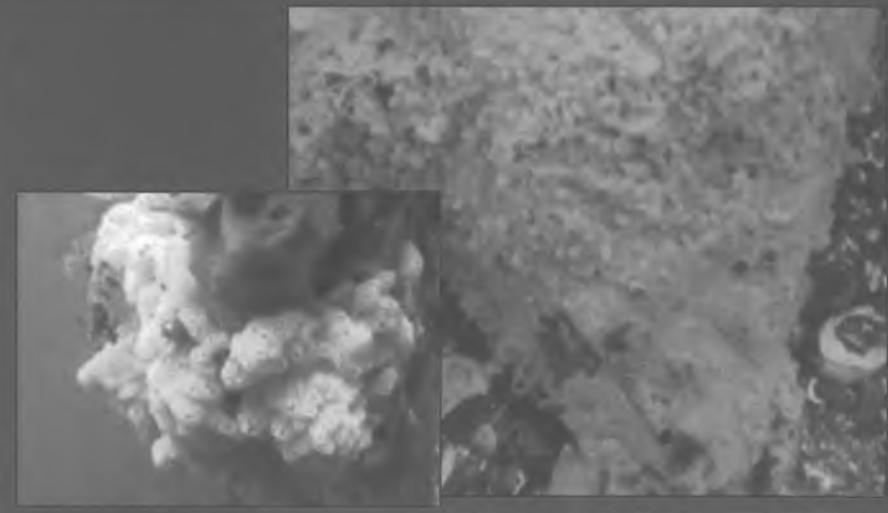


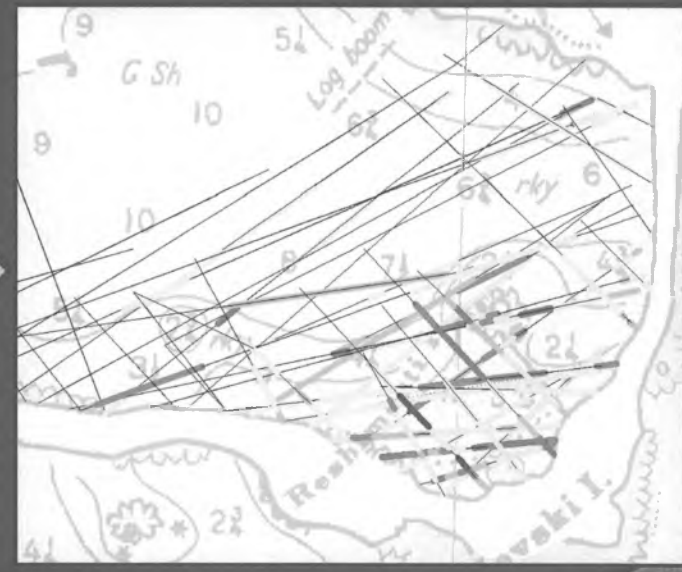




2012 Survey and Distribution





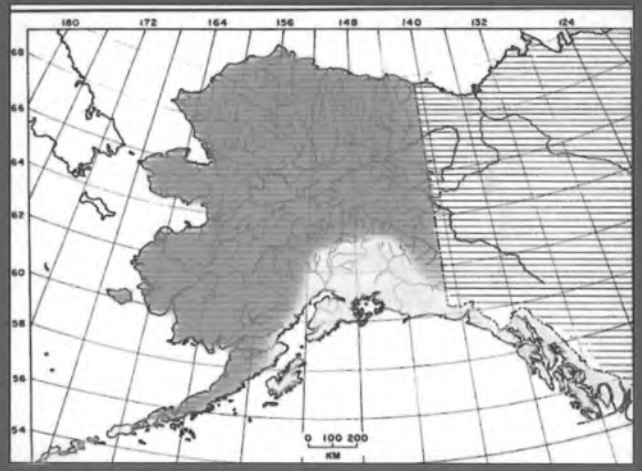


D. vex: Best Means for Success

- Communication
  - Experienced international experts
  - Researchers: new technologies for eradication
  - Permitting agencies
  - State and Federal agencies for collaboration
  - The public
- Scope of Work near completion
- Request for Proposal- early spring
- Eradication work to begin in summer 2013
- Monitoring: 3 years post-treatment
- Outreach and Monitoring statewide

Invasive Northern Pike: Southcentral

- Distribution
  - Northern pike are not native south and east of the Alaska Range.
  - Pike were first illegally-introduced to Southcentral in the 1950s.
  - They continue to spread and be illegally transplanted.
  - Invasive northern pike are presently in > 150 water bodies in Southcentral.
- Known Impacts
  - Highly predatory on juvenile salmonids
  - Can reduce or eliminate wild and stocked fish



Range of native pike in Alaska

Area where pike are not native





Invasive Northern Pike: Actions

- Planning
  - A management plan for invasive northern pike was completed in 2007; updates to the plan will be completed this year.
  - A strategic planning committee was formed in 2010; meets biennially to prioritize projects.
  - Six of the top eight priorities are currently underway.
    - Phase I of Soldotna Creek project to begin 2013.

Northern Pike Priorities

1. Alexander Creek pike control
2. Soldotna Creek pike eradication
3. Stormy Lake pike eradication
4. Alexander Creek radio telemetry
5. Otter Lake pike eradication
6. *Susitna River pike distribution assessment
7. Kenai Peninsula eDNA study
8. *Pike eradication in Knik, Prator, North Rolly, & Taniana Lakes

** Projects #6 and #8 require additional resources*

Invasive Northern Pike: Actions

- Control
  - Control Netting: Gillnets are used to reduce the number of northern pike in a water body when complete removal of the population is cost or logistically prohibitive.
  - Alexander Creek
    - Largest pike control project in the state.
    - Netting conducted in 61 side-channel sloughs along 40-mile stretch of the creek in May 2011 and May - June 2012. Netting continues in 2013.
    - ~7,000 pike have been removed and used for educational purposes, food resource, etc.

      >4,000 in 2011, ~3,000 in 2012
    - Salmonid monitoring for long-term evaluation of suppression effort.
    - Goal: Restore salmon fisheries.









Invasive Northern Pike: Actions

- Research
  - Pike Diet: Projects quantify prey type and abundance.
    - Alexander Creek: 2011-2013
    - Mat-Su Valley pike projects: 2000-present
  - Movement Patterns: Radio telemetry detects when and where pike occur.
    - Alexander Creek: 2011-2013
    - Stormy Lake: 2010-2012
  - Detection Techniques: Evaluate new approaches for determining presence or absence of pike.
    - Environmental DNA-
      - Kenai Peninsula: 2013 - 2014



Invasive Northern Pike: Actions

- Eradication
  - Objective: remove entire population of northern pike from individual freshwater systems.



  - Rotenone Treatments: 2008-Present
    - Mortality to fish caused by inhibiting cellular respiration.
    - Requires extensive permitting and Federal NEPA compliance.
    - Since 2008, ADF&G has successfully eradicated pike from 5 lakes in Southcentral.
    - Stormy Lake: Largest lake treated, Sept. 2012.
    - ADF&G plans to treat 5 lakes and portions of Soldotna Creek in 2013-14.





Monitoring for Invasive Species

- Citizen monitoring
  - Educational programming and training for the public and school children - KBRR
- ADF&G staff monitoring and investigation
  - Crayfish in Buskin Lake
    - Begin trapping in 2012, will continue in 2013
  - Elodea on Kenai Peninsula
    - Known invader detected in 2012 by staff working in Stormy Lake
    - Rapid surveys of Northern Kenai Peninsula lakes
  - Opportunistic monitoring
    - Staff to scout for invasives while engaging in field work
  - Rats in Anchorage-
    - Investigate reported incidents

Monitoring for Invasive Species

- QZAP- Quagga and zebra mussel action plan monitoring (w/UAA)
  - Locations: Glennallen, Kenai Peninsula (4), Richardson Hwy. (5), Fairbanks (6), Anchorage (7)
- Platewatch-Pacific coast tunicate monitoring
  - Locations: Gustavus, Homer, Kodiak, Seward, Sitka, Ketchikan (2),
- European green crab monitoring
  - Locations: Chenega Bay, Juneau, Seward, Sitka, Valdez (3), Ketchikan (4), Kachemak Bay (5)



Prevention & Outreach

- Regulations
- Collaboration: Statewide and regional partnerships
- Outreach
  - Educational programs and materials
  - Presence at sportsmen's shows, festivals, workshops, trainings and forums
  - Materials to stakeholder groups and the public via broad consortium of entities
  - Signage at infested and high use water bodies
  - Work with partners to share common messages
- Prioritize actions based on risk, pathways and species.

Pacific NorthWest Economic Region Invasive Species Working Group

- The Invasive Species Working Group addresses the regional economic and environmental impact of invasive species and promotes regional collaboration and sharing of best practices.
- The Group is focused on creating and sharing preventative measures that policy makers can adopt to prevent the spread of invasive species.
- Because the threats posed by invasive species are regional, they must be met through a regional response.

•PNWER Invasive Species Working Group Co-Chairs:

- Dr. Mark Sytsma, Professor of Environmental Sciences and Associate Vice-president for Research at Portland State University
- Rep. Eric Anderson, Idaho Chairman of the Idaho House Ways and Means Committee
- Megan Levy, PNWER



The Quagga and Zebra Mussels

- The Quagga and Zebra mussels are native to Europe but have been spreading through North America since the 80's.
- Without their natural predators found in their original habitat the populations have exploded and are now causing environmental and economic problems in the United States





- Mussels can produce up to 1 million eggs per year.
- They destroy motors, clog dam openings, and compromise the environment.
- In Southern California, the Metropolitan Water District is expected to spend $8-10 million per year removing mussel infestations and repairing damaged infrastructure.



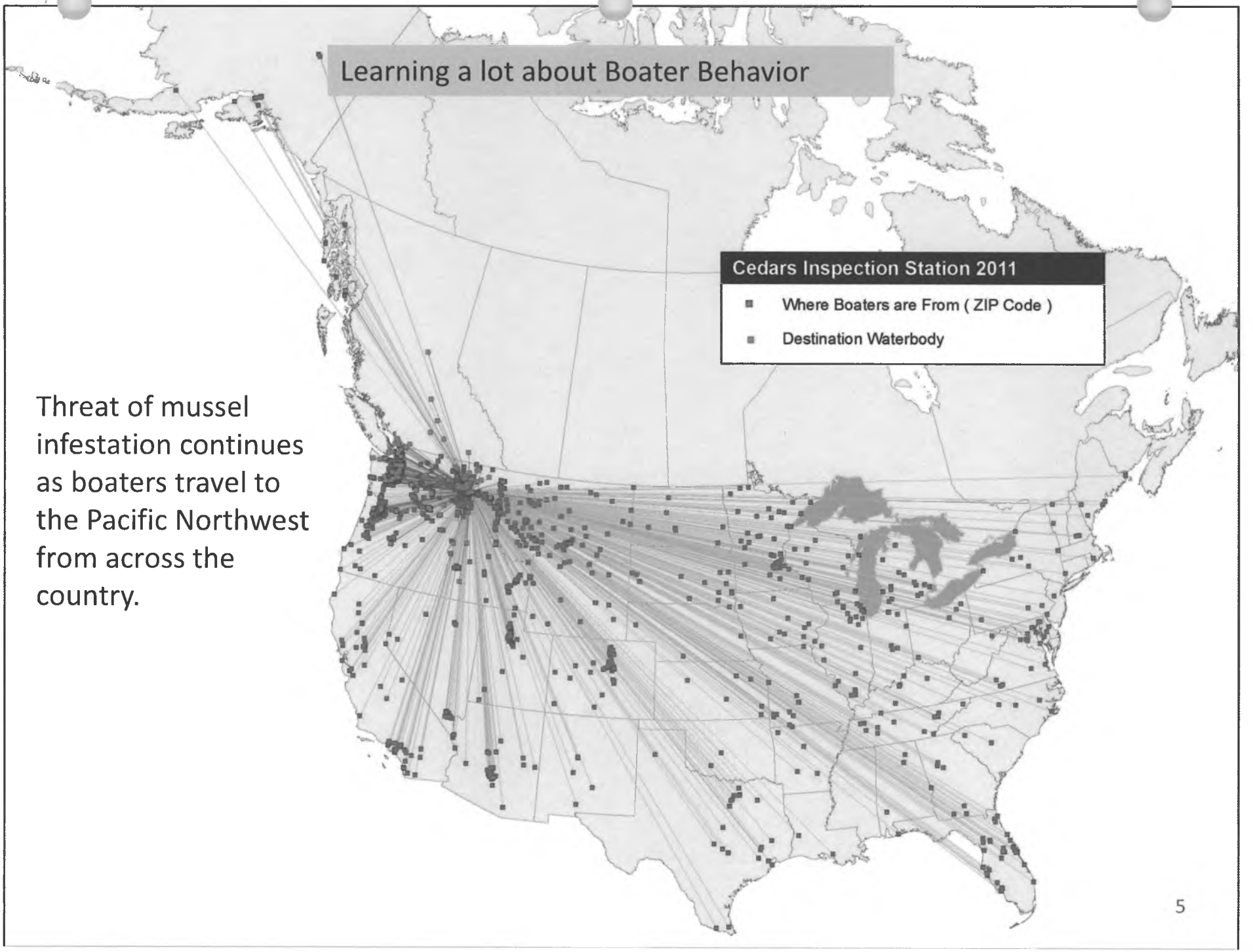


PNWER is the last uninfested region in North America





Learning a lot about Boater Behavior



Threat of mussel infestation continues as boaters travel to the Pacific Northwest from across the country.

Regional Impact

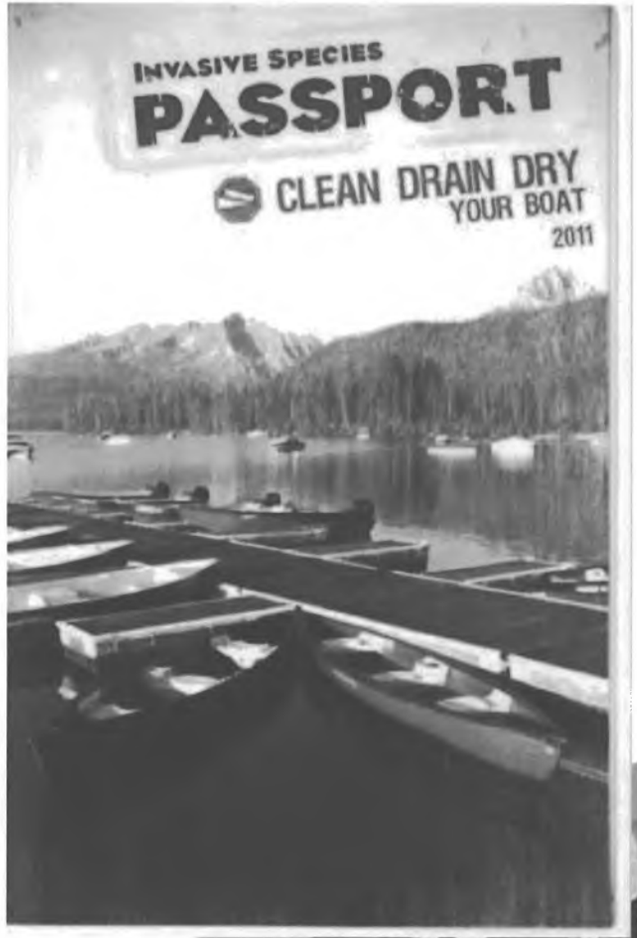
- Installation of typical zebra mussel control measures at federal hydropower facilities in the Columbia River Basin are estimated to be $23 million.
- Before chemical control is implemented an environmental impact study is necessary.
- There will be additional costs to protect drinking water systems, fish and tourism, and other industries





Preventative Measures

- Checkpoints in Idaho have stopped 93 contaminated vessels.
- Idaho has created the Invasive Species passport to expedite watercraft inspection.
- Need for regional preventative policies.
- Estimated costs of zebra mussel control in Great Lakes States is $40.5 million.
- Prevention is the most cost effective strategy.





Policy Action

- Expand the July 2011 multi-state agency staff MOU to include pilot use of regional passport based on the Idaho Model.
- Develop a real-time data tracking system and share data throughout the region to track vessels coming into the region with inspection results.
- Legislation providing additional funding for inspection and cleaning stations and possibly of a regional organization responsible for facilitating the sharing of inspected vessel information.



2013 PNWER Annual Summit



•Join more than 600 legislators and business and government leaders for the **2013 PNWER Annual Summit from July 14-18 in Anchorage, Alaska**.

• The summit will serve as a platform for policy makers to address issues affecting the region and discuss solutions.

•Experience Anchorage through policy tours, evening receptions, and nature excursions.

•Please mark your calendars for **July 14-18 2013** for the Annual Summit!





Questions?

- **For More Information on PNWER's Invasive Species Program, and reports referenced in this presentation, go to:**

www.pnwer.org



Tsunami Marine Debris in Alaska

Alaska Department of Environmental Conservation
Airborne Technologies, Inc
Gulf of Alaska Keeper
January 29, 2014

Tsunami-Generated Marine Debris Background

- Devastating March 2011 Earthquake and Tsunami in Japan

- Government of Japan estimates 5 million tons of debris swept into Pacific Ocean
  - Estimated 70% sank almost immediately
  - 1.5 million tons floating off coast of Japan, caught by wind and ocean currents

- Composition
  - Materials typically found in urban areas, homes, and fishing communities
  - Styrofoam, buoys, bottles, jugs, household items (refrigerators, freezers, etc)
  - Rigid urethane insulation and wood from destroyed buildings and homes
  - Fishing & boating docks, floats, bumpers, nets,

- NOAA models show debris will reach US and Canadian shores for next several years
  - High-windage (lighter) debris carried by wind; arrived much sooner than expected
  - Low-windage (heavier) debris carried by ocean current;

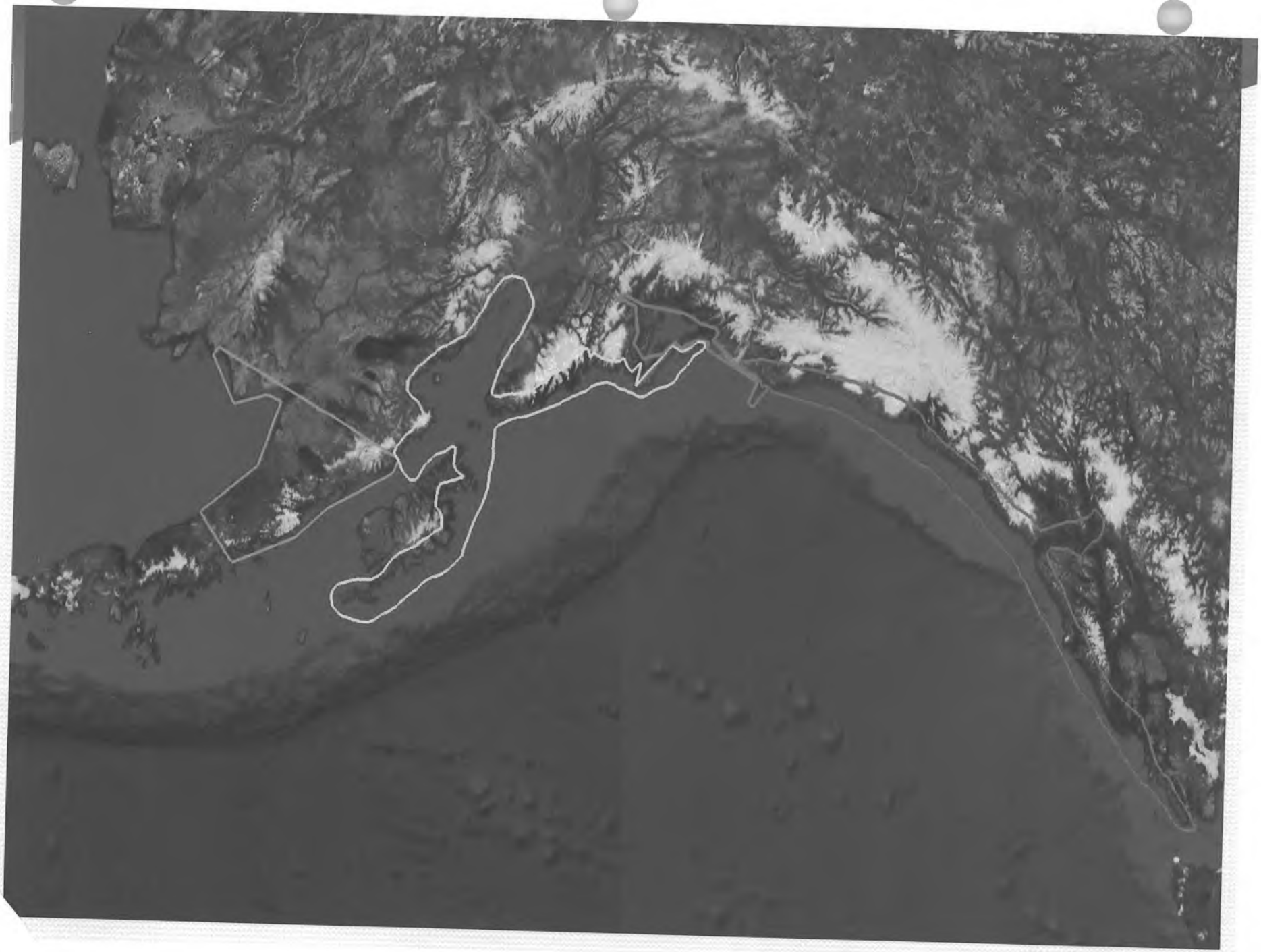
Detailed Aerial Survey
Airborne Technologies, Inc (ATI)

- Approximately 2500 miles of coastline surveyed

- Over 8200 high resolution images
  - Southeast Alaska
  - Gulf of Alaska
  - Prince William Sound
  - Alaska Peninsula
  - Bristol Bay

- Every image individually ranked for density and debris type

- Data analysis and GIS mapping



Observations Relating to Amount, Location and Composition of Tsunami Marine Debris in Alaska

- Significant increase in volume
- Large volume of high windage items
- Evidence of March 2011 Tsunami-generated debris
  - Oyster Buoys
  - Rigid Urethane Insulation
  - Common Japanese household items
  - White Styrofoam

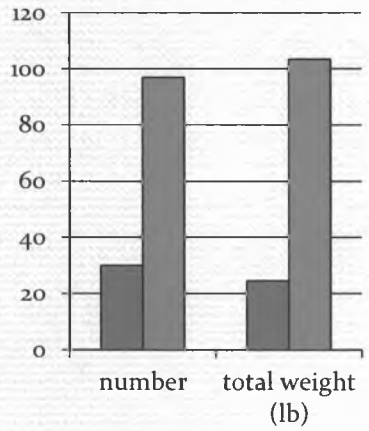
Gulf of Alaska Keeper
Tsunami Debris - Summer 2012



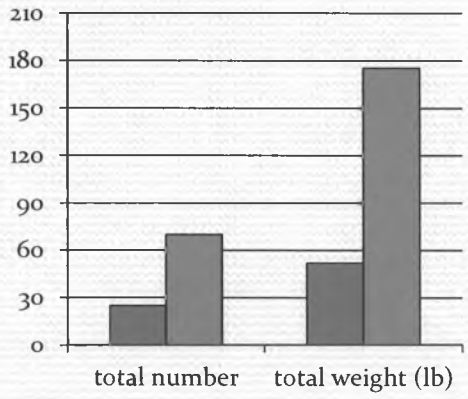


Combined changes in amount of high-windage MD 2011 to 2012, pre- and post-tsunami, on two Gore Point monitoring sites and two Prince William Sound sites. Pre-tsunami in blue, post-tsunami in red. ***(Debris collected and data analyzed by Gulf of Alaska Keeper, August 2012.)***

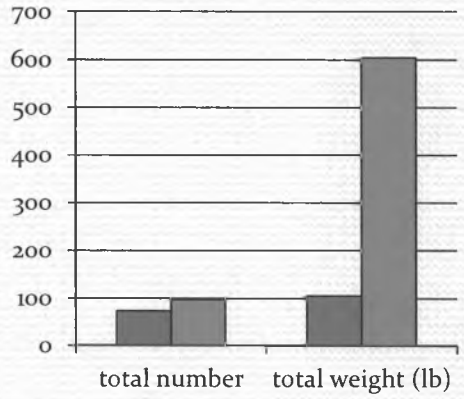
Buckets (≤ 7 gallon size)



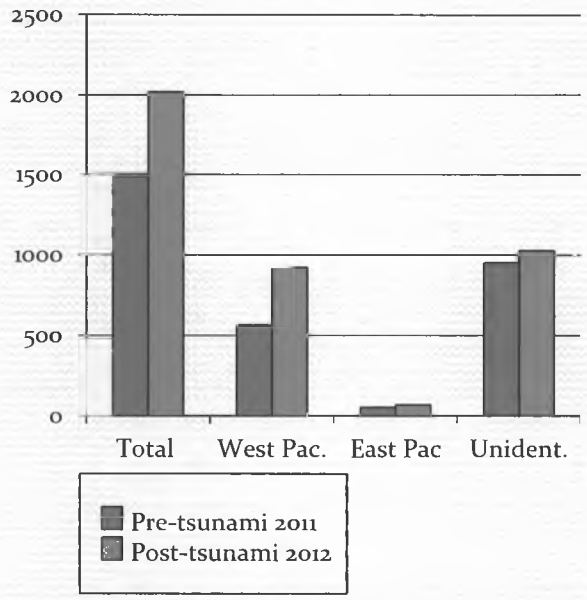
Plastic drums (≤ 6 gallon)



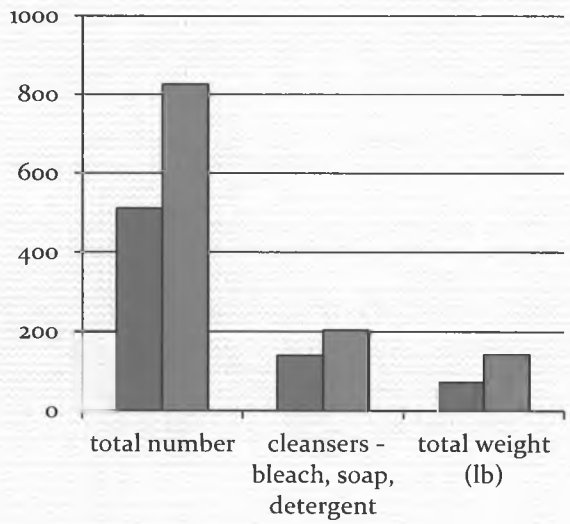
Hard plastic buoys



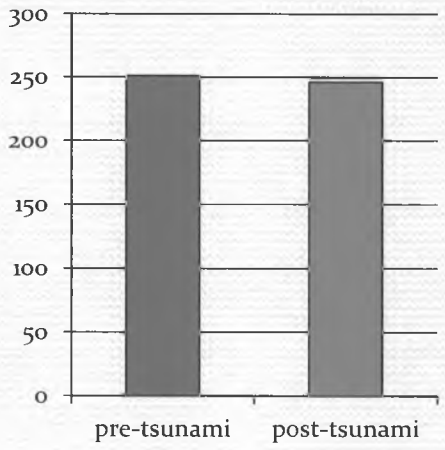
Beverage bottles (number)



Non-beverage bottles (number)



Combined rope and line fragments (lbs)



Control

Low-windage, current-driven debris





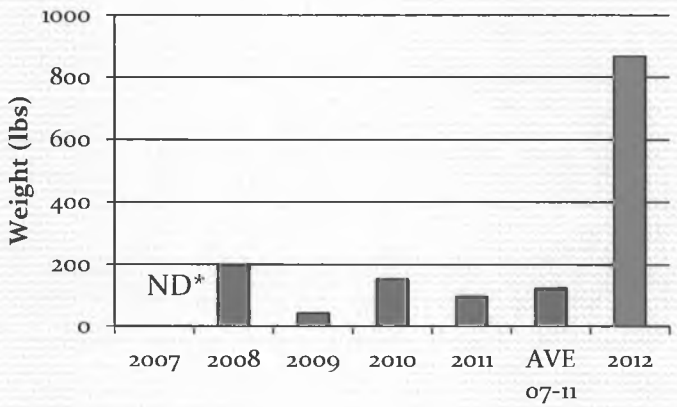
Gulf of Alaska Keeper Marine Debris Monitoring Program.

Styrofoam Data Summary as of August 20, 2012.

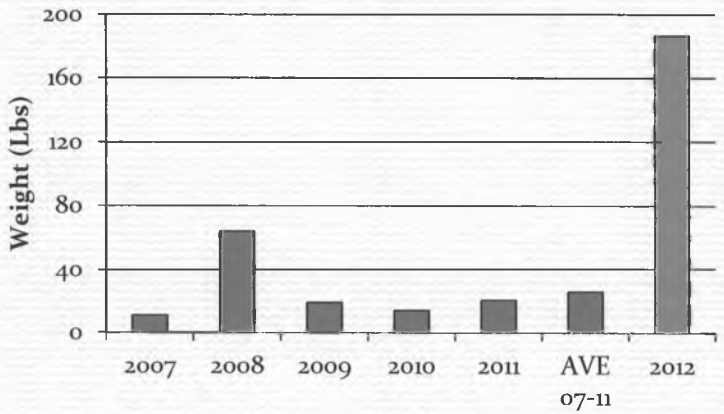
Effect Of The 2011 Japanese Tsunami On Marine Debris In PWS And Gore Point.

Styrofoam Weight

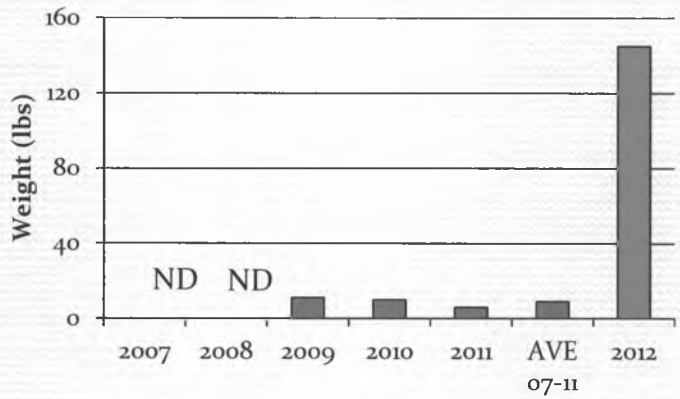
Gore Point East - Styrofoam



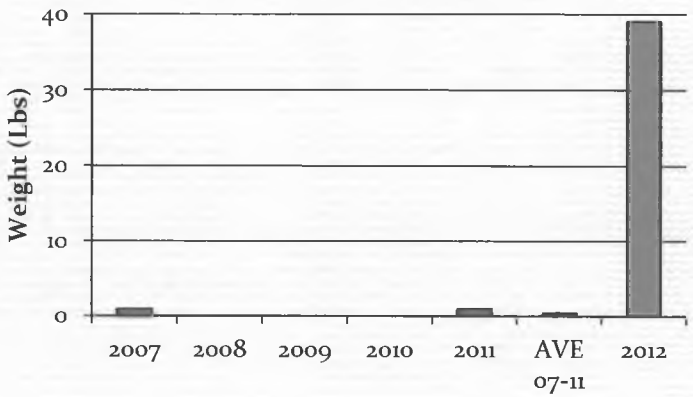
Mega Byte- Styrofoam

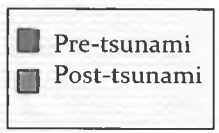


Gore Point North - Styrofoam



Block Island - Styrofoam



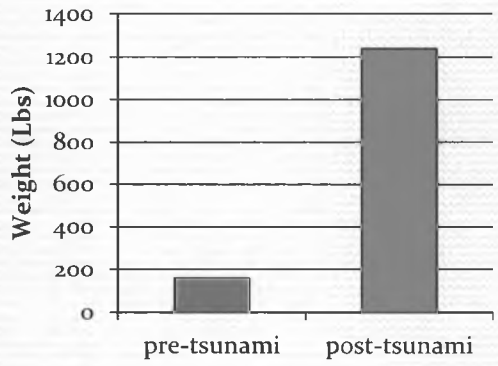


* ND, no data

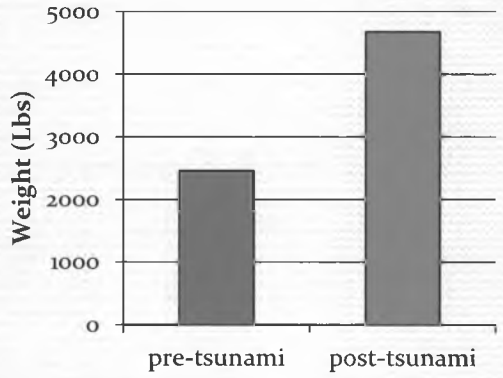


Gulf of Alaska Keeper Marine Debris Monitoring Program.
Styrofoam data summary as of August 20, 2012.
Average percentages, before and after tsunami.
Totals for the 4 sites.

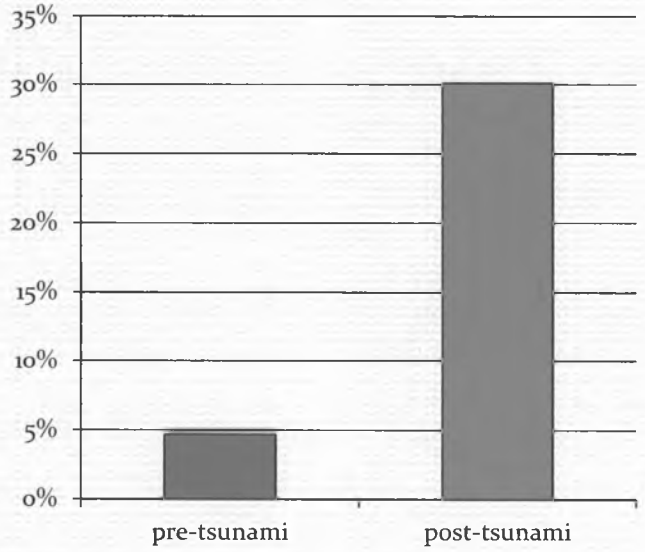
Total Styrofoam weight

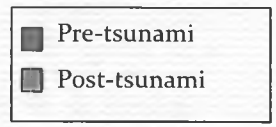


Total MD weight



Total Styrofoam weight/total MD weight






Yukon
Anchorage
e Constantine
Gore Point
Montague Island
Kayak Island
Tugidak Island
Cape Muzon

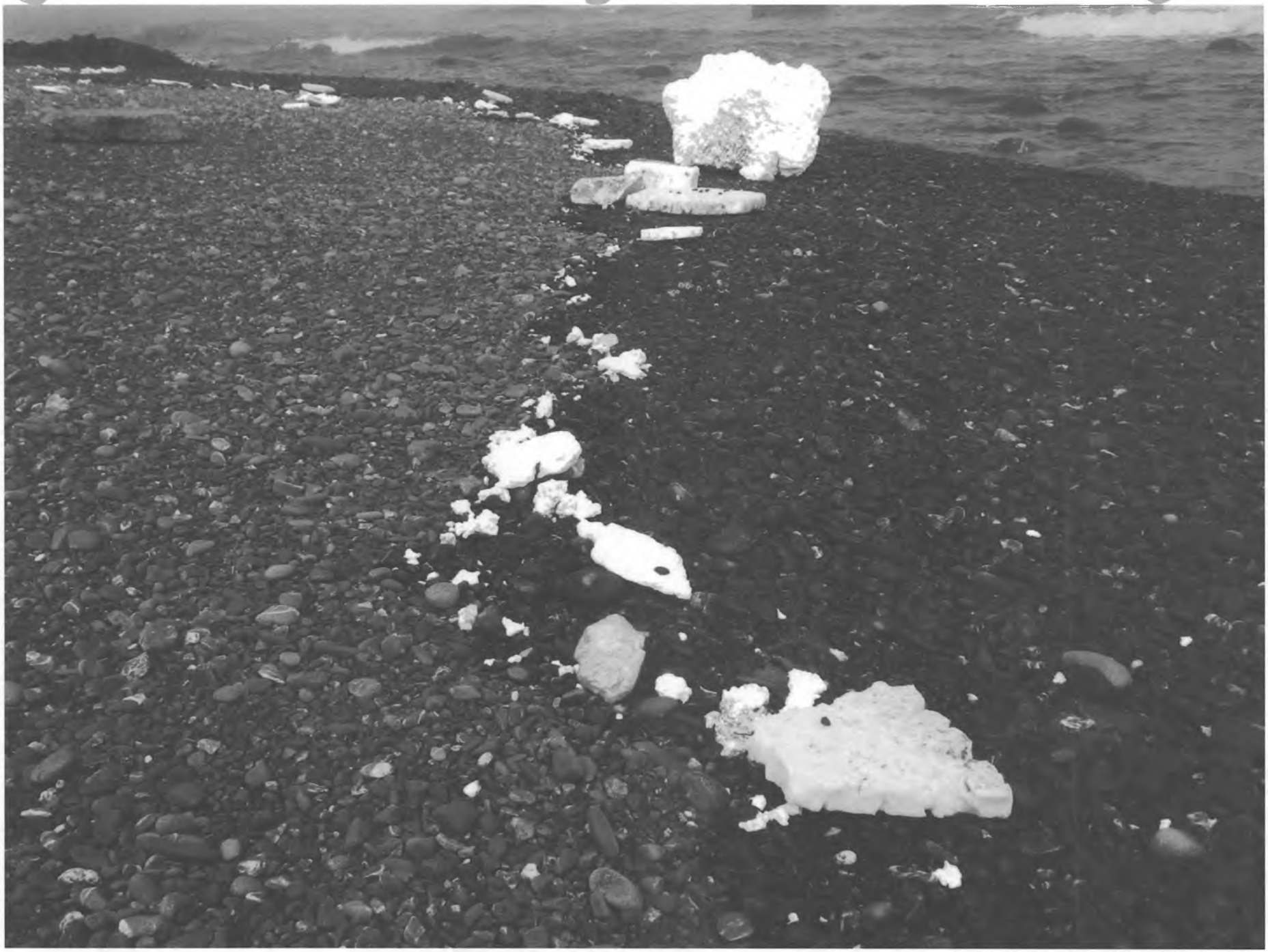




- Late Fall 2012 Pictures

More Tsunami Debris Observations

- New Debris Lines
- Storm Surges Move Debris Farther Up Beach
- Wind Carries Debris Inland
- Collector Beaches
- Heavier Debris Arriving Now



Concerns Related to Marine Debris

- Unknown Total Quantity or Composition
- Potential Toxicity of Components
- Breaking up and Disbursement
- Potential Impact of Small Styrofoam Pieces on Marine and Terrestrial Life
- Smothering of Sensitive Habitats
- Invasive Species
- Disposal
- Safety Risks (weather, remote sites, sea conditions, wildlife)
- Potential Navigation Risks Due to Large Debris

Radiation

- It is highly unlikely that tsunami debris has been affected by radiation from Japan's Fukushima Nuclear Reactor.

- By the time the radioactive water leak developed, the debris was already in the ocean, miles away from the reactor, and moving farther offshore.

- Recent inspections of Alaska beaches by DHSS's Radiological Health Physicist have turned up no marine debris with levels of radiation above background.

- For additional questions on radioactivity and radiation testing, visit: www.epa.gov/japan2011/index.html or contact EPA spokesperson Molly Hooven at 202-564-2313.

Cleanup Cost Considerations

- Re-Cleaning a Beach
- First Time Marine Debris Removal
- Landing Craft, Crew Vessel, Skiffs, Equipment, Supplies
- Crew Costs: Wages or Contractors
- Helicopters and Planes: Site Access or Debris Movement
- Disposal

Funding Tsunami Marine Debris Removal

- **Funding from Federal Government**
  - $50,000 grant from NOAA that funded tsunami debris removal in Prince William Sound, late Fall of 2012.
- **Funding from State of Alaska**
  - $200,000 for aerial survey and data analysis (SFY 2012)
- **$5 Million goodwill gesture from Government of Japan**
  - Small equal allocation initially to 5 states, 2 territories
  - Transfer mechanism via MOA with NOAA and submission of Statement of Work
  - First allotment expected in April 2013
  - Subsequent allotments are need-based upon approval by NOAA review team

Recent and Upcoming Events

- Alaska effectively demonstrated significant debris arrival, treacherous, difficult to access, and extensive coastline.

- Therefore, it is possible for Alaska to receive a greater portion of the reserved funding that NOAA will release based on need. This approach benefits Alaska.

- Prioritization and planning meeting January 17, 2013 in preparation for the 2013 field season for debris removal; ongoing coordination with NOAA, State & Federal land and animal managers .

- Alaska Forum on the Environment February 4-8, 2013





Marine Debris

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Japan Tsunami Marine Debris:

Information and actions

January 29, 2013

Peter Murphy
Alaska Coordinator
NOAA Marine Debris Program

Marine Debris

JTMD - AK Legislature - 01/29/2013

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NOAA Marine Debris Program

- Established in 2005
- Mandated by the Marine Debris Research, Prevention, and Reduction Act, Dec. 2006
- Dedicated to leading and promoting research, prevention, and reduction activities nationwide
- Regional Structure
- Website: **http://marinedebris.noaa.gov/**

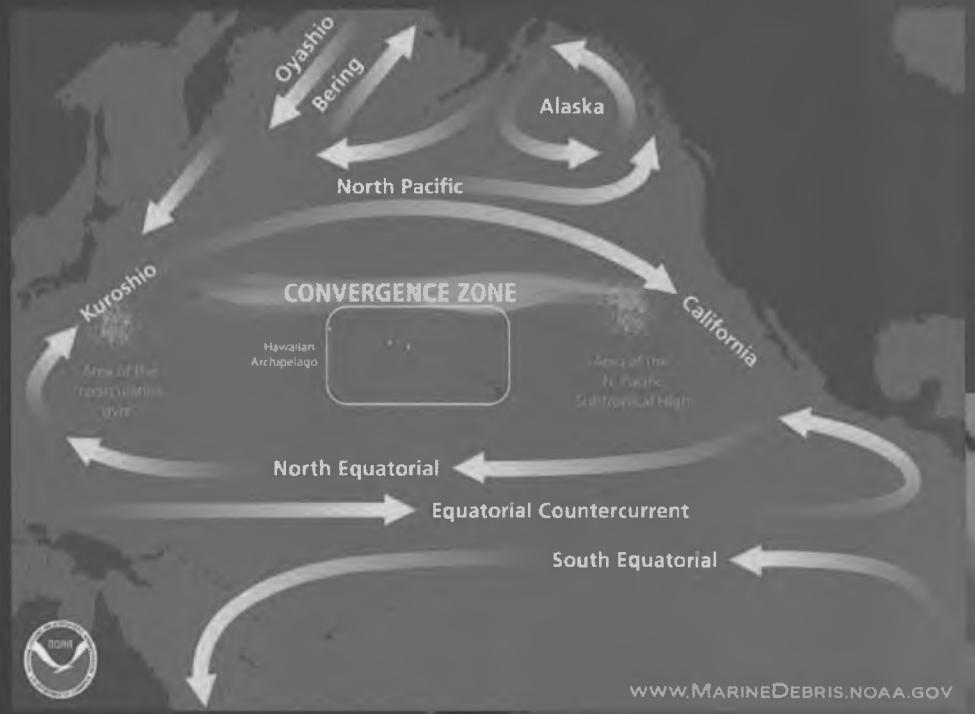


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Marine Debris in Alaska.



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Marine Debris – Already in Alaska

MDP in AK

- 23 projects
  - Research
  - Outreach
  - Removal

EX: Gore Point

- <2 mile beach
- 20+ tons of debris in removed 2007



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Tsunami Marine Debris – What is it?



Photo: US Navy Pacific Fleet



Photo: US Navy Pacific Fleet

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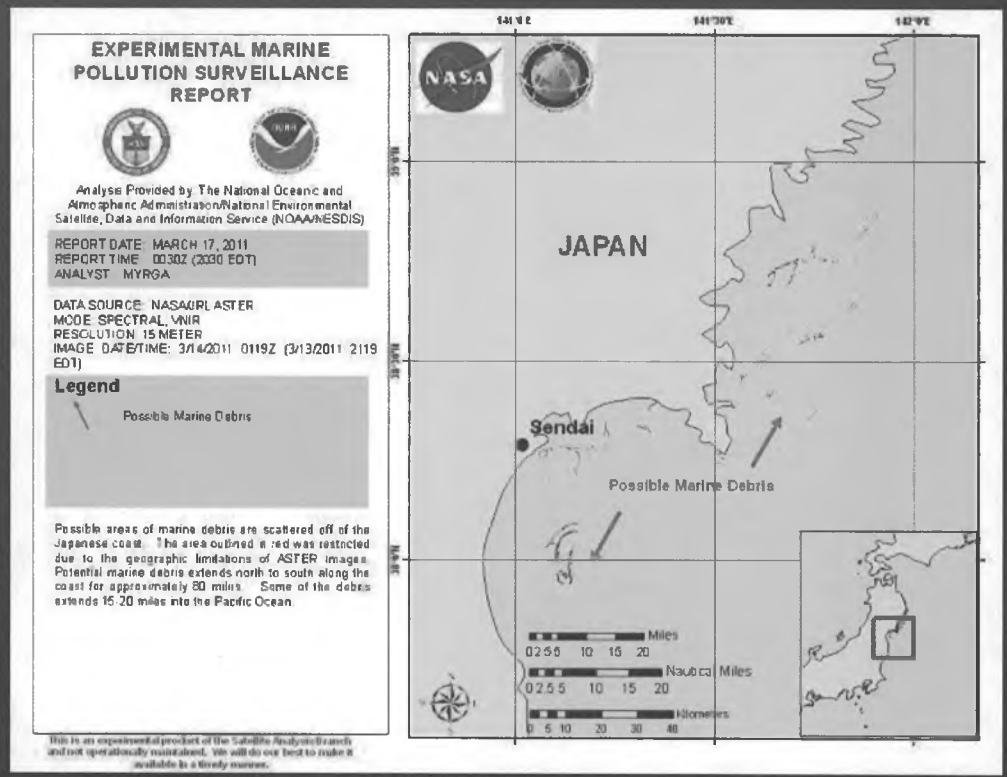
Marine Debris – Early Sightings



Photo: US Navy Pacific Fleet

Aerial Imagery – March 13

- Patches and fields
- Wood, construction materials abundant



Satellite Imagery – March

- Patches and fields – By April 14, debris no longer visible

Marine Debris

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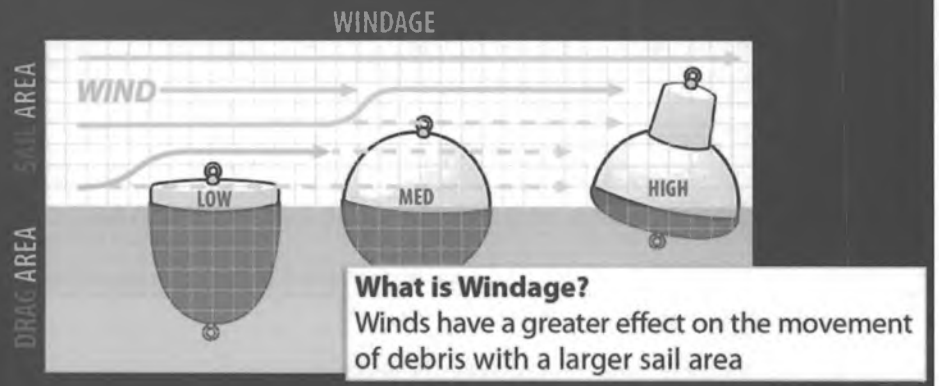
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Modeling

Where will the debris go, and when?

Ocean currents + **Winds**





What is Windage?
Winds have a greater effect on the movement of debris with a larger sail area

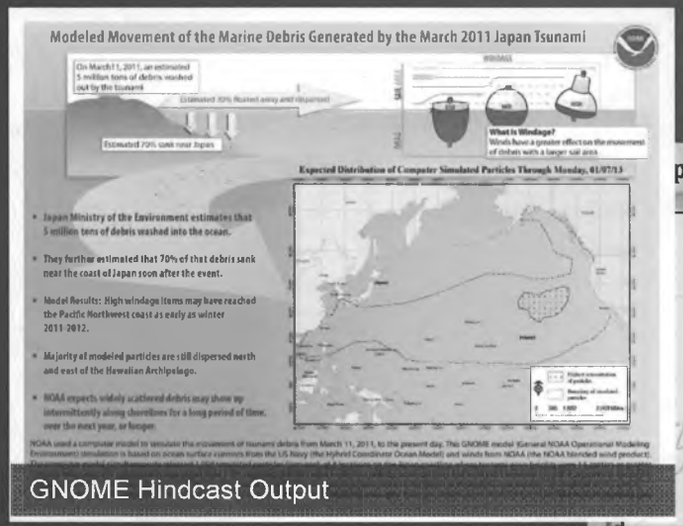
- Combination of sail area and drag
- **Low = slow (e.g., wood, nets)**
- **Medium = moderate (e.g., fishing vessel)**
- **High = fast (e.g., unoccupied inflatable life raft, Styrofoam)**

Marine Debris

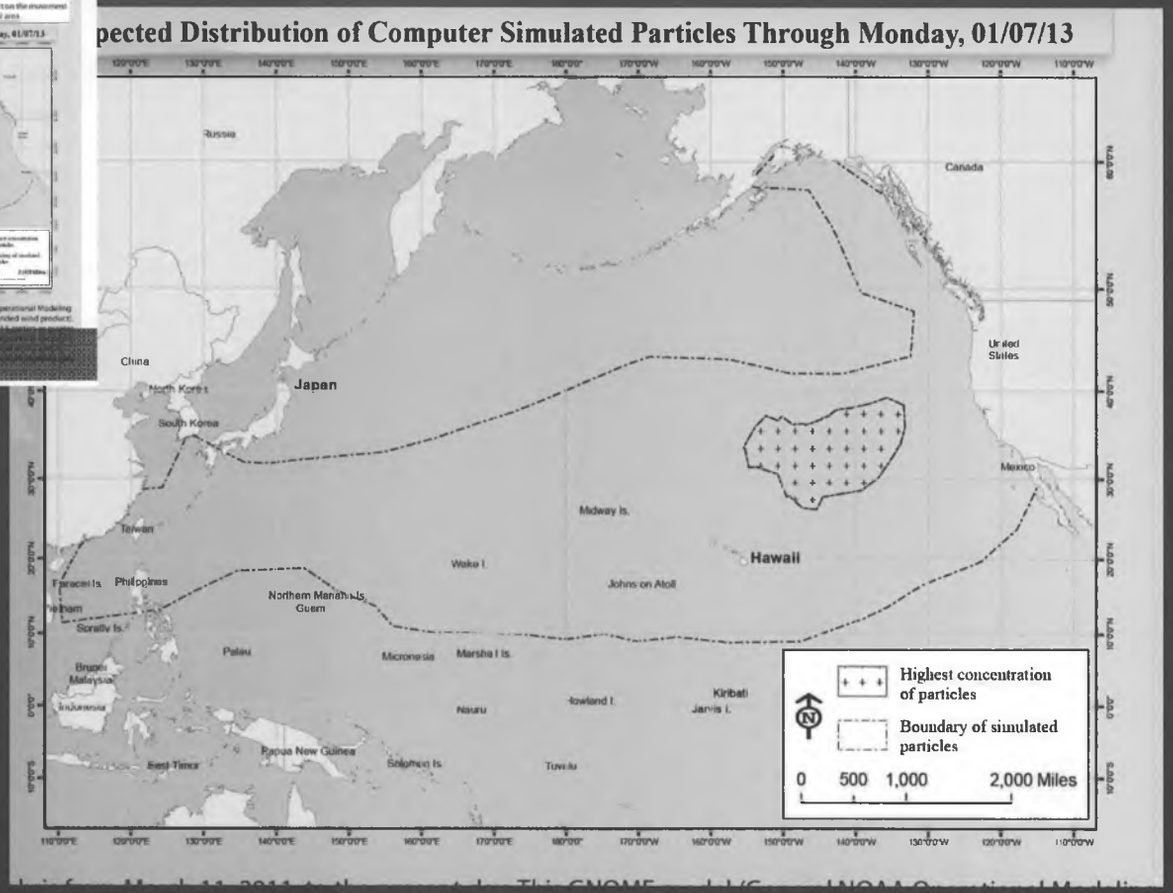
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Modeling



GNOME Hindcast Output



GNOME Hindcast

- 8,000 total particles from 8 locations
- Random windage: low to high
- Where debris may be NOW

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Marine Debris Sightings as of January 10, 2013

Sightings













Japan Tsunami Marine Debris

Debris Detection Satellite Target Areas (updated 9/20/12)

- No Debris Sighted
- Processing

Sightings

Japan Tsunami Debris Potential Sightings (updated 1/10/13)

- Potential

Japan Tsunami Debris Confirmed Sightings (updated 1/10/13)

- Confirmed

...ted to NOAA as possible tsunami debris ...htings (red triangle) indicate objects that ... the tsunami impact area. Potential sightings ...t may be linked to the tsunami, based on ...that may not have the unique identifiers ...er or contact information, to confirm its origin.

...blem, and not all debris found on U.S. shore- ...t to note that potential sightings may not be ...t items lost or abandoned before or after the tsunami from sources around the Pacific Rim. For more information regarding tsunami marine debris from Japan please visit: http://marinedebris.noaa.gov/tsunamidebris

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Coastal Response Research Center
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ERMA Environmental Response Management Application Pacific Islands

Marine Debris

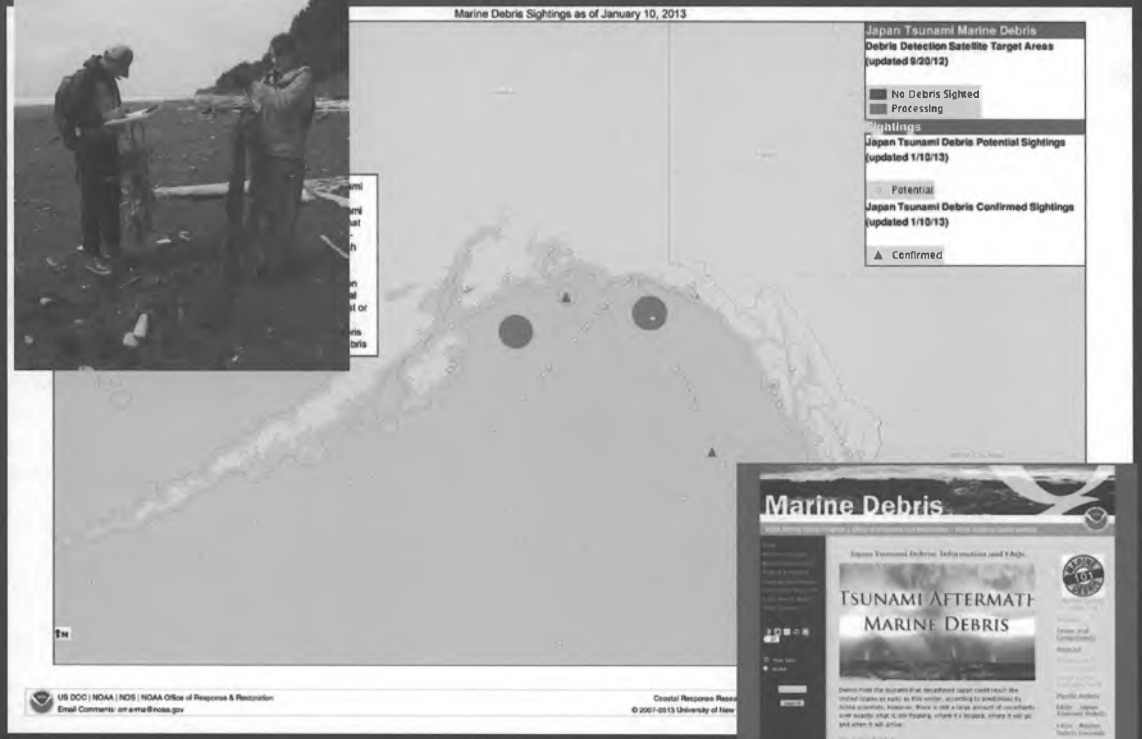
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Tsunami Marine Debris – Actions

1. Detection
   - *Satellite, Aerial, Vessel*
2. Modeling
3. Monitoring
   - *Baseline data*
4. Planning / Preparedness
   - *Regional*
5. Communication



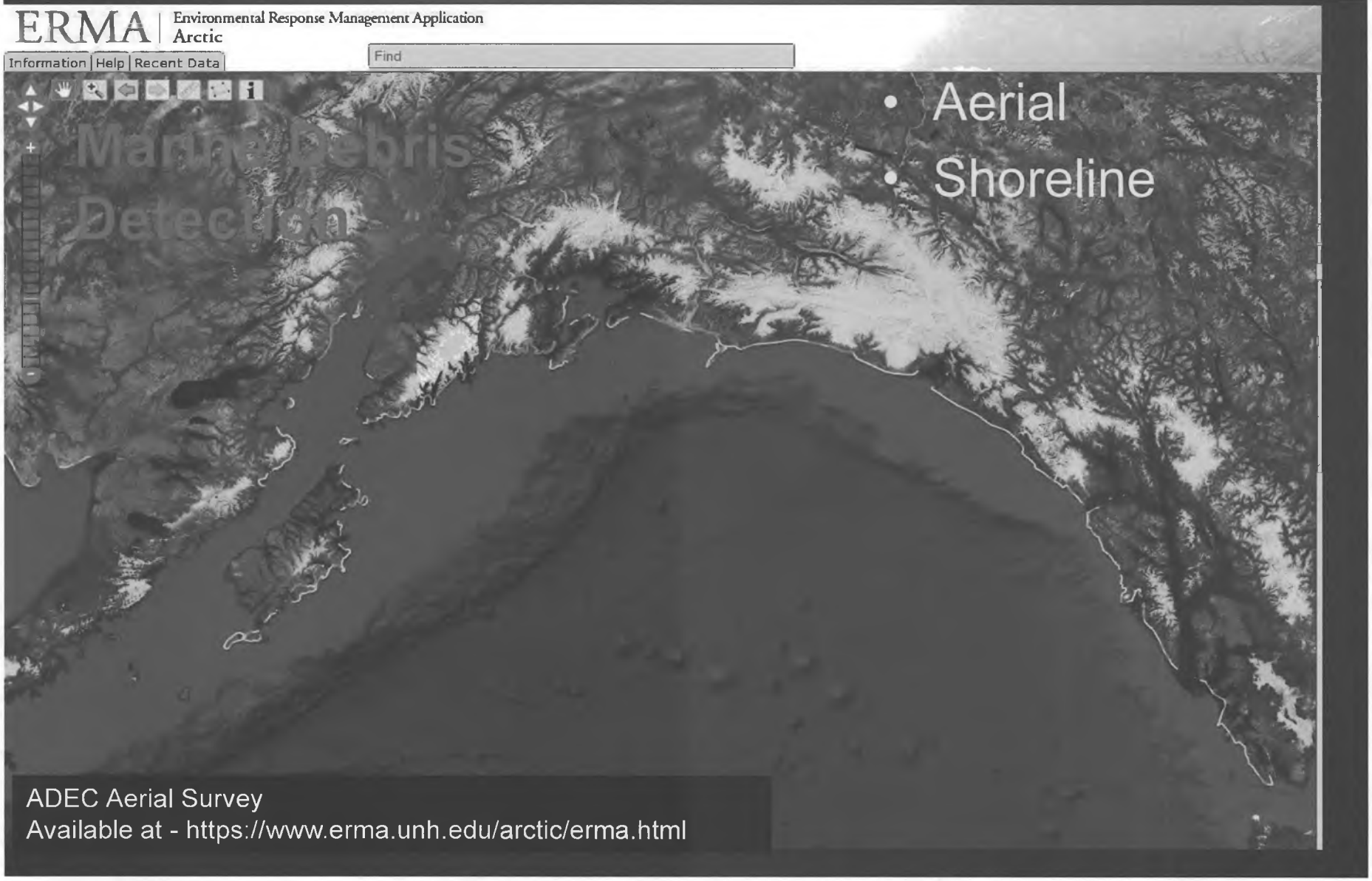




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Planning / Preparedness

- Regionally Based Planning
  - 5 States – AK, WA, OR, CA, HI
- Inclusive Process
  - Federal, State, Native, MD Community inputs
- Alaska
  - Federal Framework
  - Prioritization



Tsunami Marine Debris – What we know

- Tsunami debris **added to an existing problem**
- Likely much of the **debris sank near shore off Japan coast.**
- **Debris is dispersed** and not in large concentrations or fields.
- **Radioactive debris?**
  - Consensus that contamination of debris is highly unlikely
- **Sightings**
  - Twenty sightings of confirmed JTMD (as of 01/24/13), many more unconfirmed
  - Presence of confirmed debris means JTMD is present, but individual items can rarely be "fingerprinted" back to their origin.
  - Noted increase in styrofoam, buoys and high-floating debris during 2012 field season.
- Planning
  - Planning and preparation is being managed at state-by-state level.

Thank You

Thanks to: US Coast Guard, National Park Service, US Fish and Wildlife Service, US Forest Service, US EPA, NOAA NWS-VOS, NMFS, State of Alaska DNR, NOAA NESDIS, NGA, ADEC, DF&G, Gulf of Alaska Keeper, Marine Conservation Alliance Foundation, Island Charters, Island Trails Network, Sitka Sound Science Center, Center for Alaskan Coastal Studies, and many others!

Peter Murphy

peter.murphy@noaa.gov

marinedebris.noaa.gov

Report JTMD Sightings to:

disasterdebris@noaa.gov

Tsunami Debris Docks provide Unique Opportunity for Scientists

By Annie Feidt, APRN - Anchorage | January 23, 2013 - 5:26 pm



Photo courtesy of GoAK.

Tsunami debris from Japan is fouling shorelines all along the west coast of the United States. It's also providing a unique research opportunity for scientists studying invasive species. At the Marine Science Symposium in Anchorage this week, Oregon State University associate professor Jessica Miller gave an update on her research work on the two massive docks that washed up in Oregon and Washington last year. APRN's Annie Feidt reports:

It's rare for scientists to find perfect field experiments right in their backyard. But that's what happened last summer to Jessica Miller.

"There was a little bit of buzz in the hallway at work on the 5th of June that hey, something pretty big is on the beach."

The beach, was just four miles from Miller's office. And that "something" turned out to be a giant dock, that had been ripped lose in the 2011 Japanese Earthquake and Tsunami. When she first saw it, Miller says she was flabbergasted by just how huge it was- 66 feet long. That night, she called a few colleagues and they agreed to meet there the next morning with buckets and shovels:
"Given the situation, we were fairly systematic, but it's not like we we had a whole sampling design for a dock, we were just going 'wow', I think we need to get these samples. So we tried to sample all the sides of the dock and probably got 30 five gallon bags, and went back to the lab to begin figuring out what was there."

The scientists quickly realized several of the species were potentially aggressively invasive. So a team from the state of Oregon scraped off all of the living debris, took a blow torch to the dock and then buried two tons of organisms several feet down higher up on the beach. Then the research began. So far, Miller's team has documented 117 species that likely made the entire trip from Japan to Oregon.

"And it really appears given this diversity of animals, the reason some of them could survive on this dock for so long was that some of them were feeding on other ones on the dock. Sort of an island in the ocean crossing the Pacific."

Miller says 11 of the species could be invasive, including the European blue mussel, the Japanese sea star and the Asian pink barnacle. Miller says it's hard to predict how likely they are to become invasive. But if any do take hold, it will be a unique opportunity to study an invasive species from the moment of its arrival. One of the species Miller is most worried about is an Asian seaweed:
"Ondarea is a brown alga that was incredible abundant on the dock and reproductive at the time. And its already established in California. And it's on one of the 100 worst invasive species list already."

In late December, another dock washed up on a beach on Washington's Olympic Peninsula. It was from the same port in Japan and carried a similar mix of creatures with it across the ocean. Miller's team took samples from that dock as well. But she says invasive species aren't just arriving on huge objects, like docks.
"A buoy just came up into the Columbia river region. The large black buoys several people are reporting with chiton, a couple species of chitons, mussels and I think an Oyster on it, so you really can have some of the smaller objects bringing in non native species."

That has implications for Alaska. No large docks have washed on shore in the state. But millions of pounds of debris are piling up on Alaska's beaches. So far, the state hasn't documented any invasive species from the debris. Chris Pallister, with Gulf of Alaska Keeper, helped clean about 6 tons of tsunami debris from the southeast Kenai Peninsula this summer. He says he worried about invasive species, but he's more worried about toxins from the debris:
"I mean you're talking thousands of miles of coastline that have been impacted by every type of plastic you can imagine and drums and containers of everything from nasty industrial chemicals to household cleaning products that are being scattered all up and down the inter-tidal environment."

Last summer, the state commissioned a aerial survey to document how much tsunami debris was washing up and where it was concentrating. The survey shows the debris stretches from the Southern tip of Southeast all the way around the Gulf of Alaska and at least part way down the

Alaska Peninsula. Montague Island, Kayak Island, south of Cordova and Shuyak Island near Kodiak were identified as hot spots. But so far no state funding and only a tiny amount of federal funding has been appropriated to begin cleaning it up.

Listen to the full story



Smithsonian Institution

KACHEMAK BAY
RESEARCH RESERVE
A Unit of the National Estuarine Research Reserve System

Guide to Some Common
Fouling Invertebrates of Alaska
with focus on known and potential invasives



Introduction

Invasive species are a concern in many parts of the world, but nowhere is the threat more evident than in the state of Alaska. With 30-40 thousand miles of pristine coastline and commercial fisheries worth billions of dollars annually, introductions to Alaskan waters have the potential for great impact, both environmentally and economically. To meet this threat, a citizen science monitoring network called Plate Watch was established in 2007 (http://platewatch.nisbase.org/) to help monitor for invasive marine invertebrates in Alaska. The invertebrate fauna of the Pacific Northwest is varied and diverse and can provide challenges to identification, thus the idea of a field guide was born, to ensure that monitors could distinguish Alaskan native species from non native invasives. This work is the result of a collaboration of the Smithsonian Environmental Research Center and Kachemak Bay Research Reserve. Many thanks to Ann Eissinger of the Puget Sound Marine Invasive Species Volunteer Monitoring Program (MISM) and Ray McNally at the Puget Sound Partnership, for giving us access to the Marine Invasive Species Guide for the Puget Sound Area which provided the basic framework for our Guide. As much as possible, the species descriptions include key features discernable with the naked eye, to help separate them from similar species without the aid of a microscope. Distributional information is focused primarily on the west coast.

For questions or further information about the field guide, contact Linda McCann mccannl@si.edu or Catie Bursch catie.bursch@alaska.gov. Work on the Guide is ongoing, so check the websites for updates!



Cover Photos: Botryllid juvenile: Linda McCann, *Molgula* tunicate: Catie Bursch, Plate covered with *Ciona* spp: Chela Zabin, *Distaplia alaskensis*: Heather Meuret Woody. Photo this page: *Ciona* sp. fouling aquaculture cages. http://www.whoi.edu/cms/images/oceanus/seasquirt2_n1_41620.jpg

This Field Guide can be downloaded from the Plate Watch and KBRR websites at: http://platewatch.nisbase.org and http://www.adfg.alaska.gov/index.cfm?adfg=kbrr_educationResources.home.

Field Guide Species List

Marine Fouling Invertebrates

Phyla

Tunicata

Taxonomic Name	Common Name	Status Pacific NW
Aplidium californicum	sea pork	Native
Aplidium coei		Native
Ascidea callosa	sea blister	Native
Ascidea columbiana	sea blister	Native
Boltenia villosa	spiny headed tunicate	Native
Botryllus schlosseri	golden star tunicate	NIS
Botrylloides violaceus	chain or sheath tunicate	NIS
Ciona intestinalis	vase tunicate	NIS
Ciona savignyi	vase tunicate	NIS
Corella inflata	brooding transparent tunicate	Native
Corella willmeriana	transparent tunicate	Native
Dendrodoa pulchella		Native
Didemnum vexillum	marine or sea vomit	NIS
Didemnum carnulentum	White crust tunicate	Native
Tridemnum spp		Native
Distaplia alaskensis	compound tunicate	Native
Distaplia occidentalis	mushroom compound tunicate	Native
Halocynthia aurantium	sea peach	Native
Halocynthia igaboja	Hedge hog tunicate	Native
Molgula citrina	sea grape	Native?
Molgula manhattensis	sea grape	NIS
Molgula pacifica	sea grape	Native
Molgula retortiformis	sea grape	Native
Styela clava	club tunicate	NIS
Synoicum irregulare	Gnomes toes	Native
Synoicum jordani	sea pork	Native
Cnemidocarpa finmarkiensis	broad base tunicate	Native

Decapoda

Carcinus maenas	European green crab	NIS
Metacarcinus magister	Dungeness crab	Native

Bryozoa

Taxonomic Name	Common Name	Status Pacific NW
Watersipora subtorquata		NIS
Schizoporella japonica		NIS
Bugula neritina		NIS

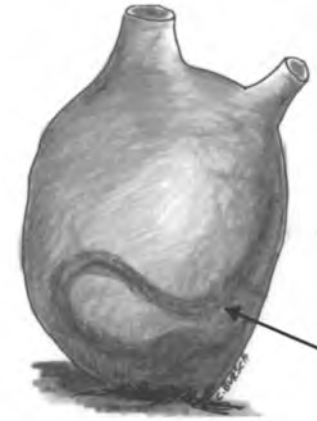
Macroalgae

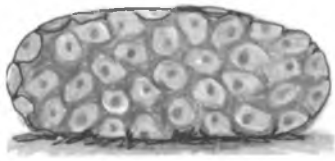
Phaeophyta

Undaria pinnitifida	Japanese kelp	NIS

Key Features

Tunicata

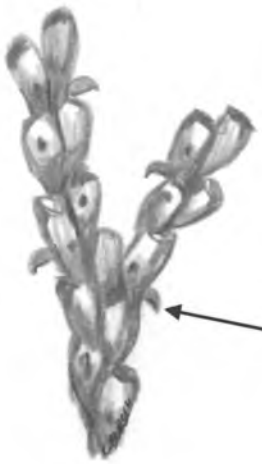


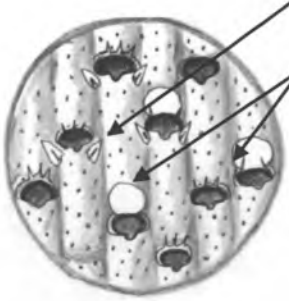


- Solitary or Colonial
- Firm or spongy
- Position of siphons lateral, terminal
- Tunic smooth, hairy or bumpy
- Presence of spicules (microscopic)
- Shape of gut



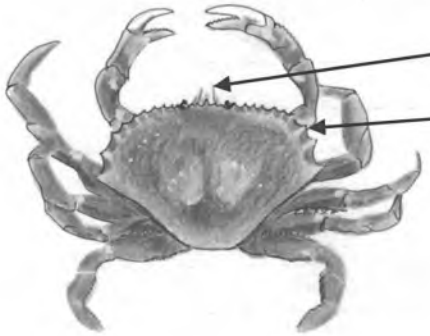
Bryozoa





- Erect or Encrusting
- Soft or Calcareous
- Color
- Presence of spines
- Presence of avicularia
- Presence of ovicells

Decapoda



- Presence of 10 legs
- Number of spines between eyes
- Number of spines laterally
- Swimming or walking legs
- Shape and color of claw

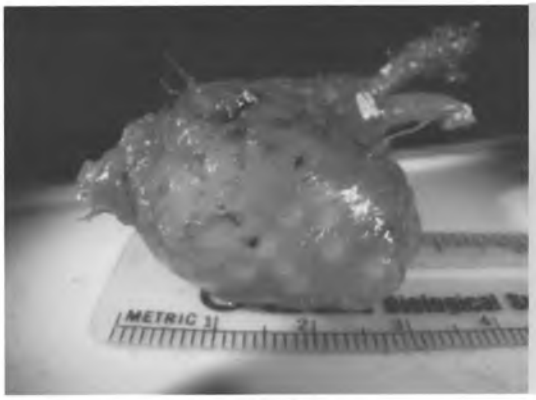
Macroalgae



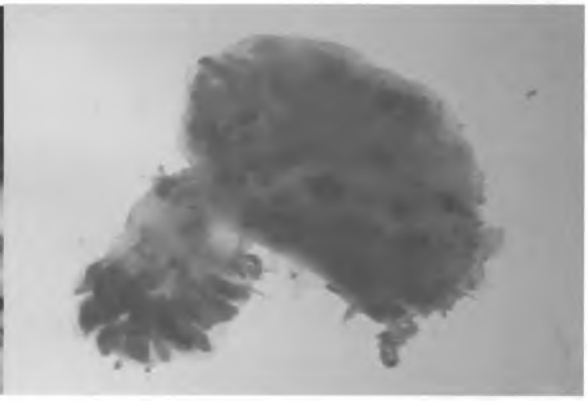
- Brown, Red or Green Alga
- Presence of midrib
- Blade divided or whole
- Presence of sporophyll
- Presence of swim bladders

Tunicate (colonial) - *Aplidium californicum*

DESCRIPTION	This colonial tunicate, commony called Sea Pork, is very smooth, round and often glossy. Sometimes sand is in folds of the tunic, but never embedded. Form is extremely variable including mounds, lobes or sheets.
RANGE	Alaska to southern California
SIZE	1- 3 cm tall, to 20 cm in diameter.
STATUS	Native
COLOR	Variable, white, pink, peach or brown with yellow to orange spots within the tunic, to nearly colorless.
HARITAT	Intertidal to subtidal, rocks, sand and common on man-made substrates to 85 m.
TIDAL HEIGHT	Lower intertidal, subtidal to 85 m.
SALINITY	25.4 to 35 ppt
TEMPERATURE	-0.4 to 16.2 °C
SIMILAR SPECIES	Glossy surface distinctive. Species is highly variable in form and can look similar to *A. solidum* , but the latter is generally much larger and has 5 lobes on the atrial siphon, whereas *A. californicum* has none.



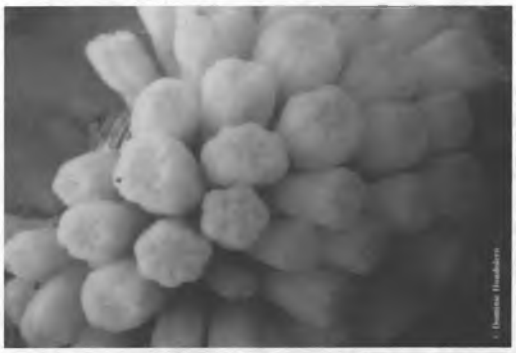
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Tunicate (colonial) - *Aplidium coei*

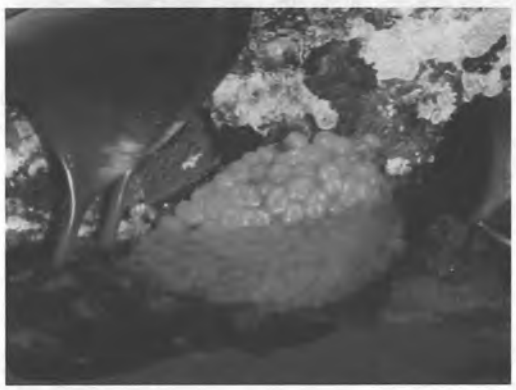
DESCRIPTION	Colonial tunicate with 1-4 enlarged lobes arising from a common base. The top of lobes are gathered looking, with the zooids columnar like *Distaplia* .
RANGE	Alaska: Ritter described and collected them on Kodiak Island during the Harriman expedition (Ritter, 1901). Gretchen Lambert identified them again in Kodiak in 2001 and reported that they were fairly common in the low rocky intertidal. They were also seen in Kachemak Bay in low rocky intertidal and in Scow Bay, near Sitka.
SIZE	Lobes to 5.5 cm tall. Colonies photographed ~ 15 cm wide or less.
STATUS	Native
COLOR	Bright yellow or orange.
HABITAT	Sand and rock, on the latter sometimes under dense kelp cover.
TIDAL HEIGHT	Low intertidal and subtidal.
SALINITY	15.2 to 33.3 ppt. (Homer & Seldovia Harbor range)
TEMPERATURE	-2.3 to 14.9 °C (Homer and Seldovia Harbor range)
SIMILAR SPECIES	Can be confused with *Distaplia* spp which do not have a puckered top to the lobes. There are many *Aplidium* and *Synoicum* spp. *As well* as other compound tunicates in the Pacific Northwest that can be difficult to tell apart without a microscope.



© D. Hondelero



©K. Iken



©K. Stanley

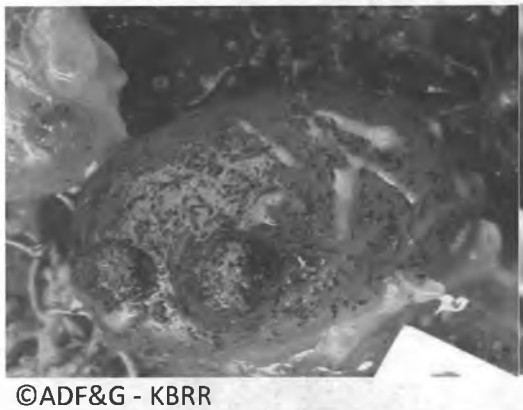
Photos 1-3 from Kachemak Bay



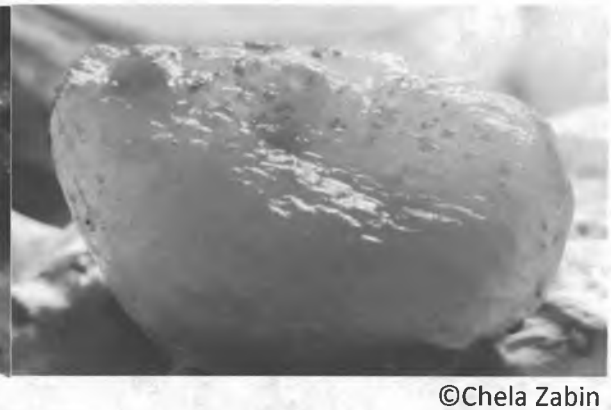
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Tunicate (solitary) - *Ascidia callosa*

DESCRIPTION	This solitary tunicate is soft, hairless, ~1-2 mm thick and easily torn. Its body is wider than it is tall with a somewhat flattened appearance. The tunic margins are rounded and in old individuals looks wrinkled. Since this animal is lying mostly on its left side, the oral siphon is at the extreme anterior end of body, the atrial siphon is close to it but slightly posterior. Both siphons 6 lobed.
RANGE	Circumboreal in northern seas. In North America it's found from Alaska to Puget Sound, Washington. In Alaska it is found in Homer, Cordova, and Chenega.
SIZE	Body length up to 5 cm. ~3 cm in diameter.
STATUS	Native
COLOR	Clear, white to orange. More transparent when young.
HABITAT	Attaches to firm substrates, rocks in the intertidal and floats and ropes in harbors.
TIDAL HEIGHT	Low intertidal and sub-tidal to 146 m.
SALINITY	15.2 to 33.3 ppt. (Homer & Seldovia Harbor range)
TEMPERATURE	-2.3 to 14.9 °C (Homer and Seldovia Harbor range)
SIMILAR SPECIES	It can be distinguished from *Ascidea columbiana* by the lack of a dense circle of papillae around the siphons. Rather, its siphons look a bit like those of *Cnemidocarpa finmarkiensis* , in that they cramp up when shut and have smooth edges. Also, the edges of its tunic are rounded and may roll up whereas the tunic of *A. columbiana* is wide and sheet-like at the base. Locally it could be confused with *Molgula* but is flatter and attached on it's side.



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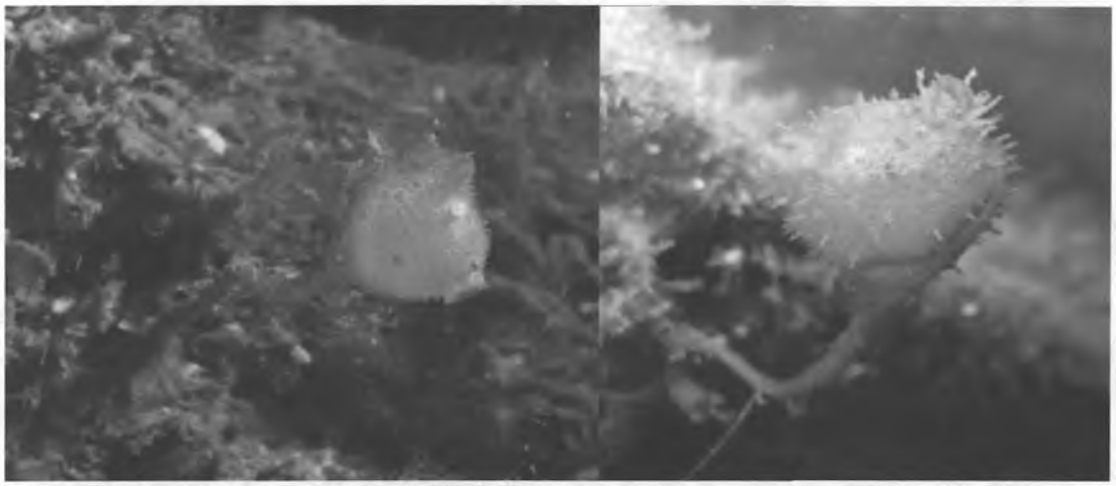
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Tunicate (solitary) - *Boltenia villosa*

DESCRIPTION	Small solitary tunicate with stalked, hairy body. The stalk can be long relative to size of tunicate
RANGE	Alaska and British Columbia to San Diego, CA
SIZE	up to 3 cm wide and 10 cm long
STATUS	Native
COLOR	orange, red or brown and aperaturs often red
HABITAT	Among colonies of tubeworms that grow on submerged man-made structures or hard substrates.
TIDAL HEIGHT	Alaska and British Columbia to San Diego, CA
SALINITY	28.0-33.3 ppt Seldovia Harbor
TEMPERATURE	0-12.4 °C Seldovia Harbor
SIMILAR SPECIES	*Halocynthia igaboja*, but the latter is not stalked, is more densely covered with long spines and can get quite large. Another species of the genus, *B. ovifera* which does not have the spiny tunic, is circumpolar and may be in Alaska but we have no records at present.



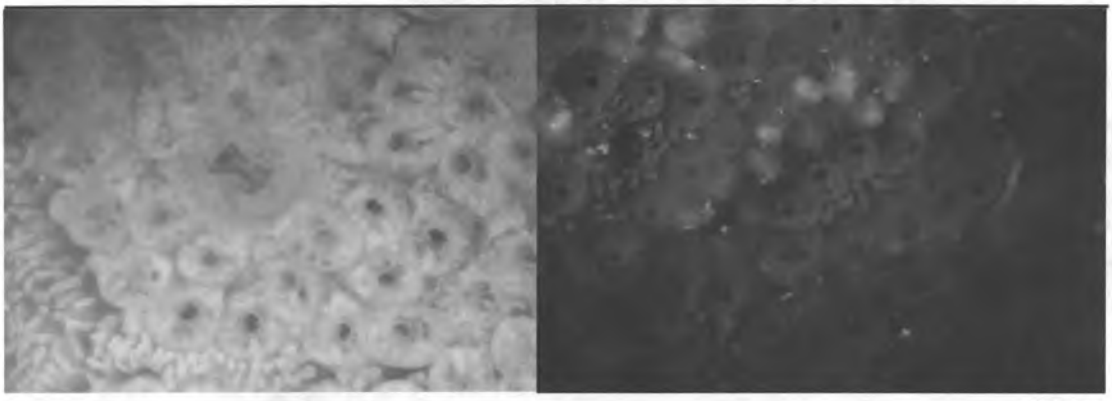
©ADF&G - Shawn Harper Kachemak Bay ©Janna Nichols Washington state



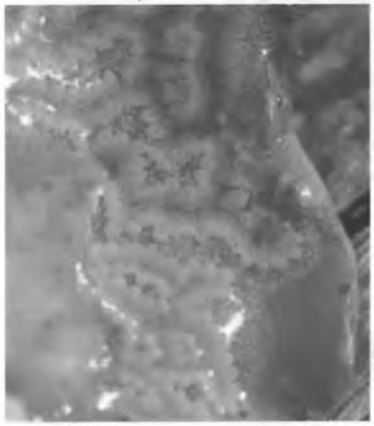
©Paul Norwood Sitka

Tunicate (colonial) - *Botrylloides violaceus*

DESCRIPTION	This colonial tunicate is thin and lobe-like with zooids forming long double rows or chains. Short chains sometimes look similar to the flower-like pattern in *B. schlosseri*. The tunic is relatively tough and leathery to the touch.
RANGE	Alaska to California. It was first noted on the west coast in San Francisco, CA in the early 1970's. Native to Japan and China, it has become abundant in Sitka and Ketchikan, AK over the last decade.
SIZE	Colonies can be large, up to 0.3 m diameter
STATUS	Invasive; see the full record at http://invasions.si.edu/nemesis/
COLOR	Solid color, variable - often orange but can be red, yellow, purple, or tan, occasionally brown or lavender.
HABITAT	It generally grows subtidally in protected areas on a variety of surfaces such as docks, boat hulls, buoys, ropes, pilings, on top of and underneath rocks, on mussels and solitary sea squirts, seaweeds (see photo) and eelgrass.
TIDAL HEIGHT	Shallow subtidal, < 50m, but can be found in the intertidal in protected areas
SALINITY	18-40 ppt
TEMPERATURE	-0.6 -25°C but generally found above 8°C
SIMILAR SPECIES	*Botrylloide diegensis* is two toned with a light colored ring around the siphons and darker test. *Botrylloides spp*. do not form the star-like pattern found in *Botryllus schlosseri*, rather the zooids form long chains or ladders. Also distinctive, *Botrylloides violaceus* has numerous very large ampulae that are visible in the lower left hand corner in the first photo to the left.



©M. Frey ©M. Frey



©Gary Freitag note meandering rows



on algae ©Heather Meuret Woody

Tunicate (colonial) - *Botryllus schlosseri*

DESCRIPTION	The zooids in this colonial tunicate are organized in a star pattern (usually conspicuous). Colonies are flat, but can develop lobes as they mature.
RANGE	Alaska to California. First noted in California and Washington in the 1970's. Native to Europe, and the Mediterranean. Now abundant in Sitka and recently found at one locality in Ketchikan but no clear evidence of establishment yet.
SIZE	Forms flat irregular sheets 3-4 mm thick, and up to around 15 cm.
STATUS	Invasive, see the complete record at http://invasions.si.edu/nemesis/
COLOR	Often two-toned, the color patterns are extremely variable, white, purple, orange or brown to almost black.
HARITAT	Docks, boat hulls, buoys, ropes, pilings, on top of and underneath rocks, on mussels and solitary sea squirts, seaweeds and eelgrass.
TIDAL HEIGHT	Subtidal to 200 m, occasionally found in lower intertidal
SALINITY	<14-44 ppt. Found in marine and estuarine habitats.
TEMPERATURE	Species dies below 3°C and needs at least 11°C to reproduce
SIMILAR SPECIES	*Botyrlloides* has long rows of zooids, numerous large ampulae along the exterior margins of the colony, and much larger larvae.



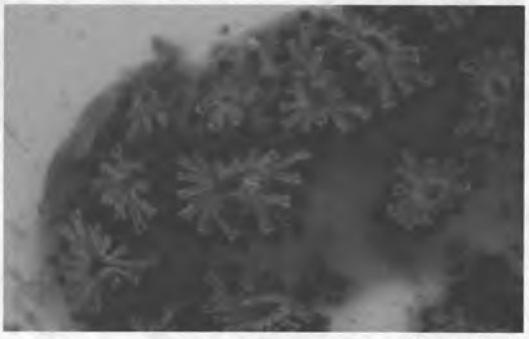
©H. Meuret-Woody



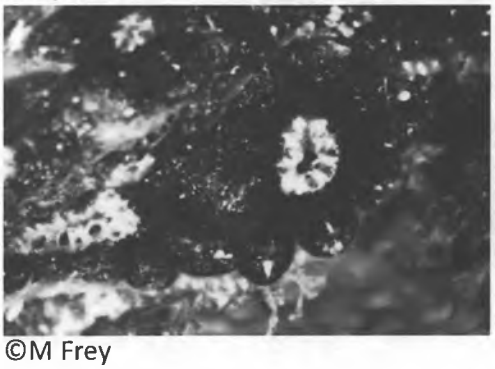
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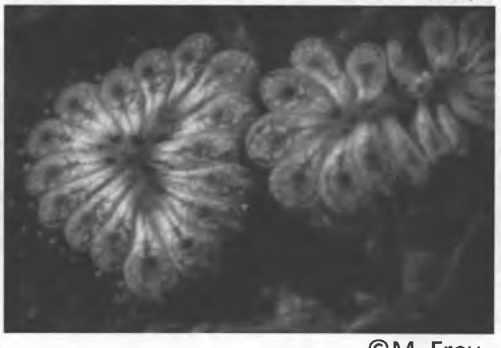
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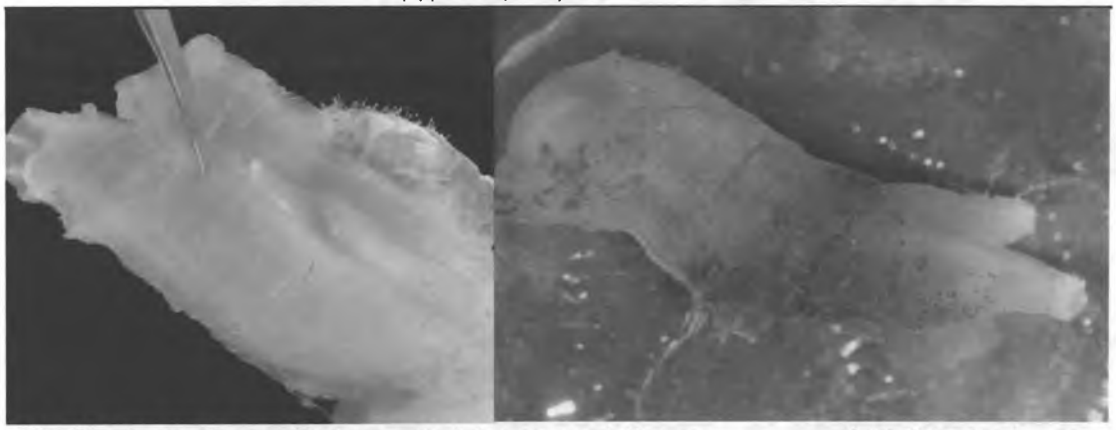
©M Frey



©M. Frey

Tunicate (Solitary) - *Ciona intestinalis*

DESCRIPTION	This solitary tunicate is long and transparent with orange to red dots on the scalloped edges of the siphons. The body is easily torn. They can form large groups.
RANGE	Puget Sound, Washington to San Diego, California. Native to the Atlantic and the Mediterranean. They were first reported on the west coast in San Diego in 1897.
SIZE	to 15 cm.
STATUS	Invasive (find the complete record at http://invasions.si.edu/nemesis/index.html)
COLOR	Body yellowish, often transparent, with orange dots on the top edges of the siphon
HABITAT	They are found in protected harbors and marinas growing on docks, boat hulls, buoys, ropes, pilings, but also on natural substrates such as rocks, shells and boulders.
TIDAL HEIGHT	Subtidal, but sometimes in low intertidal
SALINITY	11-50 ppt. Highly tolerant species that can reproduce up to 40 ppt
TEMPERATURE	cold temperate to tropical, 10-30°C, but can withstand temperatures as cold as -1°C for months at a time
SIMILAR SPECIES	*Ciona savignyi* has a more fragile tunic than *C. intestinalis* with much brighter yellow markings on the siphon edges and a white rather than a red dot on the vas deferens (upper left photo).



©California Academy of Science Red dot on vas deferens. © Melissa Frey



© Melissa Frey

Tunicate (Solitary) - *Ciona savignyi*

DESCRIPTION	This solitary tunicate is long and transparent with orange dots and broad yellow markings on the scalloped edges of the siphons. The body is fragile and easily torn. They can form large groups.
RANGE	Puget Sound, Washington to southern California. They are native to Japan and were first reported on the west coast in 1985 in Long Beach California.
SIZE	Body long, up to 15 cm.
STATUS	Invasive. See the full record at http://invasions.si.edu/nemesis/
COLOR	Pale yellow, often transparent with white and yellow dots in body cavity. The tip of vas deferens is white.
HABITAT	Often found on docks and manmade structures such as boat hulls. They can form dense aggregates.
TIDAL HEIGHT	Subtidal to 60m.
SALINITY	18-35 ppt
TEMPERATURE	Broad temperature range, 11-27°C
SIMILAR SPECIES	In California *Ciona intestinalis* is distinguished by its red/orange dots on the siphon edges (*C savignyi* has bright yellow streaking on the siphon edges as in photo below), and the red dot on the vas deferens seen through the body wall. The tunic also gets tougher and browner in *C. intestinalis* . Genetic analyses is showing that these patterns may be regional.



© Janna Nichols

Tip of siphon showing bright yellow lines ©M. Frey



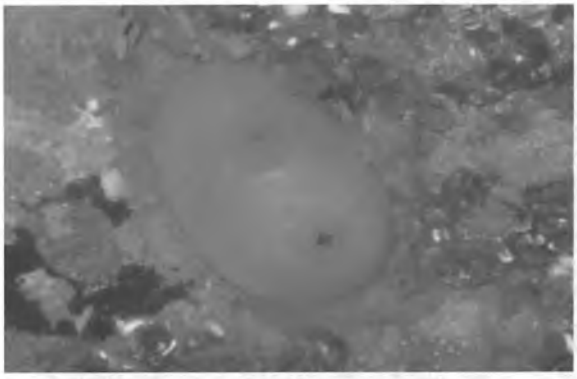
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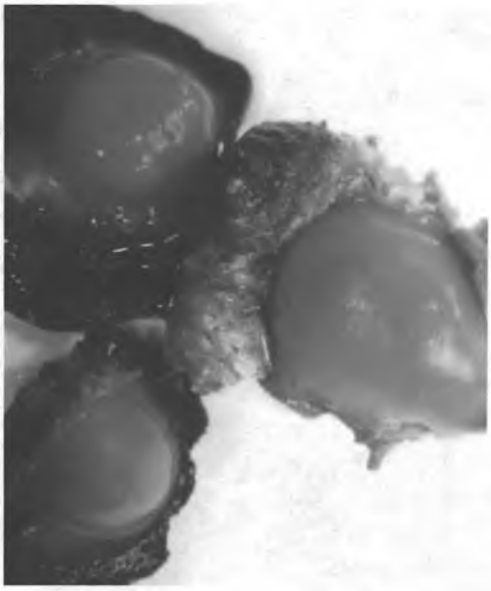
Tunicate (solitary) - *Cnemidocarpa finmarkiensis*

DESCRIPTION The tunic is opaque and smooth, the body is low and dome-shaped to flattened, and broadly attached to the substrate. The tunic is thin but tough and shiny. When out of water, siphons can fully retract and siphons look like small crosses making identity as a tunicate difficult. There are 5 to 12 tubular, hermaphroditic gonads in the atrial wall on each side, but there are usually more on the right side.

RANGE	Circumpolar. Western distribution Japan, and Alaska to California.
SIZE	up to 5 cm in diameter.
STATUS	Native
COLOR	Red, orange, rose or pinkish-red. White when juvenile.
HABITAT	Rocks and hard substrates in areas with moderate to high wave action. Uncommon on artificial substrates.
TIDAL HEIGHT	Low intertidal to at least 50m.
SALINITY	25.4 to 33.3 ppt. (Homer & Seldovia Harbor deep sonde range)
TEMPERATURE	-0.4 to 12.4 °C (Homer & Seldovia Harbor deep sonde range)
SIMILAR SPECIES	*Halocynthia aurantium* is similar with a smooth orange tunic but it is taller than wide.



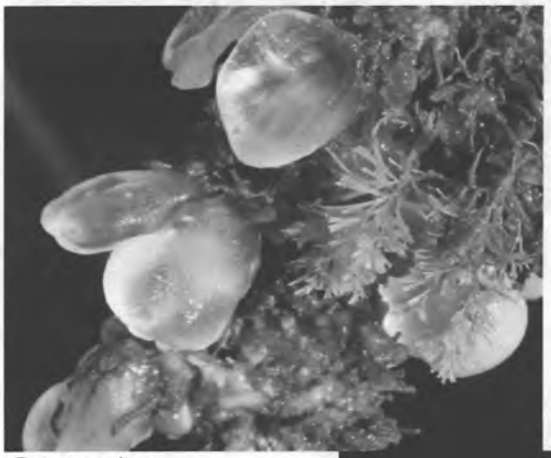
©K. Iken Kachemak Bay



©Paul Norwood Sitka

Tunicate (solitary) - *Corella inflata*

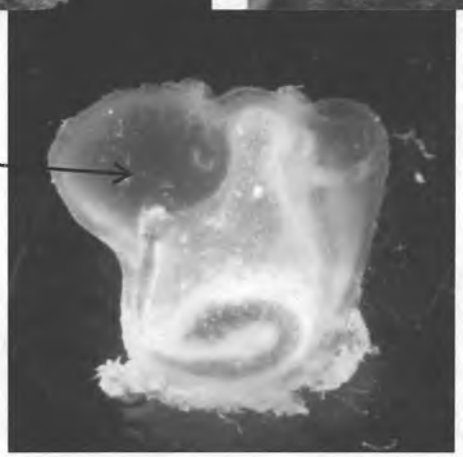
DESCRIPTION	This solitary tunicate has an oblong-oval body, with a bumpy surface. Its atrial chamber is greatly enlarged into a brood chamber, giving it a roughly cubical outline. The tunic is translucent and it has poorly developed siphons.
RANGE	Common throughout Alaska. Found to the San Juan Islands, Washington. It has recently extended its range south to San Francisco, Ca., probably due to boat fouling
SIZE	To 5 cm high.
STATUS	Native
COLOR	Clear and colorless, often with flecks of white, gold or orange.
HARITAT	On rocks and floats and other man-made structure.
TIDAL HEIGHT	Low intertidal zone to sub tidal depths of 20 m.
SALINITY	Minimum 27 ppt
TEMPERATURE	-2.3 to 14.9 °C (Homer and Seldovia Harbor range)
SIMILAR SPECIES	*Ciona intestinalis* is several times taller than wide and has visible longitudinal muscle bands. *Corella willmeriana* is very similar to this species but has a rectum more than 3/4 the length of the body and its atrial siphon is not expanded into a brood chamber (bottom photo).
MORE FACTS	This tunicate is more than 99 percent water, yet it is preyed upon by several animals, including the morning sun star.



©G. Lambert



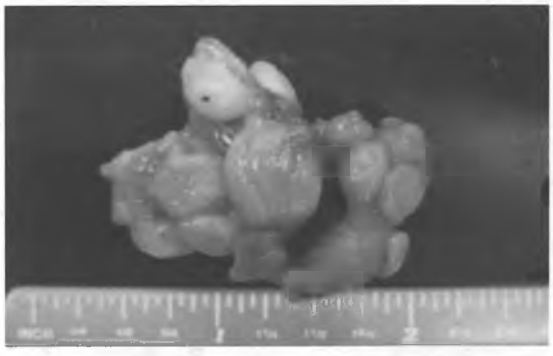
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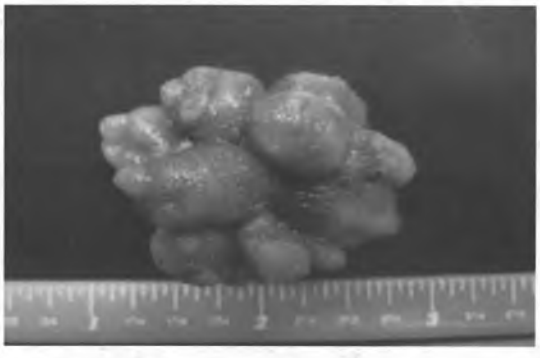
©Melissa Frey

Tunicate (solitary) - *Dendrodoa pulchella*

DESCRIPTION	Solitary tunicate but grows together in clumps. Tunicate globular, tough and wrinkled. Siphons can be pale red or pink in contrast to the rest of the tunicate.
RANGE	Circumpolar Arctic species, in the Pacific from Kamchatka to the Bering Strait. In Alaska, found in Nunivak Island and Kachemak Bay
SIZE	To 2.5 cm in diameter.
STATUS	Native
COLOR	Grey, orange to pinkish.
HARITAT	Muddy sand. In Kachemak Bay seen washed up on beach after storms and on lines in harbors.
TIDAL HEIGHT	Subtidal to 100m.
SALINITY	25.4 to 33.3 ppt. (Homer & Seldovia Harbor deep sonde range)
TEMPERATURE	-0.4 to 12.4 °C (Homer & Seldovia Harbor deep sonde range)
SIMILAR SPECIES	Distinguished from other species of the genus by the numerous oral tentacles (only visible in water) and the3 branched gonad (requires dissection).



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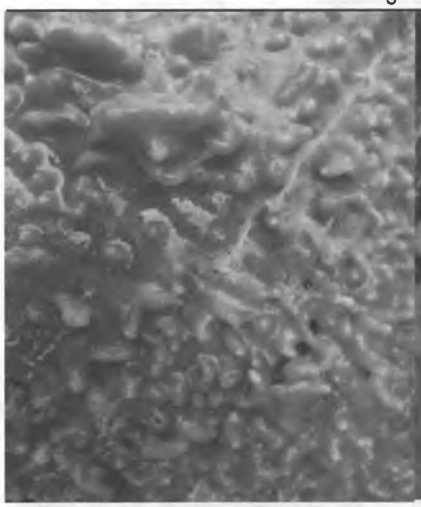


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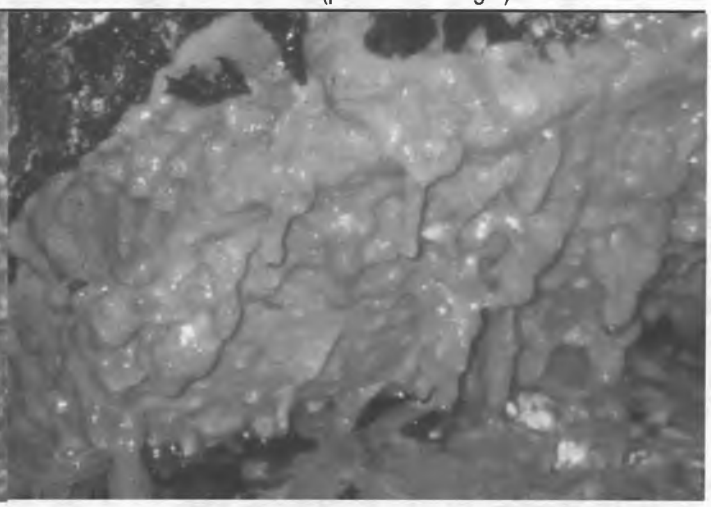
Photos from Kachemak Bay, AK

Tunicate (colonial) *Didemnum vexillum*

DESCRIPTION	Extremely variable in form, the colony can be sheet like, leathery, lobed, or hang in droopy, pendulous extensions. The tunic contains distinctive spike or star shaped spicules that are visible only under a microscope.
RANGE	Considered a native of Asia, the specie has been introduced all over the world. First described on the west coast in 1993 in San Francisco, it is now present from CA to British Columbia, and most recently in Sitka, Alaska.
SIZE	Can form extensive matts, meters across.
STATUS	Invasive, see the complete record at http://invasions.si.edu/nemesis/
COLOR	variable, pale tan to orange.
HABITAT	colonizes most hard surfaces, both natural and man-made, but common at aquaculture facilities. Will grow over most species and can smother organisms, forming vast sheets.
TIDAL HEIGHT	low intertidal to about 81 m
SALINITY	18-40 ppt, but survives best between 26-30 ppt
TEMPERATURE	-2 - 24°C, needs temperatures > 9°C to reproduce
SIMILAR SPECIES	Native *Didemnum* and *Tridemnum* species can be hard to distinguish from this species without dissection, but they do not form the extensive matts, nor the drip-like dangles that often occur in *D. vexillum* (photo bottom right).



© Linda Shaw subtidal



intertidal ©Heather Meuret Woody



©Ian Davidson



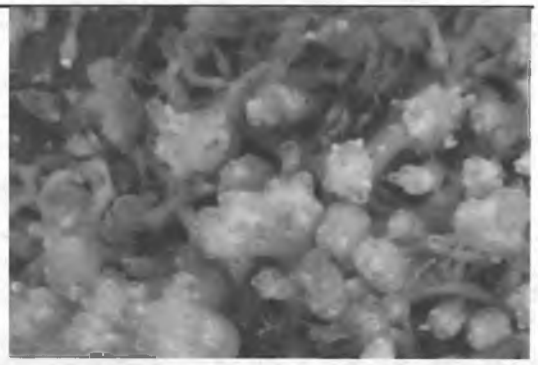
"dangle" ©Marnie Chapman

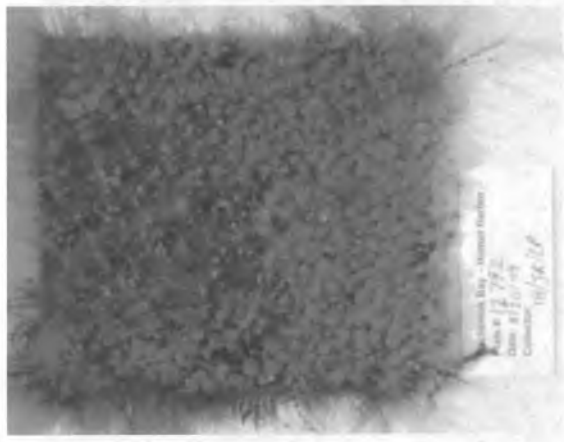
Pictures all from Whiting harbor, Sitka, Alaska

Tunicate (colonial) - *Distaplia alaskensis*

DESCRIPTION	Colonies consist of several cone-shaped lobes generally narrowing from the top to the base with a small area of attachment. The lobes are elongated and flat-topped. Lateral offshoots can sometimes cover settling plate surface without many lobes
RANGE	This species was undescribed until 2001 and was only found on manmade structures in Homer Harbor and Cordova Marina.
SIZE	Colonies up to 5 cm in length always subdivided into numerous lobes < 3 cm in diameter.
STATUS	Unknown origin
COLOR	Orange, peach or yellow to tan. Translucent, shiny tunic.
HARITAT	Preferred habitat is sheltered surfaces, rocks and crevices. In shallow water, but never exposed at low tide. Situated away from very much light. Found on harbor pilings, ropes and settling plates. Overgrows molgulas, mussels and has been seen on decorator crabs.
TIDAL HEIGHT	Shallow sub tidal.
SALINITY	15.2 to 33.3 ppt. (Homer & Seldovia Harbor range)
TEMPERATURE	-2.3 to 14.9 °C (Homer and Seldovia Harbor range)
SIMILAR SPECIES	*Distaplia occidentalis* is often purple or pinkish and is much shorter and mushroom-like in growth form.
OTHER FACTS	Common names; Sea peach. Another tunicate in this family is cultivated for human consumption in Japan and Korea. The tunic is removed before it is eaten. Along Alaskan coasts they are prey to predatory snails, nudibranchs, sharks and skates, crab, sea stars and bottom fish.





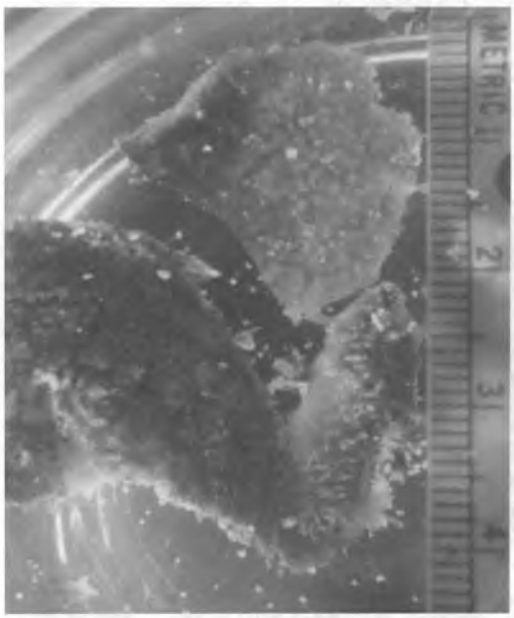




All photos ©ADF&G - KBRR

Tunicate (colonial) - *Distaplia occidentalis*

DESCRIPTION	This colonial tunicate, commonly called the mushroom ascidian, is globular (sometimes flat) with a short, narrow attachment stalk. The mushroom-like globe can be pale orange, yellow, pink, dark purplish-red, or brown. Each zooid has its own incurrent siphon and pharynx, but share a slightly raised common excurrent siphon and atrial cavity.
RANGE	Alaska to Southern California. In Alaska it has been seen in Prince William Sound, Kodiak Island and in the Sitka area.
SIZE	Most colonies are less than 2 cm in diameter, though they can be as large as 10 cm.
STATUS	Native
COLOR	Variable, pale orange, yellow, pink, dark purplish-red, or brown
HABITAT	rocky shore, and man-made structures.
TIDAL HEIGHT	Intertidal to 50 m.
SALINITY	High salinity species
TEMPERATURE	Cold water species
SIMILAR SPECIES	*Distaplia alaskensis* can be distinguished from this species by its more columnar lobes.



©Paul Norwood



©Heather Meuret Woody

Tunicate (solitary) - *Halocynthia aurantium*

DESCRIPTION	A large, solitary tunicate with a barrel shaped body that is directly attached to the substrate. Two uneven, large siphons on top. Tunic can be smooth or slightly wrinkled. Often found in groups.
RANGE	Occurs from the Arctic, throughout the Bering Sea, and south to Puget Sound. Common north of the Alaska Peninsula. the SE Bering, NE Bering, and SE Chukchi Seas.
SIZE	<18 cm
STATUS	Native
COLOR	Bright orange-red, often unfouled and may appear shiny. Looks like a peach.
HARITAT	Attachs to rocks. Often seen washed up on beach or comes up on hook when fishing for bottom fish.
TIDAL HEIGHT	0 to 100 m deep. Most common in depths of 40-100 m in the SE Bering, NE Bering, and SE Chukchi Seas.
SALINITY	28.0-33.3 ppt Seldovia Harbor
TEMPERATURE	0-12.4 °C Seldovia Harbor
SIMILAR SPECIES	*Cnemidocarpa finlandiensis* is similar in color and has the same smooth tunic, and can look the same out of water, but it is much more broad and squat. There is another species in the same genus in Alaska, *H. hispida* (previously *hilgendorfi or igaboja*), but the latter is tan and covered with spines.
OTHER FACTS	Common names; Sea peach. Another tunicate in this family is cultivated for human consumption in Japan and Korea. The tunic is removed before it is eaten. Along Alaskan coasts they are prey to predatory snails, nudibranchs, sharks and skates, crab, sea stars and bottom fish.



©Dominic Hondolero

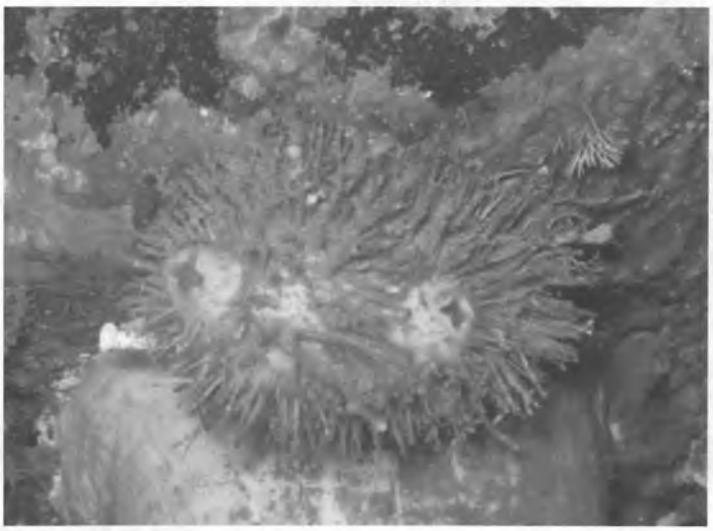


©Paul Norwood Sitka

Tunicate (solitary) - *Halocynthia igaboja*

DESCRIPTION Common name: Sea hedgehog. Body unstalked, stout. Distinctive flexible bristles. Bristles sometimes completely covered in silt making the animal hard to detect.

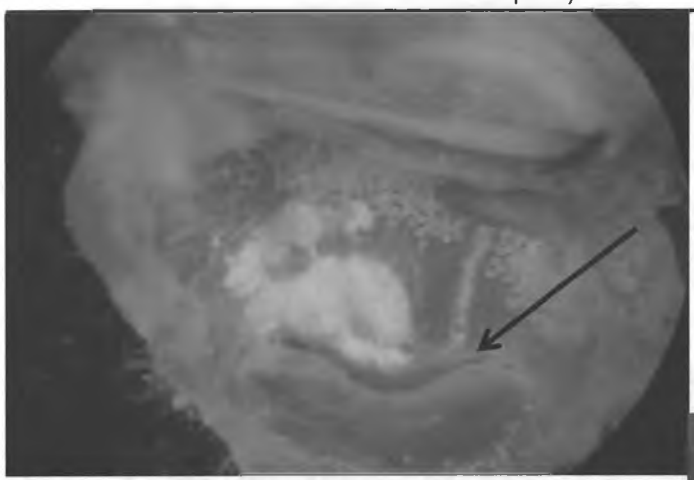
RANGE	Japan, Aleutian Islands, and Alaska south to southern California.
SIZE	5 cm across to 10 cm tall
STATUS	Native
COLOR	Dark brown tunic under bristles: siphons red or orange.
HABITAT	Rocky or gravel areas. Usually near current.
TIDAL HEIGHT	Intertidal to 175m.
SALINITY	25.4 to 33.3 ppt. (Homer & Seldovia Harbor deep sonde range)
TEMPERATURE	- 0.4 to 12.4 °C (Homer & Seldovia Harbor deep sonde range)
SIMILAR SPECIES	This may be one species or a group of cryptic species under several names including *Halocynthia hispida* , *H hilgendorfi, H. hilgendorfi hilgendorfi, H hilgendorfi igajoba* and *H. igaboja* , depending on the publication. If they are all the same species, the spines make it very distinctive, though *Pyura haustor* , which is warty and often has many things growing on it, can look similar at first glance.



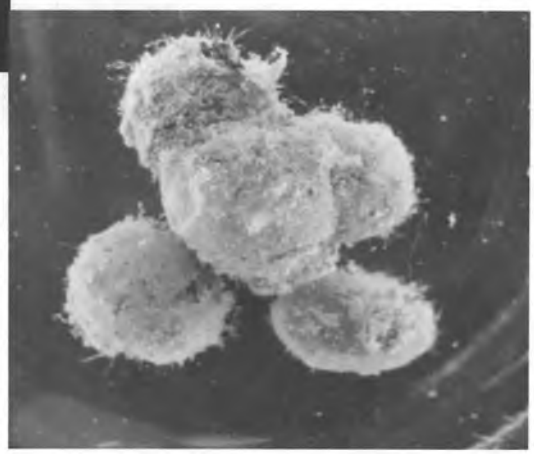
©K. Iken, Kachemak Bay, AK

Tunicate (solitary) - *Molgula citrina*

DESCRIPTION	This small, round to oval tunicate has 6 lobes on the oral (incurrent) siphon and a flattened, u-shaped gut oriented horizontally. The siphons are sometimes ringed with spines. The tunic can be bare, to hairy or sediment covered. Larvae with a tail and brooded
RANGE	Current distribution is the Atlantic Arctic and Seldovia, Alaska, however there are other Pacific records from early Museum collections thar are yet to be confirmed; Circumpolar species.
SIZE	Body length usually 6-8 mm but can reach 2.3 cm.
STATUS	Unknown: introduced or a range extension
COLOR	Clear to dull greenish or olive green
HABITAT	Attaches to firm substrates such as rocks.
TIDAL HEIGHT	Low intertidal and sub tidal to offshore
SALINITY	15.2 to 33.3 ppt. (Homer & Seldovia Harbor range)
TEMPERATURE	-2.3 to 14.9 °C (Homer and Seldovia Harbor range)
SIMILAR SPECIES	Unlike *Ascidea* which is attached on its side, it is attached at its base. *Molgula citrina* is smaller than other Molgulids, has the flattened, u shaped gut (less flattened in *M. manhattensis*), has 7 branchial folds (requires dissection), broods its larvae and has distinctively long, slender oviducts (requires dissection, marked with the arrow in first photo).



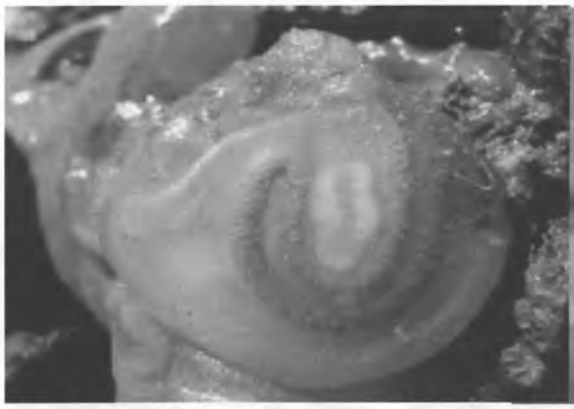
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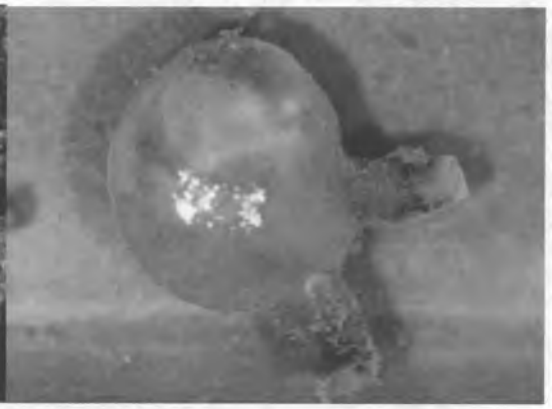
© Gretchen Lambert

Tunicate (solitary) - *Molgula manhattensis*

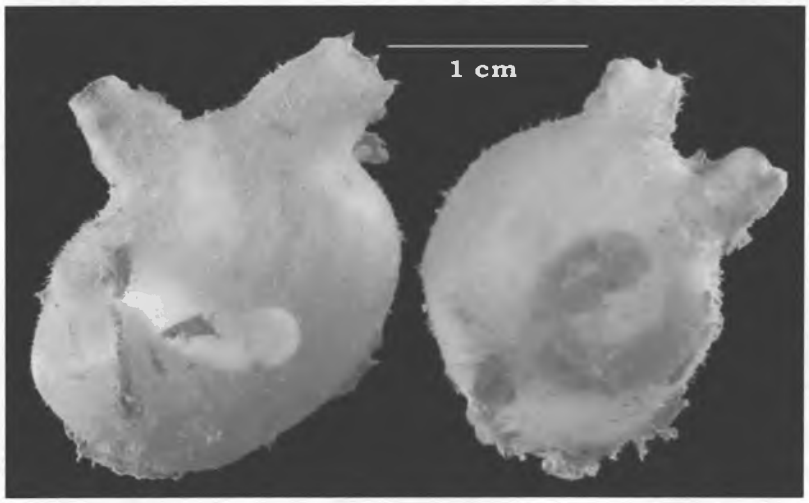
DESCRIPTION	grape-like tunicate, sometimes laterally flattened, with 6 lobes on the oral (incurrent) siphon, thick tunic, often with some papillae (hair-like projections). Larvae with a tail
RANGE	Mexico to British Columbia; First recorded on the west coast in Tamales Bay, CA in 1949, it's introduced around the world. Native to the Atlantic coast of North America
SIZE	Body length to 1-5 cm.
STATUS	Invasive
COLOR	Clear, grey with a 'u' shaped intestine sometimes visible through the body wall, oriented vertically, body often sediment covered.
HARITAT	Attaches to firm substrates, such as rocks, boulder, shell and cobble as well as man-made structures. Can be found on sands as well. Tolerates pollution.
TIDAL HEIGHT	Low intertidal, but generally subtidal to 90 meters depth.
SALINITY	5-40 ppt: estuarine to marine
TEMPERATURE	tolerates a broad temperature range
SIMILAR SPECIES	Unlike *Ascidea* which is attached on its side, it is attached at its base. To identify *M. manhattensis* from other Molgulids can be difficult: look for the u shaped gut (see pictures), tadpole larvae (unlike *M. citrina*) and 6 branchial folds (requires dissection) as opposed to the 7 found in *M. retortiformis* , *M. pacifica* and *M. citrina* . Siphons are long and similar in length (unlike *M. retortiformis* and *M. pacifica*).



©Andrew Cohen



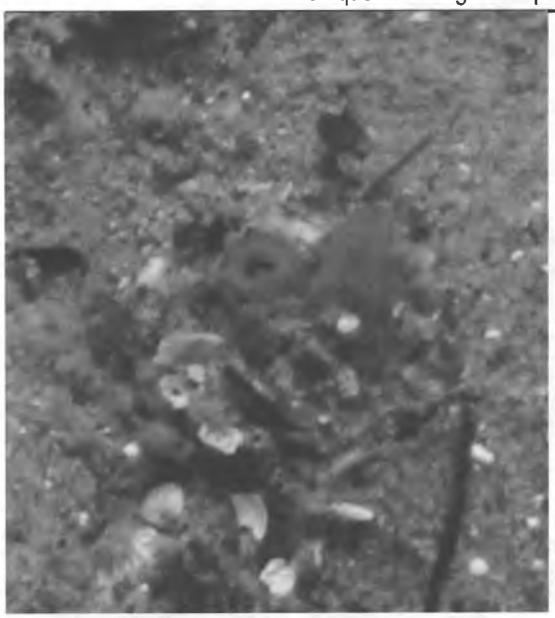
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Tunicate (solitary) - *Molgula pacifica*

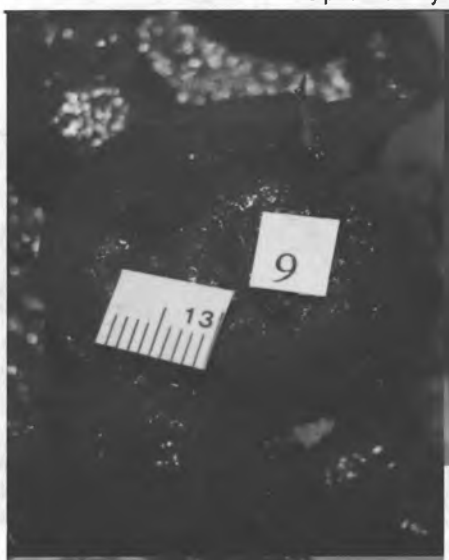
DESCRIPTION	small, grape-like tunicate with one siphon (atrial) extending upwards about twice as high as the the other, often covered with debris. Siphons appear orange.
RANGE	Alaska and Washington
SIZE	Body length to 2.5cm
STATUS	Native
COLOR	Clear, with 's' shaped intestine visible through the body wall, though body often covered with foreign materials, including algae. Siphons are pink to orange
HABITAT	Attaches to firm substrates, rocks intertidally. In harbor; floats, ropes. One of the most common species in Arctic waters.
TIDAL HEIGHT	Low intertidal and sub tidal to offshore
SALINITY	
TEMPERATURE	
SIMILAR SPECIES	Unlike *Ascidea* which is attached on its side, Molgulas are attached at its base. Differs from other *Molgula* species in the orange siphons, one twice as long as the other, and the often accessive amount of debris attached to the body. It is also unique in having no tadpole larvae.



©Billie Swalla, University of Washington

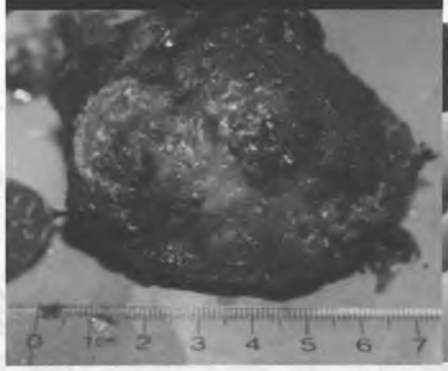
Tunicate (solitary) - *Molgula retortiformis*

DESCRIPTION	This grape-like tunicate is one of the largest Arctic ascidians. It is oval with a thick and firm tunic that is clear but often covered in debris. When cleaned the tunic appears rough or wrinkled. The two siphons are unequal with the atrial siphon being the longest, usually equal in length to the diameter of the body. The oral siphon is 1/4 as long as the atrial and has 4 lobes.
RANGE	Alaska and Washington, circumpolar species
SIZE	Body length to 10 cm
STATUS	Native
COLOR	Clear tunic, with an s shaped intestine visible through the body wall, oriented horizontally. Overall the body appears light olive or grayish green.
HABITAT	Attaches to firm substrates, rocks and man-made structures.
TIDAL HEIGHT	Low intertidal and sub tidal to offshore to 80m
SALINITY	15.2 to 33.3 ppt. (Homer & Seldovia Harbor range)
TEMPERATURE	-2.3 to 14.9 °C (Homer and Seldovia Harbor range)
SIMILAR SPECIES	Unlike *Ascidea* which is attached on its side, it is attached at its base. It differs from other *Molgula* species mainly in the much larger size, in having the flattened, horizontally oriented gut, and 4 rather than 6 lobes on the oral siphon and one siphon is very long (upper right and left picture respectively)





right photo ©SERC note 4 lobes on oral siphon
left photo © Joni Johnson Petersburg, AK



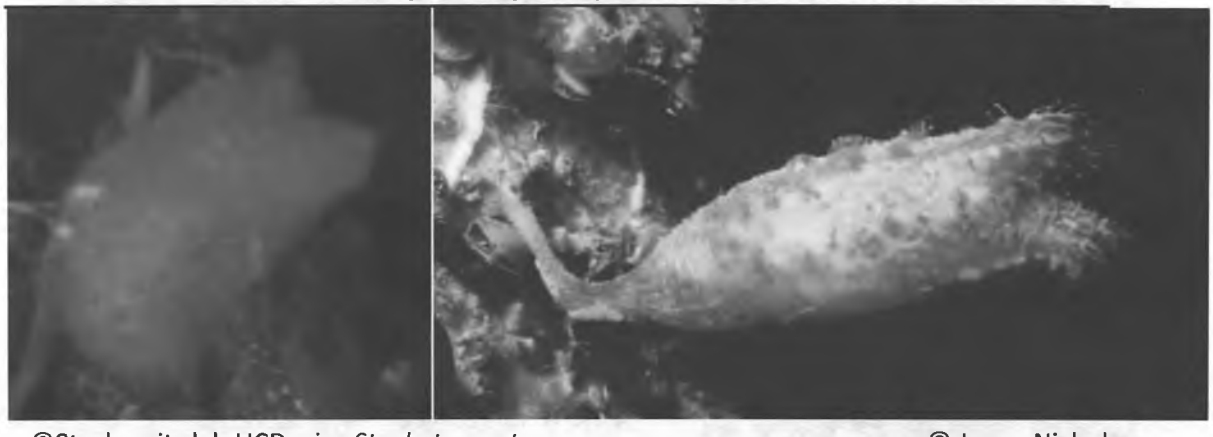
© Paul Norwood Sitka, AK



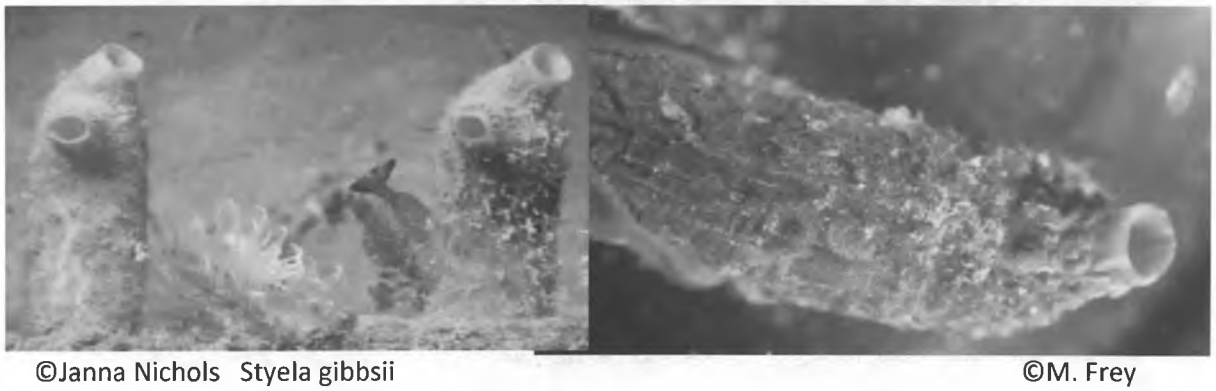
© ADFG Homer, AK

Tunicate (Solitary) - *Styela clava*

DESCRIPTION	This solitary tunicate has a leathery, bumpy and creased tunic. Its body is cylindrical or club-shaped narrowing to a stalk that is anchored to the substrate by a disk shaped holdfast. The wrinkled stalk is often 20-50% of the total body length.
RANGE	It is native to China, Japan and Korea and introduced to both coasts of North America and to Europe, Australia and New Zealand. It was first reported on the west coast in 1933 in Newport, Oregon and can now be found from British Columbia to Southern California.
SIZE	Body usually 8-12 cm. long, but up to 20 cm. Stalk about 1/3 total length
STATUS	Invasive; see the complete record at http://invasions.si.edu/nemesis/browseDB/SpeciesSummary.jsp?TSN=159337
COLOR	Colors can range from yellowish to reddish to brownish. Sometimes they are yellow white stripes on the siphons. The juveniles often pale orange.
HARITAT	Found in protected harbors and marinas growing on docks, boat hulls, buoys, ropes, pilings, but it also grows on natural substrates such as rocksand shell.
TIDAL HEIGHT	Low intertidal to shallow subtidal
SALINITY	18-35 ppt. Found in marine and estuarine habitats.
TEMPERATURE	11-27°C , found to -2 °C but need at least 15 °C to reproduce
SIMILAR SPECIES	*Styela truncata* (pictured below top left) and *Styela gibbsii* (native, bottom photo) may have stripes on the siphons, but they are not stalked. The most similar species, *Styela montereyensis* is longer (up to 30 cm), with a longer stalk relative to the body size, distinctive stripes the entire length of the body, the oral siphon opens laterally rather than upward, and the tunic is smooth rather than wrinkled. The latter grows in high energy areas



©Stachowitz lab UCDavis *Styela truncata* © Janna Nichols



©Janna Nichols Styela gibbsii ©M. Frey

Tunicate (colonial) - *Synoicum irregulare*

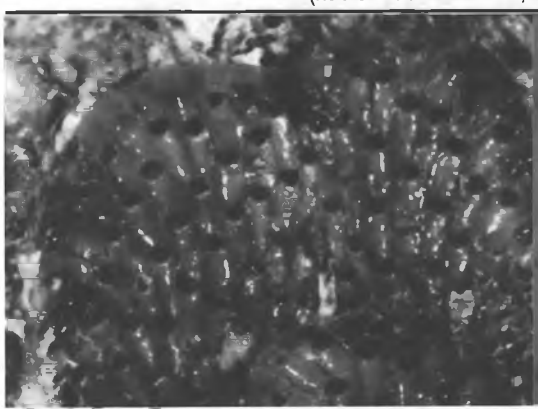
DESCRIPTION	This colonial tunicate is sometimes called "Gnomes toes" due to its tough and wrinkly texture. The colonies can be large or small, maybe only a few pieces.
RANGE	Range not well known. Originally collected from the Pribilof Islands, Ritter, W. E. 1899. Commonly seen on the beaches of Kachemak Bay.
SIZE	Usually <10 cm in colony diameter.
STATUS	Native
COLOR	Bright orange or pinkish when fresh.
HARITAT	Unknown, often seen when washed up on beaches.
TIDAL HEIGHT	Subtidal to 115 m Depth.
SALINITY	25.4 to 33.3 ppt. (Homer & Seldovia Harbor deep sonde range)
TEMPERATURE	-0.4 to 12.4 °C (Homer & Seldovia Harbor deep sonde range)
SIMILAR SPECIES	Many species of the family Polyclinidae, such as *Aplidium* and *Synoicum* look similar. They often require microscope work to tell them apart. Species of these groups are sometimes mistaken for a sponge.



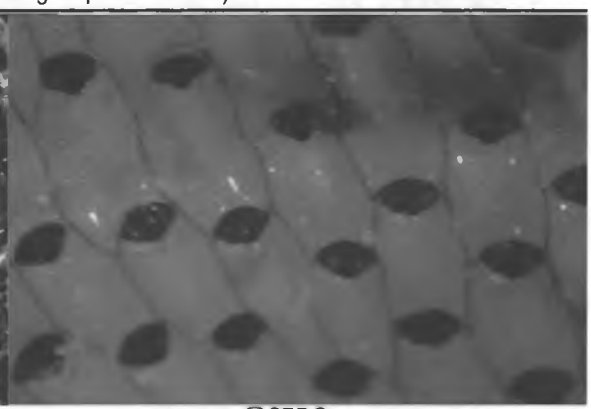
©ADF&G - KBRR

Bryozoa (encrusting) - *Watersipora subtorquata*

DESCRIPTION	This encrusting bryozoan is sheet-like to erect and the zooids are bright orange outlined in black with black opercula clearly visible to the naked eye.
RANGE	From Baja California to Coos Bay, Oregon. First record on the west coast in Cabo San Lucas, Mexico in 1937 based on collecting in 1888. Considered an Atlantic and Carribean species, it is now invasive worldwide.
SIZE	Zooids with slight mid expansion, but basically rectangular, alternating and regularly spaced. Can form large, upright, chip-like growths that form colonies up to 25 cm tall
STATUS	Invasive
COLOR	bright orange with black opercula, zooids outlined in black.
HABITAT	Often found on docks and man made structures including aquaculture infrastructure. Its resistence to copper based paints allows it to colonize boat hulls and provide substrate for other invading species.
TIDAL HEIGHT	lower intertidal to subtidal
SALINITY	20-50 ppt
TEMPERATURE	12 - 28 C
SIMILAR SPECIES	*Schizoporella japonica* , another invasives species in Alaska, and *Tegella aquilirostris* (native) are also orange and look very similar at first glance, but neither of these speces has the black opercula or black outline around each zooid. There are 2 other *Watersipora* speces that may be confused with it, *Watersipora arcuata* (opercula has a distinctive arch proximally) and *Watersipora edmonsoni* (has a much narrower, longer opercular sinus).



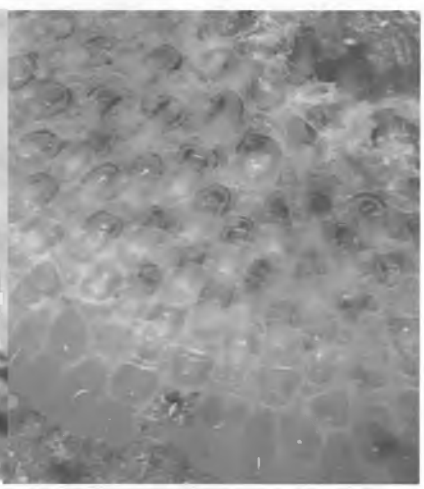
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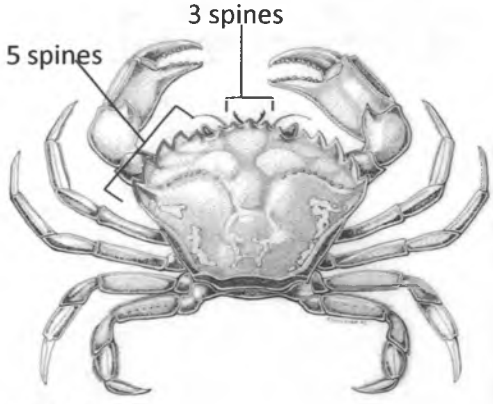
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©Linda McCann *Tegella aquilirostris*

European Green Crab - *Carcinus maenas*

DESCRIPTION	Pagurid marine crab with 5 spines on each side of the eye stalk and 3 between.
RANGE	San Diego, CA to British Columbia. Native to Europe, they are now as far north as the northern end of Vancouver Island in BC.
SIZE	A small species, adults up to 10 cm across carapace.
STATUS	Invasive
COLOR	mottled greens and browns, older specimens becoming very orange, especially on the ventral side
HABITAT	rocky shores, cobble beaches, sand flats, eel grass beds and salt marshes.
TIDAL HEIGHT	low intertidal to about 6 m
SALINITY	6-35 ppt, estuarine and marine
TEMPERATURE	tolerant of a broad range of temperatures from below freezing to 35°C, though larvae do not survive below 10°C
SIMILAR SPECIES	Other similar crabs include Dungeness (*Metacarcinus magister*) and the Red Rock Crab (*Cancer productus*), but they have 10 spines on each side and can be much larger, Pygmy Cancer crabs (*Cancer oregonensis*), which have black tipped claws and a more circular shell, and the Helmet or horse crab (*Telmessus cheiragonus*) which has large spines on the edge of it's more round carapace and is covered with stiff hairs.



©ADFG



©Lina Ceballos



© Janna Nichols Dungeness crab



Red Rock crab
©www.wallawalla.edu/academics/departments/biology/rosario/inverts

Dungeness crab - *Metacarcinus magister*

DESCRIPTION	This crab has white-tipped pinchers on the claws, and the top edges and upper pincers are sawtoothed with dozens of teeth along each edge. The last three joints of the last pair of walking legs have a comb-like fringe of hair on the lower edge. Also the tip of the last segment of the tail flap is rounded as compared to the pointed last segment of many other crabs.
RANGE	Alaska's Aleutian Islands south to Pt Conception in California
SIZE	Carapace width to 25 cm (9 inches), but typically less than 20 cm
STATUS	Native; see the full record at http://www.dfg.ca.gov/marine/dungeness_crab.asp
COLOR	Light reddish brown on the back, with a purplish wash anteriorly in some specimens. Underside whitish to light orange.
HABITAT	Rock, sand and eelgrass
TIDAL HEIGHT	Subtidal to offshore
SALINITY	Normal range 10–32ppt; 15ppt optimum for hatching
TEMPERATURE	Normally found from 3–19°C
SIMILAR SPECIES	Unlike the green crab, it has 10 spines on either side of the eye sockets and grows much larger. It can be distinguished from *Metacarcinus gracilis* which also has white claws, by the carapace being widest at the 10th tooth vs the 9th in *M. gracilis*. Unlike the red rock crab it has a tooth on the dorsal margin of its white tipped claw (this and other similar Cancer crabs have black tipped claws).



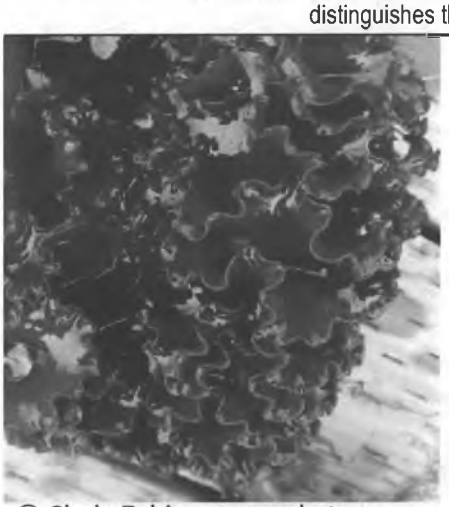
©Paul Norwood



© bioweb.uwlax.edu red rock crab - note black tipped claws

Macroalgae (Brown) - *Undaria pinnitifida*

DESCRIPTION	brown kelp with long blades, a midrib and 'ruffled' reproductive structure or sporophyll at base, attaches by a root-like holdfast. No swim bladders and stipe (stem) is short relative to the rest of the plant.
RANGE	Islas de Todos, Mexico (Baja) to San Francisco Bay, Ca. Native to Japan, first record on the west coast from Long Beach and Los Angeles, California, 2000.
SIZE	Body from 1-3 m long, but typically up to 1.5 m
STATUS	Invasive, see complete record at http://undaria.nisbase.org
COLOR	appears yellow green to dark brown colored when you remove from the water
HARITAT	Often found growing on hard surfaces, both natural and man-made structures such as docks and boat hulls. Can form dense kelp forests in sheltered areas.
TIDAL HEIGHT	low intertidal to 25 m, but most common at 1-3 m
SALINITY	20-38 ppt, but grows best above 27ppt
TEMPERATURE	0-27C, but grows best below 12C
SIMILAR SPECIES	Can be confused with other kelps such as *Alaria fistulosa* (see picture), *Egregia menziesii* (has swim bladders and small paddle like blades unlike *Undaria)* and several native *Laminarias* , but the midrid and distinctive ruffled sporophyte distinguishes the species.



© Chela Zabin sporophyte

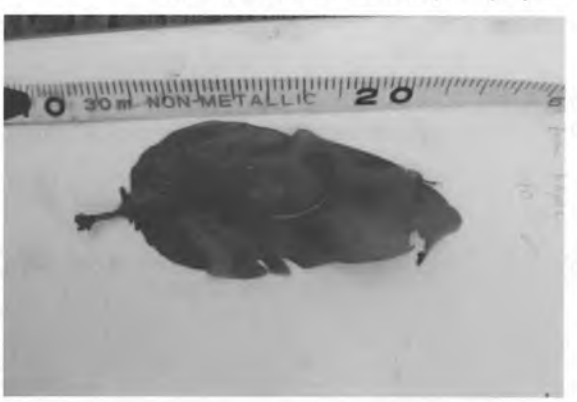


Chela Zabin / Smithsonian Institute

mature *Undaria* with sporophyte



©Chela Zabin *Alaria fistulosa*



©Chela Zabin juvenile Undaria pinnitifida

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Pictures and locality records for east coast species
http://www.rosm.ca/recherche_espece/fiche_espece.php?recordID=96

Salem Sound Coastwatch program:
http://www.salemsound.org/chimp.htm main page
http://www.sms.si.edu/irlspec/Species_Rpts.htm

http://www.salemsound.org/SSCW_MIS_Monitoring_Guide.pdf A good resource for citizen monitors.
http://www.salemsound.org/mis/misid.htm

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Link to BC Shellfish Growers Assoc. Aquatic Invasive Species Guide
http://www.bcsga.ca/research-development/invasive-tunicates-monitoring-project/identifying-tunicates

Intertidal marine Invertebrates of the South Puget Sound

Http://www.nwmarinelife.com/htmlswimmers/a_callosa.html

Guide and key to species in Washington state
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01/31/13 Update: University of Alaska Fisheries, Seafood and Maritime Initiative

<TARGET><BILL></BILL><SUBJECT>01-31-13 Update University of Alaska Fisheries, Seafood and Maritime Initiative</SUBJECT><COMM>HFSH28</COMM></TARGET>



Fisheries, Seafood & Maritime Initiative (FSMI)

Towards a strong and sustainable FSM workforce in Alaska

Developed by:
Representatives of FSM industry sectors & community partners
Representatives of Alaska state agencies

UNIVERSITY of ALASKA
Many Traditions One Alaska

Facilitated by:
University of Alaska

Visit our website:
alaska.edu/fsmi

Today's FSMI Presenters

Paula Cullenberg, UAF Alaska Sea Grant Marine Advisory Program Director, FSMI Co-Chair

Vince O'Shea, Pacific Seafood Processors Association, FSMI Industry Advisory Committee Member

Julie Decker, United Fishermen of Alaska, FSMI Industry Advisory Committee Member

Rick Caulfield, UAS Provost, FSMI Working Group Member





What are we doing?

- Statewide industry-led FSM Workforce Development (WFD) Plan
- Identify broad WFD strategies
- Specific strategies for highest priority occupations
- Similar to the oil/gas and health alliance models
- UA will be one of many responsible parties (e.g., education providers, state agencies) responding to the plan





Benefits?

- An educated and skilled workforce strengthens Alaska's economy statewide
- FSM Employers, Employees, and Self-employed businesses
- More career-level, higher-skilled, higher-paying FSM occupations to Alaskan residents
- Collaboration among industry, community partners, state agencies and education providers in Alaska





FY14 UA Budget Request

FSMI Request $396.8K in Operating Budget

- Alaska Young Fishermen's Summit
- Statewide Delivery: Certificate and AAS in Fisheries Technology
- Alaska Seafood Processors Leadership Institute
- Marine Technologies Training

Chinook Salmon Research Request $3.1M in Capital Budget



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University of Alaska
Fisheries, Seafood & Maritime Initiative (FSMI)

JANUARY 2013 UPDATE

Visit our website: alaska.edu/fsmi



In Response to industry feedback at the October 2012 Forum and their commitment to more fully engage in developing a comprehensive statewide Workforce Development Plan, letters were sent on behalf of President Gamble to a select group of industry and state agency representatives inviting them to participate on the newly formed Industry Advisory Committee.

Based on Industry feedback, UA forms Industry Advisory Committee (IAC)

Current IAC Membership:

Kris Norosz, Icicle Seafoods Inc. (IAC Co-Chair)
Aggie Blandford (Laura Delgado), WACDA
Vince O'Shea, Pacific Seafood Processors Assoc.
Stephanie Madsen, At-Sea Processors Assoc.
Doug Ward (Jason Custer), AK Ship & Drydock
TBD, AK Marine Highway System, DOTPF
Kurt Hallier, Marine Advisor, Conoco Phillips
Julie Decker, United Fishermen of Alaska
Russell Dick (Anthony Lindoff), Haa Aani, LCC
Oliver Holm, Commercial Fisherman, Kodiak
Pearl Strub, BBEDC, AWIB Board, Processor
Candice Bressler, ADF&G
Wanetta Ayers, DOLWD-AWIB
Helen Mehrkens, EED
Glenn Haight, DCCED
Rep. Bryce Edgmon (Tim Clark), State House
Sen. Lyman Hoffman (Tim Grussendorf) State Senate

**The inaugural meeting of the IAC and UA Working Group was held by audio on 29Nov12 where the FSMI goals and 2013 Operational Plan were discussed.

FY14 Budget Request; 2013 Operational Plan; work continues

FY14 Budget Request: In November, UA Board of Regents approved a $398K FSMI request in the FY14 UA Operational Budget for submission to the legislature this January session. The four programs put forward: (a) will strengthen existing successful programs in high demand; (b) would have statewide benefits; and (c) clearly respond to needs identified in the McDowell FSMI Report and at our two industry forums. The programs are: Alaska Young Fishermen's Summit, Marine Technologies, AK Seafood Processors Leadership Institute, and Statewide Delivery of Fisheries Technology AA. In response to feedback at the Forum, FSMI moved forward with a more modest request for funding in order to begin to address FSM workforce development needs as soon as possible. We are delaying a major funding request until we have completed a comprehensive workforce development plan.

A 2013 Operational Plan is in place. It is recognized this planning phase of the FSMI is to establish priorities in a statewide comprehensive WFD document that would be implemented and evaluated over the years to come in similar fashion to the AK Health Alliance in its nearly tenth year of existence. The UA Leadership Committee continues to meet weekly. Selected IAC members are currently working with UA in conducting an expanded **Occupational Needs Assessment** in each of the Fisheries, Seafood, Maritime and Public sectors to identify the highest priority career areas. A draft outline of a statewide WFD Plan document is in review stage. Collaborative work continues with consideration for the academic year and the very busy seasons within each industry sector.

Towards a statewide FSM Workforce Development (WFD) Plan

By early 2014, the IAC and UA Working Group aim to develop a statewide, comprehensive, industry-led WFD Plan document that will identify broad WFD strategies within FSM sectors and specific strategies for highest priority occupations. Strategies will identify rationale, actions, timeline, responsible parties, resources and expected outcomes. Recommendations for future FSM Coalition work will also be identified. UA will be one of many responsible parties who will prepare an academic Response Plan based on the comprehensive WFD Plan. Discussion continues towards the formation of a longer-term FSM Coalition based on the AK Health Alliance model.

Version: Jan 14, 2013

UNIVERSITY of ALASKA
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University of Alaska
Fisheries, Seafood & Maritime Initiative (FSMI)
Towards a strong and sustainable fisheries, seafood and maritime workforce in Alaska

Our Mission:

-engaging fisheries, seafood and maritime sectors and community partners to assess, develop and deliver programs, training and research that prepare Alaskans to meet current and emerging workforce, economic and scientific needs.

The fishing, seafood and maritime sectors represent Alaska's largest private employer and plays a significant role in our state's economy. At a December 2011 summit convened by the Governor of Alaska, the Honorable Sean Parnell, the Chair of the Rasmuson Foundation, Ed Rasmuson, and the University of Alaska President Patrick Gamble committed to close engagement with the FSM industry sectors to meet the FSMI goals.

The FSMI Goals are:

(1) **Sustain and enhance the economy and the communities of Alaska** by developing a responsive workforce that enables the fishing/seafood and maritime industries to stay vibrant and substantial contributors to the state;

(2) **Support Alaska's workforce, particularly in coastal communities,** in discovering and preparing for the wide range of employment opportunities in the fishing, seafood and maritime industries, and

(3) **Provide research to sustain resources** on which these communities and sectors depend.

UA FSMI Working Group appointed by President Gamble:

*__Paula Cullenberg__, UAF Alaska Sea Grant Marine Advisory Program, FSMI Co-Chair;
*__Fred Villa__, UA Statewide Office of Workforce Programs, FSMI Co-Chair;
*__Bonnie Nygard__, Workforce Development, UAA;
*__Gunnar Knapp__, UAA Institute of Social and Economic Research;
*__Mike Castellini,__ Dean, UAF School of Fisheries and Ocean Sciences;
*__Torie Baker__, UAF, Acting Program Leader, Alaska Sea Grant Marine Advisory Program;
*__Bernice Joseph__, UAF Vice Chancellor Rural Community & Native Education;
*__Pete Pinney__, UAF Assoc. Vice Chancellor, Rural Community & Native Education;
*__Rick Caulfield__, UAS Provost;
__Terry Johnson__, UAF Alaska Sea Grant Marine Advisory Program;
__Rashmi Prasad__ (tbd), UAA College of Business & Public Policy;
__Karen Schmitt__, UAA Community and Technical College;
__Barbara Bolson__, UAA Kodiak Campus;
__BJ Williams__, UAA Prince William Sound Community College;
__Carol Swartz__, UAA Kachemak Bay Campus;
__Deborah McLean__, UAF Bristol Bay Campus;
__Mary Pete__, UAF Kuskokwim Campus;
__Keith Criddle__, UAF School of Fisheries and Ocean Sciences;
__Mark Herrmann__, UAF School of Management;
__Kate Sullivan__, UAS Ketchikan;
__Duane Heyman__, UA Statewide University of Alaska Corporate Programs

*denotes Leadership Committee member

For more information, visit our website: www.alaska.edu/fsmi

Receive FSMI News Alerts: Please provide your name and organization at: https://lists.alaska.edu/mailman/listinfo/ua-fsmi.

We want to hear from you!

Contact:
Michele Masley, FSMI Program Manager
Statewide Workforce Programs
Office of Academic Affairs, University of Alaska
mmasley@alaska.edu (907) 843-1996

Table 1.–Average inshore and federal waters harvests and fishery-specific activities recommended to fill knowledge gaps in stock-specific harvest assessment.

Chinook Fishery	Average Harvest (1994–2006)	Average Harvest (2007–2011)	Stock-Specific Harvest Assessment
Southeast	Subsistence: 1,000 Commercial: 309,000 Sport: 71,000	Subsistence: 1,000 Commercial: 297,000 Sport: 65,000	Genetics mixed-stock analysis and sampling of troll, sport, and districts 108 and 111 gillnet
Copper River and Prince William Sound	Subsistence: 7,000 Commercial: 48,000 Sport: 10,000	Subsistence: 5,000 Commercial: 18,000 Sport: 8,000	Age-size of commercial harvest. CWT recovery of major fisheries at 20% minimum coverage; genetic mixed-stock analysis of major fisheries
Cook Inlet	Subsistence: 3,000 Commercial: 18,000 Sport: 74,000	Subsistence: 2,000 Commercial: 12,000 Sport: 45,000	Comprehensive marine CWT and genetics sampling of Upper subdistrict set gillnet, Kenai Peninsula sport, Tyonek subsistence, Northern District set gillnet, Central District drift gillnet, winter sport fishery in Homer
Kodiak	Subsistence: <1,000 Commercial: 19,000 Sport: 8,000	Subsistence: <1,000 Commercial: 15,000 Sport: 9,000	CWT recovery of major fisheries at 20% minimum coverage; genetic mixed-stock analysis of major fisheries
Chignik and Alaska Peninsula	Subsistence: 1,000 Commercial: 17,000 Sport: 4,000	Subsistence: <1,000 Commercial: 14,000 Sport: 3,000	CWT recovery of major fisheries at 20% minimum coverage; genetic mixed-stock analysis of major fisheries
Bristol Bay	Subsistence: 16,000 Commercial: 78,000 Sport: 8,000	Subsistence: 14,000 Commercial: 38,000 Sport: 8,000	Improved genetic baseline resolution (listed under Table 3). CWT and genetic sampling of Chinook harvests.
Kuskokwim	Subsistence: 90,000 Commercial: 30,000 Sport: 2,000	Subsistence: 84,000 Commercial: 21,000 Sport: 2,000	Improved genetic baseline resolution (listed under Table 3) . CWT and genetic sampling of Chinook harvests..
Yukon	Subsistence: 51,000 Commercial: 64,000 Sport: 1,000	Subsistence: 44,000 Commercial: 10,000 Sport: 1,000	Improved genetic baseline resolution (listed under Table 3) . CWT and genetic sampling of Chinook harvests.
Norton Sound Kotzebue	Subsistence: 6,000 Commercial: 5,000 Sport: 1,000	Subsistence: 4,000 Commercial: 1,000 Sport: <1,000	Improved genetic baseline resolution (listed under Table 3) . CWT and genetic sampling of Chinook harvests.
Federal waters bycatch (all groundfish fisheries)	GOA: 19,000 BSAI: 47,000	GOA: 28,000 BSAI: 41,000	Increased observer sampling rate of bycatch for CWT and genetics, as well for process studies (listed under Table 3)
Totals	Subsistence: 175,000 Commercial: 584,000 Sport: 178,000 Federal Waters: 66,000	Subsistence: 154,000 Commercial: 425,000 Sport: 140,000 Federal Waters: 69,000	

Table 2.–Stock-specific activities recommended to fill knowledge gaps in Chinook salmon escapement, smolt, and local and traditional knowledge (LTK) assessments (CWT-tagging means coded-wire-tagging).

Chinook Stock	Escapement or Inriver Assessment	Smolt Assessment	LTK Assessment
Unuk	Mark-recapture with age-sex-size	CWT-tagging of smolt with recaptures in fishery and escapement	None, existing program sufficient
Stikine	Mark-recapture with age-sex-size	CWT-tagging of smolt with recaptures in fishery and escapement	A study of local and traditional knowledge
Taku	Mark-recapture with age-sex-size	CWT-tagging of smolt with recaptures in fishery and escapement	None, existing program sufficient
Chilkat	Mark-recapture with age-sex-size	CWT-tagging of smolt with recaptures in fishery and escapement	A study of local and traditional knowledge
Copper	Mark-recapture with age-sex-size	CWT-tagging of smolt with recaptures in fishery and escapement	An analysis of the harvest of Chinook salmon in the subsistence fishery in Copper River District, as well as commercial removals of Chinook salmon for personal use, including an LTK component
Susitna	Age-specific genetic mark-recapture	CWT-tagging of smolt with recaptures at Deshka weir, other weir, and fishery.	A study of local and traditional knowledge
Kenai	Sonar with age-sex-size	CWT-tagging of smolt with recaptures in fishery and escapement; mixed-stock analysis (early versus late runs)	A study of local and traditional knowledge
Karluk	Weir lease and age-sex-size sampling	CWT-tagging of smolt (Karluk and hatchery releases) with recaptures in fishery and escapement	None, existing program sufficient
Chignik	Age-sex-size sampling	CWT-tagging and PIT-tagging of smolt with recaptures in fishery and escapement	Improvements to the existing subsistence harvest monitoring and assessment program

-continued-

Table 3.–Recommended activities to fill knowledge gaps that cut across Chinook salmon stocks and fisheries.

Activity	Explanation
Nearshore Marine Trawl Research Cruises	As a companion to stock-specific estimates of marine survival, 3 years of trawl research cruises to study trends in nearshore marine abundance and distribution of juvenile Chinook salmon in the northern and southern Bering Sea, and Gulf of Alaska
Modeling effort for Western Alaska Chinook salmon	Use of data from research surveys to parameterize models for addressing questions regarding salmon production.
Offshore Fishery Sampling	GOA: Improvement in observer sampling rate (bycatch and CWT/genetic bycatch composition). Sample for CWT at 20% minimum for harvest coverage. BSAI: Sample for CWT at 20% minimum for harvest coverage. Both: Improved geographic and stock-specific resolution of bycatch to the individual haul. Consider use of bycatch samples for process studies of feeding, growth, maturation, and energy content.
Process Studies on the Yukon River	Three studies are recommended with the Yukon River as an initial focus stock. The first study is to examine climate-induced changes to Chinook salmon spawning and freshwater rearing habitats. The second study would examine predation as a source of Chinook salmon declines in Alaska. The third study will examine Chinook salmon condition during various freshwater and marine life stages and relate these measurements to adult production and environmental variables.
Genetic Baseline Development	Additional collections of Chinook salmon are needed to improve the Alaska Chinook salmon genetic baseline, which is required for stock identification purposes.
Genetic Marker Development	The inability to distinguish lower river spawning populations of Bristol Bay, Kuskokwim, and Yukon Chinook salmon from each other is a major knowledge gap; additional genetic marker development is necessary to improve identification ability.
CWT Lab Support	Implementation of additional CWT activities across Alaska will lead to greatly increased workload at the CWT lab and additional fiscal resources will be required for the CWT lab to handle the added workload.
Scale Reading Support	Many more scales from both adult and juvenile Chinook salmon will be collected. These scales will need to be read to determine age and samples will require archiving.
Biometric Support	An additional biometrician will be required to support the program as identified
Publication Support	Additional staff members are needed to ensure timely reporting of results of this program.

Table 4.–Approximate annual costs (including startup costs) by type of activity to address Chinook salmon knowledge gaps (thousands of dollars).

Type of Activity	Approximate Annual Cost
Stock-Specific Escapement or Inriver Run Assessments	$3,000
Stock-Specific Smolt Assessments	$2,500
Stock-Specific LTK Assessments	$500
Stock-Specific Harvest Assessments	$1,800
Marine Surveys and Modeling	$1,600
Process Studies	$700
Genetic Baseline and Marker Development	$300
Programmatic Support	$500

The University of Alaska Fisheries, Seafood & Maritime Initiative

Report to the Legislature by Sen. Lyman Hoffman
and Rep. Bryce Edgmon

January 20th, 2013

The University of Alaska Fisheries, Seafood & Maritime Initiative

Report to the Legislature

By Sen. Lyman Hoffman and Rep. Bryce Edgmon

In accordance with Legislative Resolve Number 36, based on the passage of House Concurrent Resolution 18 during the 27th Alaska State Legislature, this report describes the progress thus far of the University of Alaska Fisheries, Seafood & Maritime Initiative (FSMI) and includes recommendations to the House and Senate regarding ways in which the legislature might effectively contribute to the undertaking.

The primary goal of the FSMI is to better train and educate Alaskans for careers in some of the state's most vital industries. Its objective is not simply to get Alaskans into jobs but also to establish clear paths they can follow into secure, rewarding, lifelong livelihoods. Readying and enlarging the Alaskan workforce is also essential to the fisheries, seafood, and maritime industries' present and future prosperity. The initiative is therefore identifying industry needs over the broadest possible spectrum in order to create a comprehensive, focused, and sustained plan for developing this workforce.

History

The FSMI was launched in June of 2011, when UA President Patrick Gamble appointed a 19-member University of Alaska cross-campus working group comprised of deans, directors, and faculty members. By October, the working group had, according to President Gamble's charge, identified and inventoried "existing UA institutional capacity for training and education that supports all aspects of the fishing business industries, fisheries support and fisheries development in Alaska." (See Appendix A—Executive Summary, Inventory Conclusions and Next Steps.)

On December 15th, 2011, President Gamble, Governor Parnell, and Rasmuson Foundation Chairman Ed Rasmuson convened a Seafood-Fisheries Summit to encourage industry to discuss its workforce needs with the University, the Parnell administration, and the Rasmuson Foundation. Following this meeting, the first Alaska Joint Fisheries Seafood Maritime Workforce Forum was held in Anchorage on March 5th, 2012. Fifty-two representatives from industry, vocational training facilities, state agencies, regional economic development associations, and other entities participated. The forum resulted in agreement to undertake the following:

- Complete Alaska FSM Workforce Needs and Priories Survey of Industries, with follow up phone interviews
- Update UA Education and Training Inventory
- Inventory offerings from other Alaska education and training providers
- Inventory occupations
- Prepare to hold second forum with industry to review survey findings and education and training gap analysis and to hear industry priority education and training needs. (For a complete summary of the first FSM Workforce Forum, see Appendix B.)

The 2nd Joint Fisheries, Seafood & Maritime Workforce Forum convened in Anchorage on October 2nd, 2012. This was an opportunity for participants to review and discuss the McDowell Group's *Education and Training Gap Analysis for the Fisheries, Seafood, Maritime Workforce* (see Appendix C), which had been commissioned following the first forum. Additionally, Gunnar Knapp, of the Institute of Social and Economic Research, outlined a report he is preparing on approaches to FSM workforce development in other countries such as New Zealand, Iceland, and Norway.

Also at this meeting, participants considered 19 training and education proposals solicited from sources across the university system. These proposals were intended as an initial response to the education and training needs so far identified by the FSMI.

FSMI's FY14 Funding Request

Based on input during the second forum, the university decided to postpone any major program funding request until after the development of a truly comprehensive workforce development plan. For the coming fiscal year, the FSMI submitted a more modest funding request of approximately $398,000 to the UA Board of Regents for four programs designed to "(a) strengthen existing programs in high demand; (b) clearly respond to needs identified in the McDowell FSMI Report and to comments provided at our two industry forums; and (c) ...have statewide benefits." In early November, the Board of Regents approved the funding proposal and included it in the university's FY14 legislative budget request.

It is our recommendation that the legislature support funding for these programs. These training opportunities address gainful, career-level occupations in mainstay industries in the state—industries in which there is abundant potential for higher levels of Alaskan participation and reward. Funding for these programs will be a prudent investment in Alaskan job creation and in the present and future vitality of industries that are among the state's largest employers.

These four programs are, according to the university's abstracts:

> **Alaska Seafood Processors Leadership Institute (ASPLI); $56,500**
> The Alaska Seafood Processors Leadership Institute (ASPLI) was developed to provide the much needed technical and leadership training for the next generation of seafood plant managers. ASPLI is presented in three parts: a ten-day technical training session at the Kodiak Seafood and Marine Science Center (KSMSC), a five-day leadership course in Anchorage, and a trip to the Boston International Seafood Show to better understand Alaska's place in the world markets. All three experiences broaden students understanding of the complexity of the industry and provide future industry leaders the tools to develop their careers. The 2011-12 course details can be found on the UAF website (http://seagrant.uaf.edu/map/aspli/index.html). ASPLI has been presented three times since 2006, each time with different funding. This project will allow ASPLI to become a regular program within the Marine Advisory Program with funding to provide faculty support, travel, and to pay for additional expertise. A large part of the revenue to support the class comes from the course fee. In 2011, the sponsors paid $3,000 for each ASPLI student. ASPLI is targeted at those mid-level plant employees that have been identified by their supervisors and plant managers as potential leaders. The recruitment and selection of individuals is driven by the seafood processing plant managers and higher executives. After three ASPLI's, the program is being recognized as one of the few opportunities to encourage

exceptional plant employees to continue the development of their career in the seafood industry. Of the 50+ students that have participated in ASPLI, four have become plant managers and thirty-three are still working in the industry. ASPLI has been open to all Alaska seafood processors and most of the students have been Alaskans, although a small percentage are based in Seattle. Each ASPLI has had good participation from CDQ and Western Alaska processors as well. Because of the nature of hands-on training that occurs throughout the program, enrolment is kept to a maximum of 25 students.

Alaska Young Fishermen's Summit; $43,910

The Alaska Sea Grant Marine Advisory Program has hosted four successful statewide leadership conferences - Alaska Young Fishermen's Summits (AYFS) from 2007 to 2012. The goal of the Alaska Young Fishermen's Summit is to encourage and support upcoming leaders in Alaska's commercial fisheries and enhance the business success of new and young fishermen. These leadership-building conferences target commercial fishermen new to the business or considering moving from a deckhand position into owning a commercial fishing operation. While our objectives have remained the same for each Summit, each event brings together new steering committee members, speakers, topics and innovations in methods of instruction. We are currently on a cycle to conduct a fifth statewide AYFS in late 2013 or early 2014 and a sixth Summit in 2015. With support from this grant, we propose to expand our fishing business related offerings during the Summit by: 1.) hiring a contractor with both commercial fishing and accounting experience to improve on the fishing business section of the Summit itself; 2.) design and deliver an optional full-day fishing business workshop immediately before or after the Summit; and 3.) customize these materials for use by MAP agents statewide in other MAP offerings. We will also provide travel scholarships for participants from parts of the state or in fisheries not otherwise represented at the events. To date, over 200 fishermen from ports throughout Alaska representing federal and state fisheries have attended an AYFS summit, with each event bringing together between 35-70 students. We anticipate those numbers remaining steady, with more participation from communities off the road system facilitated by travel scholarships included in this proposal.

Statewide Delivery: Certificate and AAS in Fisheries Technology; $167,000

The UAS Fisheries Technology (FT) Program offers a Certificate and Associate of Applied Science degree that is delivered statewide—from Ketchikan to Kodiak to Western Alaska. Graduates from the program work in the fisheries and seafood sectors across the state, including in fish hatcheries, mariculture, and in field technician positions for state and federal resource agencies. The program focuses on fisheries science—students study courses such as Fundamentals of Fisheries Oceanography, Fin Fish Culture, Fisheries Management Law and Economics. Under recently-approved articulation agreements, UA campuses throughout coastal Alaska are cooperating with UAS in offering locally-designed Fish Biology and Field Methods courses tailored to their regions. Under this proposal, UAS proposes to hire a fulltime Fisheries Technology faculty member to support the educational mission and expansion of the program. Moreover, the proposal will fund four part-time positions as regional

Outreach Coordinators in places such as Prince William Sound, Bristol Bay, and Kodiak. These Coordinators will provide information about fisheries both locally and around the state, will engage with industry partners and with management agencies, and will mentor students enrolled in the distance program. They will lead the required lab and field courses and coordinate articulation between local high schools and the statewide Fisheries Technology program. With the community college articulations students across Alaska can enter into fisheries education and continue on for a 4 year BA or BS in fisheries at UAF (due to a formal articulation agreement already in place).

UAS Marine Technologies; $129,375

The UAS School of Career Education-Juneau is requesting funding for a tenure-track Assistant Professor of Marine Technologies, to be located within the UAS Power Technology Program. The faculty position is needed to develop, expand, and deliver curriculum in the existing UAS Marine Diesel and Oiler programs and to provide new face-to-face and online offerings in Marine Refrigeration, Marine Hydraulics, Marine Electrical, and Marine Power Generation. Online versions of these programs will be developed and delivered in concert with campuses throughout the UA system. This proposal builds on an existing successful marine diesel program and expands it to continue meeting the need of FSM industries. It builds on UAS's experience and expertise in providing quality online education. And, it allows faculty and staff across all three MAUs to work together in providing new education and training that previously has not been available. The new courses will be available to land and sea-based fish processors, fishing vessel operators, UAS Power Technology students and the general public. Working with an instructional designer, the new faculty will develop courses that are both distance-delivered and have a hands on component (lab) overseen by an on-site content expert.

FSMI Going Forward

Following the second FSMI Workforce Forum in October, the initiative formed the UA FSMI Industry Advisory Committee. The committee's responsibilities include continued gathering and analysis of FSM workforce data to develop an inventory of current occupations and an assessment of future needs; developing criteria to identify current and projected high-demand occupations; and identifying specific training, skills, and educational background needed for current and projected high-demand occupations. The committee, co-chaired by the UA FSMI Working Group co-chairs and by Kris Norosz of Icicle Seafoods, began this work on November 29th, 2012, and will continue developing information throughout the winter. (For a list of the committee membership and a FSMI January 2013 update, see Appendix D.)

These efforts are part of an ambitious Operational Plan—drafted by the university this fall—that outlines steps the FSMI will take through 2013 to develop "a comprehensive, integrated Workforce Development Plan (WFDP)." The university will follow the WFDP with a Response Plan detailing its strategy to address the post-secondary education and training priorities. (To read the full Operational Plan, see Appendix E.)

In November we accepted UA President Patrick Gamble's invitation to join the FSMI Industry Advisory Committee. We believe it is important to maintain our involvement, so as to keep the legislature informed of the FSMI's continuing progress.

We would like to commend the dozens of administrators and faculty at the University of Alaska for approaching this effort on such an ambitious scale. Their commitment has helped engender an equal degree of determination and commitment on the part of important industry representatives, regional vocational training specialists, state government officials, and many other stakeholders. The UA Fisheries, Seafood & Maritime Initiative seeks to generate significantly greater career opportunities for Alaskans at the same time it strengthens lifeblood Alaskan industries. It will have a substantial—perhaps even historical—positive impact on our economy long into the future. We encourage our colleagues at the legislature to support it.

APPENDIX A

Executive Summary
ALLIED FISHERIES: University of Alaska Partnership with the Fisheries, Seafood and Maritime Industries

October 2011

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ALLIED FISHERIES: University of Alaska Partnership with the Fisheries, Seafood and Maritime Industries

October 2011

Executive Summary

In June 2011, University of Alaska President Patrick Gamble appointed an 18-member University of Alaska Allied Fisheries Working Group, a cross-campus group of deans, directors and faculty members.

Allied Fisheries is a cross-campus University of Alaska collaborative initiative to assess and enhance the development and delivery of programs, courses, research and information that meet the employment needs of the fisheries, seafood and maritime industries.

The goals of the University of Alaska's Allied Fisheries initiative are:

- *To sustain and enhance the economy and the communities of Alaska by developing education and training that supports a responsive workforce enabling the fishing, seafood and maritime industries to stay vibrant and substantial contributors to the state.*
- *To support Alaskans, particularly young Alaskans, in discovering and preparing for the wide range of employment opportunities in the fishing, seafood and maritime industries.*

One of the first charges to the group was to "identify and inventory existing UA institutional capacity for training and education that supports all aspects of the fishing business industries, fisheries support and fisheries development in Alaska." The Allied Fisheries Working Group has broadened the inventory to include also the institutional capacity for training and education in support of the seafood and maritime industries. This inventory provides a starting point for the University of Alaska to begin working with industry and community leaders to improve the educational and training opportunities for fisheries, seafood and maritime careers.

Inventory Conclusions

- Collectively, the fisheries, seafood and maritime programs offered within the UA system meet many of the education and training needs of prospective employees in these industries. However, they lack coordination, planning, and a cohesive identity. Outside of fisheries biology and management, fisheries, seafood or maritime specific courses may be difficult to locate or identify, are generally not organized into career tracks, and in most cases are not comprehensive in content coverage. Without question there are major gaps in the UA system's content offerings needed to meet workforce training demands in these industries. But equally important is the need to elevate these industries to an educational priority that will recognize the needs and opportunities and will provide career education and training tracks to prospective students.

- The UA advisory committees identified in this inventory each address part but not all of the educational and training needs of the fishing, seafood and maritime industries and coastal communities that depend on them.
- Fisheries - Almost the entire faculty capacity in programs focusing on fisheries consists of the Fisheries division faculty members (UAF SFOS), Marine Advisory Program faculty members (UAF SFOS) and two UAS faculty in the Fisheries Technology program. Although some faculty members in other parts of the system are engaged in fisheries education, training and research, it is generally as individuals rather than within a directed program. Formal training in fisheries is primarily focused on biology and management related occupations. Business and technical skills are offered primarily as non-credit, informal classes.
- Seafood - Five seafood faculty members at the UAF SFOS Kodiak Center provide some targeted seafood industry training and public service but in general there is no comprehensive training program to serve the seafood industry other than at the seafood science graduate student level in the UA system.
- Maritime - The University of Alaska Southeast provides training for maritime industries and has growth potential. Other than these programs, the UA system has few courses or programs addressing the employment and training needs of the maritime industries.
- Business and marketing training specific to the fisheries, seafood and maritime industries currently is not directly addressed in the UA system other than through informal education and short courses.
- Depending on industry and community identified needs, there may be room to revamp and enhance existing programs; collaborate with non-UA education and training providers; or create new programs. A number of programs are potentially easily adaptable or have the potential to grow—including Rural Development, Fisheries Technology and Marine Transportation and Technology. Some type of formal training program for commercial fishermen should be considered.

Next Steps

Moving forward, the Allied Fisheries Working Group recommends these steps and work products.

- Establish an advisory committee that provides input to the University from the fisheries, seafood, maritime industries and communities.
- Conduct an occupations inventory and workforce assessment.
- Complete an education and training gap analysis and establish priorities.
- Identify unique constraints and opportunities for effective education and training delivery for these occupations.
- Develop an integrated and comprehensive action plan.

For more information: www.marineadvisory.org/initiatives/marinescience/workforceplan/

APPENDIX B

Summary Report: Alaska Joint Fisheries Seafood Maritime Workforce Forum

March 30, 2012

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Summary Report: Alaska Joint Fisheries Seafood Maritime Workforce Forum

UA Fisheries, Seafood and Maritime Initiative
alaska.edu/fsmi

March 30, 2012

On March 5th, 2012, the University of Alaska welcomed 52 representatives from fisheries, seafood and maritime companies and organizations to the Alaska Joint Fisheries Seafood Maritime Workforce Forum. The purpose of the day-long event was to establish a mutual understanding of the benefits and value of industry and education and training partnerships, and to share fisheries, seafood and maritime workforce development needs.

University of Alaska President, Patrick Gamble, thanked all for coming and for their interest in collaborating to "raise the bar." He asked attendees to help focus the fisheries, seafood and maritime workforce development effort. He emphasized the University was here to "listen to your needs, and to also take today's information to coordinate efforts, to put workers out there, ready to work." He also recognized this would not be an overnight process, and stated commitment to the long-term effort.

Alaska Process Industry Careers Consortium's Dave Rees, Chair Emeritus, and Todd Bergman, Executive Director, described their organization's effort to build consensus around workforce development needs identified by the varied process industries' stakeholders. Mr. Rees stated industry leadership and partnership with the University has been successful. "[The] agenda in 1999 look[ed] just like the Fisheries Seafood Maritime agenda - needs assessment, priority occupations, engage stakeholders, figure out training gaps, training, recruit, retain. Industry has to decide it is going to take a role in making the standards and define technical needs. The Alaska Workforce Investment Board is important, [and so are] utiliz[ing] state resources. Finally, you have to extend outreach to young and the future."

Mr. Bergman called attention to APICC's ongoing, periodic reviews of programs, placement and occupations. APICC conducts a *'Priority Occupations Report'* every three years that focuses on need and surveys where there are gaps. He also shared the structure of the APICC organization and how it facilitates between industry and education and training providers.

The McDowell Group's analyst Scott Miller presented *'What we think we know about the state of Alaska's Fisheries, Seafood and Maritime Workforce'* and gave an introduction to the Occupational Needs Assessment Survey Instrument. "The bottom line? We need to know more about fisheries, seafood and maritime occupations, and we need to identify common denominators among occupations to understand what skills and knowledge are required".

Following the morning session, representatives from fisheries, seafood processing and maritime organizations adjourned to small group break-out sessions to discuss:

- What is working now to meet your workforce needs?
- What challenges do you face in meeting your workforce needs?
- What are your current and future workforce needs and priorities?
- What education and training is needed to prepare the workforce?

Attendees reconvened in the afternoon to share results of their small group discussions. Common themes emerged including: definitions of each sector, e.g. what does "fisheries", "seafood" and "maritime" include; seasonality of work; lack of outreach and communication to young people and parents about occupations and careers; competition for employees; entry-level vs. skilled; broad range of types of occupations.

Attendees were asked if they would be willing to participate in further work to identify occupations, education and training needs. Based on the Fo-

What you can do:

- Complete the Alaska FSM Workforce Needs and Priorities Survey at http://fmrsurvey.com/MG/AWP1/AWP1logn.htm
- Review the UA Education and Training Inventory, let us know what programs are relevant to your company's/member organization's education and training needs alaska.edu/fsmi/reports-documents
- Attend the second Alaska Joint Fisheries Seafood Maritime Workforce Forum

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Contacts:
Paula Cullenberg, Program Leader
Alaska Sea Grant Marine Advisory Program
School of Fisheries and Ocean Sciences
University of Alaska Fairbanks
1007 W 3rd Ave, Suite 100
Anchorage, AK 99501
(907) 274-9692
paula.cullenberg@alaska.edu

Greta L. Goto, Projects Manager
Statewide Workforce Programs
Office of Academic Affairs
University of Alaska
1815 Bragaw Street, Suite 102
Anchorage, AK 99508
greta.goto@alaska.edu

rum's dialogue and subsequent work, the UA FSM Initiative will undertake these next steps:

- Complete Alaska FSM Workforce Needs and Priorities Survey (April 2012; access survey at http://fmrsurvey.com/MG/AWP1/AWP1logn.htm)
- Follow up phone interviews (April 2012)
- Update UA Education and Training Inventory
- Inventory offerings from other Alaska education and training providers
- Inventory occupations
- Second Forum with industry to review survey findings, education and training gaps analysis, hear industry priority education and training needs

Complete summaries from the morning, small group, and afternoon sessions and presentations as well as other project information are available at the UA FSM Initiative project website, www.alaska.edu/fsmi .

Participants at the March 5th Alaska Joint Fisheries, Seafood & Maritime Workforce Forum

Wanetta Ayers, Dept. of Commerce Community & Economic Development

Helen Mehrkens, Dept. of Education & Early Childhood Development

Candice Bressler, Department of Fish & Game

Greg Cashen, Department of Labor & Workforce Development

Jim Browning, Alaska Fisheries Development Foundation Inc.

Brad Wilkins, Alaska General Seafoods

Michael Neussl, Alaska Marine Highway System

Dave Rees, Alaska Process Industry Careers Consortium

Todd Bergman, Alaska Process Industry Careers Consortium

Doug Ward, Alaska Ship and Drydock

Ron Peck, Alaska Travel Industry Association

Jay Stinson, Alaska Whitefish Trawlers Association

Larry Cotter, Aleutian Pribilof Island Community Development Association

Laura Delgado, Aleutian Pribilof Island Community Development Association

Stephanie Madsen, At-Sea Processors Association

Fred Esposito, AVTEC

Celeste Novak, Bristol Bay Economic Development Corporation

Robin Richardson, Copper River Seafoods

Joel Neimeyer, Denali Commission

Cheryl Sutton, Fisherman Former Legislative Aide UFA board member

Kris Norosz, Icicle Seafoods

Sean Ruddy, Kachemak Shellfish Grower's Cooperative

Norman Van Vactor, Leader Creek Seafoods

Captain Ed Page, Marine Exchange

Scott Miller, McDowell Group

Buck Laukitis, North Pacific Fisheries Association

Chris Oliver, North Pacific Fishery Management Council

Steve Reifenstuhl, Northern Southeast Regional Aquaculture Association

Doug Walrath, Northwestern Alaska Career and Technical Center

Dianne Blumer, Office of Governor Sean Parnell

Glenn Reed, Pacific Seafood Processor Association

Ed Rasmuson, Rasmuson Foundation

Ian Dutton, Rasmuson Foundation

Valerie Burd, Saltwater Inc.

Penelope Goforth, SeaCat Exploration

John Kelley, Signature Seafoods

Brenda Dale, Snug Harbor Seafoods

Elaine Price, Southeast Conference

Erik O'Brien, Southwest Alaska Municipal Conference

Adelheid Herrmann, Southwest Alaska Vocational Education Center

Steven Angasan, Southwest Alaska Vocational Education Center

Chris Plaisance, Unisea Seafoods

Arni Thomson, United Fishermen of Alaska

Jeff Stephan, United Fishermen's Marketing Association Inc.

Ansel Sandone, United States Senate Office of Senator Begich

Bob Walsh, United States Senate Office of Senator Murkowski

Thomas Ostebo, US Coast Guard

Aggie Blandford, Western Alaska Community Development Association

David Hatton, Westward Seafoods Inc.

Jason Hale, Yukon River Drainage Fishermen's Association

Tom Case, UAA Chancellor

Bear Baker, UAA College of Business & Public Policy

Bonnie Nygard, UAA

Karen Schmitt, UAA Community and Technical College

Gunnar Knapp, UAA Institute of Social and Economic Research

Barbara Bolson, UAA Kodiak Campus

BJ Williams, UAA Prince William Sound Community College

Carol Swartz, UAA-KPC-Kachemak Bay Campus

Deborah McLean, UAF Bristol Bay Campus

Mary Pete, UAF Kuskokwim Campus

Beverly Bradley, UAF Alaska Sea Grant Marine Advisory Program

Terry Johnson, UAF Alaska Sea Grant Marine Advisory Program

Mike Castellini, UAF School of Fisheries and Ocean Sciences

Keith Criddle, UAF School of Fisheries and Ocean Sciences

Paula Cullenberg, UAF Alaska Sea Grant Marine Advisory Program

Mark Herrmann, UAF School of Management

Bernice Joseph, UAF Vice Chancellor Rural Community & Native Education

Rick Caulfield, UAS Provost

Kate Sullivan, UAS Ketchikan

Fred Villa, UA Statewide Office of Workforce Programs

Duane Heyman, UA Statewide University of Alaska Corporate Programs

APPENDIX C

McDowell Group
Education and Training Gap Analysis
for the Fisheries, Seafood, Maritime Workforce

May 2012

Education and Training Gap Analysis for the Fisheries, Seafood, Maritime Workforce

Prepared for:
University of Alaska

Prepared by:



Juneau • Anchorage

May 2012

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Study Purpose and Methodology

Study Purpose

This gap analysis was developed to help identify training and education needs and opportunities related to industries in the Fisheries, Seafood, Maritime (FSM) sector. It reflects the ideas and experience of participants from private, public and nonprofit organizations working in FSM subsectors across Alaska, as well as data collected by the Alaska Department of Labor and Workforce Development (DOLWD). This research is intended to provide a factual and theoretical foundation for further training and education design efforts by the University of Alaska (UA), other workforce training and education entities, and the businesses and agencies of the sector itself.

Assessment Methodology

The gap analysis included the following major tasks:

- An overview of the Fisheries Seafood Maritime sectors and summary of discussions held at the Alaska Joint Fisheries Seafood Maritime Workforce Forum held at UAA on March 5, 2012
- Telephone interviews with 25 representatives of the FSM sector and selected training providers
- Design and fielding of an online Workforce Needs Survey distributed by email to 250 FSM businesses and organizations and promoted through sector membership organizations
- Identification and analysis of specialized employment and training data in cooperation with the Alaska Department of Labor and Workforce Development Research and Analysis Unit
- Briefing and discussion with the UA Allied Fisheries Working Group
- Production of this report and associated data files for public use

Conclusions presented below draw on all these sources of information to identify common themes. It is important to remember, however, that the information provided at the Forum, through interviews, and in the online survey are anecdotal and may not be representative of the sector as a whole. Data and analysis provided by the Alaska Department of Labor also has limitations, primarily because it is based on industry and occupation codes that are not always aligned with the structure and activities of the FSM sector.

The FSM Sector

Overview

Like the visitor Industry, the FSM sector has not been formally defined by agencies that track workforce participation. Yet the sector is profoundly important to the Alaskan economy. Alaska has one mile of coastline for every 20 residents and more than 12,000 rivers. There is hardly an economic entity in the state that is unaffected by FSM activities.

Broadly defined, the FSM sector includes any firm or occupation connected in some way with oceans or waterways. Positions range from seasonal fish-census workers to experts in maritime law. McDowell Group identified firms associated with FSM activities and found that their employees represent more than 800 different Standard Occupational Codes (SOCs). Many firms, and even individual occupations, are only partly associated with FSM activities, however. For example, many professionals and technicians, from economists to diesel mechanics to construction managers, perform a portion of their work in the FSM sector.

This analysis focuses on firms and occupations that are typically or mainly associated with fishing, seafood processing, vessel operation, and the businesses that provide direct technical and professional support to those industries. Even by that abbreviated definition, the FSM sector in Alaska includes more than 500 firms (not counting the many sole proprietorships and smaller fishing operations that do not file unemployment reports). With proprietorships and fishing operations included, McDowell Group estimates the FSM workforce at more than 68,000 workers.

Sector Employment

This analysis, together with more detailed employment data in the appendices, is based on two sets of federal codes, the North American Industry Classification System (NAICS) codes, and the Standard Occupational Codes (SOCs). The analysis is useful mainly as a general indicator of the overall potential market for various types of education and training. Data should be considered an approximation. Neither code-set specifically identifies FSM businesses or workers, and reporting by employers of both kinds of data is of variable accuracy.

The NAICS and SOC data, provided by DOLWD, indicates that Alaska's FSM sector consists of roughly 68,000 workers not counting scientists, educators and other professionals whose association with the sector is not evident from DOLWD employment records. Alaska residents make up 47 percent of the private-sector FSM workforce. The seafood industry dominates employment in the sector. Commercial fishing, seafood processing, and non-profit hatcheries employ 92 percent of the private FSM workforce. With the exception of AMHS, most FSM-related government positions support the commercial seafood and sport-fish seafood industries in some manner.

Based on interviews with industry and the array of applicable NAICS codes, McDowell Group segregated Alaska's FSM sector into the following subsectors:

- Commercial Fishing
- Seafood Processing and Marketing
- Sport-fish Guides
- Salmon Hatcheries
- Boat Building, Repair, and Dealers
- Selected Marine Engineering and Surveying
- Water Transportation (Freight and Sightseeing)
- State and Federal Government

The table that follows breaks down selected employment indicators by these sub-sectors to the extent possible with available data. It gives a sense of the overall potential market for education and training within each of the subsectors. The table highlights the large component of resident FSM employment represented by commercial fishing. Government workers shown are limited to those for whom data was readily available. Those are employees of the Alaska Department of Fish and Game, USCG, and the National Marine Fisheries Service (NMFS).

Employment in Alaska Maritime Industries

Maritime Sub-Sector	# Workers	Pct. Resident	# of Resident Workers	Wages and/or Earnings ($MM)	Average Age
Commercial Fishing[1]	30,980	56%	17,349	$1,742.0	N/A
Seafood Processing/Marketing	22,412	27	6,051	$323.2	40
Water Transportation	4,056	62	2,515	134.2	39
Sport-fish Guiding[2]	3,034	72	2,184	N/A	N/A
Boat Building/Repair	693	76	527	21.5	38
Salmon Hatcheries	456	64	292	10.7	37
Marine Engineering/Surveying	183	85	156	12.1	40
ADF&G, USCG, NMFS	5,641	N/A	5,077 [4]	N/A	N/A
Total[3]	68,042	N/A	34,150	N/A	N/A

[1] Workers represent total count of fishermen fishing commercial permits and adult crewmembers. Earnings are estimated gross ex-vessel earnings for the industry and are not directly comparable to wages in other industries.

[2] Guiding employment is estimated based on 2010 license and logbook data. Figures cover saltwater and freshwater guides. Residency is based on address data provided by guides.

[3] Data provided on residency and age apply to private sector only; data was not available for government employees.

[4] For purposes of estimating potential training demand, McDowell Group assumes that 90 percent of these state and federal workers are residents of Alaska. Adding these workers to the private sector data brings the proportion of resident workers from 47 percent to approximately half.

Note: Data on age applies to Alaska residents only, as data is not available for nonresident workers.

Source: DOLWD, CFEC, ADFG, ASMI, NOAA, US Office of Personnel Management and American Forces News Service.

The remaining tables in this section show only workers who are covered under Alaska's unemployment insurance program. These include private-sector wage and salary workers, but not sole proprietorships. The latter encompass, for example, most of the sport-fish guides shown in the previous table. In addition, thousands of fishing and government jobs are not covered by the data. Nevertheless, the table may help identify the approximate overall market for certain types of education and training, this time by occupational area. The next table segments the FSM workforce by occupation using Standard Occupational Codes.

Private Sector Wage and Salary Employment in Alaska's Maritime Sector – 2010
by Type of Occupation
(not including government or most guiding and commercial fishing)

All Private Sector Wage/Salary Maritime Industries	Number of Workers
Production Occupations	18,697
Transportation and Material Moving Occupations	3,121
Office and Administrative Support Occupations	1,163
Installation, Maintenance, Cleaning, and Repair Occupations	1,065
Management and Financial/Business Operations	456
Sales and Related Occupations	325
Architecture and Engineering Occupations	189
Life, Physical, and Social Science Occupations	177
Business and Financial Operations Occupations	115
All Other	2,607

Source: DOLWD.

The next table shows the same employment data grouped by type of FSM business (Boat Building, Hatcheries, Seafood Processing, Selected Marine Engineering and Surveying, and Water Transportation).

Private Sector Wage and Salary Employment in Alaska's Maritime Sector – 2010
by Type of Business
(not including government or most guiding and commercial fishing)

	Number of Workers
Boat Building	
Construction and Extraction Occupations	222
Production Occupations	188
Installation, Maintenance, and Repair Occupations	104
Office and Administrative Support Occupations	72
Sales and Related Occupations	65
Management Occupations	14
All Others	28
Total	**693**
Hatcheries	
Farming, Fishing, and Forestry Occupations	293
Management Occupations	38
Installation, Maintenance, and Repair Occupations	30
Life, Physical, and Social Science Occupations	21
Office and Administrative Support Occupations	20
All Others	54
Total	**456**

(continued on next page)

Seafood Processing	
Production Occupations	19,931
Installation, Maintenance, and Repair Occupations	685
Office and Administrative Support Occupations	568
Management and Financial/Business Operations	221
Architecture and Engineering Occupations	99
Life, Physical, and Social Science Occupations	93
All Others	815
Total	**22,412**
Selected Marine Engineering & Surveying	
Architecture and Engineering Occupations	84
Life, Physical, and Social Science Occupations	49
Office and Administrative Support Occupations	37
All Others	13
Total	183
Water Transportation	
General Labor/Operations	1,887
Sailors/Oilers/Navigation	1,120
Management	272
Maintenance	248
Operating Engineers and Truck Drivers	235
Cooking	172
Administrative	81
Specific Pipeline Operations	27
Other	14
Total	**4,056**

Source: DOLWD.

For purposes of estimating FSM training and education needs, it would be helpful to know how long specific positions typically remain vacant and how often hires are made out of state for that reason. Unfortunately, there is no public source for that information. DOLWD has data on occupation and duration of employment by individual social security number. However, the data does not show why individuals leave particular positions (for example, whether there was simply not enough work). Neither does the data show how long positions remain open.

Major Findings and Recommendations

Goals for FSM Workforce Development

Interest in UA's FSM education and training initiative has been high. In spite of the sector's social and economic importance, the initiative represents the first comprehensive effort to understand and address its workforce development needs. The research suggests FSM-sector participants have somewhat different overarching goals for workforce development. Primary concerns include the following:

- **Fishing** – counteract the aging of the fleet and, especially, the aging of those providing the fishing fleet with shore-based marine support services of many kinds.
- **Seafood processing and marketing** – Help attract and hold motivated workers who have potential to advance into more highly skilled technical, supervisory, and management positions.
- **Maritime** – 1) Training to meet USCG requirements for safety training and licensed and experienced mariners as well as trained unlicensed deckhands and engineers (for organizations involved in vessel operations); and 2) workers with enhanced technical skills similar to those sought by the Fishing participants, above (for organizations involved in vessel construction, repair and support).

Within these broad concerns are a host of workforce needs specific to different components of this varied sector. Those most often identified during the research are discussed below.

Training and Education Needs Reported by FSM Businesses and Organizations

This study concludes that additional training and education opportunities would be especially welcome in six main areas:

1. Technical support services for shore-side and at-sea fishing, processing and maritime operations.
2. Seafood processing and mariculture technologies
3. Business management relevant to the FSM sector
4. Resource management for sustainable ocean resources
5. Mariner licensure and certification for career ladders
6. Safety and risk management

These areas are described further below.

TECHNICAL SUPPORT SERVICES FOR SHORE-SIDE AND AT-SEA FISHING, PROCESSING AND MARITIME OPERATIONS.

This often-referenced need includes vessel support services, construction, and repair. Technical skills identified as in short supply include welding, electronics, fabrication, electrical generation and other plant and vessel support. Refrigeration engineers and technicians are especially in demand, in part because of an ongoing shift from canned to fresh and frozen seafood products. All refrigeration work must be performed by certified technicians, and commercial anhydrous ammonia systems are potentially dangerous if mishandled.

SEAFOOD PROCESSING AND MARICULTURE TECHNOLOGIES

The skilled positions most often identified as in short supply are plant managers, plant engineers, mechanics, and quality-assurance technicians and managers. Training needs for specific employers depend on the equipment and technologies actually employed. Mariculture and hatchery personnel need training in fish biology and also in maintaining mechanical systems in remote locations. Another need is for environmental monitoring and compliance officers.

BUSINESS MANAGEMENT RELEVANT TO THE FSM SECTOR

Currently, UA management programs do not directly address the business activities of the FSM sector. Companies need managers with a combination of traditional management skills and industry-specific knowledge and experience. This is especially true for seafood processing and marketing firms and for fish hatcheries. Fishermen who want to self-market their catch also need training in marketing and product quality.

RESOURCE MANAGEMENT FOR SUSTAINABLE OCEAN RESOURCES

Regulatory managers, and sometimes technicians, need a combination of technical, managerial, and communications skills. Related training needs include applied fisheries science such as by-catch reduction, gear design, and marine mammal avoidance.

Documentation of training needs for the Alaska Department of Fish and Game (ADF&G), with 1,700 employees, is not readily available and will require further research and analysis in cooperation with the department. Training needs were not assessed for the Department of Environmental Conservation, the Department of Natural Resources, the Department of Public Safety, or other State departments with responsibilities that include marine and maritime activities. The same is true for the Alaska-based staff of the U.S. Fish and Wildlife Service and Region 10 of the U.S. Forest Service. All these agencies might benefit from training as varied as biological sciences and boat handling, but specific needs are not yet identified.

MARINER LICENSURE AND CERTIFICATION FOR CAREER LADDERS

This category includes masters, deckhands, and vessel and marine engineers. These highly specific technical certifications should be developed in consultation with prospective employers, existing training providers (for example, AVTEC and UA's Ketchikan campus), and the United States Coast Guard (USCG). Vessel engineers

manage systems such as diesel engines, gas turbines, boilers, steam turbines, heat exchangers, and pumps and compressors, electrical machinery; hydraulic machinery, refrigeration machinery, steam, water, fuel oil, lubricating oil, compressed gas, equipment for automation and control, equipment for fire fighting and other forms of damage control, and systems for cargo handling. Marine engineers are responsible for design, outfitting, inspection and surveying, corrosion protection, and repair of ships.

SAFETY AND RISK MANAGEMENT

Requirements for vessel and food-safety training, as well as environmental safety, are both increasing. The Alaska Marine Highway System (AMHS) has a specific need for USCG-approved emergency-trauma technicians. More broadly, small-boat fishermen need training, likely through short courses or winter classes, in vessel operation and systems of all sorts. One interviewee referred to this material as an "Alaska mariner basic skill set."

Other Training Needs

In addition to the six areas above, representatives of various segments of the FSM sector cited the following education and training needs:

- Education in the implications of climate change for subsistence and commercial harvesting and other arctic commerce
- An AA or similar degree in maritime transportation
- Training for new fishermen in sophisticated modern electronics, fish handling techniques and equipment, diesel engines, etc.
- Commercial diver training
- Additional emphasis on coastal engineering disciplines within existing UA engineering programs
- Culinary training, especially with a seagoing component
- Customer service and other training for interpretive naturalists
- Training in various disciplines for marine surveyors
- Commercial truck-driver training

Additional Findings

- **Workforce development efforts for the FSM sector statewide currently consist of localized efforts with no overall plan, priorities or coordination.** Some close working relationships exist, however, between regional UA campuses, regional training providers, and sometimes CDQ groups and Alaska Native organizations. These relationships may be fertile starting points for developing an FSM strategy.
- **The FSM sector is different from healthcare and warrants very different approaches to training.** Healthcare employment is highly structured and concentrated in large employers or in clinics and offices that are similar in structure and services. Credentials are well established and widely known.

FSM, with the exception of the Coast Guard and AMHS, has a heterogeneous employment pool with little formal structure spread across disparate businesses and organizations.

- **Except for the Coast Guard and agencies such as ADF&G and AMHS, the concept of career ladders seems almost unknown in the FSM sector.** Similarly, professional development experiences, as distinguished from technical training needed or required for particular positions, typically is provided on an ad hoc basis rather than as part of a workforce strategy.
- **CDQ groups could be important partners in the workforce initiative.** The groups have long relationships with 65 FSM-dependent communities. They already engage in workforce development and have dedicated staff in that area. Finally, CDQ groups are engaged in a variety of FSM businesses and occupations. Of particular importance to CDQ groups, in addition to training for plant personnel, is knowledge of the regulatory process, including the North Pacific Fisheries Management Council and the Alaska Board of Fisheries.

Structuring Training

Different employers have different needs with respect to the content and scheduling of employee education and training. Among the considerations that will require ongoing discussion between employers and educators are the following:

- **A hands-on training component is important to meet most of the existing needs.** This is particularly true of positions on vessels. Shore-based processors and other manufacturers also need technical workers who are trained on particular kinds of equipment. Apprenticeships and internships are examples of how some employers have combined classroom and workplace learning. It has been suggested that UA could support apprenticeship programs by providing specific classroom components. Apprenticeships and internships in areas such as quality control and mechanical/industrial repair are especially useful because they tend to be:
    - Career-oriented
    - Flexible to meet industry needs
    - A combination of classroom and practical experience
    - Eligible for grant subsidies
- **Scheduling and duration of classes is important and must adapt to seasonal businesses and geographic location of workers.** Short (3 weeks or less), off-season, and online courses are necessary to meet many industry needs, assuming that adequate hands-on experience can be incorporated where necessary. Timing and duration of classes should be developed in consultation with target employers and trainees. This might lead, for example, to a series of short courses that feed into a certification.
- **Existing providers of technical training can help UA identify potential links between academic and vocational programs.** AVTEC, with its ship and fire-response simulators, is the most

comprehensive FSM training organization in the state outside the UA system. UA Ketchikan already offers more than 20 different maritime certifications.

- **In addition to new training courses, training materials might be useful to the sector in other forms.** For example, video and other online content could be developed to help fishermen and others perform repairs and other tasks, even in real time, that formerly required trained technicians.

Training Needs versus Workforce Needs

Finally, it is important to differentiate between unmet training needs and a real or perceived lack of skilled workers in particular positions. The former represents potential immediate demand for new training programs. The latter may be a result of lack of training availability, but may also reflect other factors that retard new entries into certain professions. Those factors may include lack of real or perceived job or future advancement opportunities, the nature of the work, wages associated with the work, demanding training requirements, or other considerations that discourage new entrants.

For example, the research suggests there is a growing shortage of qualified, shore-based marine services, such as refrigeration, welding, diesel maintenance, fabrication, etc. Training in these areas is indeed limited in most parts of Alaska. Economics, however, is also a factor in whether a new generation of owners develops to take over the small businesses that often provide these services. Finally, those entrepreneurs will need the necessary management and financial as well as technical skills.

Recommended Further Steps

McDowell Group suggests that the university consider where training will create the most benefit for Alaska's employers and its economy as measured by the health of its communities. This suggests the workforce initiative should:

- **Take a long-term view.** Properly managed, the FSM sector will be a mainstay of Alaska employment indefinitely. The big challenge is to capture more and more of the value created in the sector here in Alaska, and one way is to generate career opportunities for Alaskans. For example, 85 percent of the first-wholesale value of Alaska commercial fisheries goes to companies whose headquarters are outside the state. Goals and strategies in this area must be chosen carefully, however. For example, Alaska is unlikely to capture significant management infrastructure associated with large catcher/processors that are logistically best suited to be based in more southern ports.

- **Establish strong relationships with industry and other training providers, such as AVTEC, not just to design courses, but to work in a continuing three-way partnership.** Focus on flexibility to adapt approaches to the needs of both employers and workers. Work toward production of a statewide workforce development plan for the FSM sector.

- **Look to the CDQ groups and other innovative companies such as Copper River Seafoods that are already exploring training, internships, and apprenticeships in a variety of areas.** CDQ

groups already engage in community workforce development, and their workforce needs likely will continue to increase. Consider bringing together the workforce development staff from these companies for more targeted discussions about education and training.

- **Package and promote FSM-oriented offerings to the sector.** Make it easy for prospective students to find and evaluate relevant classes across the entire university system, and link individual classes to potential careers. As part of that effort, develop business, regulatory, and other management classes that incorporate FSM-specific skills and content.
- **Work individually with ADF&G, AMHS, and USCG to evaluate potential for specific training and certification support.** AMHS and USCG training needs are well documented because most address legal and regulatory requirements. (See the accompanying electronic file, "AMHS Crew Training Requirements"). ADF&G represents a large workforce (1,700 employees) with diverse training needs that are not fully documented. The best way to pinpoint opportunities with ADF&G may be to work directly with department leadership to conduct a department-wide survey designed to identify recent past trainings and future needs for each division.
- **Look for ways to combine classroom and field experience.** For many FSM positions and careers, employers stressed the need for training to include significant hands-on, as well as classroom time. This is particularly true of positions on vessels.
- **In addition to new training courses, consider provision of training materials in other forms.** For example, video and other online content could be developed to help fishermen and others perform repairs and other tasks, even in real time, that formerly required trained technicians.

Appendix 1: Summary of FSM Workforce Forum Discussions

Two broad areas of discussion at the March 5 UA FSM Workforce Forum concerned the level of training most appropriate for UA attention and the challenges of training versus recruiting. Other themes from the discussion groups are described briefly following.

Entry-level versus skilled training needs

There was much discussion at the Forum of training needs for both skilled and entry-level positions. Other research for this report continued to identify needs for both types of training. Most entry-level positions that involve basic production activities (production line, laborer, driver, etc.) benefit from training that is reasonably well known and understood. These so-called "soft" or job-readiness skills include basic reading, math, organization, interpersonal dynamics, safety and other skills and practices, sometimes extending to customer service. This type of training often serves the related function of screening prospective workers for attitude, drug and alcohol use, and other personal attributes that may affect job performance. Job readiness skills are important and in great demand and are provided by a variety of training organizations, some of which are FSM-related and some not.

Training versus recruiting

Many Forum participants said there is a need to address a broad set of recruiting factors that include perceptions of and information about various types of FSM jobs. This need exists among school-age youth as well as the workforce in general. Expanded training efforts will, to some extent, raise the profile of the FSM sector, however training and recruiting are different functions. Recruiting—and also retention—includes management strategies, public relations, pay and benefits, working conditions, career opportunities, and other considerations that go far beyond training or even development of career ladders. Effectively addressing the public awareness/public-relations aspects of recruiting would take additional planning and resources beyond training provision.

Following are themes or comments that represent some of the views voiced at the FSM Forum.

Fishing Group Themes

Current Practices

- *Many employers depend on personal references, word of mouth, and relationships with tribal and regional organizations for recruiting.*
- *Small boat owners are in a difficult spot. They don't have resources for formal recruiting and depend mainly on on-the-job training.*
- *CDQ groups invest in a variety of education programs.*

Challenges

- *The private sector competes with ADF&G for employees, and ADF&G competes with NOAA and other federal employers.*
- *It's hard to find qualified people in rural regions.*
- *Refrigeration and other technical skills are in short supply. In general, shoreside support for small boats is aging and declining.*
- *High school graduates have a very limited skill set.*
- *Students need to be exposed to industry skills and opportunities at a much earlier age (high school or younger). This needs to be a major effort/partnership.*
- *ADF&G is facing a shortage of biologists and people with educational skills.*
- *Young people have to see opportunity before they will get excited about skills. Need to sell the range of careers available in the whole industry and career paths need to be clear.*
- *Look at educational models in other states and countries.*
- *Overly specific training will saturate individual positions, but there is a great need for broad-based training, including business skills.*
- *It's difficult for employers and workers to find out what training is available, where, and when. We need easier access to information, maybe through a central clearinghouse, but one that is clearly identified as FSM.*

Other Considerations

- *Breadth of training is extremely wide. There needs to be an ongoing, working interface between the University and industry to evaluate and address. What kind of structure could do this with fish/maritime as the focus?*
- *Looked at sectors and the items that weave through all.*
- *Build interest at a younger age and make the industry more visible to those students. Sell the career opportunities.*
- *Scholarships are an important tool to consider.*
- *Need to coordinate approaches across the University. Credits must be transferable.*
- *Distance delivery will be important, but how to do it and coordinate across the state?*

Seafood Group Themes

Current Practices

- *Employers being flexible to create year round opportunities*
- *Outreach working well in some areas, word of mouth*
- *Replicating successful programs – EX: Coastal Villages Regional Fund. Some programs working well, but small in scale*
- *Promoting from within, investing in current workers*

- *Skilled and entry-levels cannot be differentiated by number of hours or seasons. Season length can differ by region, and positions adapt.*

Challenges

- *Entry level jobs hard to fill and have high turnover.*
- *Processors would like to attract more people to entry-level work who have interest in and potential for advancement.*
- *Seasonal nature of industry*
- *Remote nature of industry*
- *Current online and urban recruiting methods are not effective in rural Alaska.*
- *Both companies and workers need a better understanding of what kinds of training and recruiting tools are available.*
- *Most employers are not familiar with training providers. Need a statewide inventory of what's available.*

Future Needs

- *Better placement information -- a centralized job bank*
- *Connect with existing academies/programs, i.e. STEM Academy*
- *Site based training – bring education to people*
- *Contact students younger – K-12 to get them interested in the industry.*

Maritime Group Themes

Current Practices

- *AK is a good place to build careers – good lifestyle and good opportunities*
- *AVTEC and UAS MT program offer good training used by AMHS*
- *AVTEC has an on-line maritime class for high school seniors – get to hear from folks in industry about opportunities and what it takes to get there*
- *Bristol Bay region has a CTE maritime model*
- *ASD gives HS tours, introduces students to workers, get to see facility – also hire high school kids in summer – get them into work force*
- *Teacher Externship opportunities (such as APICC's TIE program, which places teachers in companies to help them learn first-hand about an important industry) would be good for this sector*

Challenges

- *Lack of central source of information*
    - *On training*
    - *Work standards*
    - *Credentials required*
    - *Opportunities*
    - *Pathways*

- *AK has lack of industry recognition*
- *Need for screening and employability skills among entry level workers*
- *AK maritime operations must be viewed in a global context.*
- *Young people not aware of opportunities*

FUTURE NEEDS

- *Look at transferability of training to other positions, including seasonal shifts in location for some positions.*
- *Need strong industry support and input for this to work*
- *Look at on-the-job career paths as well as formal/academic paths.*
- *Need to start young – middle school and high school.*
- *Guidance counseling (secondary and post-secondary) is important.*

Key steps include:

- *Employability and basic skills*
- *Basic analytical skills*
- *Career paths*
- *Centralized career/job/training information*
- *Understand the structure of the Maritime sector better*
- *Look at gaps and what others are doing. Design complementary and cooperative training*
- *Don't lose track of demand. Look at what the workforce really needs.*

Appendix 2: Online Survey Responses

McDowell Group developed an online survey based on discussion topics from the FSM Forum and the UA Working Group. Survey questions were designed to identify training and education needs based on general information from the divers participants in the FSM sector. Final design of effective training courses will require additional information about, and discussions with, the industry segments to be targeted by the training.

The survey link was emailed to 250 organizations and businesses that represent a cross-section of the FSM Sector. Business associations were invited to circulate the link to their member. This appendix summarizes the results of the 52 complete survey responses.

Please note that the survey results represent a small, nonscientific (nonrandom) sample. The responses are a useful source of insight but are not necessarily representative of the whole FSM sector either in content or in number.

Respondents

WHERE IS YOUR ORGANIZATION'S HEADQUARTERS LOCATED?

Headquarters Location	# Respondents
Anchorage	7
Kodiak	4
Dutch Harbor/Unalaska	2
Dillingham	0
Sitka	5
Juneau	8
Ketchikan	7
Seattle	5
Cordova	3
Petersburg	2
Homer	1
Wrangell	2
Kenai/Soldotna	2
Other outside Alaska	4

WHICH PART OF THE FISHERIES SEAFOOD MARITIME SECTOR BEST DESCRIBES YOUR BUSINESS/ORGANIZATION?

Primary Business Activity	# Respondents
Fish harvesting	7
Shellfish mariculture	0
Fish hatcheries	4
Seafood processing/marketing	11
Resource management	4
Professional/technical services	3
Manufacturing	0
Industrial or logistical support for marine vessels	3
Public safety or enforcement	1
Equipment installation and maintenance	0
Construction/mechanical services	0
Transportation/shipping	6
Tourism/hospitality	3
Resource exploration/development	0
Scientific/academic research or education	0
Trade or advocacy organization	8
Economic Development	1

WHAT WAS THE AVERAGE MONTHLY NUMBER OF EMPLOYEES WORKING IN ALASKA FOR THE BUSINESS/ORGANIZATION YOU REPRESENTED DURING 2011?

Average Monthly Employment	# Respondents
1-10	12
11-50	11
51-200	11
201-500	4
501-1,000	7
1,001-2,000	3
>2,000	4

Current Education and Training Priorities

Needed Positions and Skills

What are the hardest Alaska-based positions for your business/organization to fill?

Scientific/Professional

- *Biometric positions*
- *Entry level labor/technicians AND experienced upper level Fishery Biologist positions (upper level management and research)*
- *Fisheries economist*
- *Fisheries managerial positions*
- *Middle management*
- *Upper management for processing and for trade groups*
- *Project managers, supervisors, top level subject matter experts (journey level)*
- *Science based - from the field technicians to biologists who want to work in rural Alaska.*
- *Senior Level Managers*

Vessel or Plant Operations

- *Chef, mate*
- *Class A - CDLTruck Drivers. Most applicants cannot pass a drug test*
- *Class A - CDL, Master 100 ton with towing*
- *Competent divers*
- *Deckhands (2 responses)*
- *Engineers*
- *Filleters, Shipper, HACCP trained personnel*
- *Fish culturists and hatchery managers*
- *Fish culturists at entry through 5 year experience levels*
- *Plant Managers, QA, Chief Engineers with Ammonia Certification*
- *Individuals trained in seamanship; vessel operation, handling & navigation; general vessel maintenance*
- *Licensed mariners*
- *Marine engineers (2 responses)*
- *Processor engineer*
- *Processor positions. Other technical positions such as engineers and refrigeration technicians*
- *Processor workers (2 responses)*
- *Vessel captains, mates, engineers*
- *Seafood Processors*

Customer Service

- *Customer service positions on board vessels: Naturalist, Deckhand, Passenger Service*
- *Naturalist/guides for day tours and Expedition Leaders for multi-day cruises.*

Trades/Technical

- *Highly skilled people to work on/repair of fishing vessel (e.g. diesel mechanic, electrician, fiberglass, welder)*
- *General ship mechanics (electrical work, plumbing, engine mechanics, refrigeration, fabrication, etc.)*
- *Instructors*
- *Marine surveyor*
- *Millwrights, Tech professionals*
- *Refrigeration Engineers, Millwrights, Port Engineers (skilled in both vehicle and vessel repair)*
- *Refrigeration Technicians, Quality Control Specialist and Environmental Compliance personnel*
- *Refrigeration technicians, Machinists (can line), Electricians, QA managers, Production Managers, Maintenance workers*
- *Refrigeration*
- *Safety officer, Welding Foreman, Ship fitters, Machinists, Mechanics, Electricians, and Bookkeepers*
- *Chief Engineers, Refrigeration Techs, Electricians*
- *Technical positions, such as Quality Assurance and process related production positions*
- *Trained Quality Control Technicians (seafood safety & seafood quality issues, including biological/chemical/other contamination, general quality, etc.), trade persons (Electricians, Plumbers, Mechanics, Refrigeration specialists, Welders, etc.), individuals with other skills (Personnel managerial, Manufacturing management, Human Resources, Accounting, etc.)*
- *Unlicensed deck and engineering*

Other

- *Community organizers*
- *Seasonal employees that will stay throughout the whole summer season*
- *Security*
- *Cooks*

REGARDLESS OF WHAT POSITIONS THEY MIGHT APPLY TO, WHAT SPECIFIC WORKFORCE KNOWLEDGE, SKILLS AND ABILITIES ARE HARDEST FOR YOUR BUSINESS/ORGANIZATION TO FIND FOR YOUR ALASKA-BASED OPERATIONS?

Business and Industry Experience

- *Alaska based experience and knowledge of enhancement program, and understanding of commercial fishing industry*
- *Basic business skills, problem-solving skills, and specialized training in their field*
- *Project/program management skills including written communications, budget management and supervision*
- *Understanding of on the grounds reality of the fishing industry*
- *Experience*

- *Knowledge of the industry*
- *Experience in fisheries management/economics*
- *Historical knowledge of resource management issues, current knowledge of resource management issues*

Interpersonal skills/Guiding

- *Customer Service*
- *Customer service, interpretive guide*
- *Experienced naturalists/guides*
- *Mainly the service related positions*

Specific Technical

- *Commercial divers that have experience with boat husbandry*
- *Engineers, refrigeration technicians, plant managers (in-region). Hard to retain processors (high turnover)*
- *Fish picking skills*
- *Food sciences and up-to-date, sophisticated process skills*
- *Common sense*
- *Unique repairs skills related to canning machinery; ability to cope with 7 days per week min 11 hour per day schedule for up to 90 days straight*
- *Engineering*
- *Qualified people to repair onboard freezers, weld, fabricate, repair fiberglass, perform shipwright; above all- finding shipyards that support work on commercial fishing vessels is increasingly a problem*
- *Chief engineer*
- *Employees able to work on the fish processing specific equipment we have in our plants*
- *Aquaculture and Fishery Research techniques; scientific or formal report writing/communication*
- *Fisheries managerial positions, Plant Managers, QA, Chief Engineers with Ammonia Certification*
- *Security*
- *Shipwrights*
- *Since the rationalization of the BSAI Crab fisheries we are lucky to have among the highest skilled crewmembers of any fishery in the nation. What concerns me are the lack of mechanics, welders, refrigeration technicians, and other shore-based workers that the crab industry depends upon to keep operating.*
- *Diesel mechanics, electrical, refrigeration*
- *The tradesmen need more background knowledge in the theory of fabricating constructing etc. Bookkeepers need better knowledge of the fundamentals of running a small business office and the type of software programs required to do it efficiently*

Good Workers/Basic Education

- *Drug-free employees*
- *Maintenance, attention to detail. High school education, simple math skills*
- *Information Technology*
- *Safety, ability and drive to work in remote operations at basic line production work*
- *Ability to work only 3 months*
- *For the vessels I represent, its finding people who are willing to work long hard hours*

Mariners

- *USCG Licensed and experienced mariners*
- *Licensed Mariners with a wide range of maritime skills and vessel handling abilities*
- *Experienced, knowledgeable, educated, Mariners*
- *USCG master licensed individuals. Professionally trained cook/chef*
- *Marine engineering*
- *Unlicensed deck and engineering, cooking*
- *Marine vessel knowledge; USCG regulations; ABYC Standards; NFPA Standards*

Combination of Technical and Qualitative Skills

- *Experienced and qualified employees with knowledge of manufacturing processes, project management, supervisory and leadership skills*
- *Large-scale production-oriented salmon rearing skills. Knowledge of small hydropower operations, maintenance and repair. Managing a staff in an isolated, remote, year-around production facility*
- *Biology, policy/regulatory. We generally desire Alaska Native individuals*
- *A combined skill-set of statistics, biology/oceanography, communication, speaking, and writing*

Hiring Graduates of Education and Training Programs

DOES YOUR COMPANY/ORGANIZATION REGULARLY HIRE GRADUATES OF AN EDUCATION OR TRAINING PROGRAM RELATED TO THEIR JOB, EITHER IN ALASKA OR ELSEWHERE?

Name of position hired	Name of program or organization providing the training	Location of program or organization	Degree, credential or certification (if applicable)	Approx. # hires per year of graduates from this program
Diver	Commercial diver training	Various around the country	ADC recognized air diver certification	2
Marine Engineer	Massachusetts Maritime Academy	Buzzards Bay, MA	Marine Engineer	2
Pilot boat operators	UAS Ktn Maritime	Ketchikan	STCW, radar endorse	2
Unlicensed deck and engineering	UAS, AVTEC	KTN and JNU for UAS. Seward for AVTEC	QMed, Able Seaman	25
USCG Licensed and unlicensed Mates	AVTEC, Seattle CC, Astoria CC and others		100 ton masters Navigation and vocational training certificates	6

Internal Training of Existing Workforce

DOES YOUR BUSINESS/ORGANIZATION USE ITS OWN STAFF TO DELIVER INTERNAL, FORMAL TRAINING LASTING ONE FULL DAY OR MORE AND BASED ON A RECOGNIZED CURRICULUM (MORE THAN JUST ON-THE-JOB INSTRUCTION AND COACHING)?

Type	Position	Training	Curriculum
ENV	Biometrician	Escapement Goal Analysis	
ENV	Biometrician	Writing techniques	
ENV	Procurement Specialist	Contracts, Grants, Procurement	NOAA Required
ENV	Supervisors	Supervisory Training using various vendors	Required Training
F	Skiff operator	Extreme skiff training	Internal
H	Our seasonal employees are provided with a week of training before being employed in the fisheries field.	Safety, fish identification and sampling methods	Internal
M	Adjunct Instructor	Mentoring	Internal
M	All positions	Customer Service	Alaska Host

M	Customer Service Crew	Classroom sessions, facility orientation, TAM training and safety/emergency training. CPR & First Aid	AMT - company designed
M	Deckhand/engineers	Classroom sessions, facility orientation and safety/emergency training. CPR & First Aid	AMT - company designed
M	Fork Lift Operator	Instruction and hands on	Vendor
M	HAZ-COM	Instructor-led	Commercially produced
M	In house training consists of Customer Service, Retail, Tour Supply, Inventory, Stocking, Maritime nomenclature and skills (such as line handling etc, safety (at work and with guests)		
M	Job Hazard Awareness	In person	Company provided
M	Lock Out Tag Out Stored Energy	Instructor Led	Company provided
M	Marine surveyor	Fiberglass, aluminum, wood recreational and commercial boats; damage investigations; appraisal training	ABYC standards; Society of Accredited Marine Surveying Recommended Content
M	Naturalist/interpreters	Classroom sessions, facility orientation, area familiarization and safety/emergency training. CPR & First Aid	AMT - company designed
M	New hires	Basic safety training, crowd control	
M	Port Security	Security, first aid, safety, customer service	
M	Respirator fit testing		
M	As needed.	Training of this nature is usually a regulatory requirement; i.e. asbestos, HASWOPER, etc.	
M	Vessel Captains (w/ 100 Ton License)	Classroom sessions, facility orientation, area familiarization and safety/emergency training. CPR & First Aid	AMT - company designed
M/A	Apprentice Pilot Trainee	Hands on training, simulation	
M/A	Deputy Pilot trainee	Hands on training, simulation	

Continued on next page

S	Foreman	Management	
S	In FY 13 we will be begin apprenticeships in IT and Seafood Marketing.		
S	Internal training is conducted on an as needed basis	Forklift driving, Quality Control, etc. Also, the company has been conducting training programs for Electricians and other skilled positions. This works well as those selected for these openings have demonstrated that they enjoy living and working in Dutch Harbor.	The training is in line with a certified apprenticeship, requiring the same hours in order to advance.
S	Line Manager	Management	
S	Mechanical Repair Industrial/Refrigeration	Apprenticeship	NCCER, Liberty Mutual, Garden City Ammonia Program
S	Microbiology Quality Control Technician-Seafood handling and production	Apprenticeship	NCCER, HACCP, Liberty Mutual, State of Alaska FSS, American Society Quality
S	Mobile Heavy Equipment Repair	Apprenticeship	NCCER, MAVCC, Liberty Mutual,
S	Office Manager	Personnel management	
S	Quality Control Manager	Management	
S/A	Electricians		
S/A	Millwrights		
S/A	Specialty Welders		

Type Codes:

CDQ = CDQ Group
ENV = Environmental or Regulatory Agency
F = Fisheries
F/A = Fisheries Association
H = Hatchery
M = Maritime
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External Training of Existing Workforce

DOES YOUR COMPANY/ORGANIZATION REGULARLY SEND EXISTING EMPLOYEES TO AN EDUCATION OR TRAINING PROGRAM (INCLUDING AN ONLINE PROGRAM) EITHER IN ALASKA OR ELSEWHERE?

Type	Name of position trained	Name of program or organization providing the training	Location of program or organization	Degree, credential or certification (if applicable)	Approx. # employees sent per year
M	Able seamen			Fast rescue boat	10
M	Able seamen		80% KTN	Ratings	10
M	ALL	NOAA/NMFS	Seattle	HACCP	2
M	ALL	NPFVOA	Seattle	Fire training	8
M	ALL	NPFVOA	Seattle	Immersion suit pool training	12
M	ALL	NPFVOA	Seattle	Medical	12
M	All Crew Positions	CPR/FA Tongass Substance Screening	Ketchikan	CPR/FA Card	20
H	All employees	Red Cross or AK EMS	Kodiak	ETT or First Aid/CPR	15
H	All Employees	UA	Kodiak	N/A continuing ed	2
M	All Vessel Crew Positions	Red Cross	Various	CPR & First Aid	100
ENV	Biometrician	American Fisheries Society			2
ENV	Biometrician	American Statistical Association			1
S	Boiler Technician	Cleaver Brooks	Fresno, CA	Boiler fundamentals	1
S	Community Liaisons	BBEDC	Dillingham or Naknek	N/A	17
S	Crane Operator	Overton \?	Aloha, OR\ Yakima, WA	OSHA Crane Operation	1
H	Culturist	UAS	Online or Sitka		2
H	Culturist/ Biologist	UA	Anchorage	N/A	2
M	Customer Service Crew	State Contractor	Various	TAM qualification	100
F	Deckhand	Alaska Marine Safety Education Association	Sitka	First aid, Marine safety	1
M	Fire fighting	NPFVOA	Seattle	Certificate	12

Continued on next page

H	Fish culturist and technician	UAS Fisheries Technology Program	Sitka or online		3
M	Marine surveyor	ABYC STANDARDS	ABYC various	Certificate	1
S	Mechanical Repair/ Refrigeration				6
M	Medical emergency	NPFVOA	Seattle	Certificate	12
S	Microbiology Quality Control Technician	NCCER, Liberty Mutual, ASQ, HACCP			5
S	Mobile Heavy Equipment Repair	NCCER, Liberty Mutual, MAVVC, Class A CDL			5
M	Passenger Service	AK Food Handlers	Internet based	Food Worker Card	15
M	Passenger Service	TAP	Ketchikan	TAP Card	10
CDQ	Plant Engineer	Garden City Ammonia	Kansas	Ammonia Cert	1
CDQ	Plant Engineer	American Trainco inc	Anchorage	HVAC Cert	1
CDQ	Plant Manager	MAP Seagrant	Anchorage	ASPLI	2
CDQ	Plant Manager	Two-day seminars	Anchorage		5
S	Salmon Cook	Better Process School	Burien, WA	Container Closure Technician, Low Acid Processing	2
M	Steward	UAS, AVTEC	KTN, Seward	Proficiency	35
ENV	Supervisors	Mandatory safety training	Various	Certification	1
ENV	Supervisors	Supervisory training	Various Vendors	Mandatory NOAA Training	2
M	Survival at sea	NPFVOA	Seattle	Certificate	12
S	Technician	Multi Vac	Kansas City, MO	Basic Machine Operations	1
M	Tugboat / Pilotboat master	Crawford Maritime	Vancouver, WA	License upgrades	2
M	Tugboat mate	Columbia Maritime	Seattle, WA	Towing lic. upgrade	2
M	Unlicensed deck and engineering	UAS, AVTEC	KTN, Seward	Advanced fire	20

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Regional Employment and Training Needs

DOES YOUR BUSINESS/ORGANIZATION HAVE SPECIAL EMPLOYMENT OR TRAINING NEEDS IN PARTICULAR REGIONS OR COMMUNITIES IN ALASKA?

Type	Location	Special Employment Need
CDQ	Aleutian/Pribilof Region	Community development
CDQ	Western Alaska	Biology and general field technician skills
F	Wrangell	Vessel repair, Diesel mechanic, Electrician
F/A	Cook Inlet	Fish picking, net hanging and mending, outboard motor repair, knot tying, welding
F/A	Kodiak Island	Certification programs on trawl gear design and repair. Certification programs on refrigeration operation and maintenance. Certification programs on marine electronics, new generation of communication equipment, hydro-acoustic fish finders, fisheries and oceanographic data collection
F/A	South Central	Continued Education in commercial fishing fields
H	Kodiak	Fisheries Research Techniques; Basic and Advanced Fisheries Biology (salmon), Fish Culture techniques, Worker Safety, first aid/emergency medical training; Welding
H	Nanwalek, Port Graham	Fisheries Technicians and Hatchery Operations
H	Rural Southeast Alaska	Small hydropower operation, maintenance and repair
M	All maritime (including interior) region	Willingness to travel
M	Ketchikan	Customer Service in Seasonal Visitor Industry
M	Sitka, Alaska - Allen marine Shipyard	Qualified aluminum welders, Mechanics and Marine Electricians
M	SE Alaska / Ketchikan	Trained and licensed Mariners

Continued on next page

M	Statewide	Entry-level construction and employability skills (NCCER LEVEL 1 - 2
M	Unalaska/Dutch Harbor	HAZWOPPER, confined space, shipyard competent person training
M/A	Glacier Bay and Tracy Arm	Ice maneuvering
S	Bristol Bay	Refrigeration engineers, Diesel Mechanics, Welders, fiberglass workers
S	Floating processors	Finding skilled and non-killed workers willing to work in remote areas of Alaska
S	Naknek, Ketchikan	Refrigeration, Electrician, Millwright
S	Southeast	Smokehouse, retort, canning, packaging, shipping, filleting

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Priorities for Future Workforce Development

HOW IMPORTANT ARE EACH OF THE FOLLOWING TRENDS TO YOUR WORKFORCE NEEDS OVER THE NEXT TEN YEARS:

Workforce trend or training need	Very important	Important	Somewhat important	Not at all important
Need for additional skilled machinery operators	21%	29%	23%	23%
Training workers to use new types of technology (other than machinery)	19	38	25	13
Training to meet safety standards	44	37	12	4
Need for additional installation/repair/maintenance technicians	35	25	19	17
Need for more business and financial personnel	6	25	37	29
Cross-training workers (i.e., train workers to fill multiple positions)	31	40	21	4
Training employees for positions in foreign countries	2	2	8	85
Training in writing, public speaking or communication in the workplace	17	33	35	12
Training in quantitative skills	15	37	31	13
Training in the regulatory process	21	44	23	8
Training in environmental science	21	23	31	21
Other	21	29	23	23

"Other" responses, above, include vessel operation; fishing vessel repair and maintenance; seafood quality, safety and product development; advanced manufacturing production processes; USCG maritime requirements; packaging; and motivated workers.

WHAT TYPES OF TRAINING THAT YOU EITHER NEED NOW OR EXPECT TO NEED IN THE NEXT TEN YEARS ARE HARDEST TO FIND OR IN SHORT SUPPLY?

Type	Training Needed
CDQ	Ammonia training (not available in state), Quality Assurance, fisheries management, production management
CDQ	Technical training for skilled trades such as Refrigeration Technicians, Engineers, Welders, electricians, etc.
ENV	Writing and speaking training for employees for whom English is not the first language
ENV	Fish habitat protection
ENV	Most of the training we need at NOAA Fisheries is readily available through academic or private entities or internally through NOAA
F	Mechanics, fiberglass, electrician (all marine related)
F	Qualified deckhand training
F	EPA regulatory compliance training
F/A	Safety training. Fishing skills training
F/A	1. Applied engineering skills, i.e. electrical, mechanical, electronics, hydraulics and refrigeration 2. Vessel operations, management, state and federal regulatory compliance and policy, critical thinking and problem solving 3. Basic seamanship skills, gear repair and construction, fundamental life and social skills
F/A	Support services for commercial vessels; skills with electronics
F/A	Shore-based technical support
H	Hatchery technicians
H	Data management, biometrics, fishery management
H	Middle management
M	USPAP Appraisal Training. ABYC Standards
M	Employees that hold certifications that are recognized by OSHA and DEC, etc.
M	USCG Certified and or Licensed mariners who are good teachers/instructors
M	Class A truck drivers 100 ton master with towing
M	advanced training for tradesmen and engineering types
M	Customer Service/Personnel/Business/Marketing
M	Training seems to be readily available if you know where to look
M	Advanced manufacturing production processes based on knowledge of key tasks in ship production processes (industry standards)
M	Trained and licensed mariners
M	Regulatory training - OSHA and USCG requirements
M	HVAC Training, CDL, Heavy Equipment Operator

Continued on next page

M	Credentialed Mariners
M	Training to meet everyday needs
M	Technical training in specialty areas
M/A	Cost effective simulation
S	HACCP trained workers, high school graduates, people detailed oriented
S	*Seafood processing sector:* quality control technicians (seafood safety & seafood quality issues, including biological/chemical/other contamination and general quality, etc.); regulatory compliance as it applies to domestic and export markets; product development personnel to meet the needs of domestic and export consumer demand in retail and foodservice; food utilization technicians to assist with extracting maximum product and value from the entire raw product; trade persons (Electricians, Plumbers, Mechanics, Refrigeration specialists, Welders, etc.); individuals with other skills (Personnel Managerial, Manufacturing Management, Human Resources, Accounting, etc.). *Harvesting sector:* individuals trained in: seamanship; vessel operation, handling & navigation; general vessel maintenance; general ship mechanics (electrical work, plumbing, engine mechanics, refrigeration, fabrication, etc.); on board quality assurance
S	Technical-maintenance, etc. Regulatory familiarity and compliance production supervision and management for more advanced processes
S	Millwright, Electrical Engineer, Robotics Engineering
S	Refrigeration
S	Business analysts that understand the seafood industry. Environmental scientists that understand how our industry affects the environment around us and can work with government agencies to make sure we are in compliance with environmental laws.

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IF YOUR ORGANIZATION OR BUSINESS HAS RECOGNIZED CAREER PATHWAYS (ESTABLISHED WAYS FOR EMPLOYEES TO ADVANCE FROM JOB TO JOB WITHIN THE ORGANIZATION), PLEASE DESCRIBE THEM BRIEFLY.

Type	Typical Career Pathways
CDQ	Our seafood company recognizes hard working individuals and has promoted them through the years up to the position of plant manager and plant engineer. This is done by time in the positions and training requirements in either management or certifications for HVAC
CDQ	Processors to plant managers, deck hands to skippers, etc.
ENV	Biometrician I, Biometrician II, Biometrician III, Fishery Scientist I, Fishery Scientist II
ENV	NOAA offers an Advanced Studies Program, an Undergraduate Studies Program, a Leadership Competencies Development Program, and Aspiring Leaders Program. We have had from 10-20 employees go through the Advanced Studies or Undergraduate Studies programs at the University of Alaska. NOAA funds these students tuition
F/A	Improving on skills and take command
H	Not clearly defined
H	Pathway is available based on demonstrated abilities, performance, and drive
H	Employees can start in temporary Hatchery Technician positions assisting with fish feeding, cleaning, egg-takes and similar basic tasks. Those who demonstrate interest, dedication, competence and ability to communicate and interact well with other employees are usually offered permanent fish culture positions. The best of these, i.e. those that demonstrate ability to learn and execute a wide variety of specific hatchery skills and, most importantly, the ability to thrive socially in a small, remote work location, will be promoted to positions of increased authority and responsibility
M	Work toward full accreditation in the Society of Accredited Marine Surveyors
M	Vessel experience, USCG certification/licensing, teaching and organization leadership
M	We ask our employees where they want to go with their career and encourage them in that direction within our company as they show their ability and willingness to learn
M	We have a set of skill standards and a model training plan developed for the shipbuilding and repair industry by skilled workers
M	Deckhands with the necessary skills are given the opportunity to become vessel operators. In order to advance they must continue to upgrade their license and USCG requirements as well as show maritime abilities for competent operation of the vessel
M	Seasonal vessel captains are occasionally promoted to full-time operations managers. Seasonal deckhands are occasionally promoted to work full-time in the shipyard (as mechanics and engineers). Customer service crew are occasionally promoted to be naturalists or to shore support.
M	Greenhorn, full-share deckhand, engineer, captain
M	[See DOLWD career lattice] Positions are defined by USCG or AMHS regs.
S	Cross training. Suggesting one continues with their education
S	Yes we emulate the 16 Federal Career Clusters and have adapted them to our Company and the Seafood Industry

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S	Many managers started as production line workers. Always room for advancement for employees who are willing to put in the time and who are able to learn new skills
S	We internally train our maintenance helpers on the equipment then as people get promoted or leave the company they are promoted into the next job level
S	Almost every employee at the plants has been a processor. All of the supervisors, maintenance, auto shop, galley, dock workers, office, security, and all the way up to the production managers and also the plant managers. As positions open up each season, they are posted, and the selection begins.

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DO YOU HAVE ANY OTHER SUGGESTIONS FOR NEW OR EXPANDED TYPES OF TRAINING OR EDUCATION TO SUPPORT THE FISHERIES SEAFOOD MARITIME WORKFORCE NOW OR IN THE FUTURE?

Type	Other Suggestions for New or Expanded Training or Education
CDQ	Fisheries-specific management training, including regulatory training, logistics/processing plant management, accounting and human resources
ENV	Marketing Alaska wild salmon and their habitat as unique
ENV	Continue efforts to enhance and support the Undergraduate Fisheries Program (Rasmuson Foundation). Continue to work towards enhancing educational opportunities in Seafood Technology, Marketing, and Business fields
F	Alter the training programs available through the state/federal governments to allow for individuals to receive training for a specialized skill (e.g. diesel mechanic) and then go to work for themselves. In rural Alaska, many times an individual is his own business, yet most training programs won't allow people to enter unless they intend to work for another company after the training
F	There needs to be a highly specialized small-boat-operator course
F	Basic fisheries training - especially net hanging, net repair clinics
F/A	USCG safety regs are going to impose a huge burden on the fishing fleet in the coming years. We could use increased commercial fishing training. We could use more Mechanics, Refrigeration techs, Electricians, Machinists, and Welders
F/A	Certain areas of specialized applied fisheries science (other than classic fisheries and marine science) are becoming more important, but currently are not large enough to support an Alaska-based academic program. Mandated by-catch reduction, marine mammal avoidance, commercial fishing gear selectivity, gear design, etc. are becoming more important to the industry. Currently, vessel captains and crew have to travel to Denmark, Newfoundland, or Maryland to participate in workshops that address these issues. There may be potential for visiting professionals, researchers or professors to present seminars and workshops in these or similar topics. Timing and accessibility are always issues with programs like this
F/A	Training in support services-fiberglass repair; shipyard operation; welding; fabrication; shipwright, machining
H	As much online certificates, degrees, and workshops in the aquaculture, biometrics, data management areas
M	More training on the new USCG F/V regulations; and also the new towing industry regulations.
M	We suggest the University looks into emerging fisheries marketing new kinds of harvestable fish and shell fish that can be flown or moved by marine transport to foreign markets. Including farming of the shellfish. While we are not in the fishing industry directly, we serve the fishing fleet and do charter work for government, public and private industry in the areas of filming and research
M	Curriculum development

Continued on next page

M	A big problem for employers is rapid turnover; long time employees are our biggest asset. The main reason for turnover is character issues and poor attitude. This problem has a root in our countries social ills but I believe training in this area would help a lot of them
M	Adopt a common curriculum for the educational and training providers for construction related work and a strong employability sequence for entry level skill (through the equivalent of a 2 year degree, then support work place learning with supervisory training to include coaching and mentoring for subject matter experts (Training Within Industry)
M	The University of Alaska should support full funding for the Associate of Applied Science degree program in Maritime Transportation for UAS. A proven need
M	Most of our applicants cannot pass a drug test. Some type of drug and alcohol training
M	3-5 day USCG approved medical class (care provider - e.g., emergency trauma technician. An associate degree in deck or engineering duties that is USCG approved and receives credit for seagoing time to meet requirements
S	HACCP certification locally or at least a one-day program in Sanitary procedures. Numerous other Seafood businesses in the area would also be interested in this. Currently to have people certified we have to send out of town for training
S	The Post Secondary system offer RTI/short courses that support and work with the apprenticeship and training programs/systems of companies in the Seafood Industry
S	There is an ongoing need and domestic shortage of processor-level seasonal workers. I recommend targeting skilled trades (refrigeration, electrical, boilers/generators, line maintenance, welding, fabrication, production machinery maintenance
S	I recommend a vocational tech class specializing in refrigeration, but the class would need to be completed in a reasonable amount of time. Classes related to the fishing industry and what legal constraints surround this specific business
S	Training our existing workforce outside of the facilities is difficult as our permanent (non-seasonal) employees are needed at the plant every day with a few exceptions. But what can be promoted away from the plant would be the knowledge that Seafood Processing is not a dead end job. Almost all of our positions are filled with our own employees. Senior employees provide on the job training. We promote from within. Even though these are seasonal jobs, they provide employment from 9 to 10 months a year and the opportunity to earn and save a good amount of money

Type Codes:

CDQ =	CDQ Group
ENV =	Environmental or Regulatory Agency
F =	Fisheries
F/A =	Fisheries Association
H =	Hatchery
M =	Maritime
M/A =	Maritime Association
S =	Seafood

Appendix 3: Interviews with FSM Sector Participants

Interviews were conducted with 25 individuals from various segments of the FSM sector. Interviewees represented the following organizations:

- Alaska Department of Fish and Game (ADF&G)
- Alaska Longline Fishermen's Association
- Alaska Marine Highway System (AMHS)
- Alaska Marine Safety Education Association (AMSEA)
- Alaska Vocational and Technical Education Center (AVTEC)
- At-Sea Processors Association
- Bristol Bay Economic Development Corporation (BBEDC)
- UA Bristol Bay Campus
- City of Petersburg Harbors
- Copper River Seafoods
- Kachemak Shellfish Growers
- Lynden Transport and Alaska Marine Lines
- Northwestern Alaska Career & Technical Center (NACTEC)
- Norton Sound Economic Development Corporation (NSEDC)
- Large Engineering Firm
- Port of Anchorage
- Port of Dutch Harbor
- Port of Kodiak
- Southwest Alaska Vocational Education Center (SAVEC)
- United Fishermen of Alaska
- UAS Ketchikan Campus

Because the FSM sector and the above organizations represent heterogeneous activities, it was not feasible to standardize interview questions or easily categorize responses. Interviews were designed to probe subjects' particular area of expertise for insights into training needs and the potential role of the university. Themes that emerged include the following:

Workforce Development Goals

- *A UA FSM workforce development program should work, in part, to raise the profile of FSM occupations. Make people aware of opportunities.*
- *Be aware of, and realistic about, the number of positions available for graduates of upper level training programs. Some segments of the FSM sector will never have large management contingents in Alaska.*
- *Trainees in rural areas often need connections with employers outside the region.*

Training Needs

- *Work readiness and drug/alcohol screening are important, especially to processors and other seasonal employers.*
- *Skills are needed at the management level, as well. Product development, marketing, QA, etc.*
- *Growing demand for icing/freezing technology.*
- *There may be unmet demand for 6-pack training. Too expensive for smaller training organizations.*
- *Port directors say vessel-support skills are hard to find, especially during the summer season, refrigeration, electronics, fiberglass, etc. A winter training program might provide some of these services to boat/permit owners during the off-season.*
- *Demand for safety-related training is significant and will increase with new USCG drill-instructor regulations.*
- *One reason for shortage of technical vessel support is that everyone needs them at once. Can training be used to extend availability of vessel services in places like Bristol Bay beyond the season?*
- *There is no particular shortage of highly trained technical crew such as licensed engineers and masters for larger transportation and catcher/processor vessels. However, those professionals need ongoing skills and refresher training.*
- *Training is needed in:*
    - *Fish quality and bleeding*
    - *Research on underutilized species*
    - *Marketing, both well known and less known species*
    - *Use of refrigeration, freezing, and slush technology*
    - *Impacts of environmental (climate) change*

In-house Training Strategies

- *Most firms do in-house training. Copper River Seafoods developed a federally recognized apprenticeship program that currently has 15 candidates enrolled in 3 different disciplines.*
- *The concept of apprenticeships is receiving growing attention, spurred in part by federal and state funding when available. Keep curriculum flexible and duration of apprenticeships as short as possible. Ability to earn a wage during training is important.*
- *Firms are focusing more on developing technical, supervisory and management capacity from within, in part because complex industries such as seafood harvesting and processing demand local knowledge and experience as well as training.*

Other Delivery Considerations

- *Distance delivery is necessary to reach many Alaska workers, but it must typically be coupled with hands-on training, which is considered critical for many positions.*
- *AVTEC enjoys strong name recognition and an excellent reputation among high school students and counselors. They have the strongest maritime training program in the state, as well as sophisticated*

equipment such as their ship and fire training simulators, and ongoing partnerships with the Pilots Association, cruise industry and US Coast Guard.

- *A role for UA would be to offer short courses of technical instruction that support other programs, for example apprenticeships.*
- *Training needs to be accessible, affordable and credible, typically with a significant hands-on component.*
- *Young fishermen need training in new technologies partly to make themselves bankable – to get financing.*

Appendix 4: Overview of Education and Training Needs by FSM Subsector

This appendix combines information from the Forum, survey and interview research with DOLWD data to profile education and training needs in major FSM subsectors.

Commercial Fishing

Commercial fishing is one of Alaska's largest sectors, employing more than 30,000 people per year. Businesses range from a family with a few nets and a skiff to factory trawlers worth millions of dollars and employing more than 100 workers. In 2010, commercial fishermen of all kinds grossed an estimated $1.7 billion. However, these are gross earnings and not wages or profits. Significant deductions must be made for fuel, gear, boat repairs, interest, food, taxes and other expenses.

Investment in upgrades on commercial fishing boats typically follows fish prices. The last four seasons have seen strong prices and concomitant investment in the fleet that, in turn, has increased demand for many marine services.

Types of Skills Needed

Nearly all commercial fishing jobs are "blue collar" jobs requiring a range of technical skills. Most white-collar jobs associated with the seafood industry in Alaska are in government, sales, or non-profit organizations.

Very little formal training is required to enter the industry, but mastering the techniques needed to succeed can take a lifetime. The Alaska Vocational Technical Center (AVTEC) offers some relevant courses, such as Able Seaman, Basic Safety Training, Masters programs (25/50/100+ tons), Introduction to Nautical Skills, Shipboard Emergency Medicine, and several others. The Marine Transportation Department at UAS Ketchikan offers a range of courses for mariners, including many designed to meet the needs of AMHS staff. Finally, UA Fairbanks is the home of UA's undergraduate and graduate Fisheries programs. Typically, UAF programs are tailored for individuals training to work as biologists, administrators, or researchers.

Although commercial fishing boats range from less than 20 feet to more than 300 feet, the majority of Alaska's commercial fishing vessels are small and employ anywhere from three to 20 people. Larger factory trawlers may employ 100 or more, but most positions are processing rather than fishing jobs.

Ideally, each crew has a range of skills that cover all eventualities on a voyage (in addition to fishing skills such as hauling gear or knowing where/when to set gear). The same applies to other vessels on extended voyages, for example long-haul tugs. Some of these skills could be gained through vocational courses, including:

- Hydraulic Operation and Repair
- Marine Engine Repair

- Basic Navigation
- Marine Electronics Troubleshooting and Repair
- Onboard Refrigeration Repair
- Welding and Metal Fabrication
- Fiberglass Repair/Fabrication
- Gear Repair (Mending Nets or Tying New Lines/Leaders)

Skippers interviewed for this report indicated a need for skilled mechanics, refrigeration technicians, welder, shipwright/fiberglass, and marine electricians. A few respondents said they have trouble finding employees willing to work long, hard hours, but most responses indicated a lack of technical shoreside services.

Detailed occupational data on the commercial fishing industry is not available. Most commercial fishing operations are exempt from unemployment insurance levies. As a result, employment statistics similar to other wage and salary jobs are not available. License data shows how many permit holders (skippers) and crew participated in the industry during a given year. No government data is kept on how many first mates, hydraulic experts, or other specialists the industry requires, however.

New US Coast Guard requirements for safety drill instructors will affect fishermen and other who work outside the 3-mile limit. Unless it becomes a Coast Guard requirement, more general training aimed at qualifying people as "commercial fishermen/women" would likely take time to generate interest because the industry is so diverse, so remote, and has such a history of on-the-job learning. However, greater access to resource materials covering basic skills and how to address common problems might be helpful. Input from skippers in a range of fisheries, as well as from the US Coast Guard, would be important in designing such resources. The Coast Guard keeps incident reports that could provide clues to the type of reference materials that might be most useful.

Dive Fisheries

There are approximately 180 divers participating in the sea urchin and geoduck fisheries in Alaska. Southeast Alaska has three sea urchin plants, and the dive fisheries in that region are worth approximately $9 million annually.

Seafood Processing

Seafood processing is Alaska's second largest FSM industry, employing more than 22,000 workers. Most seafood processing workers are not year-round residents (in 2010 resident workers made up 27 percent of the industry workforce). This is because many of Alaska's busiest processing plants are located in remote areas (for example, Akutan, Unalaska, and Excursion Inlet) or are highly seasonal (Petersburg and Bristol Bay). In these areas and situations, the local workforce is too small to fill several hundred jobs on a short-term basis.

TYPES OF SKILLS NEEDED

Every seafood plant in Alaska requires a unique collection of skills to function profitably. Most positions are low wage jobs requiring little training, but each plant contains several positions that require advanced skills/experience and pay substantial wages. Plant managers typically earn more than $100,000 per year, while fleet managers can earn $30,000 to $60,000 for a season. Talented maintenance staff are paid well and required almost year round, even in seasonal plants. In addition, there are sales staff, accounting staff, and other white-collar positions that may be located at the plant or in a separate location.

Seafood processors surveyed for this report reported the following labor challenges:

- Finding enough hard-working employees to staff production lines
- Building greater awareness of opportunity within the Industry
- Finding skilled trade-workers (to maintain equipment/facilities and coordinate plant upgrades)
- Hiring trained quality control technicians and environmental officers
- Developing effective plant managers (who want to live in rural areas)

PRODUCTION LINE WORKERS AND AWARENESS OF OPPORTUNITY IN INDUSTRY

Forum feedback and industry surveys suggest staffing general line positions is the primary labor issue for most seafood processors. Uncertainty about the J-1 visa program has created additional concern about labor for the 2012 season. The J-1 visa program typically supplies several thousand workers for various Alaska industries, particularly the seafood processing industry during the summer months.

Work on the "slime line" can be tedious and exhausting, but it can also be a stepping-stone to more skilled positions within a plant or company. Although many of today's managers started in entry-level positions, however, there is no clear ladder for advancement in most processing firms.

TRADE WORKERS (REFRIGERATION, ELECTRICAL, PRODUCTION EQUIPMENT)

Another big challenge for processors is finding skilled engineers who can fix refrigeration units, line equipment, and maintain other plant equipment/facilities. A few processors and a marine shipper said finding engineers or general maintenance workers with ammonia certification and the ability to fix onshore or offshore refrigeration units is especially difficult.

Alaska's seafood industry has seen a great increase in refrigeration/freezing capacity during the past 10 years. In 2003, more than 50 percent of all commercially harvested Alaska salmon was canned. In 2011, only 20 percent of the salmon pack was sold in cans, the rest was delivered to fresh and frozen markets. In addition to plants adding more frozen capacity, a large percentage of the fleet now features Refrigerated Sea Water (RSW) systems that require specialized techni8cal skills.

Maintenance and repair of RSW and refrigeration systems is a big part of most plant engineers' jobs. Given the increase in refrigeration capacity, these skills are in high demand. The Alaska Marine Advisory Program

has addressed the situation by offering one-day workshops for fishermen so they can troubleshoot simple problems and have the background to communicate with a repair technician in order to fix a problem on the water. However, there are no programs available in Alaska to train people in the complex refrigeration systems being installed in Alaska's seafood plants.

Quality Control Technicians, Food Regulation Experts, and Efficiency Auditors

Quality control (QC) technicians make sure processing plants comply with food safety and other regulations as well as meeting customer specifications. The latter can require knowledge of food science, especially as products become more complex. QC techs also audit production efficiency and many are responsible for monitoring plant discharge and overall worker safety.

The skill set needed to be an effective quality control technician is highly specific to the seafood industry. HACCP (basic food safety) training is common, but not ubiquitous, and no training program covers all the areas a QC technician might encounter.

Plant Managers

Several survey respondents said they have difficulties finding effective plant managers to live in rural Alaska. Plant managers are difficult to find because the position requires a combination of extensive plant experience and organizational, inter-personal, and business skills. Partly for this reason, some survey respondents expressed interest in the idea of a business-school curriculum tied to the seafood industry.

Employment and Education/Experience Requirements

Occupational data was matched with DOLWD data on job qualifications to produce a profile of processing jobs by education level and experience level. Roughly four percent of seafood processing workers worked in jobs requiring education beyond high school in 2010.

Employment in Alaska Seafood Processing and Marketing Industry, 2010

	Number of Workers	Pct. Resident	Average Quarterly Wage	Average Age
By Education				
High School or Less (or N/A)	21,497	25%	5,896	40
Associates Degree or Post-Secondary Award	527	65	7,921	32
Bachelor's Degree or Higher	388	35	$20,053	44
By Experience				
Less than 1 year (or N/A)	21,714	25	$6,035	40
1 to 5 years	661	59	10,100	37
More than 5 years	37	76	27,189	48

Note: Data on age applies to Alaska residents only.
Source: DOLWD.

Water Transportation

Roughly 5,000 workers are employed ferrying goods, raw materials, and people to, from or within Alaska. The majority of these workers are residents and work for companies with significant operations in Alaska. The average private sector water transportation wage was $11,217 per quarter in 2010. Those employed moving freight tended to earn higher incomes.

Cruise line employees are not included in these data. Cruise lines employ an estimated 21,697 crewmembers. This estimate is based on data from the Juneau Convention and Visitor's Bureau showing crew capacity for ships visiting Juneau in 2010.[1] Cruise line employees are not included in data shown below because they are not covered under Alaska's unemployment insurance program. These crewmembers are composed almost entirely of foreign nationals or US residents from other states and have little connection to the Alaska ports they visit (aside from shopping there along with the tourists they transport).

[1] All major cruise ships coming to Alaska typically make at least one stop in Juneau, which make this total an acceptable proxy for statewide cruise line crew employment.

Employment in Alaska Water Transportation Industry by Education and Sub-Sector - 2010

	Number of Workers	Pct. Resident	Average Quarterly Wage	Average Age
By Education (Private Sector Only)				
High School or Less (or N/A)	3,306	64%	9,621	46
Associates Degree or Higher	750	53	17,821	38
Private Sector Total	**4,056**	**62**	**11,217**	**39**
By Sub-Sector (includes AMHS)				
Freight	1,895	70	15,156	42
Passenger/Sightseeing	1,816	50	6,042	35
Alaska Marine Highway System	935	*N/A*	*N/A*	*N/A*
Other	347	80	12,893	40
Cruise Lines	*21,697*	*N/A*	*N/A*	*N/A*
Total	**26,688**	-	-	-

Note: Data on age applies to Alaska residents only, as data is not available for nonresident workers. Employment by major cruise lines generally not included in these data because they operate primarily in international waters and the bulk of their employees are not covered under Alaska's unemployment insurance system.

Source: DOLWD, JCVB, and OMB.

Slightly less than half of the private sector water transport industry workforce is employed in general operating positions that require relatively little training or education. These positions include a wide range of jobs, such as: clerks, cashiers, material movers, housekeepers/cleaners, labors, and porters.

A large percentage of workers are employed as captains, mates, sailors, or marine oilers. About 1 in 15 workers in private sector water transport is employed as a manager and a similar number are employed as maintenance workers.

Private Sector Employment in Alaska Water Transportation Industry by Occupation

	Number of Workers
General Labor/Operations	1,887
Sailors/Oilers/Navigation	1,120
Management	272
Maintenance	248
Operating Engineers and Truck Drivers	235
Cooking	172
Administrative	81
Specific Pipeline Operations	27
Other	14

Note: Does not include employees of major cruise lines or government employees associated with the Alaska Marine Highway System.
Source: DOLWD.

Survey Responses

Several companies working in the freight, salvage, and scenic sightseeing industries were interviewed for this report. They said the hardest positions to fill were for USCG-licensed and experienced mariners, knowledgeable guides/naturalists, and skilled trade workers. Seasonality and ability to pass drug tests were also noted as challenges.

Boat Building and Repair

Companies that build, repair, or sell boats employed nearly 700 people in Alaska during 2010, not including self-employed workers. Workers earned an average of $9,868 per quarter and slightly more than 75 percent were Alaska residents.

An executive interviewed for this project expressed difficulty finding top-level project managers with knowledge of advanced manufacturing processes and supervisory/leadership skills. Hiring journeyman-level trade workers with substantial experience in key subject matters is also challenging. This executive suggested a common curriculum be adopted for educational and training programs related to vessel construction. He stressed three elements: 1) a strong employability sequence from entry level (through the equivalent of a two year degree), 2) work place learning with supervisory training as employees progress, and 3) mentoring by subject-matter experts to ensure institutional knowledge is passed on.

Similar to other production-oriented segments of the FSM sector, vocational training most needed is for refrigeration, marine construction techniques, DC electrical systems, marine boilers, diesel engines, stainless/fiberglass fabrication, and processing equipment.

Salmon Hatcheries

Most salmon hatcheries in Alaska were established by the Alaska Department of Fish and Game in the 1970s and 1980s. Today, most hatcheries are run by private, non-profit companies or regional aquaculture associations. Operations are generally paid for through cost-recovery harvesting (when hatcheries contract local fishermen to catch and sell their fish) and enhancement taxes paid by fishermen. The State occasionally contributes funding for capital projects.

Alaska's private salmon hatchery industry employed 456 workers in 2010. Including state and federal employees working at salmon hatcheries, the total figure is probably close to 500. These employees collect broodstock, hatch more than 1 billion fry, and release them into the wild according to regional salmon plans.

Four salmon hatchery operators were surveyed for this report. Those surveyed expressed difficulty filling positions from entry level through upper management. Skills noted as scare include: aquaculture/fishery research techniques, scientific report writing, project management skills, budget management, supervisory skill, and a basic understanding of Alaska and the commercial fishing industry. One hatchery operator suggested online certificates, courses, or workshops covering general aquaculture methods, biometrics, and data management.

Shellfish Mariculture

Shellfish mariculture, primarily oysters and mussels, is a small industry in Alaska, but one with potential for growth. Most farms are in Kachemak Bay or Southeast. Because world markets for these products are very large, and mariculture typically occurs in remote locations, the industry has been identified as having important community development potential if it can develop to a more efficient scale of operations.

Currently there are approximately 75 licensed shellfish farms in Alaska. Half are productive and employ a total of roughly 125 people. Kachemak Shellfish Growers Cooperative is exploring the possibility of an apprenticeship program. There are no regularly scheduled courses in shellfish biology in Alaska. UAS Ketchikan has arranged for visiting lecturers in the past. Other key employee skills include those associated with working in small boats.

Marine Engineering and Surveying

Unlike aquaculture or seafood processing, there is no NAICS code that specifically delineates marine engineering or marine surveying firms. In an effort to quantify Alaska's marine engineering and surveying sector, the study team asked DOLWD to isolate a group of companies known to provide these services.

These firms employed 156 workers in 2010. They typically contract for design and construction management on marine or harbor/port construction projects but may work on other construction projects as well. Some firms also perform marine vessel surveys. As a group, these workers tend to require advanced degrees and earn relatively high wages.

One surveying firm was interviewed for this report. They noted difficulties filling positions for marine surveyors, which require knowledge of USCG regulations, American Boat and Yacht Council (ABYC) standards, and National Fire Protection Association (NFPA) standards.

An executive from an engineering firm known for design and construction of marine facilities urged UA to consider more course content related to coastal engineering, including areas such as harbor utilities design, marine geotechnical engineering, offshore foundation piles, heavy timber design, and hydrographic surveying. The representative also said there is a need for affordable training in certified welding and welding inspections.

State and Federal Government

The State of Alaska (ADF&G and AMHS), USCG, and NOAA employ a total of roughly 6,600 workers in Alaska's FSM sector. Gathering occupational data on these government workers is challenging because state workers are not identified by agency within DOLWD data, and federal employees are not included in the State's occupational database (because they are not covered under Alaska's unemployment insurance system). Instead, the study team used budget reports and communicated with various federal departments to estimate employment in agencies known to support the FSM sector.

Federal and State Employment in Agencies Related to Alaska Maritime Industries

	Number of Workers
US Coast Guard in Alaska	3,010
Alaska Department of Fish and Game	1,743
Alaska Marine Highway System	935
National Oceanic and Atmospheric Administration	888
State and Federal Government Total	**6,576**

Source: OMB, NOAA, US Office of Personnel Management and American Forces News Service.

NOAA and ADF&G were surveyed for this report. The NOAA representative suggested the University continue efforts to enhance and support the Undergraduate Fisheries Program and work towards enhancing educational opportunities in seafood technology, marketing, and business fields (although the latter programs are not related to NOAA staff). ADF&G responses indicated that finding biometricians can be difficult because many applicants do not possess a strong combination of statistical skills, biological/ocean knowledge, and writing/speaking skills.

ADF&G has a much broader range of training needs, and UA may be well suited to meeting many of them. However, those needs have not been documented recently. The department's most recent comprehensive workforce development plan was published in 2008. It identifies cross-training and supervisory training as high priorities among employees. The report does not recommend specific kinds of technical training, but includes some suggestions offered by staff. These include training for:

- Seasonal field technicians in bear safety, first aid, boat handling etc.
- Programming languages
- Technical writing
- Leadership and management

The best way to pinpoint training needs and opportunities with ADF&G may be to work directly with department leadership to conduct a department-wide survey designed to identify the incidence and focus of past trainings and to estimate future needs for each division within the department.

Potential Training Needs Related to Arctic Marine Research

The Arctic Ocean and Alaska marine environment will be the subject of intensified research in coming years as a result of global warming. Climate change may also create commercial opportunities as receding ice sheets offer more efficient shipping routes or allow access to hydrocarbon deposits.

Alaska already plays a pivotal role in Arctic research/exploration. Endeavors. The University of Alaska-Fairbanks (UAF) International Arctic Research Center has a long history of collaborative Arctic research. In addition, the Arctic Research Consortium of the US (ARCUS) is based in Fairbanks and supports numerous ongoing Arctic research projects. One project is the Study of Environmental Arctic Change (SEARCH), which seeks to understand the nature, extent, and future system-scale developments in the Arctic and interpret those developments in the context of environmental changes occurring in other climates.

In order to carry out this massive research undertaking, a variety of tools and skills will be needed. One tool, the 261-foot research vessel R/V Sikuliaq is currently under construction in Wisconsin and is expected to begin collecting data in 2014. It will be able to break ice up to 2.5 feet thick and will be homeported in Seward at UAF's Seward Marine Center.

Future research missions will require collaboration across physical borders and disciplines. The Arctic environment will require skilled technical staff (to ensure instruments and communication equipment continue to function during a research mission) and academic staff to study data. Expanding or forecasting all

the positions and skills required as Arctic research evolves is beyond the scope of this report, but the University should confer with UAF, ARCUS, SEARCH, and other Arctic research groups to discuss training needs and learn from experiences associated with prior research projects.

Summary of FSM Employment by Size of Employer

FSM employment data was segregated by employer size to determine whether there are significant differences in wages, residency, or quarters worked. These data do not include self-employed individuals, rather only wage and salary workers covered under Alaska's unemployment insurance program.

In general, workers employed by larger companies work more quarters and make more money (except in the seafood processing industry where average wages were higher in smaller firms). Overall, smaller firms employed a higher percentage of residents. Remote processing plants are typically large-scale operations requiring many imported workers. This pushes the total nonresident hire percentage up. In the water-transport sector, smaller companies are likely involved in the visitor sightseeing or guiding industries, which require local knowledge.

Private Sector Employment by Employer Size - 2010

	Number of Workers	Pct. Resident	Avg. Wages/Worker	Avg. Number of Quarters Worked
Employers with more than 25 FTE employees				
Boat Building/Repair/Dealers	413	72%	$11,019	3.2
Salmon Hatcheries	384	61	8,252	3.0
Seafood Processing/Marketing	20,930	25	6,231	2.3
Selected Marine Engineering and Surveying	161	89	19,757	3.6
Water Transportation	2,735	64	12,116	3.2
Total	**24,623**	**31%**	**$7,351**	**2.5**
Employers with fewer than 25 FTE employees				
Boat Building/Repair/Dealers	280	82%	$8,111	3.1
Salmon Hatcheries	72	79	6,491	2.8
Seafood Processing/Marketing	1,482	44	6,616	1.9
Selected Marine Engineering and Surveying	22	55	10,725	2.9
Water Transportation	1,321	57	8,788	2.4
Total	**3,177**	**54%**	**$7,794**	**2.3**

Source: DOLWD.

Appendix 5: FSM Private Sector Workers and Education Requirements by Occupation Code

This table shows the number of workers (in 2010) in private-sector FSM occupations along with education and on-the-job training (OJT) requirements developed by DOLWD for each occupation.

Occ. Code	Occupational Title	Count of Workers	Education Required	OJT Required
111011	Chief Executives	34	Bachelors degree	None or N/A
111021	General and Operations Managers	134	Associate degree	None or N/A
112011	Advertising and Promotions Managers	2	Bachelors degree	None or N/A
112021	Marketing Managers	6	Bachelors degree	None or N/A
112022	Sales Managers	14	Bachelors degree	None or N/A
113011	Administrative Services Managers	21	HS diploma or GED	None or N/A
113021	Computer and Information Systems Managers	3	Bachelors degree	None or N/A
113031	Financial Managers	8	Bachelors degree	None or N/A
113051	Industrial Production Managers	12	Bachelors degree	None or N/A
113061	Purchasing Managers	4	Bachelors degree	None or N/A
113071	Transportation, Storage, and Distribution Managers	7	HS diploma or GED	None or N/A
113121	Human Resources Managers	6	Bachelors degree	None or N/A
119013	Farmers, Ranchers, and Other Agricultural Managers	14	HS diploma or GED	None or N/A
119041	Engineering Managers	21	Bachelors degree	None or N/A
119051	Food Service Managers	4	HS diploma or GED	None or N/A
119081	Lodging Managers	5	HS diploma or GED	None or N/A
119121	Natural Sciences Managers	1	Bachelors degree	None or N/A
119199	Managers, All Other	48	HS diploma or GED	None or N/A
131022	Wholesale and Retail Buyers, Except Farm Products	3	HS diploma or GED	Long-term
131023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	22	HS diploma or GED	Long-term
131041	Compliance Officers, Except Agriculture, Construction, Health and Safety, and Transportation	49	Bachelors degree	Moderate-term
131071	Employment, Recruitment, and Placement Specialists	4	Bachelors degree	None or N/A
131075	Labor Relations Specialists	1	Bachelors degree	None or N/A
131081	Logisticians	4	Bachelors degree	None or N/A
131121	Meeting and Convention Planners	1	Bachelors degree	None or N/A
131199	Business Operations Specialists, All Other	9	HS diploma or GED	Long-term

132011	Accountants and Auditors	22	Bachelors degree	None or N/A
132082	Tax Preparers	1	HS diploma or GED	Moderate-term
151121	Computer Systems Analysts	2	Bachelors degree	None or N/A
151131	Computer Programmers	1	Bachelors degree	None or N/A
151142	Network and Computer Systems Administrators	1	Bachelors degree	None or N/A
151151	Computer User Support Specialists	1	Some college, no degree	Moderate-term
171021	Cartographers and Photogrammetrists	1	Bachelors degree	None or N/A
171022	Surveyors	2	Bachelors degree	None or N/A
172051	Civil Engineers	58	Bachelors degree	None or N/A
172071	Electrical Engineers	2	Bachelors degree	None or N/A
172081	Environmental Engineers	1	Bachelors degree	None or N/A
172121	Marine Engineers and Naval Architects	5	Bachelors degree	None or N/A
172141	Mechanical Engineers	83	Bachelors degree	None or N/A
172151	Mining and Geological Engineers, Including Mining Safety Engineers	1	Bachelors degree	None or N/A
172199	Engineers, All Other	14	Bachelors degree	None or N/A
173011	Architectural and Civil Drafters	17	Associate degree	None or N/A
173019	Drafters, All Other	2	Associate degree	None or N/A
173029	Engineering Technicians, Except Drafters, All Other	1	Associate degree	None or N/A
173031	Surveying and Mapping Technicians	2	HS diploma or GED	Moderate-term
191012	Food Scientists and Technologists	1	Bachelors degree	None or N/A
191021	Biochemists and Biophysicists	1	Doctoral or prof. degree	None or N/A
191023	Zoologists and Wildlife Biologists	9	Bachelors degree	None or N/A
191029	Biological Scientists, All Other	12	Doctoral or prof. degree	None or N/A
192031	Chemists	14	Bachelors degree	None or N/A
192041	Environmental Scientists and Specialists, Including Health	12	Bachelors degree	None or N/A
192042	Geoscientists, Except Hydrologists and Geographers	6	Bachelors degree	None or N/A
192043	Hydrologists	1	Master's degree	None or N/A
193051	Urban and Regional Planners	5	Master's degree	None or N/A
193091	Anthropologists and Archeologists	3	Master's degree	None or N/A
194011	Agricultural and Food Science Technicians	20	Associate degree	None or N/A
194021	Biological Technicians	1	Bachelors degree	None or N/A
194041	Geological and Petroleum Technicians	5	Associate degree	Moderate-term
194091	Environmental Science and Protection Technicians, Including Health	11	Associate degree	Moderate-term
194099	Life, Physical, and Social Science Technicians, All Other	76	Associate degree	Moderate-term
211019	Counselors, All Other	1	Master's degree	None or N/A

231011	Lawyers	1	Doctoral or prof. degree	None or N/A
251199	Postsecondary Teachers, All Other	1	Doctoral or prof. degree	None or N/A
252059	Special Education Teachers, All Other	1	Bachelors degree	Internship/Residency
253011	Adult Literacy, Remedial Education, and GED Teachers and Instructors	1	Bachelors degree	Internship/Residency
271012	Craft Artists	1	HS diploma or GED	Long-term
272099	Entertainers and Performers, Sports and Related Workers, All Other	6	HS diploma or GED	None or N/A
273012	Public Address System and Other Announcers	3	HS diploma or GED	Short-term
273042	Technical Writers	1	Bachelors degree	Short-term
274013	Radio Operators	1	HS diploma or GED	Short-term
291071	Physician Assistants	1	Master's degree	None or N/A
291141	Registered Nurses	1	Associate degree	None or N/A
299011	Occupational Health and Safety Specialists	2	Bachelors degree	Moderate-term
299012	Occupational Health and Safety Technicians	21	HS diploma or GED	Moderate-term
319099	Healthcare Support Workers, All Other	7	HS diploma or GED	Short-term
331099	First-Line Supervisors/Managers, Protective Service Workers, All Other	1	HS diploma or GED	None or N/A
333051	Police and Sheriff's Patrol Officers	1	HS diploma or GED	Moderate-term
339032	Security Guards	42	HS diploma or GED	Short-term
339099	Protective Service Workers, All Other	11	HS diploma or GED	Short-term
351011	Chefs and Head Cooks	49	HS diploma or GED	None or N/A
351012	First-Line Supervisors/Managers of Food Preparation and Serving Workers	11	HS diploma or GED	None or N/A
352012	Cooks, Institution and Cafeteria	139	Less than HS	Short-term
352014	Cooks, Restaurant	46	Less than HS	Moderate-term
352015	Cooks, Short Order	5	Less than HS	Short-term
352019	Cooks, All Other	67	Less than HS	Moderate-term
352021	Food Preparation Workers	92	Less than HS	Short-term
353011	Bartenders	25	Less than HS	Short-term
353021	Combined Food Preparation and Serving Workers, Including Fast Food	60	Less than HS	Short-term
353022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	8	Less than HS	Short-term
353031	Waiters and Waitresses	95	Less than HS	Short-term
353041	Food Servers, Nonrestaurant	1	Less than HS	Short-term
359011	Dining Room and Cafeteria Attendants and Bartender Helpers	21	Less than HS	Short-term
359021	Dishwashers	18	Less than HS	Short-term
359031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	28	Less than HS	None or N/A

359099	Food Preparation and Serving Related Workers, All Other	28	Less than HS	Short-term
371011	First-Line Supervisors/Managers of Housekeeping and Janitorial Workers	5	HS diploma or GED	None or N/A
371012	First-Line Supervisors/Managers of Landscaping, Lawn Service, and Groundskeeping Workers	1	HS diploma or GED	None or N/A
372011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	77	Less than HS	Short-term
372012	Maids and Housekeeping Cleaners	231	Less than HS	Short-term
372019	Building Cleaning Workers, All Other	17	HS diploma or GED	Short-term
372021	Pest Control Workers	1	HS diploma or GED	Moderate-term
373011	Landscaping and Groundskeeping Workers	8	Less than HS	Short-term
373019	Grounds Maintenance Workers, All Other	12	Less than HS	Short-term
393091	Amusement and Recreation Attendants	4	Less than HS	Short-term
396011	Baggage Porters and Bellhops	26	HS diploma or GED	Short-term
397011	Tour Guides and Escorts	110	HS diploma or GED	Moderate-term
397012	Travel Guides	20	HS diploma or GED	Moderate-term
399011	Child Care Workers	1	HS diploma or GED	Short-term
399032	Recreation Workers	23	Bachelors degree	None or N/A
399041	Residential Advisors	1	Some college, no degree	Short-term
399099	Personal Care and Service Workers, All Other	3	HS diploma or GED	Short-term
411011	First-Line Supervisors/Managers of Retail Sales Workers	17	HS diploma or GED	None or N/A
411012	First-Line Supervisors/Managers of Non-Retail Sales Workers	2	HS diploma or GED	None or N/A
412011	Cashiers	75	Less than HS	Short-term
412021	Counter and Rental Clerks	21	Less than HS	Short-term
412022	Parts Salespersons	21	Less than HS	Moderate-term
412031	Retail Salespersons	117	Less than HS	Short-term
413099	Sales Representatives, Services, All Other	34	HS diploma or GED	Short-term
414011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	2	Bachelors degree	Moderate-term
414012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	10	HS diploma or GED	Moderate-term
419091	Door-To-Door Sales Workers, News and Street Vendors, and Related Workers	2	HS diploma or GED	Short-term
419099	Sales and Related Workers, All Other	26	HS diploma or GED	Moderate-term
431011	First-Line Supervisors/Managers of Office and Administrative Support	63	HS diploma or GED	None or N/A

	Workers			
433011	Bill and Account Collectors	1	HS diploma or GED	Moderate-term
433021	Billing and Posting Clerks and Machine Operators	24	HS diploma or GED	Short-term
433031	Bookkeeping, Accounting, and Auditing Clerks	124	HS diploma or GED	Moderate-term
433051	Payroll and Timekeeping Clerks	27	HS diploma or GED	Moderate-term
433061	Procurement Clerks	13	HS diploma or GED	Moderate-term
433099	Financial Clerks, All Other	2	None or N/A	None or N/A
434051	Customer Service Representatives	70	HS diploma or GED	Short-term
434071	File Clerks	9	HS diploma or GED	Short-term
434081	Hotel, Motel, and Resort Desk Clerks	35	HS diploma or GED	Short-term
434161	Human Resources Assistants, Except Payroll and Timekeeping	9	HS diploma or GED	Short-term
434171	Receptionists and Information Clerks	34	HS diploma or GED	Short-term
434181	Reservation and Transportation Ticket Agents and Travel Clerks	39	HS diploma or GED	Short-term
434199	Information and Record Clerks, All Other	9	HS diploma or GED	Short-term
434199.03	Financial, Information and Record Clerks, All Other	4	None or N/A	None or N/A
434199.05	Material Recording, Scheduling, Dispatching and Distribution Clerks, All Other	1	None or N/A	None or N/A
435011	Cargo and Freight Agents	44	HS diploma or GED	Short-term
435021	Couriers and Messengers	19	HS diploma or GED	Short-term
435032	Dispatchers, Except Police, Fire, and Ambulance	51	HS diploma or GED	Moderate-term
435051	Postal Service Clerks	2	HS diploma or GED	Short-term
435061	Production, Planning, and Expediting Clerks	16	HS diploma or GED	Moderate-term
435071	Shipping, Receiving, and Traffic Clerks	33	HS diploma or GED	Short-term
435081	Stock Clerks and Order Fillers	62	Less than HS	Short-term
435111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	1	HS diploma or GED	Short-term
436011	Executive Secretaries and Administrative Assistants	32	HS diploma or GED	None or N/A
436014	Secretaries, Except Legal, Medical, and Executive	17	HS diploma or GED	Short-term
439011	Computer Operators	3	HS diploma or GED	Moderate-term
439021	Data Entry Keyers	3	HS diploma or GED	Moderate-term
439022	Word Processors and Typists	5	HS diploma or GED	Short-term
439051	Mail Clerks and Mail Machine Operators, Except Postal Service	2	HS diploma or GED	Short-term
439061	Office Clerks, General	334	HS diploma or GED	Short-term
439199	Office and Administrative Support	92	HS diploma or GED	Short-term

	Workers, All Other			
451011	First-Line Supervisors/Managers of Farming, Fishing, and Forestry Workers	100	HS diploma or GED	None or N/A
452011	Agricultural Inspectors	7	Bachelors degree	Moderate-term
452041	Graders and Sorters, Agricultural Products	96	Less than HS	Short-term
452093	Farmworkers, Farm and Ranch Animals	62	Less than HS	Short-term
452099	Agricultural Workers, All Other	167	Less than HS	Short-term
453011	Fishers and Related Fishing Workers	875	Less than HS	Moderate-term
471011	First-Line Supervisors/Managers of Construction Trades and Extraction Workers	5	HS diploma or GED	None or N/A
472031	Carpenters	49	HS diploma or GED	Apprenticeship
472051	Cement Masons and Concrete Finishers	1	Less than HS	Moderate-term
472061	Construction Laborers	145	Less than HS	Short-term
472073	Operating Engineers and Other Construction Equipment Operators	11	HS diploma or GED	Moderate-term
472111	Electricians	63	HS diploma or GED	Apprenticeship
472141	Painters, Construction and Maintenance	31	Less than HS	Moderate-term
472152	Plumbers, Pipefitters, and Steamfitters	5	HS diploma or GED	Apprenticeship
472211	Sheet Metal Workers	2	HS diploma or GED	Apprenticeship
472221	Structural Iron and Steel Workers	10	HS diploma or GED	Apprenticeship
473012	Helpers--Carpenters	2	Less than HS	Short-term
473013	Helpers--Electricians	4	HS diploma or GED	Short-term
473019	Helpers, Construction Trades, All Other	27	Less than HS	Short-term
474011	Construction and Building Inspectors	3	HS diploma or GED	Moderate-term
474031	Fence Erectors	2	HS diploma or GED	Moderate-term
474041	Hazardous Materials Removal Workers	14	HS diploma or GED	Moderate-term
474099	Construction and Related Workers, All Other	7	HS diploma or GED	Moderate-term
475013	Service Unit Operators, Oil, Gas, and Mining	1	Less than HS	Moderate-term
491011	First-Line Supervisors/Managers of Mechanics, Installers, and Repairers	45	HS diploma or GED	None or N/A
492021	Radio Mechanics	1	Associate degree	Moderate-term
492093	Electrical and Electronics Installers and Repairers, Transportation Equipment	3	Postsecondary non-degree award	Long-term
492095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	9	Postsecondary non-degree award	Long-term
493011	Aircraft Mechanics and Service Technicians	5	Postsecondary non-degree award	None or N/A
493023	Automotive Service Technicians and Mechanics	30	HS diploma or GED	Long-term

493031	Bus and Truck Mechanics and Diesel Engine Specialists	46	HS diploma or GED	Long-term
493042	Mobile Heavy Equipment Mechanics, Except Engines	6	HS diploma or GED	Long-term
493043	Rail Car Repairers	2	HS diploma or GED	Long-term
493051	Motorboat Mechanics	29	HS diploma or GED	Long-term
493052	Motorcycle Mechanics	3	HS diploma or GED	Long-term
493053	Outdoor Power Equipment and Other Small Engine Mechanics	7	HS diploma or GED	Moderate-term
493092	Recreational Vehicle Service Technicians	12	HS diploma or GED	Long-term
499021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	31	Postsecondary non-degree award	Long-term
499041	Industrial Machinery Mechanics	26	HS diploma or GED	Long-term
499043	Maintenance Workers, Machinery	81	HS diploma or GED	Moderate-term
499044	Millwrights	1	HS diploma or GED	Long-term
499071	Maintenance and Repair Workers, General	159	HS diploma or GED	Moderate-term
499092	Commercial Divers	7	Postsecondary non-degree award	Moderate-term
499093	Fabric Menders, Except Garment	1	Less than HS	Long-term
499098	Helpers--Installation, Maintenance, and Repair Workers	102	HS diploma or GED	Moderate-term
499099	Installation, Maintenance, and Repair Workers, All Other	111	HS diploma or GED	Moderate-term
499099.02	Electrical and Electronic Equipment Maintenance, Installation and Repairers, All other	1	None or N/A	None or N/A
499099.03	Vehicle, Mobile Equipment Mechanics, Installers, and Repairers, All Other	1	None or N/A	None or N/A
511011	First-Line Supervisors/Managers of Production and Operating Workers	386	Postsecondary non-degree award	None or N/A
511011.01	First-line Supervisors/Managers of Seafood Processing Workers	284	None or N/A	None or N/A
512041	Structural Metal Fabricators and Fitters	8	HS diploma or GED	Moderate-term
512091	Fiberglass Laminators and Fabricators	11	HS diploma or GED	Moderate-term
512099	Assemblers and Fabricators, All Other	6	HS diploma or GED	Moderate-term
513011	Bakers	5	Less than HS	Long-term
513022	Meat, Poultry, and Fish Cutters and Trimmers	2503	Less than HS	Short-term
513022.05	Seafood Processing Workers, Except Surimi and Fish Roe	14390	None or N/A	None or N/A
513091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	12	Less than HS	Moderate-term
513092	Food Batchmakers	72	HS diploma or GED	Short-term
513092.01	Surimi Technicians	387	None or N/A	None or N/A

513092.02	Fish Roe Technicians	133	None or N/A	None or N/A
513093	Food Cooking Machine Operators and Tenders	3	HS diploma or GED	Short-term
513099	Food Processing Workers, All Other	44	None or N/A	None or N/A
514031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	23	HS diploma or GED	Moderate-term
514041	Machinists	145	HS diploma or GED	Long-term
514121	Welders, Cutters, Solderers, and Brazers	127	HS diploma or GED	Moderate-term
514192	Lay-Out Workers, Metal and Plastic	3	HS diploma or GED	Moderate-term
514199	Metal Workers and Plastic Workers, All Other	4	HS diploma or GED	Moderate-term
516011	Laundry and Dry-Cleaning Workers	19	Less than HS	Short-term
517099	Woodworkers, All Other	1	HS diploma or GED	Moderate-term
518013	Power Plant Operators	6	HS diploma or GED	Long-term
518021	Stationary Engineers and Boiler Operators	8	HS diploma or GED	Long-term
518093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	2	HS diploma or GED	Long-term
518099	Plant and System Operators, All Other	2	HS diploma or GED	Long-term
519012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	4	HS diploma or GED	Moderate-term
519031	Cutters and Trimmers, Hand	21	Less than HS	Short-term
519032	Cutting and Slicing Machine Setters, Operators, and Tenders	27	HS diploma or GED	Short-term
519032.05	Baader Machine Setters, Operators and Tenders	66	None or N/A	None or N/A
519061	Inspectors, Testers, Sorters, Samplers, and Weighers	26	HS diploma or GED	Moderate-term
519111	Packaging and Filling Machine Operators and Tenders	70	HS diploma or GED	Moderate-term
519122	Painters, Transportation Equipment	5	HS diploma or GED	Moderate-term
519193	Cooling and Freezing Equipment Operators and Tenders	13	HS diploma or GED	Moderate-term
519198	Helpers--Production Workers	12	Less than HS	Short-term
519199	Production Workers, All Other	10	HS diploma or GED	Moderate-term
531011	Aircraft Cargo Handling Supervisors	1	HS diploma or GED	None or N/A
531021	First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand	29	HS diploma or GED	None or N/A
531031	First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators	32	HS diploma or GED	None or N/A
532011	Airline Pilots, Copilots, and Flight Engineers	1	HS diploma or GED	Long-term

532012	Commercial Pilots	2	HS diploma or GED	Long-term
532021	Air Traffic Controllers	2	Associate degree	Long-term
532031	Flight Attendants	1	HS diploma or GED	Moderate-term
533021	Bus Drivers, Transit and Intercity	6	HS diploma or GED	Moderate-term
533022	Bus Drivers, School	2	HS diploma or GED	Moderate-term
533031	Driver/Sales Workers	25	HS diploma or GED	Short-term
533032	Truck Drivers, Heavy and Tractor-Trailer	59	HS diploma or GED	Short-term
533033	Truck Drivers, Light or Delivery Services	59	HS diploma or GED	Short-term
533041	Taxi Drivers and Chauffeurs	7	Less than HS	Short-term
533099	Motor Vehicle Operators, All Other	38	HS diploma or GED	Short-term
535011	Sailors and Marine Oilers	798	Less than HS	Short-term
535021	Captains, Mates, and Pilots of Water Vessels	560	Bachelors degree	None or N/A
535022	Motorboat Operators	24	HS diploma or GED	Short-term
535031	Ship Engineers	211	Bachelors degree	None or N/A
536031	Service Station Attendants	9	Less than HS	Short-term
536051	Transportation Inspectors	3	Some college, no degree	Short-term
536061	Transportation Attendants, Except Flight Attendants	94	HS diploma or GED	Short-term
536099	Transportation Workers, All Other	30	HS diploma or GED	Short-term
536099.05	Water Transportation Workers, All Other	59	None or N/A	None or N/A
537011	Conveyor Operators and Tenders	9	Less than HS	Short-term
537021	Crane and Tower Operators	68	Less than HS	Long-term
537032	Excavating and Loading Machine and Dragline Operators	1	Less than HS	Moderate-term
537041	Hoist and Winch Operators	2	Less than HS	Moderate-term
537051	Industrial Truck and Tractor Operators	89	Less than HS	Short-term
537061	Cleaners of Vehicles and Equipment	11	Less than HS	Short-term
537062	Laborers and Freight, Stock, and Material Movers, Hand	332	Less than HS	Short-term
537064	Packers and Packagers, Hand	10	Less than HS	Short-term
537081	Refuse and Recyclable Material Collectors	1	Less than HS	Short-term
537121	Tank Car, Truck, and Ship Loaders	118	Less than HS	Short-term
537199	Material Moving Workers, All Other	598	Less than HS	Short-term

APPENDIX D

Industry Advisory Committee Membership and
January 2013 FSMI Update

UNIVERSITY of ALASKA
Many Traditions One Alaska

University of Alaska
Fisheries, Seafood & Maritime Initiative (FSMI)

JANUARY 2013 UPDATE

Visit our website: alaska.edu/fsmi





In Response to industry feedback at the October 2012 Forum and their commitment to more fully engage in developing a comprehensive statewide Workforce Development Plan, letters were sent on behalf of President Gamble to a select group of industry and state agency representatives inviting them to participate on the newly formed Industry Advisory Committee.

Based on Industry feedback, UA forms Industry Advisory Committee (IAC)

Current IAC Membership:

Kris Norosz, Icicle Seafoods Inc. (IAC Co-Chair)
Aggie Blandford (Laura Delgado), WACDA
Vince O'Shea, Pacific Seafood Processors Assoc.
Stephanie Madsen, At-Sea Processors Assoc.
Doug Ward (Jason Custer), AK Ship & Drydock
TBD, AK Marine Highway System, DOTPF
Kurt Hallier, Marine Advisor, Conoco Phillips
Julie Decker, United Fishermen of Alaska
Russell Dick (Anthony Lindoff), Haa Aani, LCC
Oliver Holm, Commercial Fisherman, Kodiak
Pearl Strub, BBEDC, AWIB Board, Processor
Candice Bressler, ADF&G
Wanetta Ayers, DOLWD-AWIB
Helen Mehrkens, EED
Glenn Haight, DCCED
Rep. Bryce Edgmon (Tim Clark), State House
Sen. Lyman Hoffman (Tim Grussendorf) State Senate

**The inaugural meeting of the IAC and UA Working Group was held by audio on 29Nov12 where the FSMI goals and 2013 Operational Plan were discussed.

FY14 Budget Request; 2013 Operational Plan; work continues

FY14 Budget Request: In November, UA Board of Regents approved a $398K FSMI request in the FY14 UA Operational Budget for submission to the legislature this January session. The four programs put forward: (a) will strengthen existing successful programs in high demand; (b) would have statewide benefits; and (c) clearly respond to needs identified in the McDowell FSMI Report and at our two industry forums. The programs are: Alaska Young Fishermen's Summit, Marine Technologies, AK Seafood Processors Leadership Institute, and Statewide Delivery of Fisheries Technology AA. In response to feedback at the Forum, FSMI moved forward with a more modest request for funding in order to begin to address FSM workforce development needs as soon as possible. We are delaying a major funding request until we have completed a comprehensive workforce development plan.

A 2013 Operational Plan is in place. It is recognized this planning phase of the FSMI is to establish priorities in a statewide comprehensive WFD document that would be implemented and evaluated over the years to come in similar fashion to the AK Health Alliance in its nearly tenth year of existence. The UA Leadership Committee continues to meet weekly. Selected IAC members are currently working with UA in conducting an expanded **Occupational Needs Assessment** in each of the Fisheries, Seafood, Maritime and Public sectors to identify the highest priority career areas. A draft outline of a statewide WFD Plan document is in review stage. Collaborative work continues with consideration for the academic year and the very busy seasons within each industry sector.

Towards a statewide FSM Workforce Development (WFD) Plan

By early 2014, the IAC and UA Working Group aim to develop a statewide, comprehensive, industry-led WFD Plan document that will identify broad WFD strategies within FSM sectors and specific strategies for highest priority occupations. Strategies will identify rationale, actions, timeline, responsible parties, resources and expected outcomes. Recommendations for future FSM Coalition work will also be identified. UA will be one of many responsible parties who will prepare an academic Response Plan based on the comprehensive WFD Plan. Discussion continues towards the formation of a longer-term FSM Coalition based on the AK Health Alliance model.

Version: Jan 14, 2013

UNIVERSITY of ALASKA
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University of Alaska
Fisheries, Seafood & Maritime Initiative (FSMI)
Towards a strong and sustainable fisheries, seafood and maritime workforce in Alaska

Our Mission:

-engaging fisheries, seafood and maritime sectors and community partners to assess, develop and deliver programs, training and research that prepare Alaskans to meet current and emerging workforce, economic and scientific needs.

The fishing, seafood and maritime sectors represent Alaska's largest private employer and plays a significant role in our state's economy. At a December 2011 summit convened by the Governor of Alaska, the Honorable Sean Parnell, the Chair of the Rasmuson Foundation, Ed Rasmuson, and the University of Alaska President Patrick Gamble committed to close engagement with the FSM industry sectors to meet the FSMI goals.

The FSMI Goals are:

(1) **Sustain and enhance the economy and the communities of Alaska** by developing a responsive workforce that enables the fishing/seafood and maritime industries to stay vibrant and substantial contributors to the state;

(2) **Support Alaska's workforce, particularly in coastal communities**, in discovering and preparing for the wide range of employment opportunities in the fishing, seafood and maritime industries, and

(3) **Provide research to sustain resources** on which these communities and sectors depend.

UA FSMI Working Group appointed by President Gamble:

***Paula Cullenberg**, UAF Alaska Sea Grant Marine Advisory Program, FSMI Co-Chair;

***Fred Villa**, UA Statewide Office of Workforce Programs, FSMI Co-Chair;

***Bonnie Nygard**, Workforce Development, UAA;

***Gunnar Knapp**, UAA Institute of Social and Economic Research;

***Mike Castellini,** Dean, UAF School of Fisheries and Ocean Sciences;

***Torie Baker**, UAF, Acting Program Leader, Alaska Sea Grant Marine Advisory Program;

***Bernice Joseph**, UAF Vice Chancellor Rural Community & Native Education;

***Pete Pinney**, UAF Assoc. Vice Chancellor, Rural Community & Native Education;

***Rick Caulfield**, UAS Provost;

Terry Johnson, UAF Alaska Sea Grant Marine Advisory Program;

Rashmi Prasad (tbd), UAA College of Business & Public Policy;

Karen Schmitt, UAA Community and Technical College;

Barbara Bolson, UAA Kodiak Campus;

BJ Williams, UAA Prince William Sound Community College;

Carol Swartz, UAA Kachemak Bay Campus;

Deborah McLean, UAF Bristol Bay Campus;

Mary Pete, UAF Kuskokwim Campus;

Keith Criddle, UAF School of Fisheries and Ocean Sciences;

Mark Herrmann, UAF School of Management;

Kate Sullivan, UAS Ketchikan;

Duane Heyman, UA Statewide University of Alaska Corporate Programs

*denotes Leadership Committee member

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We want to hear from you!

Contact:
Michele Masley, FSMI Program Manager
Statewide Workforce Programs
Office of Academic Affairs, University of Alaska
mmasley@alaska.edu (907) 843-1996

APPENDIX E

FSMI 2013 Operational Plan



UNIVERSITY
of ALASKA

Many Traditions One Alaska

UA Fisheries, Seafood and Maritime Initiative (FSMI)

Operational Plan 2013

Towards a Workforce Development Plan for the FSM industry sectors in Alaska

and

A University of Alaska Response Plan

Version: November 26, 2012

NOTE: the intent of this document is to provide guidance to FSMI stakeholders as to how objectives will be accomplished in the coming year. This document is 'living' in that it can be updated at any time to reflect any iterative changes in direction to accomplishing the FSMI mission. The FSMI Program Manager will update the Operational Plan as needed.

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Executive Summary

With the endorsement of Governor Parnell, Rasmuson Foundation and UA President Gamble at a December 2011 Summit, University of Alaska is leading the development of a statewide strategic workforce development plan for the fisheries seafood/maritime (FSM) industry with industry, community advisory group, state agency and state and regional training center participation, known as the Fisheries, Seafood, and Maritime Initiative (FSMI). The University of Alaska aims to deliver:

1) A comprehensive, integrated **Workforce Development (WFD) Plan** for the Fisheries, Seafood, and Maritime (FSM) industry sectors in Alaska;
2) In response to the broader WFD plan, University of Alaska will develop a **UA Response Plan** for its role in addressing the identified post-secondary education/training priorities.

In the past 18 months, accomplishments include an education/training inventory of UA, a high-level education/training gap analysis by the McDowell Group, and two industry forums to help guide UA in next steps. Anticipated next steps for 2013 include:

• **Conduct an expanded occupations inventory and workforce assessment.** Gather, evaluate, and analyze FSM workforce data to develop an inventory of current occupations and assess future trends. Conduct an industry needs assessment through interviews, surveys and other data collection methods to identify current and projected high demand occupations within the FSM industries using criteria developed by the industry advisory committee. This will be an expansion on the work to date by the McDowell Group.

• **Complete an education and training gap analysis and establish priorities.** Identify specific training, skills and educational background needed for current and projected high demand occupations. Link the education and training inventory with the occupations inventory and workforce assessment to identify gaps and priorities for addressing gaps. Identify unique geographic, time and technical constraints with regard to effective delivery, and opportunities to meet these constraints in potentially new or innovative ways.

• **Develop an integrated and comprehensive Workforce Development Plan.** The plan will include a comprehensive statement of capacity and plans to address existing and future education and training needs across the educational spectrum including K-12, post-secondary, vocational/technical, and post-employment professional development recommendations. Detail on how to develop and maintain a strong partnership with and be accountable to industry and communities will be part of the plan.

• **Develop a UA Response Plan.** Based on WFD plan recommendations, UA will develop a UA response plan to identified post-secondary and other appropriate education/training needs.

Introduction/History

The fishing/seafood industry is Alaska's largest private sector employer, providing 70,000 persons with seasonal or year around jobs. Nearly half of those people work in seafood processing and most of the other half are commercial fishermen, either owners or crewmembers, nearly all of whom function as independent self-employed businesses. The 70,000 figure includes workers in a variety of businesses that support the industry, from fuel dealers to equipment suppliers to ground, sea and air transport to lawyers and accounting firms. The fisheries sector also includes fisheries research and management (Alaska Department of Fish and Game employs 1,700), private non-profit salmon culture and for-profit shellfish culture.

Alaska leads the nation in fisheries landings, totaling about 1.8 million metric tons, worth $1.3 billion to harvesters and $3.3 billion at the first wholesale level. About 30 large shore-based processors dominate production and another 100 smaller companies including many small catcher-sellers contribute significantly to the total. Processing wages alone total nearly $290 million annually.

The Community Development Quota program, which assigns 10% of Bering Sea groundfish and crab quotas to six non-profit corporations representing 65 Western Alaska villages, generates 1,600 jobs and $180 million in benefits annually. From 1992 through 2008 the program generated $285 million in wages.

The non-fisheries maritime sector includes many industries operating on Alaska's coastal and offshore waters, including cargo shipping and lightering, passenger transportation, ports and harbors, oceanographic and geophysical exploration relating to oil/gas/mineral extraction, Coast Guard and other military support and operations, recreation and tourism and oceanographic research.

More than 30 ports and harbors, from Metlakatla to Kotzebue, serve the fishing, transportation and tourism industries. Ninety percent of all goods and supplies consumed in Alaska arrive by sea transport, and 90% of those consumed in the state outside of Southeast Alaska first enter via the Port of Anchorage alone. The Alaska Marine Highway system employs 1,100 people. The U.S. Coast Guard employs 1,800 people on 24 bases, stations and ships in the state. More than a thousand charter and tour boat companies and more than 30 marine transportation companies operate in Alaska.

Maritime industries employee demands are difficult to quantify because there are many kinds of employers and many job classifications. Some hiring is done out of state and offshore jobs many not even be reported to the State of Alaska.

More than 80 occupations in the state have been identified as related to the fisheries, seafood or maritime industries. Some specific occupational fields include: fisheries science, marine biology, marine hydroacoustics, marine hydraulics, refrigeration and power generation specialties, marine electronics, ocean engineering, underwater construction, marine bio-

remediation, logistics, vessel operations and safety, shipwrights and fabricators, fisheries business management, marketing, maritime law and maritime environmental law.

There is significant potential to expand employment of Alaskans in many of these occupations. Some of these industries—particularly seafood processing—tend to be viewed by Alaskans as low-wage, unskilled occupations that are unattractive career options. The reality is that the seafood processing industry and other fisheries, seafood and maritime industries include many high-skilled and well-paid occupations that provide stable and rewarding careers with opportunities to advance into top management positions.

> *"The total estimated ex-vessel value of Alaska's commercial harvest was $1.55billion in 2007. The additional value added by Alaska's seafood processing sector brought the total wholesale value of Alaska's commercial seafood industry to over $3.6 billion in 2007. It is estimated that the seafood industry's $3.6 billion in wholesale value generated an additional $2.2 billion in indirect and induced economic output for a total contribution of $5.8 billion to Alaska's economic output. The seafood industry also generated a total of 78,519 direct, indirect and induced jobs and $1.75 billion in direct, indirect and induced payments to labor and income."*
>
> *Excerpt from "The Seafood Industry in Alaska's Economy", prepared for the Marine Conservation Alliance, At-Sea Processors Association, and Pacific Seafood Processors Association by Northern Economics, January 2009*

The Alaska seafood harvesting and processing industry is one of the largest employers in the state – directly employing at least 53,500 workers in 2009.[1] Like other of Alaska's industry sectors, the seafood harvesting and processing industry has a high percentage of nonresident workers[2]. In addition, the fisheries/seafood/maritime industry workforce is "graying.[3]" While supporting statistics are difficult to find, it is commonly acknowledged that coastal Alaskans are generally not succeeding the retiring workforce and often do not have the information or educational opportunities needed to fill these positions.

While a large portion of seafood/maritime industry jobs are entry-level, seasonal seafood processing jobs, the industry also employs large numbers of people in a wide array of skilled positions. As noted in recent statewide reports and studies[4], the seafood/maritime industry holds enormous potential as a source of job and career opportunities, particularly for residents of the state who are closest to the resource and who are appropriately trained. In addition, industry representatives report they are eager to employ Alaskans who are trained to fill these positions. Underscoring the importance of the industry to Alaska's state, regional and local economies is the fact that the Alaska Workforce Investment Board recognizes the seafood industry as one of eight priority industries in the state. However, a statewide strategic workforce development plan does not yet exist for the fisheries seafood/maritime (FSM) industry[5].

FSMI Milestones and Outcomes to Date

October 2010: The Alaska Sea Grant Marine Advisory Program (UAF) coordinated a statewide gathering funded by the National Marine Fisheries Service titled, the "North Pacific Marine Education and Training Program Workshop." Participants – including representatives from fisheries, marine technology and seafood related industry, educational entities, and public agencies – met and acknowledged the need to build a statewide workforce development plan. Additionally, it was recognized that accurate data about current and anticipated workforce needs, as well as education and training programs are required to build, and ultimately implement, a strategic workforce development plan. Furthermore, an ongoing process to determine occupational priorities is also needed because it allows stakeholders to measure progress and priorities and to forecast and address future needs and priorities. These needs combined with an industry initiated call to work with the University, the Alaska Workforce Investment Board, and other stakeholders, presents an opportunity to craft an Alaska statewide strategic fisheries/seafood/maritime industry workforce development plan. This is a key step in aligning systems to encourage and train Alaskans, particularly underserved populations, toward filling occupational opportunities in the FSM industry.
Outcomes:
North Pacific Marine Education and Training Program Workshop Report, October 14-15, 2010

Spring 2011: Rasmuson Foundation completes a 5-year grant to the UAF School of Fisheries and Ocean Sciences to enhance their undergraduate fisheries degree. Rasmuson Foundation encourages the concept of a workforce plan and looking at a broader role for the University in serving the fisheries and seafood sectors.

June 2011: UA President Gamble appoints UA Fisheries, Seafood and Maritime Working Group across the UA academic units (see page 11 for list of appointees).

September 2011: UA Working Group Meeting: finalizes FSM Education and Training Inventory.
Outcomes:
Inventory of UA Capacity, Educational and Training Options to FSM Industries, October 2011
Summary Inventory of University of Alaska Educational and Training Offerings related to Fisheries, Seafood, and Maritime Industries, December 2011

December 2011: A Seafood Summit meeting was convened by the Governor of Alaska, the Chair of the Rasmuson Foundation and the President of the University of Alaska and marked an historic step in workforce development for the Alaskan seafood industry and related maritime sectors. The Summit provided an unprecedented opportunity for industry to inform the University, Government of Alaska and the Rasmuson Foundation about their workforce development challenges and needs. It was clear that current education and training systems do not adequately support industry requirements and that it is timely to reassess how those needs can best be met to sustain one of Alaska's leading industries.
Outcomes:
Industry Workforce Educational Needs Assessment Report of the Seafood-Fisheries Summit, Rasmuson Foundation Office, Anchorage (report available upon request)

January 2012: 2nd UA Working Group Meeting: plans industry forum and next steps; name changed from Allied Fisheries to **Fisheries, Seafood and Maritime Initiative (FSMI)**.

March 2012: Alaska Joint Fisheries Seafood Maritime Workforce Forum in Anchorage.
Outcomes:
Agenda, Summary Report, APICC Presentation, McDowell Group Presentation available at FSMI website.

April 2012: McDowell Group executes the occupational needs survey to industry stakeholders and submits a completed report.
Outcomes:
McDowell Group. Education and Training Gap Analysis for the Fisheries, Seafood, Maritime Workforce, May 2012

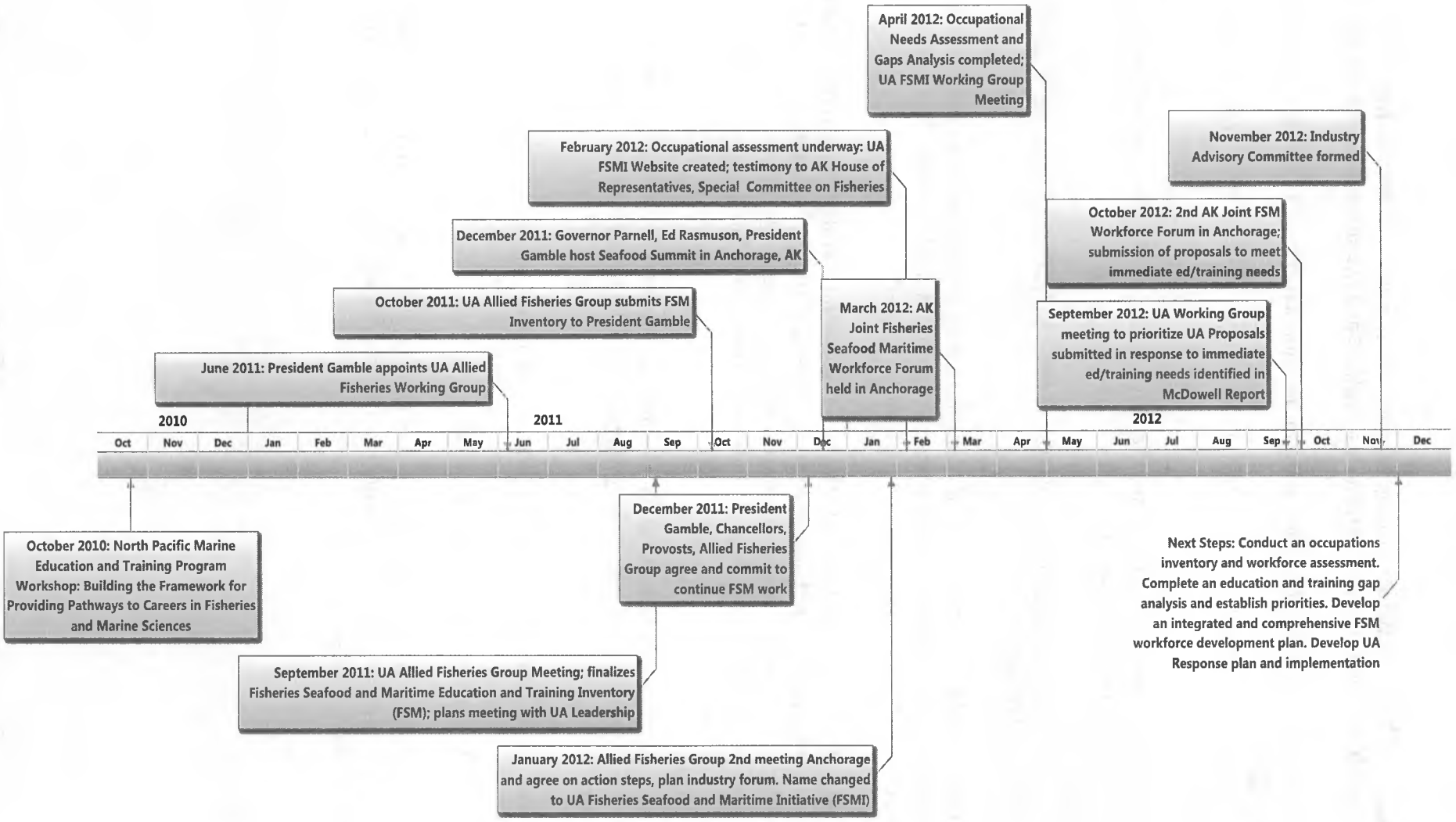
September 2012: UA Working Group Meeting to prioritize UA Proposals submitted in response to the short-term education/training needs identified in the McDowell Report (May 2012) towards a FY14 legislative request by UA Board of Regents.

October 2012: 2nd Alaska Joint Fisheries Seafood Maritime Workforce Forum in Anchorage: review of McDowell Report and small group reviews of the UA Proposals. UA Proposals were prioritized by industry representatives towards meeting short-term educational needs. Group discussions ensued on next steps for tackling the long-term, integrative education needs for FSM occupations.
Outcomes:
Agenda, Summary of Proceedings, Participant List, Gunnar Knapp Presentation, McDowell Group Presentation available at FSMI website. Small Group Discussion notes available upon request.

October 2012: To address identified short-term educational needs, FSMI submits $398K proposal package to UA Board of Regents for FY14 legislative budget request; Board of Regents approves budget request at 7Nov meeting.

November 2012: UA President Gamble and FSMI Leadership Committee forms the Industry Advisory Committee (IAC) per industry feedback at October 2012 Industry Forum (see page 12 for list of IAC Invitees).

FSMI Chronology: Key Milestones from October 2010 to September 2012 (prepared by Greta Goto)



Mission & Expected Outcomes

University of Alaska Fisheries, Seafood and Maritime Initiative (FSMI) Mission:

-engaging fisheries, seafood and maritime sectors and community partners to assess, develop and deliver programs, training and research that prepare Alaskans to meet current and emerging workforce, economic and scientific needs.

The goals of FSMI are to:
(1) **Sustain and enhance the economy and the communities of Alaska** by developing a responsive workforce that enables the fishing/seafood and maritime industries to stay vibrant and substantial contributors to the state;
(2) **Support Alaska's workforce, particularly in coastal communities**, in discovering and preparing for the wide range of employment opportunities in the fishing, seafood and maritime industries, and
(3) **Provide research to sustain resources** on which these communities and sectors depend.

Definitions:
Fisheries encompasses fisheries sciences including fisheries, marine biology and oceanographic research, sustainable management of fisheries and aquatic resources, aquaculture and fish and shellfish enhancement, as well as subsistence, sport and commercial harvest, and fishery dependent communities.
Seafood includes seafood science and engineering, seafood processing technology, product development, seafood logistics, business and marketing.
Maritime encompasses a range of business and industries including marine transportation, marine tourism, ports and harbors, and the technology support component of marine research, oil and mineral prospecting and much more.

Expected Deliverables, Users, Outcomes and Impacts:

University of Alaska anticipates **two major deliverables** from this initiative:

1) A comprehensive, integrated **Workforce Development (WFD) Plan** for the Fisheries, Seafood, and Maritime (FSM) industry sectors in Alaska. Sections of this plan will include:
   - FSM occupations inventory and workforce needs assessment including current and projected high demand occupations;
   - Current education/training inventory across all educational institutions in Alaska and relevant institutions outside Alaska;
   - Gap analyses of education/training needs and priorities for addressing gaps. Identification of unique geographic, time and technical constraints with regard to effective delivery, and recommendations for all key education providers in Alaska to meet these constraints in potentially new or innovative ways;

- Recommendations for outreach to the K-12 system and development of clear occupational pathways including program articulation;
- Recommendations for funding strategies dependent on identified financial needs;
- Recommendations for communicating the plan to Alaska residents, particularly coastal residents and underserved populations, state and federal agencies, industry, education and training providers, and the broader Alaska community;
- Detail on how to develop and maintain a strong partnership with and be accountable to industry and communities;
- Recommendations for developing a data gathering and reporting process to measure changes in the industry's occupational needs and priorities.

2) In response to the broader WFD plan, University of Alaska will develop a **UA Response Plan** for its role in addressing the identified post-secondary education/training priorities. The response plan will include development and prioritization of creative actions, details for alignment of existing UA FSM-related curriculum and programs, identification of responsible human resources and potential funding sources, and an outcomes assessment plan.

Primary users of the statewide strategic workforce development plan include:

- Seafood/Maritime Employers – for greater understanding of total industry workforce occupations; understanding of how workforce needs might link to education and training; building partnerships for a statewide approach to seafood/maritime workforce development; and, coordinating and aligning efforts with the Alaska Career and Technical Education Plan.
- State of Alaska Workforce Investment Board and related state agencies – for alignment and coordination of resources to support seafood/maritime industry workforce development.
- University of Alaska and other education and training providers – to address identified gaps in the education and training system based on industry identified needs for workforce development and to improve access to training and education opportunities.
- State of Alaska Department of Education – for coordination of secondary career education opportunities and opportunity to coordinate with post-secondary educational providers.
- Current employees, those looking for work – for information on how to access education and training programs and employment opportunities in the seafood/maritime industry.
- Additionally, it is expected that other groups of users may include students, parents, and research organizations.

Expected project **outcomes** include:

- Acknowledgement by the University, State of Alaska, FSM industry employers, and other stakeholders for the need for FSM industry workforce development planning processes and alignment.
- Understanding of the significant number of employment opportunities in Alaska's FSM industry.
- Increased understanding of high priority occupations in the FSM industry.

- Identification of strengths and weaknesses in the system of providing education and training to meet high priority occupations in the FSM industry sector workforce.
- Development of partnerships to engage in ongoing work to implement a strategic FSM workforce development plan.
- Information and recommendations to enhance current data gathering and reporting to support FSM workforce development evaluation.
- Motivation to continue the process and formalize the function and role of a FSM industry workforce development consortium.
- Understanding of Alaska's workforce development processes and alignment with the State of Alaska Career and Technical Education Plan.

Expected project **impacts** include:

- Increased understanding by Alaskans about the range of employment opportunities in the FSM industry.
- Increased access for coastal, rural and underserved populations to information about education, training, and employment opportunities in the FSM industry.
- Increased numbers of Alaskans engaging in the FSM industry education, training, and employment opportunities.
- Continuous improvement in Alaska's education and training systems to communicate and provide in-state opportunities to meet industry-required skills, knowledge, and qualifications.
- Improved representation of FSM industries in Alaska's workforce committees.
- Improve articulation of education and training programs, both credit and non-credit, among education and training providers.
- Streamlined processes for delivering programs without needless duplication.
- Leveraging resources and assets so stakeholders can strategically plan and invest in career and technical education related to FSM-related industries.

Stakeholders & Organizational Structure

University of Alaska Working Group appointed by President Gamble:

*Paula Cullenberg, UAF Alaska Sea Grant Marine Advisory Program, FSMI Co-Chair;
*Fred Villa, UA Statewide Office of Workforce Programs, FSMI Co-Chair;
*Bonnie Nygard, Workforce Development, UAA;
*Gunnar Knapp, UAA Institute of Social and Economic Research;
*Mike Castellini, Dean, UAF School of Fisheries and Ocean Sciences;
*Torie Baker, UAF, Acting Program Leader, Alaska Sea Grant Marine Advisory Program;
*Bernice Joseph, UAF Vice Chancellor Rural Community & Native Education;
*Pete Pinney, UAF Assoc. Vice Chancellor, Rural Community & Native Education;
*Rick Caulfield, UAS Provost;
Bear Baker, UAA College of Business & Public Policy;
Karen Schmitt, UAA Community and Technical College;

Barbara Bolson, UAA Kodiak Campus;
BJ Williams, UAA Prince William Sound Community College;
Carol Swartz, UAA Kachemak Bay Campus;
Deborah McLean, UAF Bristol Bay Campus;
Mary Pete, UAF Kuskokwim Campus;
Keith Criddle, UAF School of Fisheries and Ocean Sciences;
Mark Herrmann, UAF School of Management;
Kate Sullivan, UAS Ketchikan;
Duane Heyman, UA Statewide University of Alaska Corporate Programs
*denotes Leadership Committee member

The UA Working Group has engaged with about 100 representatives from fisheries, seafood and maritime industry, state agencies, community and economic development organizations. Over 52 representatives attended the first Alaska Joint Fisheries Seafood Maritime Workforce Forum in March 2012 and over 67 representatives attended the 2nd Forum in October 2012. The UA Working Group will continue to keep all industry and community representatives informed and engaged in the year to come. Based on industry feedback at the October 2012 Forum, a smaller group of industry representatives have accepted President Gamble's invitation to participate on the Industry Advisory Committee (IAC) who will work closely with UA in accomplishing the FSMI goals.

Industry Advisory Committee invited by President Gamble:

INVITEE; (Alternate)	ORGANIZATION	LOCATION
Aggie Blandford; (Laura Delgado)	Western Alaska Community Development Association (WACDA)	Anchorage
Kris Norosz	Icicle Seafoods	Petersburg
TBD	Pacific Seafood Processors Association	Seattle/ Juneau
Stephanie Madsen	At-Sea Processors Association	Juneau
Doug Ward	Alaska Ship & Drydock	Ketchikan
TBD	AKDOTPF Alaska Marine Highway System (AMHS)	
Captain Kurt Hallier	Marine Advisor-Conoco Phillips	Anchorage
Julie Decker	Alaska Fisheries Development Foundation (AFDF)	Anchorage
Russell Dick	Haa Aani, LCC	Juneau
Oliver Holm	Commercial Fisherman	Kodiak
Pearl Strub	BBEDC; AWIB Board; Processor	Dillingham
Candice Bressler	Alaska Dept. of Fish and Game (ADF&G)	Juneau
Wanetta Ayers	Alaska Dept. of Labor & Workforce Development (DOLWD)	Juneau
Helen Mehrkens	Alaska Dept. of Education & Early Development (EED)	Juneau
Glenn Haight	Alaska Dept. of Commerce, Community and Economic Development (DCCED)	Juneau
UA Pres. to appoint	University of Alaska (UA) President's Office	Fairbanks
Rep. Bryce Edgmon; (Tim Clark)	AK State House	Juneau/ Dillingham
Sen. Lyman Hoffman;	AK State Senate	Juneau/

(Tim Grussendorf)		Bethel

FSMI Program Manager:

Greta Goto has been acting Program Manager along with her regular duties since 2011. Michele Masley, FSMI Program Manager, was hired in October 2012 to coordinate the FSMI program for University of Alaska. She is a certified Project Management Professional (PMP®) and has over ten years of scientific industry experience in scientific communications, business development, data management, and quality assurance/corporate systems management. She holds a Master of Science in Epidemiology. She is based in Dillingham, Alaska, home to one of the last great sockeye salmon runs in the world. Michele reports to Fred Villa, Associate Vice President, UA Statewide Workforce Programs.

Michele Masley
FSMI Program Manager
Statewide Workforce Programs
Office of Academic Affairs
University of Alaska
Phone: 907-843-1996
Email: mmasley@alaska.edu

Roles & Responsibilities / Communication Management within the UA FSMI

The University of Alaska is a large and complex institution structured under three Major Administrative Units (MAUs) including University of Alaska Fairbanks, University of Alaska Anchorage and University of Alaska Southeast in partnership with the Statewide University of Alaska system-wide offices. In addition, UA serves Alaskans through a number of rural campuses and outlying field stations (i.e., MAP offices) all over the state. As a result, communication is critical in building a collaborative and integrated program that serves the fisheries, seafood and maritime sectors.

UA FSMI Working Group and Leadership Committee:
The UA Working Group was formed by President Gamble about 18 months ago. Co-Chairs are Paula Cullenberg and Fred Villa.

A Leadership Committee subgroup of the Working Group and the Program Manager meet regularly (e.g., weekly) to review progress and to seek consensus on key decisions and direction.

The Program Manager sends out regular email communications to the UA Working Group. The UA Working Group is encouraged to contact the Program Manager or their Leadership Committee representative at any time to discuss issues, ideas, and concerns.

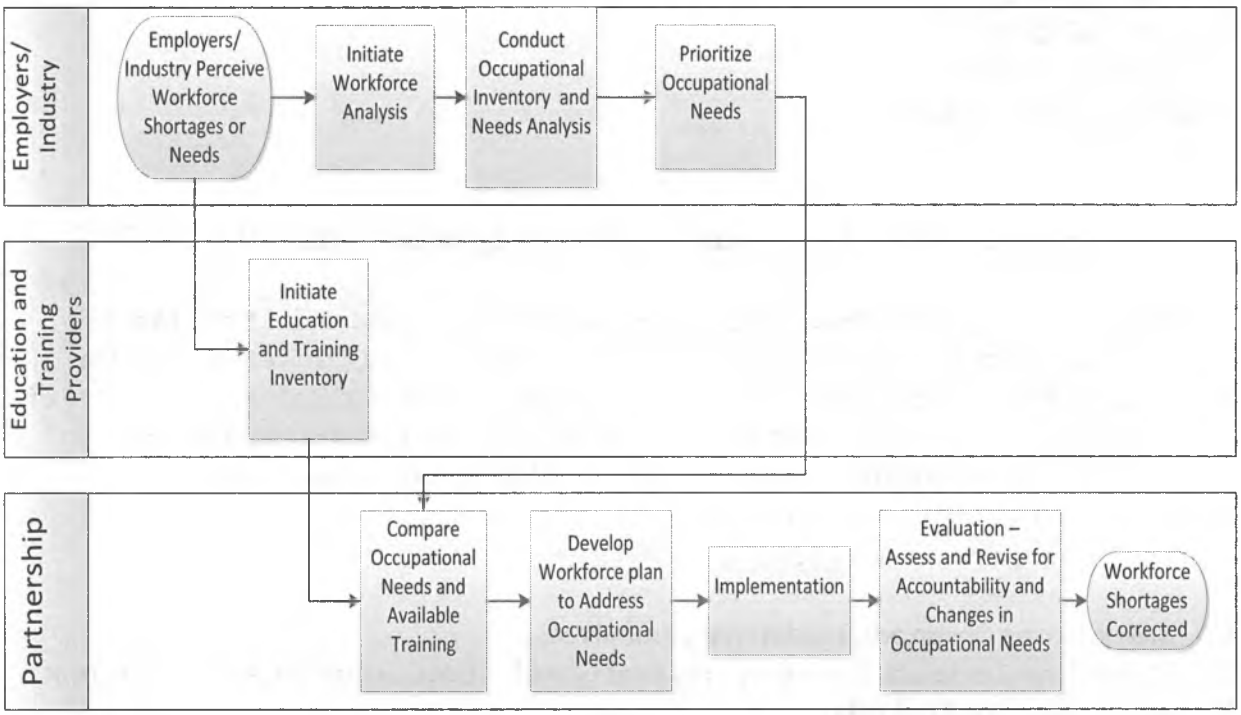
FSMI Industry Advisory Committee:

The Co-Chairs of the IAC meetings will be the UA President's Office appointee (tbd) and an Industry rep (tbd). Other individuals and organizations may be invited ad hoc to certain meetings as the agenda requires. The UA Working Group will be invited to attend the teleconferences and face-to-face meetings with the Industry Advisory Committee.

FSMI Program Manager:
The Program Manager manages the overall FSMI operations and is the point of contact for the Working Group and the Industry Advisory Group. She manages the FSMI website (www.alaska.edu/fsmi) where news, press releases, meeting documents, outcome reports and relevant links are posted. The Program Manager works with UA Office of Public Affairs in managing statewide UA communications related to the FSMI.

Process & Timeline

Ideal Steps toward Establishing a Workforce Development Plan



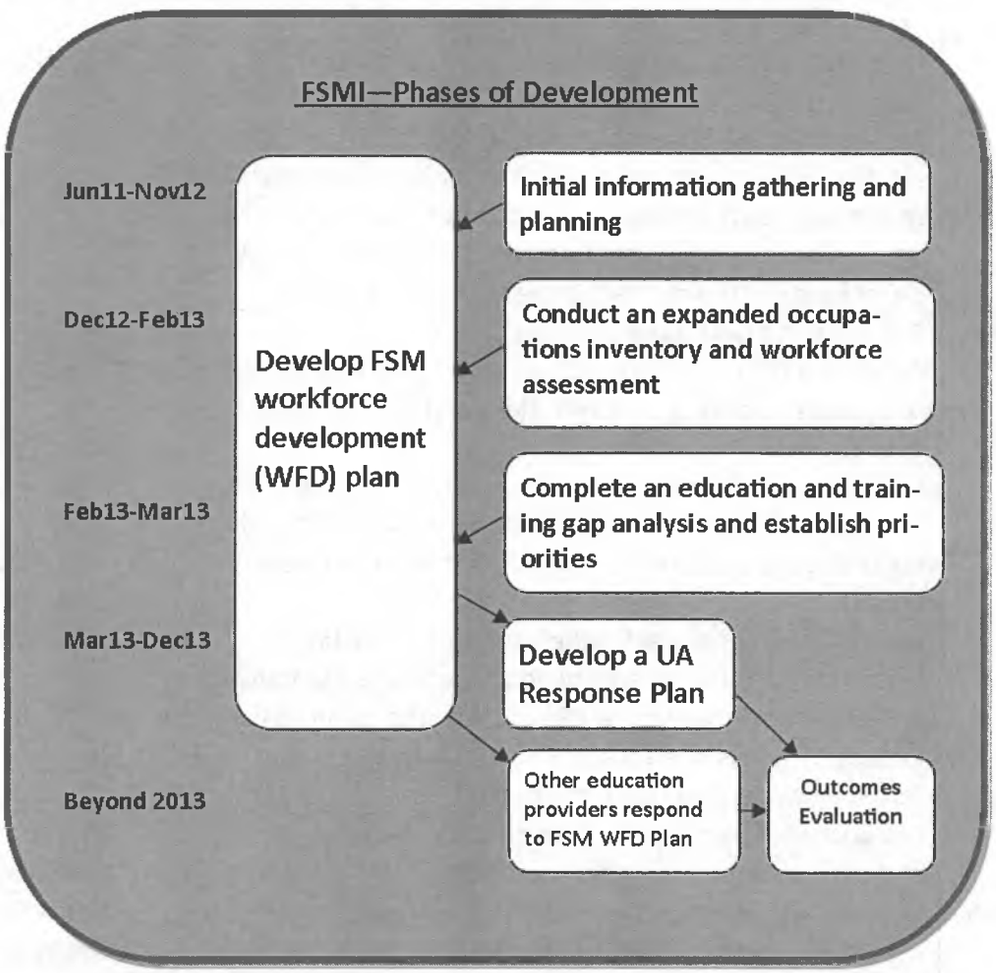
The above diagram outlines the ideal steps to creating a workforce development plan. In planning this FSMI process, we have adapted this process to meet the objectives of FSMI. UA is working with FSM industry and public sector employers to assess their needs through an occupational analysis that must take place before a full plan can be developed.

Timelines are not represented, but the sequencing ensures that industry is the primary driver of the process and education is a partner in the development, implementation, evaluation, and revision of the plan.

The diagram below outlines the FSMI phases of development anticipated in 2013. Immediate work through to March 2013 is to conduct an expanded occupational needs assessment (ONA) for all FSM sectors (see detailed ONA Plan), to complete a gap analysis between current available education/training and those needs identified via the ONA, and to prioritize these education/training needs.

Further sections of the FSM WFD Plan will be developed by UA and the Industry Advisory Committee throughout 2013. Starting end of March 2103 when education/training priorities have been established, UA will start developing a Response Plan to the identified post-secondary education needs. It is recognized that both industry and UA will have limited human resources available in late spring and summer to work on deliverables. However, the work will continue throughout the summer as much as possible.

FSMI Phases of Development 2013



FSMI Timeline for 2013

Acronyms:
UA=University of Alaska; WG=UA Working Group; LC=Leadership Committee as subset of the UA Working Group; IAC=Industry Advisory Committee; ONA=Occupational Needs Assessment; F=Fisheries; S=Seafood; M= Maritime; PS= Public Sector.

Timeline	Milestone/Activity	Primary Responsibility
November	**See separate ONA Plan (1-pager).** Pilot seafood template(s) for industry to conduct a FSM occupations inventory and workforce needs assessment; circulate to IAC ahead of first meeting. Other UA Facilitators of subgroups (ie, F, S, M, PS) make initial contact with industry members to discuss needs/approach for their assigned subgroup.	Gunnar (S) Torie (F); Terry (M); Michele (PS).
29Nov 2-4pm	**First IAC meeting** by teleconference: Agenda-seek IAC endorsement of the Operational Plan; determine Industry Rep for Co-chair role; review McDowell recommendations & establish objectives; review Gunnar's piloted seafood ONA tool and determine how to move forward with the other data collection tools (fisheries, maritime, public sector) for IAC subgroups to start gathering data after meeting.	IAC; WG; Michele to Co-Chair
December-March 2013	**See separate ONA Plan (1-pager).** Conduct a FSM occupations inventory in each of the industry subgroups (including required skills and knowledge for each occupation). Conduct a workforce needs assessment (including supply and demand, resident and non-resident, hot job trends, technology trends, safety standards/ regulation training needs). Review progress of each subgroup; revisit existing education/training inventory docs; complete a workforce and education/training gap analyses and priority ranking. Include all levels of education needs & providers (eg, K-12; post-secondary; voc/tech; prof. devt).	IAC; WG Monthly telecon mtgs ONA subgroup meetings and homework
January 2013	Conduct an inventory of FSM education/training outside AK and within US (already have inventory in UA and within AK).	WG (or contractor)
End March	**IAC face-to-face meeting with UA Faculty**: Start addressing the post-secondary training needs: IAC to meet with UA faculty to develop enhanced or new programs to support education and training gaps (i.e., might be very similar to what UA already offers in some cases, or could lead to revisions and/or additions). Identify unique constraints and opportunities for effective education and training delivery	IAC; WG; UA faculty invited Day 1: IAC with faculty Day 2: faculty

	for these occupations. **Now have 2 tracks**: **Track 1 WFD Plan**: Completing the comprehensive WFD plan document with IAC; **Track 2 UA Response Plan:** UA responding to industry WF needs thru alignment of curriculum & programs and potential legislative request in fall.	collaboration on UA Response plan.
April	**Track 1 WFD Plan**: Towards designing a comprehensive plan: (1) make recommendations for developing a replicable data gathering and reporting process(es) to measure changes in the industry's occupational needs and priorities, ie, project evaluation process; **Track 2 UA Response Plan:** UA break out into departmental or UA unit subgroups to respond to industry WF needs thru alignment of curriculum & programs; plan the RFP process for the fall	IAC; WG; work with DOLWD on evaluation parameters Monthly telecon mtgs WG; UA faculty
May-June	**Track 1 WFD Plan**: Towards designing a comprehensive plan: (1) make recommendations for communicating the plan to Alaska residents, particularly coastal residents and underserved populations, state and federal agencies, industry, education and training providers, and the broader Alaska community; (2) make recommendations for outreach to the K-12 system and development of clear occupational pathways including program articulation; (3) make recommendations for funding strategies dependent on identified financial needs; (4) detail on how to develop and maintain a strong partnership with and be accountable to industry and communities; (5) any other WFD Plan sections??. **Track 2 UA Response Plan:** Continue subgroup work to respond to industry WF needs thru alignment of curriculum & programs.	IAC; WG; Michele WG; UA faculty
July-August	**Track 1 WFD Plan**: Complete full draft of integrated and comprehensive statewide strategic WFD plan document	Michele
By early September	**Track 1 WFD Plan**: UA and IAC review full draft of integrated and comprehensive statewide strategic WFD plan document **Track 2 UA Response Plan**: Each UA subgroup (eg, SFOS; Kodiak campus) provides 'unit plan' on how they will respond to FSM WFD needs as identified by Industry (eg, revision to current curriculum and/or credit transfer among MAUs; addition/revision of classes or programs); this	IAC; WG WG;UA faculty

	may/may not include a 'proposal' for fall Leg. Request. Expectation is UA units will coordinate efforts, where needed, for maximum efficacy.	
Mid-September	**IAC face-to-face meeting:** **Track 1 WFD Plan**: Full group discussion towards finalizing comprehensive WFD plan document; **Track 2 UA Response Plan**: IAC advises on UA unit plans & Leg. Request proposals	Michele to organize; IAC; WG (UA faculty?)
End September	**Track 2 UA Response Plan**: If needed, rank UA proposals for Oct Leg. Request based on IAC priorities and total $ value request established early in the process.	IAC; WG
Early Oct 2013	**Track 2 UA Response Plan**: Prepare next UA BOR Legislative Request for FY15	Michele; WG
Oct-Nov 2013	**Track 1 WFD Plan**: Finalize comprehensive WFD plan document	Michele; IAC; WG
Winter 2013 – Spring 2014	**Track 1 WFD Plan and Track 2 UA Response Plan**: Execute communication plan to broader community and to other educational providers; Conduct PR presentations of the FSM WFD Plan and UA Leg. Request, particularly to legislators in prep for Legislative Session as of Jan 2014.	IAC; WG; Other educational providers?
2014-201X	**Track 1 WFD Plan and Track 2 UA Response Plan**: Conduct project evaluation	??

Budget Management

UA has secured TVEP funding ($114K through to 30Jun13) to cover the Program Manager part-time salary, the PM's travel, supplies and contractual expenses such as meeting room rentals.

At this time, UA Working Group and Industry Advisory Committee members are expected to cover their own travel expenses. If individuals have no other means of covering travel expenses, please let the Program Manager know.

References

1. Alaska Economic Trends, November 2010.

2. Nonresidents Working in Alaska, 2009, Alaska Department of Labor and Workforce Development, January 2011.

3. State of Alaska Seafood Economic Strategies Draft Report, McDowell Group, December 2006, p. 44.

4. State of Alaska Seafood Economic Strategies, Draft Report; prepared for the State of Alaska Office of the Governor; prepared by McDowell Group, December 2006; The Seafood Industry in Alaska's Economy, prepared for the Marine Conservation Alliance, At-Sea ProcessorsAssociation, and Pacific Seafood Processors Association by Northern Economics,

January 2009; North Pacific Marine Education and Training Program Workshop Report, October 14-15, 2010.

5. University of Alaska, 2011, Proposal to Develop an Alaska Statewide Strategic Seafood/Maritime Industry Workforce Development Plan-Responding to the NOAA Fisheries Alaska Region 2011 Alaska Region Marine Education and Training Grant Program Request for Proposals, February 2011.

01/31/13 Overview: Short Term Commercial Crew Members License

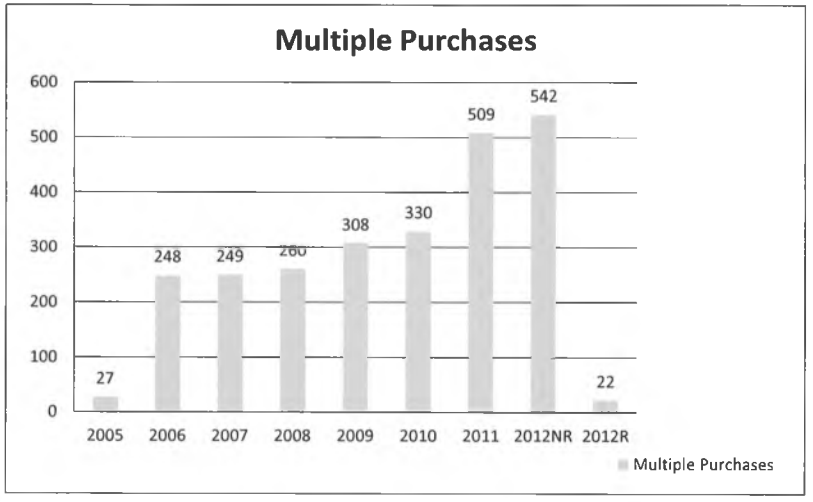
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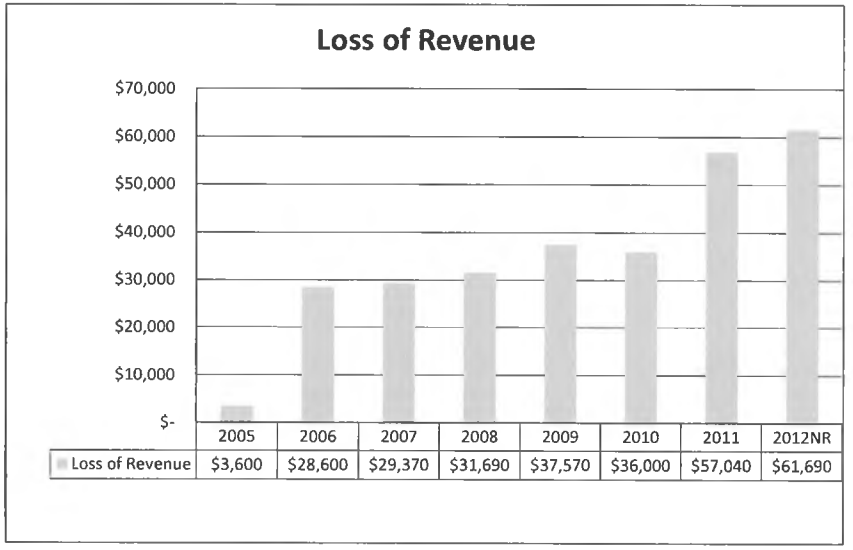
Fish and Game
Commercial Crew 7 day license

$200 NonRes annual
$30 NonRes 7day

	2005	Lost in 2005	2006	Lost in 2006	2007	Lost in 2007	2008	Lost in 2008	2009	Lost in 2009	2010	Lost in 2010	2011	Lost in 2011	2012NR	Lost in 2012NR	2012R
Purchased 2 Licenses	22	$ 3,080	117	$ 16,380	140	$ 19,600	149	$ 20,860	187	$ 26,180	179	$ 25,060	246	$ 34,440	272	$ 38,080	20
Purchased 3 Licenses	4	$ 440	69	$ 7,590	52	$ 5,720	70	$ 7,700	70	$ 7,700	24	$ 2,640	112	$ 12,320	134	$ 14,740	2
Purchased 4 Licenses	1	$ 80	51	$ 4,080	41	$ 3,280	37	$ 2,960	40	$ 3,200	75	$ 6,000	101	$ 8,080	86	$ 6,880	0
Purchased 5 Licenses	0	$ -	11	$ 550	15	$ 750	3	$ 150	9	$ 450	42	$ 2,100	40	$ 2,000	33	$ 1,650	0
Purchased 6 Licenses	0	$ -	0	$ -	1	$ 20	1	$ 20	2	$ 40	10	$ 200	10	$ 200	17	$ 340	0
Totai	27	$ 3,600	248	$ 28,600	249	$ 29,370	260	$ 31,690	308	$ 37,570	330	$ 36,000	509	$ 57,040	542	$ 61,690	22
	2005	Lost in 2005	2006	Lost in 2006	2007	Lost in 2007	2008	Lost in 2008	2009	Lost in 2009	2010	Lost in 2010	2011	Lost in 2011	2012NR	Lost in 2012NR	2012R

Total Revenue lost over 8 years $ 285,560





License Revenue Activity

	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
					PERMITS & LICENSES SOLD						
Resident	9,777	9,497	9,577	9,620	9,335	9,930	9,732	9,393	10,207	12,201	12,662
Non-Resident	9,155	8,649	8,077	7,499	7,192	8,164	7,726	7,061	9,111	9,884	10,217
Duplicate	655	676	589	562	525	670	632	571	727	844	96
Child	350	351	346	398	370	296	331	349	381	413	822
Non-Res Child	39	25	25	55	35	26	29	48	5	0	394
7-Day Res Crewmember License	334	283	351	375	202	1	0	0	0	0	0
7-Day Non-Res Crewmember License	1,466	1,267	1,305	1,201	310	0	0	0	0	0	0
Total Licenses	**21,776**	**20,748**	**20,270**	**19,710**	**17,969**	**19,087**	**18,450**	**17,422**	**20,431**	**23,342**	**24,191**
Resident CFEC Permit	8,898	8,622	9,090	9,170	9,140	9,802	9,952	9,892	9,257	9,884	10,294
Nonresident CFEC Permit	3,290	3,333	3,358	3,374	3,627	3,184	3,486	3,486	3,316	3,584	3,655
Resident CFEC Permit - Reduced	0	0	0	0	0	0	0	0	354	438	561
Nonresident CFEC Permit - Reduced	0	0	0	0	0	0	0	0	13	28	35
Total Permits	**12,188**	**11,955**	**12,448**	**12,544**	**12,767**	**12,986**	**13,438**	**13,378**	**12,940**	**13,934**	**14,545**
Grand Total	**33,964**	**32,703**	**32,718**	**32,254**	**30,736**	**32,073**	**31,888**	**30,800**	**33,371**	**37,276**	**38,736**
					CONTRIBUTIONS DUE FISHERMEN'S FUND						
Resident	$ 228,781.80	$ 222,229.80	$ 224,101.80	$ 225,108.00	$ 218,439.00	$ 232,362.00	$ 227,728.80	$ 219,796.20	$ 238,843.80	$ 285,503.40	$ 296,290.80
Non-Resident	$ 457,750.00	$ 432,450.00	$ 403,850.00	$ 374,950.00	$ 359,600.00	$ 408,200.00	$ 386,300.00	$ 353,050.00	$ 455,550.00	$ 494,200.00	$ 510,850.00
Duplicate	$ 1,277.25	$ 1,318.20	$ 1,148.55	$ 1,095.90	$ 1,023.75	$ 1,306.50	$ 1,232.40	$ 1,113.45	$ 1,417.65	$ 1,645.80	$ 187.20
Child	$ 682.50	$ 684.45	$ 674.70	$ 776.10	$ 721.50	$ 577.20	$ 645.45	$ 680.55	$ 742.95	$ 805.35	$ 1,602.90
Non-Res Child	$ 1,901.25	$ 1,218.75	$ 1,218.75	$ 2,681.25	$ 1,706.25	$ 1,267.50	$ 1,413.75	$ 2,340.00	$ 243.75	$ -	$ 19,207.50
7-Day Res Crewmember License	$ 3,907.80	$ 3,311.10	$ 4,106.70	$ 4,387.50	$ 2,363.40	$ 11.70	$ -	$ -	$ -	$ -	$ -
7-Day Non-Res Crewmember License	$ 17,152.20	$ 14,823.90	$ 15,268.50	$ 14,051.70	$ 3,627.00	$ -	$ -	$ -	$ -	$ -	$ -
Total Licenses	**$ 711,452.80**	**$ 676,036.20**	**$ 650,369.00**	**$ 623,050.45**	**$ 587,480.90**	**$ 643,713.20**	**$ 617,320.40**	**$ 576,980.20**	**$ 696,798.15**	**$ 782,154.55**	**$ 828,138.40**
Resident CFEC Permit	$ 208,213.20	$ 201,754.80	$ 212,706.00	$ 214,578.00	$ 213,876.00	$ 229,366.80	$ 232,876.80	$ 231,472.80	$ 216,613.80	$ 231,285.60	$ 185,292.00
Nonresident CFEC Permit	$ 164,500.00	$ 166,650.00	$ 167,900.00	$ 168,700.00	$ 181,350.00	$ 159,200.00	$ 174,300.00	$ 174,300.00	$ 161,655.00	$ 174,720.00	$ 197,370.00
Resident CFEC Permit - Reduced	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,310.00	$ 6,570.00	$ 8,415.00
Nonresident CFEC Permit - Reduced	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 585.00	$ 1,260.00	$ 1,575.00
Total Permits	**$ 372,713.20**	**$ 368,404.80**	**$ 380,606.00**	**$ 383,278.00**	**$ 395,226.00**	**$ 388,566.80**	**$ 407,176.80**	**$ 405,772.80**	**$ 384,163.80**	**$ 413,835.60**	**$ 392,652.00**
Grand Total	**$ 1,084,166.00**	**$ 1,044,441.00**	**$ 1,030,975.00**	**$ 1,006,328.45**	**$ 982,706.90**	**$ 1,032,280.00**	**$ 1,024,497.20**	**$ 982,753.00**	**$ 1,080,961.95**	**$ 1,195,990.15**	**$ 1,220,790.40**

Prepared by the Department of Labor and Workforce Development
April 6, 2012

02/05/13 Overview: Alaska Department of Fish and Game Presentation of Foregone Harvest of Salmon

<TARGET><BILL></BILL><SUBJECT>02-05-13 Overview Alaska Department of Fish and Game Presentation of Foregone Harvest of Salmon</SUBJECT><COMM>HFSH28</COMM></TARGET>

A Report to the House Fisheries Committee: Salmon Escapements in Excess of Goals

Jeff Regnart
Director, Division of Commercial Fisheries



February 2013

Alaska Department of Fish and Game, Division of Commercial Fisheries

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Unharvested Salmon Surpluses: Causes and Potential Solutions
Alaska Department of Fish and Game, Division of Commercial Fisheries

Southeast Region – Region I

Hugh Smith, Sitka Survey Index, and Auke Creek Coho Salmon

Coho salmon in Southeast Alaska are managed on a regional level. The primary inseason coho salmon monitoring the department does is for the four index stocks: Auke, Hugh Smith, Berners, and Ford Arm. We do not know the escapement of the Hugh Smith and Sitka Survey Index group coho salmon stock until after the fishing seasons are mostly over. The department has adequate tools for inseason management, but does not advocate additional harvest above the existing level since escapement assessment takes place after the majority of harvests occur.

Tools Needed: None.

Taku and Klukshu Sockeye Salmon

Sockeye salmon returning to these systems are managed under the auspices of the Pacific Salmon Treaty with Canada. Harvests are not solely the prerogative of the Department of Fish and Game.

Tools Needed: None.

Central Region – Region II

Igushik River Sockeye Salmon

The Igushik River is one of three main rivers in the Nushagak District in Bristol Bay. Over the last five years, the Igushik River has exceeded the desired escapement goal range. It should also be noted that in 2004 and 2002, escapement into the Igushik system was less than the minimum desired escapement; in some years, the department has managed conservatively as a result.

The Igushik system is managed based on tower count information and aerial surveys; the tower typically begins operation on June 22 and operates until approximately July 23. It takes an estimated five days for sockeye salmon to swim from the upper end of the commercial fishing district to the counting tower site. Most of this distance is in very turbid water and fish cannot be observed from the air. The upper end of the Igushik River is clear and department personnel do survey the river to assess fish passage.

The current strategy for managing the Igushik system is to begin setnet-only openings as soon as there is a market available. This is typically between June 15 and June 18. Set gillnet-only fishing is open eight hours per day until the tower camp is up and running, and managers have escapement information to base decisions on. As escapement increases, set gillnet fishing time is increased and the drift fleet may also have openings in the Igushik Section. In 2011, continuous fishing with set gillnets began at 9:00 p.m. June 24, and fishing with drift gillnets began on June 25. Fishing with drift gillnets became continuous on June 30 at 1:00 p.m. Prior to that, the Igushik Section was open concurrently with the Nushagak Section for 12 to 18 hours per day.

The decision to go to continuous fishing was made after the daily escapement on June 29 was 42,000 fish, bringing the cumulative escapement to 103,000 fish.

The major problem with controlling Igushik River escapement is the lack of fishing effort in that area. Tenders are typically placed at the south line of the district or at Clarks Point, both a significantly longer distance from the Igushik Section than other areas one might fish. Fishermen tend to fish in the Nushagak Section when it is open, avoiding the Igushik Section because of the distance from tenders. Another change affecting harvest has been the decrease in set gillnet effort. The Wards Cove Ekuk plant used to buy fish from Igushik Beach. When Wards Cove ceased operation, Norquest took over buying fish from Igushik Beach. Norquest would not buy dry-picked fish and many Igushik set gillnet fishermen could not adjust to the new market requirement to pick fish wet. The number of set gillnet operations on Igushik Beach has decreased from over 80 to approximately 50. In some years, there were also processor limits or suspensions.

The Igushik Section is shallow with many bars and large flats and is more difficult to fish. In past years, the department has had Igushik-only openings to try and move the fleet into the Igushik Section, with limited success, and is trying different management approaches to increase harvest in the section.

Tools Needed: None.

Island Creek Pink Salmon

Island Creek pink salmon commercial harvests in Port Dick (Lower Cook Inlet) are typically comprised of mixed stocks. In some recent years, Island Creek escapement has exceeded the upper end of the sustainable escapement goal due to proximity of neighboring streams that have experienced poor returns. Therefore, when one stock has a poor return, harvest opportunity in Port Dick, overall, must be reduced by fishery managers to meet escapement goals for poorly performing adjacent stocks. Additional harvest opportunity could not occur on this stock unless other stocks return at higher levels to allow for increased harvest rates. Current emergency order (EO) authority and management plans are adequate to manage this fishery.

Tools Needed: None.

Chenik Lake Sockeye Salmon

Historically, the Chenik Lake system (also in Lower Cook Inlet) has been difficult to manage precisely for sockeye salmon given the barrier falls that prevent passage into the Chenik River from the ocean at all but the highest tides. Salmon, therefore, enter the lake in very large pulses. Complicating this is the turbid water of Lower Cook Inlet that prevents managers from making accurate estimates of sockeye numbers outside of Chenik Lagoon. Current EO authority and management plans are adequate to manage this fishery.

Tools Needed: None.

Arctic-Yukon-Kuskokwim Region – Region III

Yukon Mainstem Summer Chum Salmon

Riverwide, summer chum salmon escapement has been exceeded in Yukon River since 2002. In the mid-2000s, poor markets resulted in small commercial harvests. Since 2007, industry has worked to improve markets in the lower river (districts 1 and 2) and midriver areas (Subdistrict 4-A). It is a very remote and expensive area in which to operate.

The major difficulty managing summer chum is now related to poor king salmon runs that overlap in run timing, particularly during the peak of the summer chum salmon run. The Alaska Board of Fisheries (board) adopted a proposal last cycle to allow the department to prohibit sale of king salmon when closures of the subsistence salmon fishery are necessary for king salmon conservation. This regulation has assisted in allowing a little more commercial fishing for summer chum salmon. It remains difficult, however, to maximize harvest of summer chum salmon when there is no surplus of king salmon, which are harvested incidentally in lower river gillnet fisheries restricted to 6-inch maximum mesh size, the only legal gear for commercial fishing in lower river districts 1–3.

In 2011, the department took unprecedented management action to only open the South Mouth of District 1 by EO to short directed summer chum salmon fishing periods during the end of June. This strategy was utilized because test fishing indicated few king salmon migrating through the South Mouth, while there was a high abundance of summer chum salmon. Conversely, the Middle and North Mouth test fishery indicated higher passage of king salmon and thus, the remaining portion of the district was not opened to fishing. During four 4-hour fishing periods allowed in the South Mouth, approximately 77,000 summer chum salmon were harvested and 570 king salmon reported as caught, but not sold. Overall, the districts 1 and 2 harvest in 2011 was 266,500 summer chum salmon, the highest since 1992.

Current regulations separate subsistence and commercial fishing periods in the lower Yukon Area. In 2011, the department did allow some concurrent subsistence and commercial fishing periods by EO. This strategy was used to reduce the overall amount of fishing time during a poor king salmon run and because king salmon could not be sold. The incidental harvest of king salmon would be utilized for subsistence purposes and fishermen could decide during concurrent subsistence and commercial fishing periods whether to fish for subsistence or commercial purposes. It is anticipated similar actions will be taken in the future to increase summer chum harvest opportunity in lower Yukon River districts during times of king salmon conservation. Strategies and actions will be further refined and implemented as conditions warrant.

No buyer operated in District 4 in 2011, an area with high transportation costs and logistical difficulties. Through 1997, there were several buyers operating in Subdistrict 4-A, and in Galena, in subdistricts 4-B and 4-C. After years of poor runs from 1998 to 2002 and no fishing or buyers operating, it has been difficult to reestablish infrastructure in the area. Recently, buyers have reestablished smaller-scale operations in Subdistrict 4-A, although processing capacity is very limited compared to previous years. During times when king salmon conservation measures are needed, similar concerns and limitations on summer chum harvest

exist in this district. To increase overall opportunity and provide for king salmon conservation when needed, the department has worked with industry to address board regulatory changes that allow only fish wheel gear and stipulate that king salmon must be returned to the water alive. Last year the board adopted such regulations, adopted similar emergency regulations in District 6 (Tanana River) in response to an emergency petition submitted inseason, and made these emergency regulations permanent during the recent AYK Region meeting in January 2013.

Additional regulations were adopted by the board during the AYK Region meeting that will assist the department with managing for Chinook salmon conservation while allowing for increased commercial harvest opportunity on summer chum salmon. These regulatory changes include emergency order authority to:

- Refine implementation of concurrent subsistence and commercial periods;
- restrict commercial gillnets to mesh sizes of 5.5 inches or less with a mesh depth of 30 meshes or less; and
- restrict commercial gear to dipnets or beach seines, and require live release of any Chinook salmon taken with these gear types.

Tools Needed: None at this time

Westward Region – Region IV

Cinder River Sockeye Salmon

The Cinder River could potentially have more opportunity to harvest surplus escapement. Currently, the outer portion of the Cinder River Section is closed to commercial salmon fishing. While there is some opportunity to harvest salmon in the Cinder River Flats, fishermen are unable to fish that portion of the Cinder River Section due to shallow water within the tidal flats. In order to harvest excess salmon, a regulatory change would need to occur that would allow a fishery in that portion of the Cinder River Section outside of the breakwater.

Tools Needed: Alaska Board of Fisheries action.

Table 1.–Statewide summary.

Region	Number of times in past 5 years escapement goal exceeded 5	4	3	Total	%	Number of goals in 2010
Southeast	1	1	1	3	6.0	50
Central	2	5	15	22	21.0	105
AYK	3	4	5	12	16.4	73
Westward	1	1	2	4	6.8	59
Total	7	11	23	41	14.3	287

Table 2.–List of salmon stocks in Southeast Region with escapements that have exceeded their escapement goal in at least 3 of the last 5 years. Escapements were assessed as either Under (escapement below lower bound of goal), Met (escapement within goal range or above lower bound for lower-bound SEG), or Over (escapement exceeded upper end of goal) using the escapement goal in place at the time of enumeration.

Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	No. of times escapement over in past 5 years	No. of times escapement over in past 10 years
Chinook salmon	Chickamin River	Over	Over	Met	Over	Over	Met	Over	Met	Over	Met	2	6
Coho salmon	Hugh Smith Lake	Over	Over	Met	Over	Met	Over	Over	Over[a]	Over	Met	4	7
	Peterson Creek	Met	Met	Met	Met	Over[a]	Met	Over	Met	Over	Met	2	3
	Sitka Survey Index					Over	Over	Over	Over	Over	Over	5	6
Sockeye salmon	Taku River	Over	Over	Over	Over	Over	Over	Under	Met	Over	Over	3	8

Note: Blank cells indicate that there was no official escapement goal for the stock in that particular year. The yellow highlight indicates stocks exceeding goals in all 5 of the last 5 years.

[a] Escapement goal reevaluated; goal range changed.

Table 3.– List of salmon stocks in **Central Region** with escapements that have exceeded their escapement goal in at least 3 of the last 5 years. Escapements were assessed as either Under (escapement below lower bound of goal), Met (escapement within goal range or above lower bound for lower-bound SEG), or Over (escapement exceeded upper end of goal) using the escapement goal in place at the time of enumeration.

Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	No. of times escapement over in past 5 years	No. of times escapement over in past 10 years
Chinook salmon	*Upper Cook Inlet*												
	Kenai River - Early Run	Under	Met	Met	Over[a]	Over	Over	Over	Over	NA	NA	3	5
Chum salmon	*Upper Cook Inlet*												
	Clearwater Creek	Over	Under	Met	Under	Under	Met	Over	Met	Over	Over	3	4
	Lower Cook Inlet												
	Port Dick Creek	Over	Over	Over	Over	Met	Met	Over	Over	Met	Over	3	7
	Ursus Cove	Over	Over	Over	Over	Over	Over	Met	Over	Over	Over	4	9
	Cottonwood Creek	Over	Over	Over	Over	Over	Over	Met	Over	Over	Under	3	8
	Iniskin Bay	Over	Over	Over	Over	Over	Under	Over	Over	Over	Under	3	8
Coho salmon	*Upper Cook Inlet*												
	Jim Creek	Over	Over	Over	Over	Over	Over	Over	Over	Under	Under	3	8
Pink salmon	*Lower Cook Inlet*												
	Barabara Creek	Met	Met	Met	Over	Met	Over	Over	Met	Over	Over	4	5
	Seldovia Creek	Met	Met	Over	Over	Over	Over	Over	Under	Met	Over	3	6
	Port Graham River	Over	Met	Over	Over	Over	Over	Over	Met	Met	Over	3	7
	Windy Creek Right	Over	Over	Over	Over	Over	Over	Over	Over	Met	Under	3	8
	Windy Creek Left	Met	Over	Met	Over	Over	Met	Over	Over	Met	Met	2	5
	Rocky River	Over	Over	Met	Over	Over	Over	Over	Over	Met	Met	3	7
	Island Creek	Over	Over	Over	Met	Over	Over	Over	Over	Over	Met	4	8

-continued-

Table 3. Page 2 of 2.

Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	No. of times escapement over in past 5 years	No. of times escapement over in past 10 years
	Bruin River	Over	Met	Met	Met	Over	Over	Met	Over	Met	Under	2	4
	Sunday Creek	Over	Over	Over	Over	Over	Over	Met	Over	Met	Under	2	7
	Brown's Peak Creek	Over	Over	Met	Over	Over	Over	Met	Over	Met	Under	2	6
Sockeye salmon	*Bristol Bay*												
	Naknek River	Met	Over	Over	Over	Over	Over	Over	Met	Over	Met	3	7
	Wood River	Met	Met	Over	Met	Over	Over	Over	Met	Over	Met	3	5
	Igushik River	Under	Met	Under	Over	Over	Over	Over	Over	Over	Over	5	7
	Upper Cook Inlet												
	Crescent River	Over[b]	Over	Over	Over[a]	Over	Over	Met	NS	Over	Over	3	8
	Lower Cook Inlet												
	English Bay	Over	Over	Over	Met	Over	Over	Met	Over	Met	Met	2	6
	Delight Lake	Over	Met	Met	Over	Met	Over	Over	Over	Over	Over	5	7
	Bear Lake	Over	Over	Met	Over	Over	Over	Over	Over	Met	Over	4	8
	Chenik Lake	Met	Over	Over	Over	Over	Over	Over	Over	Over	Met	4	8
	Amakdedori Creek	Over	Over	Over	Met	Under	Over	Over	Met	Under	Over	3	6
	Prince William Sound												
	Upper Copper River	Over	Met[a]	Met	Over	Over	Over	Met	Met	Over	Over	3	6

Note: NA = data not available; NS = no survey. The yellow highlight indicates stocks exceeding goals in all 5 of the last 5 years.

[a] Escapement goal reevaluated;, goal range changed.

[b] Escapement goal reevaluated; goal type changed, but goal range remained the same.

Table 4.– List of salmon stocks in **AYK Region** with escapements that have exceeded their escapement goal in at least 3 of the last 5 years. Escapements were assessed as either Under (escapement below lower bound of goal), Met (escapement within goal range or above lower bound for lower-bound SEG), or Over (escapement exceeded upper end of goal) using the escapement goal in place at the time of enumeration.

Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	No. of times escapement over in past 5 years	No. of times escapement over in past 10 years
Chinook salmon	*Kuskokwim Area*												
	Aniak River	Met	Met	Met	NS[a]	Over	Over	Over	NS	NS	NS	2	3
Chum salmon	*Kuskokwim Area*												
	Kogrukluk River	Met	Under	Under	Over[a]	Over	Over	Met	Over	Over	Over	4	6
	Yukon River Summer Chum												
	Mainstem Yukon River	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	5	10
	Yukon River Fall Chum												
	Tanana River	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	5	10
	Delta River	Met	Over	Over	Over	Over	Over	Over	Met	Over	Over	4	8
	Chandalar River	Met	Over	Met	Over	Over	Over	Over	Met	Over	Over	4	7
	Norton Sound												
	Subdistrict 1 Aggregate	Met	Under	Met	Over	Over	Over	Met	Under	Over	Over	3	5
	Nome River	Under	Under	Met	Over[b]	Over	Over	Under	Under	Over	Met	2	4
	Snake River	Over	Met	Met	Over[b]	Over	Over	Under	Under	Over	Over	3	6
	Eldorado River	Over	Under	Under	Over[b]	Over	Over	Met	Under	Over	Over	3	6
	Kwiniuk River	Over	Met	Under	Met	Over	Over	Under	Under	Over	Over	3	5
	Unalakleet/Old Woman River	NS	NS	NS	Under[b]	NS	Under	NS	Over	Over	Over	3	3

-continued-

Table 4. Page 2 of 2.

Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	No. of times escapement over in past 5 years	No. of times escapement over in past 10 years
Salmon Escapements Exceeding Goals													
	Kotzebue Sound												
	Upper Kobuk w/ Selby River	NS	Met	Over	NS[b]	Over	NS[c]	Over	Over	NS	NS	2	4
Coho salmon	*Norton Sound*												
	Kwiniuk River	NS	Met	Met	NS[b]	NS	Over	Over	NS	Over	Over	4	4
	Niukluk River	Met	NS	Met	NS	NS	Met	Over	Over	Over[c]	Met	3	3
	North River (Unalakleet R.)	Met	NS	Over	Over[b]	NS	Over	Over	Over	Over	Over	5	7
Sockeye salmon	*Kuskokwim Area*												
	Middle Fork Goodnews River	Under	Met	Met	Over[a]	Over	Over[c]	Over	Met	Met	Under	2	4
	Norton Sound												
	Salmon Lake/Grand Central River	Under	Over	Over	Over[b]	Over	Over	Over	Under	Under	Met	2	6

Note: NS =no survey; ND = not determined yet. The yellow highlight indicates stocks exceeding goals in all 5 of the last 5 years.

[a] Escapement goal reevaluated; lower-bound goal changed to a range.

[b] Escapement goal reevaluated; goal type changed, but goal value remained the same.

[c] Escapement goal reevaluated; goal value changed.

Table 5.– List of salmon stocks in **Westward Region** with escapements that have exceeded their escapement goal in at least 3 of the last 5 years. Escapements were assessed as either Under (escapement below lower bound of goal), Met (escapement within goal range or above lower bound for lower-bound SEG), or Over (escapement exceeded upper end of goal) using the escapement goal in place at the time of enumeration.

Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	No. of times escapement over in past 5 years	No. of times escapement over in past 10 years
Coho salmon	*Kodiak*												
	Buskin River	Over	Over	Met	Over[a]	Over	Over	Over	Over	Met	Met	3	7
Pink Salmon	*Chignik*												
	Entire Chignik Area (odd year)				Over[b]		Over	[a]	Over		Over	3	4
	Entire Chignik Area (even year)				[b]	Met		Over[a]		Met			
Sockeye salmon	*AK Peninsula*												
	Cinder River	Met	Over	Over	Over	Over	Over[a]	Over	Over	Over	Over	5	9
	Ilnik River	Met	Over	Over	Over	Over	Over	Met	Over	Met	Met	2	6
	Meshik River	Over	Over	Over	Over	Over	Met[a]	Over	Over	Met[a]	Met	2	7
	North Creek	Over	Over	Over	Over	Met	Over	Over	Met	Over	Over	4	8
	Mortensen Lagoon	Met	Over	Over	Over	Over	Met	Met	Over	Over	Under	2	6

Note: The yellow highlight indicates stocks exceeding goals in all 5 of the last 5 years.
[a] Escapement goal reevaluated, goal range changed.
[b] Aggregate goal established to replace individual district level goals.

Fishery Manuscript Series No. 12-03

Summary of Pacific Salmon Escapement Goals in Alaska with a Review of Escapements from 2003 to 2011

by

Andrew R. Munro

and

Eric C. Volk

August 2012

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations

alternate hypothesis	H_A
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	E
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

FISHERY MANUSCRIPT SERIES NO. 12-03

SUMMARY OF PACIFIC SALMON ESCAPEMENT GOALS IN ALASKA WITH A REVIEW OF ESCAPEMENTS FROM 2003 TO 2011

By
Andrew R. Munro
and
Eric C. Volk
Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage

Alaska Department of Fish and Game
Division of Sport Fish, Research and Technical Services
333 Raspberry Road, Anchorage, Alaska, 99518-1565

August 2012

The Fishery Manuscript Series was established in 1987 by the Division of Sport Fish for the publication of technically-oriented results of several years' work undertaken on a project to address common objectives, provide an overview of work undertaken through multiple projects to address specific research or management goal(s), or new and/or highly technical methods, and became a joint divisional series in 2004 with the Division of Commercial Fisheries. Fishery Manuscripts are intended for fishery and other technical professionals. Fishery Manuscripts are available through the Alaska State Library and on the Internet: http://www.adfg.alaska.gov/sf/publications/ This publication has undergone editorial and peer review.

Andrew R. Munro,
Alaska Department of Fish and Game, Division of Commercial Fisheries,
333 Raspberry Road, Anchorage, Alaska 99518, USA

and

Eric C. Volk
Alaska Department of Fish and Game, Division of Commercial Fisheries,
333 Raspberry Road, Anchorage, Alaska 99518, USA

This document should be cited as:
Munro, A. R., and E. C. Volk. 2012. Summary of Pacific salmon escapement goals in Alaska with a review of escapements from 2003 to 2011. Alaska Department of Fish and Game, Fishery Manuscript Series No. 12-03, Anchorage.

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ABSTRACT

This report summarizes statewide Pacific salmon escapement goals in effect in 2011 and documents escapements for all species and stocks with goals from 2003 through 2011. Annual escapements are compared against escapement goals in place at the time to assess outcomes, with summaries by the Division of Commercial Fisheries regions. We list methods used to enumerate escapements and to develop current escapement goals (with brief descriptions) for each monitored stock.

Key words: escapement, escapement goals, Chinook salmon, sockeye salmon, coho salmon, pink salmon, chum salmon, Alaska Board of Fisheries, statewide, Alaska

INTRODUCTION

Scientifically defensible Pacific salmon escapement goals are a central tenet of fisheries management in Alaska. Escapement goals are founded in the sustained yield principle highlighted in the Alaska Constitution (Article VIII, section 4) and in state statute (AS 16.05.020). Several policies in Alaska Administrative Code also provide guidance for establishing escapement goals including the policy for the management of sustainable salmon fisheries (5AAC 39.222), the policy for statewide salmon escapement goals (5 AAC 39.223) and the policy for the management of mixed stock fisheries (5 AAC 39.220). These policies provide detailed definitions of specific escapement goal types, outline the responsibilities of the Alaska Department of Fish and Game (department) and the Alaska Board of Fisheries (board) in establishing goals, and provide general direction for development and application of escapement goals in Alaska. Currently, there are 287 active salmon stock escapement goals throughout the state of Alaska (Figure 1).

It is the responsibility of the department to document, establish and review escapement goals, prepare scientific analyses in support of goals, notify the public when goals are established or modified, and notify the board of allocative implications associated with escapement goals. The foundation for this effort is regional or area escapement goal review teams assembled every three years to review goals, recommend changes, establish new goals or eliminate goals. The teams encompass broad expertise in biological characteristics of salmon stocks and technical approaches for establishing goals. Scientific staff from headquarters may assist regional teams and address issues of general importance for escapement goal development and application in Alaska. A detailed regional report of escapement goal recommendations is presented to the board and the public at tri-annual board meetings for that region or area. Following the board meeting, recommended goals are presented to the directors of the Divisions of Commercial Fisheries and Sport Fish for approval.

While development of regional escapement goals are exhaustively detailed in regional reports and supporting documents, this statewide summary report allows readers to examine the goals and escapements for salmon stocks in a single document. It provides an overview of salmon stocks for which goals exist, a numerical description of the goal, type of goal, year the current goal was first implemented and recent years' escapement data for each stock. In addition, summary statistics documenting performance in achieving goals is presented, including a statewide summary of stocks with yield or management concerns, as recommended by the department and established by the board. Data presented in this document is the most recently available at the time of publication and supersedes data in previous annual statewide escapement reports. This report will be a useful resource for department staff, stakeholders, and the public.

METHODS

We reviewed department escapement goal reports and supporting documents to catalog current escapement goals in each region for all five species of Pacific salmon, including information on stock name, type of goal, numerical description of the goal and the year it was implemented (i.e. the first season that the goal was used to manage escapements). Regional and area staff from the divisions of Commercial Fisheries and Sport Fish provided the most current escapement estimates from 2003 through 2011 for each stock with an established escapement goal. The escapement goals listed are those in effect during the 2011 spawning season including escapement goals that were established, or updated during the 2010/2011 board meeting cycle (Appendices A-C).

Escapements from 2003 through 2011 were compared against escapement goals in place at the time of enumeration to assess outcomes in achieving goals. Escapements for a particular stock were classed as "Under" if escapement for a given year was less than the lower bound of the escapement goal. If escapement fell within the escapement goal range or was greater than a lower-bound goal, we considered the goal "Met". Where escapement exceeded the upper bound of an escapement goal range, it was classed as "Over". Where escapement goals or enumeration methods changed between 2003 and 2011 for a stock, we assessed outcomes by comparing escapement estimates with the goal and methods in place at the time of the fishery. Information on previous escapement goals and methods came from a detailed review of regional escapement goal reports, supporting documents, and conversations with regional and area biologists.

METHODS OF ESCAPEMENT GOAL DEVELOPMENT

A variety of methods are used to develop escapement goals in Alaska and brief descriptions of each are summarized below. The most commonly used methods are listed first, followed by the less common methods.

Percentile Method: A method for establishing sustainable escapement goals (SEG) developed by Bue and Hasbrouck (Unpublished)[1]. Contrast of the observed annual escapements (largest escapement divided by smallest escapement) and exploitation rate of the stock are used to select percentiles of observed escapements for estimating lower and upper bounds of the escapement goal.

Spawner-Recruit Analysis (SRA): Analysis of the relationship between escapement (number of spawners) and subsequent production of recruits (i.e. adults) in the next generation. There are several SRA models, but the Ricker production model (Ricker 1954) is almost exclusively used for salmon populations in Alaska.

Risk Analysis: Risks of management error, unneeded management action or mistaken inaction, in future years are estimated based on a precautionary reference point established using past observations of escapement (Bernard et al. 2009). This method is primarily used to guide establishment of a lower-bound SEG for nontargeted stocks of salmon.

---

[1] Bue, B. G., and J. J. Hasbrouck. *Unpublished*. Escapement goal review of salmon stocks of Upper Cook Inlet. Alaska Department of Fish and Game, Report to the Alaska Board of Fisheries, November 2001 (and February 2002), Anchorage.

Yield Analysis: Graphical or tabular examination of yields produced from observed escapement indices from which the escapement range with the greatest yields is identified (Hilborn and Walters 1992).

Theoretical Spawner-Recruit Analysis (Theoretical SRA): Used in situations where there are few or no stock specific harvest estimates and/or age data. Information from nearby stocks, or generalizations about the species, are used in a spawner-recruit production model to estimate the number of spawners needed to achieve maximum sustained yield (e.g., Clark 2005).

Empirical Observation: Goal development methods classified as "Empirical Observation" generally are *ad hoc* methods for stocks with limited or sparse data. Goals are based on observed escapements over time and may be calculated as the average escapement or the value of a low escapement for which there is evidence that the stock is able to recover (e.g., Norton Sound pink salmon escapement goals, ADF&G 2004).

Zooplankton Model: This model estimates the number of sockeye salmon *Oncorhynchus nerka* smolts of a threshold or optimal size that a lake can support based upon measures of zooplankton biomass and surface area of the lake (Koenings and Kyle 1997). Adult production is then estimated from predicted smolt production by applying marine survival rates for a range of smolt sizes.

Spawning Habitat Model: Estimates of spawning capacity or number of spawners that produce maximum sustained yield are based on relationship with watershed area, available spawning habitat in a drainage, or stream length. Spawning habitat models have been developed for sockeye salmon (Burgner et al. 1969), coho salmon *O. kisutch* (Bradford et al. 1999; Bradford et al. 1997) and Chinook salmon *O. tshawytscha* (Parken et al. 2004).

Euphotic Volume (EV) Model: Measurement of the volume of a lake where enough light penetrates to support primary production (i.e. euphotic volume) is used to estimate sockeye salmon smolt biomass (Koenings and Burkett 1987) from which adult escapement is then estimated using marine survival rates.

Lake Surface Area: Similar to spawning habitat models, the relationship between the lake surface area and escapement are used to estimate adult sockeye salmon production (Honnold et al. 1996; Nelson et al. 2006).

Conditional Sustained Yield Analysis: Observed escapement indices and harvest are used to estimate if, on average, surplus production (yield) results from a particular goal range (Nelson et al. 2005). Estimated expected yields are conditioned on extreme values of measurement error in the escapement indices.

Brood Interaction Simulation Model: This model simulates production using a spawner–recruit relationship that modifies the simulated production for the year of return using an age-structured sub-model, and estimates resulting catches and escapements under user-specified harvest strategies (Carlson et al. 1999). This is a hybrid of a theoretical SRA and yield analysis that has only been used to develop the escapement goal for Kenai River sockeye salmon.

RESULTS AND DISCUSSION

Summaries of estimated escapements and escapement goals for each monitored salmon stock from 2003 to 2011 are presented by region and species in Tables 1–4. While most information was available through regional escapement goal reports, 2011 data were often obtained directly from area and regional biologists. Data for 2011 are often preliminary estimates because complete data regarding subsistence and sport harvests are often not available immediately following the season.

A summary of escapement goal types for all species by region indicate that the majority of goals in Central, Westward, and AYK regions are SEGs, including lower-bound SEGs, with biological escapement goals (BEG) making up a smaller proportion of goals (Figure 1a). The reverse is true for Southeast region, where most goals are BEGs. Escapement goals for sockeye, Chinook and chum salmon comprise 75% of all escapement goals statewide, with the majority of goals for each species being SEGs (Figure 1b). Optimal escapement goals (OEG) and inriver goals imposed by the board, management targets, and goals based upon international agreements collectively represent a small proportion of escapement goals in Alaska.

Use of different escapement goal types for each salmon species is summarized by Division of Commercial Fisheries regions (Figures 2–5). Among the four regions, there are some distinct differences in the distribution of goal types by salmon species. In Southeast Region, the majority of goals are BEGs, which include all pink salmon *O. gorbuscha* goals, all but one Chinook salmon goal, as well as over 60% of the coho salmon goals and over 40% of the sockeye salmon goals (Figure 2). This is sharply contrasted with Central Region, where the majority of all goals are SEGs, with three sockeye stocks representing the only BEGs (Figure 3). AYK Region has the only BEGs for chum salmon in the state, with additional BEGs for three Chinook and one sockeye salmon stock (Figure 4). All Chinook salmon stocks in Westward Region are BEGs, but compared to Southeast, a much smaller proportion of coho and sockeye salmon goals are BEGs (Figure 5). These are broad generalizations immediately apparent from our summary. There are many reasons why goal types would be different between regions including fishery structure, stock assessment capacity and technical approaches.

Summary comparisons of actual estimated escapements with escapement goals in place at the time are shown in Tables 5–8, highlighting whether the goal was exceeded, met, or not met. Numerous footnotes contain important information about changes in stock assessment methods or goal ranges during that time, and are essential for a thorough understanding of the escapement estimates and evaluations of outcomes against goals. Summaries of outcomes in achieving goals are presented by species (Tables 9–12) and region (Tables 13–16; Figures 6–9). Between 2003 and 2006, it was typical to observe greater than 80% success in achieving minimum escapement goals for all species in all regions except AYK (Figures 6–9; Tables 9–12). In recent years, the proportion of escapements falling below the lower bound of goals has increased in Southeast, Central and Westward regions (Figures 6–9; Tables 9–12). Statewide, the percentage of escapement goals within the goal range (or above the lower bound if a lower-bound SEG) has been between 35% and 58% since 2003 (Figure 10a). In recent years there has been a decrease in the percentage of goals exceeded, and an increase in the percentage of goals not achieved, when compared to previous years (Figures 10b and 10c). Because meeting escapement goals is fundamental to department efforts to manage for sustainable salmon stock productivity, it is important to document outcomes for meeting these goals. Where escapements chronically (4–5

years) fail to meet expectations for harvestable yield or spawning escapements, the department may recommend, and the board may adopt a stock of concern designation for those under-performing salmon stocks. The policy for the management of sustainable salmon fisheries (5 AAC 39.222) provides specific definitions for stocks of concern. Yield concerns arise from a chronic inability to maintain expected yields or harvestable surpluses above escapement needs. Management concerns are precipitated by a chronic failure to maintain escapements within the bounds, or above the lower bound of the established goal. A conservation concern may arise from a failure to maintain escapements above a sustained escapement threshold (SET). Methods to develop stock-specific SETs, as defined in the sustainable salmon fisheries policy, are not well developed for Pacific salmon, and no SETs or stocks of conservation concern exist in Alaska. In 2011 there were 13 stocks of concern in the state (Table 17). stocks of yield concern and six stocks of management concern in the state (Table 17). Seven of these are new stocks of concern that were declared During the 2010/2011 board meeting cycle and include: Karluk River Chinook salmon in Westward Region, and in Central Region, Chuitna, Theodore and Lewis rivers Chinook salmon, and Alexander, Willow and Goose creeks Chinook salmon. All of these new stocks were designated as stocks of management concern, except for Willow and Goose creeks Chinook salmon that were designated as stocks of yield concern.

The array of methods used to enumerate salmon for each of the stocks with escapement goals, as well as methods used to assist department staff in developing the escapement goal for a given stock are summarized by region in Tables 18-21.

ACKNOWLEDGEMENTS

The authors thank the many staff members from the divisions of Commercial Fisheries and Sport Fish who assisted with providing updates to the escapement numbers and for reviewing earlier drafts of the tables for accuracy and completeness. From Southeast Region we thank Steve Heinl, John DerHovanisian, Ed Jones and Leon Shaul. From Central Region we thank Lowell Fair, Tim Baker, Steve Moffitt, Ted Otis, Mark Willette, Jack Erickson, Dan Bosch, Tim McKinley, Carol Kerkvleit, Jason Pawluk, Samantha Oslund and Suzanne Hayes. From AYK Region we thank Jan Conitz, Jim Menard, Matt Evenson and Heather Leba, and from Westward Region we thank Matt Nemeth, Bob Murphy and Matt Keyse.

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FIGURES AND TABLES

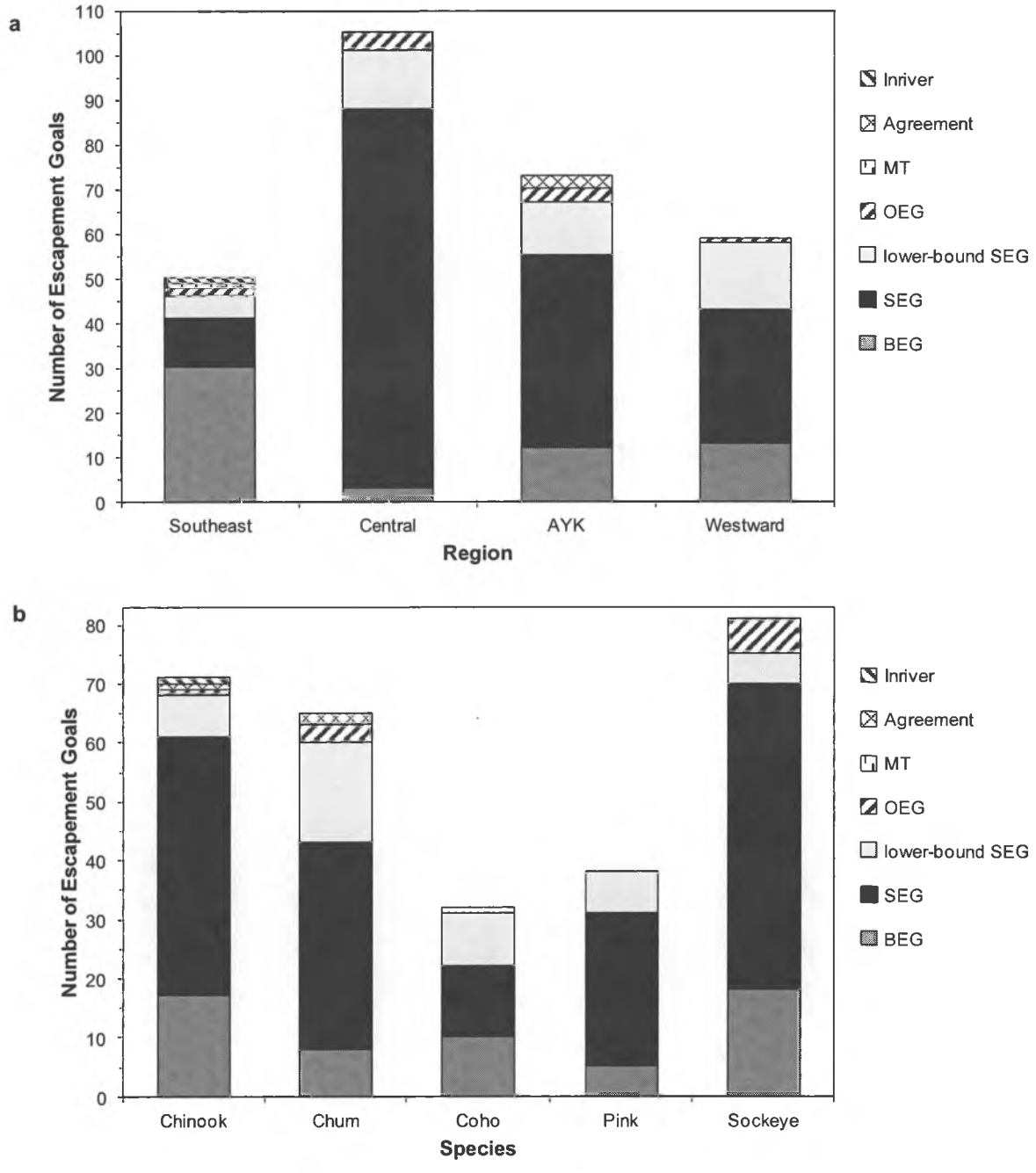


Figure 1.–Statewide summary of the 287 escapement goals in effect during the 2011 spawning season for (a) the four Division of Commercial Fisheries regions and (b) by species. BEG is biological escapement goal, SEG is sustainable escapement goal, OEG is optimal escapement goal (set by the Alaska Board of Fisheries), MT is management target, agreement goals are established through international treaties, and Inriver is inriver escapement goal (set by the Alaska Board of Fisheries).

Table 1.–Southeast Region Chinook, chum, coho, pink, and sockeye salmon escapement goals and escapements, 2003 to 2011.

System	2011 Goal Range		Type	Year Implemented	Escapement								
	Lower	Upper			2003	2004	2005	2006	2007	2008	2009	2010	2011
CHINOOK SALMON[a]													
Blossom River	250	500	BEG	1997	203	333	445	339	135	257	123	180	147
Keta River	250	500	BEG	1997	322	376	497	747	311	363	172	475	223
Unuk River	1,800	3,800	BEG	2009	5,546	3,963	4,742	5,645	5,668	3,104	3,157[b]	4,854[b]	3,272[b]
Chickamin River	450	900	BEG	1997	964	798	924	1,330	893	1,111	611	1,156	853
Andrew Creek	650	1,500	BEG	1998	1,160	2,991	1,979	2,124	1,736	981	628	1,205	936
Stikine River	14,000	28,000	BEG	2000	46,824	48,900	40,501	24,405	14,560	18,352	11,086[b]	15,180[b]	14,569[b]
King Salmon River	120	240	BEG	1997	119	135	143	150	181	120	109	158	192
Taku River	19,000	36,000	BEG	2009	36,435	75,032	38,725	42,296	14,854	27,383	20,762[b]	29,307[b]	27,523[b]
Chilkat River	1,850	3,600	Inriver[c]		5,657	3,422	3,366	3,039	1,445	2,905	4,429[b]	1,815[b]	2,803[b]
	1,750	3,500	BEG	2003									
Klukshu (Alsek) River	1,100	2,300	BEG	1998	1,645	2,451	1,034	568	676	466	1,466	2,159	1667[b]
Situk River	450	1,050	BEG	2003	2,163	698	599	695	677	413	902	167[d]	240
CHUM SALMON													
Southern Southeast Summer	68,000		lower-bound SEG	2009	66,000	74,000	66,000	76,000	132,000	13,000	41,000	47,000	157,000
Northern Southeast Inside Summer	149,000		lower-bound SEG	2009	210,000	242,000	185,000	282,000	149,000	99,000	107,000	77,000	125,000
Northern Southeast Outside Summer	19,000		lower-bound SEG	2009	30,000	86,000	77,000	57,000	34,000	46,000	15,000	24,000	23,000
Cholmondeley Sound Fall	30,000	48,000	SEG	2009	75,000	60,000	15,000	54,000	18,000	49,500	39,000	76,000	93,000
Port Camden Fall	2,000	7,000	SEG	2009	676	3,300	2,110	2,420	505	1,400	1,711	5,400	1,800
Security Bay Fall	5,000	15,000	SEG	2009	8,700	13,100	2,750	15,000	5,400	11,700	5,100	6,500	5,100
Excursion River Fall	4,000	18,000	SEG	2009	6,300	5,200	1,100	2,203	6,000	8,000	1,400	6,100	3,000
Chilkat River Fall	75,000	170,000	SEG	2009	166,000	310,000	202,000	704,000	331,000	451,000	337,000	91,000	368,000
COHO SALMON													
Hugh Smith Lake	500	1,600	BEG	2009	1,510	840	1,732	891	1,244	1,741	2,281	2,878	2,137
Taku River[c]	35,000		MT	1995	183,038	129,327	135,558	121,778	74,326	95,360[b]	104,321[b]	126,830[b]	70,745[b]
Auke Creek	200	500	BEG	1994	585	416	450	581	352	600	360	417	517
Montana Creek	400	1,200	SEG	2006	808	364	351	1,110	324	405	698	630	709
Peterson Creek	100	250	SEG	2006	203	284	139	439	226	660	123	467	138
Ketchikan Survey Index	4,250	8,500	BEG	2006	11,859	9,904	14,840	6,912	4,488	16,680	8,226	4,656	5,202
Sitka Survey Index	400	800	BEG	2006	1,101	1,124	1,668	2,647	1,066	1,117	1,156	1,273	2,222
Ford Arm Lake	1,300	2,900	BEG	1994	6,789	3,539	4,257	4,737	2,567	5,173	2,181	1,610	1,908
Berners River	4,000	9,200	BEG	1994	10,110	14,450	5,220	5,470	3,915	6,870	4,230	7,520	6,050
Chilkat River	30,000	70,000	BEG	2006	134,340	67,465	38,589	80,683	25,493	57,376	47,548	87,381	64,511
Lost River	2,200		lower-bound SEG	2009	6,394	5,047	1,241	3,500	2,542	NA	3,581	2,393	1,221
Situk River	3,300	9,800	BEG	1994	6,009	10,284	2,514	8,533	5,763	NA	5,814	11,195	3,652
Tsiu/Tsivat Rivers	10,000	29,000	BEG	1994	35,850	NA	16,600	14,500	14,000	25,200	28,000	11,000	21,000

-continued-

Table 1.–Page 2 of 2.

System	2011 Goal Range Lower	2011 Goal Range Upper	Type	Year Implemented	Escapement 2003	2004	2005	2006	2007	2008	2009	2010	2011
PINK SALMON													
Southern Southeast	3,000,000	8,000,000	BEG	2009	9,780,000	8,260,000	9,400,000	4,330,000	10,590,000	6,290,000	7,200,000	5,940,000	5,500,000
Northern Southeast Inside	2,500,000	6,000,000	BEG	2009	6,680,000	5,210,000	6,680,000	3,960,000	4,740,000	1,470,000	3,650,000	3,210,000	6,030,000
Northern Southeast Outside	750,000	2,500,000	BEG	2009	3,510,000	2,190,000	3,840,000	1,960,000	2,310,000	1,730,000	1,820,000	2,010,000	2,730,000
Situk River (even-year)	42,000	105,000	BEG	1995		144,938		114,779		1,232[f]		89,301[f]	
Situk River (odd-year)	54,000	200,000	BEG	1995	374,533		281,135		229,033		62,787		169,908
SOCKEYE SALMON													
Hugh Smith Lake	8,000	18,000	OEG[g]	2003	19,568	19,734	23,872	42,112	33,743	3,588	9,483	15,646	22,028
	8,000	18,000	BEG	2003									
McDonald Lake	55,000	120,000	SEG	2009	110,633	28,759	61,043	31,357	29,086	20,700	51,000	72,500	113,000
Mainstem Stikine River	20,000	40,000	SEG	1987	57,972	36,275	34,788	27,603	20,865	16,178[b]	23,045[b]	25,185[b]	33,659[b]
Tahltan Lake	18,000	30,000	BEG	1993	49,587	58,709	39,622	50,052	18,035	8,052	27,312	18,218	29,689
Speel Lake	4,000	13,000	BEG	2003	7,014	7,813	7,549	4,165	3,099	1,763	3,689	5,640	4,777
Taku River	71,000	80,000	SEG	1986	160,366	106,688	120,053	146,151	87,763	68,059[b]	71,811[b]	87,259[b]	112,187[b]
Redoubt Lake	7,000	25,000	OEG	2003	69,893	77,263	65,653	103,953	66,938	10,146	12,851	17,119	21,806
	10,000	25,000	BEG	2003									
Chilkat Lake	70,000	150,000	BEG	2009	113,000	119,000	84,000	73,000	68,000	71,735	150,033	61,906	63,628
Chilkoot Lake	38,000	86,000	SEG	2009	74,459	75,596	51,178	96,203	72,561	32,957	33,545	71,657	65,915
East Alsek-Doame River	13,000	26,000	BEG	2003	36,400	33,300	50,000	29,000	40,100	8,000	12,000	19,500	33,000
Klukshu River	7,500	15,000	BEG	2000	32,120	13,721	3,167	12,890	8,310	2,741	5,509	18,546	20,904
Lost River	1,000		lower-bound SEG	2009	3,057	1,123	1,476	1,018	180	200	NA	1,525	1,006
Situk River	30,000	70,000	BEG	2003	89,720	43,278	66,476	90,351	61,799	22,520	83,959	47,865[d]	89,943

Note: NA = data not available.

[a] Goals are for large (≥660 mm MEF, or fish age 1.3 and older) Chinook salmon, except the Alsek River goal, which is germane to fish age 1.2 and older and can include fish <660 mm MEF.

[b] Preliminary data.

[c] Inriver goal accounts for inriver subsistence harvest, which averages <100 fish.

[d] Incomplete weir count due to inseason problems with weir (e.g., breach of weir).

[e] For the Taku River coho salmon, the management intent of the U.S. is to ensure a minimum above border run (i.e. inriver run) of 38,000 fish as detailed in the Pacific Salmon Treaty. The management threshold for escapement is the inriver run minus the allowed Canadian inriver harvest of 3,000 at runs of less than 50,000.

[f] Situk River weir was pulled well before peak of pink salmon run so adequate assessment was not possible.

[g] Hugh Smith Lake sockeye salmon OEG includes wild and hatchery fish.

Table 2.–Central Region (Bristol Bay, Cook Inlet, and Prince William Sound/Copper River) Chinook, chum, coho, pink, and sockeye salmon escapement goals and escapements, 2003 to 2011.

	2011 Goal Range			Year	Escapement								
System	Lower	Upper	Type	Implemented	2003	2004	2005	2006	2007	2008	2009	2010	2,011
CHINOOK SALMON													
Bristol Bay													
Nushagak River	40,000	80,000	SEG	2007	72,420	107,591	163,506	117,364	50,960	91,653	73,379	56,134	59,728
Togiak River	9,300		lower-bound SEG	2007	NS	NS	NS	NS	NS	NS	NS	NS[a]	NS
Naknek River	5,000		lower-bound SEG	2007	6,081	12,878	NS	NS	5,498	6,559	3,305[b]	NS[a]	NS
Alagnak River	2,700		lower-bound SEG	2007	8,209	6,755	5,084	4,278	3,455	1,825	1,957	NS[a]	NS
Egegik River	450		lower-bound SEG	2007	790	579	335	196	458	162	350[c]	NS[a]	NS
Upper Cook Inlet													
Alexander Creek	2,100	6,000	SEG	2002	2,012	2,215	2,140	885	480	150	275	177	343
Campbell Creek	380		lower-bound SEG	2011	745	964	1,097	1,052	588	439	554	290	260
Chuitna River	1,200	2,900	SEG	2002	2,339	2,938	1,307	1,911	1,180	586	1,040	735	719
Chulitna River	1,800	5,100	SEG	2002	NS	2,162	2,838	2,862	5,166	2,514	2,093	1,052	1,875
Clear (Chunilna) Creek	950	3,400	SEG	2002	NS	3,417	1,924	1,520	3,310	1,795	1,205	903	512
Crooked Creek	650	1,700	SEG	2002	2,554	2,196	1,903	1,516	964	881	617	1,088	654
Deshka River	13,000	28,000	SEG	2011	39,257	57,934	37,725	31,150	18,714	7,533	11,967	18,594	19,026
Goose Creek	250	650	SEG	2002	175	417	468	306	105	117	65	76	80
Kenai River - Early Run	5,300	9,000	OEG	2005	10,097	11,855	16,387	18,428	12,504	11,732	9,771	NA[d]	NA[e]
	4,000	9,000	SEG	2011									
Kenai River - Late Run	17,800	35,700	SEG	2011	23,736	40,198	26,046	24,423	32,618	24,144	17,158	NA[d]	NA[e]
Lake Creek	2,500	7,100	SEG	2002	8,153	7,598	6,345	5,300	4,081	2,004	1,394	1,617	2,563
Lewis River	250	800	SEG	2002	878	1,000	441	341	0[f]	120	111	56	92
Little Susitna River	900	1,800	SEG	2002	1,114	1,694	2,095	1,855	1,731	1,297	1,028	589	887
Little Willow Creek	450	1,800	SEG	2002	879	2,227	1,784	816	1,103	NC	776	468	713
Montana Creek	1,100	3,100	SEG	2002	2,576	2,117	2,600	1,850	1,936	1,357	1,460	755	494
Peters Creek	1,000	2,600	SEG	2002	3,998	3,757	1,508	1,114	1,225	NC	1,283	NC	1,103
Prairie Creek	3,100	9,200	SEG	2002	4,095	5,570	3,862	3,570	5,036	3,039	3,500	3,022	2,038
Sheep Creek	600	1,200	SEG	2002	NS	285	760	580	400	NC	500	NC	350
Talachulitna River	2,200	5,000	SEG	2002	9,573	8,352	4,406	6,152	3,871	2,964	2,608	1,499	1,368
Theodore River	500	1,700	SEG	2002	1,059	491	478	958	486	345	352	202	327
Willow Creek	1,600	2,800	SEG	2002	3,855	2,840	2,411	2,193	1,373	1,255	1,133	1,173	1,061
Lower Cook Inlet													
Anchor River	3,800	10,000	SEG	2011	9,238	12,016	11,156	8,945	9,622	5,806	3,455	4,449	3,547[g]
Deep Creek	350	800	SEG	2002	1,008	1,075	1,076	507	553	205	483	387	696
Ninilchik River	550	1,300	SEG	2008	517	679	1,259	1,013	543	586	528	605	668[g]

-continued-

Table 2. –Page 2 of 5.

System	2011 Goal Range Lower	Upper	Type	Year Implemented	Escapement 2003	2004	2005	2006	2007	2008	2009	2010	2011
Prince William Sound													
Copper River	24,000		lower-bound SEG	2003	34,034	30,628	21,528	58,454	34,565	32,487	27,787	16,771	27,000[b]
CHUM SALMON													
Bristol Bay													
Nushagak River	190,000		lower-bound SEG	2007	295,413	283,811	456,025	661,002	161,483	326,300	438,481	273,914	248,278
Upper Cook Inlet													
Clearwater Creek	3,800	8,400	SEG	2002	800	3,900	530	500	5,590	12,960	8,300	13,700	11,630
Lower Cook Inlet													
Port Graham River	1,450	4,800	SEG	2002	2,925	1,177	743	2,231	1,882	1,802	1,029	1,395	1,764
Dogfish Lagoon	3,350	9,150	SEG	2002	13,287	3,617	2,746	5,394	4,919	6,200	4,380	12,703	12,936
Rocky River	1,200	5,400	SEG	2002	5,549	17,159	6,060	11,200	1,600	3,763	2,500	1,271	4,480
Port Dick Creek	1,900	4,450	SEG	2002	5,595	8,620	4,848	2,786	2,753	11,774	5,592	2,439	7,087
Island Creek	6,400	15,600	SEG	2002	16,274	15,135	20,666	5,615	3,092	12,935	9,295	3,408	11,755
Big Kamishak River	9,350	24,000	SEG	2002	16,357	57,897	25,717	58,173	14,787	4,495	15,026	NS	5,532
Little Kamishak River	6,550	23,800	SEG	2002	22,194	45,342	12,066	42,929	15,569	21,265	4,213	18,414	19,31
McNeil River	24,000	48,000	SEG	2008	29,306	14,613	22,496	17,403	21,629	10,617	18,766	10,520	30,9
Bruin River	6,000	10,250	SEG	2002	13,080	15,886	21,208	7,000	3,055	17,535	10,071	6,200	3,486
Ursus Cove	6,050	9,850	SEG	2002	30,410	15,988	12,176	15,663	20,897	6,502	12,946	11,765	10,636
Cottonwood Creek	5,750	12,000	SEG	2002	72,764	16,277	17,914	13,243	12,522	11,561	19,405	15,848	4,730
Iniskin Bay	7,850	13,700	SEG	2002	18,709	22,044	16,461	15,640	5,340	20,042	30,821	19,252	16,522
Prince William Sound[a]													
Eastern District	50,000		lower-bound SEG	2006	198,921	108,833	113,135	109,403	123,814	74,740	55,219	91,514	196,933
Northern District	20,000		lower-bound SEG	2006	44,272	42,456	30,657	52,039	49,669	38,791	37,358	38,207	52,474
Coghill District	8,000		lower-bound SEG	2006	19,729	9,685	11,979	15,900	14,052	39,660	36,724	51,589	16,368
Northwestern District	5,000		lower-bound SEG	2006	12,736	10,371	12,696	25,860	10,778	28,051	34,290	30,074	11,447
Southeastern District	8,000		lower-bound SEG	2006	116,131	42,344	25,547	26,739	60,464	21,614	16,453	85,138	91,218
COHO SALMON													
Bristol Bay													
There are no coho salmon stocks with escapement goals in Bristol Bay.													
Upper Cook Inlet													
Fish Creek (Knik)	1,200	4,400	SEG	2011	1,231	1,415[j]	3,011[j]	4,967[j]	6,868[j]	4,868[j]	8,214	6,977	1,428[j]
Jim Creek	450	700	SEG	2002	1,421	4,652	1,464	2,389	725	1,890	1,331	242	229
Little Susitna River	10,100	17,700	SEG	2002	10,877	40,199	16,839[k]	8,786[k]	17,573	18,485	9,523	9,214	4,826[k]

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Table 2.–Page 3 of 5.

System	2011 Goal Range Lower	Upper	Type	Year Implemented	Escapement 2003	2004	2005	2006	2007	2008	2009	2010	2,011
Lower Cook Inlet													
There are no coho salmon stocks with escapement goals in Lower Cook Inlet													
Prince William Sound													
Copper River Delta	32,000	67,000	SEG	2003	72,180	99,980	101,082	89,270	53,820	76,892	41,294	41,077	38,495
Bering River	13,000	33,000	SEG	2003	32,475	30,185	44,542	33,192	33,062	28,932	22,141	21,311	18,890
PINK SALMON													
Bristol Bay													
There are no pink salmon stocks with escapement goals in Bristol Bay.													
Upper Cook Inlet													
There are no pink salmon stocks with escapement goals in Upper Cook Inlet.													
Lower Cook Inlet													
Humpy Creek	21,650	85,550	SEG	2002	90,853	28,945	93,756	48,368	53,989	90,870	5,207	70,686	1,670
China Poot Creek	2,900	8,200	SEG	2002	6,694	3,335	9,223	7,242	6,235	5,086	1,120	2,220	3,462
Tutka Creek	6,500	17,000	SEG	2002	30,866	17,846	133,600	25,824	5,664	14,144	3,770	2,141	21,974
Barabara Creek	1,900	8,950	SEG	2002	5,062	5,395	14,440	3,554	25,168	16,557	2,583	13,935	21,974
Seldovia Creek	19,050	38,950	SEG	2002	35,135	56,763	98,602	70,045	69,405	53,484	14,619	25,886	46,231
Port Graham River	7,700	19,850	SEG	2002	14,916	44,010	69,095	31,173	25,595	24,720	13,996	16,586	20,883
Port Chatham	7,800	21,000	SEG	2002	34,979	26,375	44,389	24,210	14,451	16,354	25,291	2,992	15,830
Windy Creek Right	3,350	10,950	SEG	2002	23,341	11,974	22,174	17,146	32,297	12,491	15,012	6,408	1,722
Windy Creek Left	3,650	29,950	SEG	2002	82,814	23,286	72,031	65,155	18,339	64,068	57,263	24,241	12,210
Rocky River	9,350	54,250	SEG	2002	287,443	53,760	198,671	67,840	189,992	90,876	173,583	27,045	22,706
Port Dick Creek	18,550	58,300	SEG	2002	107,575	13,323	122,236	51,500	44,170	34,228	41,681	41,090	16,868
Island Creek	7,200	28,300	SEG	2002	118,637	33,573	26,404	107,683	87,235	49,719	44,527	69,525	10,181
S. Nuka Island Creek	2,700	14,250	SEG	2002	41,366	6,432	11,199	5,100	6,645	12,300	19,934	NS	NS
Desire Lake Creek	1,900	20,200	SEG	2002	34,766	24,258	45,980	74,774	11,820	9,546	73,926	2,978	600
Bear & Salmon Creeks	eliminated			2011	4,435	1,236	34,452	9,033	NS	NS	NS	NS	
Thumb Cove	eliminated			2011	5,050	4,250	8,668	5,205	NS	NS	NS	NS	
Humpy Cove	eliminated			2011	2,563	990	14,586	1,905	NS	NS	NS	NS	
Tonsina Creek	eliminated			2011	5,180	3,450	9,922	6,453	NS	NS	NS	NS	
Bruin River	18,650	155,750	SEG	2002	138,674	66,494	98,346	515,114	350,420	150,717	1,067,351	40,256	4,534
Sunday Creek	4,850	28,850	SEG	2002	346,657	31,497	116,170	70,037	394,797	20,434	106,296	6,607	844
Brown's Peak Creek	2,450	18,800	SEG	2002	285,049	18,100	60,983	35,703	249,383	17,400	63,605	3,092	2,035
Prince William Sound													
All Districts Combined (even year)	1,250,000	2,750,000	SEG	2003		1,996,223		1,187,595		862,419		1,916,910	
All Districts Combined (odd year)[1]	1,250,000	2,750,000	SEG	2003	2,857,289		4,669,168		1,509,133		1,828,801		3,921,761

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Table 2.–Page 4 of 5.

System	2011 Goal Range		Type	Year Implemented	Escapement								
	Lower	Upper			2003	2004	2005	2006	2007	2008	2009	2010	2,011
SOCKEYE SALMON													
Bristol Bay													
Kvichak River[m]	2,000,000	10,000,000	SEG	2009	1,687,000	5,500,000	2,320,000	3,068,000	2,810,000	2,758,000	2,266,000	4,207,000	2,264,000
Alagnak River	320,000		lower-bound SEG	2007	3,676,000	5,397,000	4,219,000	1,774,000	2,466,000	2,181,000	971,000	1,188,000	884,000
Naknek River	800,000	1,400,000	SEG[n]	1984	1,831,000	1,939,000	2,745,000	1,953,000	2,945,000	2,473,000	1,169,000	1,464,000	1,177,000
Egegik River	800,000	1,400,000	SEG	1995	1,152,000	1,290,000	1,622,000	1,465,000	1,433,000	1,260,000	1,146,000	927,000	961,000
Ugashik River	500,000	1,200,000	SEG	1995	790,000	815,000	800,000	1,003,000	2,599,000	596,000	1,364,000	831,000	1,030,000
Wood River	700,000	1,500,000	SEG	2000	1,460,000	1,543,000	1,497,000	4,008,000	1,528,000	1,725,000	1,319,000	1,804,000	1,098,000
Igushik River	150,000	300,000	SEG	2000	194,000	110,000	366,000	305,000	415,000	1,055,000	514,000	518,000	421,000
Nushagak River	235,000	760,000	OEG	1997	581,000	492,000	1,049,000	548,000	518,000	493,000	484,000	469,000	428,000
	340,000	760,000	SEG	1997									
Togiak River	120,000	270,000	SEG	2009	232,000	136,000	156,000	312,000	270,000	206,000	314,000	188,000	191,000
Upper Cook Inlet													
Crescent River	30,000	70,000	BEG	2005	122,159	103,201	125,623	92,533	79,406	62,029	NS	86,333	81,952
Fish Creek (Knik)	20,000	70,000	SEG	2002	91,952	22,157	14,215	32,562	27,948	19,339	83,480	126,836	66,678
Kasilof River	160,000	390,000	OEG	2011	347,434	575,721	346,516	366,216	335,943	299,601	295,434	265,513	244,2
	160,000	360,000	BEG	2011									
Kenai River[o]	700,000	1,400,000	OEG	2011	921,064	1,120,076	1,114,618	1,311,144	595,355	402,264	498,592	732,790	1,333,217
	700,000	1,200,000	SEG	2011									
Packers Creek	15,000	30,000	SEG	2008	NS	NS	22,000	NS	46,637	25,247	16,473	NS	NA
Russian River - Early Run	22,000	42,000	BEG	2011	23,650	56,582	52,903	80,524	27,298	30,989	52,178	27,074	29,129
Russian River - Late Run	30,000	110,000	SEG	2005	157,469	110,244	59,473	89,160	53,068	46,638	80,088	38,848	41,529
Yentna River[p]	eliminate d			2009	180,813	71,281	36,921	92,045	79,901	90,180			
Chelatna Lake	20,000	65,000	SEG	2009				18,433	41,290	73,469	17,721	37,784	70,353
Judd Lake	25,000	55,000	SEG	2009				40,633	58,134	54,304	44,616	18,361	39,997
Larson Lake	15,000	50,000	SEG	2009			9,751	57,411	47,736	35,040	40,933	20,324	12,413
Lower Cook Inlet													
English Bay	6,000	13,500	SEG	2002	19,422	15,310	8,188	15,454	16,487	11,996	18,176	12,253	9,920
Delight Lake	7,550	17,650	SEG	2011	7,538	7,262	15,200	10,929	43,963	23,933	12,700	23,775	20,190
Desire Lake	8,800	15,200	SEG	2002	8,400	10,700	4,820	18,600	10,000	10,700	16,000	6,320	9,630
Bear Lake	700	8,300	SEG	2002	9,498	8,061	10,285	8,338	8,421	9,000	9,977	7,964	8,620
Aialik Lake	3,700	8,000	SEG	2002	5,370	10,100	5,250	4,760	5,370	4,200	3,100	5,315	3,480
Mikfik Lake	6,300	12,150	SEG	2002	12,830	14,020	5,970	17,700	11,190	5,560	15,130	11,330	345
Chenik Lake	3,500	14,000	SEG	2011	13,825	17,006	14,507	13,868	18,288	11,284	15,200	17,312	10,330

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Table 2.–Page 5 of 5.

System	2011 Goal Range		Type	Year	Escapement								
	Lower	Upper		Implemented	2003	2004	2005	2006	2007	2008	2009	2010	2,011
Amakdedori Creek	1,250	2,600	SEG	2002	11,800	7,200	1,710	300	3,830	3,200	2,160	1,210	3,412
Prince William Sound													
Upper Copper River	300,000	500,000	SEG	2003	461,050	438,482	541,247	605,874	638,029	496,451	477,905	504,549	629,544[q]
Copper River Delta	55,000	130,000	SEG	2003	73,150	69,385	58,406	98,896	88,285	67,950	69,292	82,835	76,507
Bering River	20,000	35,000	SEG	2003	32,840	25,135	30,890	14,671	21,471	18,396	17,022	4,367	28,530
Coghill Lake	20,000	40,000	SEG	2006	75,427	30,569	30,313	24,157	70,001	29,298	19,293	24,312[r]	102,359
Eshamy Lake	13,000	28,000	BEG	2009	39,845	13,443	23,523	41,823	16,646	18,495	24,025	16,291	20,565

Note: NA = data not available; NC = no count; NS = no survey.

[a] Aerial surveys for Chinook salmon were not flown in 2010 due to poor weather conditions and high water levels.

[b] In 2009, aerial surveys were only flown on Big Creek (2,834 Chinook salmon) and King Salmon River (471 Chinook salmon). Mainstem Naknek River and Paul's Creek were not surveyed in 2009.

[c] Aerial surveys were conducted in the Egegik and King Salmon River systems on August 5, 2009 to provide escapement indices for Chinook and chum salmon. Resulting counts were 350 Chinook, and 277 chum salmon. Water conditions were poor; high and turbid conditions prevented observation on most of the surveyed systems. Chinook escapement indices were well below average in streams surveyed, but should be considered minimum counts due to the poor water conditions. Based on carcass distribution and observed presence, the survey was likely conducted after peak spawning.

[d] TS-based escapement estimate deemed unreliable.

[e] TS-based escapement estimate not available.

[f] Lewis River diverged into swamp 1/2 mi. below bridge. No water in channel.

[g] Preliminary escapement estimates.

[h] The Copper River Chinook salmon spawning escapement estimate is preliminary. The estimate is generated from a mark-recapture project run by the Native Village of Eyak and LGL Consulting. The spawning escapement estimate is generated by subtracting the upper Copper River state and federal subsistence, state personal use, and sport fishery harvest estimates from the mark-recapture estimate of the inriver abundance. The estimates for the federal and state subsistence and the state personal use fishery harvests are generally not available for ~6 months after the fishery is closed. Additionally, the sport fishery harvest estimate is based on the mail-out survey and is generally available ~12 months after the fishery ends.

[i] No estimates for chum salmon escapements are included for the Unakwik, Eshamy, Southwestern, or Montague districts because there are no escapement goals for those districts.

[j] Incomplete counts for Fish Creek (Knik) in 2004-2008, and 2011 because weir was pulled in mid-August.

[k] Incomplete counts for Little Susitna River in 2005, 2006, and 2011 due to breach of weir.

[l] The estimates for pink salmon (odd year) do not include Unakwik District escapements, due to absence of an escapement goal and an average escapement estimate of a few thousand fish.

[m] Prior to 2010 Kvichak River had a pre-peak/peak-cycle escapement goal of 6-10 million sockeye and an off-peak escapement goal of 2-10 million fish. Between 2001 and 2009 only one year (2004) was classified as either a pre-peak or peak year.

[n] Naknek River has an OEG of 800,000-2,000,000 when the Naknek River Special Harvest Area (NRHSA) is open to fishing.

[o] Uses the best estimate of sport harvest upstream of sonar.

[p] Yentna River sockeye salmon escapement goal was replaced by SEGs on Chelatna, Judd and Larson lakes in early 2009.

[q] The 2011 upper Copper River sockeye salmon spawning escapement estimate is preliminary pending the estimates of sport fishery harvests and final mark-recapture estimate of upper Copper River Chinook salmon.

[r] The Coghill River weir was removed on 26 July 2010, so this provides a minimum estimate.

Table 3.–Arctic-Yukon-Kuskokwim Region Chinook, chum, coho, pink, and sockeye salmon escapement goals and escapements, 2003 to 2011.

System	2011 Goal Range		Type	Year Implemented	Escapement								
	Lower	Upper			2003	2004	2005	2006	2007	2008	2009	2010	2011
CHINOOK SALMON													
Kuskokwim Area													
North (Main) Fork Goodnews River	640	3,300	SEG	2005	3,935	7,462	NS	4,159	NS	2,155	NS	NS	853
Middle Fork Goodnews River	1,500	2,900	BEG	2007	2,389	4,388	4,633	4,559	3,852	2,161	1,630	2,244	1,861
Kanektok River	3,500	8,000	SEG	2005	6,206	28,375	14,202	8,433	NS	3,659	NS	1,228	NS
Kogrukluk River	5,300	14,000	SEG	2005	11,771	19,651	22,000	19,414	13,029	9,730	9,702	5,690	6,891
Kwethluk River	6,000	11,000	SEG	2007	14,474	28,604	NA	17,618	12,927	5,275	5,744	1,669	4,076
Tuluksak River	1,000	2,100	SEG	2007	1,064	1,475	2,653	1,043	374	701	362	201	286
George River	3,100	7,900	SEG	2007	4,693	5,207	3,845	4,357	4,883	2,698	3,663	1,500	1,571
Kisaralik River	400	1,200	SEG	2005	654	5,157	2,206	4,734	692	1,074	NS	235	NS
Aniak River	1,200	2,300	SEG	2005	3,514	5,362	NS	5,639	3,984	3,222	NS	NS	NS
Salmon River (Aniak R)	330	1,200	SEG	2005	1,242	2,177	4,097	NS	1,458	589	NS	NS	79
Holitna River	970	2,100	SEG	2005	NS	4,051	1,760	1,866	NS	NS	NS	587	NS
Cheeneetnuk River (Stony R)	340	1,300	SEG	2005	810	918	1,155	1,015	NS	290	323	NS	249
Gagaryah River (Stony R)	300	830	SEG	2005	1,095	670	788	531	1,035	177	303	62	9[illegible]
Salmon River (Pitka Fork)	470	1,600	SEG	2005	1,241	1,138	1,801	862	943	1,305	632	135	7[illegible]
Yukon River													
East Fork Andreafsky River	2,100	4,900	SEG	2010	4,336	8,045	2,239	6,463	4,504	4,242	3,004	2,413	5,213
West Fork Andreafsky River	640	1,600	SEG	2005	1,578	1,317	1,492	824	976	262	1,678	858	1,173
Anvik River	1,100	1,700	SEG	2005	1,100	3,679	2,421	1,876	1,529	992	832	974	642
Nulato River (forks combined)	940	1,900	SEG	2005	NS	1,321	553	1,292	2,583	922	2,260	711	1,401
Gisasa River	eliminated			2010	NS	731	958	843	593	487	515	264	906
Chena River	2,800	5,700	BEG	2001	11,100	9,696	4,075	2,936	3,806	3,208	5,253	2,382	
Salcha River	3,300	6,500	BEG	2001	15,500	15,761	5,988	10,679	6,425	5,415	12,774	6,135	3,537
Canada Mainstem	42,500	55,000	Agreement[a]	Annual	80,594	48,469	67,985	62,630	34,904	33,883	65,278	32,010	46,844
Norton Sound													
Fish River/Boston Creek	100		lower-bound SEG	2005	240	112	46	NS	NS	NS	67[b]	29	NS
Kwiniuk River	300	550	SEG	2005	744	663	342	195	194	237	444	135	57
North River (Unalakleet R)	1,200	2,600	SEG	2005	1,452	1,104	1,015	906	1,948	903	2,352	1,256	864
Shaktoolik River	400	800	SEG	2005	15[c]	91[c]	74[d]	150[c]	412	NS	129[b]	29	106
Unalakleet/Old Woman River	550	1,100	SEG	2005	168[c]	398[c]	510[d]	NS	821	NS	1,368	1,021[e]	1,111

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Table 3.–Page 2 of 4.

System	2011 Goal Range Lower	Upper	Type	Year Implemented	Escapement 2003	2004	2005	2006	2007	2008	2009	2010	2011
CHUM SALMON													
Kuskokwim Area													
Middle Fork Goodnews River	12,000		lower-bound SEG	2005	21,637	31,616	26,690	54,699	49,285	44,699	19,715	26,687	19,974
Kanektok River	5,200		lower-bound SEG	2005	NS	NS	NS	NS	NS	NS	NS	NS	NS
Kogrukluk River	15,000	49,000	SEG	2005	23,413	24,201	197,723	180,594	49,505	44,978	84,940	63,583	76,384
Aniak River	220,000	480,000	SEG	2007	477,544	672,931	1,151,505	1,108,626	696,801	427,911	479,531	429,643	345,630
Yukon River Summer Chum													
East Fork Andreafsky River	40,000		lower-bound SEG	2010	22,461	64,883	20,127	102,260	69,642	57,259	8,770	72,839	100,473
Anvik River	350,000	700,000	BEG	2005	256,920	365,353	525,391	605,485	459,038	374,928	193,098	396,173	642,527
Mainstem Yukon River	600,000	1,000,000	OEG	2001	1,168,518	1,357,826	2,439,616	3,767,044	1,726,885	1,665,667	1,283,206	1,327,581	1,778,870
Yukon River Fall Chum													
Yukon River Drainage	300,000	600,000	SEG	2010	694,000	536,000	1,990,000	881,000	911,000	687,000	482,000	526,000	881,000
Tanana River	61,000	136,000	BEG	2001	263,000	187,000	373,000	233,000	357,000	264,000	160,000	213,000	271,000
Delta River	6,000	13,000	BEG	2001	23,000	25,000	28,000	14,055	19,000	23,000	13,000	18,000	24,000
Toklat River	eliminated			2010	21,000	35,000	NA	NA	NA	NA	NA		
Upper Yukon River Tributaries	152,000	312,000	BEG	2001	288,000	195,000	1,179,000	435,000	327,000	248,000	NA	196,000	406,000
Chandalar River	74,000	152,000	BEG	2001	214,000	137,000	497,000	245,000	228,000	178,000	150,000	158,000	295,000
Sheenjek River	50,000	104,000	BEG	2001	44,000	38,000	561,000	160,000	65,000	50,000	54,000	22,000	98,000
Fishing Branch River (Canada)	22,000	49,000	Agreement	2008[f]	30,000	20,000	121,000	30,000	34,000	20,000	26,000	16,000	13,000
Yukon R. Mainstem (Canada)	70,000	104,000	Agreement	2010[g]	143,000	154,000	438,000	211,000	227,000	174,000	93,000	118,000	204,000
Norton Sound													
Subdistrict 1 Aggregate	23,000	35,000	BEG	2001	17,081	23,787	38,808	87,223	76,937	25,215	21,368	97,798	66,122
Sinuk River	eliminated			2010	3,482	3,197	4,710	4,834	16,481	1,000[h]	2,232	11,107	15,028
Nome River	2,900	4,300	SEG	2005	1,957	3,903	5,584	5,678	7,034	2,607	1,565	5,906	3,582
Bonanza River	eliminated			2010	1,664	2,166	5,534	708	8,491	1,000[h]	6,744	3,513	7,357
Snake River	1,600	2,500	SEG	2005	2,201	2,145	2,948	4,128	8,144	1,244	891	6,973	4,343
Solomon River	eliminated			2010	806	1,436	1,914	2,062	3,469	1,000[h]	918	2,678	4,529
Flambeau River	eliminated			2010	3,380	7,667	7,692	27,828	12,006	11,618	4,075	25,009	15,056
Eldorado River	6,000	9,200	SEG	2005	3,591	3,273	10,426	41,985	21,312	6,746	4,943	42,612	16,227
Niukluk River	23,000		lower-bound SEG	2010	20,018	10,770	25,598	29,199	50,994	12,078	15,879	48,561	23,607
Kwiniuk River	11,500	23,000	OEG	2001	12,123	10,362	12,083	39,519	27,756	9,462	8,733	71,388	31,604
	10,000	20,000	BEG	2001									
Tubutuluk River	9,200	18,400	OEG	2001	1,799	NS	4,842	NS	7,045	NS	3,161	16,097	14,127
	8,000	16,000	BEG	2001									

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Table 3.–Page 3 of 4.

System	2011 Goal Range Lower	Upper	Type	Year Implemented	Escapement 2003	2004	2005	2006	2007	2008	2009	2010	2011
Unalakleet/Old Woman River	2,400	4,800	SEG	2005	NS	NS	1,530	NS	1,902	NS	7,143	70,811[e]	108,770
Kotzebue Sound													
Kotzebue Sound Aggregate	196,000	421,000	BEG	2007									
Noatak and Eli Rivers	42,000	91,000	SEG	2007	NS	53,058	NS	39,785	NS	270,747	69,872	NS	
Upper Kobuk w/ Selby River	9,700	21,000	SEG	2007	11,175	26,018	NS	48,750	NS	42,622	45,155	NS	
Salmon River	3,300	7,200	SEG	2007	NS	NS	NS	NS	NS	NS	NS	NS	
Tutuksuk River	1,400	3,000	SEG	2007	NS	NS	1,736	NS	NS	NS	NS	NS	
Squirrel River	4,900	10,500	SEG	2007	NS	NS	NS	NS	NS	NS	NS	NS	
COHO SALMON													
Kuskokwim Area													
Middle Fork Goodnews River	12,000		lower-bound SEG	2005	52,810	47,916	15,683	15,969	20,975	36,630	20,000	23,839	23,826
Kogrukluk River	13,000	28,000	SEG	2005	74,604	27,041	24,116	17,011	27,033	29,661	22,981	13,971	24,174
Kwethluk River	19,000		lower-bound SEG	2010	107,789	64,216	NS	25,664	19,473	49,973	21,911	NA	NA
Yukon River													
Delta Clearwater River	5,200	17,000	SEG	2005	106,000	38,000	34,000	17,000	15,000	7,500	17,000	5,867[i]	6,0
Norton Sound													
Kwiniuk River	650	1,300	SEG	2005	760	1,237	NS	NS	5,174	2,676	NS	8,058	3,288
Niukluk River[j]	2,400	7,200	SEG	2010	1,282	2,064	2,727	11,169	3,498	13,779	6,861	9,042	2,405
North River (Unalakleet R.)	550	1,100	SEG	2005	NS	1,386	1,963	NS	2,349	2,744	2,830	7,608	3,624
PINK SALMON													
Kuskokwim Area													
There are no escapement goals for pink salmon in the Kuskokwim Management Area.													
Yukon River													
There are no escapement goals for pink salmon in the Yukon River drainage.													
Norton Sound													
Nome River (odd year)	3,200		lower-bound SEG	2005	11,402		285,759		24,395		16,490		14,403
Nome River (even year)	13,000		lower-bound SEG	2005		1,051,146		578,555		1,186,554		165,931	
Kwiniuk River	8,400		lower-bound SEG	2005	22,329	3,054,684	341,048	1,347,087	54,255	1,442,249	42,957	634,220	30,023
Niukluk River	10,500		lower-bound SEG	2005	75,855	1,022,236	270,424	1,371,919	43,617	669,234	24,204	434,205	15,425
North River	25,000		lower-bound SEG	2005	280,212	1,149,294	1,670,934	2,169,890	583,320	240,286	189,939	150,807	123,892

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Table 3.–Page 4 of 4.

System	2011 Goal Range Lower	Upper	Type	Year Implemented	Escapement 2003	2004	2005	2006	2007	2008	2009	2010	2011
SOCKEYE													
Kuskokwim Area													
North (Main) Fork Goodnews River	5,500	19,500	SEG	2005	50,140	31,695	NS	78,100	NS	32,500	NS	NS	14,140
Middle Fork Goodnews River	18,000	40,000	BEG	2007	44,387	55,926	113,809	126,772	72,282	50,459	25,465	35,762	17,946
Kanektok River	14,000	34,000	SEG	2005	21,335	78,380	110,730	382,800	NS	38,900	NS	16,950	NS
Kogrukluk River	4,440	17,000	SEG	2010	9,164	6,775	37,939	60,807	16,525	19,675	23,785	13,995	8,132
Yukon River													
There are no escapement goals for Sockeye in the Yukon River drainage.													
Norton Sound													
Salmon Lake/Grand Central River	4,000	8,000	SEG	2005	20,290	25,860	42,240	41,780	20,112	11,672	272	772	5,144
Glacial Lake	800	1,600	SEG	2005	865	970	3,730	5,810	1,505	540	169	1,047	1,697

Note: NA = data not available; NS = no survey.

Note: 2011 escapements are preliminary because harvest estimates are not completed until around the beginning of the following season.

[a] Canadian Yukon River Mainstem Chinook salmon IMEG (Interim Management Escapement Goal) of 42,500-55,000 was implemented for 2010 and 2011 seasons by the United States and Canada Yukon River Joint Technical Committee (JTC). Estimates from 2005-2011 represent escapement, after subtraction of Canadian harvest.

[b] 2009 aerial surveys of the Shaktoolik River and Boston Creek are rated as incomplete as they were conducted on August 9 and 12, respectively, well after peak Chinook salmon spawning. Several carcasses and moribund Chinook salmon were observed during survey.

[c] 2003, 2004 and 2006 Shaktoolik River surveys and combined Unalakleet and Old Woman rivers surveys (2003 and 2004) are not considered complete as they were conducted well before peak spawn. Surveys during these years were rated as acceptable, but the observer noted difficulty enumerating Chinook salmon due to large numbers of pink salmon.

[d] 2005 Shaktoolik and Unalakleet River drainage surveys were conducted during peak spawning periods but Chinook salmon counts are thought to be underestimated due to large numbers of pink salmon.

[e] 2010 escapement estimate for Unalakleet/Old Woman River is a weir count.

[f] Fishing Branch River fall chum salmon IMEG of 22,000-49,000 was implemented in 2008 by JTC and will be in place through 2010.

[g] Yukon River Mainstem fall chum salmon IMEG of 70,000-104,000 was implemented for 2010 and 2011 seasons by JTC.

[h] In 2008, unable to see chum salmon in the Bonanza, Sinuk and Solomon Rivers because of large number of pink salmon. Arbitrarily assigned 1,000 chum salmon to each river.

[i] Delta Clearwater River coho salmon 2010 escapement index is not a peak count.

[j] Niukluk River coho salmon numbers (all years) are actual tower counts, and do not take into consideration upstream harvest.

Table 4.–Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas) Chinook, chum, coho, pink, and sockeye salmon escapement goals and escapements, 2003 to 2011.

System	2011 Goal Range Lower	2011 Goal Range Upper	Type	Year Implemented	Escapement 2003	2004	2005	2006	2007	2008	2009	2010	2011
CHINOOK SALMON													
AK Peninsula													
Nelson River	2,400	4,400	BEG	2004	5,154	6,959	4,993	2,516	2,492	5,012	2,048	2,769	NA
Chignik													
Chignik River	1,300	2,700	BEG	2002	6,205	7,633	6,037	3,175	1,675	1,620	1,590	3,373[a]	NA
Kodiak													
Karluk River	3,000	6,000	BEG	2011	6,986	7,228	4,684	3,673	1,697	752	1,306	2,917	3,420
Ayakulik River	4,000	7,000	BEG	2011	17,106	24,425	8,175	2,937	6,232	3,071	2,615	5,291	NA
CHUM SALMON													
AK Peninsula													
Northern District	119,600	239,200	SEG	2007	214,660	139,350	103,675	382,583	243,334	228,537	154,131	145,310	96,952
Northwestern District	100,000	215,000	SEG	2007	236,000	295,600	192,965	193,460	335,450	241,750	84,460	144,100	151,400
Southeastern District[b]	106,400	212,800	SEG	1992	218,810	367,200	412,500	405,300	201,451	277,450	106,500	62,612	145,300
South Central District	89,800	179,600	SEG	1992	79,000	184,800	235,700	119,600	126,000	140,450	18,600	85,600	169,[illegible]
Southwestern District	133,400	266,800	SEG	1992	193,030	180,000	317,910	231,935	398,010	171,250	385,730	142,650	176,[illegible]
Unimak District	800		lower-bound SEG	2007	200	400	4,200	7,915	1,200	2,800	1,400	1,050	7,000
Chignik													
Entire Chignik Area	57,400		lower-bound SEG	2008	300,325	349,518	308,700	93,489	238,216	197,259	214,959	177,220	278,145
Kodiak													
Mainland District	104,000		lower-bound SEG	2008	114,750	364,395	37,500	346,140	87,350	122,425	83,106	144,715	138,600
Kodiak Archipelago Aggregate	151,000		lower-bound SEG	2008	265,773	168,696	206,755	441,409	206,983	101,482	202,039	155,637	283,530
COHO SALMON													
AK Peninsula													
Nelson River	18,000		lower-bound SEG	2004	28,000	52,500	24,000	19,000	19,000	24,000	22,000	15,000	21,000
Thin Point Lake	3,000		lower-bound SEG	2004	25,000	9,600	17,500	9,750	9,000	3,200	900	NA[c]	200
Ilnik River	9,000		lower-bound SEG	2010	37,000	40,000	NA	31,000	22,000	27,000	NA	19,600	22,000
Chignik													
There are no coho salmon stocks with escapement goals in Chignik Area													
Kodiak													
Pasagshak River	1,200		lower-bound SEG	2011	8,886	3,402	3,773	937	1,896	3,875	2,385	1,971	1,083
Buskin River	3,200	7,200	BEG	2005	12,325	8,384	15,844	11,706	7,697	7,963	9,351	6,808[d]	6,025

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Table 4.–Page 2 of 3.

System	2011 Goal Range Lower	Upper	Type	Year Implemented	Escapement 2003	2004	2005	2006	2007	2008	2009	2010	2011
Olds River	1,000		lower-bound SEG	2011	1,534	1,860	2,495	1,912	868	656	697	127	1,003
American River	400		lower-bound SEG	2011	511	753	339	2,033	307	700	639	58	1,061
PINK SALMON													
AK Peninsula													
Bechevin Bay Section (odd year)	1,600		lower-bound SEG	2004	800		8,720		16,800		72,000		2,400
Bechevin Bay Section (even year)	31,000		lower-bound SEG	2004		84,300		116,075		11,900		13,600	
South Peninsula Total (odd year)	1,637,800	3,275,700	SEG	2007	5,511,220		6,165,634		2,680,213		3,067,000		2,494,950
South Peninsula Total (even year)	1,864,600	3,729,300	SEG	2007		8,311,410		2,862,250		3,338,370		742,912	
Chignik													
Entire Chignik Area (odd year)	500,000	800,000	SEG	2008	1,390,600		1,591,850		1,217,064		869,063		986,248
Entire Chignik Area (even year)	200,000	600,000	SEG	2008		1,114,860		374,826		863,031		330,570	
Kodiak													
Mainland District	250,000	1,000,000	SEG	2011	1,008,550	711,555	268,050	778,200	315,300	236,500	430,100	265,650	273,500
Kodiak Archipelago (odd year)	2,000,000	5,000,000	SEG	2011	4,088,412		3,688,158		2,208,678		4,707,894		2,506,714
Kodiak Archipelago (even year)	3,000,000	7,000,000	SEG	2011		8,074,963		5,086,372		2,924,708		3,378,483	
SOCKEYE SALMON													
AK Peninsula													
Cinder River	12,000	48,000	SEG	2007	102,700	58,050	141,000	101,100	142,000	129,800	133,600	108,900	106,000
Ilnik River	40,000	60,000	SEG	1991	69,000	82,000	154,000	88,000	93,000	44,300	66,000	59,000	43,000
Meshik River	25,000	100,000	SEG	2010	114,000	102,200	111,100	138,010	56,900	83,250	88,000	63,700	93,900
Sandy River	34,000	74,000	SEG	2007	66,000	32,000	101,000	48,000	44,700	32,200	36,000	37,000	37,500
Bear River Early Run	176,000	293,000	SEG	2004	226,201	354,565	332,248	262,995	206,233	125,526	216,237	226,534	207,451
Bear River Late Run	117,000	195,000	SEG	2004	139,799	80,435	221,752	182,005	224,767	195,474	133,263	142,966	132,549
Nelson River	97,000	219,000	BEG	2004	343,511	480,097	303,000	215,000	180,000	141,600	157,000	108,000	89,000
Christianson Lagoon	25,000	50,000	SEG	1980s	52,200	75,400	54,500	41,505	48,100	114,000	48,100	27,900	35,200
Swanson Lagoon	6,000	16,000	SEG	2007	16,100	24,300	2,400	376	9,200	5,500	1,000	1,700	1,000
North Creek	4,400	8,800	SEG	late 1980s	10,200	15,000	45,000	7,530	16,800	38,000	8,000	18,500	10,200
Orzinski Lake	15,000	20,000	SEG	1992	70,690	75,450	44,797	18,000	10,643	36,839	21,457	18,039	16,764
Mortensen Lagoon	3,200	6,400	SEG	late 1980s	16,804	7,215	21,703	14,688	6,200	5,600	25,000	6,600	500
Thin Point Lake	14,000	28,000	SEG	late 1980s	40,000	34,500	21,000	11,510	21,550	18,900	33,500	12,400	14,500
McLees Lake[c]	10,000	60,000	SEG	2010	101,793	40,283	12,097	12,936	21,428	8,661	10,120	32,842	36,602
Chignik													
Chignik River Early Run	350,000	400,000	SEG	2005	350,004	363,800	355,091	366,497	361,091	377,579	391,476	432,535	488,930

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Table 4.–Page 3 of 3.

System	2011 Goal Range Lower	Upper	Type	Year Implemented	Escapement 2003	2004	2005	2006	2007	2008	2009	2010	2011
Chignik River Late Run[f]	200,000	400,000	SEG	2008	334,119	214,459	225,366	368,996	293,883	328,479	328,586	311,291	264,887
Kodiak													
Malina Creek	1,000	10,000	SEG	2005	12,000	9,636	3,180	6,400	1,900	3,690	1,400	4,000	3,800
Afognak (Litnik) River	20,000	50,000	BEG	2005	27,766	15,181	21,577	22,933	21,070	26,874	31,358	52,255	49,193
Little River	3,000		lower-bound SEG	2008	50,500	16,000	3,000	3,500	8,500	2,300	1,500	3,200	3,900
Uganik Lake	24,000		lower-bound SEG	2008	51,000	83,600	7,500	26,700	35,000	64,700	53,700	30,700	37,900
Karluk River Early Run	110,000	250,000	BEG	2008	451,856	393,468	283,860	202,366	294,740	82,191	52,466	70,544	87,049
Karluk River Late Run	170,000	380,000	BEG	2005	626,854	326,466	498,102	288,007	267,185	164,419	277,611	277,558	230,273
Ayakulik River	eliminated			2005	197,892	275,238	251,906	87,780	283,042	162,888	315,184	262,327	
Ayakulik River Early Run	140,000	280,000	SEG	2011	162,708	245,123	139,246	59,315	169,596	96,912	200,648	201,933	177,480
Ayakulik River Late Run	60,000	120,000	SEG	2011	35,184	30,115	112,660	28,465	113,446	65,976	114,536	60,394	83,661
Upper Station River Early Run	25,000		OEG	1999	76,175	78,487	60,349	24,997	31,895	38,800	34,585	42,060	28,759
	43,000	93,000	BEG	2011									
Upper Station River Late Run	120,000	265,000	BEG	2005	200,894	177,108	156,401	153,153	149,709	184,856	161,736	141,139	101,893
Frazer Lake	75,000	170,000	BEG	2008	201,679	120,664	136,948	89,516	120,186	105,363	101,845	94,680	134,642
Saltery Lake	15,000	35,000	BEG	2011	57,993	54,800[h]	28,500[h]	28,000[h]	17,200[h]	49,266	46,591	26,809	30,7
Pasagshak River	3,000		lower-bound SEG	2011	8,000	46,400	22,000	6,300	14,300	14,900	1,400	4,800	13,4
Buskin Lake	5,000	8,000	BEG	2011	23,870	22,023	15,468	17,734	16,502	5,900	7,757	9,800	11,982

Note: NA = data not available.

[a] 2010 Chignik River Chinook salmon escapement is the weir count minus 300 fish for subsistence harvest.

[b] Southeastern District chum salmon escapement goal includes Shumagin Islands Section and Southeastern District Mainland.

[c] Poor survey conditions contributed to the zero aerial survey escapement index for Thin Point Lake coho salmon.

[d] Buskin River coho salmon 2010 escapement is weir count only as SWHS data are not available yet.

[e] McLees Lake sockeye salmon SEG will be in effect if a weir is in place; there will be no goal if a weir is not operated.

[f] The Chignik late-run sockeye escapement objective (July 5 to September 15) includes the late-run sockeye salmon sustainable escapement goal (SEG; 200,000 – 400,000) plus an additional 50,000 sockeye salmon inriver run goal (25,000 in August and 25,000 in September) to meet late season subsistence needs.

[g] 2002, 2004, and 2005 Malina Creek sockeye salmon escapements are weir counts. All other escapements are peak aerial survey indices.

[h] 2004-2007 Saltery Lake sockeye salmon escapements are peak aerial survey indices. All other escapements are weir counts.

[i] 2011 Pasagshak River sockeye salmon escapement is a weir count. All other escapements are peak aerial survey indices.

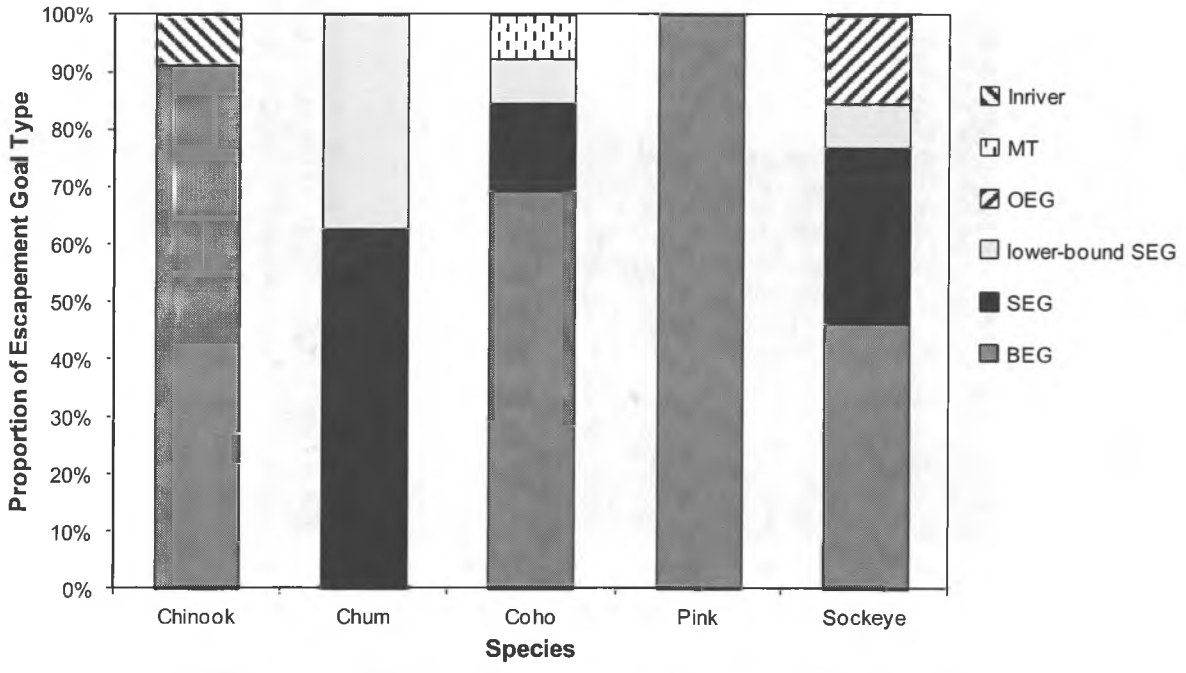


Figure 2.–Proportion of escapement goal types by species for the 50 escapement goals in Southeast Region. BEG is biological escapement goal, SEG is sustainable escapement goal, OEG is optimal escapement goal (set by the Alaska Board of Fisheries), MT is management target and Inriver is an inriver escapement goal (set by Alaska Board of Fisheries).

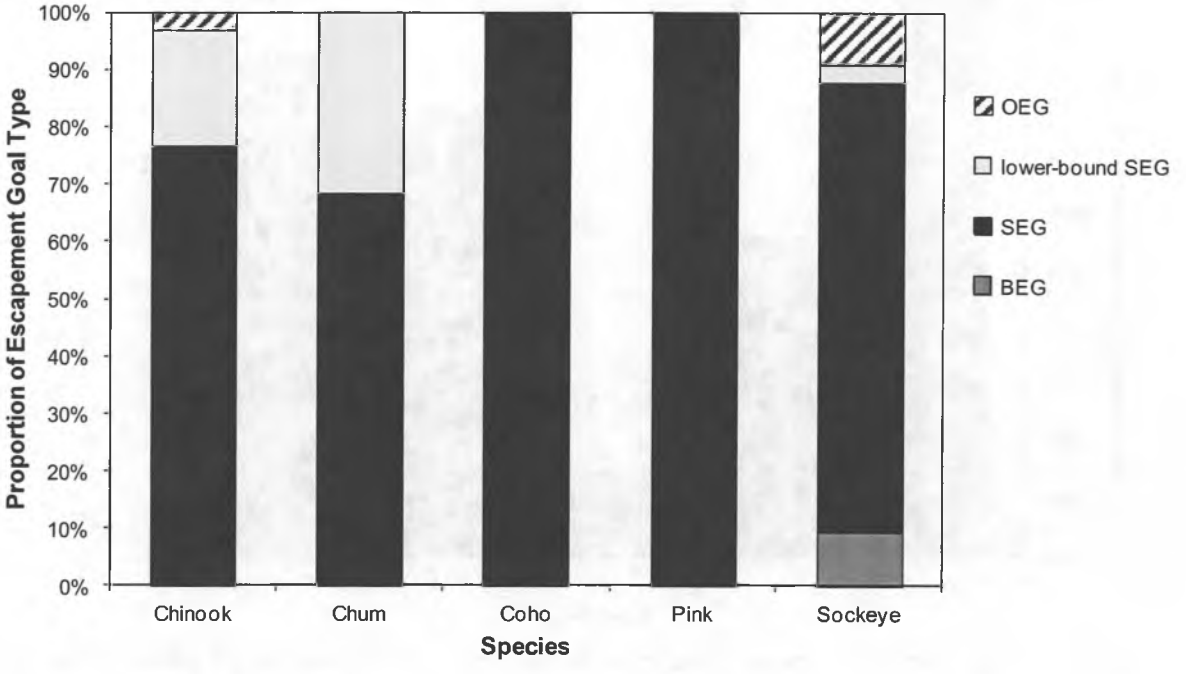


Figure 3.–Proportion of escapement goal types by species for the 105 escapement goals in Central Region (Bristol Bay, Cook Inlet, and Prince William Sound/Copper River). BEG is biological escapement goal, SEG is sustainable escapement goal, and OEG is optimal escapement goal (set by the Alaska Board of Fisheries).

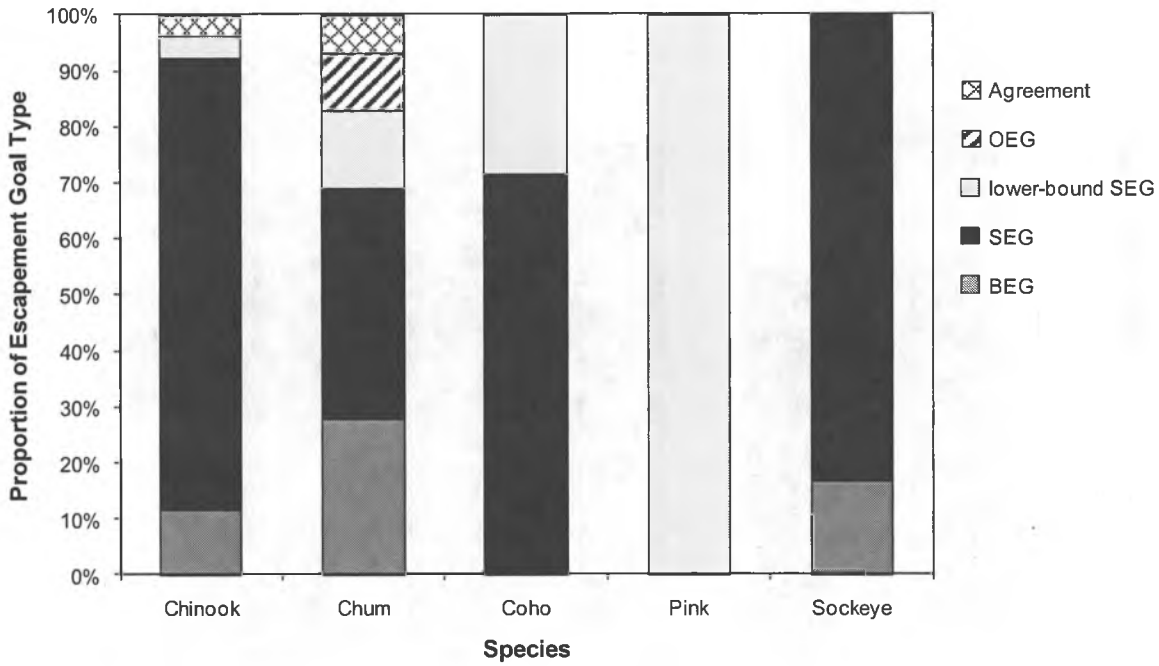


Figure 4.–Proportion of escapement goal types by species for the 73 escapement goals in Arctic-Yukon-Kuskokwim Region. BEG is biological escapement goal, SEG is sustainable escapement goal, OEG is optimal escapement goal (set by the Alaska Board of Fisheries), and agreement goals are established through international treaties.

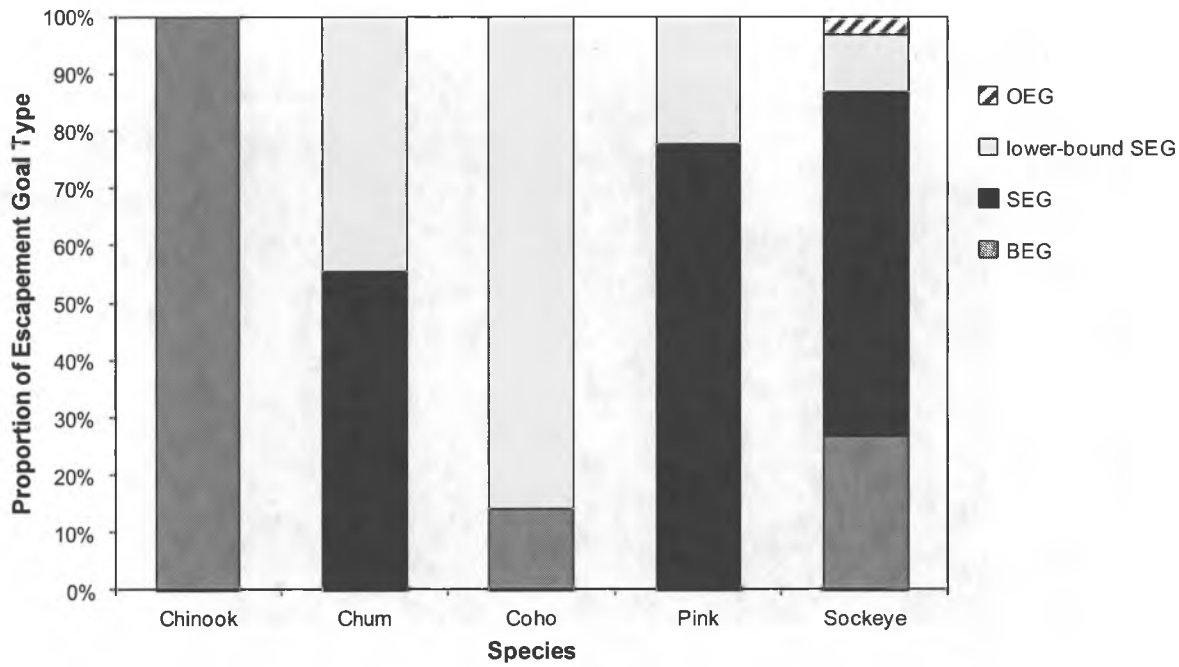


Figure 5.–Proportion of escapement goal types by species for the 59 escapement goals in Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas). BEG is biological escapement goal, SEG is sustainable escapement goal, and OEG is optimal escapement goal (set by the Alaska Board of Fisheries).

Table 5.–Assessment of whether escapements met (Met), exceeded (Over), or did not meet (Under) the escapement goal in place at the time of enumeration for salmon stocks in Southeast Region.

Species	System	2003	2004	2005	2006	2007	2008	2009	2010	2011
Chinook salmon	Blossom River	Under	Met	Met	Met	Under	Met	Under	Under	Under
	Keta River	Met	Met	Met	Over	Met	Met	Under	Met	Under
	Unuk River	Met	Met	Met	Met	Met	Met	Met[a]	Over	Met
	Chickamin River	Over	Met	Over	Over	Met	Over	Met	Over	Met
	Andrew Creek	Met	Over	Over	Over	Over	Met	Under	Met	Met
	Stikine River	Over	Over	Over	Met	Met	Met	Under	Met	Met
	King Salmon River	Under	Met	Met	Met	Met	Met	Under	Met	Met
	Taku River	Met	Over	Met	Met	Under	Under	Met[b]	Met	Met
	Chilkat River	Over	Met	Met	Met	Under	Met	Over	Met	Met
	Klukshu (Alsek) River	Met	Over	Under	Under	Under	Under	Met	Met	Met
	Situk River	Over	Met	Met	Met	Met	Under	Met	Under	Under
Chum salmon	Southern Southeast Summer							Under	Under	Met
	Northern Southeast Inside Summer							Under	Under	Under
	Northern Southeast Outside Summer							Under	Met	Met
	Cholmondeley Sound Fall							Met	Over	Over
	Port Camden Fall							Under	Met	Under
	Security Bay Fall							Met	Met	Met
	Excursion River Fall							Under	Met	Under
	Chilkat River Fall							Over	Met	Over
Coho salmon	Hugh Smith Lake	Over	Met	Over	Met	Over	Over	Over[b]	Over	Met
	Taku River	Met	Met	Met	Met	Met	Met	Met	Met	Met
	Auke Creek	Over	Met	Met	Over	Met	Over	Met	Met	Over
	Montana Creek	Over	Met	Met	Met[b]	Under	Met	Met	Met	Met
	Peterson Creek	Met	Met	Met	Over[b]	Met	Over	Met	Over	Met
	Ketchikan Survey Index				Met	Met	Over	Met	Met	Met
	Sitka Survey Index				Over	Over	Over	Over	Over	Over
	Ford Arm Lake	Over	Over	Over	Over	Met	Over	Met	Met	Met
	Berners River	Over	Over	Met	Met	Under	Met	Met	Met	Met
	Chilkat River				Over	Under	Met	Met	Over	Met
	Lost River	Met	Met	Under	Met	Met	NA	Met[c]	Met	Under
	Situk River	Met	Over	Under	Met	Met	NA	Met	Over	Met
	Tsiu/Tsivat Rivers	Over	NA	Met	Met	Met	Met	Met	Met	Met

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Table 5.–Page 2 of 2.

Species	System	2003	2004	2005	2006	2007	2008	2009	2010	2011
Pink salmon	Southern Southeast	Over	Met	Over	Met	Over	Met	Met[d]	Met	Met
	Northern Southeast Inside	Met	Under	Met	Met	Met	Under	Met[d]	Met	Over
	Northern Southeast Outside	Over	Over	Over	Over	Over	Met	Met[d]	Met	Over
	Situk River (even-year)		Over		Over		NA[e]		NA[e]	
	Situk River (odd-year)	Over		Over		Over		Met		Met
Sockeye salmon	Hugh Smith Lake	Over	Over	Over	Over	Over	Under	Met	Met	Over
	McDonald Lake	Over	Under	Under	Under[b]	Under	Under	Under[b]	Met	Met
	Mainstem Stikine River	Over	Met	Met	Met	Met	Under	Met	Met	Met
	Tahltan Lake	Over	Over	Over	Over	Met	Under	Met	Met	Met
	Speel Lake	Met	Met	Met	Met	Under	Under	Under	Met	Met
	Taku River	Over	Over	Over	Over	Over	Under	Met	Over	Over
	Redoubt Lake	Over	Over	Over	Over	Over	Met	Met	Met	Met
	Chilkat Lake	Over	Over	Met	Under[f]	Under	Under	Over[b]	Under	Under
	Chilkoot Lake	Met	Met	Met	Over[b]	Met	Under	Under[b]	Met	Met
	East Alsek-Doame River	Over	Over	Over	Over	Over	Under	Under	Met	Met
	Klukshu River	Over	Met	Under	Met	Met	Under	Under	Over	Over
	Lost River	Over	Met	Met	Met	Under	Under	NA[c]	Met	Met
	Situk River	Over	Met	Met	Over	Met	Under	Over	Met	Over

Note: NA = data not available. Blank cells indicate that there was no official escapement goal for the stock in that particular year.

[a] Prior to 2009 goal was based on index count of escapements.

[b] Escapement goal reevaluated, goal range changed.

[c] Escapement goal reevaluated, upper bound eliminated, lower bound remained the same.

[d] Expansion factor was removed from escapement estimates and escapement goal was reevaluated.

[e] Weir on Situk River was pulled well before peak of pink salmon run, therefore a valid assessment of whether the goal was met is not possible.

[f] Prior to 2006 escapement goal was based on weir counts. From 2006 escapements and escapement goal were based on mark-recapture estimates (see DerHovanisian and Geiger 2005).

Table 6.–Assessment of whether escapements met (Met), exceeded (Over), or did not meet (Under) the escapement goal in place at the time of enumeration for salmon stocks in Central Region (Bristol Bay, Cook Inlet, and Prince William Sound/Copper River).

Species	System	2003	2004	2005	2006	2007	2008	2009	2010	2011
Chinook salmon	***Bristol Bay***									
	Nushagak River	Over	Over	Over	Over	Met[a]	Over	Met	Met	Met
	Togiak River	NS	NS	NS	NS	NS[b]	NS	NS	NS	NS
	Naknek River	Over	Over	NS	NS	Met[b]	Met	Under	NS	NS
	Alagnak River					Met	Under	Under	NS	NS
	Egegik River					Met	Under	Under	NS	NS
	Upper Cook Inlet									
	Alexander Creek	Under	Met	Met	Under	Under	Under	Under	Under	Under
	Campbell Creek	Over	Over	eliminated			Met[c]	Met	Met	Under
	Chuitna River	Met	Over	Met	Met	Under	Under	Under	Under	Under
	Chulitna River	NS	Met	Met	Met	Over	Met	Met	Under	Met
	Clear (Chunilna) Creek	NS	Over	Met	Met	Met	Met	Met	Under	Under
	Crooked Creek	Over	Over	Over	Met	Met	Met	Under	Met	Met
	Deshka River	Over	Over	Over	Over	Met	Under	Under	Met	Met
	Goose Creek	Under	Met	Met	Met	Under	Under	Under	Under	Under
	Kenai River - Early Run	Met	Met	Over[d]	Over	Over	Over	Over	NA	NA
	Kenai River - Late Run	Met	Over	Met	Met	Met	Met	Under	NA	NA
	Lake Creek	Over	Over	Met	Met	Met	Under	Under	Under	Met
	Lewis River	Over	Over	Met	Met	Under	Under	Under	Under	Under
	Little Susitna River	Met	Met	Over	Over	Met	Met	Met	Under	Under
	Little Willow Creek	Met	Over	Met	Met	Met	NC	Met	Met	Met
	Montana Creek	Met	Met	Met	Met	Met	Met	Met	Under	Under
	Peters Creek	Over	Over	Met	Met	Met	NC	Met	NC	Met
	Prairie Creek	Met	Met	Met	Met	Met	Under	Met	Under	Under
	Sheep Creek	NS	Under	Met	Under	Under	NC	Under	NC	Under
	Talachulitna River	Over	Over	Met	Over	Met	Met	Met	Under	Under
	Theodore River	Met	Under	Under	Met	Under	Under	Under	Under	Under
	Willow Creek	Over	Over	Met	Met	Under	Under	Under	Under	Under
	Lower Cook Inlet									
	Anchor River	Under	Over	eliminated			Met[e]	Under	Under	Under[f]
	Deep Creek	Over	Over	Over	Met	Met	Under	Met	Met	Met
	Ninilchik River	Under	Met	Met	Met	Met	Met[g]	Under	Met	Met

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Table 6.–Page 2 of 5.

Species	System	2003	2004	2005	2006	2007	2008	2009	2010	2011
	Prince William Sound									
	Copper River	Met	Met	Under	Met	Met	Met	Met	Under	Met
Chum salmon	***Bristol Bay***									
	Nushagak River					Under	Met	Met	Met	Met
	Upper Cook Inlet									
	Clearwater Creek	Under	Met	Under	Under	Met	Over	Met	Over	Over
	Lower Cook Inlet									
	Port Graham River	Met	Under	Under	Met	Met	Met	Under	Under	Met
	Dogfish Lagoon	Over	Met	Under	Met	Met	Met	Met	Over	Over
	Rocky River	Over	Over	Over	Over	Met	Met	Met	Met	Met
	Port Dick Creek	Over	Over	Over	Met	Met	Over	Over	Met	Over
	Island Creek	Over	Met	Over	Under	Under	Met	Met	Under	Met
	Big Kamishak River	Met	Over	Over	Over	Met	Under	Met	NS	Under
	Little Kamishak River	Met	Over	Met	Over	Met	Met	Under	Met	Met
	McNeil River	Over	Met	Met	Met	Met	Under[b]	Under	Under	Met
	Bruin River	Over	Over	Over	Met	Under	Over	Met	Met	Under
	Ursus Cove	Over	Over	Over	Over	Over	Met	Over	Over	Over
	Cottonwood Creek	Over	Over	Over	Over	Over	Met	Over	Over	Under
	Iniskin Bay	Over	Over	Over	Over	Under	Over	Over	Over	Under
	Prince William Sound									
	Eastern District	Over	Met	Met	Met[j]	Met	Met	Met	Met	Met
	Northern District	Met	Met	Met	Met[j]	Met	Met	Met	Met	Met
	Coghill District	Met	Met	Met	Met[j]	Met	Met	Met	Met	Met
	Northwestern District	Met	Met	Met	Met[j]	Met	Met	Met	Met	Met
	Southeastern District	Over	Over	Over	Met[j]	Met	Met	Met	Met	Met
Coho salmon	***Upper Cook Inlet***									
	Fish Creek (Knik)	Met	Met	eliminated						Met[c]
	Jim Creek	Over	Over	Over	Over	Over	Over	Over	Under	Under
	Little Susitna River	Met	Over	Met	NA	Met	Over	Under	Under	Under

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Table 6.–Page 3 of 5.

Species	System	2003	2004	2005	2006	2007	2008	2009	2010	2011
	Prince William Sound									
	Copper River Delta	Over	Over	Over	Over	Met	Over	Met	Met	Met
	Bering River	Met	Met	Over	Over	Over	Met	Met	Met	Met
Pink salmon	***Lower Cook Inlet***									
	Humpy Creek	Over	Met	Over	Met	Met	Over	Under	Met	Under
	China Poot Creek	Met	Met	Over	Met	Met	Met	Under	Under	Met
	Tutka Creek	Over	Over	Over	Over	Under	Met	Under	Under	Over
	Barabara Creek	Met	Met	Over	Met	Over	Over	Met	Over	Over
	Seldovia Creek	Met	Over	Over	Over	Over	Over	Under	Met	Over
	Port Graham River	Met	Over	Over	Over	Over	Over	Met	Met	Over
	Port Chatham	Over	Over	Over	Over	Met	Met	Over	Under	Met
	Windy Creek Right	Over	Over	Over	Over	Over	Over	Over	Met	Under
	Windy Creek Left	Over	Met	Over	Over	Met	Over	Over	Met	Met
	Rocky River	Over	Met	Over	Over	Over	Over	Over	Met	Met
	Port Dick Creek	Over	Under	Over	Met	Met	Met	Met	Met	Under
	Island Creek	Over	Over	Met	Over	Over	Over	Over	Over	Met
	S. Nuka Island Creek	Over	Met	Met	Met	Met	Met	Over	NS	NS
	Desire Lake Creek	Over	Over	Over	Over	Met	Met	Over	Met	Under
	Bear & Salmon Creeks			Over	Met	NS	NS	NS	NS	
	Thumb Cove	Met	Met	Met	Met	NS	NS	NS	NS	
	Humpy Cove	Met	Met	Over	Met	NS	NS	NS	NS	
	Tonsina Creek	Met	Met	Over	Over	NS	NS	NS	NS	
	Bruin River	Met	Met	Met	Over	Over	Met	Over	Met	Under
	Sunday Creek	Over	Over	Over	Over	Over	Met	Over	Met	Under
	Brown's Peak Creek	Over	Met	Over	Over	Over	Met	Over	Met	Under
	Prince William Sound									
	All Districts Combined (even year)		Met		Under		Under		Met	
	All Districts Combined (odd year)	Over		Over		Met		Met		Over
Sockeye salmon	***Bristol Bay***									
	Kvichak River	Under	Under[j]	Met	Met	Met	Met	Met	Met	Met
	Alagnak River	Over	Over	Over	Over	Met[k]	Met	Met	Met	Met
	Naknek River	Over	Over	Over	Over	Over	Over	Met	Over	Met

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Table 6.–Page 4 of 5.

Species	System	2003	2004	2005	2006	2007	2008	2009	2010	2011
	Egegik River	Met	Met	Over	Over	Over	Met	Met	Met	Met
	Ugashik River	Met	Met	Met	Met	Over	Met	Over	Met	Met
	Wood River	Met	Over	Met	Over	Over	Over	Met	Over	Met
	Igushik River	Met	Under	Over	Over	Over	Over	Over	Over	Over
	Nushagak River	Met	Met	Over	Met	Met	Met	Met	Met	Met
	Togiak River	Over	Met	Met	Over	Met[d]	Met	Over	Met[l]	Met
	Upper Cook Inlet									
	Crescent River	Over	Over	Over[d]	Over	Over	Met	NS	Over	Over
	Fish Creek (Knik)	Over	Met	Under	Met	Met	Under	Over	Over	Met
	Kasilof River	Over	Over	Over	Over	Over	Met	Met	Met	Met
	Kenai River	Met	Over	Over	Over	Met	Under	Under	Met	Met
	Packers Creek	NS	NS	eliminated			Met[c]	Met	NS	NA
	Russian River - Early Run	Met	Over	Over[j]	Over	Met	Met	Over	Met	Met
	Russian River - Late Run	Over	Met	Met[d]	Met	Met	Met	Met	Met	Met
	Yentna River	Over	Under	Under	Met	Under	Met			
	Chelatna Lake							Under	Met	Over
	Judd Lake							Met	Under	Met
	Larson Lake							Met	Met	Under
	Lower Cook Inlet									
	English Bay	Over	Over	Met	Over	Over	Met	Over	Met	Met
	Delight Lake	Met	Met	Over	Met	Over	Over	Over	Over	Over
	Desire Lake	Under	Met	Under	Over	Met	Met	Over	Under	Met
	Bear Lake	Over	Met	Over	Over	Over	Over	Over	Met	Over
	Aialik Lake	Met	Over	Met	Met	Met	Met	Under	Met	Under
	Mikfik Lake	Over	Over	Under	Over	Met	Under	Over	Met	Under
	Chenik Lake	Over	Over	Over	Over	Over	Over	Over	Over	Met
	Amakdedori Creek	Over	Over	Met	Under	Over	Over	Met	Under	Over
	Prince William Sound									
	Upper Copper River	Met	Met	Over	Over	Over	Met	Met	Over	Over
	Copper River Delta	Met	Met	Met	Met	Met	Met	Met	Met	Met
	Bering River	Met	Met	Met	Under	Met	Under	Under	Under	Met
	Coghill Lake	Over	Met	Met	Met[j]	Over	Met	Under	Met	Over
	Eshamy Lake	Met	Under	Met	Over	Under	Under	Met[d]	Met	Met

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Table 6. Page 5 of 5.

Note: NA = data not available; NC = no count; NS = no survey. There are no escapement goals for coho salmon in Bristol Bay or Lower Cook Inlet and there are no pink salmon escapement goals in Bristol Bay or Upper Cook Inlet.

[a] Escapement goal reevaluated, point goal changed to a range.
[b] Escapement goal reevaluated, point goal changed to a lower-bound goal.
[c] Previous escapement goal reinstated.
[d] Escapement goal reevaluated, goal range changed.
[e] Escapement goal from 2001-2004 based on aerial surveys, escapement numbers in Table 2 are not comparable.
[f] Escapement goal reevaluated, lower-bound goal changed to a range.
[g] Escapement goal reevaluated, current goal based on escapement count over longer period during spawning season, escapement numbers in Table 2 are based on longer counting time.
[h] Escapement goal reevaluated, escapement goal in place prior to 2002 was reinstated. Escapement goal in place from 2002 to 2007 was based on escapement estimates using a different aerial survey index expansion method (see Otis and Szarzi 2007).
[i] Escapement goal reevaluated, upper bound eliminated, lower bound remanded the same.
[j] 2004 and 2009 were identified as pre-peak/peak escapement years for Kvichak River sockeye salmon and evaluated against the 6-10 million escapement goal.
[k] Escapement goal reevaluated, goal range changed to a lower bound goal.
[l] Escapement goal reevaluated, goal type changed but goal range remained the same.

Table 7.–Assessment of whether escapements met (Met), exceeded (Over), or did not meet (Under) the escapement goal in place at the time of enumeration for salmon stocks in Arctic-Yukon-Kuskokwim Region.

Species	System	2003	2004	2005	2006	2007	2008	2009	2010	2011
Chinook salmon	***Kuskokwim Area***									
	North (Main) Fork Goodnews River	Met	Met	NS[a]	Over	NS	Met	NS	NS	Met
	Middle Fork Goodnews River	Under	Met	Over[a]	Over	Over[b]	Met	Met	Met	Met
	Kanektok River	Met	Met	Over[a]	Over	NS	Met	NS	Under	NS
	Kogrukluk River	Met	Met	Over[a]	Over	Met	Met	Met	Met	Met
	Kwethluk River	Over	Over	Over	NA	Over[c]	Under	Under	Under	Under
	Tuluksak River					Under	Under	Under	Under	Under
	George River					Met	Under	Met	Under	Under
	Kisaralik River	Under	Met	Over[a]	Over	Met	Met	NS	Under	NS
	Aniak River	Met	Met	NS[a]	Over	Over	Over	NS	NS	NS
	Salmon River (Aniak R)	Met	Met	Over[a]	NS	Over	Met	NS	NS	Under
	Holitna River	NS	Met	Over[a]	Over	NS	Under	NS	Under	NS
	Cheeneetnuk River (Stony R)			Met	Met	NS	Under	Under	NS	Under
	Gagaryah River (Stony R)			Met	Met	Over	Under	Met	Under	Under
	Salmon River (Pitka Fork)	Met	Under	Over[a]	Met	Met	Met	Met	Under	Met
	Yukon River									
	East Fork Andreafsky River	Under	Met	Over[a]	Under	Over	Under	Under	Met[c]	Over
	West Fork Andreafsky River	Met	Under	Met[a]	Met	Met	Under	Over	Met	Met
	Anvik River	Under	Met	Over[a]	Over	Met	Under	Under	Under	Under
	Nulato River (forks combined)	NS	Met	Under[a]	Met	Over	Under	Over	Under	Met
	Gisasa River	NS	Met	Met[a]	Met	Met	Met	Met	eliminated	
	Chena River	Over	Over	Met	Met	Met	Met	Met	Under	
	Salcha River	Over	Over	Met	Over	Met	Met	Over	Met	Met
	Canada Mainstem	Met	Met	Met	Met	Met[d]	Under[d]	Met	Under[d]	Met
	Norton Sound									
	Fish River/Boston Creek	Met	Met	Under[e]	NS	NS	NS	Under	Under	NS
	Kwiniuk River	Over	Over	Met[f]	Under	Under	Under	Met	Under	Under
	North River (Unalakleet R)	Met	Under	Under[b]	Under	Met	Under	Met	Met	Under
	Shaktoolik River	Under	Under	Under[f]	Under	Met	NS	Under	Under	Under
	Unalakleet/Old Woman River	Under	Under	Under[f]	NS	Met	NS	Over	Met	Over

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Table 7.–Page 2 of 4.

Species	System	2003	2004	2005	2006	2007	2008	2009	2010	2011
Chum salmon	***Kuskokwim Area***									
	Middle Fork Goodnews River	Met	Met	Met[b]	Met	Met	Met	Met	Met	Met
	Kanektok River	NS	NS	NS[b]	NS	NS	NS	NS	NS	NS
	Kogrukluk River	Under	Under	Over[a]	Over	Over	Met	Over	Over	Over
	Aniak River	Met	Met	Over[a]	Over	Over[g]	Met	Met	Met	Met
	Yukon River Summer Chum									
	East Fork Andreafsky River	Under	Under	Under	Met	Met	Under	Under	Met[c]	Met
	Anvik River	Under	Under	Met[b]	Met	Met	Met	Under	Met	Met
	Mainstem Yukon River	Over	Over	Over	Over	Over	Over	Over	Over	Over
	Yukon River Fall Chum									
	Yukon River Drainage	Over	Met	Over	Over	Over	Met	Met	Met[f]	Over
	Tanana River	Over	Over	Over	Over	Over	Over	Over	Over	Over
	Delta River	Over	Over	Over	Over	Over	Over	Met	Over	Over
	Toklat River	Met	Over	NA	NA	NA	NA	NA	eliminated	
	Upper Yukon River Tributaries	Met	Met	Over	Over	Over	Met	NA	Met	Over
	Chandalar River	Over	Met	Over	Over	Over	Over	Met	Over	Over
	Sheenjek River	Under	Under	Over	Over	Met	Met	Met	Under	Met
	Fishing Branch River (Canada)	Under	Under	Over	Under	Under	Under[d]	Met	Under	Under
	Yukon R. Mainstem (Canada)	Met	Met	Met	Met	Met	Met	Met	Over[d]	Over
	Norton Sound									
	Subdistrict 1 Aggregate	Under	Met	Over	Over	Over	Met	Under	Over	Over
	Sinuk River	Under	Under	Met[f]	Met	Over	Under	Under	eliminated	
	Nome River	Under	Met	Over[f]	Over	Over	Under	Under	Over	Met
	Bonanza River	Under	Under	Over[f]	Under	Over	Under	Over	eliminated	
	Snake River	Met	Met	Over[f]	Over	Over	Under	Under	Over	Over
	Solomon River	Under	Met	Over[f]	Over	Over	Under	Under	eliminated	
	Flambeau River	Under	Over	Over[f]	Over	Over	Over	Under	eliminated	
	Eldorado River	Under	Under	Over[f]	Over	Over	Met	Under	Over	Over
	Niukluk River			Under	Under	Met	Under	Under	Met[b]	Met
	Kwiniuk River	Met	Under	Met	Over	Over	Under	Under	Over	Over
	Tubutuluk River	Under	NS	Under	NS	Under	NS	Under	Met	Met
	Unalakleet/Old Woman River	NS	NS	Under[f]	NS	Under	NS	Over	Over	Over

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Table 7.–Page 3 of 4.

Species	System	2003	2004	2005	2006	2007	2008	2009	2010	2011
	Kotzebue Sound									
	Kotzebue Sound Aggregate									
	Noatak and Eli Rivers	NS	Under	NS[f]	Under	NS[b]	Over	Met	NS	NA
	Upper Kobuk w/ Selby River	Met	Over	NS[f]	Over	NS[b]	Over	Over	NS	NA
	Salmon River	NS	NS	NS[f]	NS	NS[b]	NS	NS	NS	NA
	Tutuksuk River	NS	NS	Met[f]	NS	NS[b]	NS	NS	NS	NA
	Squirrel River	NS	NS	NS[f]	NS	NS[b]	NS	NS	NS	NA
Coho salmon	***Kuskokwim Area***									
	Middle Fork Goodnews River			Met	Met	Met	Met	Met	Met	Met
	Kogrukluk River	Met	Met	Met[a]	Met	Met	Over	Met	Met	Met
	Kwethluk River								NA	NA
	Yukon River									
	Delta Clearwater River	Met	Met	Over[a]	Met	Met	Met	Met	Met	Met
	Norton Sound									
	Kwiniuk River	Met	Met	NS[f]	NS	Over	Over	NS	Over	Over
	Niukluk River	NS	Met	NS	NS	Met[h]	Over	Over	Over[b]	Met
	North River (Unalakleet R.)	NS	Over	Over[f]	NS	Over	Over	Over	Over	Over
Pink salmon	***Norton Sound***									
	Nome River (odd year)			Met		Met		Met		Met
	Nome River (even year)		Over	[i]	Met		Met		Met	
	Kwiniuk River	Over	Over	Met[i]	Met	Met	Met	Met	Met	Met
	Niukluk River	Over	Over	Met[i]	Met	Met	Met	Met	Met	Met
	North River	Over	Over	Met[i]	Met	Met	Met	Met	Met	Met
Sockeye salmon	***Kuskokwim Area***									
	North (Main) Fork Goodnews River	Met	Met	NS[a]	Over	NS	Over	NS	NS	Met
	Middle Fork Goodnews River	Met	Met	Over[a]	Over	Over[b]	Over	Met	Met	Under
	Kanektok River	Met	Met	Over[a]	Over	NS	Over	NS	Met	NS
	Kogrukluk River								Met	Met

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Table 7.–Page 4 of 4.

Species	System	2003	2004	2005	2006	2007	2008	2009	2010	2011
	Norton Sound									
	Salmon Lake/Grand Central River	Over	Over	Over[f]	Over	Over	Over	Under	Under	Met
	Glacial Lake	Met	Met	Over[f]	Over	Met	Under	Under	Met	Over

Note: NA = data not available; NS =no survey; ND = not determined yet. There are no escapement goals for pink salmon in Kuskokwim Area and Yukon River and there are no escapement goals for sockeye salmon in Yukon River.

[a] Escapement goal reevaluated, lower-bound goal changed to a range.

[b] Escapement goal reevaluated, goal value changed.

[c] Previous escapement goal was based on aerial surveys, replaced with escapement goal based on weir counts. Escapements in Table 3 are weir counts.

[d] Escapement goal revised by The United States and Canada Yukon River Joint Technical Committee (JTC).

[e] Escapement goal reevaluated, goal range changed to a lower-bound goal.

[f] Escapement goal reevaluated, goal type changed but goal value remained the same.

[g] Previous escapement goal was based on Bendix and Biosonics sonar counts, replaced with escapement goal based on DIDSON sonar counts. Escapements in Table 3 are in DIDSON units (see Molyneaux & Brannian 2006).

[h] Prior to 2007 escapement goal was based on escapements enumerated by aerial surveys of Niukluk and Ophir rivers. Escapements in Table 3 are weir counts.

[i] Escapement goal reevaluated, point goal changed to a lower-bound goal.

Table 8.–Assessment of whether escapements met (Met), exceeded (Over), or did not meet (Under) the escapement goal in place at the time of enumeration for salmon stocks in Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas).

Species	System	2003	2004	2005	2006	2007	2008	2009	2010	2011
Chinook salmon	***AK Peninsula***									
	Nelson River	Met	Over[a]	Over	Met	Met	Over	Under	Met	NA
	Chignik									
	Chignik River	Over	Over	Over	Over	Met	Met	Met	Over	NA
	Kodiak									
	Karluk River	Met	Met	Met	Met	Under	Under	Under	Under	Met[a]
	Ayakulik River	Over	Over	Met	Under	Met	Under	Under	Met	NA[a]
Chum salmon	***AK Peninsula***									
	Northern District	Met	Met	Under	Over	Over[b]	Met	Met	Met	Under
	Northwestern District	Met	Over[a]	Met	Met	Over[b]	Over	Under	Met	Met
	Southeastern District	Over	Over	Over	Over	Met	Over	Met	Under	Met
	South Central District	Under	Over	Over	Met	Met	Met	Under	Under	Met
	Southwestern District	Met	Met	Over	Met	Over	Met	Over	Met	Met
	Unimak District	Under	Under[b]	Met	Met	Met[c]	Met	Met	Met	Met
	Chignik									
	Entire Chignik Area						Met[d]	Met	Met	Met
	Kodiak									
	Mainland District	Under	Met	Under[e]	Met	Under	Met[f]	Under	Met	Met
	Kodiak Archipelago Aggregate						Under[d]	Met	Met	Met
Coho salmon	***AK Peninsula***									
	Nelson River	Over	Met[c]	Met	Met	Met	Met	Met	Under	Met
	Thin Point Lake	Over	Met[c]	Met	Met	Met	Met	Under	NA	Under
	Ilnik River	Over	eliminated						Met[g]	Met
	Kodiak									
	Pasagshak River	Over	Over	Over[a]	Under	Met	Over	Met	Met	Under[c]
	Buskin River	Over	Met	Over[a]	Over	Over	Over	Over	Met	Met
	Olds River	Over	Over	Over[a]	Met	Under	Under	Under	Under	Met[c]
	American River	Over	Over	Under[a]	Over	Under	Met	Met	Under	Met[c]

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Table 8.–Page 2 of 3.

Species	System	2003	2004	2005	2006	2007	2008	2009	2010	2011
Pink salmon	***AK Peninsula***									
	Bechevin Bay Section (odd year)	Under	[e]	Met		Met		Met		Met
	Bechevin Bay Section (even year)		Met[e]		Met		Under		Under	
	South Peninsula Total (odd year)		[d]	Over		Met[b]		Met		Met
	South Peninsula Total (even year)		Over[d]		Met	[b]	Met		Under	
	Chignik									
	Entire Chignik Area (odd year)			Over[d]		Over	[a]	Over		Over
	Entire Chignik Area (even year)			[d]	Met		Over[a]		Met	
	Kodiak									
	Mainland District	Over	Met	Met[b]	Over	Met	Under	Met	Met	Met[l]
	Kodiak Archipelago (odd year)			Met[d]		Met		Met		Met[n]
	Kodiak Archipelago (even year)				Over		Met		Met	[n]
Sockeye salmon	***AK Peninsula***									
	Cinder River	Over	Over	Over	Over	Over[a]	Over	Over	Over	Over
	Ilnik River	Over	Over	Over	Over	Over	Met	Over	Met	Met
	Meshik River	Over	Over	Over	Over	Met[a]	Over	Over	Met[a]	Met
	Sandy River	Over	Under	Over	Met	Met[a]	Under	Met	Met	Met
	Bear River Early Run	Over	Over[a]	Over	Met	Met	Under	Met	Met	Met
	Bear River Late Run	Over	Under[a]	Over	Met	Over	Over	Met	Met	Met
	Nelson River	Over	Over[a]	Over	Met	Met	Met	Met	Met	Under
	Christianson Lagoon	Over	Over	Over	Met	Met	Over	Met	Met	Met
	Swanson Lagoon	Over	Over	Under	Under	Met[a]	Under	Under	Under	Under
	North Creek	Over	Over	Over	Met	Over	Over	Met	Over	Over
	Orzinski Lake	Over	Over	Over	Met	Under	Over	Over	Met	Met
	Mortensen Lagoon	Over	Over	Over	Over	Met	Met	Over	Over	Under
	Thin Point Lake	Over	Over	Met	Under	Met	Met	Over	Under	Met
	McLees Lake	Over	eliminated[l]						Met[g]	Met
	Chignik									
	Chignik River Early Run	Met	Met	Met[b]	Met	Met	Met	Met	Over	Over
	Chignik River Late Run	Over	Met	Met	Over	Over	Met[a]	Met	Met	Met

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Table 8.–Page 3 of 3.

Species	System	2003	2004	2005	2006	2007	2008	2009	2010	2011
	Kodiak									
	Malina Creek	Met	Met	Met[a]	Met	Met	Met	Met	Met	Met
	Afognak (Litnik) River	Under	Under	Met[a]	Met	Met	Met	Met	Over	Met
	Little River	Over	Met	eliminated			Under[j]	Under	Met	Met
	Uganik Lake	Met	Over	eliminated			Met[j]	Met	Met	Met
	Karluk River Early Run	Over	Over	Over[a]	Met	Over	Under[a]	Under	Under	Under
	Karluk River Late Run	Over	Under	Over[a]	Met	Met	Under	Met	Met	Met
	Ayakulik River	Under	Met	Met	Under	Met	Under	Met	Met	
	Ayakulik River Early Run									Met[k]
	Ayakulik River Late Run									Met[k]
	Upper Station River Early Run	Met	Met	Met[a]	Under	Met	Met	Met	Met	Met
	Upper Station River Late Run	Over	Met	Met[a]	Met	Met	Met	Met	Met	Under
	Frazer Lake	Over	Under	Met[a]	Met	Met	Met[a]	Met	Met	Met
	Saltery Lake	Over	Over	Met	Met	Met	Over	Over	Met	Under[l]
	Pasagshak River	Over	Over	Over[a]	Met	Over	Over	Under	Met	Met[c]
	Buskin Lake	Over	Over	Over	Over	Over	Under	Under	Met	Over[m]

Note: There are no coho salmon escapement goals in Chignik Area.

[a] Escapement goal reevaluated, goal range changed.

[b] Escapement goal reevaluated, goal type changed but goal range remained the same.

[c] Escapement goal reevaluated, upper bound eliminated, lower bound remained the same.

[d] Aggregate goal established to replace individual district level goals.

[e] Escapement goal reevaluated, goal range changed to a lower bound goal.

[f] Escapement goal reevaluated, lower bound goal changed.

[g] Goal reestablished. New analysis.

[h] Separate odd and even year goals were discontinued and a single goal established.

[i] Escapement goal prior to elimination in 2004 was based on escapement indices enumerated by peak aerial surveys, escapements on Table 4 are weir counts.

[j] Previous escapement goal reestablished.

[k] Single escapement goal was changed to separate early- and late-run escapement goals.

[l] Escapement goal reevaluated, upper bound of goal changed.

[m] Escapement goal reevaluated, goal type and range changed.

[n] Single escapement goal was separated into odd- and even-year escapement goals.

Table 9.–Southeast Region Chinook, chum, coho, pink, and sockeye salmon escapements compared to escapement goals for the years 2003 to 2011.

	2003	2004	2005	2006	2007	2008	2009	2010	2011
CHINOOK SALMON									
Number Below	2	0	1	1	4	3	5	2	3
Number Met	5	7	7	7	6	7	5	7	8
Number Above	4	4	3	3	1	1	1	2	0
% Below	18	0	9	9	36	27	45	18	27
% Met	45	64	64	64	55	64	45	64	73
% Above	36	36	27	27	9	9	9	18	0
CHUM SALMON									
Number Below							5	2	3
Number Met							2	5	3
Number Above							1	1	2
% Below							63	25	38
% Met							25	63	38
% Above							13	13	25
COHO SALMON									
Number Below	0	0	2	0	3	0	0	0	1
Number Met	4	6	6	8	8	5	11	8	10
Number Above	6	3	2	5	2	6	2	5	2
% Below	0	0	20	0	23	0	0	0	8
% Met	40	67	60	62	62	45	85	62	77
% Above	60	33	20	38	15	55	15	38	15

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Table 9.–Page 2 of 2.

	2003	2004	2005	2006	2007	2008	2009	2010	2011
PINK SALMON									
Number Below	0	1	0	0	0	1	0	0	0
Number Met	1	1	1	2	1	2	4	3	2
Number Above	3	2	3	2	3	0	0	0	2
% Below	0	25	0	0	0	33	0	0	0
% Met	25	25	25	50	25	67	100	100	50
% Above	75	50	75	50	75	0	0	0	50
SOCKEYE SALMON									
Number Below	0	1	2	2	4	12	5	1	1
Number Met	2	6	6	4	5	1	5	10	8
Number Above	11	6	5	7	4	0	2	2	4
% Below	0	8	15	15	31	92	42	8	8
% Met	15	46	46	31	38	8	42	77	62
% Above	85	46	38	54	31	0	17	15	31

Note: Blank cells indicate that there were no official escapement goals for that species in those particular years.

Table 10.–Central Region (Bristol Bay, Cook Inlet, Prince William Sound/Copper River) Chinook, chum, coho, pink, and sockeye salmon escapements compared to escapement goals for the years 2003 to 2011.

	2003	2004	2005	2006	2007	2008	2009	2010	2011
CHINOOK SALMON									
Number Below	4	2	2	2	7	12	16	15	14
Number Met	9	9	16	17	18	12	12	7	10
Number Above	11	16	6	5	2	2	1	0	0
% Below	17	7	8	8	26	46	55	68	58
% Met	38	33	67	71	67	46	41	32	42
% Above	46	59	25	21	7	8	3	0	0
CHUM SALMON									
Number Below	1	1	3	2	4	2	3	3	4
Number Met	6	8	6	10	13	13	12	10	11
Number Above	11	9	9	6	2	4	4	5	4
% Below	6	6	17	11	21	11	16	17	21
% Met	33	44	33	56	68	68	63	56	58
% Above	61	50	50	33	11	21	21	28	21
COHO SALMON									
Number Below	0	0	0	0	0	0	1	2	2
Number Met	3	2	1	0	2	1	2	2	3
Number Above	2	3	3	3	2	3	1	0	0
% Below	0	0	0	0	0	0	25	50	40
% Met	60	40	25	0	50	25	50	50	60
% Above	40	60	75	100	50	75	25	0	0

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Table 10.–Page 2 of 2.

	2003	2004	2005	2006	2007	2008	2009	2010	2011
PINK SALMON									
Number Below	0	1	0	1	1	1	4	3	7
Number Met	8	12	4	8	8	9	4	12	5
Number Above	13	8	18	13	9	8	10	2	5
% Below	0	5	0	5	6	6	22	18	41
% Met	38	57	18	36	44	50	22	71	29
% Above	62	38	82	59	50	44	56	12	29
SOCKEYE SALMON									
Number Below	2	4	4	2	2	5	5	4	3
Number Met	13	13	12	10	13	18	15	19	20
Number Above	14	12	13	17	14	7	11	8	8
% Below	7	14	14	7	7	17	16	13	10
% Met	45	45	41	34	45	60	48	61	65
% Above	48	41	45	59	48	23	35	26	26

Table 11.–Arctic-Yukon-Kuskokwim Region Chinook, chum, coho, pink, and sockeye salmon escapements compared to escapement goals for the years 2003 to 2011.

	2003	2004	2005	2006	2007	2008	2009	2010	2011
CHINOOK SALMON									
Number Below	6	5	5	4	2	13	7	15	10
Number Met	10	14	8	8	13	10	10	7	8
Number Above	4	4	10	9	7	1	4	0	2
% Below	30	22	22	19	9	54	33	68	50
% Met	50	61	35	38	59	42	48	32	40
% Above	20	17	43	43	32	4	19	0	10
SUMMER CHUM SALMON									
Number Below	9	6	3	3	2	7	10	0	0
Number Met	5	6	4	2	2	5	3	4	5
Number Above	0	2	9	10	11	3	4	7	6
% Below	64	43	19	20	13	47	59	0	0
% Met	36	43	25	13	13	33	18	36	45
% Above	0	14	56	67	73	20	24	64	55
YUKON RIVER SUMMER CHUM SALMON									
Number Below	2	2	1	0	0	1	2	0	0
Number Met	0	0	1	2	2	1	0	2	2
Number Above	1	1	1	1	1	1	1	1	1
% Below	67	67	33	0	0	33	67	0	0
% Met	0	0	33	67	67	33	0	67	67
% Above	33	33	33	33	33	33	33	33	33
YUKON RIVER FALL CHUM SALMON									
Number Below	2	2	0	1	1	1	0	2	1
Number Met	3	4	1	1	2	4	6	2	1
Number Above	4	3	7	6	5	3	1	4	6

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Table 11.–Page 2 of 2.

	2003	2004	2005	2006	2007	2008	2009	2010	2011
% Below	22	22	0	13	13	13	0	25	13
% Met	33	44	13	13	25	50	86	25	13
% Above	44	33	88	75	63	38	14	50	75
COHO SALMON									
Number Below	0	0	0	0	0	0	0	0	0
Number Met	3	4	2	3	4	2	3	3	4
Number Above	0	1	2	0	2	4	2	3	2
% Below	0	0	0	0	0	0	0	0	0
% Met	100	80	50	100	67	33	60	50	67
% Above	0	20	50	0	33	67	40	50	33
PINK SALMON									
Number Below	0	0	0	0	0	0	0	0	0
Number Met	0	0	4	4	4	4	4	4	4
Number Above	3	4	0	0	0	0	0	0	0
% Below	0	0	0	0	0	0	0	0	0
% Met	0	0	100	100	100	100	100	100	100
% Above	100	100	0	0	0	0	0	0	0
SOCKEYE SALMON									
Number Below	0	0	0	0	0	1	2	1	1
Number Met	4	4	0	0	1	0	1	4	3
Number Above	1	1	4	5	2	4	0	0	1
% Below	0	0	0	0	0	20	67	20	20
% Met	80	80	0	0	33	0	33	80	60
% Above	20	20	100	100	67	80	0	0	20

Table 12.–Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas) Chinook, chum, coho, pink, and sockeye salmon escapements compared to escapement goals for the years 2003 to 2011.

	2003	2004	2005	2006	2007	2008	2009	2010	2011
CHINOOK SALMON									
Number Below	0	0	0	1	1	2	3	1	0
Number Met	2	1	2	2	3	1	1	2	1
Number Above	2	3	2	1	0	1	0	1	0
% Below	0	0	0	25	25	50	75	25	0
% Met	50	25	50	50	75	25	25	50	100
% Above	50	75	50	25	0	25	0	25	0
CHUM SALMON									
Number Below	3	1	2	0	1	1	3	2	1
Number Met	3	3	2	5	3	6	5	7	8
Number Above	1	3	3	2	3	2	1	0	0
% Below	43	14	29	0	14	11	33	22	11
% Met	43	43	29	71	43	67	56	78	89
% Above	14	43	43	29	43	22	11	0	0
COHO SALMON									
Number Below	0	0	1	1	2	1	2	3	2
Number Met	0	3	2	3	3	3	3	3	5
Number Above	7	3	3	2	1	2	1	0	0
% Below	0	0	17	17	33	17	33	50	29
% Met	0	50	33	50	50	50	50	50	71
% Above	100	50	50	33	17	33	17	0	0

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Table 12.–Page 2 of 2.

	2003	2004	2005	2006	2007	2008	2009	2010	2011
PINK SALMON									
Number Below	1	0	0	0	0	2	0	2	0
Number Met	0	2	3	3	4	2	4	3	4
Number Above	1	1	2	2	1	1	1	0	1
% Below	50	0	0	0	0	40	0	40	0
% Met	0	67	60	60	80	40	80	60	80
% Above	50	33	40	40	20	20	20	0	20
SOCKEYE SALMON									
Number Below	2	5	1	4	1	8	5	3	6
Number Met	4	7	10	16	17	12	16	21	20
Number Above	23	16	15	6	8	8	7	5	4
% Below	7	18	4	15	4	29	18	10	20
% Met	14	25	38	62	65	43	57	72	67
% Above	79	57	58	23	31	29	25	17	13

Table 13.–Summary of Southeast Region salmon escapements compared against escapement goals for the years 2003 to 2011.

Southeast Region		2003	2004	2005	2006	2007	2008	2009	2010	2011
Stocks with Escapement Data		38	37	38	41	41	38	48	48	49
Below Lower Goal										
	Number	2	2	5	3	11	16	15	5	8
	Percent	5%	5%	13%	7%	27%	42%	31%	10%	16%
Goal Met										
	Number	12	20	20	21	20	15	27	33	31
	Percent	32%	54%	53%	51%	49%	39%	56%	69%	63%
Above Upper Goal										
	Number	24	15	13	17	10	7	6	10	10
	Percent	63%	41%	34%	41%	24%	18%	13%	21%	20%

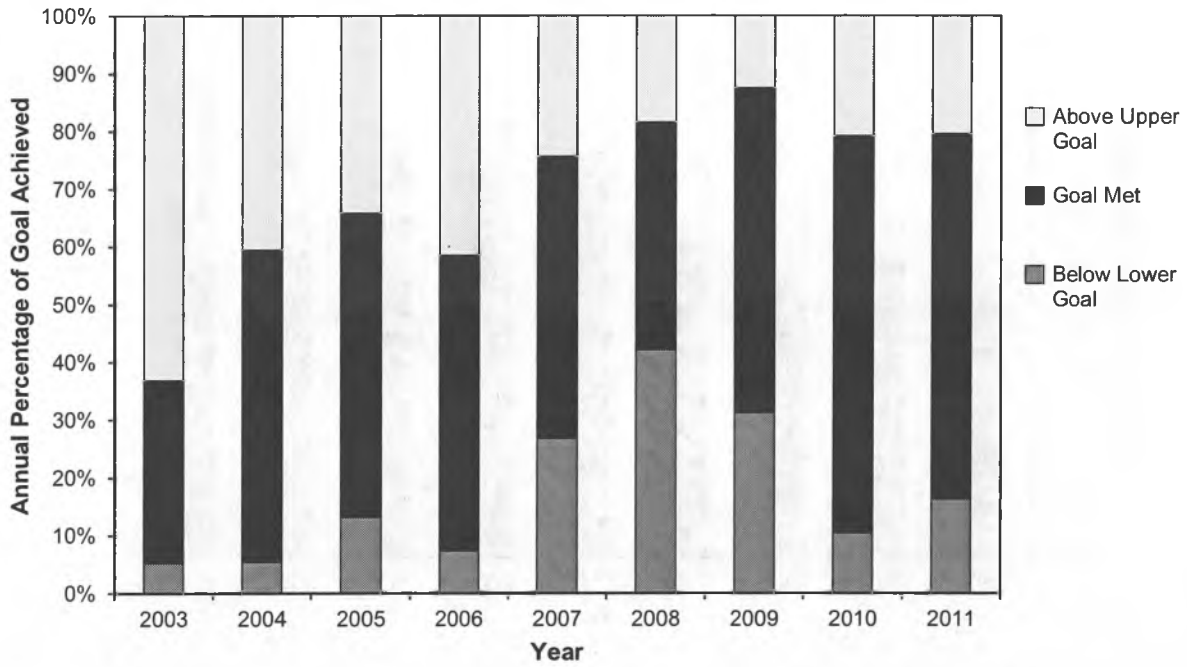


Figure 6.–Southeast Region salmon escapements compared against escapement goals for the years 2003 to 2011.

Table 14.–Summary of Central Region (Bristol Bay, Cook Inlet, Prince William Sound/Copper River) salmon escapements compared against escapement goals for the years 2003 to 2011.

Central Region		2003	2004	2005	2006	2007	2008	2009	2010	2011
Stocks with Escapement Data		97	100	97	96	97	97	101	92	96
Below Lower Goal										
	Number	7	8	9	7	14	20	29	27	30
	Percent	7%	8%	9%	7%	14%	21%	29%	29%	31%
Goal Met										
	Number	39	44	39	45	54	53	45	50	49
	Percent	39%	44%	40%	47%	56%	55%	45%	54%	51%
Above Upper Goal										
	Number	51	48	49	44	29	24	27	15	17
	Percent	52%	48%	51%	46%	30%	25%	27%	16%	18%

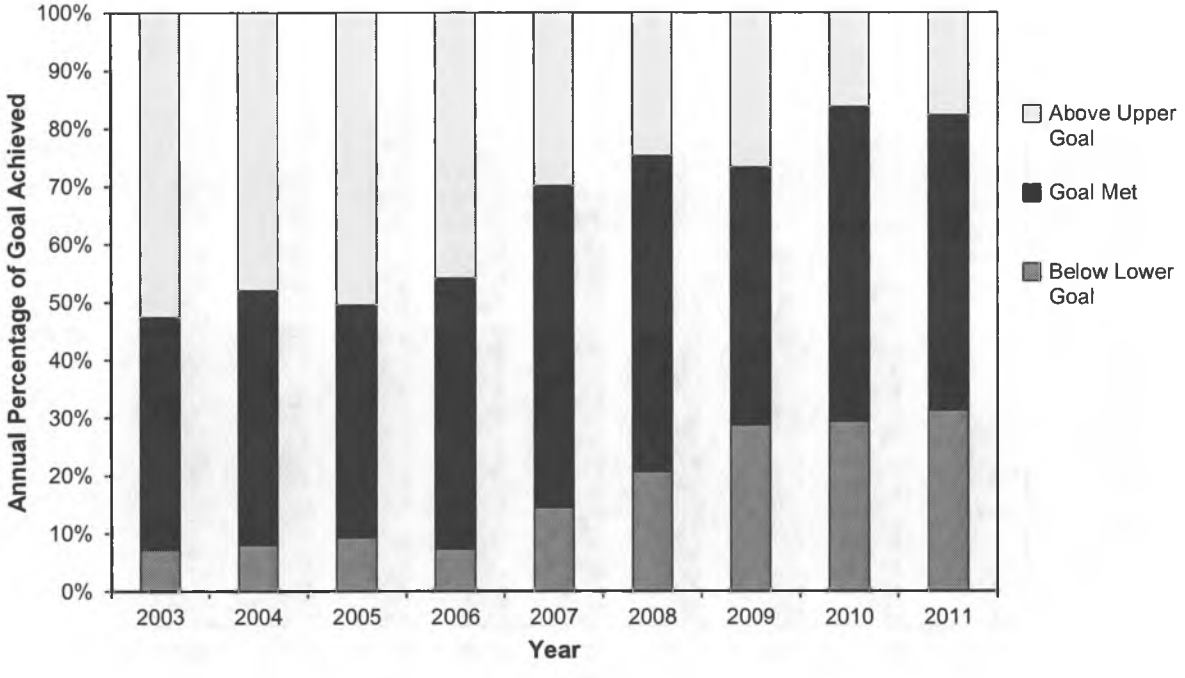


Figure 7.–Central Region (Bristol Bay, Cook Inlet, Prince William Sound/Copper River) salmon escapements compared against escapement goals for the years 2003 to 2011.

Table 15.–Summary of Arctic-Yukon-Kuskokwim Region salmon escapements compared against escapement goals for the years 2003 to 2011.

AYK Region		2003	2004	2005	2006	2007	2008	2009	2010	2011
Stocks with Escapement Data		57	63	62	59	61	65	60	59	57
Below Lower Goal										
	Number	19	15	9	8	5	23	21	18	12
	Percent	33%	24%	15%	14%	8%	35%	35%	31%	21%
Goal Met										
	Number	25	32	20	20	28	26	27	26	27
	Percent	44%	51%	32%	34%	46%	40%	45%	44%	47%
Above Upper Goal										
	Number	13	16	33	31	28	16	12	15	18
	Percent	23%	25%	53%	53%	46%	25%	20%	25%	32%

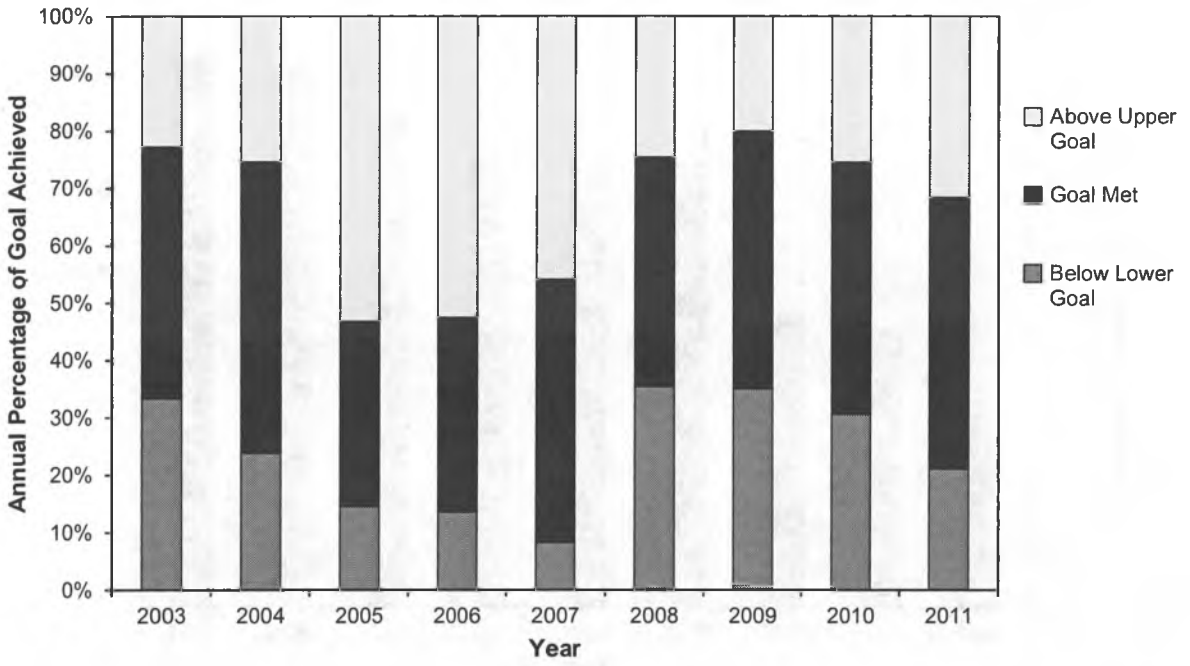


Figure 8.–Arctic-Yukon-Kuskokwim Region salmon escapements compared against escapement goals for the years 2003 to 2011.

Table 16.–Summary of Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas) salmon escapements compared against escapement goals for the years 2003 to 2011.

Westward Region		2003	2004	2005	2006	2007	2008	2009	2010	2011
Stocks with Escapement Data		49	48	48	48	48	52	52	53	52
Below Lower Goal										
	Number	6	6	4	6	5	14	13	11	9
	Percent	12%	13%	8%	13%	10%	27%	25%	21%	17%
Goal Met										
	Number	9	16	19	29	30	24	29	36	38
	Percent	18%	33%	40%	60%	63%	46%	56%	68%	73%
Above Upper Goal										
	Number	34	26	25	13	13	14	10	6	5
	Percent	69%	54%	52%	27%	27%	27%	19%	11%	10%

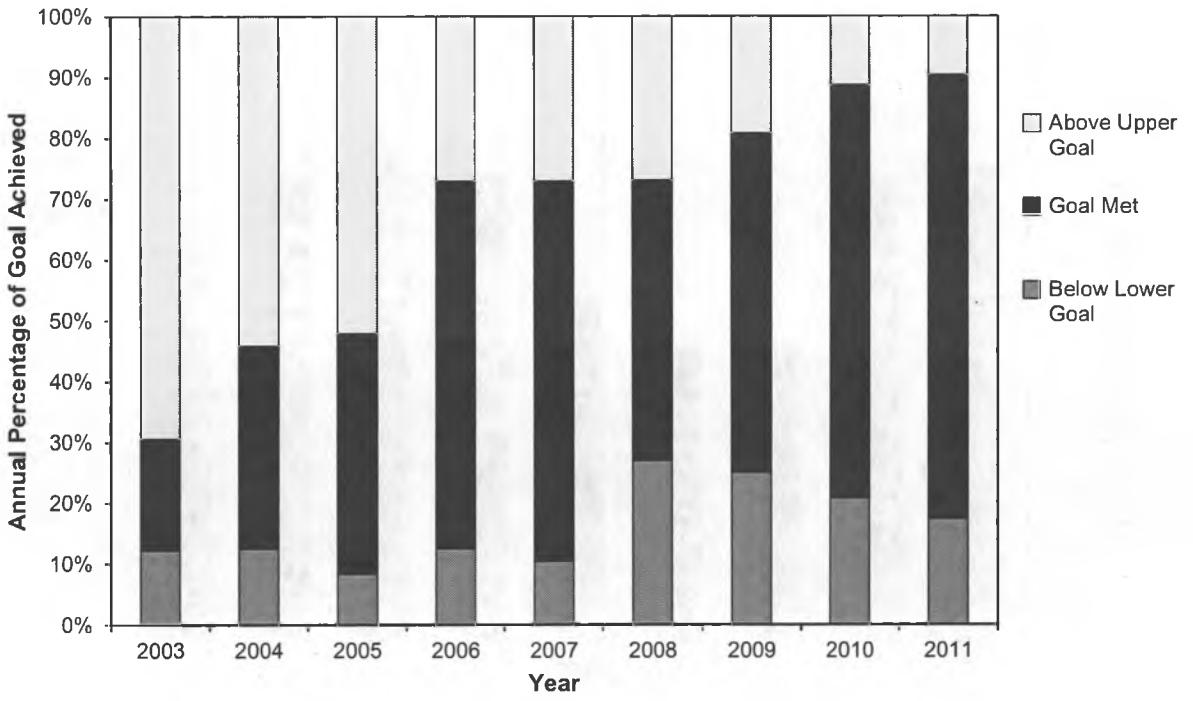


Figure 9.–Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas) salmon escapements compared against escapement goals for the years 2003 to 2011.

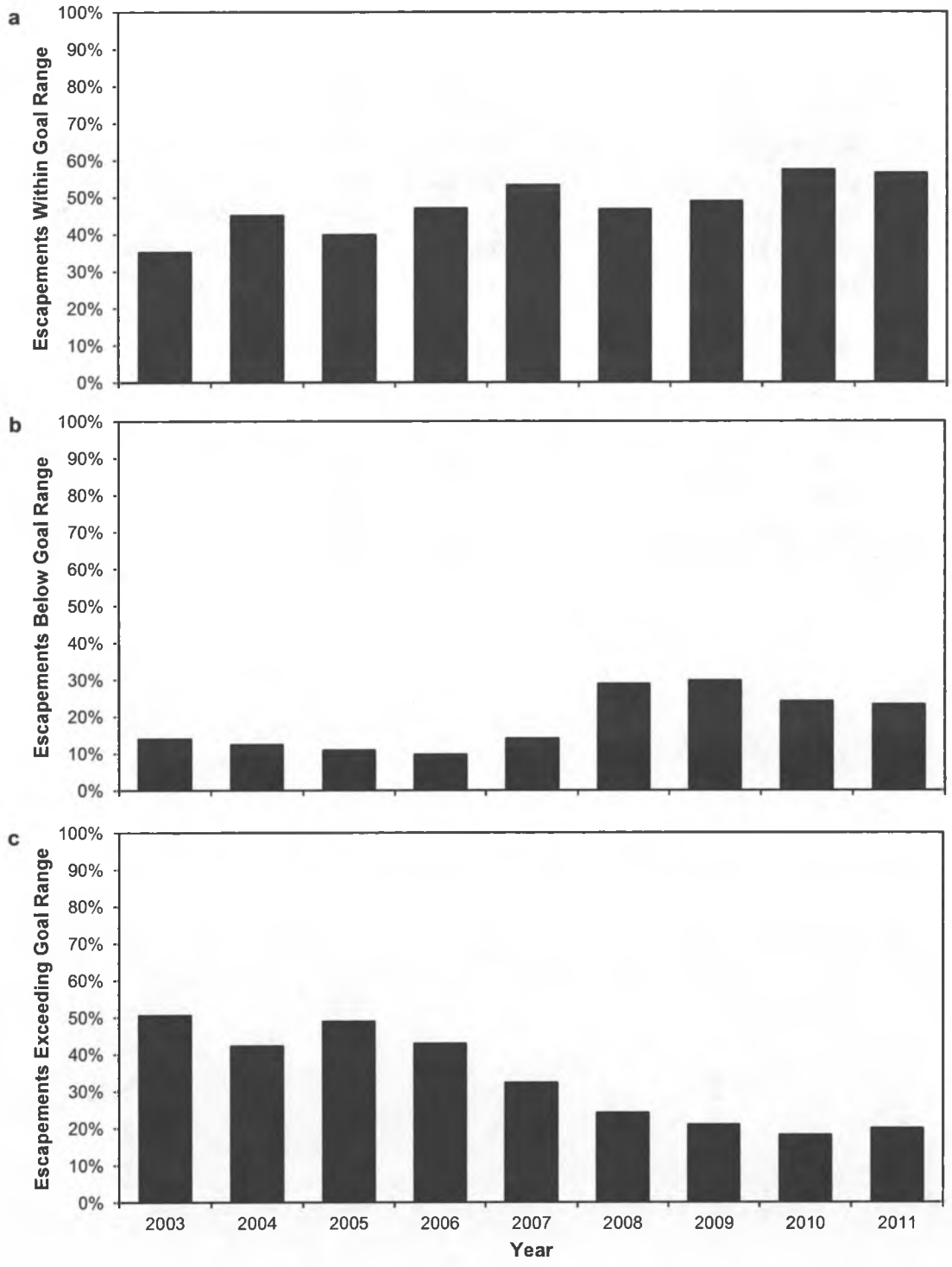


Figure 10.–Statewide summary by year of percentage of escapements that a) met the escapement goal (i.e. within goal range or above lower bound), b) were below lower bound of goal, or c) exceeded upper bound of goal range for the years 2003 to 2011.

Table 17.–Statewide summary of salmon stocks of concern in Alaska.

Region	System	Species	Year Designated[a]	Level of Concern	Year Last Reviewed[a]
Southeast	McDonald Lake	Sockeye	2008	Management	2011[b]
Central	Kvichak River	Sockeye	2000	Yield	2009
	Susitna (Yentna) River	Sockeye	2007	Yield	2010
	Chuitna River	Chinook	2010	Management	2010
	Theodore River	Chinook	2010	Management	2010
	Lewis River	Chinook	2010	Management	2010
	Alexander Creek	Chinook	2010	Management	2010
	Willow Creek	Chinook	2010	Yield	2010
	Goose Creek	Chinook	2010	Yield	2010
Westward	Karluk River	Chinook	2010	Management	2010
AYK-	Yukon River	Chinook	2000	Yield	2009
	Norton Sound Sub-district 5 & 6	Chinook	2003	Yield	2009
	Norton Sound Sub-district 1, 2, & 3	Chum	2000	Yield	2009

[a] Indicates start of Board of Fisheries cycle in which stock of concern was designated or last reviewed (e.g. 2011/2012 BOF cycle = 2011).
[b] The stock of concern designation for McDonald Lake sockeye was removed at the February 2012 Board of Fisheries meeting for Southeast Region.

Table 18.–Methods used to enumerate and develop escapement goals for Southeast Region Chinook, chum, coho, pink, and sockeye salmon stocks.

System	Enumeration Method	Goal Development Method
CHINOOK SALMON		
Blossom River	Peak Aerial Survey[a]	SRA[b]
Keta River	Peak Aerial Survey	SRA
Unuk River	Mark-Recapture	SRA
Chickamin River	Peak Aerial Survey	SRA
Andrew Creek	Peak Aerial Survey (Expanded)	SRA
Stikine River	Mark-Recapture	SRA
King Salmon River	Peak Aerial Survey (Expanded)	SRA
Taku River	Mark-Recapture	SRA
Chilkat River	Mark-Recapture	Theoretical SRA
Klukshu (Alsek) River	Weir Count	SRA
Situk River	Weir Count	SRA
CHUM SALMON		
Southern Southeast Summer	Peak Aerial Survey	Percentile
Northern Southeast Inside Summer	Peak Aerial Survey	Percentile
Northern Southeast Outside Summer	Peak Aerial Survey	Percentile
Cholmondeley Sound Fall	Peak Aerial Survey	Percentile
Port Camden Fall	Peak Aerial Survey	Risk Analysis
Security Bay Fall	Peak Aerial Survey	Percentile
Excursion River Fall	Peak Aerial Survey	Percentile
Chilkat River Fall	Mark-Recapture, Fish Wheel	SRA
COHO SALMON		
Hugh Smith Lake	Weir Count	SRA
Taku River	Mark-Recapture	Agreement[c], SRA
Auke Creek	Weir Count	SRA
Montana Creek	Foot Survey	Theoretical SRA
Peterson Creek	Foot Survey	Theoretical SRA
Ketchikan Survey Index	Peak Aerial Survey	Theoretical SRA
Sitka Survey Index	Foot Survey	Theoretical SRA
Ford Arm Lake	Weir Count	SRA
Berners River	Mark-Recapture	SRA
Chilkat River	Mark-Recapture, Foot Survey	SRA
Lost River	Foot Survey	SRA
Situk River	Peak Aerial Survey	SRA
Tsiu/Tsivat Rivers	Peak Aerial Survey	SRA
PINK SALMON		
Southern Southeast	Peak Aerial Survey	Yield Analysis
Northern Southeast Inside	Peak Aerial Survey	Yield Analysis
Northern Southeast Outside	Peak Aerial Survey	Yield Analysis
Situk River (even-year)	Weir Count	SRA
Situk River (odd-year)	Weir Count	SRA

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Table 18.–Page 2 of 2.

System	Enumeration Method	Goal Development Method
SOCKEYE SALMON		
Hugh Smith Lake	Weir Count	Risk Analysis, Theoretical SRA
McDonald Lake	Expanded Foot Survey	SRA
Mainstem Stikine River	Run Reconstruction	Professional Judgement[c]
Tahltan Lake	Weir Count	SRA
Speel Lake	Weir Count	SRA
Taku River	Mark-Recapture	Professional Judgement[c]
Redoubt Lake	Weir Count	SRA
Chilkat Lake	Sonar, Mark-Recapture	SRA
Chilkoot Lake	Weir Count	SRA
East Alsek-Doame River	Peak Aerial Survey	SRA
Klukshu River	Weir Count	SRA
Lost River	Foot/Boat Survey	Percentile
Situk River	Weir Count	SRA

[a] One or more aerial surveys are attempted during the peak of the run. Peak count is used to index the escapement.
[b] SRA = Spawner-recruit analysis.
[c] Transboundary Technical Committee, Pacific Salmon Commission.

Table 19.–Methods used to enumerate and develop escapement goals for Central Region (Bristol Bay, Cook Inlet, and Prince William Sound/Copper River) Chinook, chum, coho, pink, and sockeye salmon stocks.

System	Enumeration Method	Goal Development Method
CHINOOK SALMON		
Bristol Bay		
Nushagak River	Sonar	SRA[a], Yield Analysis
Togiak River	Single Aerial Survey[b]	Risk Analysis
Naknek River	Single Aerial Survey	Risk Analysis
Alagnak River	Single Aerial Survey	Risk Analysis
Egegik River	Single Aerial Survey	Risk Analysis
Upper Cook Inlet		
Alexander Creek	Single Aerial Survey	Percentile
Campbell Creek	Single Foot Survey	Risk Analysis
Chuitna River	Single Aerial Survey	Percentile
Chulitna River	Single Aerial Survey	Percentile
Clear (Chunilna) Creek	Single Aerial Survey	Percentile
Crooked Creek	Weir Count	Percentile
Deshka River	Weir Count	SRA
Goose Creek	Single Aerial Survey	Percentile
Kenai River - Early Run	Sonar	SRA
Kenai River - Late Run	Sonar	SRA
Lake Creek	Single Aerial Survey	Percentile
Lewis River	Single Aerial Survey	Percentile
Little Susitna River	Single Aerial Survey	Percentile
Little Willow Creek	Single Aerial Survey	Percentile
Montana Creek	Single Aerial Survey	Percentile
Peters Creek	Single Aerial Survey	Percentile
Prairie Creek	Single Aerial Survey	Percentile
Sheep Creek	Single Aerial Survey	Percentile
Talachulitna River	Single Aerial Survey	Percentile
Theodore River	Single Aerial Survey	Percentile
Willow Creek	Single Aerial Survey	Percentile
Lower Cook Inlet		
Anchor River	Sonar, Weir Count	SRA
Deep Creek	Single Aerial Survey	Percentile
Ninilchik River	Weir Count	Percentile
Prince William Sound		
Copper River	Mark-Recapture	Empirical Observation
CHUM SALMON		
Bristol Bay		
Nushagak River	Sonar	Risk Analysis
Upper Cook Inlet		
Clearwater Creek	Peak Aerial Survey[c]	Percentile
Lower Cook Inlet		
Port Graham River	Multiple Foot Surveys[d]	Percentile
Dogfish Lagoon	Multiple Foot Surveys	Percentile

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Table 19.–Page 2 of 3.

System	Enumeration Method	Goal Development Method
Rocky River	Multiple Foot Surveys	Percentile
Port Dick Creek	Multiple Aerial or Foot Surveys	Percentile
Island Creek	Multiple Aerial or Foot Surveys	Percentile
Big Kamishak River	Multiple Aerial Surveys	Percentile
Little Kamishak River	Multiple Aerial Surveys	Percentile
McNeil River	Multiple Aerial Surveys	Percentile
Bruin River	Multiple Aerial Surveys	Percentile
Ursus Cove	Multiple Aerial Surveys	Percentile
Cottonwood Creek	Multiple Aerial Surveys	Percentile
Iniskin Bay	Multiple Aerial Surveys	Percentile
Prince William Sound		
Eastern District	Multiple Aerial Surveys	Risk Analysis
Northern District	Multiple Aerial Surveys	Risk Analysis
Coghill District	Multiple Aerial Surveys	Risk Analysis
Northwestern District	Multiple Aerial Surveys	Risk Analysis
Southeastern District	Multiple Aerial Surveys	Risk Analysis
COHO SALMON		
Bristol Bay		
There are no coho salmon stocks with escapement goals in Bristol Bay		
Upper Cook Inlet		
Fish Creek (Knik)	Weir Count	Percentile
Jim Creek	Single Foot Survey	Percentile
Little Susitna River	Weir Count	Percentile
Lower Cook Inlet		
There are no coho salmon stocks with escapement goals in Lower Cook Inlet		
Prince William Sound		
Copper River Delta	Peak Aerial Survey	Percentile
Bering River	Peak Aerial Survey	Percentile
PINK SALMON		
Bristol Bay		
There are no pink salmon stocks with escapement goals in Bristol Bay		
Upper Cook Inlet		
There are no pink salmon stocks with escapement goals in Upper Cook Inlet		
Lower Cook Inlet		
Humpy Creek	Multiple Foot Surveys	Percentile
China Poot Creek	Multiple Foot Surveys	Percentile
Tutka Creek	Multiple Foot Surveys	Percentile
Barabara Creek	Multiple Foot Surveys	Percentile
Seldovia Creek	Multiple Foot Surveys	Percentile
Port Graham River	Multiple Foot Surveys	Percentile
Port Chatham	Multiple Foot Surveys	Percentile
Windy Creek Right	Multiple Foot Surveys	Percentile
Windy Creek Left	Multiple Foot Surveys	Percentile
Rocky River	Multiple Foot Surveys	Percentile
Port Dick Creek	Multiple Aerial or Foot Surveys	Percentile

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Table 19.–Page 3 of 3.

System	Enumeration Method	Goal Development Method
Island Creek	Multiple Aerial or Foot Surveys	Percentile
S. Nuka Island Creek	Multiple Aerial or Foot Surveys	Percentile
Desire Lake Creek	Multiple Aerial Surveys	Percentile
Bruin River	Multiple Aerial Surveys	Percentile
Sunday Creek	Multiple Aerial Surveys	Percentile
Brown's Peak Creek	Multiple Aerial Surveys	Percentile
Prince William Sound		
All Districts Combined (even year)	Multiple Aerial Surveys	Yield Analysis
All Districts Combined (odd year)	Multiple Aerial Surveys	Yield Analysis
SOCKEYE SALMON		
Bristol Bay		
Kvichak River	Tower Count	SRA, Yield Analysis
Alagnak River	Tower Count	Risk Analysis
Naknek River	Tower Count	SRA, Yield Analysis
Egegik River	Tower Count	SRA, Yield Analysis
Ugashik River	Tower Count	SRA, Yield Analysis
Wood River	Tower Count	SRA, Yield Analysis
Igushik River	Tower Count	SRA, Yield Analysis
Nushagak River	Sonar	SRA, Yield Analysis
Togiak River	Tower Count	SRA, Yield Analysis
Upper Cook Inlet		
Crescent River	Sonar	SRA
Fish Creek (Knik)	Weir Count	Percentile
Kasilof River	Sonar	SRA
Kenai River	Sonar	Brood Interaction Simulation Model
Packers Creek	Weir Count	Percentile
Russian River - Early Run	Weir Count	Percentile
Russian River - Late Run	Weir Count	Percentile
Chelatna Lake	Weir Count	Percentile
Judd Lake	Weir Count	Percentile
Larson Lake	Weir Count	Percentile
Lower Cook Inlet		
English Bay	Peak Aerial Survey, Weir Count	Percentile
Desire Lake	Peak Aerial Survey, Weir Count	Percentile
Bear Lake	Weir Count	Percentile
Aialik Lake	Peak Aerial Survey	Percentile
Mikfik Lake	Peak Aerial Survey	Percentile
Amakdedori Creek	Peak Aerial Survey	Percentile
Prince William Sound		
Upper Copper River	Sonar	Percentile
Copper River Delta	Peak Aerial Survey	Percentile
Bering River	Peak Aerial Survey	Percentile
Coghill Lake	Weir Count	SRA
Eshamy Lake	Weir Count	SRA

[a] SRA = Spawner-recruit analysis.
[b] Single survey done around time of presumed peak of the run with no expansion of counts.
[c] Multiple aerial surveys are attempted throughout the run. Peak count is used to index the escapement.
[d] Multiple surveys throughout run (at least 1 per week). Area under the curve method (AUC) used to estimate annual escapement.

Table 20.–Methods used to enumerate and develop escapement goals for Arctic-Yukon-Kuskokwim Region Chinook, chum, coho, pink, and sockeye salmon stocks.

System	Enumeration Method	Goal Development Method
CHINOOK SALMON		
Kuskokwim Area		
North (Main) Fork Goodnews River	Single Aerial Survey[a]	Percentile
Middle Fork Goodnews River	Weir Count	SRA[b]
Kanektok River	Single Aerial Survey	Percentile
Kogrukluk River	Weir Count	Percentile
Kwethluk River	Weir Count	Percentile
Tuluksak River	Weir Count	Percentile
George River	Weir Count	Percentile
Kisaralik River	Single Aerial Survey	Percentile
Aniak River	Single Aerial Survey	Percentile
Salmon River (Aniak R)	Single Aerial Survey	Percentile
Holitna River	Single Aerial Survey	Percentile
Cheeneetnuk River (Stony R)	Single Aerial Survey	Percentile
Gagaryah River (Stony R)	Single Aerial Survey	Percentile
Salmon River (Pitka Fork)	Single Aerial Survey	Percentile
Yukon River		
East Fork Andreafsky River	Weir Count	Percentile
West Fork Andreafsky River	Peak Aerial Survey[c]	Percentile
Anvik River	Peak Aerial Survey	Percentile
Nulato River (forks combined)	Peak Aerial Survey	Percentile
Chena River	Tower, Mark-Recapture	SRA
Salcha River	Tower, Mark-Recapture	SRA
Canada Mainstem	Sonar	Agreement (U.S./Canada Joint Technical Committee)
Norton Sound		
Fish River/Boston Creek	Peak Aerial Survey	Percentile
Kwiniuk River	Tower Count	SRA
North River (Unalakleet R)	Tower Count	Percentile
Shaktoolik River	Peak Aerial Survey	Theoretical SRA
Unalakleet/Old Woman River	Peak Aerial Survey	Theoretical SRA
CHUM SALMON		
Kuskokwim Area		
Middle Fork Goodnews River	Weir Count	Percentile
Kanektok River	Single Aerial Survey	Percentile
Kogrukluk River	Weir Count	Percentile
Aniak River	Sonar	Percentile
Yukon River Summer Chum		
East Fork Andreafsky River	Weir Count	SRA
Anvik River	Sonar	SRA
Mainstem Yukon River	NA	NA
Yukon River Fall Chum		
Yukon River Drainage	Calculated - Multiple Surveys	SRA
Tanana River	Mark-Recapture	SRA

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Table 20.–Page 2 of 3.

System	Enumeration Method	Goal Development Method
Delta River	Multiple Foot Surveys	Proportion of Tanana River Goal
Upper Yukon River Tributaries	Sonar & Weir Count	SRA
Chandalar River	Sonar	Proportion of Upper Yukon River Tributaries Goal
Sheenjek River	Sonar	Proportion of Upper Yukon River Tributaries Goal
Fishing Branch River (Canada)	Weir Count	Agreement (U.S./Canada Joint Technical Committee) IMEG Percentile
Yukon R. Mainstem (Canada)	Mark-Recapture	Agreement (U.S./Canada Joint Technical Committee) IMEG SRA
Norton Sound		
Subdistrict 1 Aggregate	Calculated - Multiple Surveys	SRA
Nome River	Weir Count	Proportion of Aggregate Goal
Snake River	Tower/Weir Count	Proportion of Aggregate Goal
Eldorado River	Peak Aerial Survey (Expanded)	Proportion of Aggregate Goal
Niukluk River	Tower Count	Risk Analysis
Kwiniuk River	Tower Count	SRA
Tubutuluk River	Peak Aerial Survey (Expanded)	SRA
Unalakleet/Old Woman River	Peak Aerial Survey	Empirical Observation
Kotzebue Sound		
Kotzebue Sound Aggregate	Peak Aerial Survey (Expanded)	SRA
Noatak and Eli Rivers	Peak Aerial Survey	Proportion of Aggregate Goal
Upper Kobuk w/ Selby River	Peak Aerial Survey	Proportion of Aggregate Goal
Salmon River	Peak Aerial Survey	Proportion of Aggregate Goal
Tutuksuk River	Peak Aerial Survey	Proportion of Aggregate Goal
Squirrel River	Peak Aerial Survey	Proportion of Aggregate Goal
COHO SALMON		
Kuskokwim Area		
Middle Fork Goodnews River	Weir Count	Percentile
Kogrukluk River	Weir Count	Percentile
Kwethluk River	Weir Count	Empirical Observation
Yukon River		
Delta Clearwater River	Boat Survey	Percentile
Norton Sound		
Kwiniuk River	Peak Aerial Survey	Theoretical SRA
Niukluk River	Tower Count	Percentile
North River (Unalakleet R.)	Peak Aerial Survey	Theoretical SRA
PINK SALMON		
Kuskokwim Area		
There are no escapement goals for pink salmon in the Kuskokwim Management Area.		
Yukon River		
There are no escapement goals for pink salmon in the Yukon River drainage.		
Norton Sound		
Nome River (odd year)	Weir Count	Empirical Observation
Nome River (even year)	Weir Count	Empirical Observation

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Table 20.–Page 3 of 3.

System	Enumeration Method	Goal Development Method
Kwiniuk River	Tower Count	Empirical Observation
Niukluk River	Tower Count	Empirical Observation
North River	Tower Count	Empirical Observation
SOCKEYE SALMON		
Kuskokwim Area		
North (Main) Fork Goodnews River	Single Aerial Survey	Percentile
Middle Fork Goodnews River	Weir Count	SRA
Kanektok River	Single Aerial Survey	Percentile
Kogrukluk River	Weir Count	Percentile
Yukon River		
There are no escapement goals for Sockeye in the Yukon River drainage.		
Norton Sound		
Salmon Lake/Grand Central River	Peak Aerial Survey	Empirical Observation
Glacial Lake	Peak Aerial Survey	Empirical Observation

Note: NA = data not available.
[a] Typically single survey done around time of presumed peak of the run with no expansion of counts.
[b] SRA = Spawner-recruit analysis.
[c] One or more aerial surveys are attempted during the peak of the run. Peak count is used to index the escapement.

Table 21.–Methods used to enumerate and develop escapement goals for Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas) Chinook, chum, coho, pink, and sockeye salmon stocks.

System	Enumeration Method	Goal Development Method
CHINOOK SALMON		
AK Peninsula		
Nelson River	Weir, Peak Aerial Survey[a]	Spawning Habitat Model, SRA[b]
Chignik		
Chignik River	Weir Count	SRA
Kodiak		
Karluk River	Weir Count	SRA
Ayakulik River	Weir Count	SRA
CHUM SALMON		
AK Peninsula		
Northern District	Peak Aerial Survey	SRA
Northwestern District	Peak Aerial Survey	SRA
Southeastern District	Peak Aerial Survey	Percentile
South Central District	Peak Aerial Survey	Percentile
Southwestern District	Peak Aerial Survey	Percentile
Unimak District	Peak Aerial Survey	Risk Analysis
Chignik		
Entire Chignik Area	Peak Aerial Survey	Risk Analysis
Kodiak		
Mainland District	Peak Aerial Survey	Percentile, Risk Analysis
Kodiak Archipelago Aggregate	Peak Aerial Survey	Percentile
COHO SALMON		
AK Peninsula		
Nelson River	Peak Aerial Survey	Risk Analysis
Thin Point Lake	Peak Aerial Survey	Empirical Observation
Ilnik River	Peak Aerial Survey	Risk Analysis
Chignik		
There are no coho salmon stocks with escapement goals in Chignik Area		
Kodiak		
Pasagshak River	Foot Survey	Theoretical SRA
Buskin River	Weir Count	SRA
Olds River	Foot Survey	Theoretical SRA
American River	Foot Survey	Theoretical SRA
PINK SALMON		
AK Peninsula		
Bechevin Bay Section (odd year)	Peak Aerial Survey	Risk Analysis
Bechevin Bay Section (even year)	Peak Aerial Survey	Risk Analysis
South Peninsula Total (odd year)	Peak Aerial Survey	SRA
South Peninsula Total (even year)	Peak Aerial Survey	SRA
Chignik		
Entire Chignik Area (odd year)	Peak Aerial Survey	Yield Analysis
Entire Chignik Area (even year)	Peak Aerial Survey	Yield Analysis

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Table 21.–Page 2 of 2.

System	Enumeration Method	Goal Development Method
Kodiak		
Mainland District	Peak Aerial Survey	Conditional Sustained Yield Analysis
Kodiak Archipelago (odd year)	Peak Aerial Survey	SRA
Kodiak Archipelago (even year)	Peak Aerial Survey	SRA
SOCKEYE SALMON		
AK Peninsula		
Cinder River	Peak Aerial Survey	Percentile
Ilnik River	Weir Count	Percentile, Euphotic Volume Model, Zooplankton Model
Meshik River	Peak Aerial Survey	Percentile
Sandy River	Weir Count	Percentile
Bear River Early Run	Weir Count	Spawning Habitat Model, Percentile, Euphotic Volume Model, Zooplankton Model, Lake Surface Area
Bear River Late Run	Weir Count	Spawning Habitat Model, Percentile, Euphotic Volume Model, Zooplankton Model, Lake Surface Area
Nelson River	Weir Count	SRA
Christianson Lagoon	Peak Aerial Survey	Spawning Habitat Model
Swanson Lagoon	Peak Aerial Survey	Percentile
North Creek	Peak Aerial Survey	Percentile
Orzinski Lake	Weir Count	Percentile
Mortensen Lagoon	Peak Aerial Survey	Spawning Habitat Model, Percentile, Euphotic Volume Model, Zooplankton Model, Lake Surface Area
Thin Point Lake	Peak Aerial Survey	Spawning Habitat Model, Percentile, Euphotic Volume Model, Zooplankton Model, Lake Surface Area
McLees Lake	Weir Count	Percentile
Chignik		
Chignik River Early Run	Weir Count	Yield Analysis, Euphotic Volume Model, Zooplankton Model
Chignik River Late Run	Weir Count	SRA, Euphotic Volume Model, Zooplankton Model
Kodiak		
Malina Creek	Peak Aerial Survey	Percentile, Zooplankton Model
Afognak (Litnik) River	Weir Count	SRA
Little River	Peak Aerial Survey	Risk Analysis
Uganik Lake	Peak Aerial Survey	Percentile
Karluk River Early Run	Weir Count	SRA
Karluk River Late Run	Weir Count	SRA
Ayakulik River Early Run	Weir Count	Zooplankton Model and historical escapement
Ayakulik River Late Run	Weir Count	Zooplankton Model and historical escapement
Upper Station River Early Run	Weir Count	Percentile
Upper Station River Late Run	Weir Count	SRA
Frazer Lake	Weir Count	SRA
Saltery Lake	Weir Count	SRA
Pasagshak River	Peak Aerial Survey	Percentile, Risk Analysis
Buskin Lake	Weir Count	Empirical Observation

[a] One or more aerial surveys are attempted during the peak of the run. Peak count is used to index the escapement.
[b] SRA = Spawner-recruit analysis.

APPENDIX A. ESCAPEMENT GOAL MEMO FOR THE UPPER COOK INLET MEETING OF THE 2010/2011 BOARD OF FISHERIES MEETING CYCLE

STATE OF ALASKA

SEAN PARNELL, GOVERNOR

1255 W. 8TH Street
P.O. BOX 115526
JUNEAU, AK 99811-5526

PHONE: (907) 465-4210
FAX: (907) 465-2604

DEPARTMENT OF FISH AND GAME

Division of Commercial Fisheries
Division of Sport Fish

MEMORANDUM

TO: John Hilsinger, Director
Division of Commercial Fisheries

Charles Swanton, Director
Division of Sport Fish

DATE: September 28, 2010

THRU: Jeff Regnart, Regional Supervisor
Division of Commercial Fisheries, Region II

James Hasbrouck, Regional Supervisor
Division of Sport Fish, Region II

SUBJECT: Upper Cook Inlet
Escapement Goal Memo

FROM: Lowell Fair, Regional Research Coordinator
Division of Commercial Fisheries, Region II

Jack Erickson, Regional Research Coordinator
Division of Sport Fish, Region II

The purpose of this memo is to inform you of the interdivisional salmon escapement goal review committee's progress reviewing and recommending escapement goals for Upper Cook Inlet. Escapement goals in this management area have been set and evaluated at regular intervals since statehood. This effort has resulted in many of the stocks having long-term historical databases. Upper Cook Inlet escapement goals were last reviewed by the department (Fair et al. 2007) during the 2007–2008 Alaska Board of Fisheries (board) cycle. The escapement goal for Yentna River sockeye salmon, however, was reviewed out of cycle in 2009 (Fair et al. 2009). During this review, the sustainable escapement goal (SEG) for Yentna River sockeye salmon was replaced with 2 SEGs represented by Chelatna (20,000–65,000) and Judd (25,000–55,000) lakes. Additionally, an SEG (15,000–50,000) was developed for Larson Lake on the Susitna River mainstem.

In February 2010, an interdivisional salmon escapement goal review committee, including staff from the divisions of Commercial Fisheries and Sport Fish, reviewed existing salmon escapement goals in the Upper Cook Inlet management area. The review was based on the

Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222) and the *Policy for Statewide Salmon Escapement Goals* (5 AAC 39.223). Two important terms are:

> 5 AAC 39.222 (f)(3) "*Biological Escapement Goal* (BEG): the escapement that provides the greatest potential for maximum sustained yield (MSY);" and
>
> 5 AAC 39.222 (f)(36) "*Sustainable Escapement Goal* (SEG): a level of escapement, indicated by an index or an escapement estimate, that is known to provide for sustained yield over a 5 to 10 year period, used in situations where a BEG cannot be estimated or managed for."

The committee determined the appropriate goal type (BEG or SEG) for each salmon stock with an existing goal and considered other monitored, exploited stocks without an existing goal. Based on the quality and quantity of available data, the committee determined the most appropriate methods to evaluate the escapement goals. Due to the thoroughness of previous analyses by Bue and Hasbrouck (*Unpublished)*, Clark *et al.* (2007), Hasbrouck and Edmundson (2007), and Fair *et al.* (2007), this review re-analyzed only those goals with recent (2007-2009) data that could potentially result in a substantially different escapement goal from the last review, or those that should be eliminated or established.

Escapement goals were evaluated for Upper Cook Inlet stocks using the following methods: (1) spawner-recruit analyses; (2) yield analyses; (3) smolt/fry information; and/or (4) the percentile approach. Methods used to evaluate the escapement goals and the rationale for making subsequent recommendations will be described in a published report (Fair et al. *In prep*) available prior to the February–March, 2011 Upper Cook Inlet board meeting. Following the review, the committee estimated escapement goals for each stock, compared these estimates with the current goal, and agreed on a recommendation to keep the current goal, change the goal, or eliminate the goal.

There were 35 escapement goals (not including Yentna River sockeye salmon) evaluated for 32 stocks in Upper Cook Inlet (Table 1). The committee recommends that most escapement goals remain status quo. However, the committee recommends reinstating the previous Fish Creek coho salmon goal dropped during the 2004–2005 review. The Division of Sport Fish assessed Fish Creek coho salmon escapement with a weir in 2009 and 2010, anticipating that operations will continue in the near future. A risk-based lower bound SEG is proposed to replace the existing SEG range for the Campbell Creek Chinook salmon stock, which provides an annual youth fishery in Anchorage. The Kenai River sockeye salmon SEG range of 500,000–800,000 should change to an SEG range of 700,000–1,200,000, and the Kasilof sockeye salmon SEG of 150,000–250,000 should change to an SEG range of 160,000–360,000. These 2 goal changes are primarily the result of updating historical Bendix sonar escapement data sets with DIDSON-based estimates, and utilizing recent genetic information to develop brood tables. Based on the amount of uncertainty associated with their escapement estimates, the committee recommends changing early and late run Kenai River Chinook salmon BEGs to SEGs. Similarly, uncertainty in Deshka River Chinook salmon commercial harvests prompted a change from a BEG to SEG-type goal. Lastly, returns from 2001–2003 brood years provided sufficient information to develop a BEG (previously an SEG of 14,000–37,000) for early-run Russian River sockeye salmon. This proposed BEG of 22,000–42,000 originated from a Ricker spawner-recruit analysis.

In summary, the escapement goal committee reviewed 34 salmon escapement goals in Upper Cook Inlet with recommendations to: reinstate one previous goal; change one goal from an SEG range to a lower bound SEG; change the ranges of two goals; change three goals from BEGs to SEGs, and; change one goal from an SEG to a BEG and its range.

An oral and written report about Upper Cook Inlet escapement goals and specific recommendations for numerous stocks will be presented to the board in February, 2011. These reports will list all current and recommended escapement goals for Upper Cook Inlet and provide a detailed description of the methods used to reach these recommendations.

Literature Cited

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Table 1.—Summary of current escapement goals and recommended escapement goals for salmon stocks in Upper Cook Inlet, 2010.

System	Current Escapement Goal			Recommended Escapement Goal			
	Goal	Type	Year Adopted	Escapement Range/Lower Bound	Type	Data[a]	Action
Chinook Salmon							
Alexander Creek	2,100–6,000	SEG	2002	2,100–6,000	SEG	SAS	No Change
Campbell Creek	50–700	SEG	2008	380	SEG	SFS	Change to lower bound SEG
Chuitna River	1,200–2,900	SEG	2002	1,200–2,900	SEG	SAS	No Change
Chulitna River	1,800–5,100	SEG	2002	1,800–5,100	SEG	SAS	No Change
Clear (Chunilna) Creek	950–3,400	SEG	2002	950–3,400	SEG	SAS	No Change
Crooked Creek	650–1,700	SEG	2002	650–1,700	SEG	Weir	No Change
Deshka River	13,000–28,000	BEG	2002	13,000–28,000	SEG	Weir	Change to SEG
Goose Creek	250–650	SEG	2002	250–650	SEG	SAS	No Change
Kenai River - Early Run	4,000–9,000	BEG	1999	4,000–9,000	SEG	Sonar	Change to SEG
Kenai River - Late Run	17,800–35,700	BEG	1999	17,800–35,700	SEG	Sonar	Change to SEG
Lake Creek	2,500–7,100	SEG	2002	2,500–7,100	SEG	SAS	No Change
Lewis River	250–800	SEG	2002	250–800	SEG	SAS	No Change
Little Susitna River	900–1,800	SEG	2002	900–1,800	SEG	SAS	No Change
Little Willow Creek	450–1,800	SEG	2002	450–1,800	SEG	SAS	No Change
Montana Creek	1,100–3,100	SEG	2002	1,100–3,100	SEG	SAS	No Change
Peters Creek	1,000–2,600	SEG	2002	1,000–2,600	SEG	SAS	No Change
Prairie Creek	3,100–9,200	SEG	2002	3,100–9,200	SEG	SAS	No Change
Sheep Creek	600–1,200	SEG	2002	600–1,200	SEG	SAS	No Change
Talachulitna River	2,200–5,000	SEG	2002	2,200–5,000	SEG	SAS	No Change
Theodore River	500–1,700	SEG	2002	500–1,700	SEG	SAS	No Change
Willow Creek	1,600–2,800	SEG	2002	1,600–2,800	SEG	SAS	No Change
Chum Salmon							
Clearwater Creek	3,800–8,400	SEG	2002	3,800–8,400	SEG	PAS	No Change
Coho Salmon							
Fish Creek (Knik)				1,200–4,400	SEG	Weir	Reinstate previous SEG
Jim Creek	450–700	SEG	2002	450–700	SEG	SFS	No Change
Little Susitna River	10,100–17,700	SEG	2002	10,100–17,700	SEG	Weir	No Change

Continued

Table 1.—Continued.

System	Current Escapement Goal			Recommended Escapement Goal			
	Goal	Type	Year Adopted	Range/Lower Bound	Escapement Type	Data[a]	Action
Sockeye Salmon							
Chelatna Lake	20,000–65,000	SEG	2009	20,000–65,000	SEG	Weir	No Change
Crescent River	30,000–70,000	BEG	1999	30,000–70,000	BEG	Sonar	No Change
Fish Creek (Knik)	20,000–70,000	SEG	2002	20,000–70,000	SEG	Weir	No Change
Judd Lake	25,000–55,000	SEG	2009	25,000–55,000	SEG	Weir	No Change
Kasilof River	150,000–250,000	BEG	1986	160,000–360,000	BEG	Sonar	Change in Range
Kenai River	500,000–800,000	SEG	1999	700,000–1,200,000	SEG	Sonar	Change in Range
Larson Lake	15,000–50,000	SEG	2009	15,000–50,000	SEG	Weir	No Change
Packers Creek	15,000–30,000	SEG	2008	15,000–30,000	SEG	Weir	No Change
Russian River - Early Run	14,000–37,000	SEG	2002	22,000–42,000	BEG	Weir	Change in Range and to BEG
Russian River - Late Run	30,000–110,000	SEG	2002	30,000–110,000	SEG	Weir	No Change
Yentna River	90,000–160,000	SEG	2002	Eliminated in 2009	Eliminated in 2009		Eliminated in 2009

[a] PAS = Peak Aerial Survey, SAS = Single Aerial Survey, and SFS = Single Foot Survey.

cc: Members, Alaska Board of Fisheries.

APPENDIX B.
ESCAPEMENT GOAL MEMO FOR THE LOWER COOK INLET MANAGEMENT AREA MEETING OF THE 2010/2011 BOARD OF FISHERIES MEETING CYCLE

STATE OF ALASKA

SEAN PARNELL, GOVERNOR

1255 W. 8TH Street
P.O. BOX 115526
JUNEAU, AK 99811-5526

PHONE: (907) 465-4210
FAX: (907) 465-2604

DEPARTMENT OF FISH AND GAME

Division of Commercial Fisheries
Division of Sport Fish

MEMORANDUM

TO: John Hilsinger, Director
Division of Commercial Fisheries

Charles Swanton, Director
Division of Sport Fish

DATE: September 30, 2010

THRU: Jeff Regnart, Regional Supervisor
Division of Commercial Fisheries, Region II

James Hasbrouck, Regional Supervisor
Division of Sport Fish, Region II

SUBJECT: Lower Cook Inlet
Escapement Goal Memo

FROM: Lowell Fair, Regional Research Coordinator
Division of Commercial Fisheries, Region II

Jack Erickson, Regional Research
Coordinator
Division of Sport Fish, Region II

The purpose of this memo is to inform you of our progress reviewing and recommending escapement goals for Lower Cook Inlet. Escapement goals in Lower Cook Inlet have been set and evaluated at regular intervals since statehood. Because of this effort, many of the stocks have long-term historical databases. Lower Cook Inlet escapement goals were last reviewed, changes recommended, and subsequently implemented by the department (Otis and Szarzi 2007) during the 2007-2008 Alaska Board of Fisheries (board) cycle.

In February 2010, an interdivisional salmon escapement goal review committee, including staff from the divisions of Commercial Fisheries and Sport Fish, was formed to review existing salmon escapement goals in the Lower Cook Inlet Management Area. The review was based on the *Policy for the Management of Sustainable Salmon Fisheries* (5 AAC 39.222) and the *Policy for Statewide Salmon Escapement Goals* (5 AAC 39.223). Two important terms are:

> 5 AAC 39.222 (f)(3) "*Biological Escapement Goal* (BEG): the escapement that provides the greatest potential for maximum sustained yield (MSY);" and

5 AAC 39.222 (f)(36) "*Sustainable Escapement Goal* (SEG): a level of escapement, indicated by an index or an escapement estimate, that is known to provide for sustained yield over a 5 to 10 year period, used in situations where a BEG cannot be estimated or managed for."

The committee determined the appropriate goal type (BEG or SEG) for each salmon stock with an existing goal and other monitored, exploited stocks without an existing goal. Based on the quality and quantity of available data, we determined the most appropriate methods to evaluate the escapement goal. Due to the thoroughness of the previous analyses by Otis (2001), Otis and Hasbrouck (2004), and Otis and Szarzi (2007), this review only re-analyzed goals with recent (2008-2010) data that could potentially result in a substantially different escapement goal from the last review, or those that should be eliminated or established. For Lower Cook Inlet stocks, the available data were most appropriate for SEG type goals.

Salmon escapements are primarily monitored by multiple aerial and/or foot surveys of stream reaches that can be monitored. The resulting escapement indices do not provide absolute abundance estimates suitable for estimating biological escapement goals. Consequently, escapement goals were evaluated for Lower Cook Inlet stocks using percentiles of observed escapement estimates or indices that also incorporated contrast in the escapement data (Bue and Hasbrouck, *Unpublished*). Following these analyses, the committee estimated escapement goals for each stock, compared these estimates with the current goal, and agreed on a recommendation to keep the current goal, change the goal, or eliminate the goal.

There were 44 existing escapement goals evaluated in Lower Cook Inlet (Table 1). The committee recommended changes to seven existing escapement goals in Lower Cook Inlet. Based on additional years of escapement and harvest data, we recommend changing the Anchor River Chinook salmon goal from a lower bound SEG of 5,000 to an SEG range of 3,800–10,000 fish. We recommend eliminating escapement goals for 4 inconsistently monitored pink salmon stocks in Resurrection Bay (Bear, Salmon, and Tonsina creeks, and Thumb and Humpy coves) having modest returns without targeted commercial fisheries. We also recommend changing the current SEG of 5,950–12,550 for Delight Creek sockeye salmon to a range of 7,550–17,650, and the current SEG range of 1,880–9,300 for Chenik Lake sockeye salmon to a range of 3,500–14,000. These 2 goals were originally derived primarily from aerial survey indices, but are now monitored by weir and/or video projects.

In summary, this comprehensive review of the 44 existing salmon escapement goals in Lower Cook Inlet resulted in 7 modifications. Three goals had a change in range and 4 goals were eliminated. An oral and written report (Otis et al. *In prep*) concerning escapement goals and specific recommendations for numerous stocks in Lower Cook Inlet will be presented to the board in November 2010. These reports will list all current and recommended escapement goals for Lower Cook Inlet, as well as detailed descriptions of the methods used to reach these recommendations.

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Table 1.—Summary of current escapement goals and recommended escapement goals for salmon stocks in Lower Cook Inlet.

	Current Escapement Goal			Recommended Escapement Goal		
System	Goal	Type	Year Adopted	Range	Escapement Data[a]	Action
Chinook Salmon						
Anchor River	5,000	SEG	2008	3,800–10,000	Weir/Sonar	Change
Deep Creek	350-800	SEG	1993	350-800	SAS	No Change
Ninilchik River	550–1,300	SEG	2008	550–1,300	Weir	No Change
Chum Salmon						
Port Graham R.	1,450-4,800	SEG	2002	1,450-4,800	MFS	No Change
Dogfish Lagoon	3,350-9,150	SEG	2002	3,350-9,150	MFS	No Change
Rocky River	1,200-5,400	SEG	2002	1,200-5,400	MFS	No Change
Port Dick Creek	1,900-4,450	SEG	2002	1,900-4,450	MAS/MFS	No Change
Island Creek	6,400-15,600	SEG	2002	6,400-15,600	MAS/MFS	No Change
Big Kamishak R.	9,350-24,000	SEG	2002	9,350-24,000	MAS	No Change
Little Kamishak River	6,550-23,800	SEG	2002	6,550-23,800	MAS	No Change
McNeil River	24,000-48,000	SEG	2008	24,000-48,000	MAS	No Change
Bruin River	6,000-10,250	SEG	2002	6,000-10,250	MAS	No Change
Ursus Cove	6,050-9,850	SEG	2002	6,050-9,850	MAS	No Change
Cottonwood Cr.	5,750-12,000	SEG	2002	5,750-12,000	MAS	No Change
Iniskin Bay	7,850-13,700	SEG	2002	7,850-13,700	MAS	No Change
Pink Salmon						
Humpy Creek	21,650-85,550	SEG	2002	21,650-85,550	MFS	No Change
China Poot Creek	2,900-8,200	SEG	2002	2,900-8,200	MFS	No Change
Tutka Creek	6,500-17,000	SEG	2002	6,500-17,000	MFS	No Change
Barabara Creek	1,900-8,950	SEG	2002	1,900-8,950	MFS	No Change
Seldovia Creek	19,050-38,950	SEG	2002	19,050-38,950	MFS	No Change
Port Graham R.	7,700-19,850	SEG	2002	7,700-19,850	MFS	No Change
Port Chatham	7,800-21,000	SEG	2002	7,800-21,000	MFS	No Change
Windy Cr. Right	3,350-10,950	SEG	2002	3,350-10,950	MFS	No Change
Windy Cr. Left	3,650-29,950	SEG	2002	3,650-29,950	MFS	No Change
Rocky River	9,350-54,250	SEG	2002	9,350-54,250	MFS	No Change
Port Dick Creek	18,550-58,300	SEG	2002	18,550-58,300	MAS/MFS	No Change
Island Creek	7,200-28,300	SEG	2002	7,200-28,300	MAS/MFS	No Change
S. Nuka Island Creek	2,700-14,250	SEG	2002	2,700-14,250	MAS/MFS	No Change
Desire Lake Cr.	1,900-20,200	SEG	2002	1,900-20,200	MAS	No Change
Bear & Salmon creeks	5,000-23,500	SEG	2005			Eliminate
Thumb Cove	2,350-8,850	SEG	2002			Eliminate

Continued ...

Table 1. —Continued.

	Current Escapement Goal			Recommended Escapement Goal		
System	Goal	Type	Year Adopted	Range	Escapement Data[a]	Action
Pink Salmon						
Humpy Cove	900-3,200	SEG	2002			Eliminate
Tonsina Creek	500-5,850	SEG	2002			Eliminate
Bruin River	18,650-155,750	SEG	2002	18,650-155,750	MAS	No Change
Sunday Creek	4,850-28,850	SEG	2002	4,850-28,850	MAS	No Change
Brown's Peak Creek	2,450-18,800	SEG	2002	2,450-18,800	MAS	No Change
Sockeye Salmon						
English Bay	6,000-13,500	SEG	2002	6,000-13,500	PAS/Weir	No Change
Delight Lake	5,950-12,550	SEG	2002	7,550-17,650	PAS/Weir	Range Change
Desire Lake	8,800-15,200	SEG	2002	8,800-15,200	PAS/Weir	No Change
Bear Lake	700-8,300	SEG	2002	700-8,300	Weir	No Change
Aialik Lake	3,700-8,000	SEG	2002	3,700-8,000	PAS	No Change
Mikfik Lake	6,300-12,150	SEG	2002	6,300-12,150	PAS	No Change
Chenik Lake	1,880-9,300	SEG	2002	3,500-14,000	PAS/Video	Range Change
Amakdedori Cr.	1,250-2,600	SEG	2002	1,250-2,600	PAS	No Change

[a] SAS = Single Aerial Survey, MAS = Multiple Aerial Survey, PAS = Peak Aerial Survey, MFS = Multiple Foot Survey.

cc: Members, Alaska Board of Fisheries

APPENDIX C.
ESCAPEMENT GOAL MEMO FOR THE CHIGNIK MANAGEMENT AREA MEETING AND KODIAK MANAGEMENT AREA MEETING OF THE 2010/2011 BOARD OF FISHERIES MEETING CYCLE

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

Division of Commercial Fisheries
Division of Sport Fish

SEAN PARNELL, GOVERNOR

1255 W. 8TH Street
P.O. BOX 115526
JUNEAU, AK 99811-5526

PHONE: (907) 465-4210
FAX: (907) 465-2604

MEMORANDUM

TO: John Hilsinger, Director
Division of Commercial Fisheries

Charles Swanton, Director
Division of Sport Fish

DATE: September 28, 2010

THRU: Steve Honnold, Regional Supervisor
Division of Commercial Fisheries, Region IV

James Hasbrouck, Regional Supervisor
Division of Sport Fish, Region II

SUBJECT: Kodiak and Chignik Escapement Goal Reports

FROM: Matt Nemeth, Regional Finfish Research Biologist
Division of Commercial Fisheries, Region IV

Jack Erickson, Regional Research Coordinator
Division of Sport Fish, Region II

The purpose of this memorandum is to inform you of our progress reviewing and recommending salmon escapement goals for the Chignik and Kodiak management areas (CMA and KMA), to be reported at the Board of Fisheries (board) meeting in January 2011. This is the third review of escapement goals in each area since goals began to be reviewed periodically as part of the implementation of the *Policy for Statewide Salmon Escapement Goals* (EGP; 5 AAC 39.223) and the *Policy for the Management of Sustainable Salmon Fisheries* (SSFP; 5 AAC 39.222) in 2001. Escapement goals for both areas were extensively reviewed and revised in 2004 (Nelson et al. 2005; Witteveen et al. 2005) and 2007 (Honnold et al. 2007; Witteveen et al. 2007).

In May 2010, an interdivisional team consisting of staff from the divisions of Commercial Fisheries and Sport Fish from the Alaska Department of Fish and Game (department) was formed to conduct the current review of salmon escapement goals in the CMA and KMA. The team's objectives were to review documented salmon escapement goals in each area and recommend either maintaining or changing them; to identify systems suitable for new goals; and

to document the review and recommendations in a report presented to the board. The review team determined the appropriate goal type for each salmon stock with an existing goal, based on the quantity and quality of the existing data, and then determined the most appropriate methods to evaluate the goals. Data were considered sufficient for a biological escapement goal (BEG) if escapements, total returns, return by age class (i.e., brood tables), and data quality were sufficient to provide a scientifically defensible estimate of the salmon escapement with the greatest potential to produce maximum sustained yield (S_{msy}). If data were not sufficient to credibly estimate S_{msy}, the goals were considered sustainable escapement goals (SEGs). The numerical range of each goal was assessed using several established methods as determined by the professional judgment of team members. This memorandum summarizes the team's review in 2010, its recommendations, and the methods used to assess goals recommended for change.

Chignik Management Area (CMA)

The previous escapement goal review in 2007 resulted in changes to four escapement goals in the CMA. The goal for late run sockeye salmon from the Chignik River changed from an SEG of 200,000–250,000 to an SEG of 200,000–400,000; the aggregate goal for odd-year pink salmon changed from a BEG of 541,000–1,177,000 to an SEG of 500,000–800,000; the aggregate goal for even-year pink salmon changed from a BEG of 327,000–737,000 to an SEG of 200,000–600,000; and the aggregate goal for chum salmon changed from a lower bound SEG of 50,400–57,400. There were no changes to the remaining goals for Chinook salmon and early-run sockeye salmon (Witteveen and Hasbrouck, *Chignik and Kodiak escapement goal recommendations*, unpublished ADF&G memorandum to directors Hilsinger and Swanton, May 13, 2009; hereafter, Witteveen and Hasbrouck 2009).

For the review in 2010, we added the last three years of data (2007 through 2009) to the data set for each of the six escapement goals (Table 1). If these three new years of data contained information that could potentially alter the existing goals, we then conducted a full analysis of the data and determined the correct goal classification and escapement goal range.

The team concluded that an additional three years of data would not affect the escapement goals for Chinook and chum salmon, which were thus not reevaluated. In each of the past three years (2007–2009), Chinook salmon escapement was within the BEG range of 1,300–1,700 fish and chum salmon escapement exceeded the lower bound SEG of 57,400 fish (Table 1). For the remaining four CMA escapement goals, the team conducted further analysis of each stock, made initial escapement goal recommendations, compared these recommendations with the existing goals, and then made a final recommendation. The analytical methods and additional rationale for each recommendation will be described in detail in a department Fishery Manuscript to be published prior to the CMA board meeting in January 2011. In total, the team recommended no changes to any of the six escapement goals in the CMA, and identified no other stocks suitable for adding as new goals. Results from the four goals analyzed are summarized below.

Sockeye salmon – early and late runs

The team recommended no change to the Chignik River early run sockeye salmon SEG of 350,000–400,000 (Table 1). The early run was assessed using the percentile method (Bue and Hasbrouck, *Unpublished*), as in 2007. Four different data sets were analyzed: 1952–2009,

1965–2009, 1977–2009, and 1980–2009. As in 2007, the latest three data sets produced an escapement range of approximately 350,000 to 750,000 fish; however, these results do not incorporate the need for progeny of early run fish to migrate to Chignik Lake and share rearing habitat with other species. Without additional productivity or carrying capacity data, the team agreed to leave the existing escapement goal range in place.

The team carefully considered other potential approaches as an alternative to the percentile analysis for the early run stock. In these, the team identified autocorrelation and nonstationarity of the return data, relatively low contrast in the most recent data sets (2.2), and the fact that most contrast is from escapements below the SEG range. It is possible that other approaches could add insight to the escapement goal determination, but these approaches would also have to consider rearing interactions between progeny of early and late run fish in Chignik Lake and evidence of food limitations in the system. The team agreed that such approaches should be revisited well in advance of the 2013 cycle, when it can also incorporate genetic data scheduled for analysis in 2012.

The team also recommended no change to the Chignik River late run sockeye salmon SEG of 200,000–400,000 fish (Table 1) because the updated spawner-recruit analysis corroborated the existing goal. The model was significant ($P<0.05$), with an S_{msy} of 355,000 fish and an (S_{eq}) of 974,000 fish.

Pink salmon – odd- and even-year goals

The team recommended no change to the existing Chignik River pink salmon SEGs of 200,000–600,000 fish in even years and 500,000–800,000 fish in odd years (Table 1). A yield analysis was conducted using different intervals of observed escapement for escapement goal estimates. Intervals which had fewer than four escapements within the interval were not considered to have reliable estimates of yield for that escapement interval. The escapement range for even-year escapements was assessed from 100,000 to 1,600,000 fish, with intervals of 400,000, 500,000, and 600,000 fish. The escapement range for odd-year escapements was assessed from 100,000 to 1,800,000 fish, with intervals of 300,000, 400,000; 500,000; and 600,000 fish. By assessing the amount of years in each range and the returns per spawner, returns minus parent escapement, and harvest in each scenario, it was determined that the best recommendations were the goal ranges already in existence.

Kodiak Management Area (KMA)

The previous escapement goal review in 2007 resulted in changes to 9 of the 26 goals then in existence, and the addition of three new goals (Witteveen and Hasbrouck 2009). Sockeye salmon goals were changed on Paul's Bay (goal eliminated), Little River (lower bound SEG of 3,000 fish established), Uganik Lake (lower bound SEG of 24,000 fish established), Frazer Lake (BEG changed from 70,000 to 150,000 to 75,000 to 170,000 fish), and for early-run Karluk Lake (BEG changed from 100,000 to 210,000 to 110,000 to 250,000 fish). Chum salmon goals were eliminated for five specific districts and replaced by one newly-created aggregate lower bound SEG of 151,000 fish for the Kodiak Archipelago. The chum salmon goal for the Mainland District was changed to a lower bound SEG of 104,000 fish. There were no changes to the remaining 17 goals.

For the review in 2010, we added the last three years of data (2007–2009) to the data set for each of the 23 current escapement goals (Table 2). If these three new years of data contained enough information to potentially alter the existing goals, we then conducted a full analysis of the data and determined the correct goal classification and escapement goal range.

The team concluded that an additional three years of data did not provide enough information to warrant further assessment of the chum salmon goals, which were therefore not reevaluated. For the remaining KMA escapement goals, the team conducted further analysis of each stock, made initial escapement goal recommendations, compared these recommendations with the existing goals, and then made a final recommendation. The analytical methods and additional rationale for each goal will be described in detail in a department Fishery Manuscript to be published prior to the KMA board meeting in January of 2011. In total, the team analyzed 18 of the 23 goals currently in existence. The team recommended changing twelve goals, two of which would be split into two new goals each. The team recommended no goals for elimination and identified no new systems suitable for adding as goals.

Sockeye salmon (13 existing goals)

The team recommended no change to the Afognak Lake sockeye salmon BEG of 20,000–50,000 fish (Table 2), based on the updated Ricker spawner-recruit curve (Ricker 1954) and corroborating euphotic volume and zooplankton biomass models. Returns from brood years fully recruited since the last escapement goal review had little effect on the existing escapement goal range. The Ricker spawner-recruit regression was significant ($P < 0.05$) and S_{msy} was estimated to be 39,000 with a 90% S_{msy} range of 29,000 to 56,000; the escapement data had sufficient contrast. The euphotic volume model estimated the optimal escapement to Afognak Lake to be 43,000 adult sockeye salmon. The zooplankton biomass model estimated the optimal escapement to Afognak Lake to be 24,000 adult sockeye salmon.

The team recommended that the Ayakulik River sockeye salmon SEG (200,000–500,000) be split into early and late runs to protect the different temporal components of the run, since it extends from May to September. An early run SEG of 140,000–280,000 fish by July 15th and a late run SEG of 60,000–120,000 fish after July 15th are recommended (Table 2) based on zooplankton biomass models and historical escapement goals. Historically, there were separate goals for early and late run components until 2004. The goals were combined into a single one in 2004, which was retained in the 2007 review. In the current review, a spawner-recruit model was not significant for the entire run when using datasets from various time periods. These new early and late run goals will be reinvestigated in 2013, after completion of run reconstructions and brood tables for the early and late segments.

The escapement goal team recommended the current Buskin River sockeye salmon SEG of 8,000–13,000 fish should be changed to a BEG of 5,000–8,000 fish (Table 2). Staff conducted a Bayesian spawner-recruit analysis (Schmidt and Evans 2010) which yielded a 90% credibility interval of S_{msy} of 4,950–8,700 fish and a probability of sustained yield being greater than 90% of S_{msy} occurring for an escapement range of 5,000–8,000 fish. The past decade has included record high and low returns of Buskin River sockeye salmon, with the low returns possibly related to overescapement.

The team recommended no change to the Frazer Lake sockeye salmon BEG of 75,000–170,000 fish (Table 2). The addition of three more years of spawner-recruit data yielded little change in the estimates of productivity. A zooplankton biomass model corroborated the current spawner-recruit analysis, whereas a euphotic volume model produced an optimum estimate over the upper range. The Ricker spawner-recruit analysis was performed using the Frazer Lake fully recruited brood year spawner-recruit data from 1966 to 2002, excluding the brood years of 1985 through 1991 when fertilization directly affected production. The multiplicative error model was significant ($P < 0.001$), the S_{msy} was estimated at 117,000 fish with a 90% S_{msy} range of 75,000–168,000 fish, and S_{eq} was estimated at 321,000 fish. The escapement data contrast was 30.7 and there was no autocorrelation detected in the residual plots.

The team recommended no change to the early and late run sockeye salmon BEGs for Karluk Lake (Table 2). For the early run BEG (110,000–250,000 fish, with an S_{msy} of 175,000 fish), the spawner-recruit estimate was similar to estimates made during the 2004 review and the committee agreed that small scale changes to this goal should not be made during every review. For the late run BEG (170,000–380,000 fish, with an S_{msy} of 270,000 fish), the updated spawner-recruit analysis was also similar to the previous estimate. Data contrast was acceptable for both the early (8.7) and late (19.9) runs, and neither run had autocorrelated residuals. Recent low returns of sockeye salmon with large parent-year escapements have caused some concerns regarding Karluk Lake sockeye salmon. The parent year escapements for recent runs, on average, were well above the escapement goals; however, the returns are not fully recruited at this time and were therefore not used in this analysis. Limnological analyses also indicate that the current escapement goals are appropriate; euphotic volume (593,000 fish) and zooplankton biomass (397,000 fish) models corroborate the combined total of the early- and late-run goals (280,000–630,000 fish).

The team recommended no change to the lower bound SEG of 3,000 sockeye salmon for Little River Lake sockeye salmon (Table 2). Since 1985, escapements have fallen above the current lower bound SEG in 22 years and have been below only three years; however, two of these years were 2008 and 2009, when aerial surveys appear of sufficient quality that the low escapement numbers are likely real and not a function of unusually low effort or poor survey conditions. The team had lengthy conversations about whether to keep the goal, given the difficulties in surveying and the lack of direct management of the stock, but ultimately elected to keep the goal.

The team recommended no change to the Malina Creek SEG of 1,000–10,000 sockeye salmon, based on results of the percentile method and corroborating results from limnological models (Table 2). The percentile algorithm yielded an escapement goal range of 1,000 to 7,000 fish, with a contrast of 31 in the peak aerial survey data. A euphotic volume model estimated the optimal escapement to be 10,900 adult sockeye salmon, and a zooplankton biomass model estimated the optimal escapement to be 5,900 adult sockeye salmon. Escapements have been within the SEG of 1,000–10,000 fish since 2005.

The team recommended changing the goal for Pasagshak River sockeye salmon to a lower bound SEG of 3,000 fish (Table 2) because escapements are not managed inseason, but instead, only quantified postseason (making this goal type consistent with the other two systems that have the same management strategy: Little River and Uganik Lake). The team used the percentile

method for the primary analysis, along with euphotic volume for secondary analyses. The percentile method used peak aerial survey data from 1968 to 2009; no age data are available for this stock. The euphotic volume model estimated the optimal escapement to Pasagshak River to be 4,500 fish.

The team recommended changing the upper range of the BEG for Saltery Lake sockeye salmon from 15,000–30,000 fish to 15,000–35,000 fish (Table 2). A spawner-recruit model was fit to the Saltery Lake fully recruited brood year spawner-recruit data from 1976 to 2003; the model was significant ($P < 0.001$), with an S_{msy} estimate of 23,600 fish, a 90% MSY range of 15,300–33,400 fish, and an S_{eq} of 61,000 fish. Contrast of the escapement data was 6.7, and no autocorrelation was detected in residual plots. A zooplankton biomass model estimated the optimal escapement to Saltery Lake to be between 23,000 and 35,000 adult sockeye salmon based on the 1997–2002 average smolt size of 2.1 grams; a euphotic volume model suggested a lower goal of 9,000 fish. Overall, the team agreed that results from the spawner-recruit and zooplankton biomass models warranted the change to the upper end of the goal.

The team recommended no change to the lower bound SEG of 24,000 sockeye salmon for Uganik Lake (Table 2). Analysis was performed using the percentile method; data contrast was 34, and the 25th percentile was 25,000 fish. The team had lengthy conversations about whether to keep the goal, given the difficulties in surveying and lack of direct management of the stock, but ultimately elected to retain the goal for the current cycle.

The team recommended changing the escapement goal for early-run sockeye salmon from Upper Station from an SEG of 30,000–65,000 to a BEG of 43,000–93,000 (Table 2). A Ricker spawner-recruit model was fit to the Upper Station early run fully recruited brood year spawner-recruit data from 1975 to 2003. The model was significant ($P < 0.05$), with an S_{msy} of 66,000 fish, a 90% MSY range of 43,000 to 93,000 fish, and an S_{eq} estimate of 165,000 fish. Data contrast was acceptable (16.5) and the residuals did not have significant autocorrelation. Upper Station also has an OEG of 25,000 fish, which was established by the board in 1999.

The team recommended no change to the late run Upper Station sockeye salmon BEG of 120,000–265,000 fish (Table 2). The model was fit to the fully recruited brood year spawner-recruit data from 1975 to 2003. The model was significant ($P < 0.05$), with an S_{msy} of 238,000, a 90% MSY range of 153,000 to 337,000, and an S_{eq} of 624,000 sockeye salmon. Data contrast was acceptable (10.7), but residuals had significant autocorrelation (lag-1) and serious non stationary processes affecting the time series of production. A combined early and late run spawner recruit model was not significant ($P > 0.05$).

Chinook salmon (two existing goals)

The escapement goal team reviewed weir and harvest data for the past three years (2007–2009) for the Chinook salmon goals on the Ayakulik and Karluk rivers. For both systems, the team concluded that recent low returns from large brood year escapements could improve the current spawner recruit analyses. Bayesian spawner-recruit analyses with AR(1) productivity terms to account for serial correlation between successive years were completed for each stock. The team recommended changing the BEG for Ayakulik River Chinook salmon from its current range of 4,800–9,600 fish to a range of 4,000–7,000 fish, and the BEG for Karluk River Chinook salmon

from its current range of 3,600–7,300 fish to a range of 3,000–6,000 fish (Table 2). The Karluk River stock has been below the escapement goal range in each of the last four years (2007–2010). ADF&G will request Karluk River Chinook salmon be designated a stock of management concern at the board work session in October 2010.

Coho salmon (four existing goals)

The escapement goal team recommended eliminating the upper bounds of coho salmon SEGs for the American, Olds, and Pasagshak rivers, and that the stocks be identified as lower bound SEGs because the upper ends of the goals are not managed for. The recommended lower bound SEGs are 400 fish for the American River, 1,000 fish for the Olds River, and 1,200 fish for the Pasagshak River (Table 2). The team examined stock assessment data from these three stocks, concluded that the three additional years of data would not affect the results of the previous analyses in 2007, and declined to evaluate them further. The team analyzed the Buskin River SEG and recommended it remain unchanged at 3,200–7,200 fish (Table 2).

Pink salmon (two existing goals)

The team recommended changing the Kodiak Archipelago pink salmon SEG of 2,000,000–5,000,000 fish to an odd year SEG range of 2,000,000– 6,000,000 fish and an even year SEG of 3,000,000–8,000,000 fish (Table 2). The difference in odd- and even-year SEGs is due more to differences in odd and even year pink salmon runs to the Karluk and Ayakulik rivers than to differences between odd and even years throughout the entire Kodiak Management Area.

The team recommended changing the Kodiak Mainland pink salmon SEG of 250,000–750,000 fish to an SEG range of 250,000–1,000,000 fish (Table 2). Although the current goal would likely ensure continued sustainability of the stock, increasing the upper goal to 1,000,000 is more likely to result in a range containing S_{msy}.

In summary, the review of CMA escapement goals recommended no changes after analyzing four of the six goals. The review of the KMA escapement goals recommended changes to 12 of the 23 existing goals, including the splitting of two goals (Ayakulik River sockeye salmon and Kodiak Archipelago pink salmon) into two goals each. All of the recommendations have gone through a three-step process thus far, consisting of initial recommendations by the lead analyst (completed in early July 2010), follow-up with the entire team in a dedicated meeting on August 25, 2010, and subsequent revisions and review completed on September 23, 2010.

The overall process is on course and similar to the timeline used in 2007. Staff are now preparing a draft report for team review and preparing for the October work session and the January 2011 board meeting. Escapement goal recommendations for each separate area will be presented to the board orally and in writing. These reports will list all current and recommended escapement goals, as shown in tables 1 and 2, and will provide detailed descriptions of the analyses performed. After the board meetings in January 2011, a memorandum to the division directors will be prepared that describes the final recommendations.

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cc: Members, Alaska Board of Fisheries

Table 1. Existing and recommended escapement goals for Chignik Management Area, based on results from the team meeting on 8/25/10.

Species	System	Escapement data[a]	Current escapement goal				Escapements			Preliminary 2010 recommendation
			Type	Lower	Point	Upper	2007	2008	2009	
Chinook										
	Chignik	WC	BEG	1,300	1,695	2,700	2,000	1,730	1,680	No change
Sockeye										
	Chignik									
	Early run	WC	SEG	350,000		400,000	361,091	377,579	391,476	No change
	Late run[b]	WC	SEG	200,000		400,000	293,883	328,479	328,586	No change
Pink										
	Chignik aggregate – odd years	PAS	SEG	500,000		800,000	1,217,064		869,063	No change
	Chignik aggregate – even years	PAS	SEG	200,000		600,000		863,031		No change
Chum										
	Chignik aggregate	PAS	Lower bound SEG	57,400			238,098	197,259	214,959	No change

[a] PAS = Peak Aerial Survey, WC= Weir Count

[b] The late-run escapement goal for Chignik River sockeye salmon includes the SEG range, plus an additional 50,000 sockeye salmon for an inriver run goal (25,000 in August and 25,000 in September) to meet late season subsistence needs.

Table 2. Existing and recommended escapement goals for Kodiak Management Area, based on results from the team meeting on 8/25/10.

Species	System	Escapement data[a]	Current escapement goal Type	Lower	Point	Upper	Escapements 2007	2008	2009	Preliminary 2010 recommendation
Chinook										
	Ayakulik	WC	BEG	4,800	6,638	9,600	6,410	3,071	2,615	Change to BEG 4,000-7,000
	Karluk	WC	BEG	3,600	4,492	7,300	1,554	752	1,308	Change to BEG 3,000-6,000
Sockeye										
	Afognak	WC	BEG	20,000	34,000	50,000	21,070	26,874	31,358	No change
	Ayakulik	WC	SEG	200,000		500,000	283,042	162,888	315,184	Change to early run SEG of 140,000-280,000 and late run SEG of 60,000-120,000
	Buskin	WC	SEG	8,000		13,000	16,502	5,900	7,757	Change to BEG of 5,000-8,000
	Frazer	WC	BEG	75,000	118,000	170,000	120,186	105,363	101,845	No change
	Karluk									
	Early run	WC	BEG	110,000	175,000	250,000	279,390	82,071	52,466	No change
	Late run	WC	BEG	170,000	270,000	380,000	267,185	164,419	277,611	No change
	Little River	PAS	Lower bound SEG	3,000			8,500	2,300	1,500	No change
	Malina	PAS	SEG	1,000		10,000	1,900	3,690	1,400	No change
	Pasagshak	FS	SEG	3,000		12,000	14,300	14,900	1,400	Change to lower bound SEG of 3,000
	Saltery	WC or PAS	BEG	15,000	23,000	30,000	17,200	49,266	46,591	Change to BEG 15,000 - 35,000
	Uganik Lake	PAS	Lower bound SEG	24,000			35,000	64,700	53,700	No change
	Upper Station									
	Early run[b]	WC	SEG	30,000		65,000	31,895	38,800	34,585	Change to BEG of 43,000 - 93,000
	Late run	WC	BEG	120,000	186,000	265,000	149,709	184,856	161,736	No change
Coho										
	Buskin	WC	BEG	3,200	5,000	7,200	9,001	9,028	10,624	No change
	American	FS	SEG	400		900	307	700	639	Change to lower bound SEG of 400
	Olds	FS	SEG	1000		2,200	868	697	656	Change to lower bound SEG of 1,000
	Pasagshak	FS	SEG	1200		3,300	1,896	3,875	2385	Change to lower bound SEG of 1,200
Pink										
	Kodiak Archipelago	PAS	SEG	2,000,000		5,000,000	2,208,678	2,924,708	4,711,087	Change to SEGs: even yr 3-8M, odd yr 2-6M
	Mainland District	PAS	SEG	250,000		750,000	315,300	236,500	430,100	Change to SEG of 250E-1M
Chum										
	Kodiak Archipelago	PAS	Lower bound SEG	151,000			206,983	101,482	202,039	No change
	Mainland District	PAS	Lower bound SEG	104,000			87,350	122,425	103,656	No change

[a] PAS = Peak Aerial Survey, WC= Weir Count, FS = Foot Survey

[b] Upper Station early run has the only optimal escapement goal (OEG: 25,000) in the KMA, established by the BOF in 1999.

02/07/13 Presentation: World and Alaska Salmon Markets

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Trends in Alaska and World Salmon Markets

Gunnar Knapp
Interim Director and Professor of Economics
Institute of Social and Economic Research
University of Alaska Anchorage
Gunnar.Knapp@uaa.alaska.edu
907-786-7717

Prepared for:
House Fisheries Special Committee
Juneau, Alaska
February 7, 2013

This presentation will be posted online at my website:

http://www.iser.uaa.alaska.edu/people/knapp/personal/

or you can e-mail me to request a copy:

Gunnar.Knapp@uaa.alaska.edu

Outline of this Presentation

1. Trends in Alaska salmon markets
   - Catches
   - Production
   - End-markets
   - Prices
   - Value
   - Permit prices

2. Trends in world salmon markets
   - World salmon supply
   - Farmed salmon prices

3. Factors affecting Alaska salmon markets

4. Future outlook for Alaska salmon markets

5. Data sources

Trends in Alaska Salmon Markets:
Selected Important Trends . . .

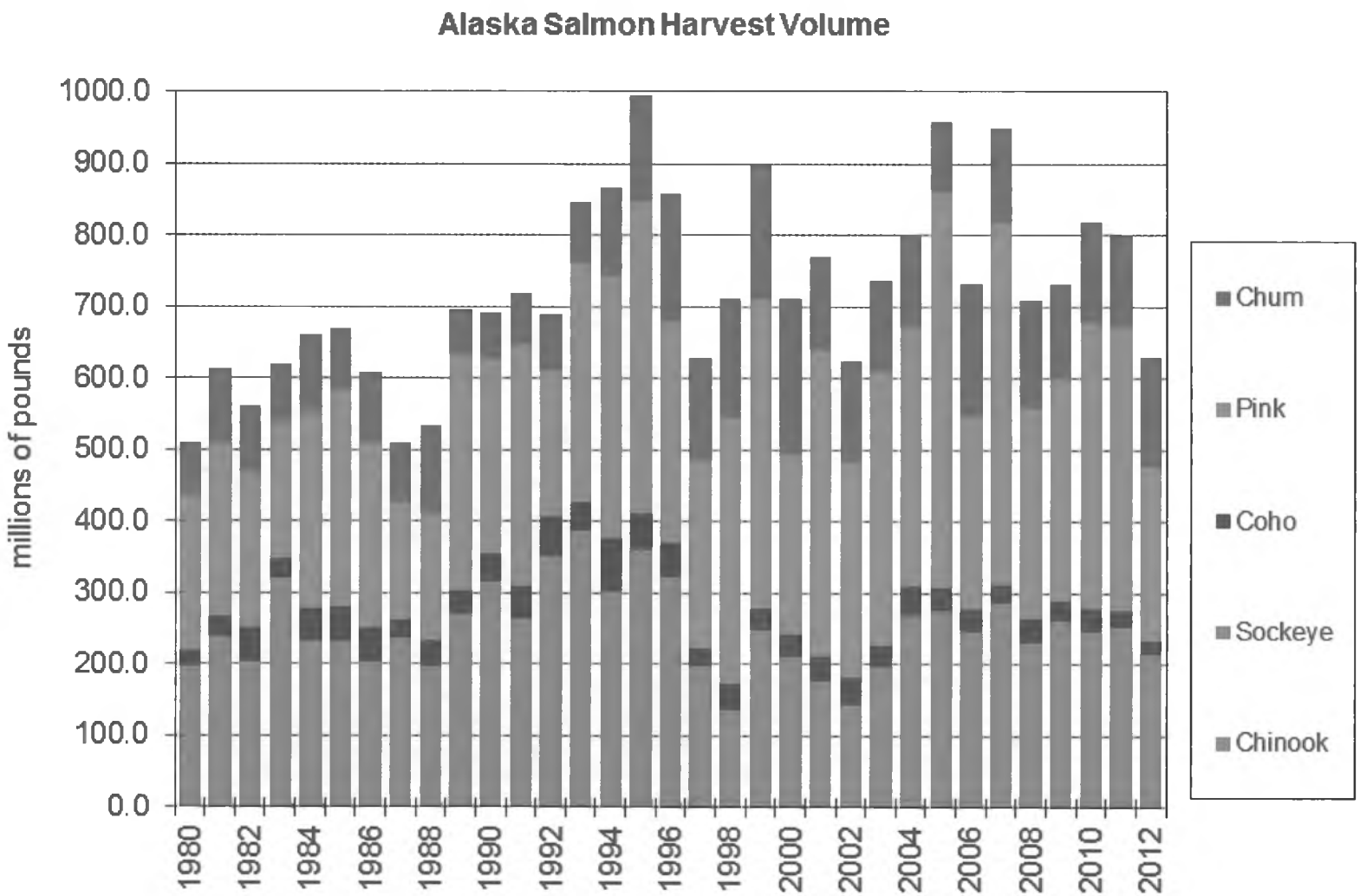
- Harvests vary from year to year, but have generally been strong
- An increasing share of pink salmon is being frozen rather than canned
- US markets for frozen salmon have diversified:
  - Less is being exported to Japan
  - More is being exported to the EU
  - More is being exported to China
    - (Most of the exports to China are reprocessed into value-added products which are re-exported to US and EU markets)
  - More is being consumed in US domestic markets
- After falling drastically in the 1990s, Alaska salmon prices and value have rebounded dramatically since 2002
  - Ex-vessel and wholesale prices have risen dramatically (but fell slightly in 2012)
  - Ex-vessel and wholesale value have risen dramatically since 2002
  - Both fishermen and processors have shared in the increase in prices and value
  - Permit prices have increased dramatically

Trends in World Salmon Markets:
Selected Important Trends . . .

- Total world salmon supply has expanded dramatically over the past three decades
- Farmed Atlantic salmon now accounts for 2/3 of world salmon supply
- Global demand for salmon has expanded dramatically
- Global markets have diversified dramatically
  - Salmon farmers have developed major new markets in Russia, Eastern Europe, Brazil, etc.
- Rapidly growing demand pulled farmed salmon prices up from 2002-2010
- Major disease problems in Chile lowered production—leading to a spike in prices
- Chilean production has recovered strongly and prices fell sharply in 2012
- Farmed salmon prices are now recovering but considerable uncertainty remains
- Some but not all markets for Alaska frozen and fresh salmon have been affected by farmed salmon pricing
  - Those markets which compete most directly with farmed salmon:
    - Frozen H&G, Frozen fillets, Fresh

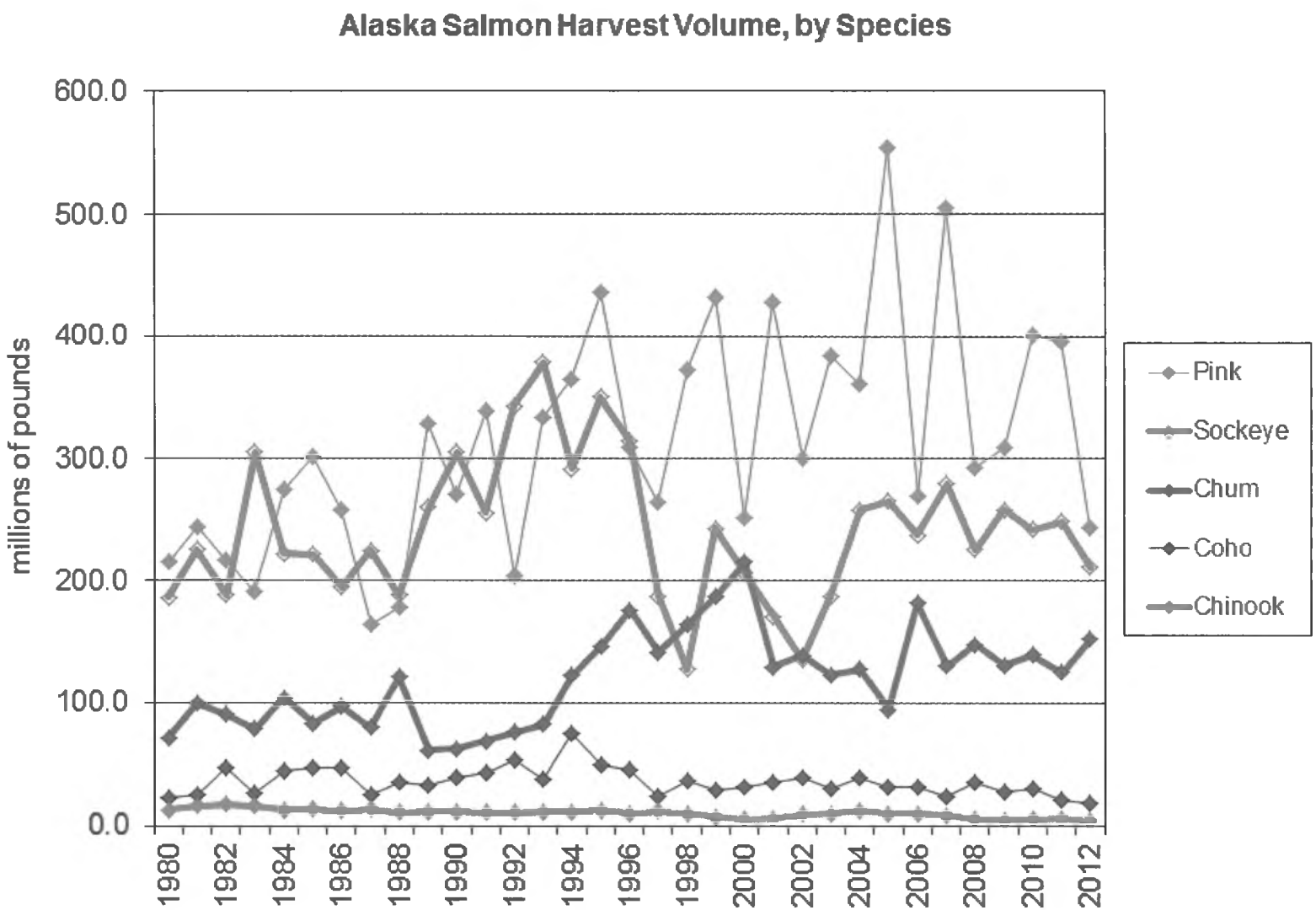
TRENDS IN STATEWIDE ALASKA SALMON HARVESTS

Sockeye, pink and chum account for most of Alaska's salmon harvest volume and value. In this presentation I focus on markets for these three species. Alaska salmon harvests have generally been strong over the past decade. Note however that the 2012 harvest volume was the lowest since 1998—due to lower sockeye and pink harvests.



Harvest trends differ by species:

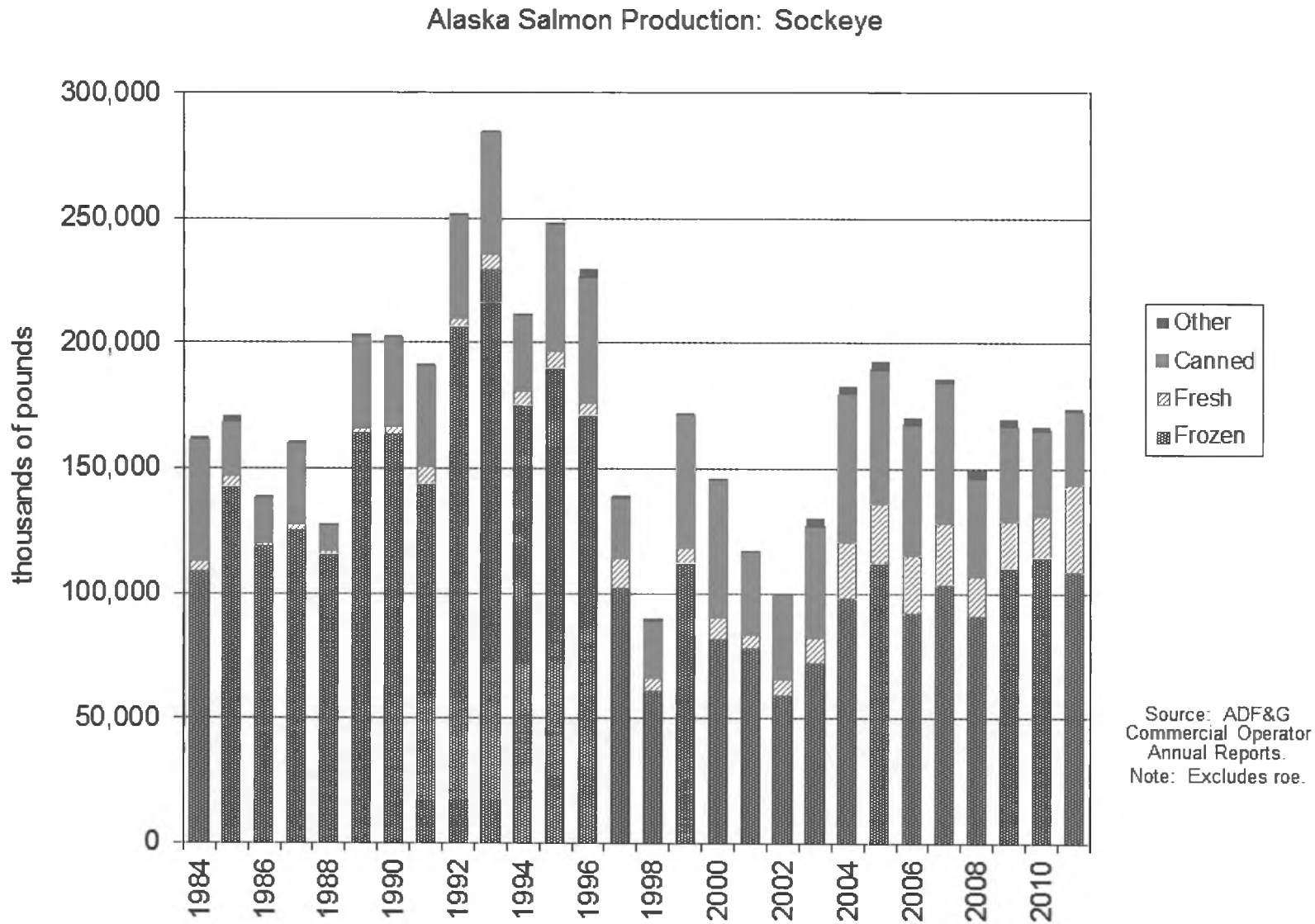
* High but widely fluctuating pink harvests—fell sharply in 2012
* Sockeye harvests up from 1998-2003 levels—but fell in 2012
* Chum harvests fairly strong and consistent



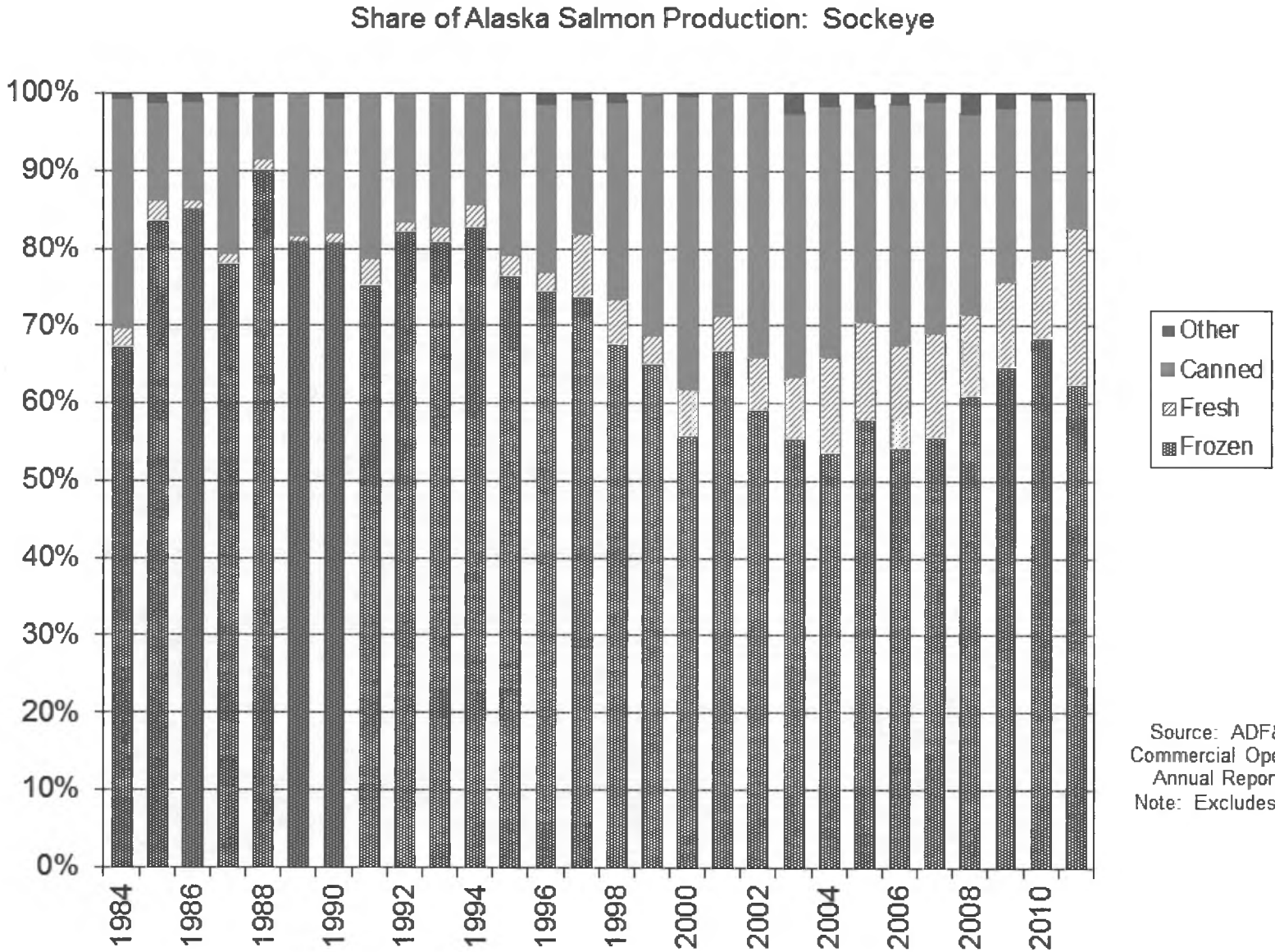
TRENDS IN ALASKA SALMON PRODUCTION: PRODUCTS PRODUCED FROM ALASKA SALMON

Note: These graphs are based on Commercial Operator Annual Report (COAR) data which are only available through 2011.

Frozen, canned and fresh salmon are all important sockeye salmon products.

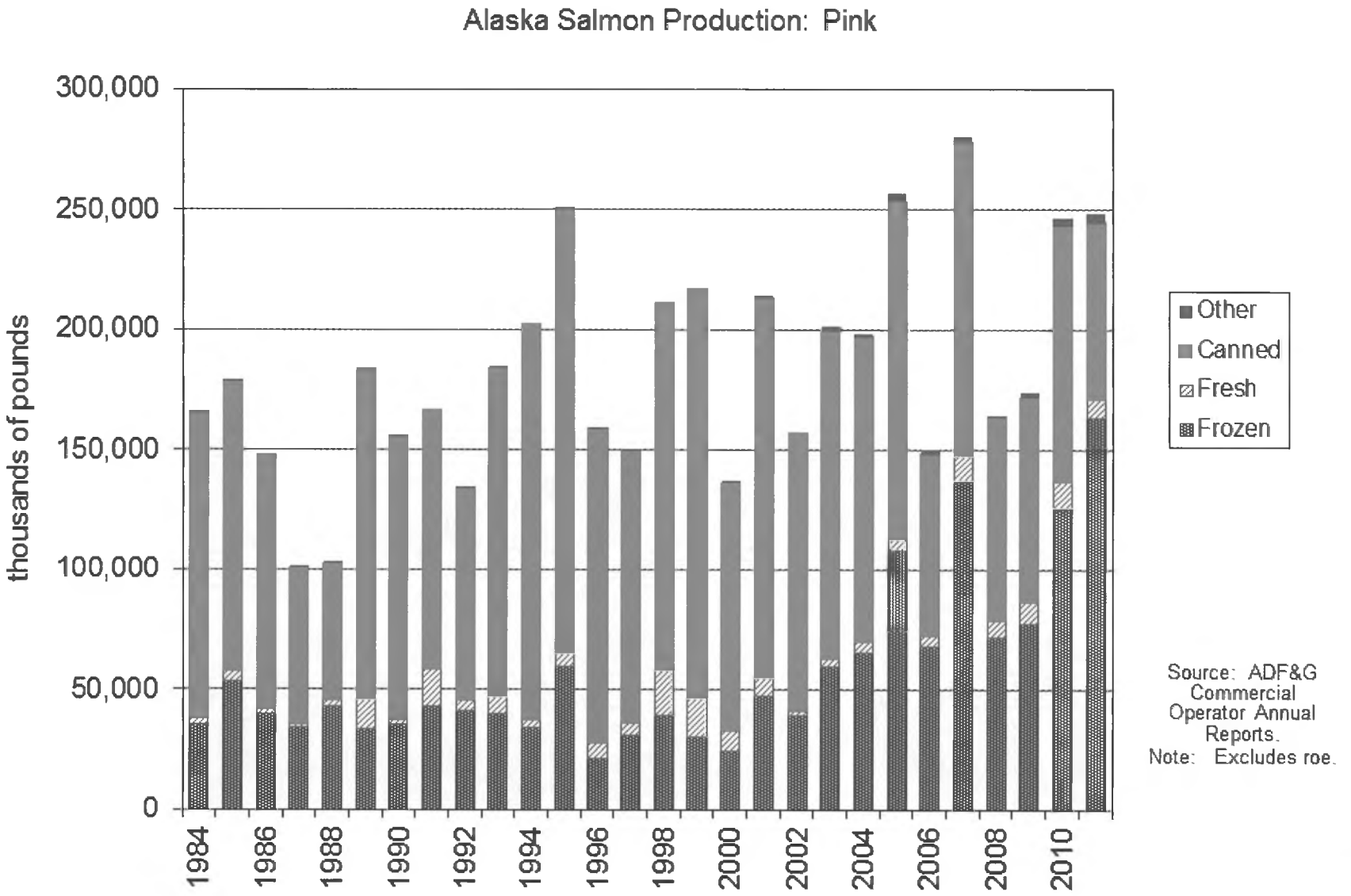


The frozen and fresh shares of sockeye production have increased over the past decade.

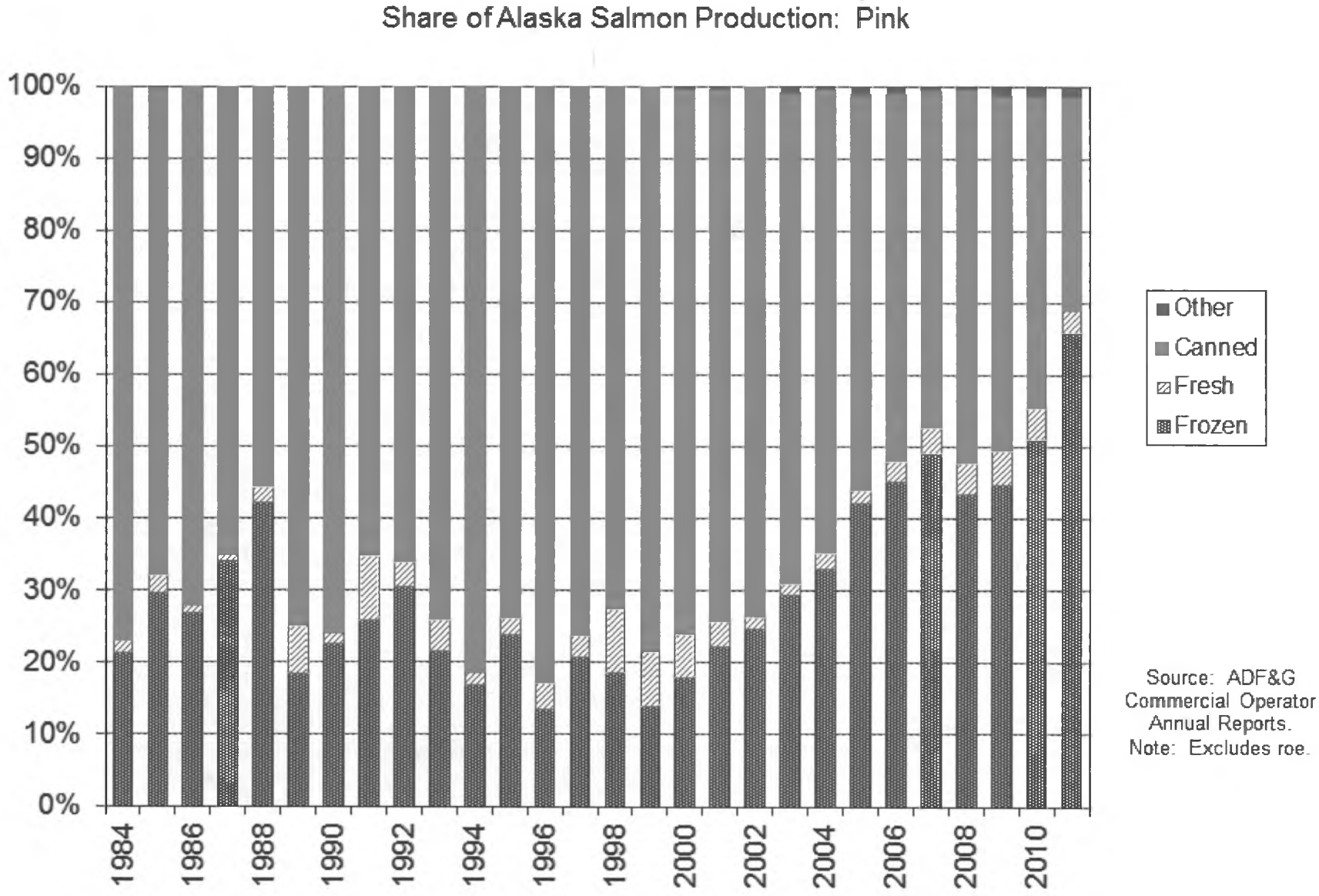


Source: ADF&G Commercial Operator Annual Reports.
Note: Excludes roe.

Historically most Alaska pink salmon was canned. Since 2002, however, frozen pink salmon production has been increasing rapidly.

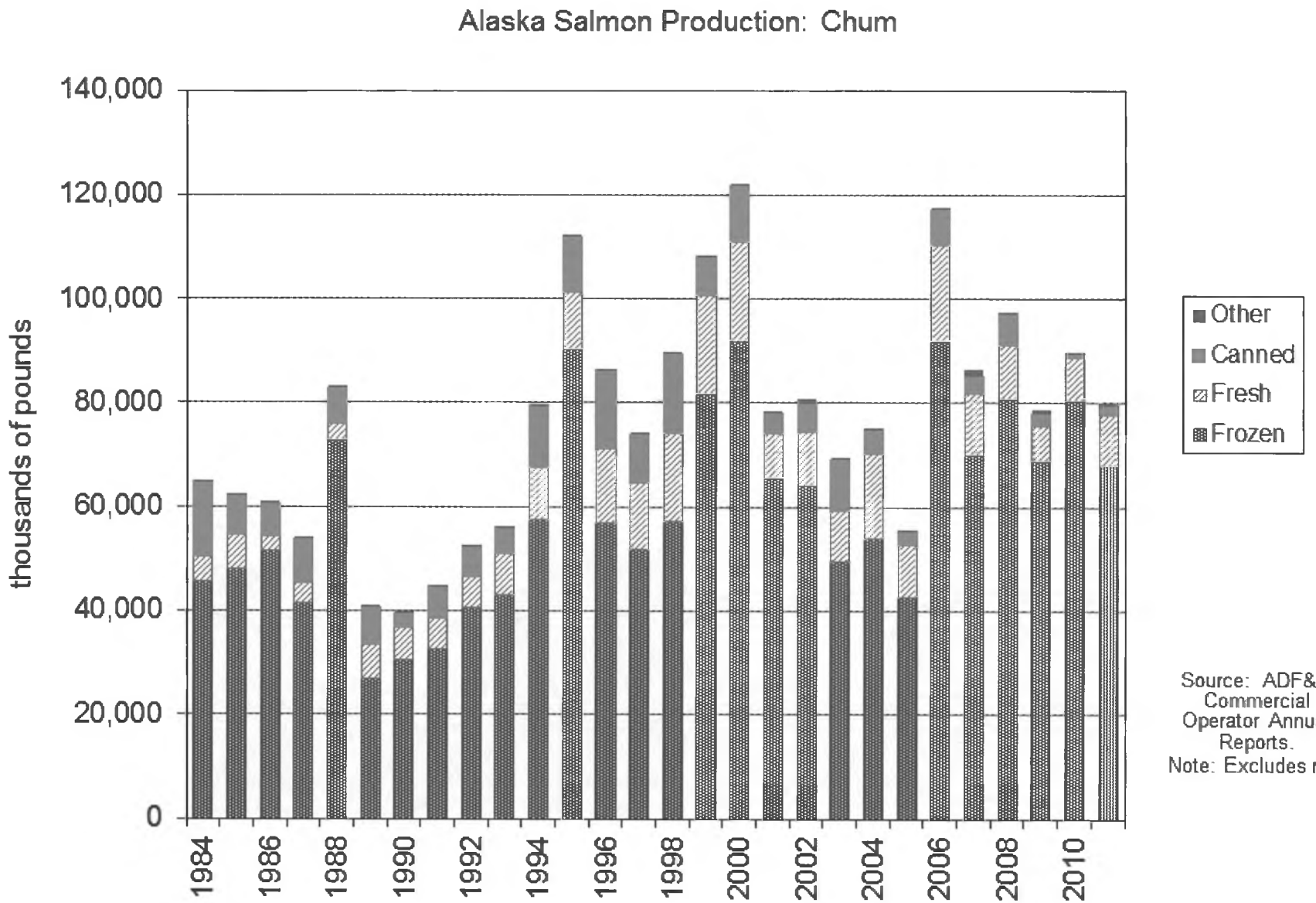


About 2/3 of Alaska pink salmon production was frozen in 2011—a dramatic increase from less than 20% in the late 1990s.



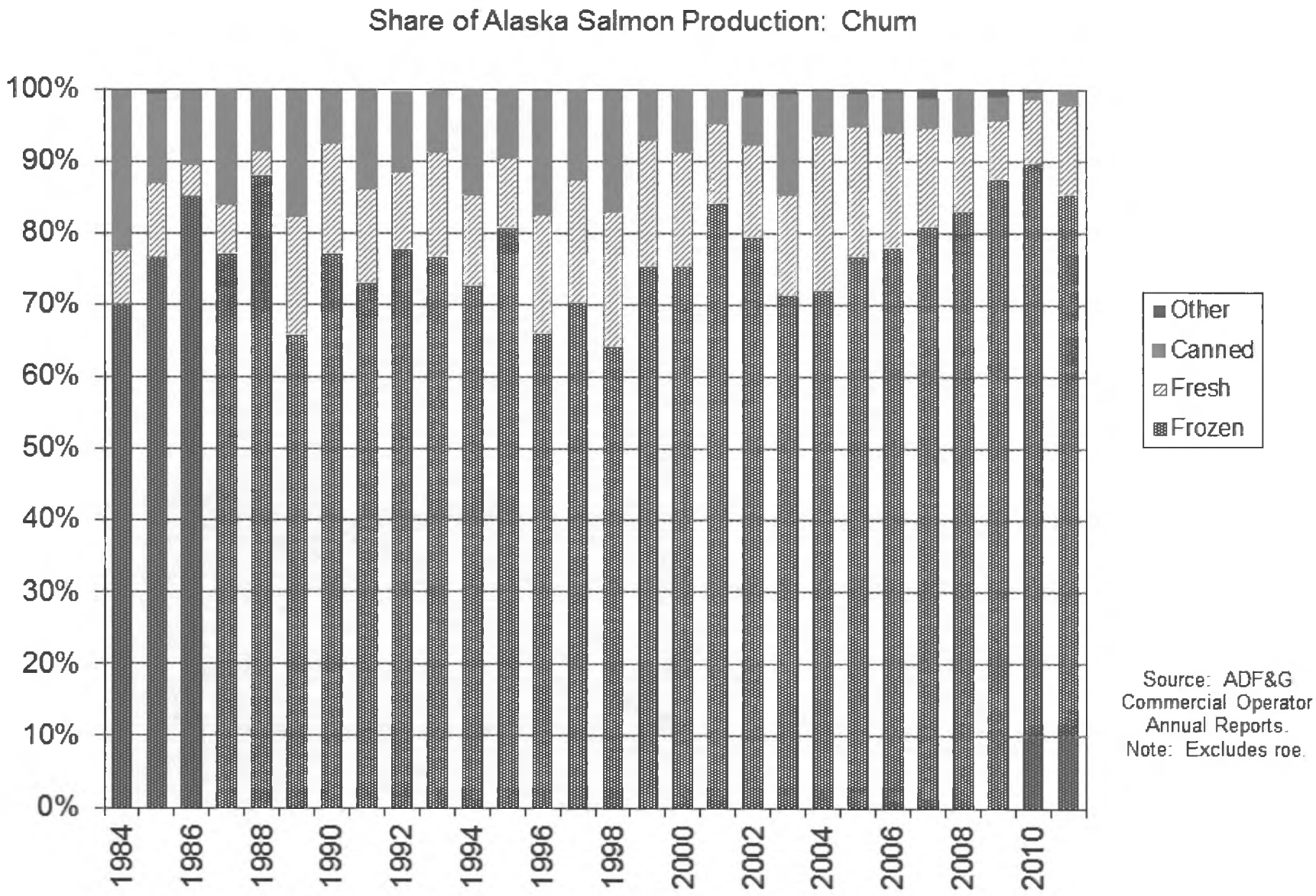
Source: ADF&G Commercial Operator Annual Reports.
Note: Excludes roe.

Most Alaska chum salmon is frozen.



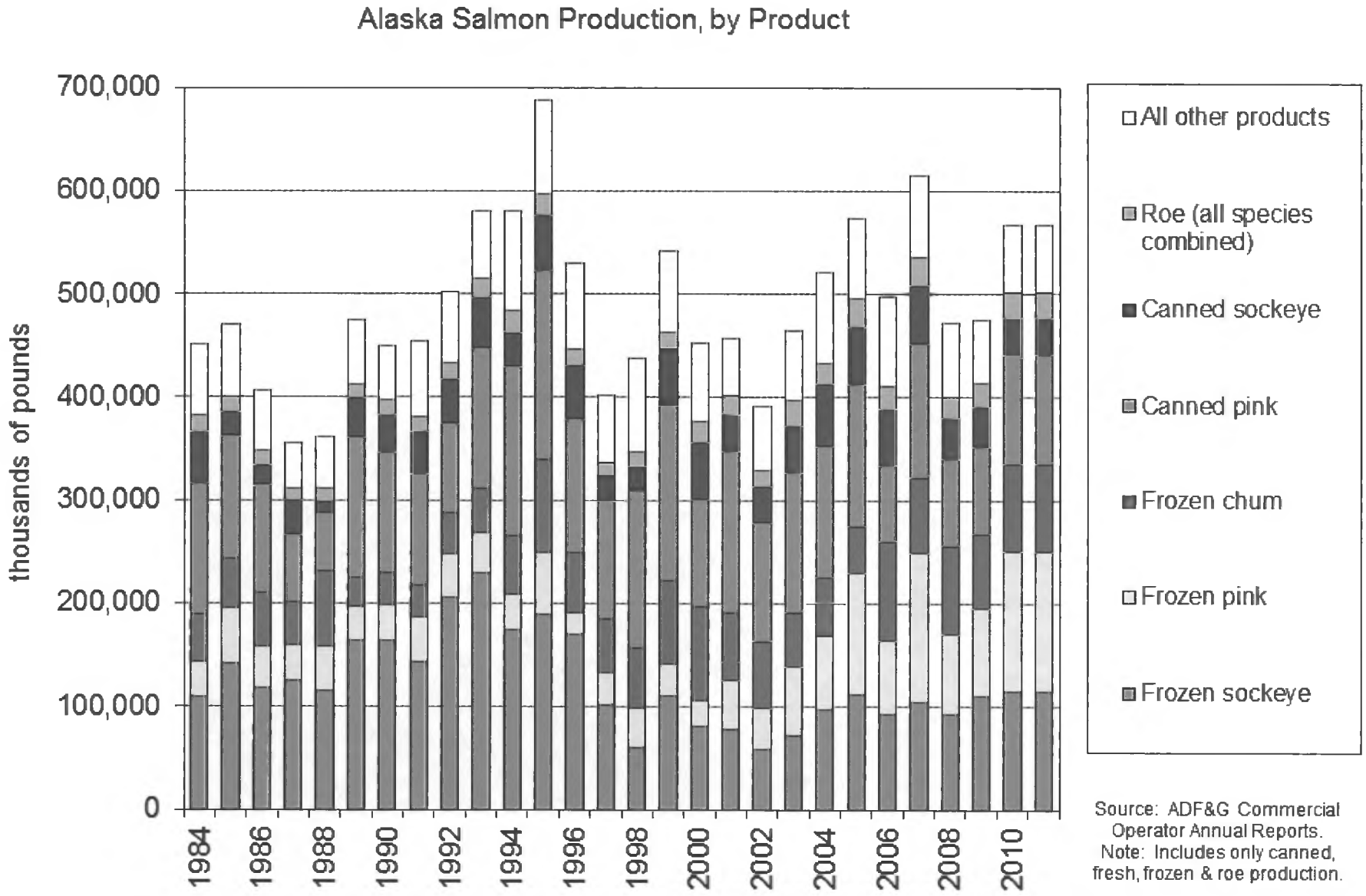
Source: ADF&G Commercial Operator Annual Reports.
Note: Excludes roe.

Over the past decade, the frozen share of Alaska chum salmon production rose, while the canned and fresh shares fell.



Source: ADF&G Commercial Operator Annual Reports.
Note: Excludes roe.

Five major product forms account for most of the volume of Alaska salmon production: frozen sockeye, frozen pink, frozen chum, canned pink, and canned sockeye.

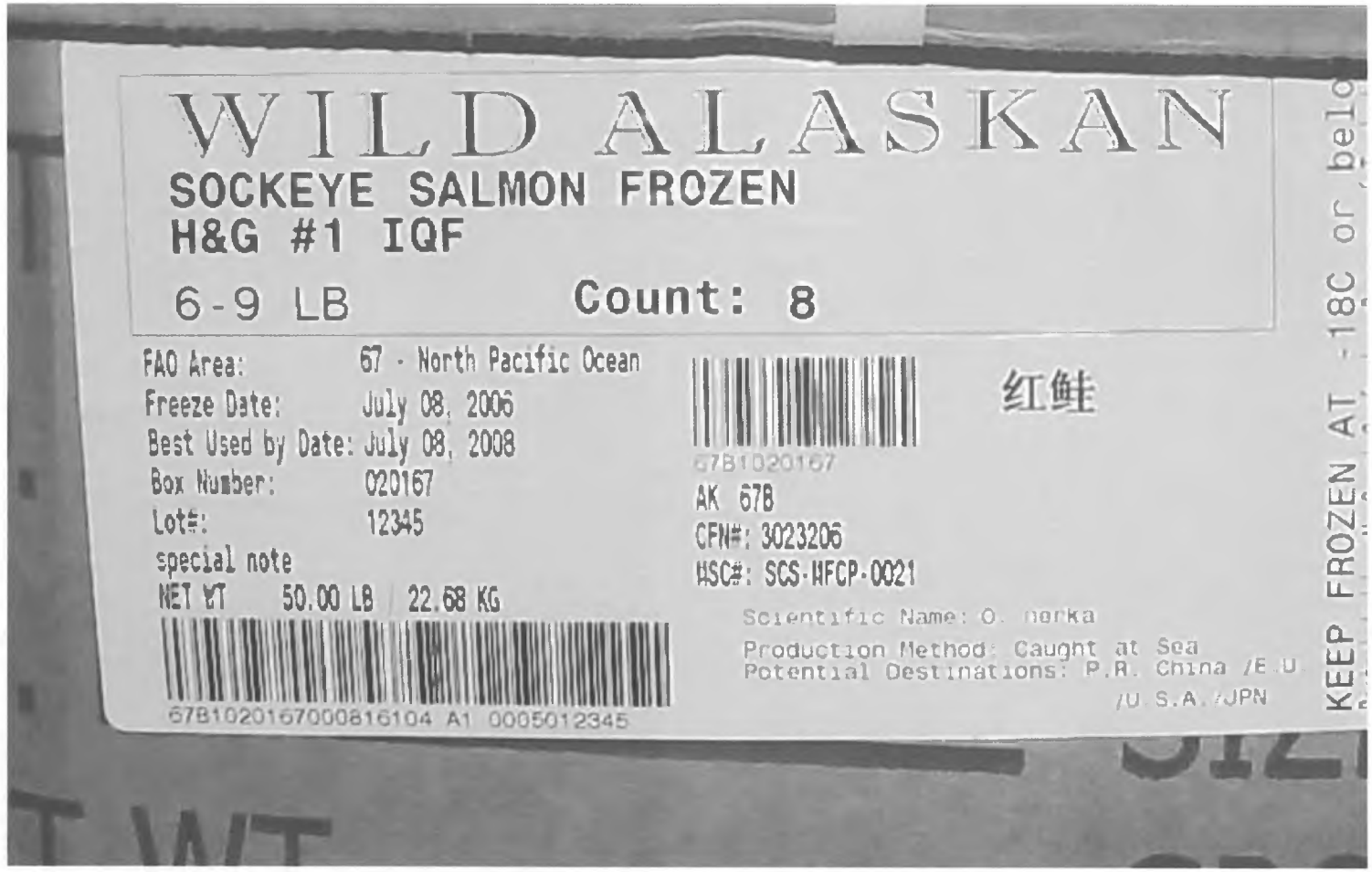


Source: ADF&G Commercial Operator Annual Reports.
Note: Includes only canned, fresh, frozen & roe production.

PICTURES OF
CHINESE SALMON REPROCESSING

Because China has become such an important market for Alaska frozen salmon over the past decade, I have included a few pictures in this presentation that I took several years ago at a processing plant in Qingdao, China, which reprocesses Alaska frozen salmon.

The cold storage at the plant was full of boxes of frozen H&G salmon (sockeye, coho, pink and chum) like the box in this picture.



The first stage of reprocessing is thawing the frozen H&G salmon.



Next workers fillet the salmon, after which the pinbones are pulled by hand.



The boneless fillets are placed in trays for freezing.



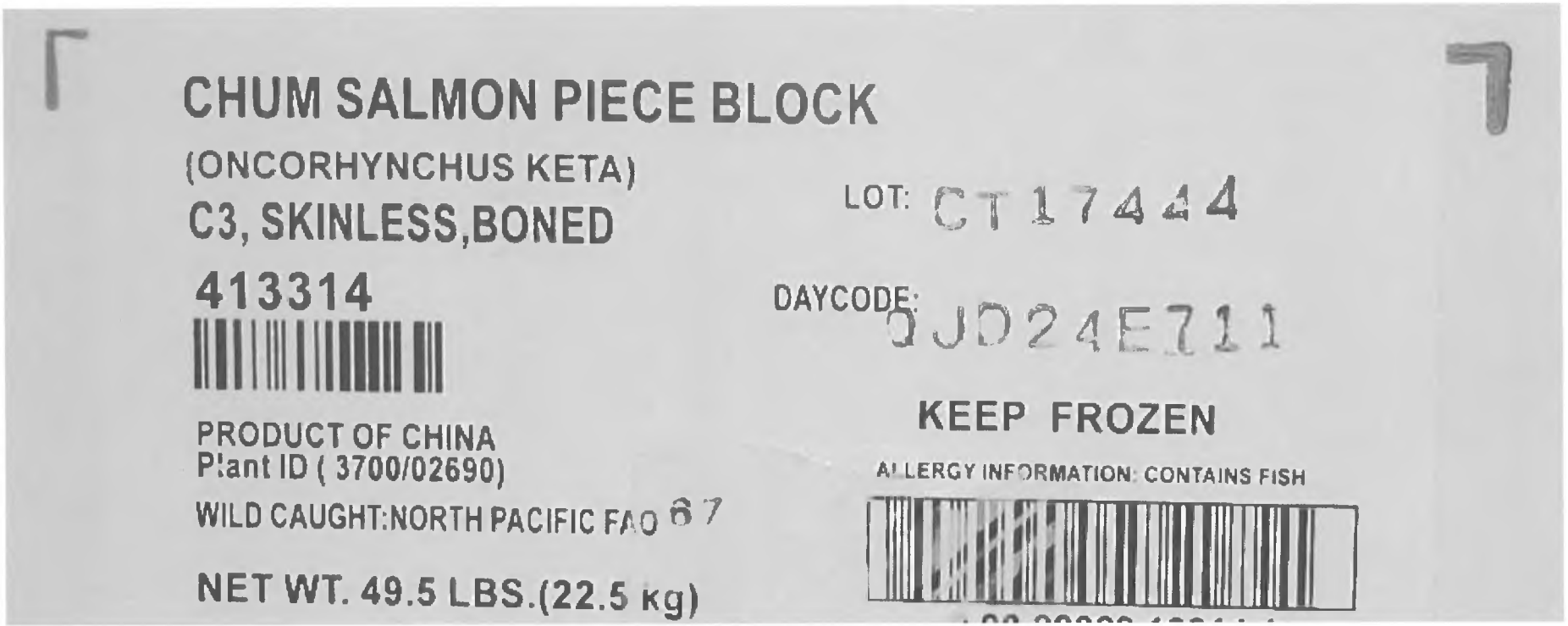
After freezing the frozen fillets are cut into portions.



This is the label on a box of frozen coho fillets.



This is the label on a box of skinless boned chum salmon blocks.



This is the cover on the box for one of the many value-added products manufactured for the European market at the plant
(*Wildlachs* is German for “wild salmon”)



Very large numbers of workers are employed at the plant.



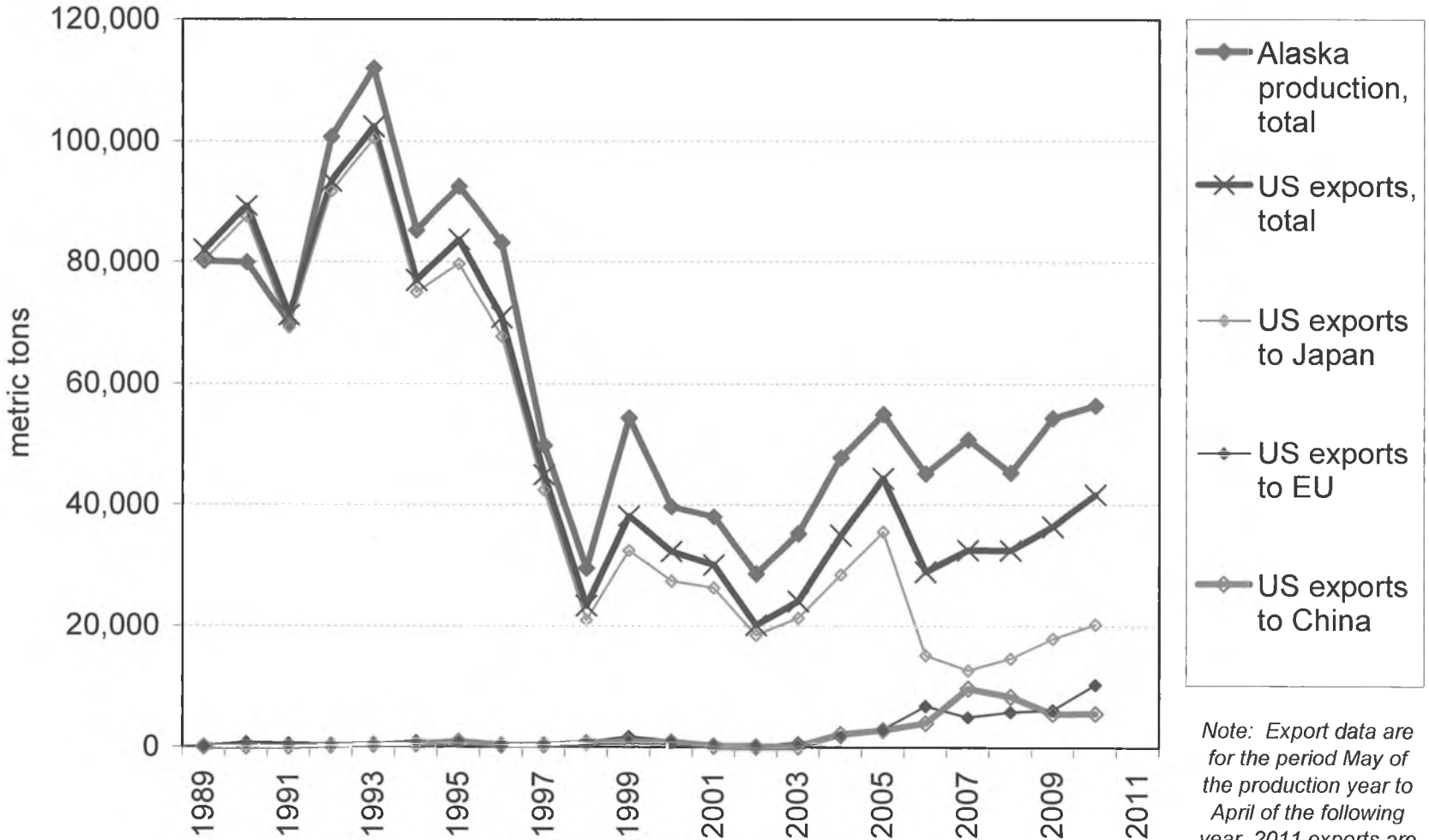
TRENDS IN EXPORTS AND END-MARKETS FOR MAJOR ALASKA SALMON PRODUCTS

The next ten graphs show trends in exports and estimated end-markets for each of the five major Alaska salmon product forms (frozen sockeye, frozen pink, frozen chum, canned pink, canned sockeye).

- There are two graphs for each product form.
- In the first graph for each product form:
  - The green line shows total Alaska production of the product as reported in the Commercial Operator Annual Report (COAR data)
  - The blue line shows total US exports of the product as reported in NMFS "Foreign Trade in Fisheries Products" data.
  - The other lines show exports of the product to the three or four largest foreign markets
  - By comparing the green line and the blue line, you can get a sense of the relative share of total production which is exported.
- The second graph is a stacked bar graph showing my estimates of the major end-markets for each product form.
  - The estimates for the different export markets are based on NMFS "Foreign Trade in Fisheries Products" data
  - I calculated the estimates for the "USA" by subtracting reported US exports (for the period from May to April of the following year) from reported Alaska production. This should be considered only an approximate estimate!

Over the past decade, the export share of Alaska frozen sockeye salmon production has declined. Frozen exports to Japan—which used to account for almost all frozen sockeye exports—have declined dramatically. Exports to China and the EU have risen significantly.

Alaska Production & U.S. Exports: Frozen Sockeye Salmon

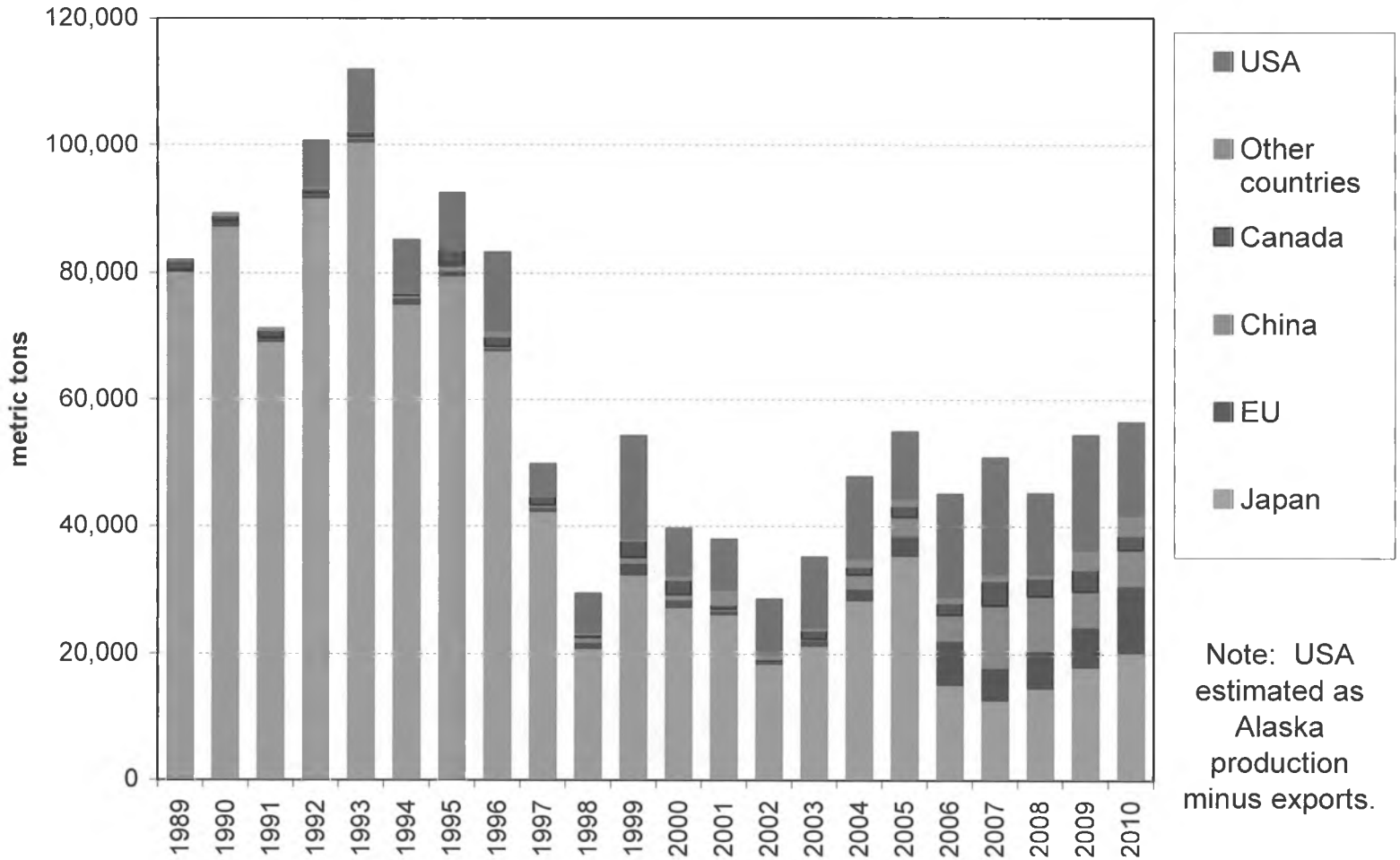


Sources: ADFG COAR database; NMFS trade data

Note: Export data are for the period May of the production year to April of the following year. 2011 exports are May-Dec only.

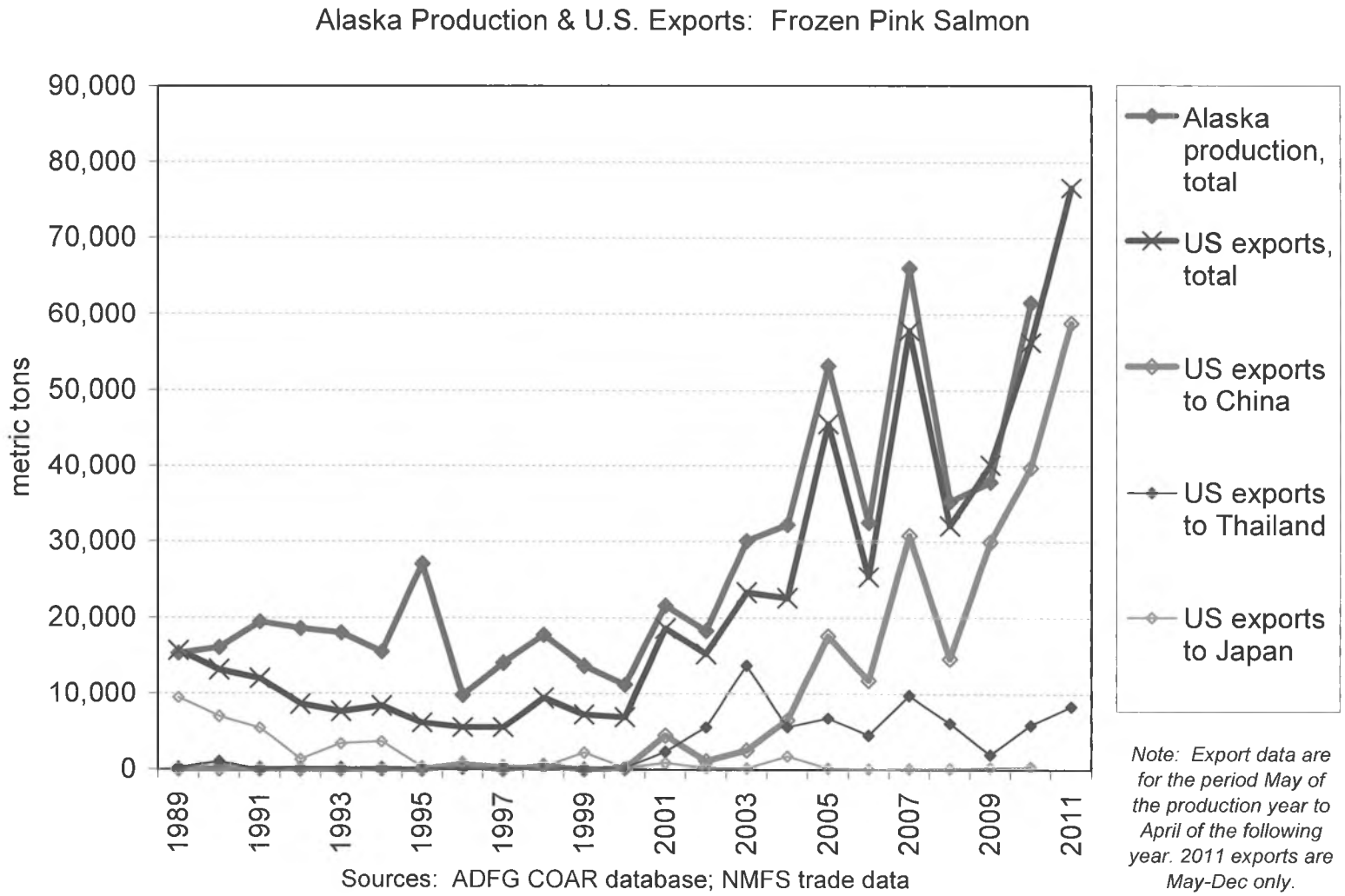
Over the past decade, end markets for Alaska frozen sockeye have become much more diversified. Formerly almost all frozen sockeye was exported to Japan. Although Japan still remains the largest market, now the USA, EU and China have all become important markets as well.

Estimated End-Markets for Alaska Frozen Sockeye Salmon



Note: USA estimated as Alaska production minus exports.

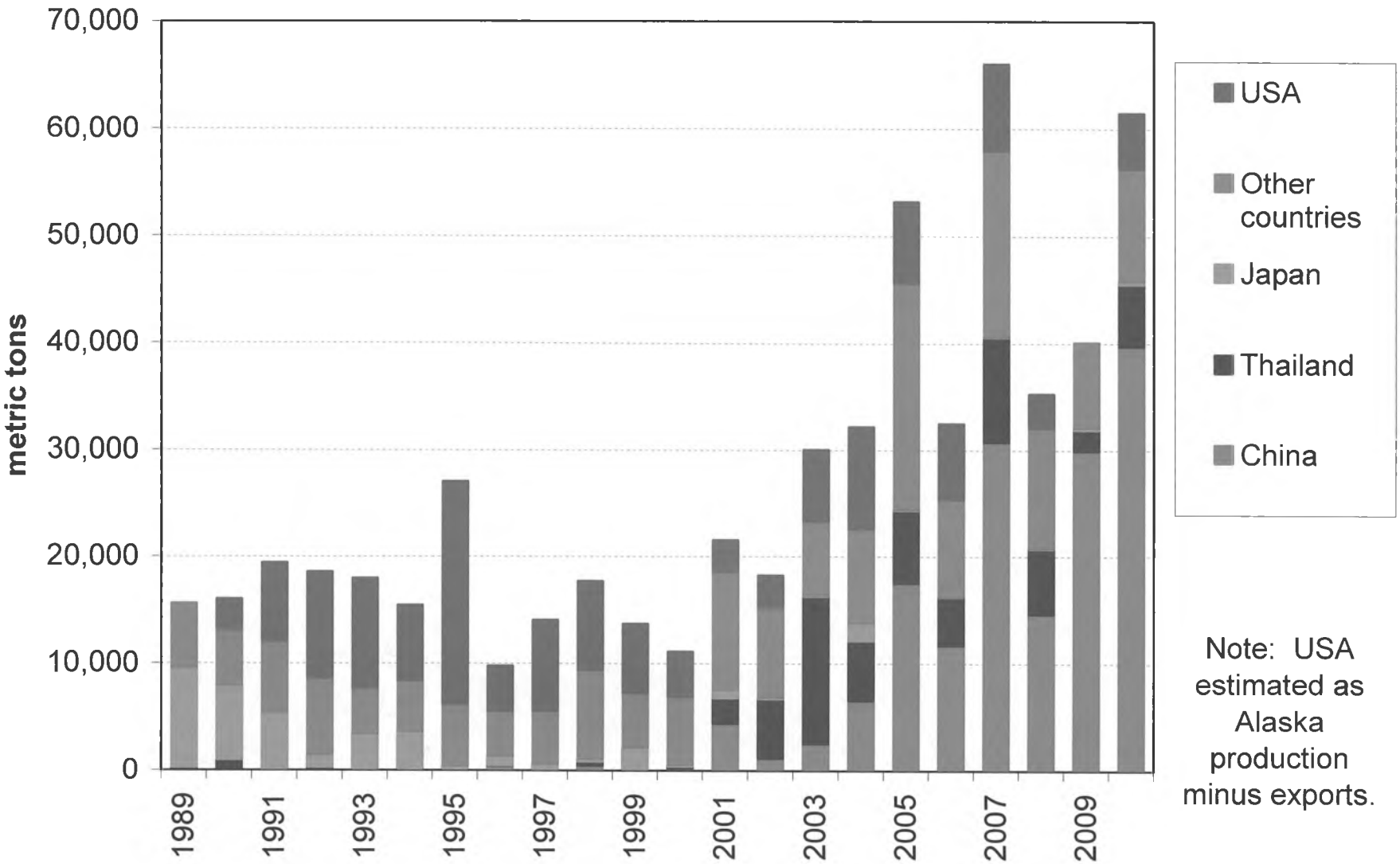
Especially during the past decade, almost all frozen pink salmon production has been exported, mostly to China. There has been a very dramatic increase in frozen pink salmon exports to China. Note that most of this frozen pink salmon is not being consumed by Chinese people! Most of it is reprocessed in China into value-added products which are re-exported to the US, EU and other markets. (This is also what is happening to US frozen sockeye and frozen chum exports to China.)



Note: Export data are for the period May of the production year to April of the following year. 2011 exports are May-Dec only.

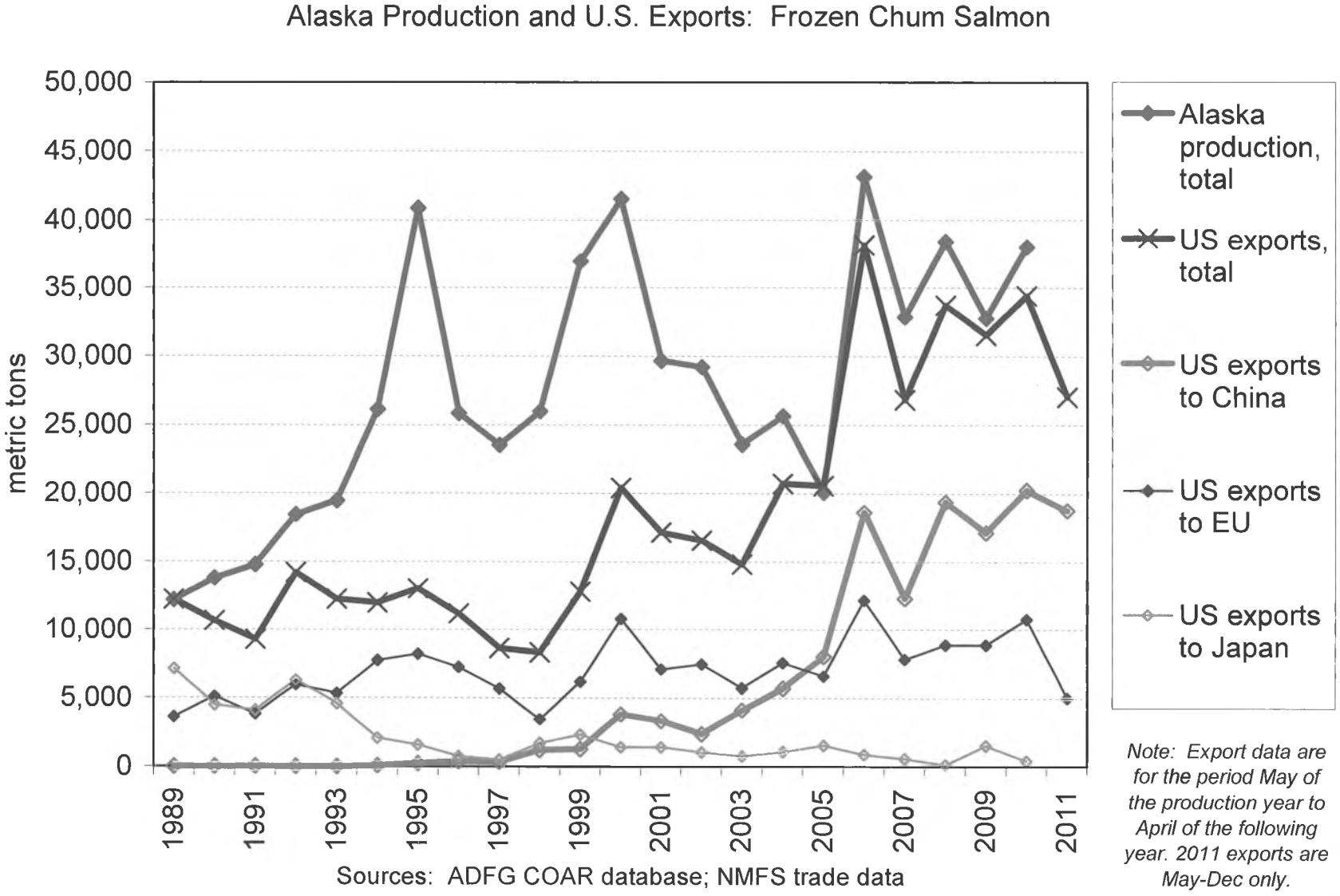
Most of the dramatic increase in Alaska frozen pink salmon production over the past decade has gone to China. Note that significant volumes are also exported to Thailand for reprocessing.

Estimated End-Markets for Alaska Frozen Pink Salmon



Note: USA estimated as Alaska production minus exports.

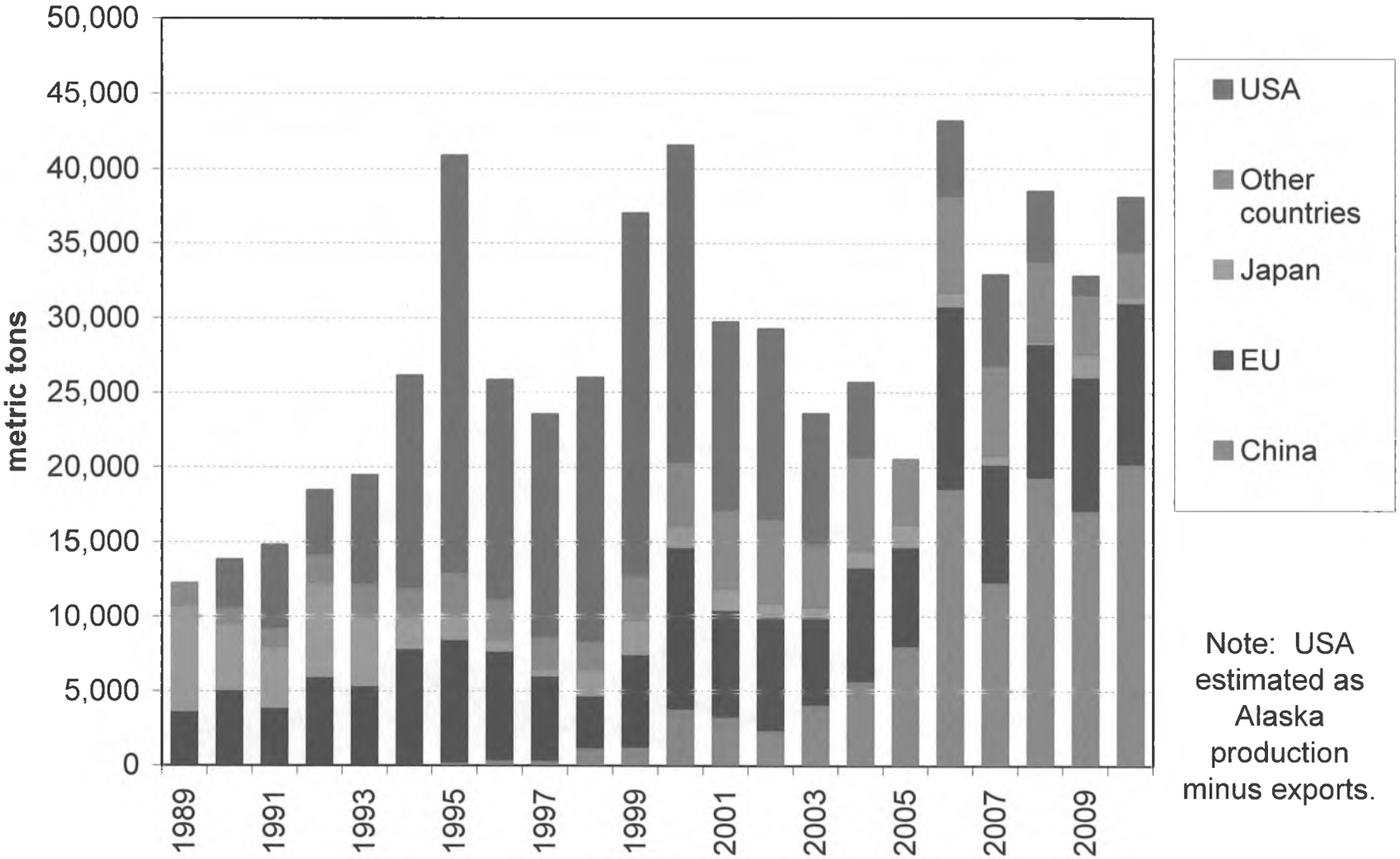
Over the past decade the export share of frozen chum salmon has risen dramatically. Since 2005 almost all frozen chum salmon has been exported. Exports to China have grown dramatically. The EU is also a very important export market.



Note: Export data are for the period May of the production year to April of the following year. 2011 exports are May-Dec only.

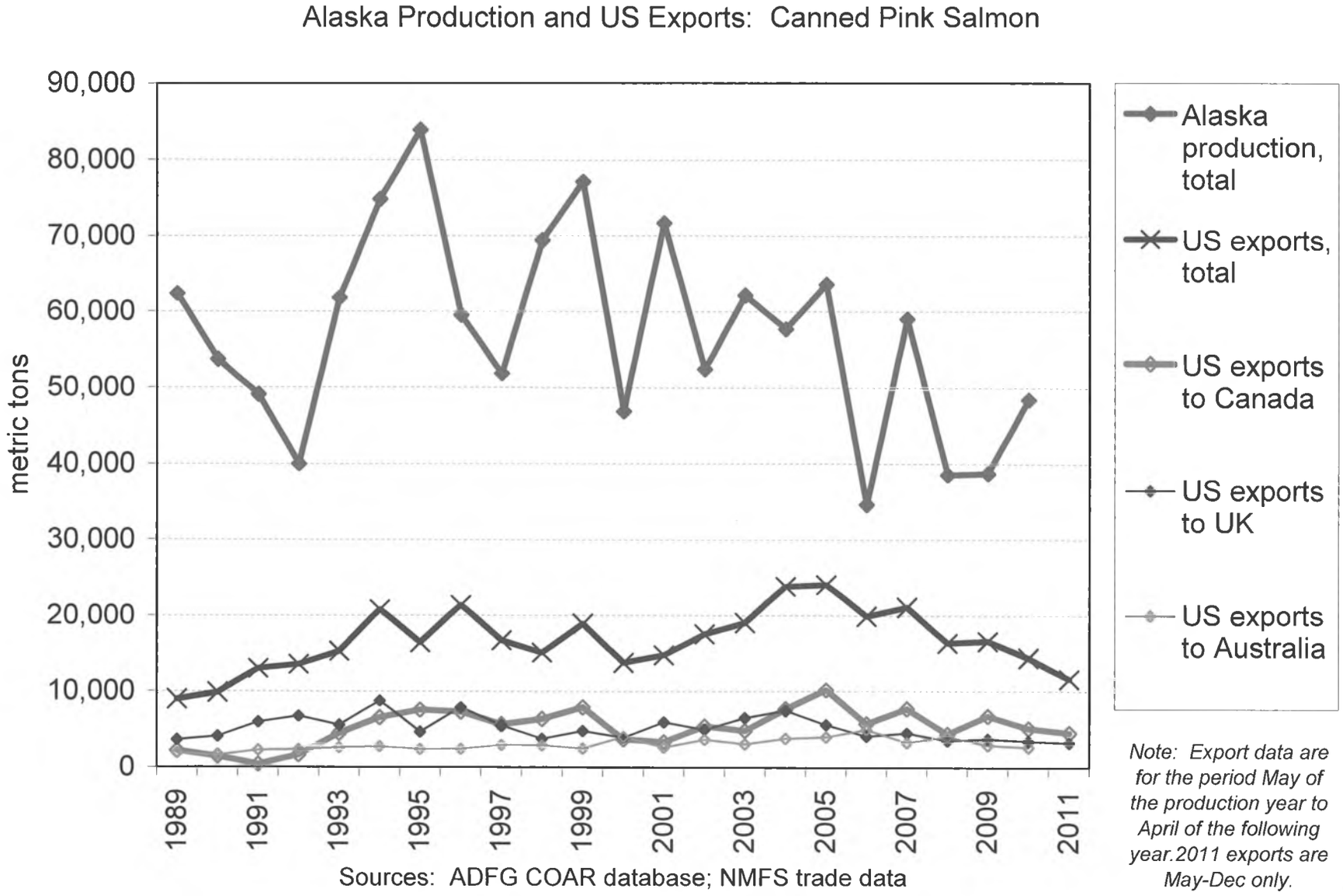
Over the past decade, exports of frozen chum salmon to China have risen dramatically, while estimated US domestic consumption has fallen. The EU is another very important export market.

Estimated End-Markets for Alaska Frozen Chum Salmon



Note: USA estimated as Alaska production minus exports.

Exports account for a much smaller share of Alaska canned pink salmon production than for frozen salmon.

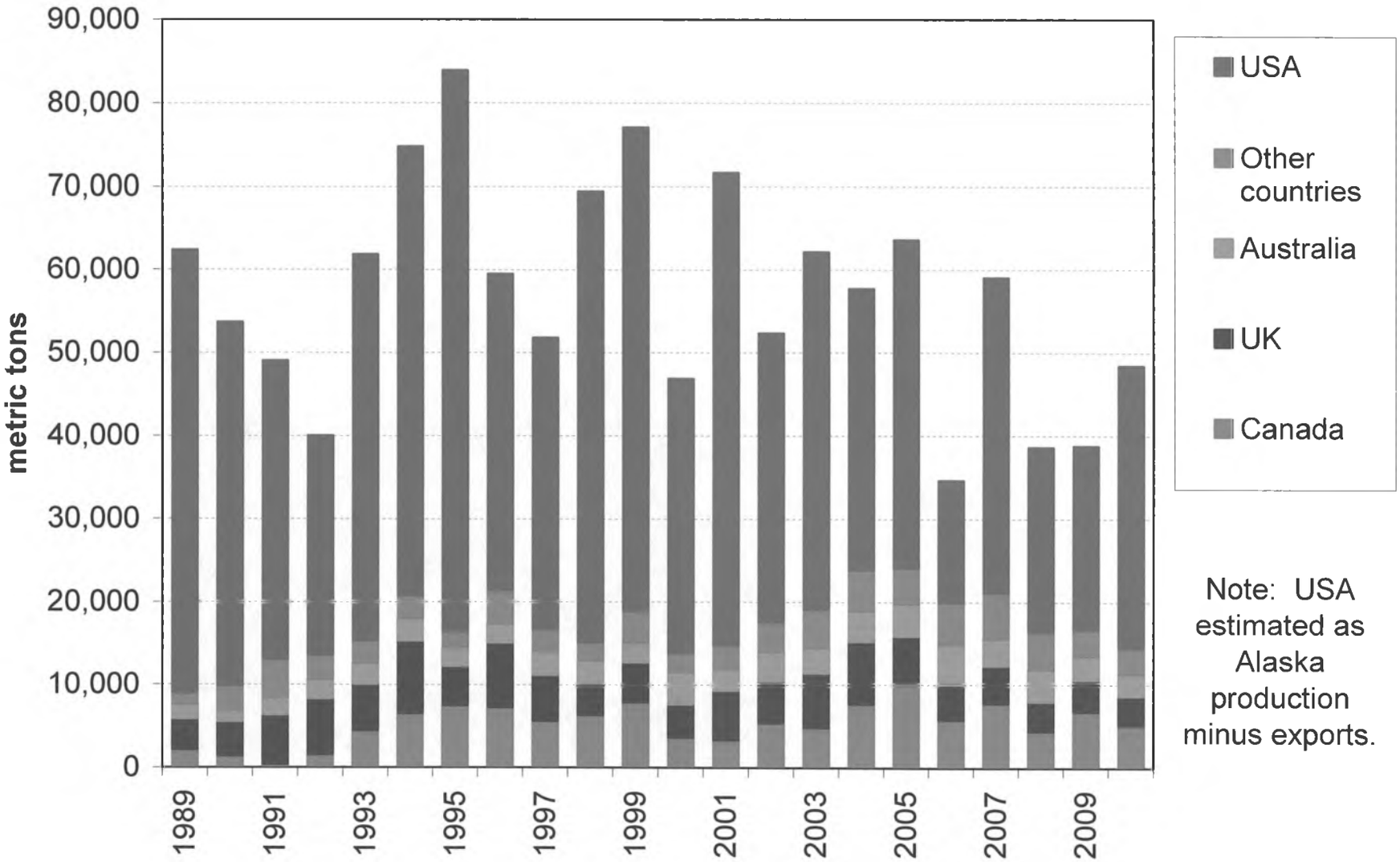


Sources: ADFG COAR database; NMFS trade data

Note: Export data are for the period May of the production year to April of the following year.2011 exports are May-Dec only.

The largest end-market for canned pink salmon is the USA, followed by Canada, the UK and Australia. (According to industry sources, most canned pink "talls" are sold in the US market, while a larger share of canned pink "halves" are sold in export markets.)

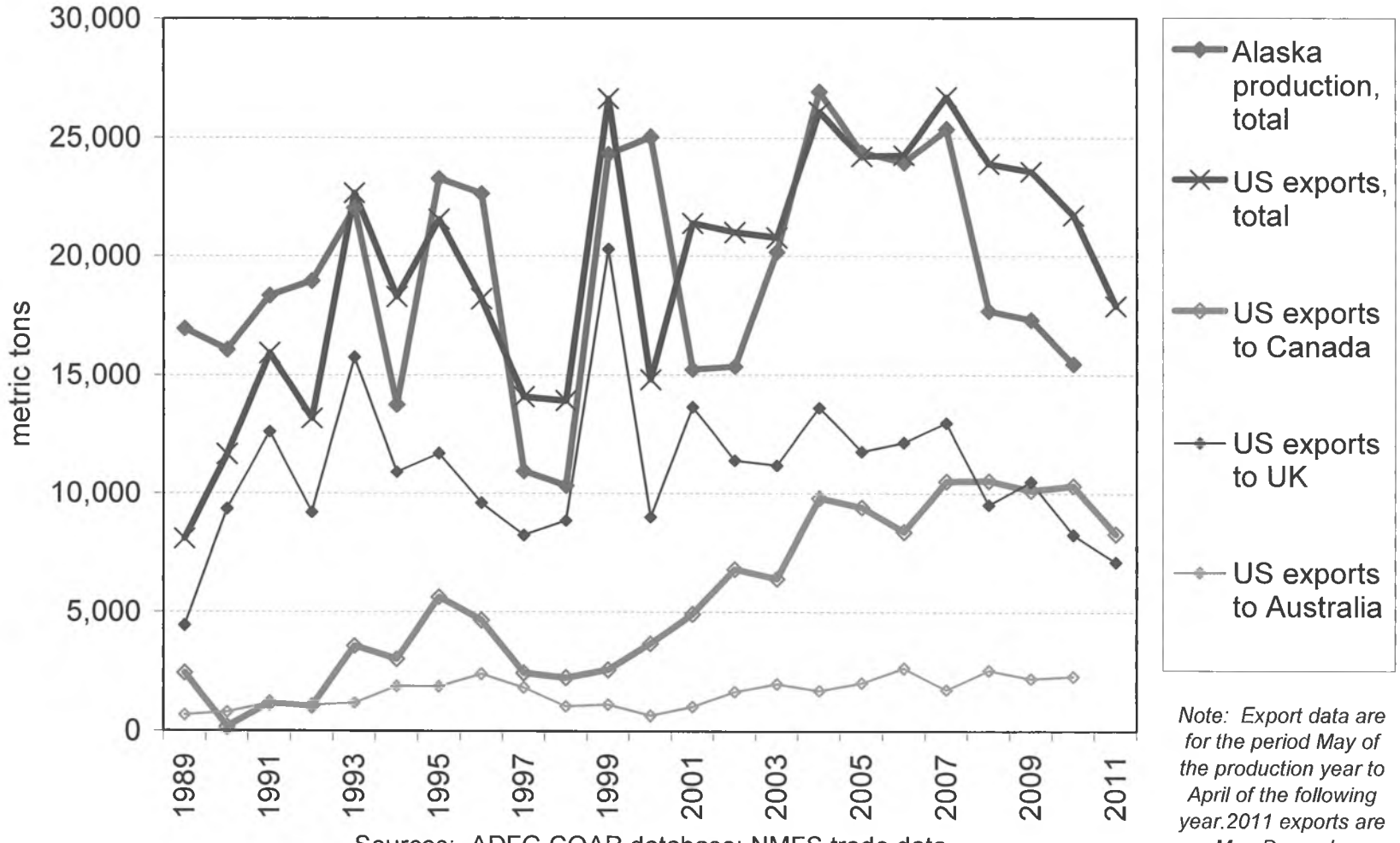
Estimated End-Markets for Alaska Canned Pink Salmon



Note: USA estimated as Alaska production minus exports.

Estimating end markets for canned sockeye salmon is complicated by the fact that reported US exports have exceeded total Alaska production in some years. This probably is due, in part, to exports in some years of carryover inventories from previous years. In any case, it is clear that most canned sockeye salmon is exported. The most important export markets are Canada, the UK and Australia.

Alaska Production and US Exports: Canned Sockeye Salmon

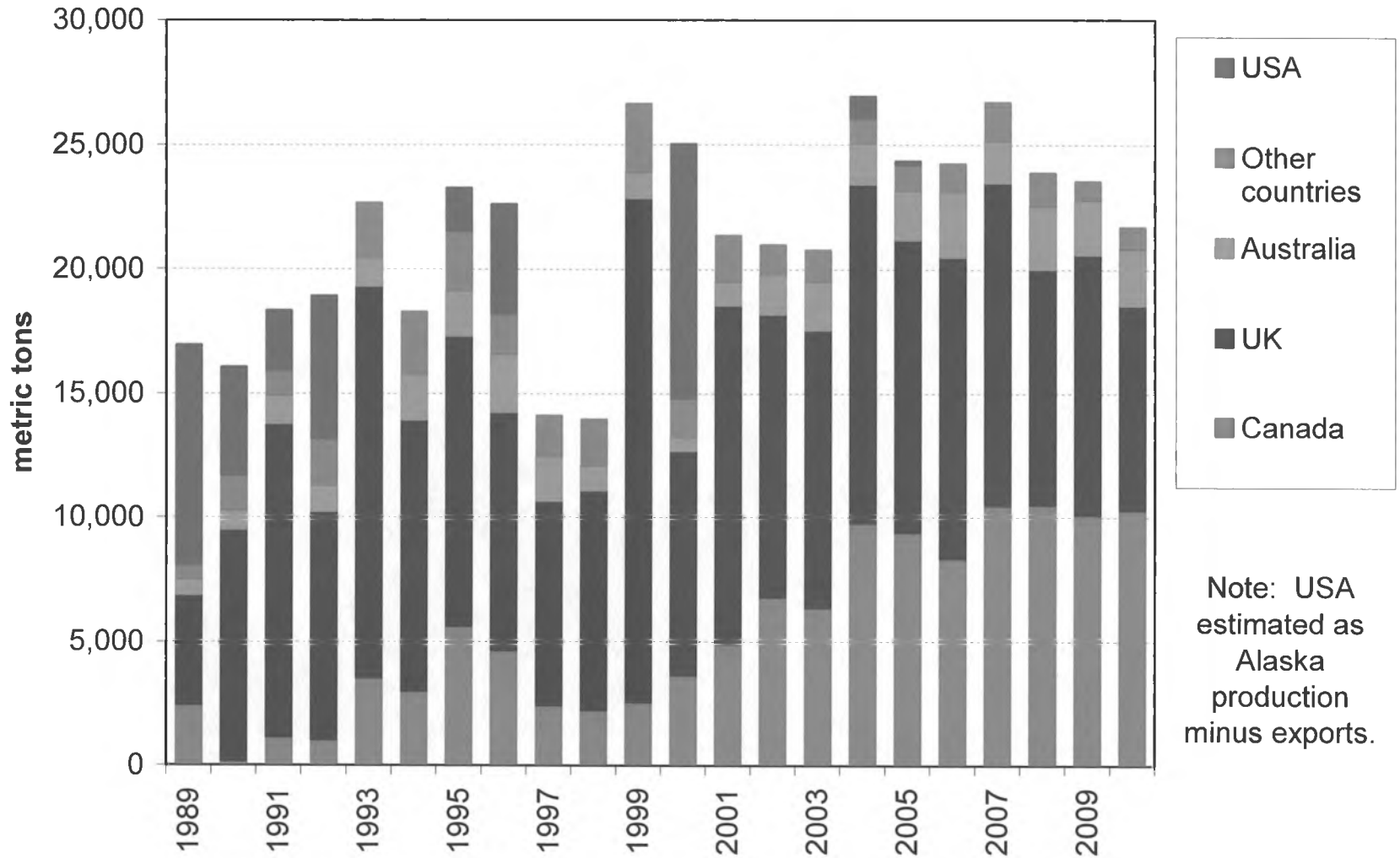


Sources: ADFG COAR database; NMFS trade data

Note: Export data are for the period May of the production year to April of the following year.2011 exports are May-Dec only.

The share of canned sockeye salmon exported to Canada increased over the past decade. Note that the estimates for the USA are not reliable, given the problems associated with estimating US consumption as Alaska production minus exports, when exports in some years are partly carryover production from earlier years.

Estimated End-Markets for Alaska Canned Sockeye Salmon

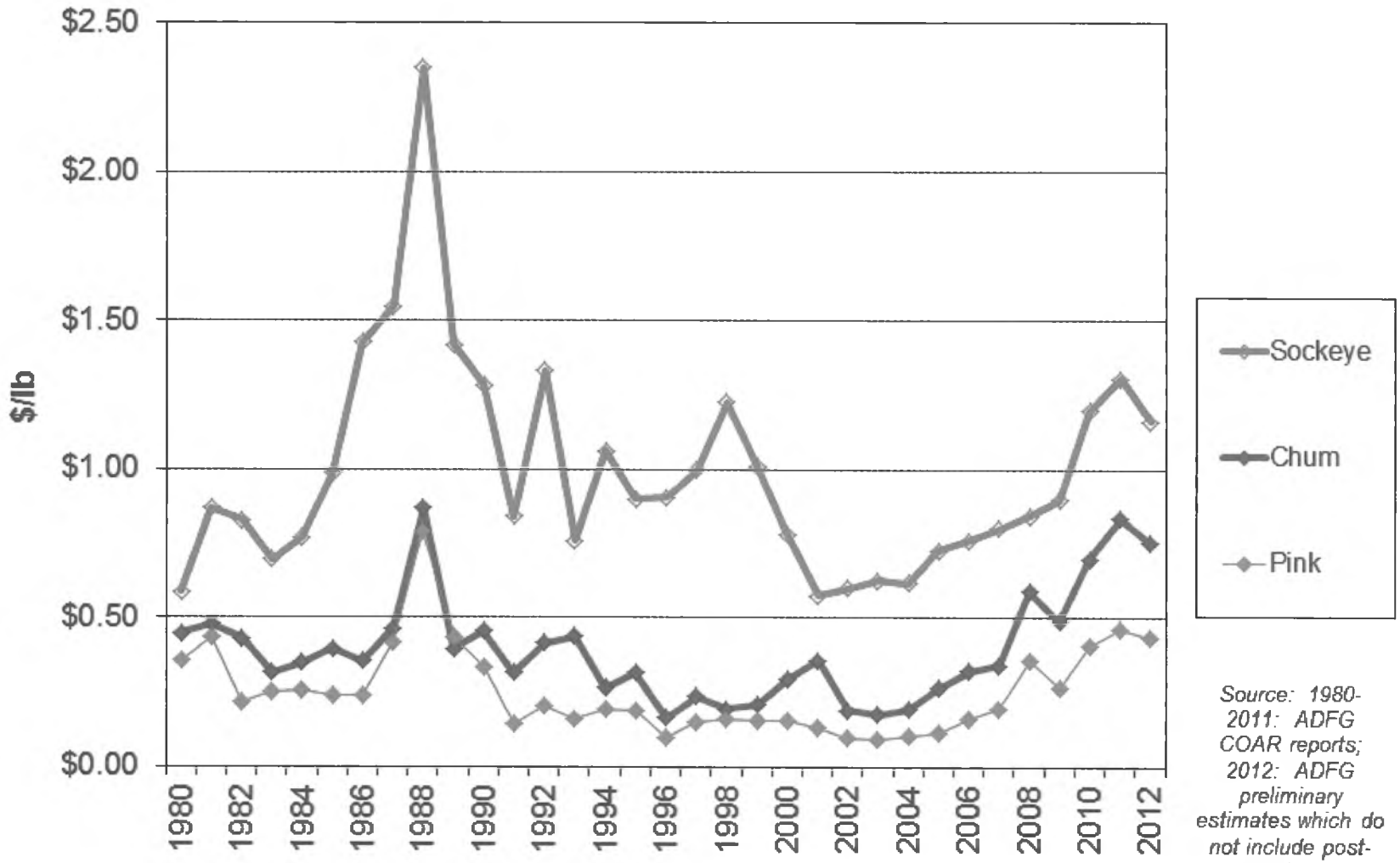


Note: USA estimated as Alaska production minus exports.

TRENDS IN EX-VESSEL PRICES PAID TO FISHERMEN

Ex-vessel prices for Alaska salmon fell drastically in 1990s but have rebounded dramatically since 2002. Prices fell in 2012—but probably not as much as shown in the graph, because the data in the graph are preliminary estimates which don't include post-season adjustments).

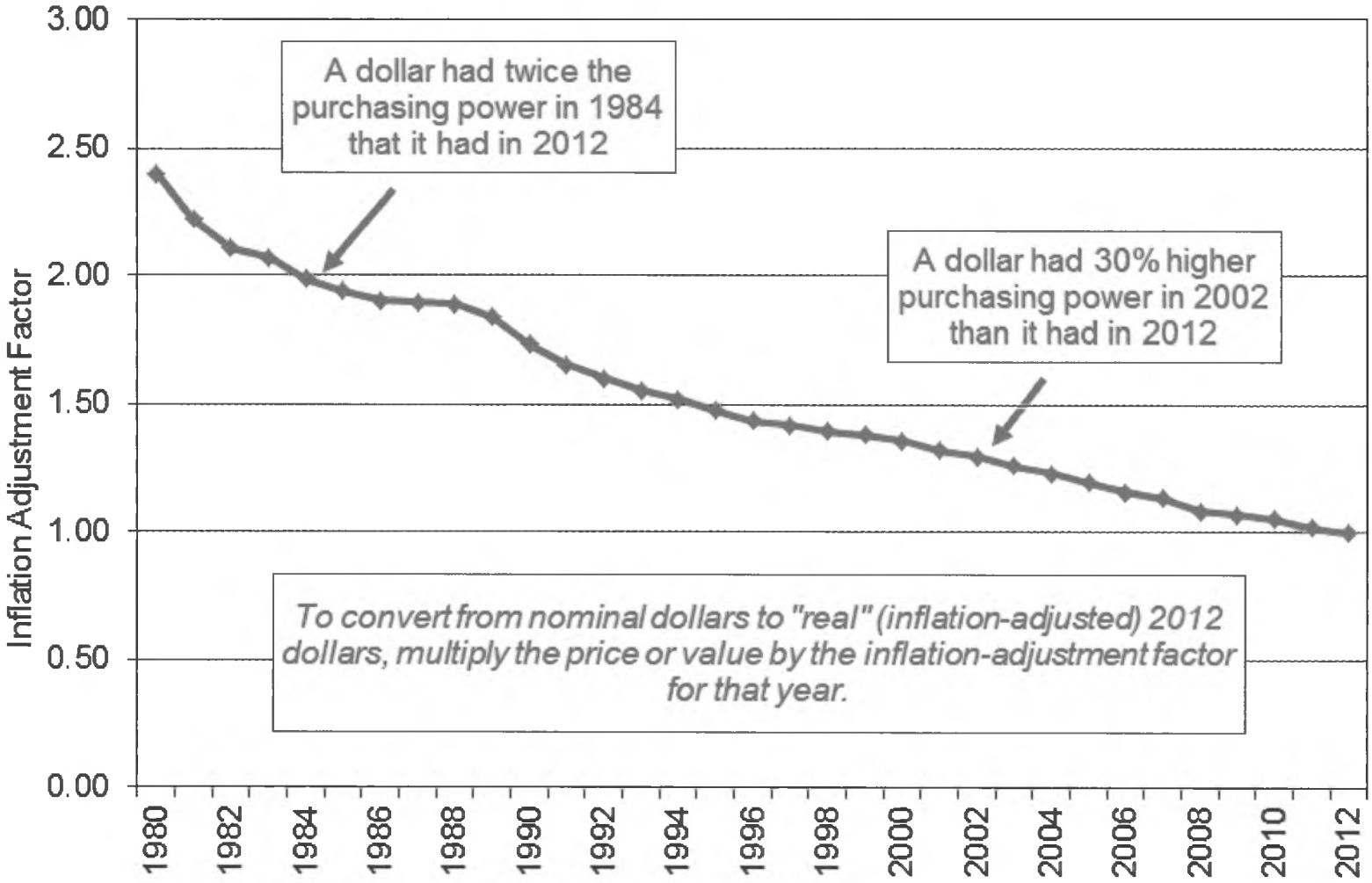
Alaska Salmon Statewide Average Ex-Vessel Prices, by Species (nominal prices-not adjusted for inflation)



Source: 1980-2011: ADFG COAR reports; 2012: ADFG preliminary estimates which do not include post-season bonuses.

In comparing long-term price and value trends it's important to remember that there has been significant inflation since the 1980s.

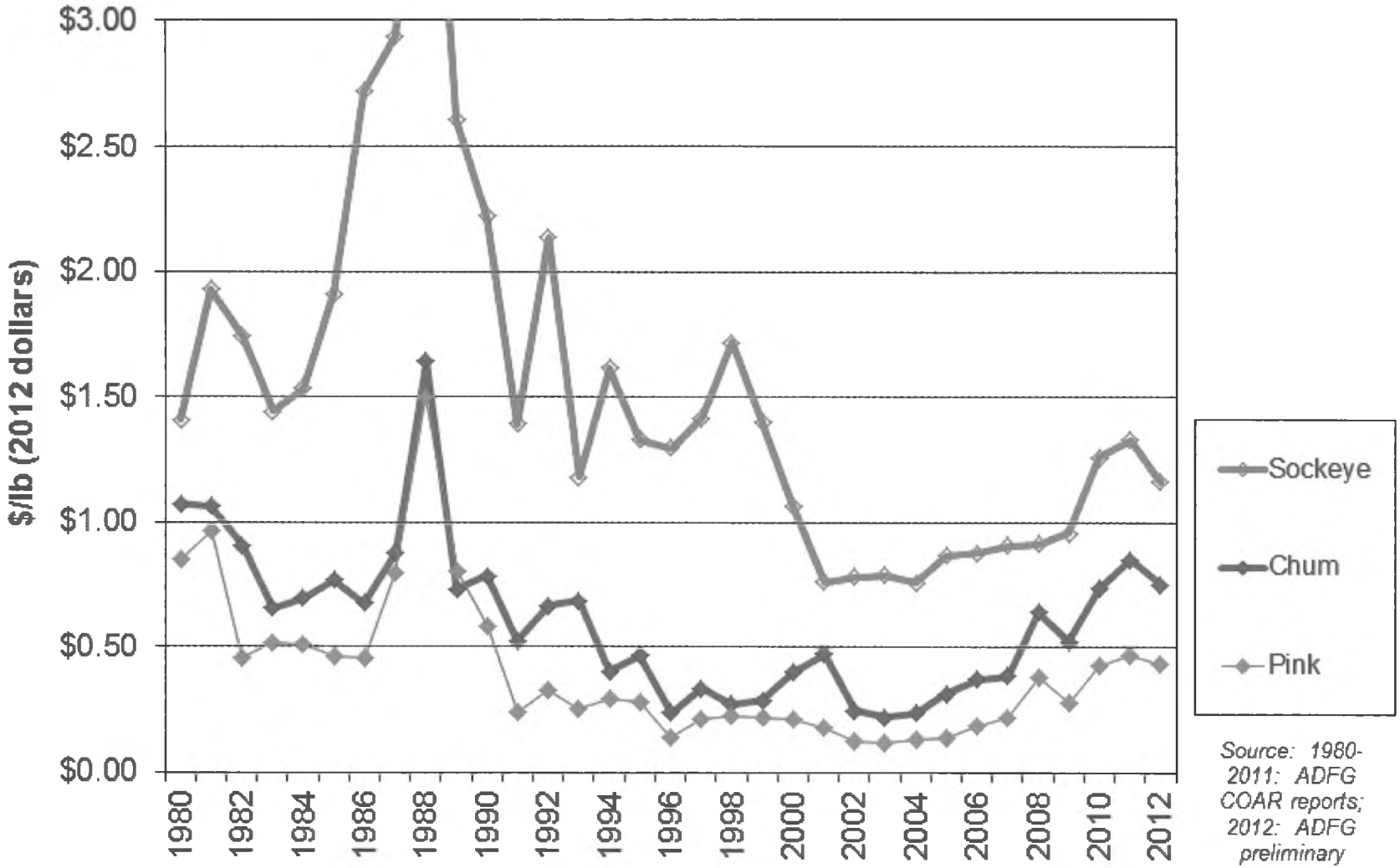
Inflation Adjustment Factor for Converting Prices and Values to 2012 Dollars



Note: This inflation-adjustment factor is based on the Anchorage Consumer Price Index (CPI), the only available measure of inflation for Alaska.

After adjusting for inflation, the rebound in ex-vessel prices since 2002 is still big but doesn't appear quite as dramatic.

Alaska Salmon Real Statewide Average Ex-Vessel Prices, by Species (adjusted for inflation, expressed in 2012 dollars)

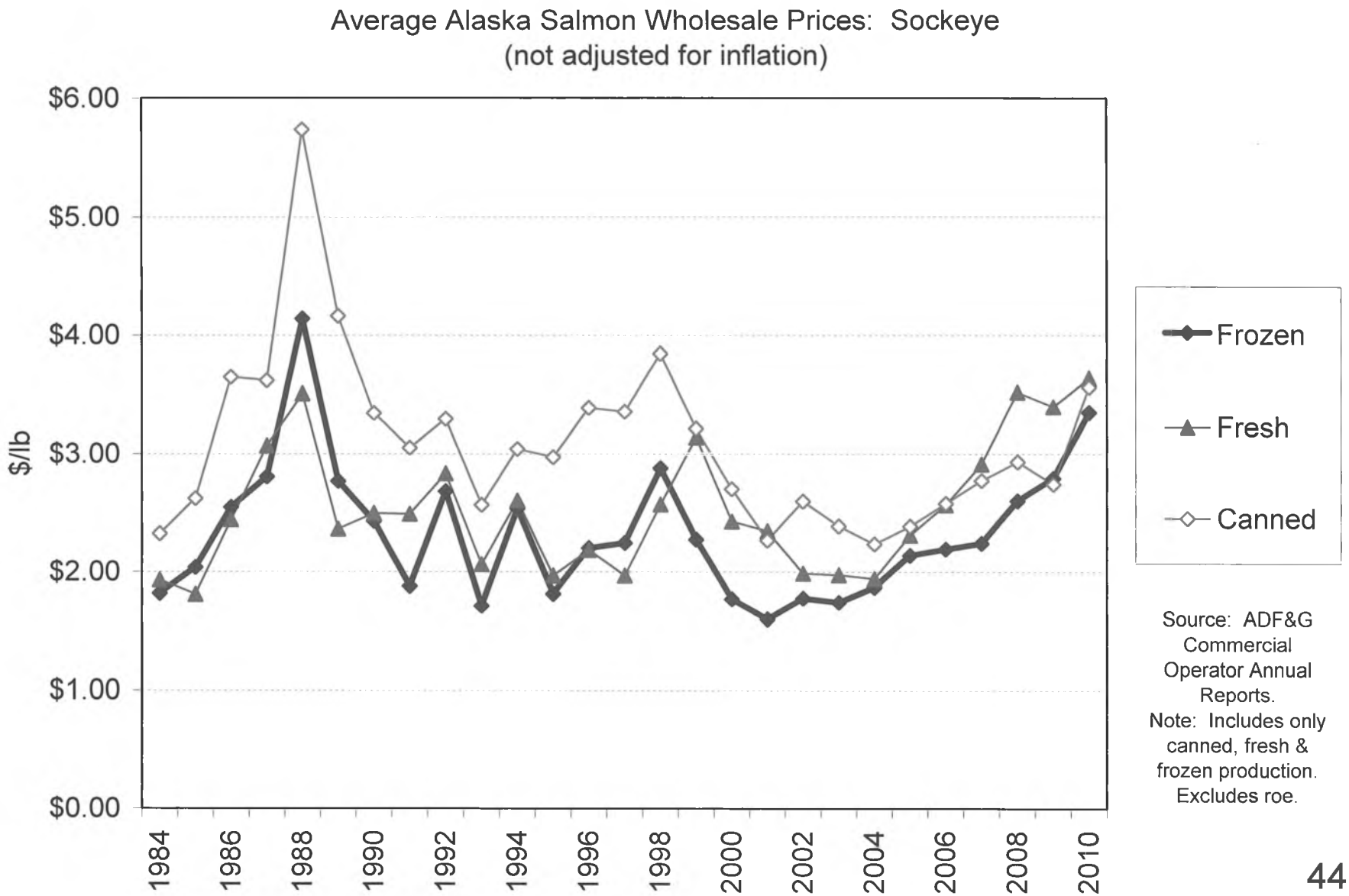


Source: 1980-2011: ADFG COAR reports; 2012: ADFG preliminary estimates

TRENDS IN FIRST WHOLESALE PRICES PAID TO PROCESSORS

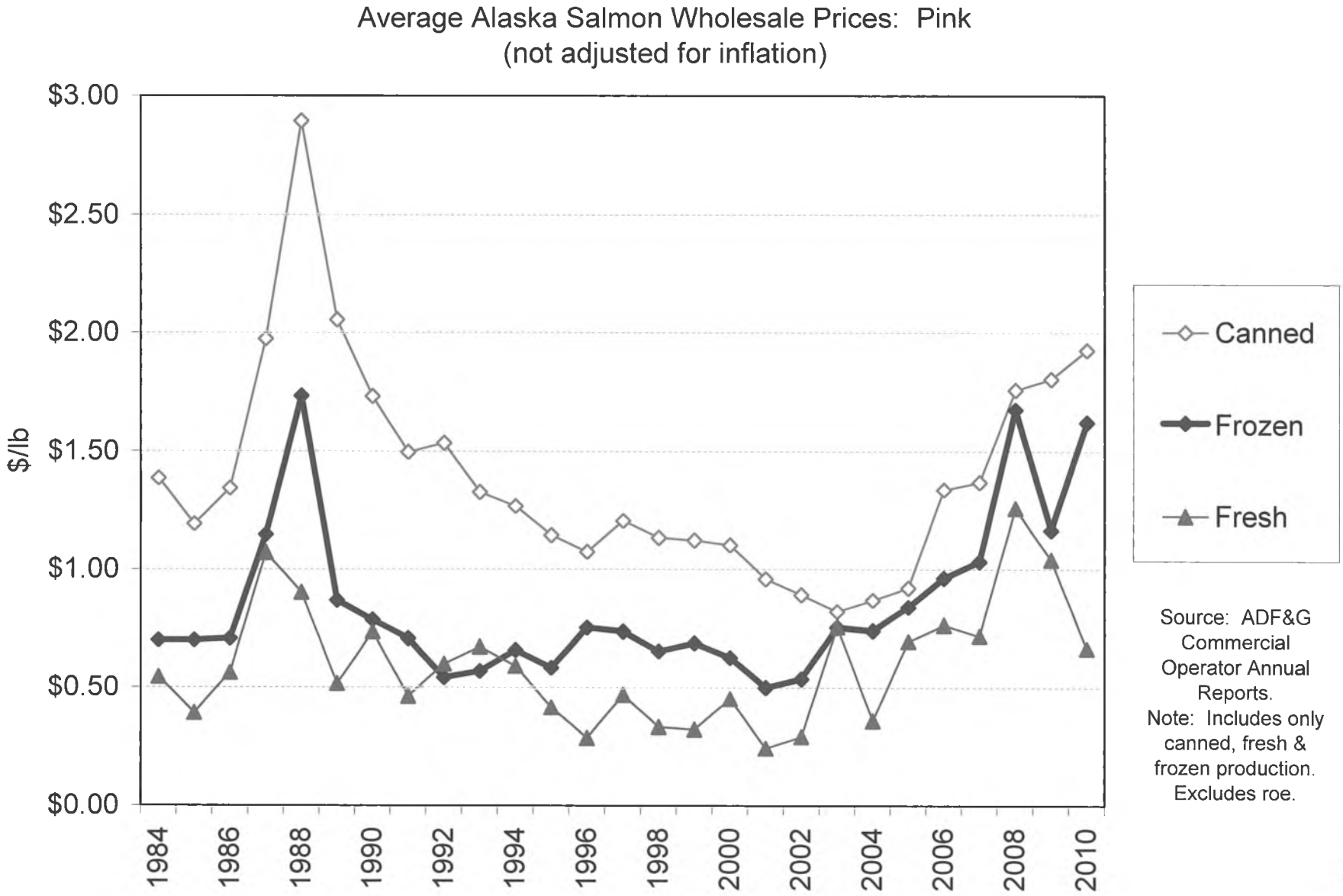
Note: These graphs are based on Commercial Operator Annual Report (COAR) data which are only available through 2011.

Wholesale prices for frozen, canned and fresh sockeye salmon have risen dramatically since the early 2000s.



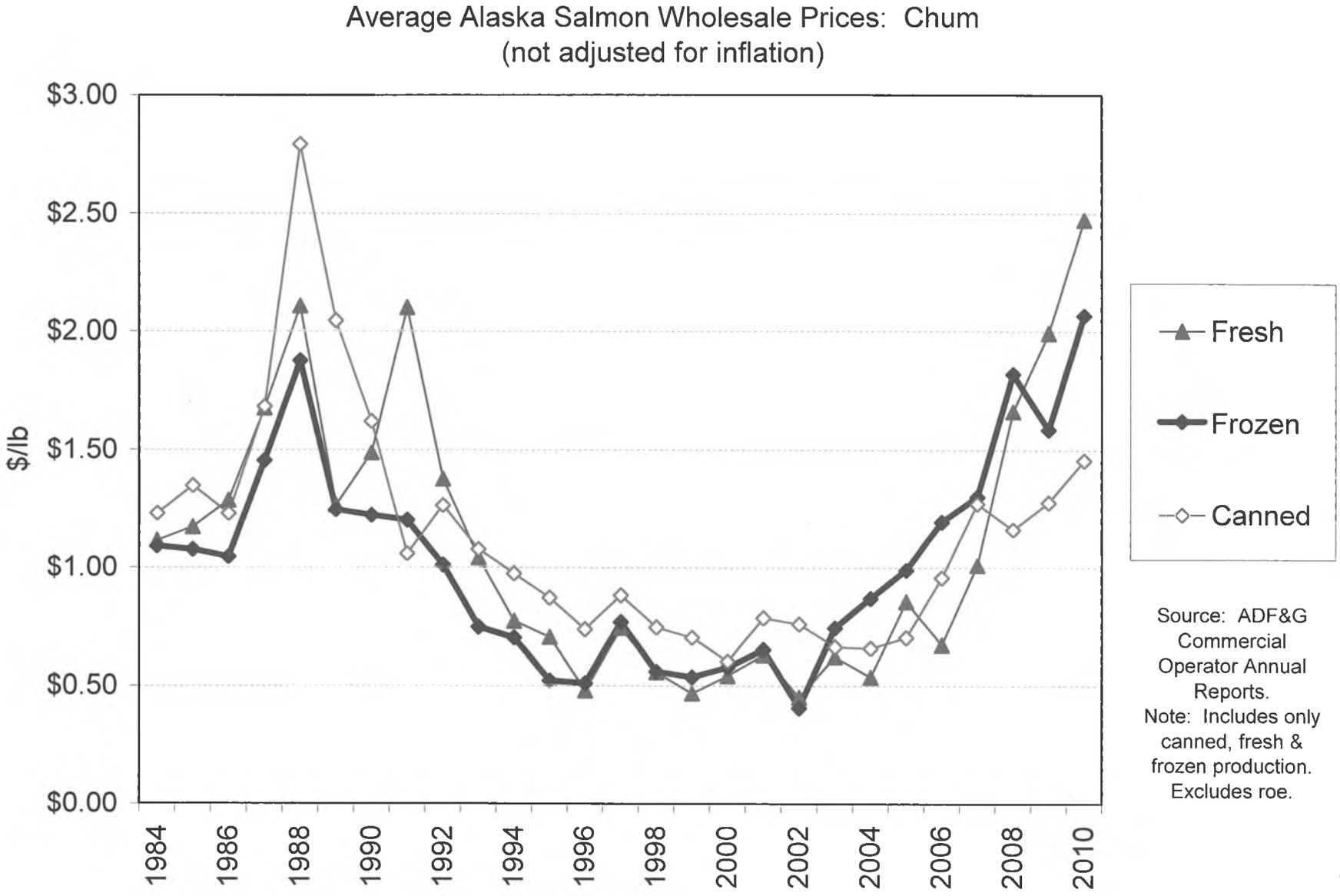
Source: ADF&G Commercial Operator Annual Reports.
Note: Includes only canned, fresh & frozen production. Excludes roe.

Wholesale prices for canned and frozen pink salmon have risen dramatically since the early 2000s.



Source: ADF&G Commercial Operator Annual Reports.
Note: Includes only canned, fresh & frozen production. Excludes roe.

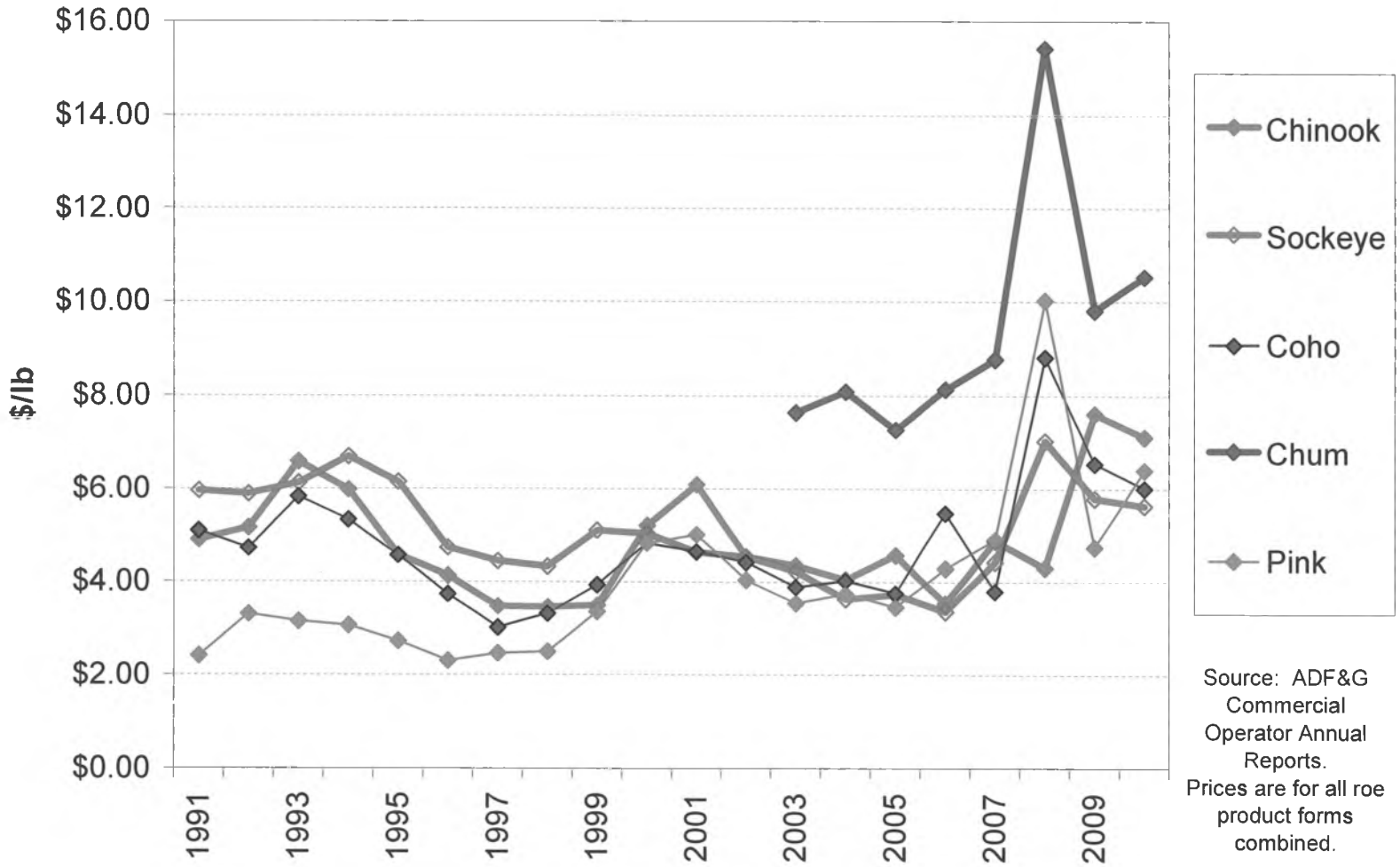
Wholesale prices for frozen, fresh and canned chum salmon have risen dramatically since the early 2000s.



Source: ADF&G Commercial Operator Annual Reports.
Note: Includes only canned, fresh & frozen production. Excludes roe.

First wholesale prices for Alaska salmon roe exhibit very different trends than first wholesale prices of other products—reflecting the fact that roe is sold in very different end-markets and that wild salmon roe production faces little very competition from farmed salmon. Roe prices spiked in 2008 but have otherwise not increased as dramatically as canned, frozen and fresh prices. Note that chum roe first wholesale prices are much higher than for other species. Roe accounts for a major share of chum salmon total first wholesale value.

Alaska Salmon Roe First Wholesale Prices, by Species
(nominal prices-not adjusted for inflation)



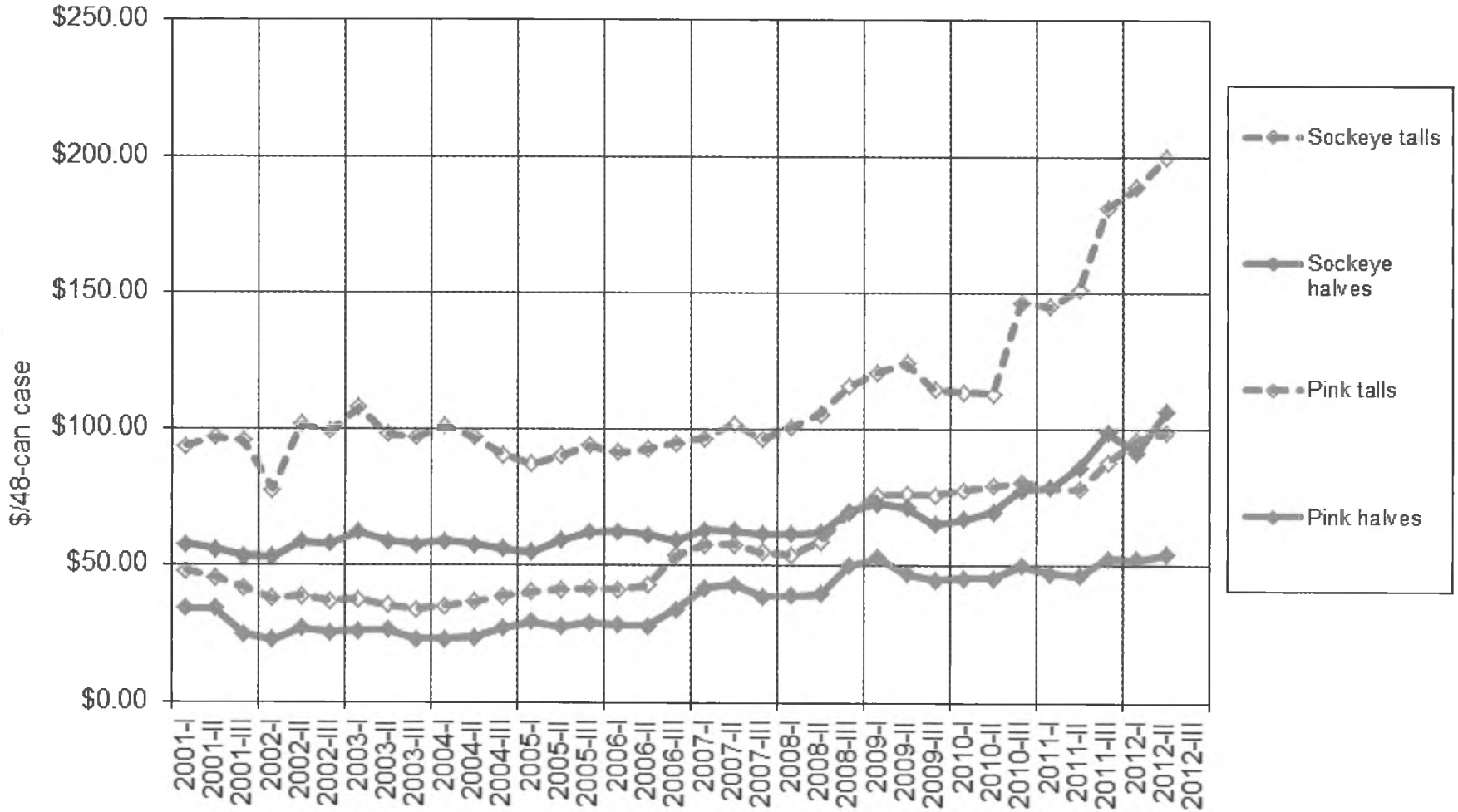
Source: ADF&G Commercial Operator Annual Reports.
Prices are for all roe product forms combined.

TRENDS IN FIRST WHOLESALE PRICES PAID TO PROCESSORS (continued . ..)

Note: These graphs are based on Alaska Department of Revenue "Salmon Price Reports" data for average prices for three four-month periods per year. The most recent available data are for the period May-August of 2012.

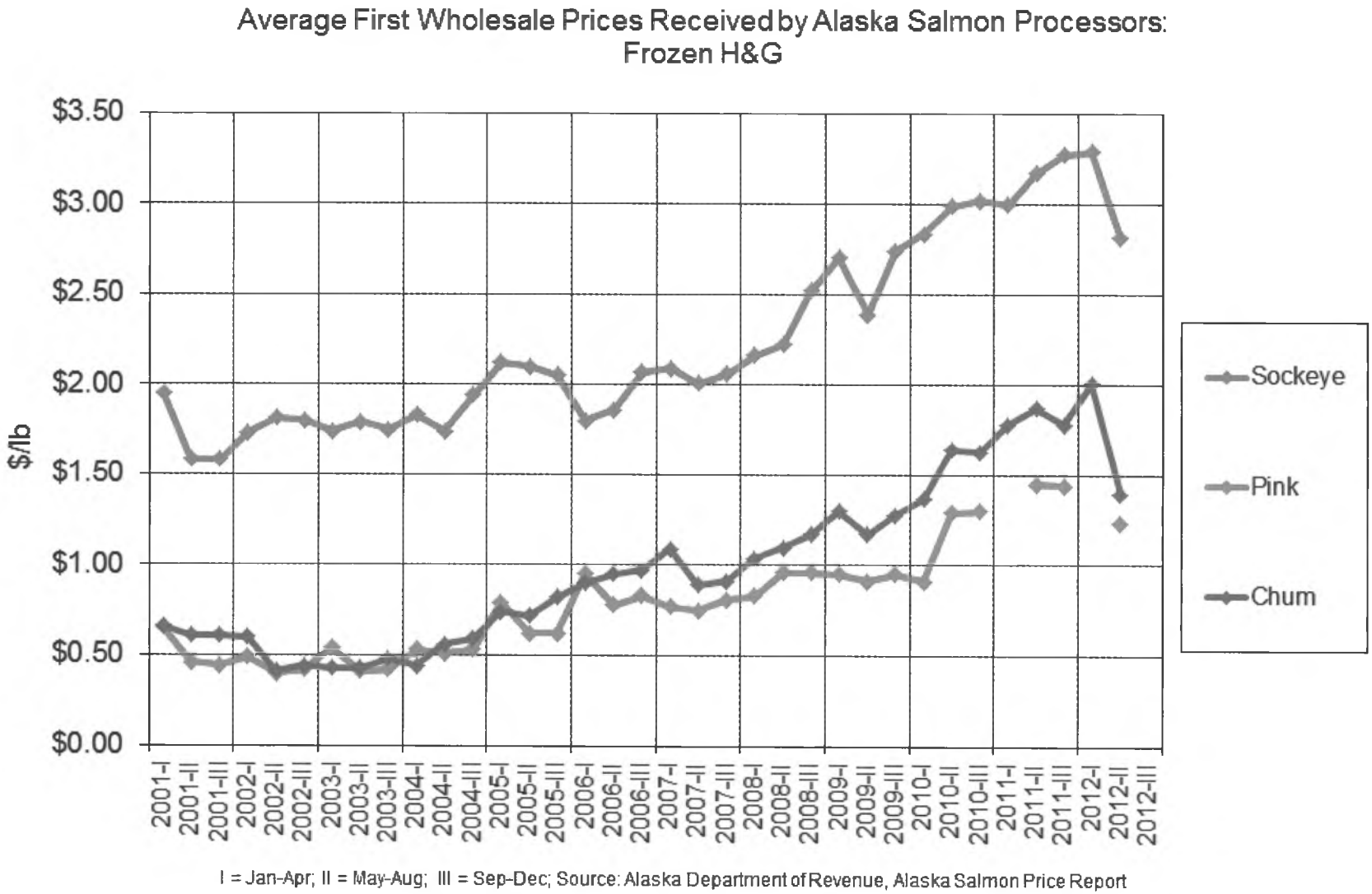
Canned salmon prices have risen dramatically.

Average First Wholesale Prices Received by Alaska Salmon Processors: Canned Sockeye and Pink ($/48-can case)

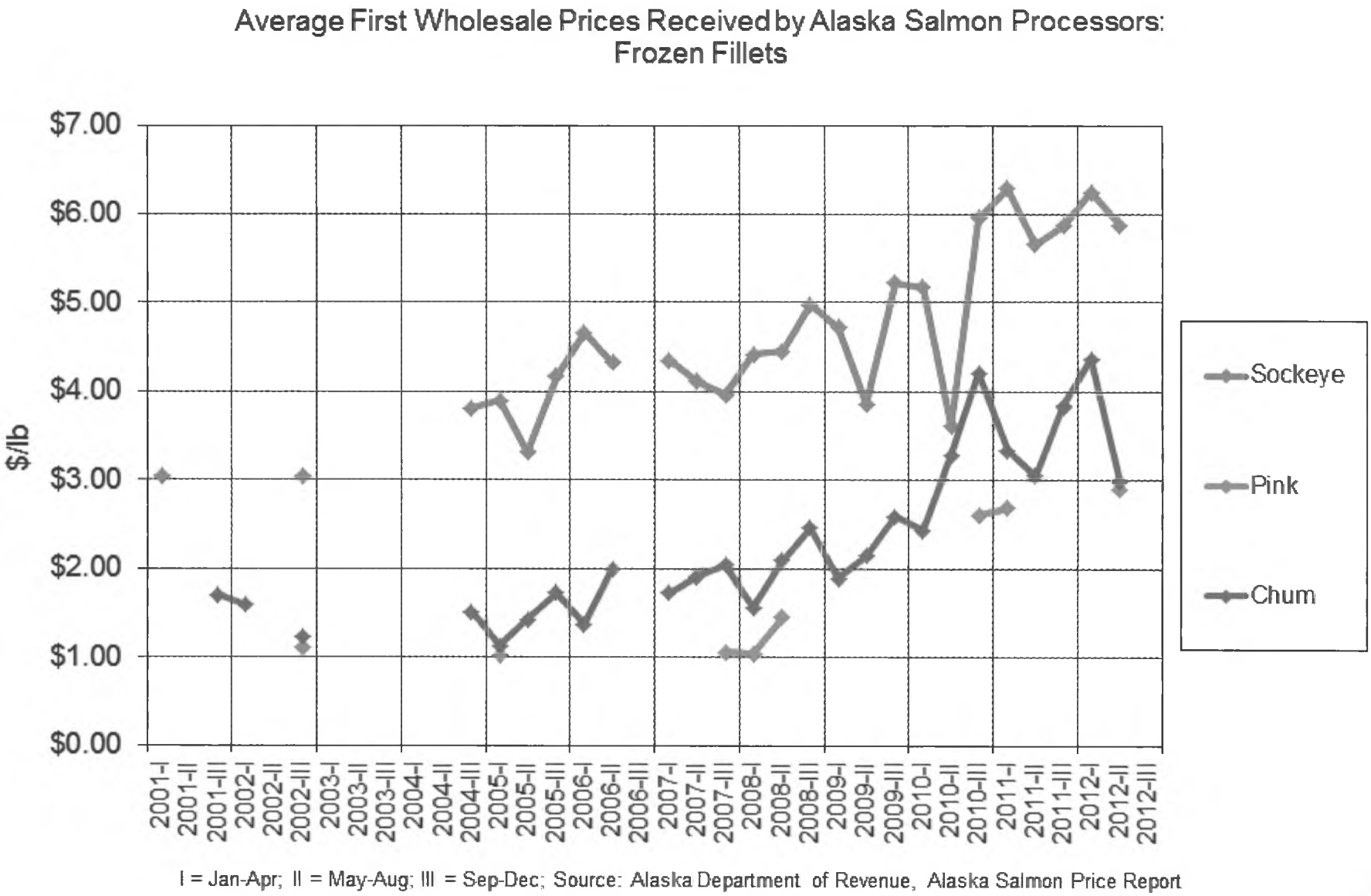


I = Jan-Apr; II = May-Aug; III = Sep-Dec
Source: Alaska Department of Revenue, Alaska Salmon Price Reports

Frozen headed and gutted (H&G) prices have risen dramatically since 2002—but fell in 2012.

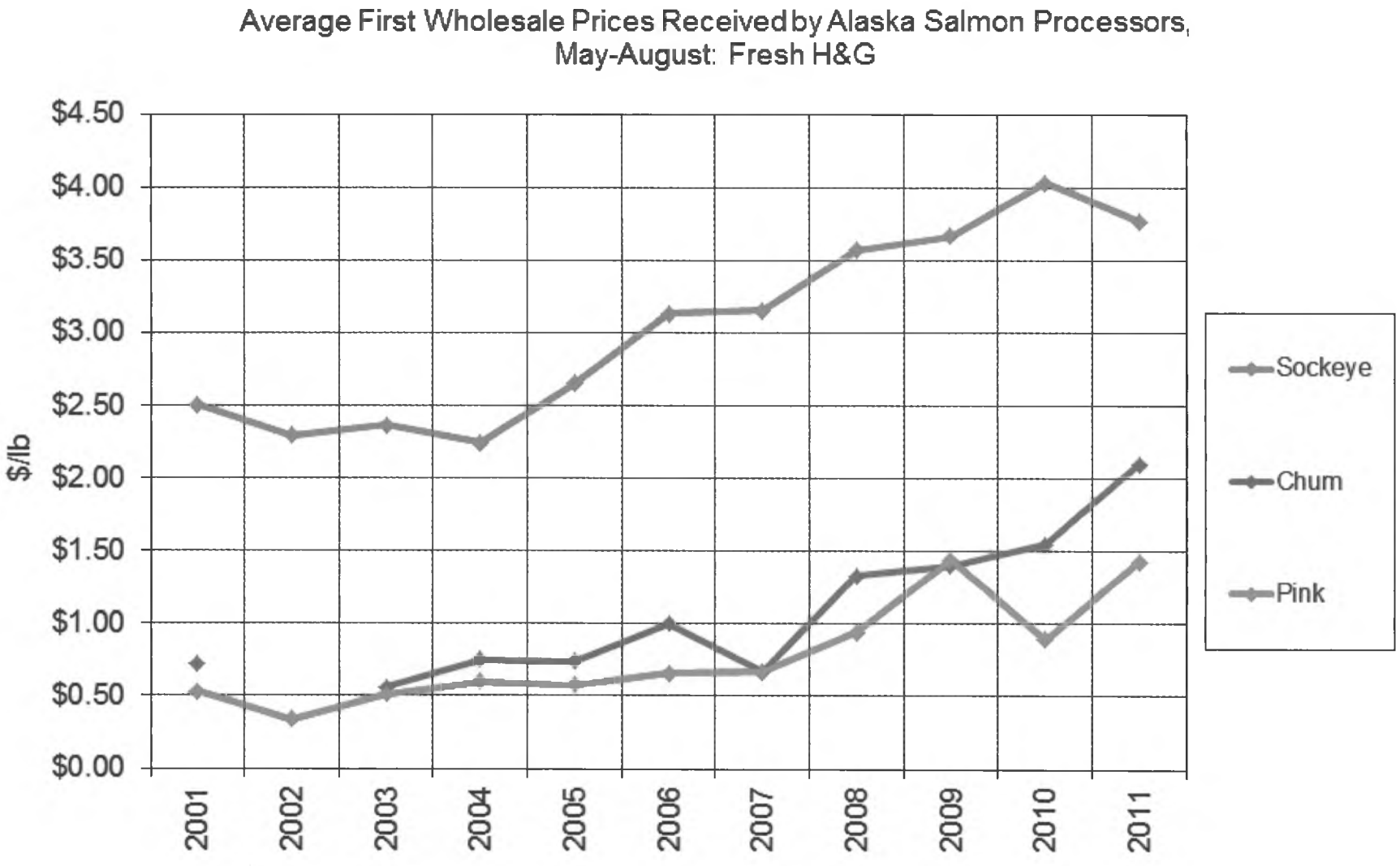


Frozen fillet prices have also risen dramatically since 2002—but also fell in 2012.



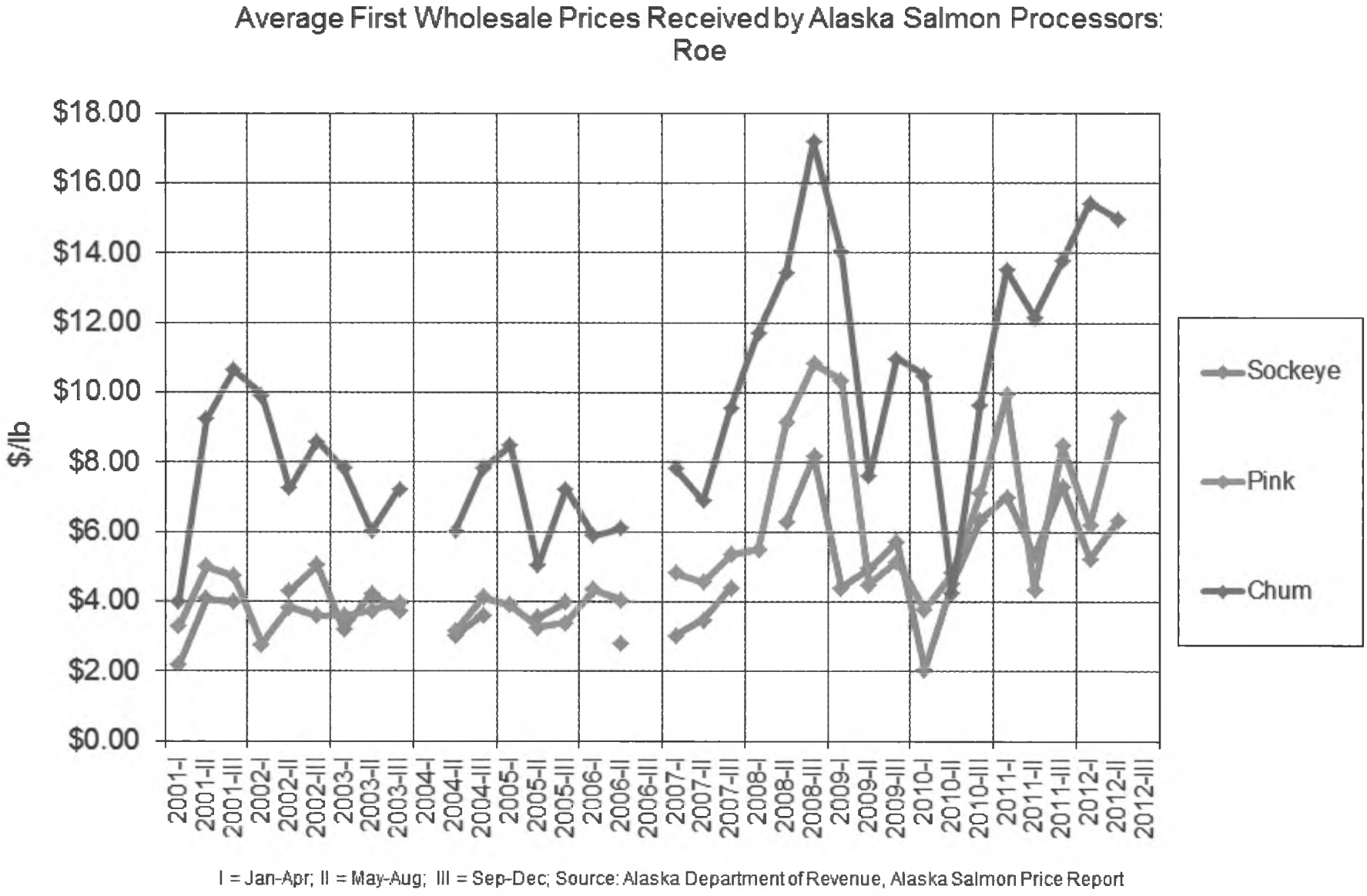
I = Jan-Apr; II = May-Aug; III = Sep-Dec; Source: Alaska Department of Revenue, Alaska Salmon Price Report

Fresh headed and gutted (H&G) prices have risen dramatically since 2002.
Fresh sockeye prices fell in 2012 (but not fresh chum and pink prices).



Source: Alaska Department of Revenue, Alaska Salmon Price Reports

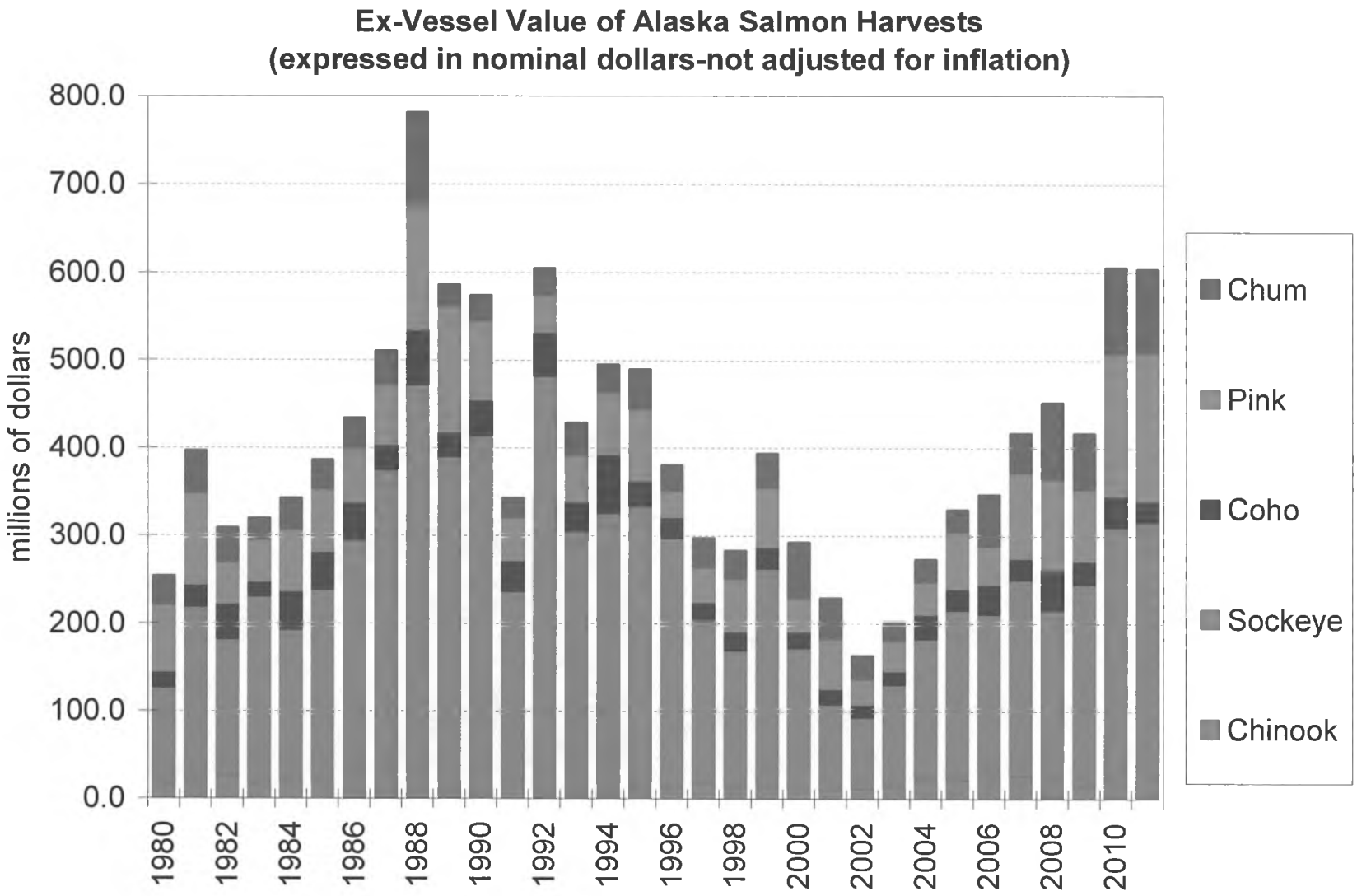
The Department of Revenue data also show that Alaska salmon roe exhibit very different wholesale price trends than for other products. Note that roe prices spiked in 2008, 2011 and 2012, and that chum roe wholesale prices are much higher than for other species.



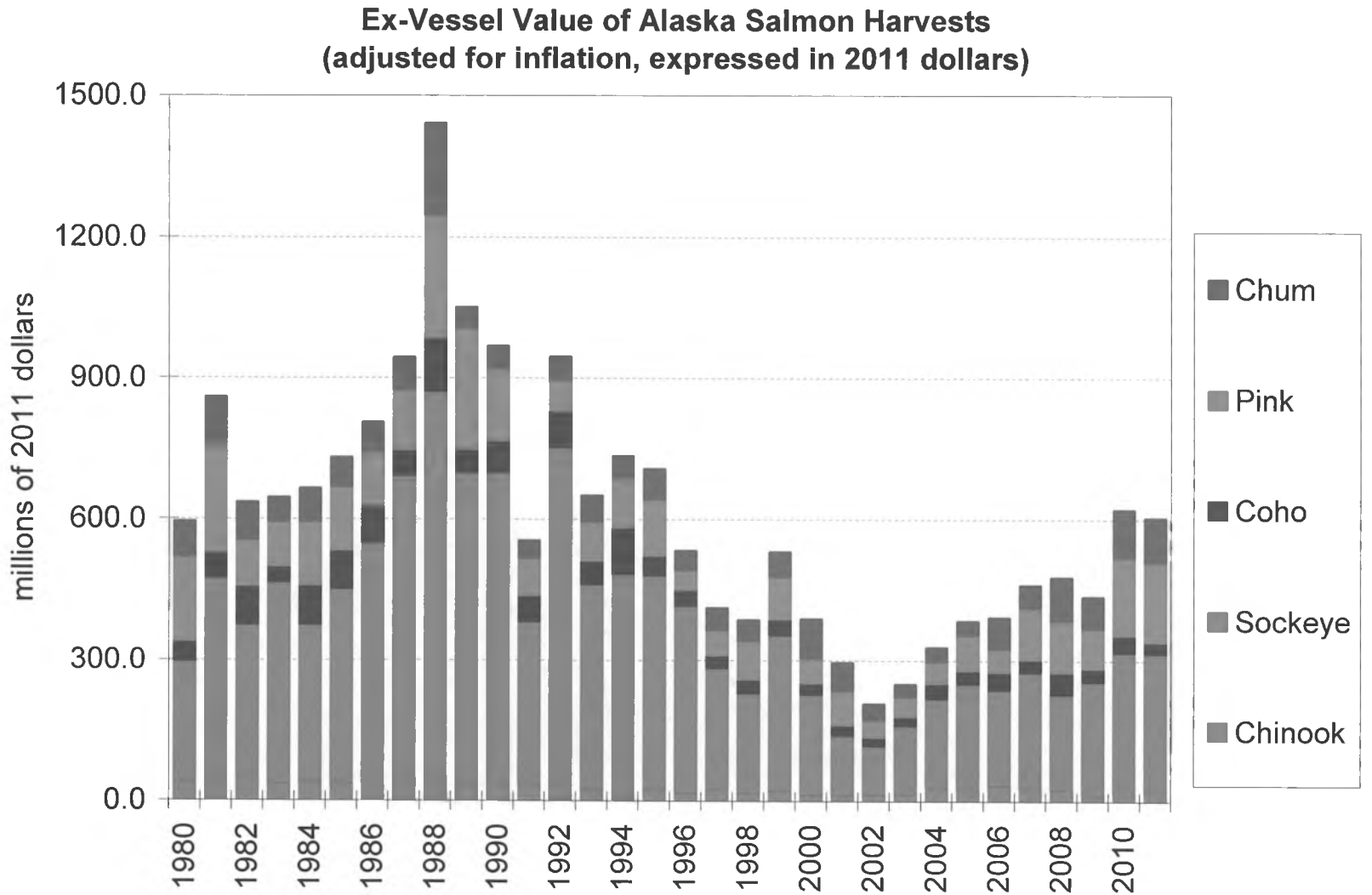
I = Jan-Apr; II = May-Aug; III = Sep-Dec; Source: Alaska Department of Revenue, Alaska Salmon Price Report

TRENDS IN EX-VESSEL VALUE OF ALASKA SALMON HARVESTS (FISHERMEN'S GROSS EARNINGS)

The combined result of strong harvests and a dramatic recovery in prices has been a dramatic recovery in the ex-vessel value of Alaska salmon harvests, from $164 million in 2002 to $603 million in 2010.



After adjusting for inflation the recovery in ex-vessel value doesn't appear quite as dramatic—although it is still dramatic and important. Although ex-vessel value has rebounded strongly, it is still well below the inflation-adjusted levels of much of the 1980s.

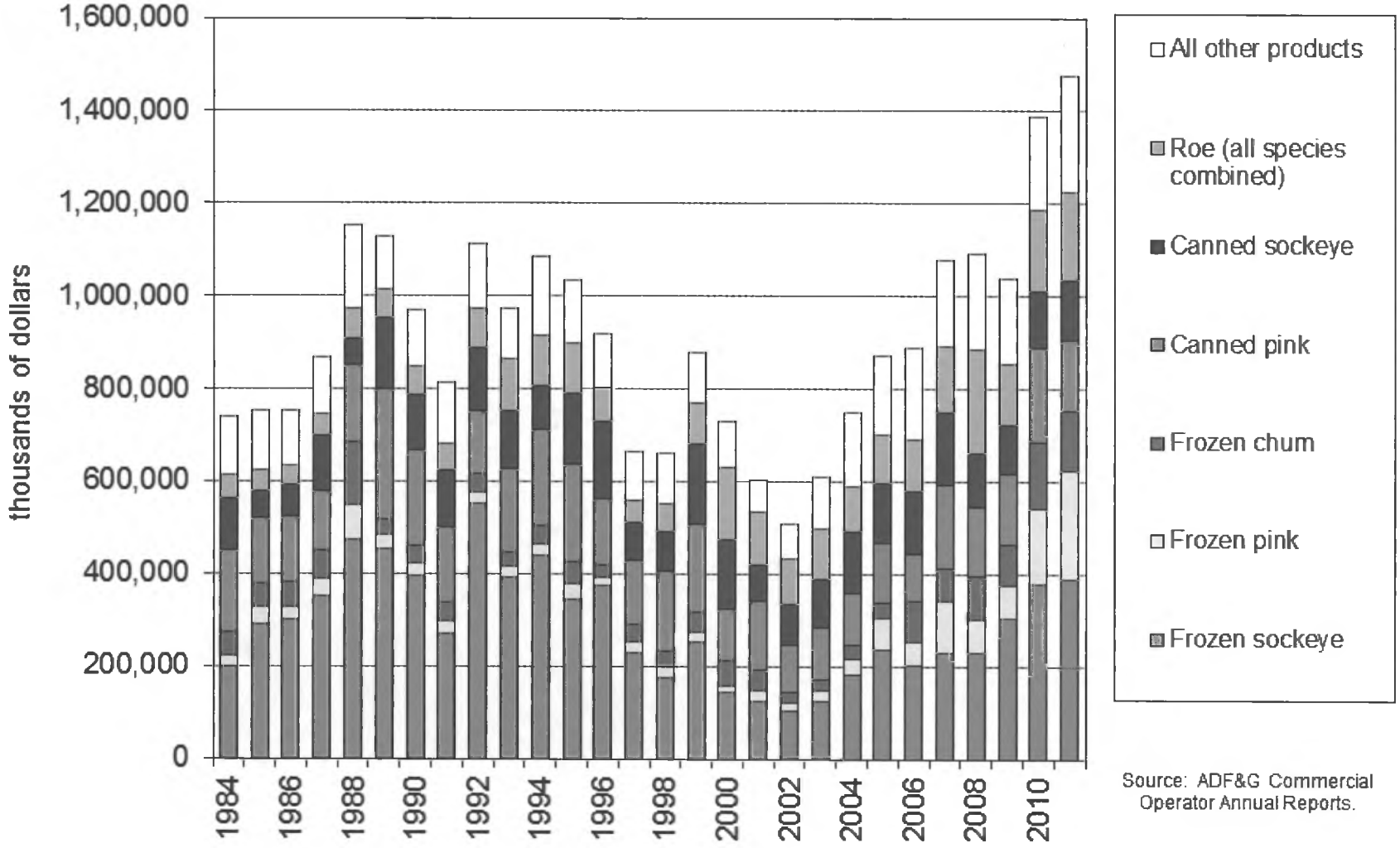


TRENDS IN TOTAL FIRST WHOLESALE VALUE OF ALASKA SAMON PRODUCTION (TOTAL PAYMENTS TO PROCESSORS)

Note: These graphs are based on Commercial Operator Annual Report (COAR) data which are only available through 2011.

There has been a dramatic increase in the total wholesale value of Alaska production since the early 2000s, from $466 million in 2002 to $1.5 billion in 2011. The increase in wholesale value was driven primarily by higher wholesale prices, as well as increased harvests and production of sockeye salmon. Note that salmon roe is an important component of total wholesale value.

First Wholesale Value of Alaska Salmon Production, by Product

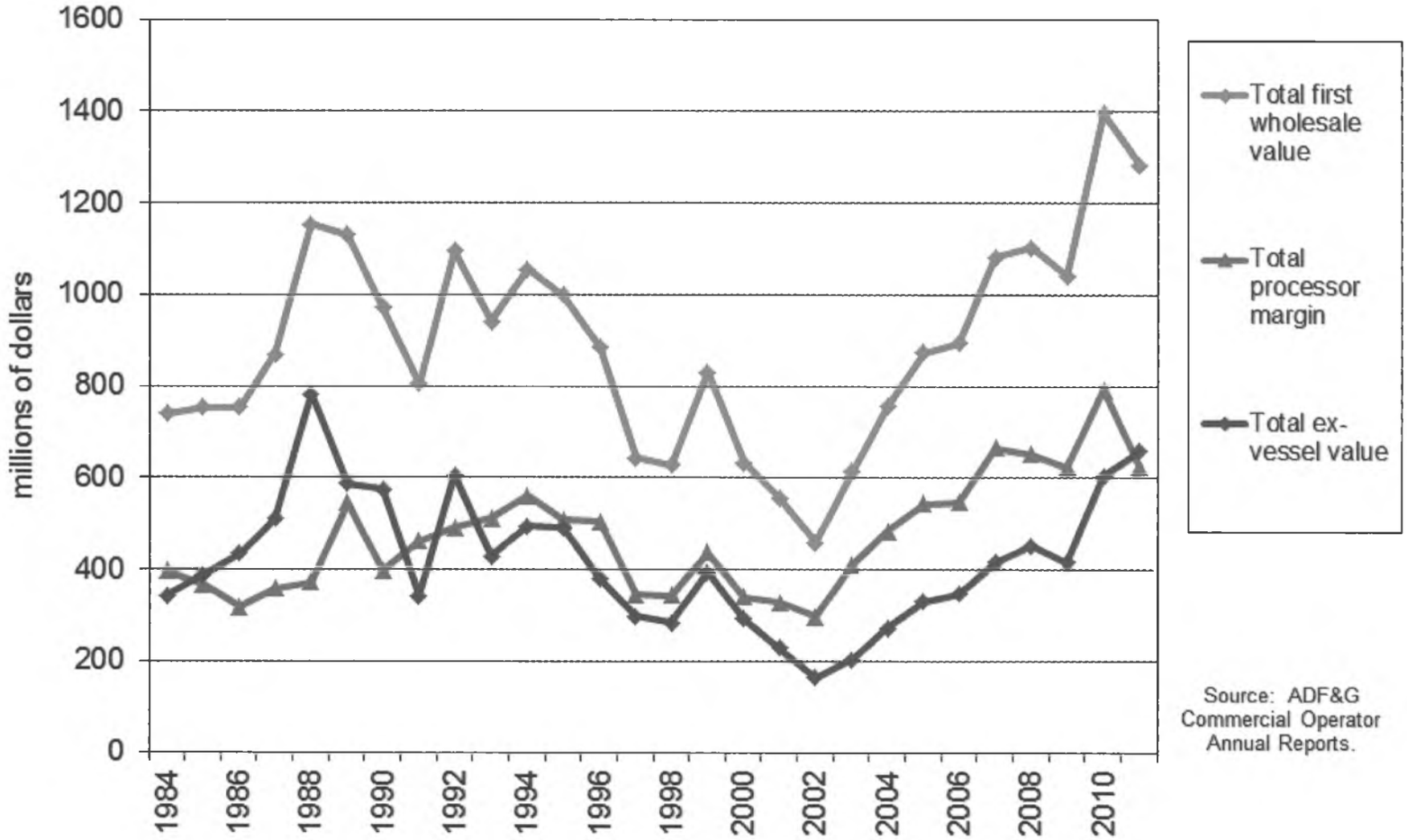


Source: ADF&G Commercial Operator Annual Reports.

Both fishermen and processors have shared in the increase in salmon wholesale prices and value since the early 2000s.

"Processor margin" is my term for the wholesale value of processors' sales minus the ex-vessel value they pay fishermen. Since the early 2000s, both total processor margin and total ex-vessel value have risen by similar amounts.

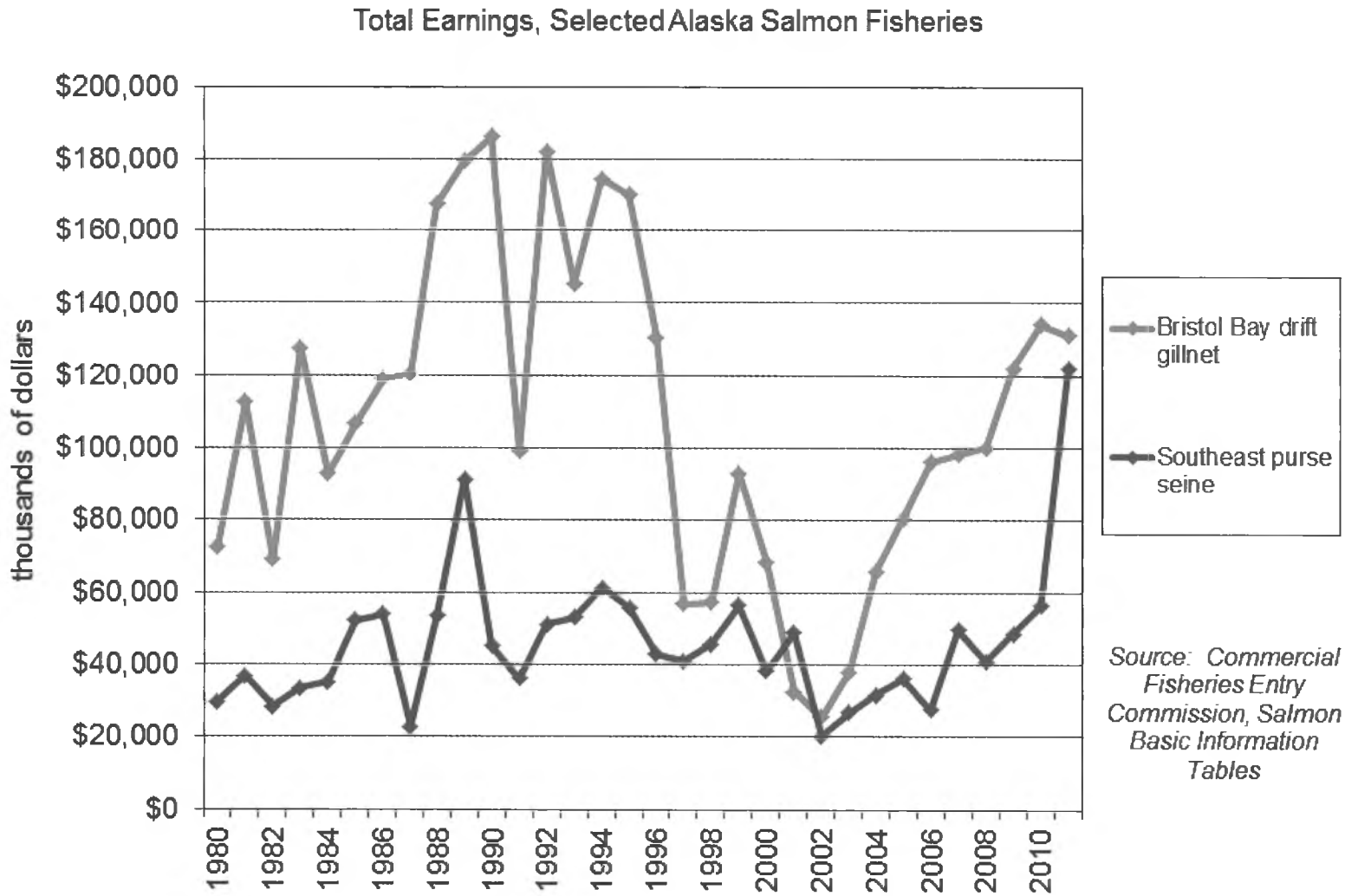
Alaska Salmon Wholesale Value, Ex-Vessel Value, and Processor Margin
(all species combined, not adjusted for inflation)



Source: ADF&G Commercial Operator Annual Reports.

TRENDS IN TOTAL EARNINGS AND PERMIT PRICES IN SELECTED FISHERIES

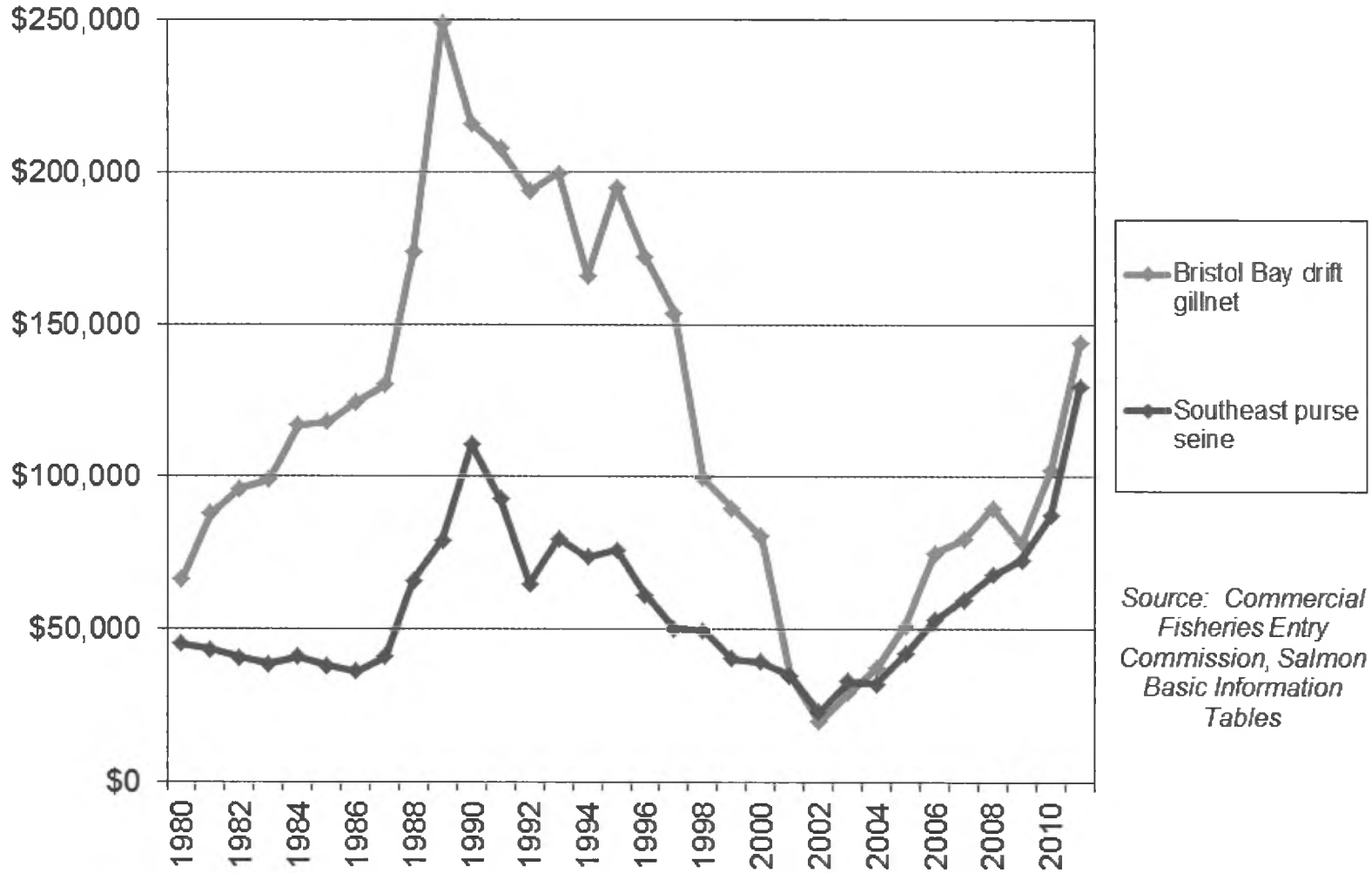
There are twenty-seven different limited entry salmon fisheries in Alaska. The trends in ex-vessel value (which is the same as total earnings) differs by fishery, reflecting the species mix caught in the fishery and local run conditions. However, in general almost all fisheries experienced a significant decline in value during the 1990s and a significant recovery since 2002. This graph shows trends in total earnings in two of Alaska's most valuable salmon fisheries: the Bristol Bay drift gillnet fishery and the Southeast purse seine fishery.



Source: Commercial Fisheries Entry Commission, Salmon Basic Information Tables

Permit prices in Alaska salmon fisheries tend to reflect trends in earnings. In many fisheries, permit prices fell drastically when total earnings fell in the 1990s, and have recovered dramatically since 2002 as total earnings have risen. The increase in permit prices since 2002 shows that Alaska salmon fishermen have become increasingly optimistic about the future prospects of Alaska salmon fisheries. The risk is that if earnings fall permit prices may fall.

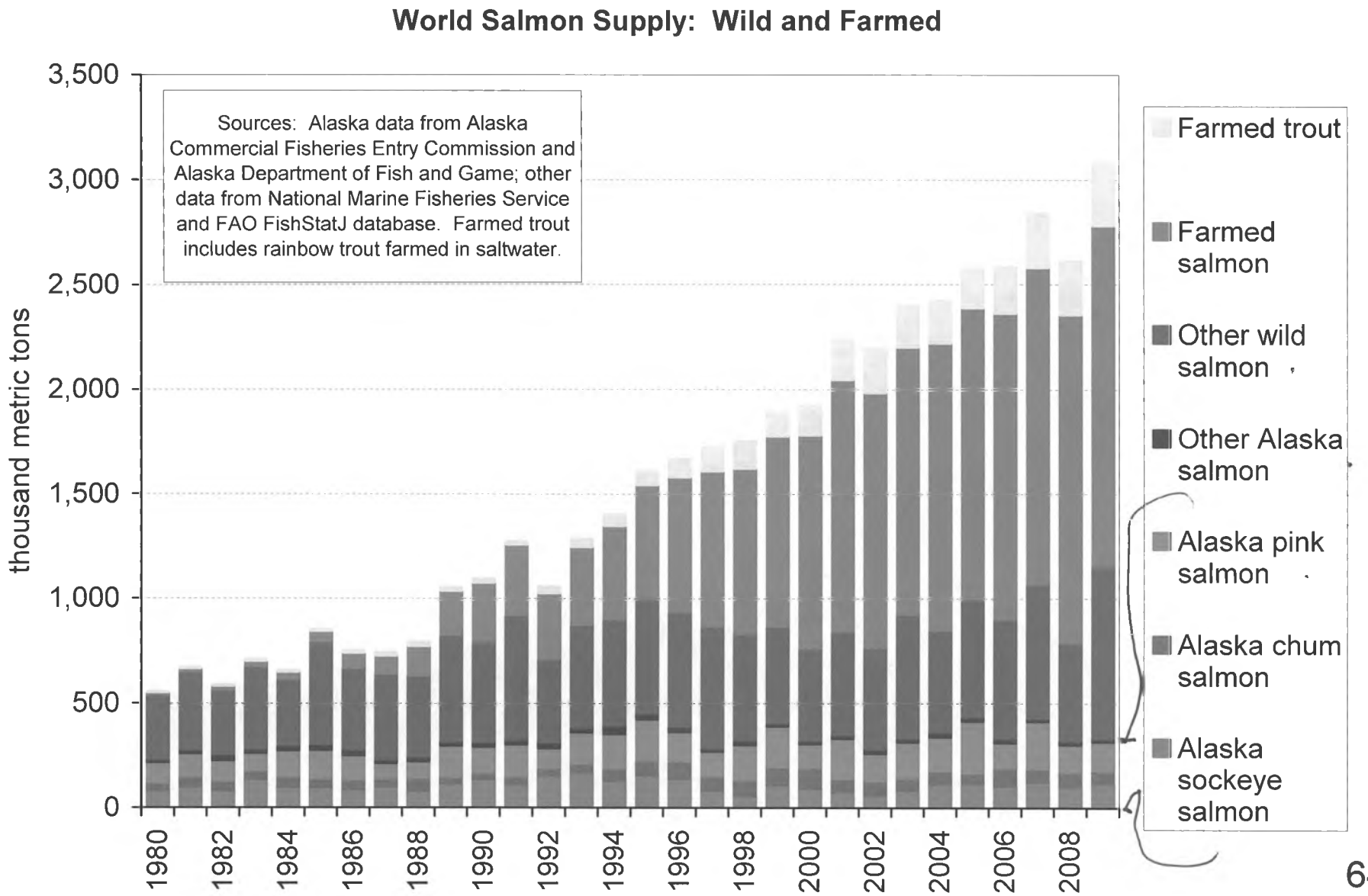
Average Permit Prices, Selected Alaska Salmon Fisheries



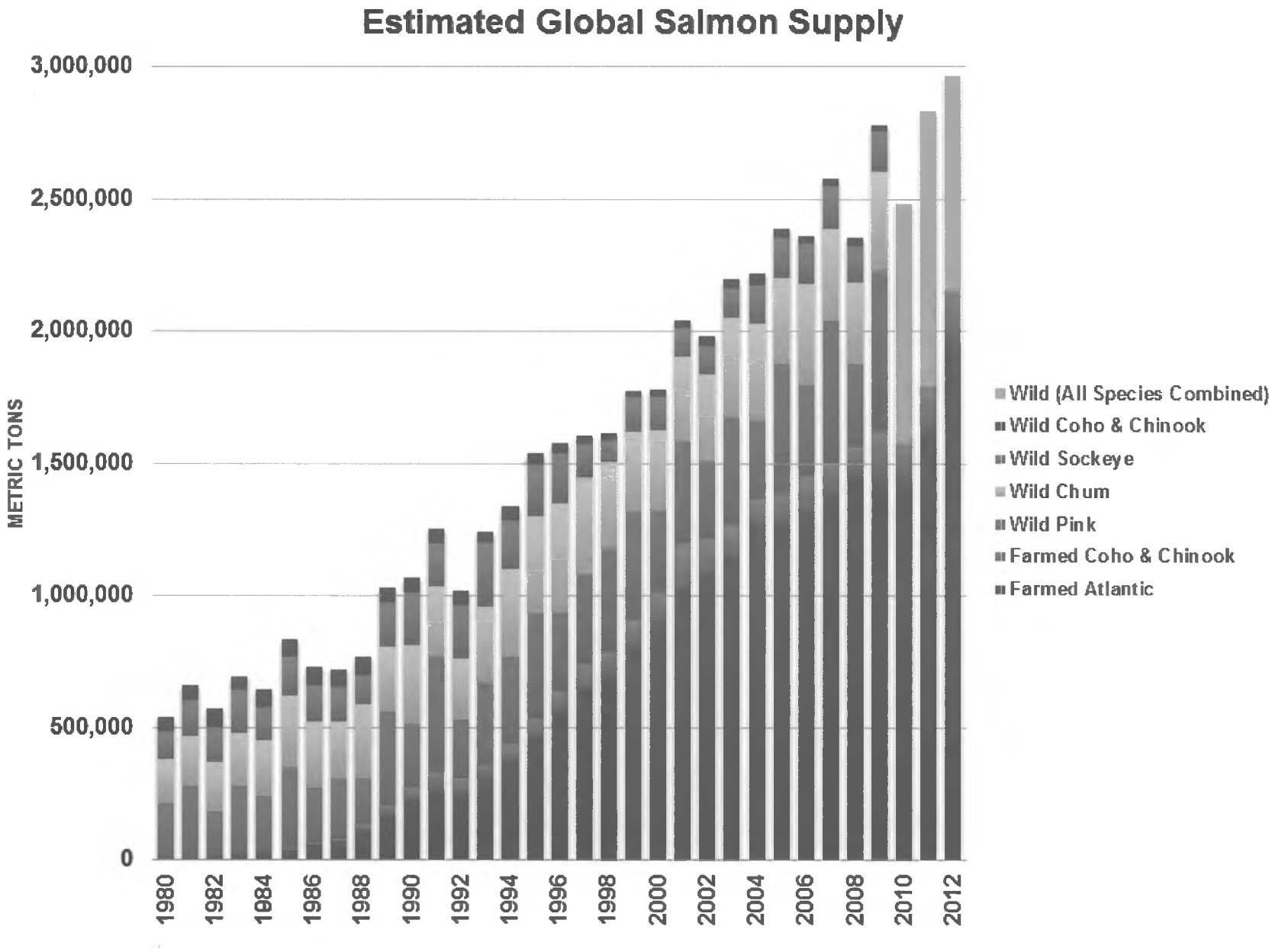
Source: Commercial Fisheries Entry Commission, Salmon Basic Information Tables

TRENDS IN WORLD SALMON SUPPLY

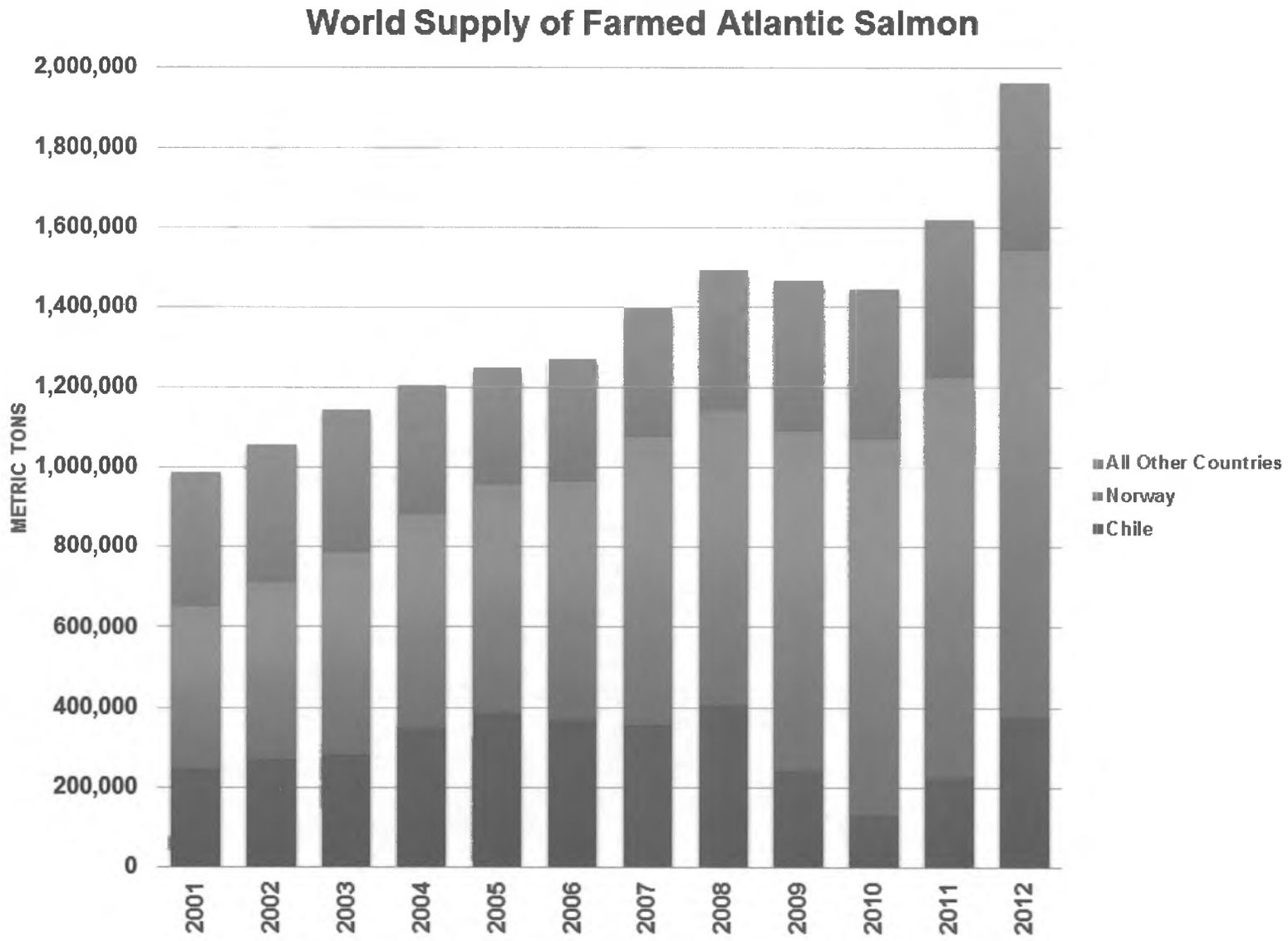
Alaska has become a relatively small part of total world salmon supply.



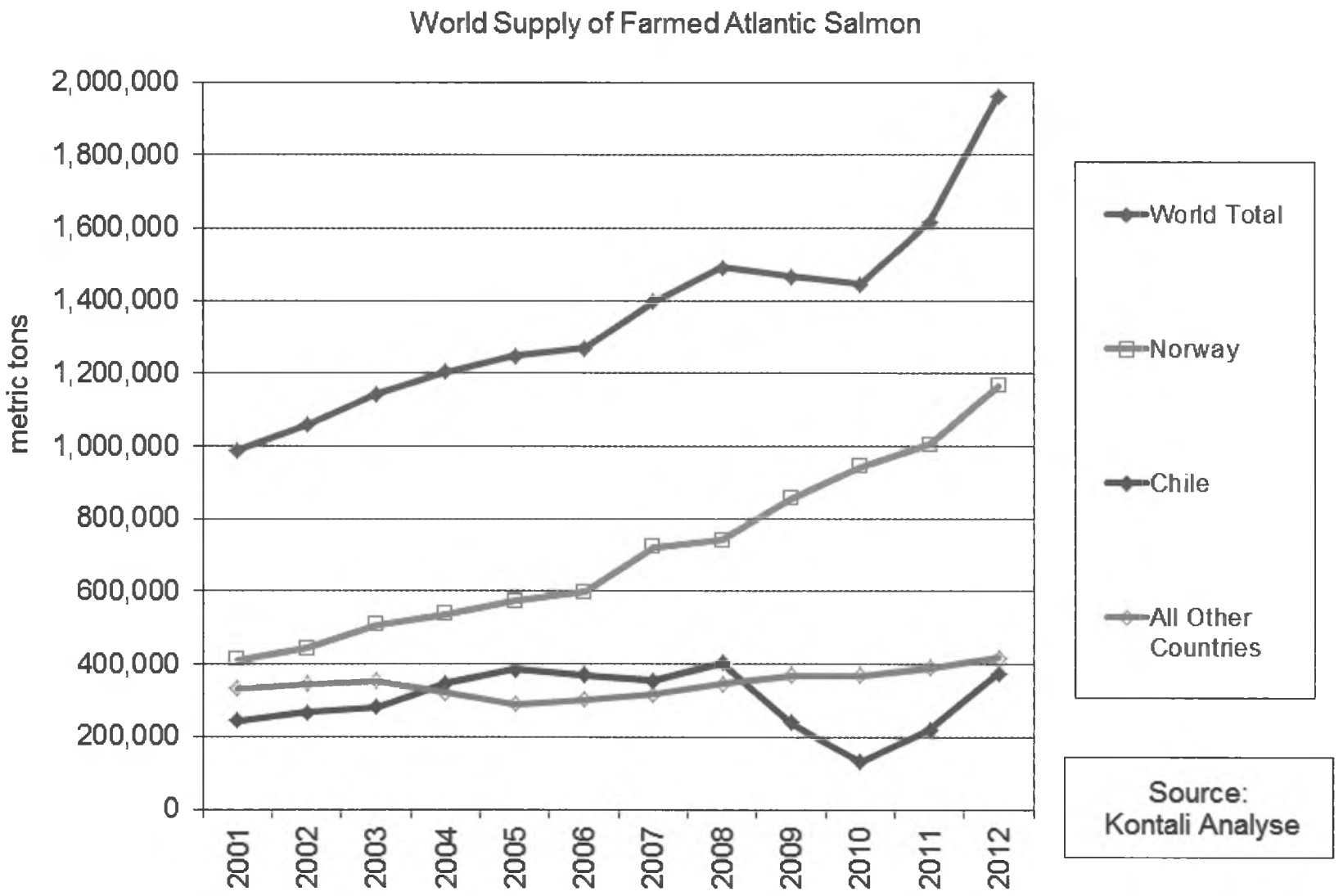
World Salmon Supply, Farmed and Wild, by Species



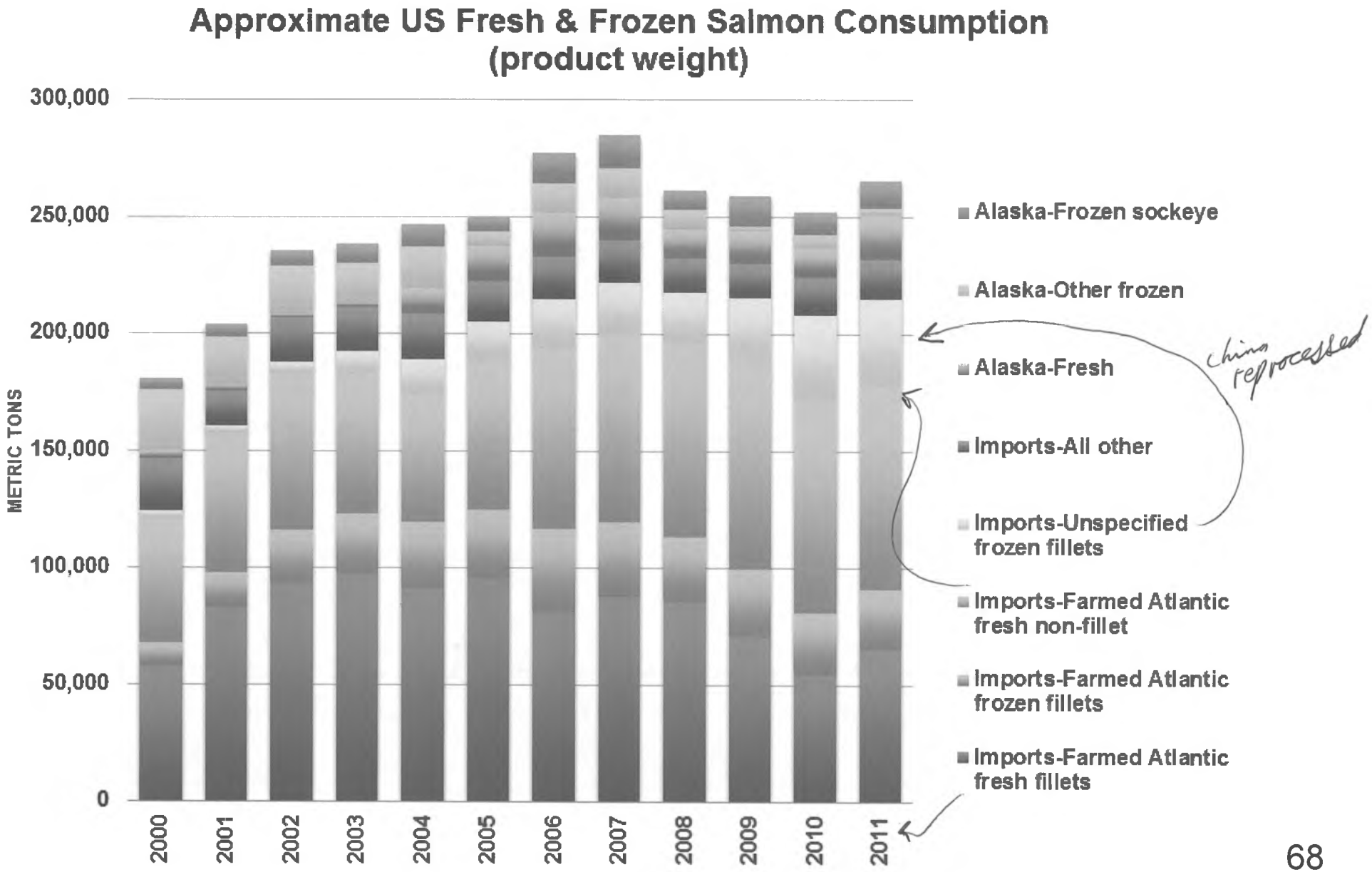
Norway and Chile dominate world farmed Atlantic salmon production. Chilean farmed production declined drastically from 2008 to 2010 due to an outbreak of Infectious Salmon Anemia (ISA). Chilean production rebounded sharply in 2011 and 2012.



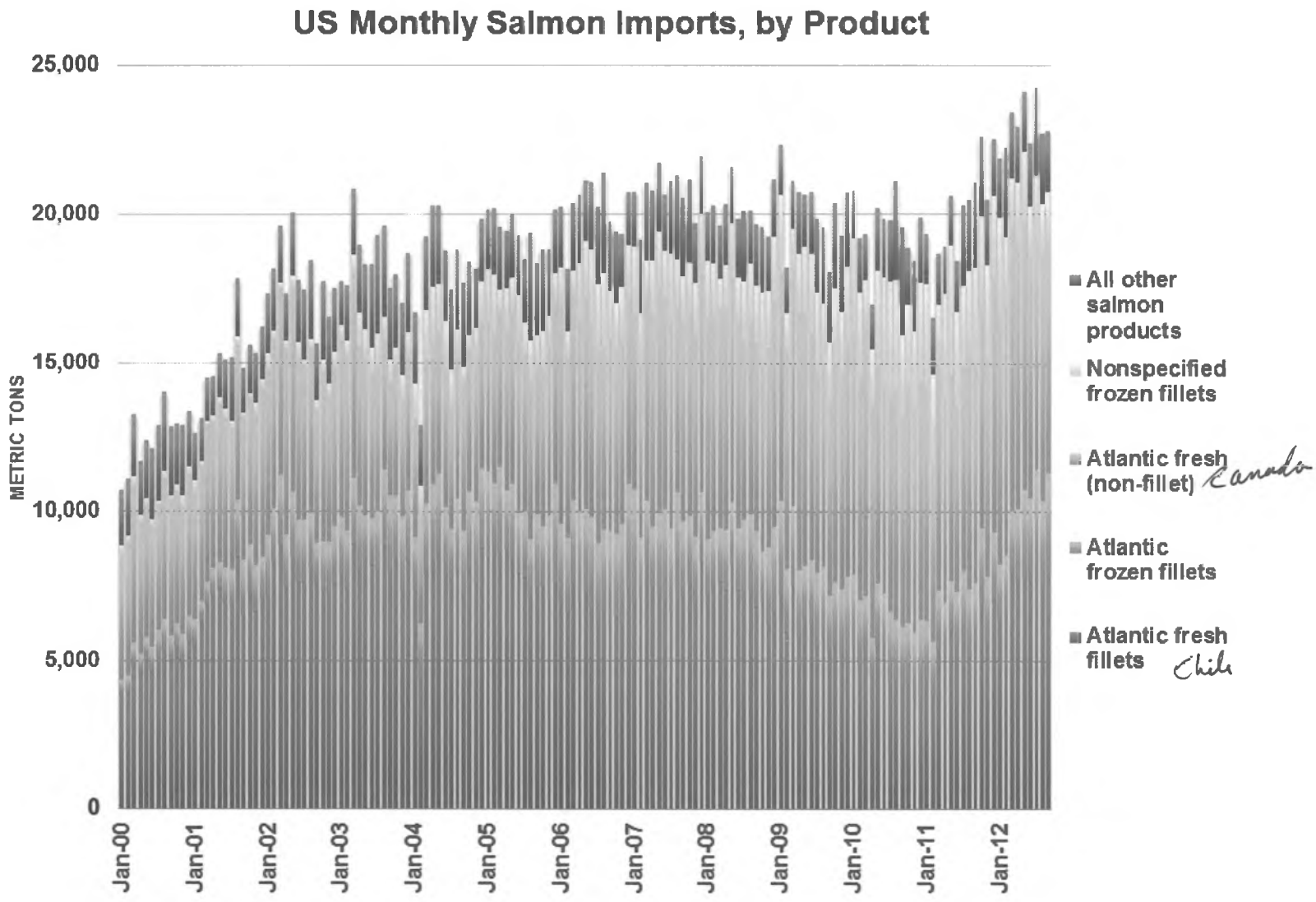
Norwegian salmon production has also been growing rapidly!



Alaska wild salmon accounts for less than one-third of US fresh and frozen salmon consumptions.



United States salmon imports have been rebounding as Chilean salmon production recovers





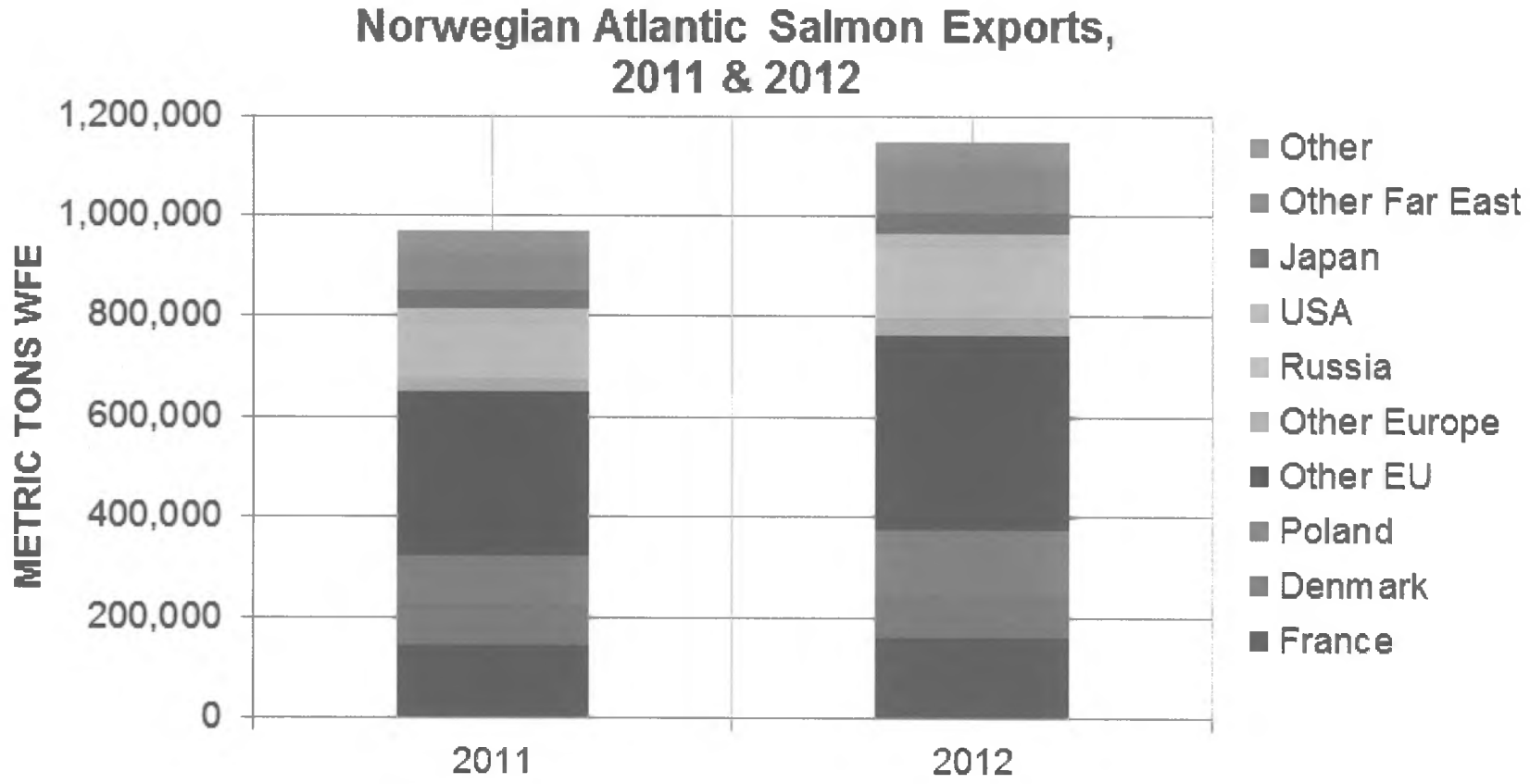
Thousand tons WFE

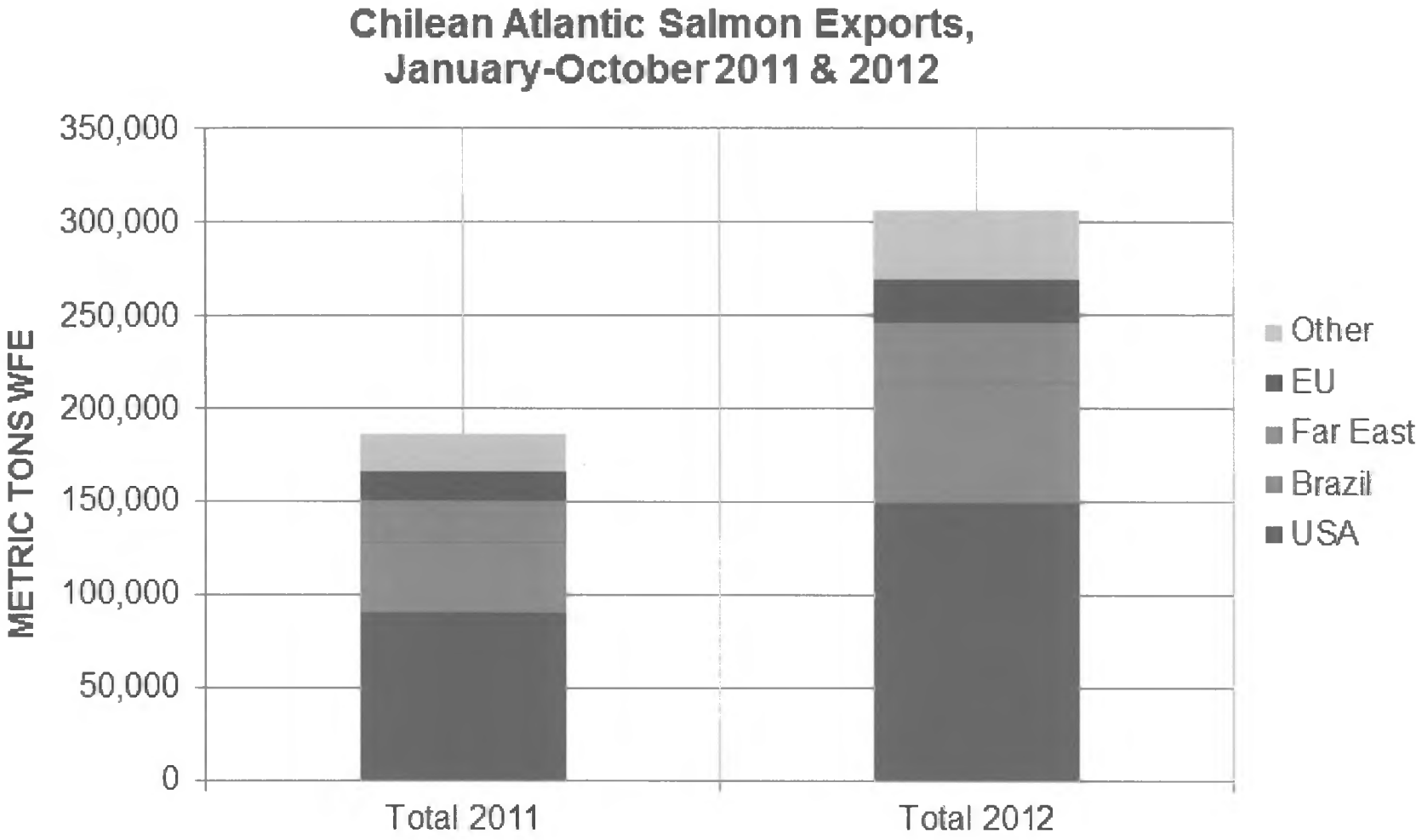
Russia up from 12 to 147

South America up from 8 to 45

As farmed Atlantic salmon production has grown, end markets have diversified dramatically

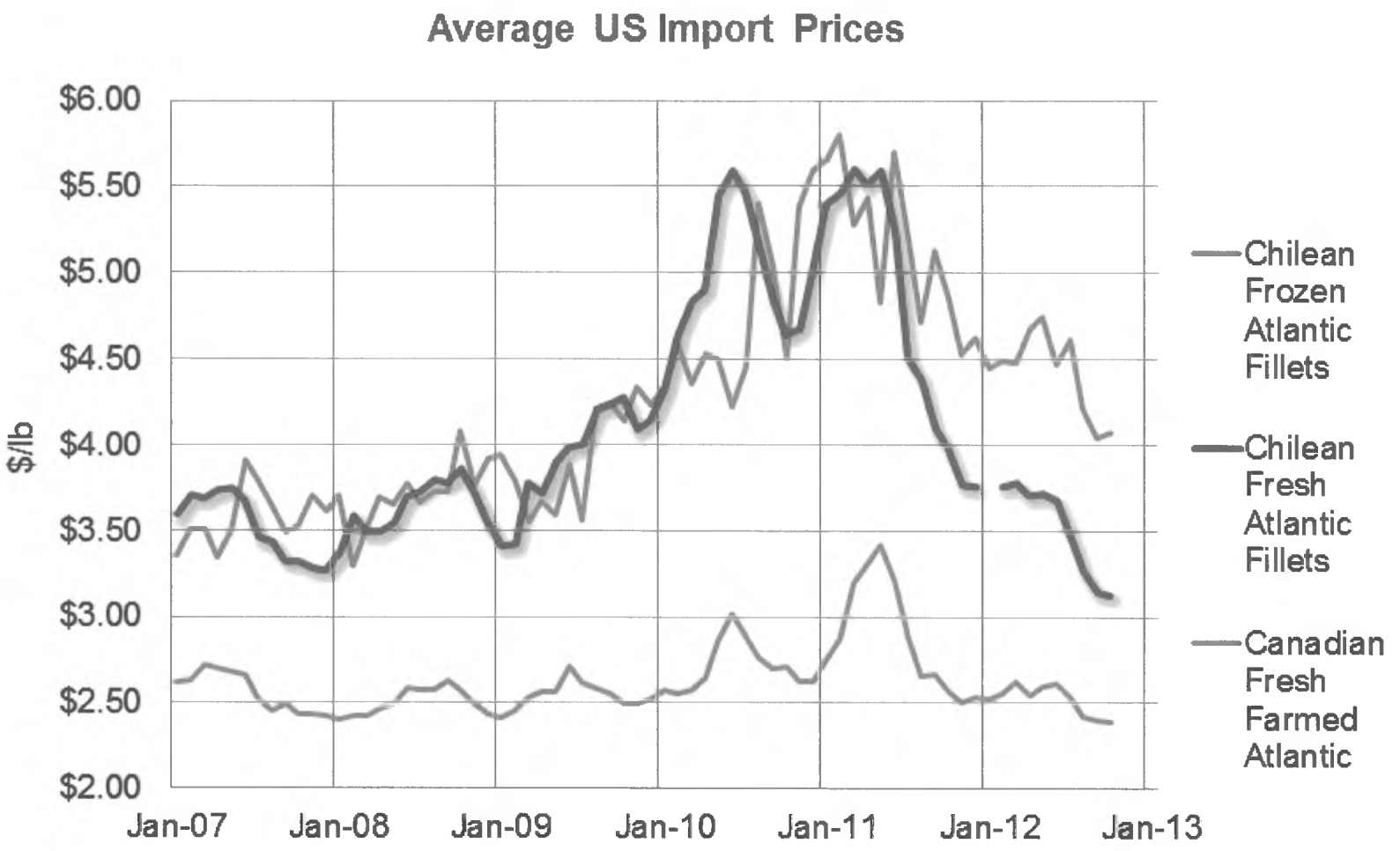



Norwegian Atlantic Salmon Exports, 2011 & 2012
METRIC TONS WFE
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
2011
2012
Other
Other Far East
Japan
USA
Russia
Other Europe
Other EU
Poland
Denmark
France

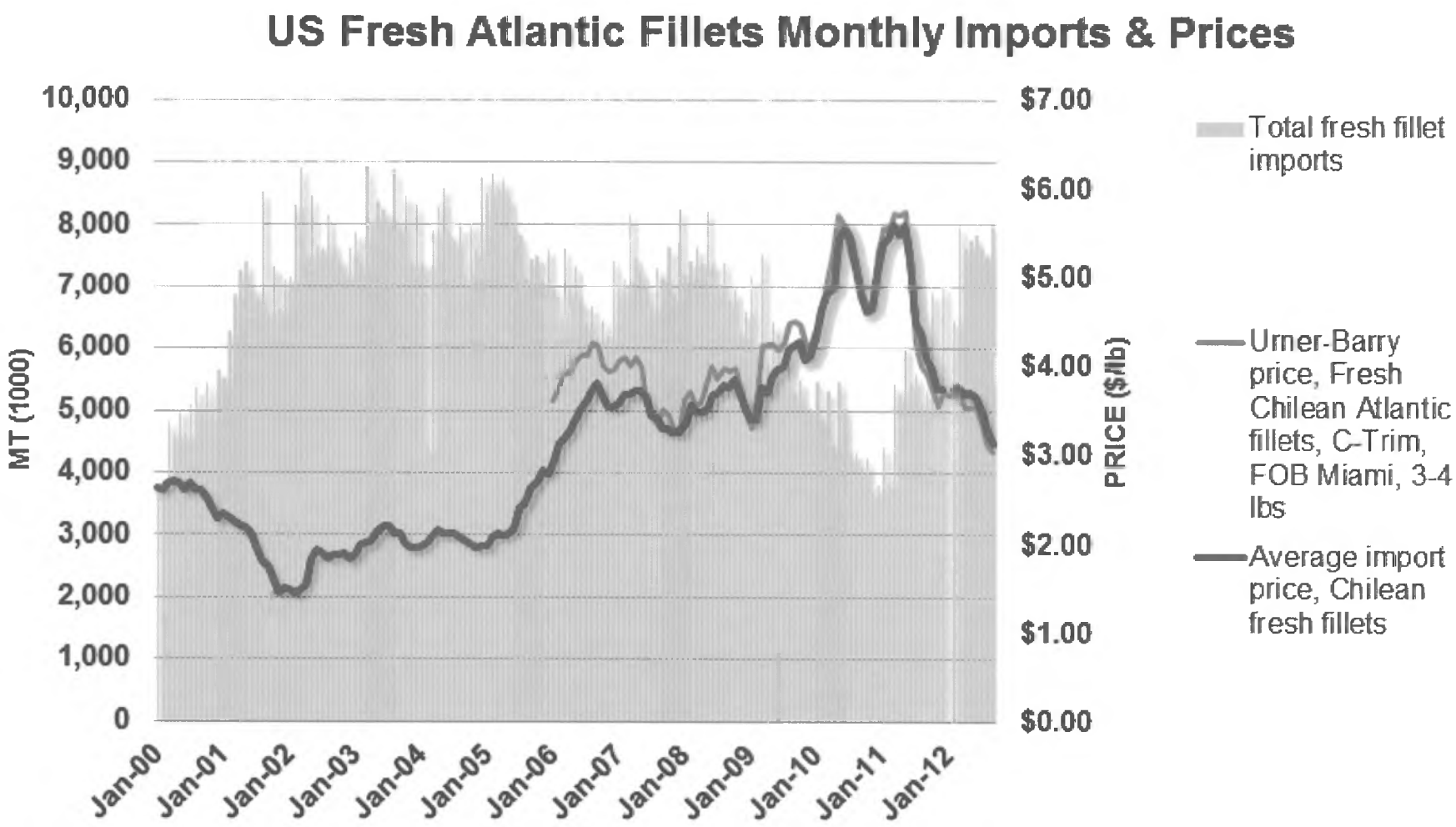

Chilean Atlantic Salmon Exports,
January-October 2011 & 2012
METRIC TONS WFE
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
Total 2011
Total 2012
Other
EU
Far East
Brazil
USA

TRENDS IN FARMED SALMON PRICES

World farmed Atlantic salmon prices spiked in 2010 and 2011 due to the downturn in supply—but then fell sharply as supply increased again. Over the past few months prices have been rising again.

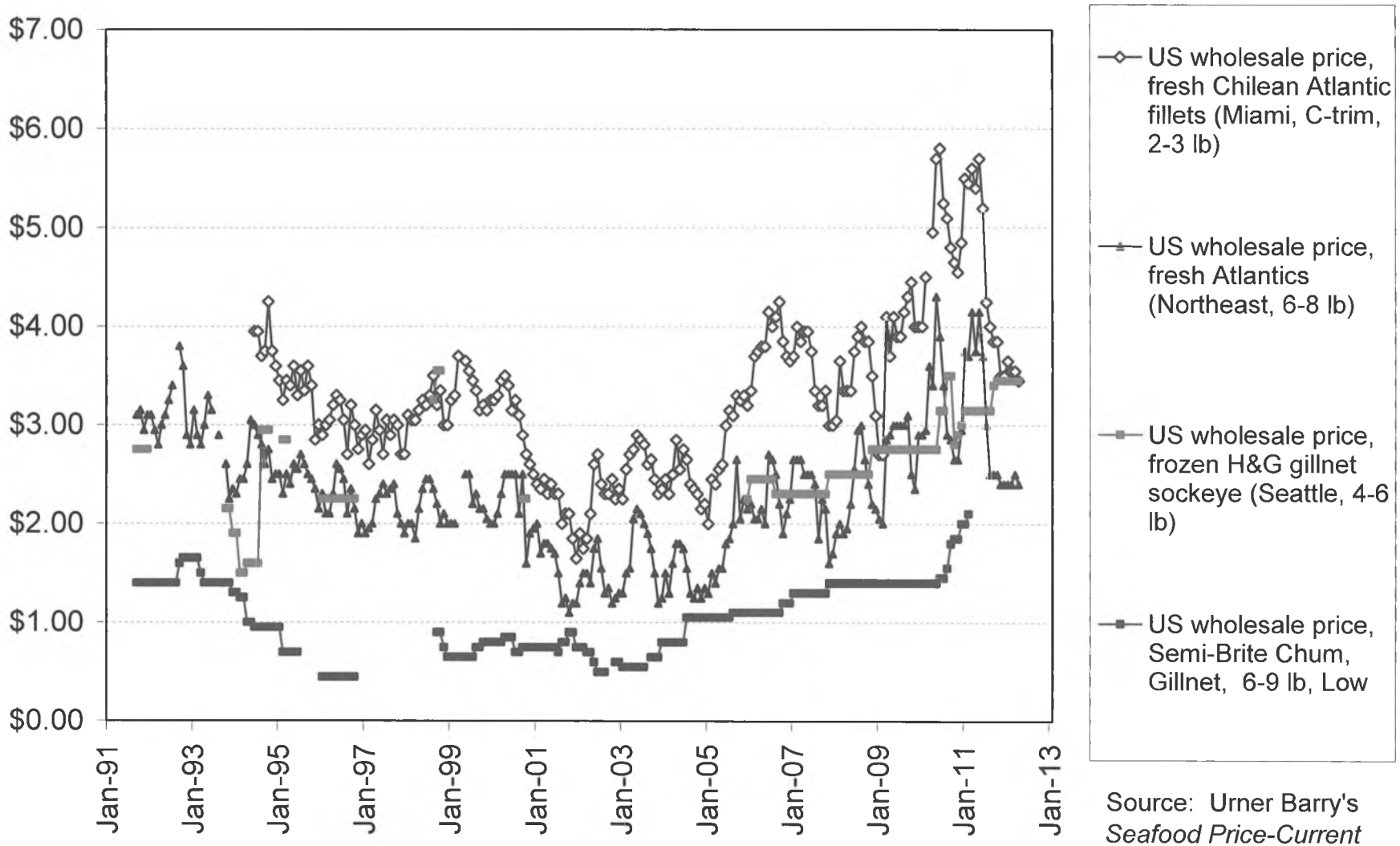


There has been a clear inverse relationship between US Atlantic salmon fillet imports and prices.



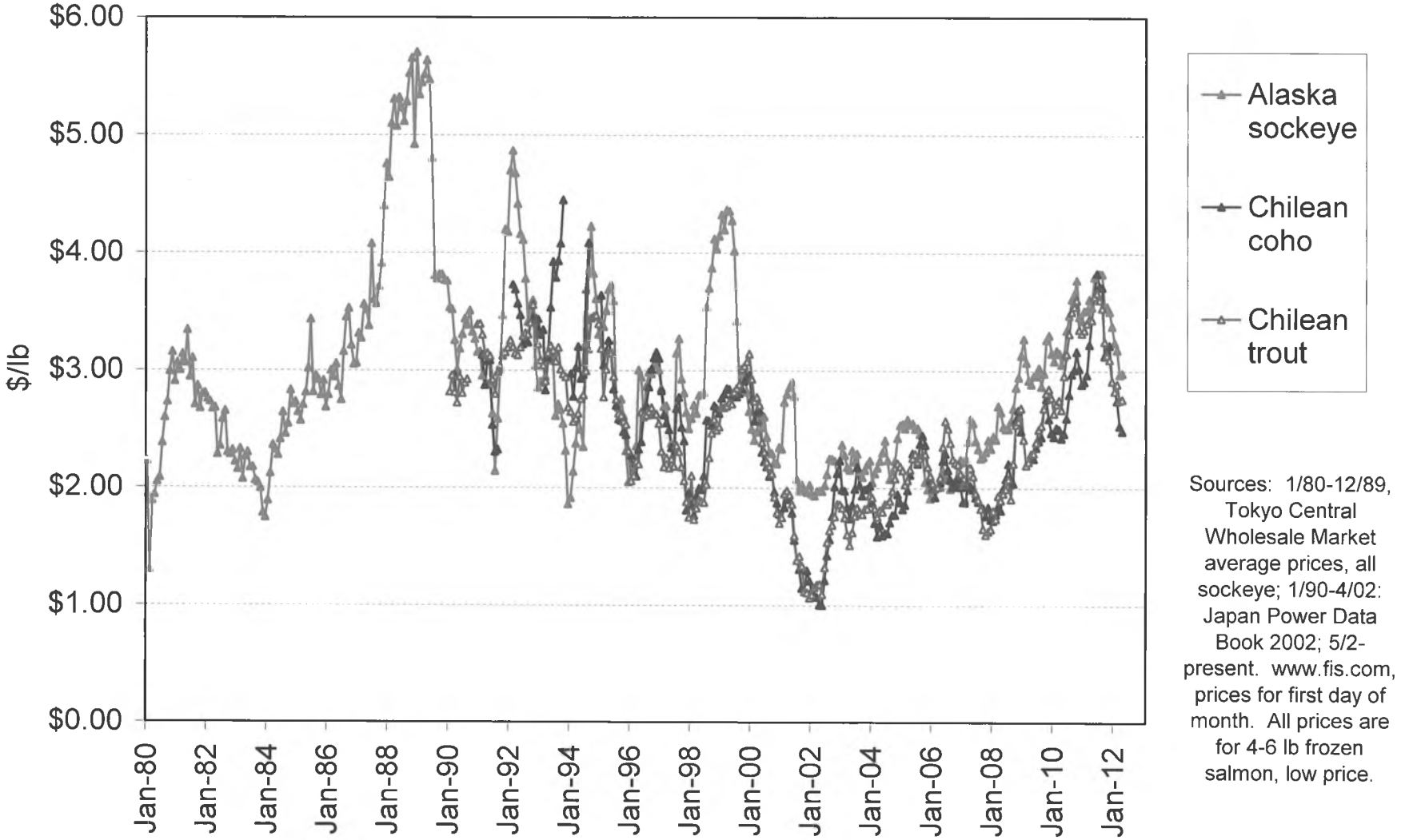
In a global market dominated by farmed salmon, wild salmon prices have tended to move in the same direction as farmed salmon prices—both down and up.

Average United States Wholesale Prices,
Selected Farmed and Wild Salmon Products



Source: Urner Barry's *Seafood Price-Current*

Japanese Wholesale Prices for Frozen Salmon ($/lb)



Sources: 1/80-12/89, Tokyo Central Wholesale Market average prices, all sockeye; 1/90-4/02: Japan Power Data Book 2002; 5/2-present. www.fis.com, prices for first day of month. All prices are for 4-6 lb frozen salmon, low price.

FACTORS AFFECTING ALASKA SALMON PRICES

What explains the dramatic recovery in Alaska salmon prices since 2002?

- Prices for Alaska salmon recovered dramatically over the past decade.
- What caused the recovery in prices?
- It is important to have a clear understanding of what has been driving prices in order to think clearly about how prices may change in the future.

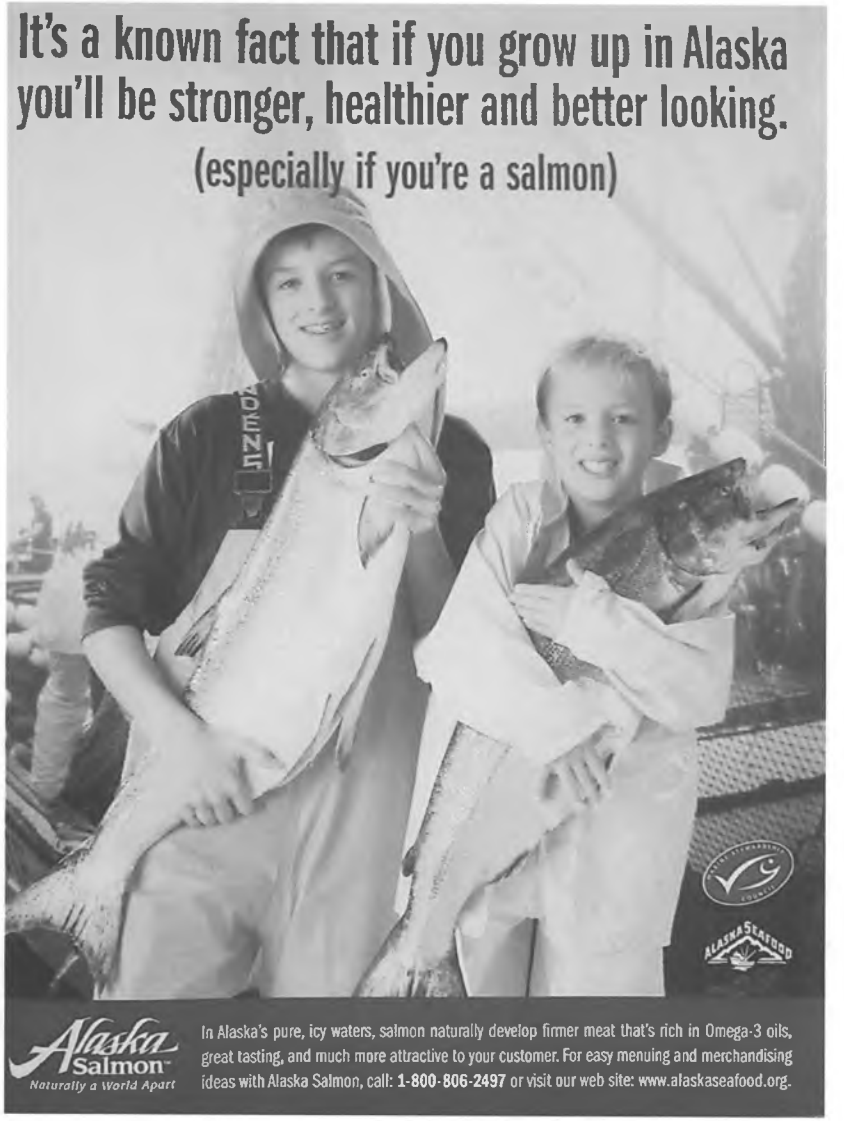
What explains the dramatic recovery in Alaska salmon prices since 2002?

- Partly things the Alaska salmon industry has done:
  - Sustained effective marketing
  - Effective niche marketing
  - Development of new markets
  - New product forms
  - Improved quality
- Partly other things happening in world salmon markets
  - Greatly expanded world salmon demand
  - Shortfall in farmed salmon supply due to Chilean disease problems

Things the Alaska salmon industry has done:
Sustained effective marketing . . .







Things the Alaska salmon industry has done:
Effective niche marketing . . .

The Salmon's Sky-High This Year

By WALTER NICHOLLS
Washington Post Staff Writer

Washingtonians who wait all year for wild Copper River king salmon from Alaska are paying for the privilege — assuming they can even find the prized fish in stores or restaurants.

Specialty fish markets are charging $5 more per pound than they did last year. At M. Slavin & Sons in Arlington, Copper River king salmon is selling for $28.95 per pound; at River Falls Seafood in Potomac, it's $29.99 per pound, up from $24.99 per pound last year. For the time being, supermarkets are carrying the less expensive sockeye variety.

At Oceanaire Seafood Room downtown, an entree of the rich, oily Copper River fish is $53.95, up from $32 five years ago. "We're just



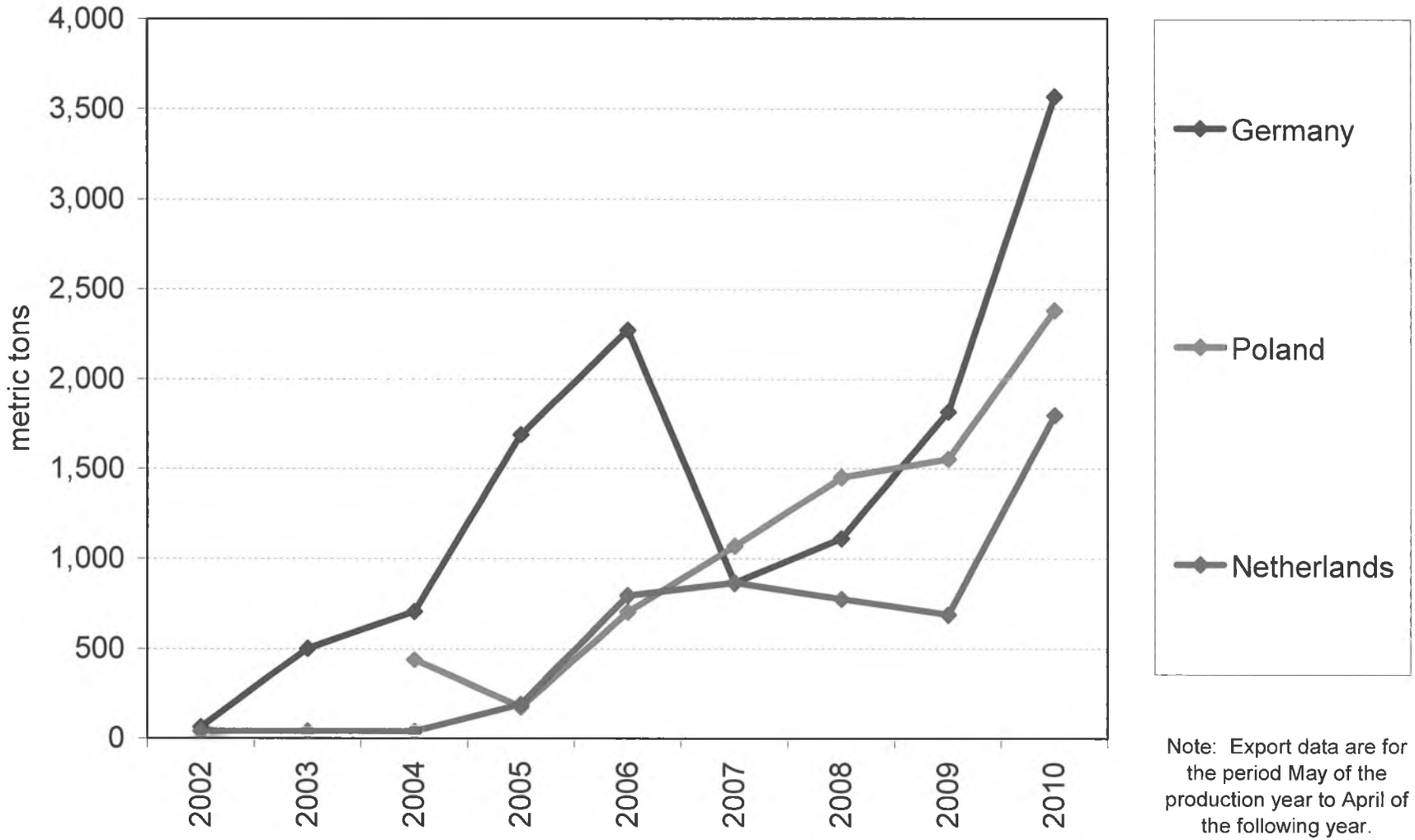
BY PAUL JOSEPH BROWN — SEATTLE POST-INTELLIGENCER VIA ASSOCIATED PRESS

The first shipment of Copper River salmon (a 45-pounder) gets red-carpet treatment from Alaska Airlines cargo manager Matt Yerbic, center, at the Seattle-Tacoma International Airport.

Washington Post, May 31, 2006

Things the Alaska salmon industry has done: Diversification of markets and development of new markets . . .

Alaska Frozen Sockeye Exports to Selected European Countries, 2002-2010



Source: NMFS trade data

Note: Export data are for the period May of the production year to April of the following year.

Things the Alaska salmon industry has done:
New product forms . . .



Wild sockeye fillet

Things the Alaska salmon industry has done:
Improved quality . . .

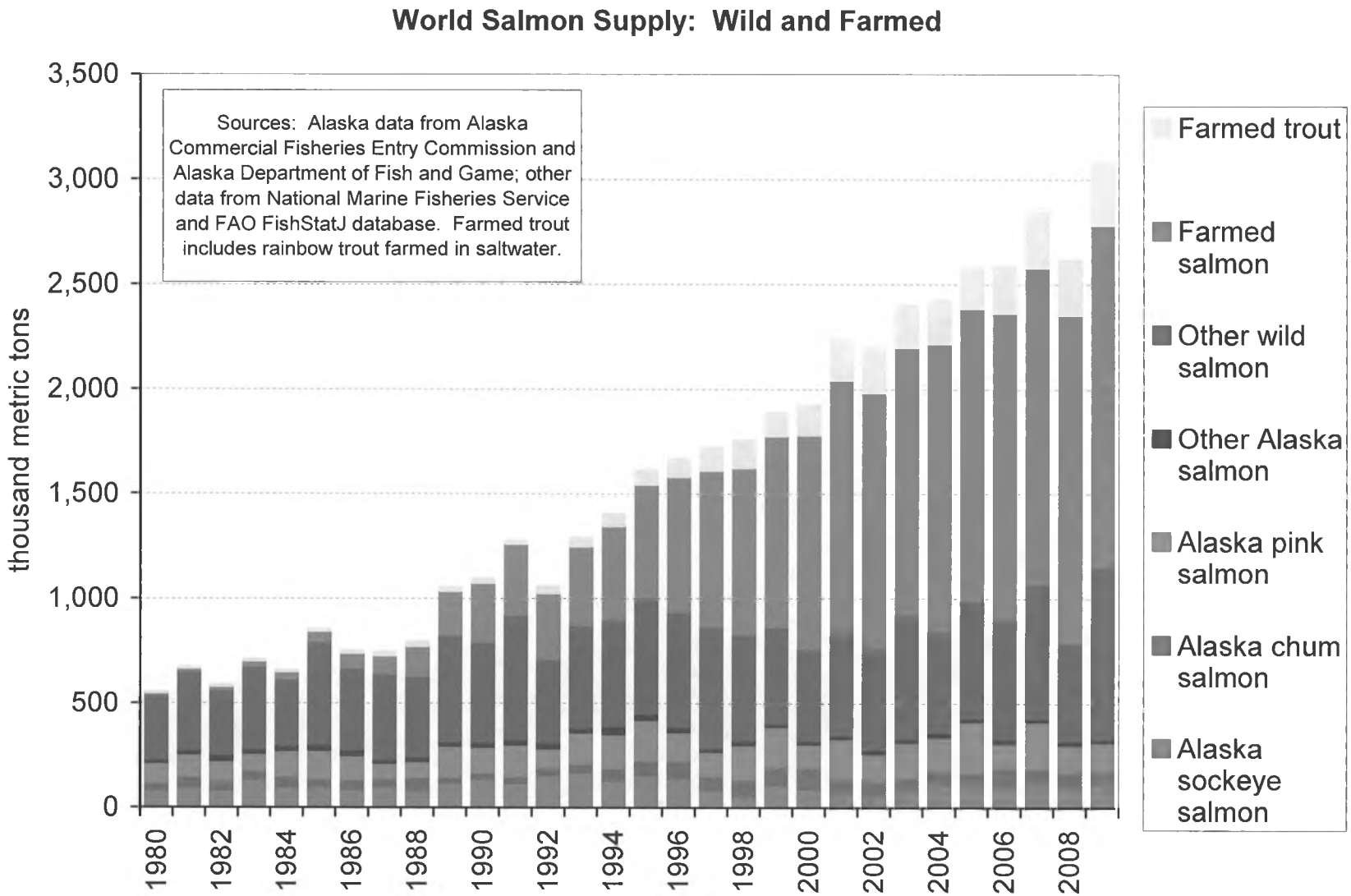


Drift Fleet Raw Product Purchases, 2008-2010

	2008		2009		2010	
Product	Round Pounds	Percent of Total	Round Pounds	Percent of Total	Round Pounds	Percent of Total
Chilled	32.5	24%	60.0	40%	63.4	47%
Unchilled	102.2	76%	91.7	60%	72.6	53%
Total	**134.7**	**100%**	**151.7**	**100%**	**136.0**	**100%**

Source: Northern Economics, Inc. 2010

Alaska has become a relatively small part of total world salmon supply.
Alaska salmon prices are significantly affected by global supply and demand conditions which influence prices for all salmon.



Wild salmon competes with farmed salmon in world markets

- Rapidly growing farmed salmon production glutted world markets in the 1990s and drove prices down for both farmed and wild salmon.
- When farmed salmon prices fell in the 1990s, wild salmon prices fell too, because buyers had cheap alternatives to wild salmon
- After 2002 prices rose for both farmed and wild salmon, because
  - World demand for salmon grew rapidly
  - Growth in world farmed salmon production slowed
  - Chile experienced major production declines due to disease.
- When farmed salmon prices rose between 2002 and 2011, wild salmon prices rose too, because buyers didn't have cheap alternatives to wild salmon

But Alaska wild salmon is different and better than farmed salmon!
Why should farmed salmon prices have any effect on wild salmon ??!!??

- Not everyone knows or thinks that wild salmon is different and better than farmed salmon
- What matters for wild salmon prices is not what the first and most loyal customers think and are willing to pay, but what the last and least loyal customers think and are willing to pay
- Even if a competitor's product is different and not as good as yours, that doesn't mean it doesn't affect your prices
  - If your competitor's product gets cheaper, you have to lower your prices or some of your customers will switch
  - If your competitor's product gets more expensive, you can raise your prices without losing customers
- The many things the Alaska salmon industry has done to strengthen markets since 2002 have helped to increase the premium that Alaska salmon commands over farmed salmon (or reduce the discount that Alaska salmon is priced at, depending on the species and product).
- But they have not made Alaska salmon prices fully independent of farmed salmon prices.
- Important exceptions are markets in which farmed salmon does not compete significantly with Alaska salmon:
  - Canned salmon markets
  - Roe markets

One of the most important reasons for the increase in both farmed and wild salmon prices over the past decade was that world demand for salmon was growing faster than world supply.

- Rapid demand growth due to:
  - Development of new geographic markets (Russia, Brazil, China, etc.)
  - Growing incomes in new markets
  - Development of new product forms
  - Sale of products from more types of retail outlets
  - Shifting consumer tastes
    - Growing familiarity with salmon
    - Health benefits

- Slower supply growth due to:
  - Wild supply limited by nature
  - Drastic drop in Chilean farmed Atlantic production due to disease
  - Higher feed costs

FUTURE OUTLOOK FOR ALASKA SALMON MARKETS

Short-term outlook for Alaska salmon markets

As always, the outlook for Alaska salmon markets in 2013 is uncertain and will be affected by many different factors which are difficult to predict:

- Alaska salmon harvests
  - Lower harvests would tend to push prices up
  - Higher harvest would tend to push prices down
  - Forecasts are for lower sockeye harvests in Bristol Bay . . .
  - Statewide pink harvests will probably be higher . . .
  - Pre-season forecasts are not necessarily accurate: every year brings surprises
- Other wild salmon harvests
  - Russian pink harvests
  - Japanese chum harvests
  - Both Russian and Japanese harvests affect roe markets
- Exchange rates for currencies of countries which are important markets for Alaska salmon
  - Japanese yen
  - Euro
- Farmed salmon market conditions:
  - Japanese farmed coho market
    - Affects Japanese market for Bristol Bay frozen sockeye
  - European and US farmed Atlantic markets
    - Affect markets for fillets, portions, & fresh salmon
    - Affect Chinese reprocessors' demand for Alaska salmom
- Factors affecting Alaska processor costs
  - Harvest volumes
  - Visa rules for foreign workers

Short-term outlook for Alaska salmon markets . . .

In general, as of February the market outlook for 2013 looks relatively favorable:

- Sockeye harvest volumes will probably be lower
- Canned salmon markets are strong and inventories are low
- Farmed salmon prices appear to be strengthening

But many factors can affect prices, and every year brings surprises!

- If you look, you can find reasons to be optimistic or concerned

Market conditions may vary significantly between species and regions

- Differences in catch volumes
- Differences in product mix and end-markets

Long-term outlook for Alaska salmon markets

There are many reasons for optimism about the future of Alaska wild salmon

- Global demand for salmon is likely to continue to grow:
  - Growing population
  - Growing incomes, particularly in rapidly developing countries such as China
  - Health benefits of salmon
  - New product forms appealing to a broader range of consumers
- Wild salmon are in limited supply
  - Potential for niche market differentiation
- Potential limits to future growth of farmed salmon production
  - Continuing potential for disease problems
  - Limits to fish oil and fish meal feed sources

Alaska wild salmon also faces potential future challenges

- Resource uncertainty
  - Regime shifts and climate change
- Potential for farmed salmon supply growth to exceed demand growth, glutting markets and depressing prices, as has happened in the past
- Potential for competition from non-salmon fish species as world aquaculture production grows
- World economic uncertainty
- Political uncertainty:
  - Sport-commercial allocations, hatcheries, Endangered Species Act, etc.

The Alaska salmon industry has seen dramatic changes in every decade since statehood.

The future is likely to bring continued significant change!

ECONOMICS OF FISH COURSE

ACKNOWLEDGEMENT

Economics 211: The Economics of Fish

- A University of Alaska Anchorage online distance education course
- Taught by Gunnar Knapp
- Taught entirely online
- Self-paced: Enroll any time, begin any time, work at your own pace
- Intended for:
  - students majoring in fisheries programs
  - people working in jobs related to fish and the seafood industry
  - Anyone interested in fish and the seafood industry
- What it's about:
  - A broad overview of the global, American and Alaska seafood industries.
  - Key insights of economics about wild fisheries, aquaculture, fish processing, the seafood distribution chain, fish prices, fish marketing, economic impacts of the seafood industry, and important current fisheries and aquaculture policy issues
- For more information, contact Gunnar Knapp at Gunnar.Knapp@uaa.alaska.edu

Thank you to Icicle Seafoods, Inc.

- For $1 million in donations to the University of Alaska over the past five years
- Which have supported programs at many UA campuses in many Alaska communities
- Including generous donations to the UAA Institute of Social and Economic Research (ISER), which have made it possible for me to continue to track seafood market trends

My research activities and conclusions are totally independent of Icicle.

DATA SOURCES

Summary of Data Sources . . .

Information	Data sources (described in the following slides)
Alaska salmon harvests	Alaska Department of Fish and Game Harvest Data
Alaska salmon production	ADF&G Commercial Operators Annual Reports (COAR) Data
Alaska salmon end-markets	ADF&G Commercial Operators Annual Reports (COAR) Data National Marine Fisheries Service (NMFS) Foreign Trade in Fisheries Products Data
Alaska salmon ex-vessel prices	Alaska Department of Fish and Game Harvest Data
Alaska salmon wholesale prices	ADF&G Commercial Operators Annual Reports (COAR) Data
Alaska salmon wholesale prices	Alaska Department of Revenue Salmon Price Reports Data
Alaska salmon ex-vessel value	Alaska Department of Fish and Game Harvest Data
Alaska salmon wholesale value	ADF&G Commercial Operators Annual Reports (COAR) Data
Earnings and permit prices, selected salmon fisheries	CFEC Basic Information Tables

(List continues on next page)

Summary of Data Sources (continued)

Information	Data sources (described in the following slides)
Japanese wholesale prices	www.fis.com data, converted to $/lb using Federal Reserve Bank of St. Louis Exchange Rate Data
United States average import prices	National Marine Fisheries Service (NMFS) Foreign Trade in Fisheries Products Data
Norwegian wholesale prices	Statistics Norway Weekly Export Prices, converted to $/lb using Federal Reserve Bank of St. Louis Exchange Rate Data
United States wholesale prices	Urner-Barry's Seafood Price Current
Exchange rates	Federal Reserve Bank of St. Louis Exchange Rate Data

Alaska Department of Fish and Game (ADF&G)
Salmon Harvest and Ex-Vessel Price Data

- Annual average Alaska salmon harvest and ex-vessel price data are posted at this Alaska Department of Fish and Game (ADF&G) Commercial Fisheries Division website: http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmoncatch
- The data shown in this presentation for the years 1994-2012 are posted by individual years at the link named "Alaska Commercial Salmon Harvests & Exvessel Values, 1994-2012"
- Data for earlier years were provided by the Commercial Fisheries Entry Commission.
- Note that the price data posted by ADF&G (which were used to estimate value) are based on Commercial Operator Annual Reports (see the next slide in this appendix) for all years through 2011. Since these reports are not yet available for 2012, the price data for 2012 are preliminary ADF&G estimates. It is likely that they understate actual 2012 ex-vessel prices because they do not include post-season adjustments.

Alaska Department of Fish and Game (ADF&G)
Commercial Annual Operator Reports (COAR) Data

- The Commercial Operator Annual Reports (data) are compiled by ADF&G based on "Commercial Operator Annual Reports" which Alaska fish processors are required to submit to the Alaska Department of Fish and Game in April of every year. In these reports they are required to report the total volume of fish purchased, by species and area; the total amount paid for fish purchased, by species and area; the total volume (weight) of production, by product, species and area; and the total first wholesale value of production. Information about the COAR reporting forms is at http://www.adfg.alaska.gov/index.cfm?adfg=fishlicense.coar
- The COAR data are not posted on the internet or published regularly by ADF&G, but are available by special request from ADF&G.
- The data used to prepare these graphs were provided to me by ADF&G over a number of years.
- For the purposes of these graphs, I have grouped all production into five product categories: "canned," "frozen," "fresh," "roe" and "other."

Some important things to keep in mind in looking at the COAR data graphs:

- The data are statewide data. They group together production from all areas of the state, and thus conceal sometimes significant differences between areas in the mix of products produced from different species as well as the wholesale value of production. Thus year-to-year differences in the statewide mix of products produced or average prices may reflect in part changes in the relative share of production from different areas.
- The data are for aggregate product categories. Thus year to year changes for a product category may reflect changes in the relative mix of products within that category. For example, "canned salmon" includes both "talls" and "halves". Halves usually sell for a higher average price per pound than talls. If the share of halves in total canned production increases, the average price per pound for all canned salmon production will increase—even if the prices for both talls and halves remains the same.
- The data are not necessarily 100% accurate. Errors may have crept in when processors reported the data, when ADF&G entered the data in their database, or when I analyzed the data. It is most useful to focus on long-term significant trends illustrated by the data, rather than any specific figure for any particular year.
- The data do not include production during the most recent (2012) salmon season, as these data will not be reported until April of 2013.

Alaska Department of Revenue Salmon Price Reports
Wholesale Price Data

- Every four months, "large" Alaska salmon processors (those with sales exceeding 1 million pounds in the previous calendar year) are required to submit salmon price reports to the Alaska Department of Revenue. These reports are available at:

  www.tax.alaska.gov/programs/programs/other/fish/salmonreports
- The reports include average wholesale prices (total value / total volume) reported by all "large" Alaska processors for the following four-month periods:
  - January-April (I)
  - May-August (II)
  - September-December (III)
- The graphs in this presentation show average wholesale prices since 2001 for the six major product forms for Alaska salmon

National Marine Fisheries Service (NMFS)
Foreign Trade in Fisheries Products Data

- The National Marine Fisheries Service posts very detailed data online about U.S. exports and imports of fisheries products at: http://www.st.nmfs.noaa.gov/st1/trade/
- The data presented in this presentation were calculated from the "Monthly Trade Data by Product, Country/Association": http://www.st.nmfs.noaa.gov/st1/trade/monthly_data/TradeDataCountryMonth.html

Commercial Fisheries Entry Commission (CFEC)
Basic Information Tables

- The Commercial Fisheries Entry Commission (CFEC) posts "Basic Information Tables" for each Alaska salmon fishery on its website at: http://www.cfec.state.ak.us/bit/MNUSALM.htm
- These tables provide a useful summary of trends since 1975 in each salmon fishery for numbers of permits issued/renewed, numbers of permits fished, total pounds harvested, average pound harvested, gross earnings, average earnings, and average annual permit prices.
- The most recent data currently available are for 2011.

www.fis.com

- The seafood industry trade information website www.fis.com posts wholesale price information for many different species of fish at many different markets around the world. These data are proprietary: you need to subscribe to the website in order to access them.
- The Japanese wholesale prices shown in the graphs in this presentation are the Tokyo market wholesale prices reported for frozen Alaska sockeye salmon (Bristol Bay), frozen Chilean coho salmon, and frozen Chilean trout (all prices are for 4-6 lb frozen H&G) as of the first day of each month.
- To convert from prices in yen/kilo to prices in $/lb, use the following formula:

  Price in $/lb = [(Price in yen/kilo) / (exchange rate in yen/dollar)]
  / [2.2046 (kilo/lb)]

Statistics Norway Weekly Export Prices

- The Norwegian Statistical Agency, Statistics Norway, posts weekly average export prices for fresh whole Atlantic salmon at:
  http://www.ssb.no/en/laks/

- The posted wholesale prices are in NOK/kilo. They may be converted to $/lb using Federal Reserve Bank of St. Louis exchange rate for the Norwegian currency (NOK), using the following formula:

  Price in $/lb = [(Price in NOK/kilo) / (exchange rate in NOK/dollar)]
  / [2.2046 (kilo/lb)]

Urner Barry's Seafood Price Current



- Urner Barry's *Seafood Price Current* is an eight-page industry newsletter published twice each week which provides US wholesale price data for a wide variety of seafood products. These data are proprietary: you need to subscribe to the newsletter to get them. Information about how to subscribe to the newsletter or online market prices is at www.urnerbarry.com (telephone 732-240-5330).

Federal Reserve Bank of St. Louis Exchange Rate Data

- The Federal Reserve Bank of St. Louis posts detailed monthly and daily exchange rates between the United States dollar and other major currencies at http://research.stlouisfed.org/fred2/categories/15

02/14/13 Overview: Derelict Vessels on State Lands

<TARGET><BILL></BILL><SUBJECT>02-14-13 Overview Derelict Vessels on State Lands</SUBJECT><COMM>HFSH28</COMM></TARGET>

Derelict Vessels

On State Lands



Where do we find them

- State Submerged Lands
- State Tidelands
- State Shorelands (inland freshwater)
- On General State Lands
- In Critical Habitat Areas
- In Parks



Manifested in various forms

- Shipwrecks
- Abandoned vessels
- Derelict vessels
- Old floathomes
- Private vessels
- Work vessels
- Ships to dinghies



DNR Authorities

- Anchoring for less than 14 days is generally allowed – 11 AAC 96.020
- Longer than 14 days anchorage in one location requires an approval through some authorization from DMLW
- Lack of enforcement authority to fine an individual that doesn't follow the law no ability to fine
- No direct authority under the land law to sieze or take control of a derelict vessel DOT delegated
- DMLW permits activities to clean up shipwrecks and vessels

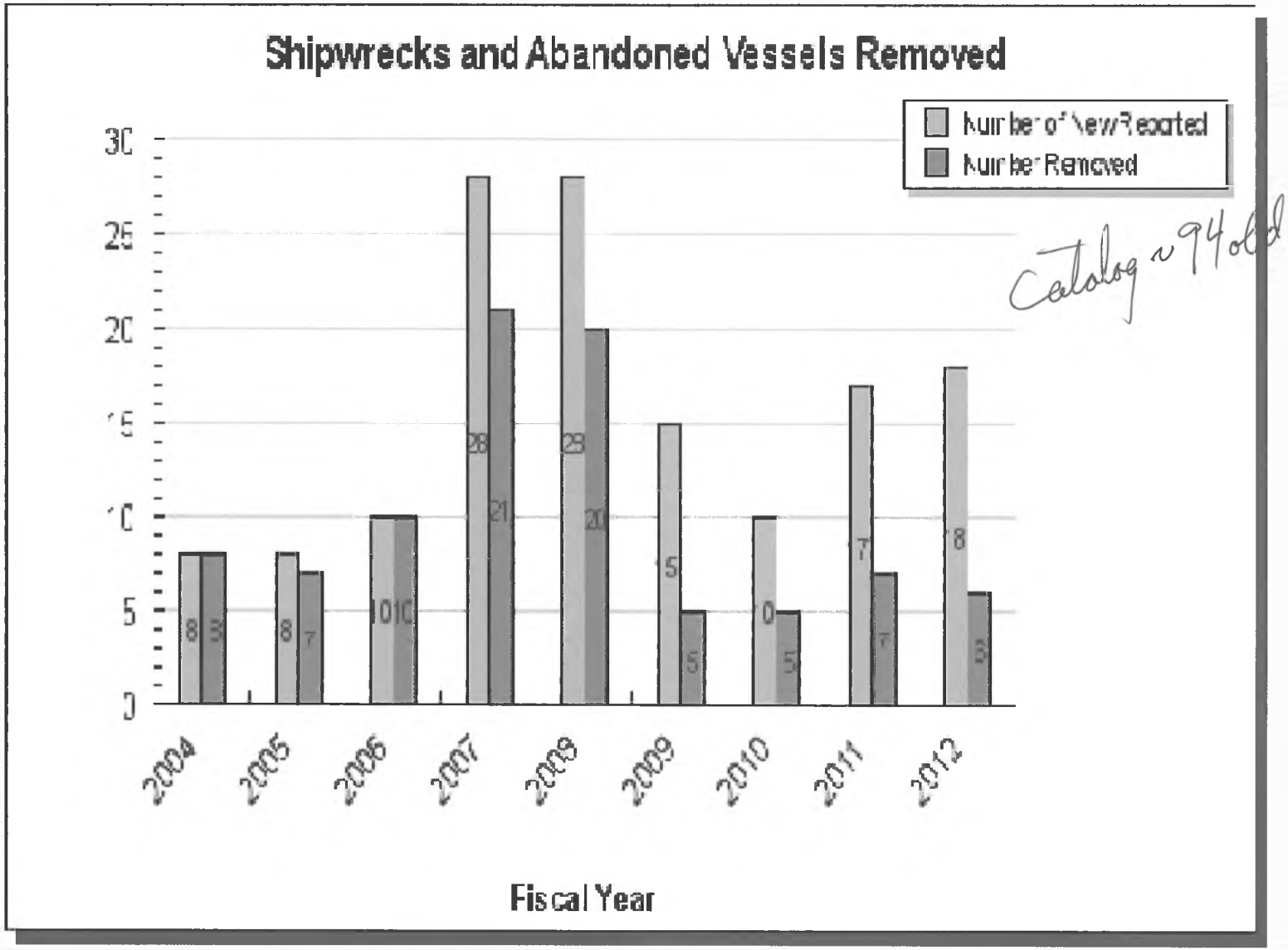
DOT/PF Authorities

- AS 30.30 addresses both Abandoned and Derelict Vessels
- For DNR/DMLW to use this authority, the authority has to be delegated to DNR from DOT/PF



Large Issue in State

- Many abandoned and derelict vessels
- Sometimes vessels are scuttled without DMLW permit – sometimes to later wash ashore
- Cheaper to leave it on state land than remove and dispose of vessels – owners don't always have money to remove even if identified
- Contaminates can adversely affect environment
- Impacts navigation
- Expensive for the state to remove



Catalog ~ 94 old


½ Mile Creek

What does it cost

- Just removed two vessels from Jakolof Bay
  - $250,000 to raise, remove hydrocarbons, stabilize, tow to Homer and have vessels placed in dry storage.
  - Does not include disposal if not auctioned off
- Seattle report of 140 foot vessel that sank last May cost state and federal government $5.4 million to clean and dispose of vessel. Another recent sinking will cost over $1 million to clean
- Washington has a derelict vessel removal account funded by a $3 boat registration fee

Derelict Vessels and Shipwrecks on DNR managed lands

Most recently DNR took responsibility for, and possession of two derelict vessels that sunk in Jakolof Bay near Homer. These two vessels had been denied access to local harbors due to the poor condition of the vessels. The owner anchored both of them in Jakolof Bay in September or October of 2012 where eventually due to the condition of the vessels and snow load they sank in approximately 60 feet of water.





These vessels were eventually refloated in a joint effort by the US Coast Guard, ADEC and ADNR and transported to Homer in mid January. The cost to all agencies was approximately $250,000 to raise, remove the hydrocarbons, stabilize, tow back to Homer, and have the vessels placed in dry storage. On board these boats was a small amount of hydrocarbons (fuel and oil) as well as propane tanks, flares, fire extinguishers, deep cycle batteries and equipment such as a welder and generator.

DNR had to receive authority from DOT/PF in order to take control of the derelict vessels under AS 30.30.090 and further dispose of the vessels under AS 30.30.100





DNR responds to approximately 15 shipwrecks per year. Unfortunately most marine vessels do not sink in easily accessible locations in shallow water. The vast majorities sink in deep water and are difficult if not impossible to locate or drift ashore and are eventually pushed into the beach or coastline leading to much more difficult, dangerous and expensive responses/removals.







In some cases vessels or barges are left, abandoned on state owned shore lands along rivers or lakes. The following examples are located near Bethel.





Alaska Association of Harbormasters and Port Administrators

RESOLUTION NO. 2012-02

A RESOLUTION OF THE ALASKA ASSOCIATION OF HARBORMASTERS AND PORT ADMINISTRATORS REQUESTING STRONGER MUNICIPAL POWERS IN REGARDS TO ABANDONED AND DERELICT VESSELS.

Whereas, the Alaska Association of Harbormasters and Port Administrators recognizes the majority of the public boat harbors in Alaska where constructed by the State during the 1960s and 1970s; and

Whereas, the State established statutes and regulations for its purposes that dealt with abandoned and derelict vessels at these state harbor facilities; and

Whereas, the specific State statute is called the Abandoned and Derelict Vessel Act (AS 30.30); and

Whereas, the State of Alaska during the past 20 years has transferred ownership of most of these State owned harbors to local municipalities; and

Whereas, the municipalities took over this important responsibility because these harbor facilities represent critical transportation links and are the transportation hubs for waterfront commerce and economic development in Alaskan coastal communities; and

Whereas, these municipal owned harbor facilities are ports of refuge and areas for protection for ocean-going vessels and fishermen throughout the State of Alaska, especially in coastal Alaskan communities; and

Whereas, consequently, local municipal harbormasters found themselves without sufficient legal protection due to some abandoned and derelict vessels left in these harbor facilities; and

Whereas, the cost of cleanup or disposal of an abandoned and derelict vessel can easily exceed $1 million, creating a major financial burden that their local municipal governments could not afford; and

Whereas, local municipal governments, where they had the legal and financial resources, created codes to protect themselves from the liabilities and hazards of abandoned and derelict vessels; and

Whereas, some local municipal governments do not have the legal and financial resources to create or change codes to protect themselves from the liabilities and hazards of abandoned and derelict vessels; and

Whereas, the unincorporated areas of the State also need protection from the liabilities and hazards due to abandoned and derelict vessels; and

Whereas, the Department of Transportation and Public Facilities' mission is to build, maintain and promote transportation of all modes; and

Whereas, the Department of Transportation & Public Facilities is not funded to perform environmental cleanup work of marine vessels; and

Whereas, other state agencies or peace officers might find it in the public's best interest to impound an abandoned or derelict vessel, especially in the unincorporated areas of the State, to prevent or cleanup the environmental mess left behind from an abandoned or derelict vessel; and

Now therefore be it resolved that the Membership of the Alaska Association of Harbormasters and Port Administrators urges that AS 30.30 be modified as detailed in the attached draft to allow any municipality or state agency to have the full protections afforded in the Abandoned and Derelict Vessel Act.

Passed and approved by a duly constituted quorum of the Alaska Association of Harbormasters and Port Administrators on this 24th day of October, 2012.

_____
Steven R. Corporon, President

ATTEST:

_____
Kim Elliot, Executive Secretary

Please create a work-draft of in modifications below. In addition to the language marked up in Chapter 30.30 we would like to add language in the work draft to clarify that:

A vessel that has been denied entrance to a harbor may not be stored in state waters for more than two weeks unless all hazardous materials and petroleum products have been removed.

Chapter 30.30. ABANDONED AND DERELICT VESSELS

Article 01. ABANDONED VESSELS

Sec. 30.30.010. Abandonment of vessel unlawful.

(a) A person may not store or leave a vessel in a wrecked, junked, or substantially dismantled condition or abandoned upon **the waters of the state** [ANY PUBLIC WATER], or at a port or harbor, of the state **or the municipality**, without the consent of the **state** agency **or municipality** having jurisdiction of the water, port, or harbor, or docked at any private property without the consent of the owner of the property.

(b) **A state agency, municipality** [THE DEPARTMENT] or a peace officer may remove a derelict vessel from public water in any instance when the vessel obstructs or threatens to obstruct navigation, contributes to air or water pollution, or in any other way constitutes a danger or potential danger to the environment.

(c) This section may not be construed to contravene any applicable federal law or regulation.

(d) A person who violates this section, upon conviction, is guilty of a misdemeanor and is punishable by a fine of not more than $500, or by imprisonment for a period of not more than six months, or by both.

Sec. 30.30.020. Disposition of certain abandoned vessels.

A vessel that has been left unattended for a continuous period of more than 30 days and is in the waters of the state or on public property, or is on private property without authorization of the owner or occupant of the property, may be taken into custody by **a state agency, municipality** [THE DEPARTMENT] or a peace officer and disposed of by the **state agency or municipality** [DEPARTMENT] under this chapter.

Sec. 30.30.030. Limitation on applicability.

Wherever outside of an organized municipality in the state it is, or has become, the custom, common or accepted practice to anchor, moor, or otherwise leave a vessel in a port or harbor, or in the public waters, of the state in such a manner that it does not threaten or obstruct navigation,

or to store or otherwise leave a vessel without permission on public or private property, unattended for a period of more than 30 days, where climatic conditions make use of the vessel impracticable, or applicable provisions of law preclude use of the vessel during that period of time, the unattended anchoring, mooring, storing, or leaving of the vessel does not constitute abandonment of the vessel as that term is used in AS 30.30.010 - 30.30.020.

Sec. 30.30.040. Notice to owner.

On taking custody of an abandoned vessel, a written notice immediately shall be posted on the vessel and a duplicate of that notice sent by registered or certified mail, with a return receipt, to the registered owner of the vessel at the registered owner's last known address and to all lienholders shown on the records of a state or federal agency. The notice must contain a brief description of the vessel, the location of custody, and the intended disposition of the vessel if not repossessed within 20 days after the mailing of the notice. A notice need not be sent to the purported owner or any other person whose interest in the vessel is not recorded with a state department or a federal agency.

Sec. 30.30.050. Public auction.

If the vessel is not repossessed within 20 days after the mailing of the notice, the vessel shall be disposed of by public auction, through oral tenders, or by sealed bids, after public advertisement has been made once in a newspaper of general circulation. However, the public auction may not be held less than five days after the publication of the advertisement. If no bid is received, the vessel may be sold by negotiation, disposed of as junk, donated to a governmental agency, or destroyed.

Sec. 30.30.060. Possession by interested party.

A person having an interest in an abandoned vessel may take possession of it before the date of the public auction upon payment to the **state agency or municipality** [DEPARTMENT] of all port or harbor use fees, towing, handling, storage, appraisal, advertising, and any other expenses incurred by the **state agency or municipality** [DEPARTMENT] in connection with the vessel. If the person taking possession of the vessel is not the registered owner, the person shall, before taking possession of the vessel, pay the expenses incurred by the **state agency or municipality** [DEPARTMENT] and post adequate security which may not exceed the appraised value of the vessel. The security, if not forfeited, shall be returned to the person one year after receipt.

Sec. 30.30.070. When public auction not required.

Public auction is not required when the appraised value of an abandoned vessel, as determined by an independent appraiser is less than $100. The appraiser must have at least one year of experience in the sale, purchase, or appraisal of vessels. Upon that determination and after public advertisement has been made once in a newspaper of general circulation, the **state agency or municipality** [DEPARTMENT] may sell the vessel by negotiation, dispose of it as junk, donate the vessel to a governmental agency, or destroy it.

Sec. 30.30.080. Effect of sale.

The transfer of interest by sale under AS 30.30.050 - 30.30.070 shall be evidenced by a bill of sale from the **state agency or municipality** [DEPARTMENT], considered a transfer by operation of law, and governed by applicable provisions of law.

Article 02. DERELICT VESSELS

Sec. 30.30.090. Derelict vessel.

A vessel that has been left unattended for a continuous period of more than 24 hours is a derelict if

(1) the vessel is sunk or in immediate danger of sinking, is obstructing a waterway, or is endangering life or property; or

(2) the vessel has been moored or otherwise left in the water of the state or on public property contrary to law, or regulations adopted by the **state agency or municipality** [DEPARTMENT], or the vessel has been left on private property without authorization of the owner or occupant of the property and if

(A) the vessel's certificate of number or marine document has expired and the registered owner no longer resides at the address listed in the vessel registration or marine document records of a state department or the United States Coast Guard;

(B) the last registered owner of record disclaims ownership and the current owner's name or address cannot be determined;

(C) the vessel identification numbers and other means of identification have been obliterated or removed in a manner that nullifies or precludes efforts to locate or identify the owner; or

(D) the vessel registration records of a state department and the marine document records of the United States Coast Guard contain no record that the vessel ever has been registered or documented and the owner's name or address cannot be determined.

Sec. 30.30.100. Disposition of derelict vessel.

(a) **A state agency, municipality or a peace officer** [THE DEPARTMENT] may take or cause a derelict vessel to be taken into custody immediately. Upon taking custody of a derelict vessel **the state agency or a municipality** [DEPARTMENT] shall concurrently

(1) publish a notice of intended disposition once in a newspaper of general circulation;

(2) when possible, post a notice of intended disposition on the vessel; and

(3) serve a duplicate of the notice of intended disposition by certified mail, with a return receipt, on

(A) the registered owner of the vessel, if known, at the registered owner's last known address or the address on record with a state department or the United States Coast Guard; and

(B) all lienholders who have filed a financing statement indexed in the name of the registered owner, or who are shown on the records of a state department or the United States Coast Guard.

(b) If the vessel is not repossessed within 20 days after the publication or mailing of the notice, whichever occurs later, the vessel may be disposed of by negotiated sale except that when two or more prospective purchasers indicate an interest in purchasing the vessel the vessel will be sold at public auction to the highest bidder in the same manner prescribed under AS 30.30.050.

(c) If no prospective purchaser indicates a desire to purchase the vessel, the vessel may be disposed of as junk, donated to a governmental agency, or destroyed.

Article 03. VESSELS ABANDONED ON BUSINESS PREMISES OF PERSONS ENGAGED IN REPAIR BUSINESS

Sec. 30.30.110. Disposition of vessels by persons in vessel repair business.

When a person abandons a vessel on the premises of a vessel repair business, the owner of the business or the business owner's authorized representative may sell or dispose of the vessel under AS 30.30.110 - 30.30.150.

Sec. 30.30.120. When vessel abandoned.

A vessel is abandoned on the premises of a vessel repair business when all of the following conditions have been satisfied:

(1) the service requested or required by a person whose vessel is towed or brought to a vessel repair business, including but not limited to towing and rendering estimates of the cost of repairs, has been performed;

(2) no authorization is given to perform any further service with respect to the vessel, but the vessel is left on the repair business premises;

(3) the owner of the repair business or the business owner's authorized representative has given notice by registered or certified mail, with a return receipt, to the registered owner of the vessel at the address on record at the vessel repair business and the address on record in a state department or the United States Coast Guard, and to any person with a recorded interest in the vessel, stating that if the vessel is not repossessed within 30 days after the mailing of the notice it will be sold or disposed of; the notice also must contain a description of the vessel and its

location, and it need not be sent to an owner or a person with an unrecorded interest in the vessel whose name or address cannot be determined; and

(4) the vessel is not repossessed within the 30-day period specified in (3) of this section.

Sec. 30.30.130. Sale or disposition of vessel.

When a vessel is abandoned, the owner of the vessel repair business, or the business owner's authorized representative, after one public advertisement in a newspaper of general circulation in the state, may negotiate a sale of the vessel or dispose of it. However, the vessel may not be sold or disposed of within less than five days after publication of the advertisement.

Sec. 30.30.140. Disposition of proceeds.

The authorized seller of the abandoned vessel is entitled to the proceeds of the sale to the extent that compensation is due to the seller for services rendered with respect to the vessel, including reasonable and customary charges for towing, handling, storage, and the cost of notices and advertising required by AS 30.30.130 . A lienholder shall receive priority of payment from the balance of the proceeds to the extent of the lien. Any remaining balance shall be forwarded to the registered owner of the vessel, if the registered owner can be found. If the registered owner cannot be found, the balance shall be deposited with the commissioner of administration and shall be paid out to the registered owner of the vessel if a proper claim is filed for it within one year from the execution of the sale agreement. If no claim is made within that year, the money shall escheat to the state.

Sec. 30.30.150. Effect of transfer of title.

The transfer of title and interest by sale under AS 30.30.140 is a transfer by operation of law. However, a bill of sale executed by an authorized seller is satisfactory evidence authorizing the transfer of the title or interest.

[ARTICLE 04. MISCELLANEOUS

SEC. 30.30.160. REGULATIONS.

THE DEPARTMENT SHALL ADOPT REGULATIONS UNDER AS 44.62 (ADMINISTRATIVE PROCEDURE ACT) TO CARRY OUT THE PROVISIONS OF THIS CHAPTER.]

Sec. 30.30.170. Definitions.

In this chapter

(1) **"state agency" means all departments, divisions, and offices in the executive branch of state government; it does not mean an agency of the legislative or judicial branch of**

government or the University of Alaska ["DEPARTMENT" MEANS THE DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES];

(2) "vessel" means every description of watercraft or other artificial contrivance, other than a seaplane on the water, used or capable of being used as a means of transportation on or through the water;

(3) "municipality" has the meaning given in AS 29.71.800;

(4) [(3)] "waters of this state" means the navigable waters within the territorial limits of the state, and the marginal sea adjacent to the state, as defined in AS 44.03.

Sec. 30.30.180. Short title.

This chapter may be cited as the Abandoned and Derelict Vessels Act.

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Local News

Originally published September 8, 2012 at 3:56 PM | Page modified September 8, 2012 at 8:16 PM

Derelict vessels cause boatloads of trouble in state

Despite a program whose sole mission is to deal with derelict vessels, Washington state just can't keep up with the tide of these potential environmental catastrophes.

By Maureen O'Hagan

Seattle Times staff reporter



Hundreds of derelict or abandoned boats, both large and small, are slowly rotting on Washington's waterways.

And despite a program whose sole mission is to deal with these potential environmental catastrophes, the state just can't keep up with the tide.

In March, 226 vessels were on Washington's "derelict or abandoned" list. By June, the state or other agencies had helped move, shore up, or dispose of 23 of them — which sounds pretty good, until you realize that, in the meantime, 18 more vessels were added to the list. Some boats are removed, only to wind up back on the list a second or third time.

Melissa Ferris, who runs the Derelict Vessel Removal Program, can rattle off stories. There are the boats that appear out of nowhere in state waters, dumped by their owners. Those that break anchor and float away, battering the docks or creating a hazard to navigation. Those that the owner swears are seaworthy, right up to the day they sink. They may contain oil, asbestos and other hazards.

Despite all that, the state just lets most of them sit — one leak away from trouble. Private-property rights make it cumbersome to intervene. Environmental regulations make it expensive. Even government policies that seem perfectly reasonable have turned out to contribute to the problem.

But the main reason derelict vessels are so vexing is this: The economics just don't pencil out. The entire budget for Ferris' agency is $750,000, yet it can cost far more than that to dispose of a single large vessel.

Most of them don't make news. They're smaller vessels, and amount to little more than eyesores. But sometimes, boats on Ferris' list turn into multimillion-dollar problems.

Like the Deep Sea.

In May, the 140-foot former fishing boat sank in Whidbey Island's Penn Cove, spilling oil within swimming distance of some of the state's prime shellfish beds. It cost the government nearly $5.4 million to clean up the mess and dispose of it.

But the Deep Sea was a problem vessel long before that. Like many boats on the list, it was passed from owner to owner, until at some point, it was worthless. The vessel was abandoned by its owner at the Port of Seattle; the Port sold it to a guy with no real means to deal with it. The Port did this even though it feared the boat would show up on "the evening news with our name attached," one email obtained under the state's open-records act said.

And that wasn't anywhere near the state's worst derelict-vessel disaster. The 430-foot Davy Crockett cost $20 million to clean up last year after the owner began to dismantle it, illegally, on the Columbia River.

In the end, it's the public who winds up footing the bill.

"Common problem"

Every boat has a story. Mostly, the story involves a good working life, and a long, slow death.

Washington, with its boating culture, is hit particularly hard.

"Most public ports have a lot of abandoned boats," said Ferris. "It's a common problem."

It's also one with an inescapable calculus: A boat can cost a lot of money when things are good. It can also cost a lot to get rid of.

First of all, rotten wood is worthless. Big metal boats are worse. They're often sprayed with asbestos. They can be full of lead paint and other hazards, too. Because of stringent environmental regulations, there are just a handful of places in the state where you can legally dismantle them. "It's going to cost you more to get rid of than it's worth," Ferris said.

The 186-foot Northern Retriever, for example, was rotting in Grays Harbor for years, with holes in its hull and no means of propulsion. It wound up costing the state $835,000 to dismantle and dispose of. Its 1,000 tons of metal sold at scrap for $78,000.

If you're a maritime business owner who needs to retire a boat, the calculus presents a real dilemma.

"You'd have to have a pretty strong company to commit to spending (hundreds of thousands) to get rid of a vessel that's becoming obsolete," Ferris said.

So what do you do? Some owners strip off parts that can be turned into cash. Then they'll sell their misfit vessel for a pittance, often to someone who thinks he can make a fortune.

Which brings us to the Deep Sea.

Fees pile up

Built in 1947, it was a pioneer in the Alaskan crabbing industry. It changed owners over the years, eventually winding up in the hands of Factotum Fisheries. In 2005, Factotum moored the boat at the Port's Fishermen's Terminal, paying $1,500 per month. But at some point, the owner just stopped paying. By July 2010, the outstanding bill was $31,000.

Factotum's owner told the Port he was sick with cancer and didn't have the money. At this point, the Deep Sea was not only technologically outdated — it was a liability.

"We were kind of left holding the bag," Port spokesman Peter McGraw said.

The Port wanted its $31,000. It wanted a paying customer in that slip. But most of all, it wanted the boat gone.

"The port has become increasingly concerned that the vessel, which is essentially an uninsured derelict, constitutes a pollution and liability hazard," a lawyer for the Port wrote in May 2011.

Port officials figured dismantling the Deep Sea could cost $500,000. So they decided to unload it.

The Port's Michael DeSota urged caution.

"The background and financial stability should be checked thoroughly on any prospective buyer to assure this doesn't wind up in the evening news," he wrote in an email.

Twice, the Port tried to sell it at maritime auctions. No one was willing to pay even a buck.

"Anybody legitimate is going to walk through it and go 'no thanks,' " Ferris said.

Then Port officials tried Craigslist.

A Maple Valley man named Rory Westmoreland stepped forward. McGraw said that since Westmoreland was a scrap dealer, he seemed like a good fit.

"We are not in the business of handing over a large vessel like this to just anyone who comes off the street," he said.

If Port officials had checked, they would have found Westmoreland had a long history of run-ins with neighbors, code inspectors, the Environmental Protection Agency, police and others.

Eventually, the Deep Sea was sold to Westmoreland for $2,500.

It was no longer the Port's headache.

Floating junkyard

When Ferris got word the boat was anchored in Penn Cove, she was not happy. She also didn't jump right in and try to seize it, even though that's what people were clamoring for.

Another boat, the Cactus, was too fresh in her mind.

The Cactus' best years were spent in the Coast Guard, working as a buoy tender. But in the 1970s, the vessel was past her prime, so the Coast Guard did what the taxpayer might expect: sold it.

At some point, the Cactus wound up in the hands of David Thomsen. He told the state he bought her for $35,000 and planned to turn her into a floating sawmill.

He also said that he was the "comptroller of the currency"; that he was "part owner of a $300 trillion gold mine"; that he "invented the silicon chip"; and that he owns Microsoft and Vulcan, according to Ferris' file on the case.

"If people can't live in society, boats are kind of a last bastion," Ferris said. "We do get a number of people with mental-health issues."

By the mid-2000s, the Cactus appeared to be little more than a floating junkyard moored in the Foss Waterway.

The law allows a boat one month in the public waterway before it has to move. In September 2003, Thomsen received his 30-day notice. On day 29, Ferris said, Thomsen used the tides, the wind and a 20-foot fishing boat to tow it to Maury Island. Authorities were hesitant to give him another 30-day notice.

"We could end up chasing this vessel around Puget Sound," one official wrote in an email. "Would that create greater danger?"

The vessel sat there for years. By 2008, it was filled with buckets of paint and epoxy; rusted steel plates, rubber hoses, PVC pipe, leaking pails of seam filler, old newspapers, mattresses, boxes of tiles and who knows what else. There was also fuel and asbestos insulation.

Meanwhile, the boat had been pillaged. Ten-foot pieces of metal had been cut out of the deck. Brass valves were removed.

"The only thing that was keeping the boat from sinking was these corks that had been hammered in," Ferris said.

At one point, it broke anchor and went swinging into the aquatic reserve. Another time, according to Ferris, Thomsen called 911 because it was sinking. He got it under control, but King County decided to step in. In 2008, under Thomsen's protest, the Cactus was towed away for dismantling.

Years later, the boat is still sitting at a Ballard shipyard because there wasn't enough money left in Ferris' budget to scrap it. Between moorage fees, cleaning off the junk, pumping out the holds and other emergency measures, it's cost the state more than $348,000 so far. Each month is another $3,000 in moorage.

"We've been baby-sitting this stupid boat for four years basically," Ferris said.

This fall, Ferris said, she'll finally be able to finish the job, thanks to a lump sum from the Legislature.

But the Cactus had taught her a valuable lesson: When you seize a boat, it becomes *your* boat. And your problem.

Fire dooms Deep Sea

Around 1 in the morning one Saturday in May, smoke was pouring from the Deep Sea. By Sunday, it had sunk. The cause is under investigation.

"I've never had any of the vessels on our list spontaneously combust," Ferris said. The state has taken a lot of heat for not swooping in and going after Westmoreland or getting the Deep Sea out of Penn Cove.

But the way Ferris sees it, she didn't have a lot of options. It's the same with the other big boats on the list. Most of the owners can't address the problem, even if she threatens them with fines or even criminal charges.

She definitely doesn't want to wind up with another Cactus. Nor does she want another Deep Sea.

It's not entirely clear what can be done. Five years ago, Ferris' agency wrote a long report outlining the issues and asked for new legislation. Aside from strengthening a little-used criminal misdemeanor statute, almost none of it passed.

After the Davy Crockett disaster, Washington and Oregon joined to create a Derelict Vessel Task Force to push for new state and federal laws. What kind? It's unclear.

At this point, they're just looking for viable ideas.

News researcher Gene Balk

contributed to this report.

Maureen O'Hagan: 206-464-2562 or mohagan@seattletimes.com

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Avalanche slows Seward Highway traffic; more delays expected Tuesday

Harbor officials meet on derelict vessel issue

Published: October 22, 2011



Spanky Paine, a tug built in 1894 that participated in the Spanish American and both world wars, has sat at the Homer Port and Harbor for nearly a decade abandoned by its owner. It was recently deeded to Peninsula Scrap and Salvage to recycle its usable metals on the world market.

NAOMI KLOUDA / Homer Tribune

HOMER: Abandoned boats create monetary and environmental ills.

By NAOMI KLOUDA — Homer Tribune

HOMER -- A 120-foot landing craft called the Sound Developer sank in Cordova's harbor three winters ago, leaving it broken in parts and leaking whatever hazardous fuels were aboard.

The craft was abandoned by its owner, who is nowhere to be found. A consortium of agencies trying to deal with the problem, and $5 million later, the landing craft and its pieces remain on the harbor floor. Its wheelhouse is partially above water, creating a navigation hazard, with a promised removal coming soon.

This was one of the cautionary tales highlighted by Municipal Attorney Holly Wells at a recent gathering of state harbor officials. The Alaska Association of Harbormasters and Port Administrators chose Homer for its annual conference. The session on what to do about derelict boats engaged the group into overtime.

Expect the problem of derelict vessels abandoned in harbors to worsen in the next decade. An aging fleet of fishing and transportation vessels is approaching the end of its useful life, Wells told the gathering.

"In 10 years, you will be overwhelmed," Wells said.

She suggested solutions that ranged from new laws to protect harbors to good networking among harbor officials.

The economic heyday of commercial fisheries brought many vessels north. Old state ferries, tugs used for hauling freight, World War II transports transformed into floating processors - many are still out there. Downsized fisheries left many of them obsolete, and Alaska's harbors became their last stop.

Homer Harbor Master Bryan Hawkins calls it "the hot potato problem" when one of those ships is evicted from one harbor only to go rest in another.

"The hot potato plan sucks when you get stuck with a derelict. We managed to get four of our derelicts broken down, two changed owners and one is still in the harbor," Hawkins said. "The problem is that most left to other places in the state. I'm not proud of that. I don't like it; it's not a solution."

With the help of a phone tree, harbor officials can alert one another when a derelict is limping in their direction. Wells recommended the harbor officials immediately establish a communication tree.

There are legal pitfalls that can be avoided, Wells advised them. Armed with strong city tariffs and codes spelling out a list of safety requirements, cities can prevent problem boats from becoming an economic and environmental nightmare like the Sound Developer. Hawkins, who believes that Homer is "an overachiever in the derelict vessel problem," set out to find solutions. Hawkins and Deputy Harbor Master Matt Clarke wrote letters and spoke with the U.S. Coast Guard, the Environmental Protection Agency and the Alaska Department of Environmental Conservation.

If old tugs like the Spanky Paine or the Honcho, now being salvaged for scrap metal, were to sink in the harbor, whatever waste oil and other pollutants that remained aboard would also sink.

"I was embarrassed to ask, is there a federal or state plan to help with these boats? ... But, no, in the end I found we're on our own," Hawkins said. "We will continue to push for, number one, them to recognize the problem, and number two, find a workable solution before the costs to the public reach the millions like they have in the case of the Sound Developer."

Hawkins began taking legal steps, working with Wells, to rid the harbor of boats that represent "clear and present danger."

Wells, in searching case histories, discovered an ancient role of federal protection stretching back to the 18th and 19th centuries. While collecting on debt, placing liens or evicting owners, harbors must avoid actions that could be deemed unconstitutional. Harbors also can't reasonably exclude a ship or boat seeking refuge, outlined as the owner' legal rights under admiralty law.

But cities can create legal means to protect their waters.

"The law requires a city to act 'rationally' in regard to vessels. That means having it spelled out in tariffs and code ahead of time. Here is an itemized list of things you cannot do; here are the requirements you must meet in order to remain in the harbor," Wells said.

Homer passed a law that requires each boat in the harbor to be moved on its own power twice per year at least 60 days apart. This helps to identify boats too broken down to move or those abandoned by their owners. So far this has been a valuable tool, Hawkins said.

A harbor official from Ketchikan asked Wells what can be done if an ailing ship is escorted into the harbor by the U.S. Coast Guard.

"You have control. If the ship is falling apart at the seams, you can talk about the 'clear and present danger' it presents. The Coast Guard can be your ally," Wells answered. "This threat can help you immediately get that vessel out of the harbor."

Unpaid moorage fees from abandoned boats mount into the thousands of dollars, representing a double loss to cities since they can't rent the space to a working boat.

Hawkins found that by working with owners, offering to forgive half the moorage fees on the condition of getting the boat out of the harbor, he can achieve the desired results.

In the cases of the Spanky Paine and the Honcho, Homer handed over both tugs to Peninsula Scrap and Salvage, receiving no monetary compensation.

"But the way we look at it, we get back 180 feet of moorage space, and we've mitigated an irritation and prevented a future disaster," Hawkins said.

Of the 14 ailing vessels that formerly inhabited the Homer harbor, all the large derelicts are gone. Now there are a few smaller, 40-foot class vessels on the radar.

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Derelict ship causes ammonia scare

The Associated Press | Posted: Wednesday, January 2, 2013 3:36 pm

KODIAK, Alaska - A derelict fish processing ship caused an ammonia scare in Kodiak when two crewmembers living onboard the vessel reported a leak.

Kodiak firefighters were joined by Coast Guard firefighters on Monday in responding to reports of a leak on the 169-foot Pacific Producer, according to the Kodiak Daily Mirror (http://is.gd/ZqpKgN). Kodiak City Pier 2 was cordoned off for five hours.

Anhydrous ammonia is commonly used as a refrigerant aboard fishing vessels and in fish processing plants. It can cause severe lung damage if inhaled. High concentrations can be fatal.

Firefighters boarded the ship and shut all the valves connected to the ship's ammonia system.

Subsequent tests found no ammonia circulating in the air.

A storm rolling through Kodiak both helped and hampered firefighters' efforts. Winds gusting up to 52 mph whisked away the ammonia leak so quickly that firefighters were able to walk next to the boat without protective gear, and no evacuations were required.

The wind also prevented firefighters from getting an accurate reading on the size of the ammonia leak.

"We never got a reading because it was always going away from us, which was a good thing," Kodiak deputy fire chief Jim Mullican.

The Pacific Producer has been tied up at Pier 2 for more than two months after its owner, captain and chief engineer all walked away from the boat. Kevin Briggs, the sole remaining engineer aboard the Pacific Producer, said he came aboard 3 months ago to help process fish, but the ship hasn't seen a single fish and he's ready to go home.

"It's just been a nightmare, basically," he said.

Last month, the Pacific Producer's owner left Kodiak to find operating capital, and he hasn't returned since.

"We've just been waiting for him to come up with what he calls 'investment money,'" Briggs said.

Deputy Kodiak harbormaster Lon White said the city wants the ship gone.

"We've asked the owner to remove it from city facilities and they have not done so, either been unable or refused to. Regardless, it's still at our facility," he said.

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Diesel spill from derelict ship in Kodiak harbor reported

The Associated Press | Posted: Sunday, January 6, 2013 5:21 pm

ANCHORAGE, Alaska - The Coast Guard says an estimated 150 gallons of diesel fuel from a fish processing vessel spilled into the Kodiak harbor.

KTUU (http://is.gd/LJDWHd) says the Coast Guard and other agencies responded to the leak Saturday from the vessel Pacific Producer.

Petty Officer Guy Hughey says the fuel leaked inside of the ship before some of it was pumped into the harbor.

Hughey says about 500 gallons of diesel discharged into the vessel's bilge, triggering the bilge pump.

The fire department also tested the atmosphere for ammonia used in the ship's refrigeration system.

Authorities say there was no ammonia threat to the Pacific Producer's crew.

Refloating derelict boat

Posted: Wednesday, November 26, 2008

Harbor employees Pete Frank, left, and Doug Liermann work Tuesday to refloat a derelict fishing boat after it sank in Aurora Harbor earlier this fall. The boat was towed to a beach near the Yacht Club at high tide so it could be drained and refloated on a future tide. Port Director John Stone said the boat would be transported to a location where a private contractor could crush it and take it to the city landfill. Stone said the boat's owner would be charged for the work.



Paul,

Valdez + Cordova are having issues with "documented" vessels in their municipal harbors that are in arrears for their dockage fees. What I'm being told is that because these are "documented" vessels, the municipalities are prevented from seizing them because they are, by a Federal statute, under the jurisdiction of the USCG. Coast Guard however does not have the funds to deal with the derelict vessels that are literally sinking in the ports of these cities. What do we / they / USCG / Feds do?

I would like to take a moment to address the issue of derelict vessels in Alaska. As a former office manager of the Sitka Harbor Department (9 years) we had an ongoing derelict vessel problem which still continues. Each time we went through the legal process we had in place it would take more than 90 days before we could come close to seizing the vessel. Then before it would be seized the owner would sell it to someone else and the process would have to start over again. It was extremely frustrating!

There are also – of course the vessels you don't want because they will cost so much to get rid of once you have them. Perhaps some sort of fund should be established to help pay for that sort of problem – particularly when there is possibility of endangering the environment with fuel/oil spills, etc. The attached had suggested possible revisions to the State Statues that would certainly be a start to resolving those issues.

As an owner of healthy vessels I find myself very nervous when one of those derelict vessels is tied to the same float as I am. I worry they will sink or catch fire and cause damage to my boats. I don't know if the attached document is the one you are looking at but I strongly urge you to consider supporting the changes suggested in it.

Thank you.

Kim

Kim Elliot

7 Maksoutoff Street

Sitka, AK 99835-7556

(907) 747-7677

email: kelliot@gci.net

FOR MORE INFORMATION

Aquatic Resources District Offices

DNR manages 2.4 million acres of state-owned Aquatic Lands statewide—lands under the marine and fresh waters, and beaches. These mostly submerged lands offer aquatic habitat, navigation, commerce and public use and access. DNR's aquatics districts provide on-the-ground management.

www.dnr.wa.gov

Orca Straits District Aquatic Resources
919 N. Township St.
Sedro Woolley, WA 98284
(360) 856-3500



Rivers District Aquatic Resources
P.O. Box 280
601 Bond Rd.
Castle Rock, WA 98611
(360) 577-2025

Shoreline District Aquatic Resources
950 Farman Ave.
Enumclaw, WA 98022
(360) 825-1631

Emergency Contacts

Sinking vessels; oil spills; spills of other hazardous materials—24-hour emergency response numbers in Washington State:

Department of Emergency Management (State) (800) 258-5990

Marine Emergencies Coast Guard Marine Safety Office
(206) 217-6232 *Seattle*
(503) 240-9320 *Portland*

Department of Ecology (State) (360) 407-6300
24-hour Spill Response Hotline

Derelict Vessel Removal Program (State) (360) 902-1574 or
Email: dvrp@wadnr.gov

WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark - Commissioner of Public Lands

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PROTECTING NATURAL RESOURCES



WASHINGTON STATE'S

Derelict Vessel Removal Program

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Removing derelict and abandoned vessels that threaten the health or safety of people and wildlife

In addition to vigorous use of commercial navigation through much of the state, the people of Washington have embraced recreation that involves sailboats and powerboats. However, an increasing number of recreational and commercial vessels are found abandoned or in such disrepair that they are in danger of sinking. In response to this growing problem, the 2002 State Legislature authorized many public agencies to remove and dispose of abandoned and derelict vessels.

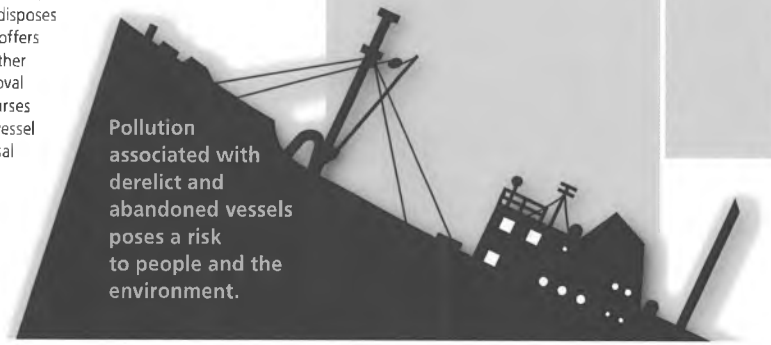
As steward of the state's 2.4 million acres of aquatic lands, the state Department of Natural Resources (DNR) manages the Derelict Vessel Removal Program (DVRP). DNR removes and disposes of derelict vessels, offers expertise to help other agencies with removal efforts, and reimburses them most of the vessel removal and disposal costs.

COVER PHOTO COURTESY OF BLACKWATER MARINE. TOP PHOTO BY MICHAL RECHNER

What Damage Can a Derelict or Abandoned Vessel Cause?

Derelict and abandoned vessels are more than an eyesore. They can be real threats. Pollution associated with vessels poses a risk to people and the environment. Contamination is mainly caused by fuel spills (gas or diesel), which occur when a vessel sinks or breaks up.

Drifting, beached, broken-up or sunken vessels can threaten human safety, be a navigational hazard and have an impact on aquatic habitats.



▲ The 'Holiday' was the first vessel removed under the program. Posing a significant threat to navigation, it was removed from lower Budd Inlet by DNR in 2003.

WASHINGTON STATE'S DERELICT VESSEL REMOVAL PROGRAM

www.dnr.wa.gov

Drifting, beached, broken-up or sunken vessels can threaten human safety and navigation, and have an impact on aquatic habitats.





Unmarked exposed portions of sunken boats can be navigation hazards, and if a collision occurs with sunken vessels just below the surface, serious injury can also occur.

Derelict vessels may contain large quantities of oil or other toxic substances. If leaked they can injure or kill marine mammals, waterfowl and other aquatic life; and contaminate aquatic lands, nearby shorelines, and water quality.

Vessels that settle on the bottom can disrupt the aquatic environment, scouring or crushing sensitive habitats like eelgrass or kelp beds.

Anti-fouling paints and other toxic coatings slough off the vessel and mix with sediments in the area. They can contaminate the organisms that feed larger fish and wildlife, and enter the food web that feeds people, too.

ILLUSTRATION BY LUIS PRADO / DNR



PHOTO COURTESY OF GLOBAL DIVING & SALVAGE INC.

Derelict vessels are removed from the water using the most environmentally sound methods available. Sunken vessels are raised using a combination of lift bags and high pressure pumping, and pollutants are removed and disposed of.

What Is the DNR's Derelict Vessel Removal Program?

The Derelict Vessel Removal Program has three main responsibilities associated with removing vessels up to 200 feet long.

1. Remove and dispose of derelict or abandoned vessels found in Washington State's waters. DNR removes vessels on a priority basis with those in danger of sinking or posing a threat to human health or safety highest on the list.
2. Manage Program Operations
   - Reimburse authorized public entities up to 90 percent of the cost of vessel removal and disposal. The remaining 10 percent can be in in-kind services such as personnel time and equipment use provided by the public entity.
   - Manage the Derelict Vessel Removal Account
   - Provide guidance and assistance to authorized public entities and the public.
3. Maintain the Derelict Vessel Inventory Database that holds information on all of the vessels reported since the program began in 2002.

What Can Authorized Agencies Do?

Authorized public entities take steps to address the derelict or abandoned vessel problem on aquatic lands in their jurisdiction:

- Send the reporting form to the Derelict Vessel Removal Program to establish the vessel status and receive priority ranking.
- Send pre-custody letters to owners of the vessel.
- Follow Derelict Vessels Act notice requirements and take temporary possession and custody of vessel.
- Remove and dispose of vessel, or contract with a private company or individual to do so.
- Seek from the vessel owner reimbursement of costs associated with removal and disposal.
- Apply to the DVRP for up to 90 percent of the associated removal and disposal costs.

If an authorized agency is unable or unwilling to undertake removal, it may ask DNR to take the lead.

What Are the Derelict Vessel Removal Priorities?

In order to protect the health of people, marine and fresh water ecosystems and wildlife, priority is given to removing derelict vessels that are in danger of breaking up or sinking. The program addresses vessels of 200 feet or less. Priority is assigned to the vessel based on criteria that classify the degree of threat for sinking, hazards upon public health, safety and the environment, or the threat to navigation.

Where Does Program Funding Come From?

About $400,000 is raised each year in the state, from a $2.00 surcharge on the annual vessel registration fee and $5.00 surcharge on the foreign vessel identification document.

The state's Derelict Vessel Laws are in Revised Code of Washington (RCW) 79.100.

Program information, guidelines, reporting, and application forms are on DNR's webpage: **www.dnr.wa.gov**. Also linked are the Derelict Vessel Inventory, and the program funding account balance.

Who Is Authorized to Remove Vessels?

Derelict vessels may be removed by Washington DNR or other public agencies:

- Port Districts
- City, town or county with ownership, management or other jurisdiction over aquatic lands
- Metropolitan Park Districts
- State Parks and Recreation Commission
- State Department of Fish and Wildlife

Abandoned and Derelict Vessel Removal

Understanding the process can ensure success.

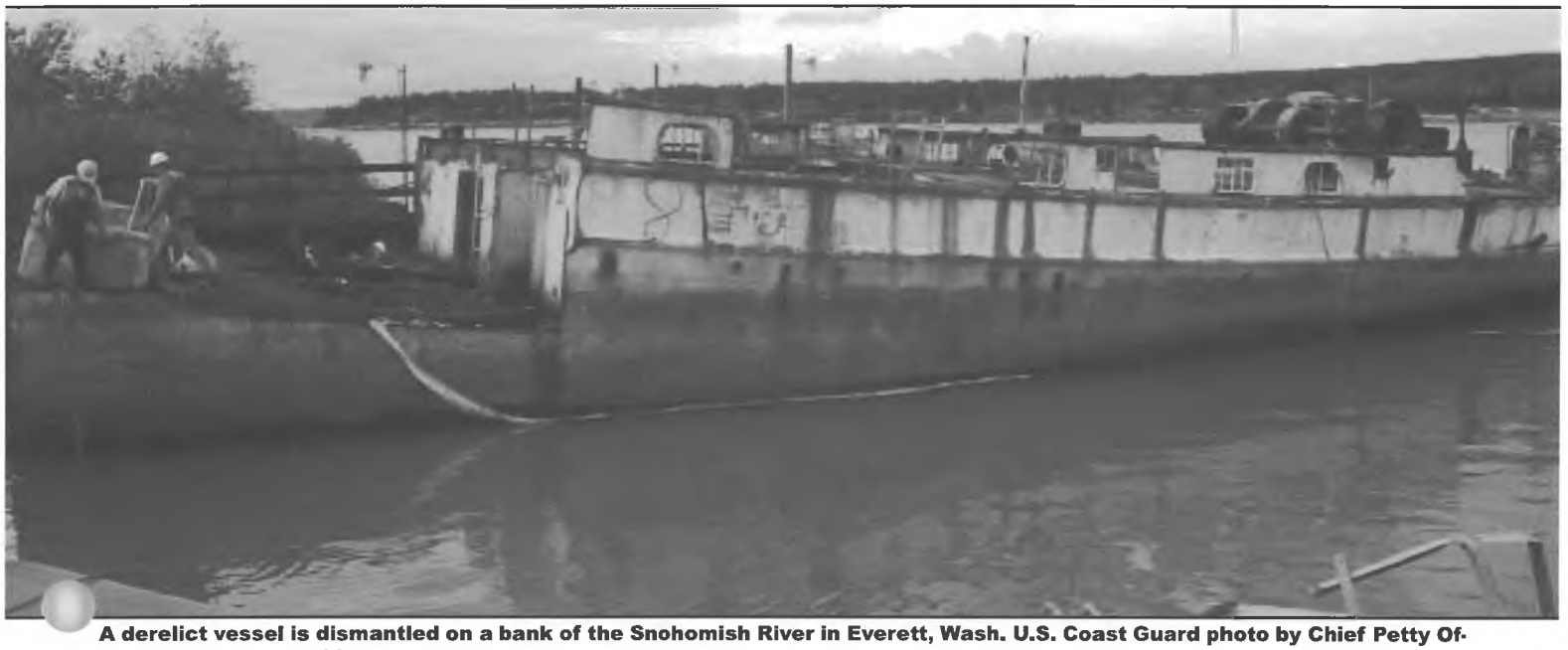
by LCDR Charles Bright
U.S. Coast Guard Office of Marine Transportation Systems

Abandoned and derelict vessels can be seen in most ports and communities as one drives across rivers or while out boating and fishing on the waterways. These vessels are unsightly, threaten safe navigation, and can pose environmental hazards.

The Problem

Vessels are abandoned or become derelict for many reasons. Some owners simply don't take care of their boats and let them fall into disrepair. Other vessels are stolen or taken for "joyrides" and then set adrift or discarded. Hurricanes or tornadoes can damage vessels and even move them from anchorage.

The recent economic downturn has also played a role. A 2009 New York Times article documented that a growing number of people are abandoning their boats because they can't afford the payments.[1]



A derelict vessel is dismantled on a bank of the Snohomish River in Everett, Wash. U.S. Coast Guard photo by Chief Petty Officer Paul Roszkowski.



Coast Guard Chief Petty Officer Ian A. Woods, left, Sector New York, and Petty Officer 3rd Class Huynh A. Nguyen, Sector Mobile, oversee hazardous materials remediation and vessel recovery in Bayou La Batre, Ala. U.S. Coast Guard photo by PA2 Lisa Hennings.

Unfortunately, these vessels can number in the hundreds in some locations, such as states with large boating publics like Florida, Georgia, and Washington. In some of these locations, vessels have been abandoned for such a long time that no one can remember how they got there or who the owners are.

Who Has the Lead?

If the owner cannot be found or is unable to remove the vessel, many times removal will fall to the federal or state government. Along with state environmental and enforcement agencies, four federal agencies play a role in abandoned and derelict vessel removal:

- the National Oceanic and Atmospheric Administration,
- the U.S. Army Corps of Engineers,
- the U.S. Coast Guard,
- the Federal Emergency Management Agency.

Even with the multitude of authorities, limited funding and resources can pose a problem.

Best Practices

To address this, in September 2009 the National Oceanic and Atmospheric Administration hosted the first Federal Abandoned and Derelict Vessel Workshop, where the four federal agencies presented their processes for dealing with vessels to the state agencies. In addition, several state program managers presented best practices for dealing with the numerous vessels within their states.[2]

For example, the Washington State Department of Natural Resources funds vessel removal primarily through an additional fee on state vessel registration. This fund provides up to 90 percent of the removal and disposal costs. The department also carefully prioritizes derelict vessels to determine which present the greatest threat to navigation, safety, and the environment.[3]

The Florida Fish and Wildlife Conservation Commission may remove vessels that are considered derelict under state regulations.[4] The vessel owner is contacted and a notice is posted on the vessel identifying it as a

derelict vessel. The owner has five days to remove the vessel. If the owner doesn't take any action, he or she can be charged with a first-degree misdemeanor and may also be charged for the cost of removing the vessel.

For more INFORMATION:

For additional information on abandoned and derelict vessels or questions regarding a specific vessel or situation, contact the local Coast Guard sector via **www.Homeport.mil,** the local Army Corps District Office at **www.USACE.army.mil,** or the NOAA Marine Debris Program at **http://marinedebris.noaa.gov/.**

Coordinating Efforts

Understanding all the authorities and jurisdictions is just the beginning when it comes to dealing with the problem of abandoned and derelict vessels. With the multitude of state and local programs and federal authorities, coordinating this process can be a daunting task. Federal and state agencies and local or private groups should come together prior to any incident to establish working relationships.

Knowing where one agency's authority and funding stops and another begins facilitates this process. For example, the Coast Guard may use its funds to remove oil or hazardous material from the vessel. From there, the Army Corps or a state agency may take over to remove the vessel from the water. Once removed, the vessel has to be salvaged for its remains or

Which Agency Does What?

The National Oceanic and Atmospheric Administration

NOAA responds to abandoned and derelict vessels through the National Marine Sanctuaries Act when a vessel is within or threatens resources within a sanctuary.

NOAA additionally supports activities in the marine environment by funding grant opportunities such as those focused on vessel removal and providing technical assistance through the Marine Debris Research, Prevention, and Reduction Act of 2006, which applies to all waters.

NOAA's personnel may provide scientific and technical assistance to a federal on-scene coordinator, when requested.

The United States Army Corps of Engineers

USACE is involved with abandoned and derelict vessels when a vessel sinks in or impacts a navigable channel. It may conduct a channel survey to determine whether the vessel constitutes an obstruction to navigation.

The location of the vessel with respect to the navigation channel will determine whether further USACE involvement in removal is warranted, per internal guidelines and available funding.

The United States Coast Guard

The USCG is involved with abandoned and derelict vessels by its designation as the federal on-scene coordinator to oversee federal response efforts for the containment, removal, and disposal of oil or hazardous substance releases into the marine environment.

The vessel may be removed as part of the abatement process or could be transferred to another agency for final disposal.

The Coast Guard also has authority to remove abandoned barges of greater than 100 gross tons under the Abandoned Barge Act. Under this act, the Coast Guard can remove the vessel if the cost of removal does not exceed its value.

Prior to removal, the Coast Guard may also mark vessels if they present a hazard to navigation.

The Federal Emergency Management Agency

FEMA is involved with abandoned and derelict vessels via the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), which gives FEMA the responsibility of coordinating the federal government's response to disasters.

FEMA may assign another federal agency to remove eligible vessels when the state and local governments certify that they lack the capability to perform or contract for the work.

Additionally, FEMA may reimburse applicants for the cost of vessel removal and disposal through grant assistance.



A vessel is moved to Sparrows Point in Baltimore. U.S. Coast Guard photo.

moved to a proper disposal site such as a landfill. This process may again be handled by a state agency or by a private contractor.

Planning the process from beginning to end is key to avoiding roadblocks and other unwanted situations. No one wants a vessel removed only to find out there is no place to put it. It may also be that one agency (a state historical preservation office, for example) asserts itself in the operational review and approval process because the vessel might be considered a historical landmark. These types of situations do happen and can best be avoided through a fully coordinated plan.

About the author:
LCDR Charles Bright has served in the Coast Guard since 1991. He is a prior enlisted marine science technician and has served on a patrol boat, on an aids to navigation team, and in various marine safety positions including inspections, investigations, and waterways management. A recent graduate of the Coast Guard Transportation Management graduate program from George Mason University, he also holds a master's degree in environmental management from the University of Maryland University College.

Endnotes:

[1] David Streitfeld, "Boats Too Costly to Keep Are Littering Coastlines," New York Times, March 31, 2009.

[2] N. Parry and K. McElwee (eds.), 2010. Proceedings of the Workshop on State-level Responses to Abandoned and Derelict Vessels. September 15-17, 2009. NOAA Technical Memorandum NOS-OR&R-37.

[3] Washington State Department of Natural Resources, Derelict Vessel Removal Program, http://www.dnr.wa.gov/RecreationEducation/Topics/DerelictVessels/Pages/aqr_derelict_vessel_removal_program.aspx.

[4] Florida Fish and Wildlife Conservation Commission (FWC), "FAQs: Derelict Vessels,"http://myfwc.com/Newsroom/Resources/News_Resources_DerelictVessel.htm.

MEMORANDUM OF UNDERSTANDING BETWEEN

UNITED STATES ARMY CORPS OF ENGINEERS
AND
UNITED STATES COAST GUARD

REGARDING
THE MITIGATION OF OBSTRUCTIONS TO NAVIGATION

1. **PARTIES:** The parties to this Memorandum of Understanding (MOU) are the U.S. Coast Guard (USCG) and the U.S. Army Corps of Engineers (USACE).
2. **PURPOSE**: The purpose of this MOU is to improve the efficiency and effectiveness of the USCG and the USACE's routine responses under each agency's respective authorities for mitigating obstructions to navigation. This MOU also provides procedures on coordination to determine whether an obstruction is a hazard to navigation and procedures to determine the appropriate corrective actions to be taken by both agencies. This MOU replaces the Memorandum of Agreement between Department of Army and US Coast Guard SUBJECT: Coast Guard and Department of Army Responses to Marking and Removal of Sunken Vessels and Other Obstructions to Navigation, signed by USCG October 16, 1985.
3. **OBJECTIVES**: The following are the objectives of this MOU:
   a. Promote close coordination and cooperation between the USCG and the USACE leading to prompt and decisive action to mitigate obstructions declared to be hazards to navigation.
   b. Provide guidance on the parameters and procedures for making mutual decisions for determining when an obstruction should be declared a hazard to navigation.
   c. Identify the corresponding Chain-of-Command relationships for resolving differences of opinion between the USCG and the USACE as to the appropriate corrective action to initiate for hazards to navigation.
   d. Assure timely and effective action to provide safe navigation to the maritime community.
   e. Develop individual USCG and USACE agency instructions to implement this MOU.
4. **AUTHORITY:** The parties to this MOU are authorized to act under the following provisions:
   a. 14 U.S.C. § 93(d)
   b. Rivers and Harbors Act of 1899, 33 U.S.C §§ 401, 403, 407, 409, 414, and 415.
   c. Specific Authorized Federal Navigation Project language regarding obstruction removals.
   d. Ports and Waterways Safety Act, 33 U.S.C. 1231.

e. Marking of Obstruction, 14 U.S.C. 86.

f. Abandoned Barge Act of 1992, 46 U.S.C. 4701-4705.

5. **APPLICABILITY**: This MOU addresses routine (non-Federally declared emergency) responses to obstructions to navigation and applies to the navigable waters of the United States. This MOU specifically does not apply to the following:

a. Federal disaster response activities conducted under the Robert T. Stafford Disaster Relief and Emergency Act.

b. Federal on-scene coordinated directed response activities conducted under the National Oil and Hazardous Substances Pollution Contingency Plan (40 C.F.R. Part 300).

c. Activities that involve bridges or causeways over navigable waters that are covered under the existing Memorandum of Agreement between the USCG and USACE signed in 1973.

6. **DEFINITIONS**: For the purpose of this MOU, the following definitions apply:

a. Obstruction: Anything that restricts, endangers, or interferes with navigation.

b. Hazard to Navigation: An obstruction, usually sunken, that presents sufficient danger to navigation so as to require expeditious, affirmative action such as marking, removal, or redefinition of a designated waterway to provide for navigational safety.

c. Navigable Waters: Both USACE and the USCG have defined navigable waters in their regulations. The applicable USACE definition is at 33 C.F.R. Part 329 and the applicable USCG regulation is at 33 C.F.R. § 2.36(a).

d. Responsible Offices and Field Units:

(1) USACE:

i. Director of Civil Works, Headquarters, USACE (HQUSACE).

ii. Chief, Operations and Regulatory, Headquarters, USACE (HQUSACE).

iii. Division Commander, USACE Divisions (Field Unit).

iv. District Commander, USACE Districts (Field Unit).

(2) USCG:

i. Assistant Commandant for Prevention Policy, USCG Headquarters (USCG HQ).

ii. Director of Marine Transportation Systems, USCG Headquarters (USCG HQ).

iii. District Commander, USCG Districts (Field Unit).

iv. Sector Commander, USCG Sectors (Field Unit).

7. **ROLES AND RESPONSIBILITIES**: Upon receiving reports of obstructions to navigation, each agency, through its field units, will take the following actions:

a. Initial Notification: Upon receiving a report of an obstruction to navigation, each agency shall immediately notify their counterpart and relay any corrective actions that have been taken.

b. Determination of Hazard: Determine through joint consultation and agreement between agency field units if an obstruction is a hazard to navigation using the following factors for determination.

(1) Determination Factors: Factors are not all inclusive, but should be considered in determining if an obstruction creates a hazard to navigation and, if so, the acceptable level of response and corrective action(s) appropriate to alleviate or reduce the impact of the hazard to navigation.

i. The degree to which the obstruction currently restricts, endangers, or interferes with navigation on the navigable waters of the United States.

(a) Location with respect to the Federally Maintained Channel.

(b) Location with respect to other navigational traffic patterns.

(c) Navigational difficulty in the vicinity of the obstruction.

(d) Clearance or depth of water over obstruction.

(e) Fluctuation of water level and other hydraulic characteristics.

ii. Physical characteristics of the obstruction, including cargo (if any exists).

iii. Potential for possible movement of the obstruction.

iv. Marine activity in the vicinity of the obstruction including:

v. Draft of vessel traffic.

vi. Type of vessel traffic including commercial, Federal, and recreational.

vii. Density of vessel traffic including commercial, Federal, and recreational.

viii. Other marine activity or trends of waterway use.

ix. Location of the obstruction with respect to existing aids to navigation.

x. Prevailing and historical weather conditions.

xi. Length of time the obstruction has been in existence.

xii. History of vessel accidents involving obstruction.

c. Determine Lead Agency: As part of the joint consultation and if a determination of a hazard to navigation is made, decide which agency shall act as lead agency for executing corrective action(s) and for contacting the owner, lessee, or operator, if one can be identified, of the obstruction to execute the corrective actions. See Paragraph 8.d, below.

d. Corrective Actions: After considering the above factors in Paragraph 7.b., along with any other relevant factors, the lead agency will decide upon the appropriate corrective action(s) to reduce the danger (posed by the hazard) to navigation to an acceptable level.

(1) Options to consider in formulating appropriate corrective action(s):

i. No action.

ii. Broadcasting and publication of navigational safety information.

iii. Marking.

iv. Removal.

v. Charting.

vi. Redefinition of navigational area, channel fairway, anchorage, etc.

vii. Combination of the above.

(2) Field level units of both agencies shall periodically review the status of existing obstructions to determine the adequacy of corrective action(s), to determine if a resurvey of the obstruction's location is necessary, to revise appropriate records, and to update public notification records. Periodic review shall be at least once per year but may be more frequently based on local conditions and risk associated with the obstruction.

8. DECISION MAKING GUIDANCE:

a. Personal contacts between agency field units should be established to facilitate decision-making.

b. Decisions should be made at the field unit level when possible in order to maintain timely response.

c. Decisions concerning corrective actions shall be supported by records appropriate to the specific case.

d. Lead Agency Determination:

(1) USACE:

i. The owner, lessee, or operator is responsible for the removal of the sunken vessel. When no pollution is involved, USACE shall be the lead agency for dealing with parties responsible for the removal of the sunken vessel. USACE will be the lead agency if federal removal of the sunken vessel is warranted. Typically, USACE will use its discretionary authority to remove sunken vessels that are located in a federally maintained navigable channel and are determined to be a hazard to navigation under 33 C.F.R. § 245.20.

ii. USACE is the lead agency to effect the removal of other obstructions by responsible parties in navigable waters. If a responsible party is not available, the USACE will evaluate factors supporting removal in conjunction with general authorities and any authorities applicable to the specific geographic location of the obstruction to determine whether USACE removal is feasible.

(2) USCG:

i. The Coast Guard shall be lead for marking obstructions, should the USCG determine marking is required, and may have authority to remove obstructions in scenarios not addressed within the scope of this MOU.

(3) Change of Lead Agency Determination:

i. The lead agency for resolving an obstruction to navigation may change after consultation between the agencies.

e. Broadcasting and publication of navigational safety information: The USCG has authority to disseminate and maintain navigational safety information pertaining to obstructions and is the lead agency responsible for this type of information. This mission is complemented by related services offered and required to be provided by other sources, including the USACE. Each agency's field units will immediately notify their counterpart of any reported obstructions and will maintain close coordination to ensure that navigational safety information is disseminated in a timely and effective manner. Free exchange of information related to obstructions, including owner's name and address, will be made between agencies, subject to the requirements of the Privacy Act, 5 U.S.C. § 522a.

f. Marking: It shall be the responsibility of the owner, lessee, or operator to mark an obstruction to navigation. In the event that the owner, lessee, or operator, cannot be identified, refuses to mark the obstruction, inadequately marks the obstruction, or is otherwise unable to properly mark it, the USCG has authority to mark obstructions to navigation. When necessary, the USACE, as the lead agency, may request for an obstruction to be marked by the USCG and may assist in locating and marking obstructions.

g. Removal: If a determination is made that removal is the appropriate course of action, but the lead agency can not complete the removal action under its authority or funding, every effort shall be made to coordinate the removal process between agencies and/or with state and local officials.

h. Conflicts over Corrective Actions: Conflicts regarding actions taken under this MOU should be resolved at the field unit level. Conflicts that cannot be resolved shall be forwarded to the next level in each agency's Chain of Command for resolution. The USCG District Commander and USACE Division Commander will document the area(s) of conflict and present them to each other for consideration at least 7 days before forwarding of the issue to higher authority. If resolution cannot be achieved, the conflict shall be forwarded to the next higher level in the each agency's Chain of Command where a similar exchange of reviews shall be made in the same timeframe. Paragraph 9 delineates each agency's Chain of Command for the purposes of this MOU.

9. **CHAIN-OF-COMMAND RELATIONSHIPS FOR RESOLUTION OF DIFFERENCES:** The listed chain-of-command relationships are applicable to most regions but where differences apply, the appropriate chain-of-command alignment will be used by each agency.

a. Sector Commander, USCG Sector / District Commander, USACE District.

b. District Commander, USCG District / Division Commander, USACE Division.

c. Director, Marine Transportation Systems, USCG HQ / Chief, Operations and Regulatory, HQUSACE.

d. Assistant Commandant for Prevention Policy, USCG HQ / Deputy Commanding General for Civil and Emergency Operations, HQUSACE.

10. AMENDMENT, DURATION, AND TERMINATION:

a. This MOU may be modified or amended upon the mutual written consent of the signatories to this MOU or their designees.

b. This MOU as modified with the mutual written consent of both parties will remain in effect for as long as it continues to serve the purpose and objectives defined herein.

c. Either agency may terminate this MOU six months after giving formal written notice of intent to terminate.

11. REPORTING AND DOCUMENTATION: Not applicable.

12. OTHER PROVISIONS:

a. All activities conducted pursuant to this memorandum are subject to, and will be carried out in compliance with, all applicable laws, regulations, and other legal requirements. Nothing in this MOU is intended to diminish, modify, conflict with, or otherwise affect statutory or regulatory authorities, the directives of the USCG, the Department of Homeland Security, the USACE, the Department of the Army or the Department of Defense. If a term of this MOU is inconsistent with such authority, then that term shall be invalid, but the remaining terms and conditions of this MOU shall remain in full force and effect.

b. This MOU is neither a fiscal nor a funds obligation document. Nothing in this MOU authorizes or is intended to obligate the Agencies to expend, exchange, or reimburse funds, services, or supplies, or transfer or receive anything of value. Subject to the availability of funding, each Participant intends to assume responsibility for its respective costs arising from any activity related to this MOU.

c. Information shared under this MOU may be subject to the Privacy Act, 5 U.S.C. § 522a. Each agency should refer to their appropriate policy or their servicing legal office for guidance on how the Privacy Act applies to sharing information on individuals.

d. This MOU is strictly for internal management purposes for each of the parties. It is not legally enforceable and shall not be construed to create any legal obligation on the part of any of the Agencies. This MOU shall not be construed to provide a private right or cause of action for or by any person or entity.

13. EFFECTIVE DATE: This MOU is effective 120 days after execution by the Commandant, USCG, and the Commanding General, USACE.

14. POINTS OF CONTACT:

a. USCG
Director, Marine Transportation Systems
U.S. Coast Guard Headquarters (CG-5PW)
2100 Second Street, SW Washington, DC 20593-7580
202-372-1504

b. USACE
Chief, Operations and Regulatory Community of Practice
United States Army Corps of Engineers
441 G. Street, NW Washington, DC 20314-1000
202-761-1983

SIGNED:

FOR THE UNITED STATES COAST GUARD:

Date: 5 Oct 2012

Peter V. Neffenger
Vice Admiral, U.S. Coast Guard
Deputy Commandant for Operations

FOR THE UNITED STATES ARMY CORPS OF ENGINEERS:

Date: 5 Oct 2012

Michael J. Walsh
Major General, USA
Deputy Commanding General
for Civil and Emergency Operations

02/19/13 Overview: Chinook Salmon Bycatch

<TARGET><BILL></BILL><SUBJECT>02-19-13 Overview Chinook Salmon Bycatch</SUBJECT><COMM>HFSH28</COMM></TARGET>

from Rep. Paul Seaton, Homer Ak

West Coast Salmon

Genetic Stock Identification Collaboration

2012 Summer Update



The 2012 sampling season is underway in Washington, Oregon, and California.

Fishermen collect data such as barcoding (left), length measurements (bottom left), scale samples for aging (below), and genetic data, as well as other catch information.

Laboratory staff are working to analyze the genetic data, enter it into the databases, and share the data as quickly as possible.

Photos courtesy of Evan Merz, Paul Merz, and Doug Fricke, commercial salmon fishermen.





West Coast Salmon Genetic Stock Identification Collaboration is a working partnership between fishermen, scientists, and managers in Washington, Oregon, California, and Idaho that aims to benefit fish and strengthen west coast salmon fisheries by protecting weak stocks, providing sustainable harvest, and improving economic opportunities and fishing practices through better understanding of stock specific ocean distribution and migration patterns of salmon.

Please visit our websites at www.pacificfishtrax.org ***and*** www.fishtrax.org

Project Goals

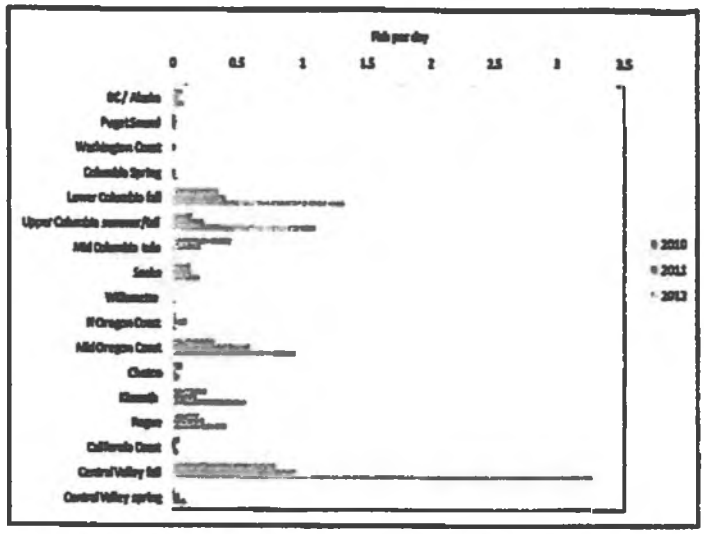
Goal 1: Improve understanding of the ocean ecology of salmon by integrating stock-specific distribution patterns over space and time with biological and environmental data.

Goal 2: Integrate multiple disciplines to develop and apply new scientific technology to improve fisheries management strategies across geo-political boundaries.

Goal 3: Improve economic opportunities for fishermen and coastal communities.

Latest Genetic Stock Identification results

- There is overall improvement in the 2012 commercial fishery since 2010 and 2011. This improvement is most significant in the stocks from the Columbia River and California Central Valley.
- GSI produces usable data faster than coded wire tags (CWTs). Genetic results can be available 24-48 hours after sampling.
- GSI supports regional management of Pacific salmon fisheries. Fish from California rivers comprise a large segment of the Oregon commercial fishery; management of Pacific salmon by single states would be insufficient.
  (See the Central Valley fall contribution to catch.)
- With data collected over many years, we can analyze long-term trends and the effects of variables such as ocean conditions, river conditions, annual rainfall and other weather patterns.



Oregon catch rates, August. Combined catch per unit effort (number of fish caught per boat-day) for 17 stocks. Data are shown for the Oregon commercial salmon fishery in August of 2010, 2011, and 2012. Stocks are displayed in north to south order of the natal river.

2012 Season

- From May through August 2012, more than 1000 Chinook salmon tissue samples have been collected at sea in Washington, over 6800 samples in Oregon, and over 7500 in California.
- In June and July 2012, Oregon conducted the second and third fishery-independent survey trials. This study explores the possibility of test fishing to determine stock distributions. Fishermen sample in a fixed grid pattern and scientists compare their catch with commercial catch from the same time period.
- Preliminary data show that, to date, catch per unit effort (CPUE) is much higher in California and Oregon in 2012 than in either 2010 or 2011.
- The SeaTab at-sea data entry system is under development and has been live tested on fishing boats to record catch and fishing data and transmit it directly to the FishTrax™ database on shore.

WCS-GSI Collaboration

- The Oregon Salmon Commission, California Salmon Council and Washington Trollers Association lead the Collaboration. Partners include Oregon Sea Grant, Community Seafood Initiative, Columbia River Inter-Tribal Fish Commission, University of California—Santa Cruz, Oregon State University, Oregon and Washington Departments of Fish and Wildlife, California and Idaho Departments of Fish and Game, National Marine Fisheries Service North-west and Southwest Fisheries Science Centers.
- This project has produced five years of fine-scale fish distribution data and fishing effort to support long term ecosystem-based fisheries science and management.
- A major objective is to prevent coast-wide fishing closures and enhance economic benefits to the salmon fishery and fishery-dependent coastal communities.

Please visit our website at www.Fishtrax.org. *For more information and to stay informed about our project, please contact Joe Dazey (Washington Trollers Association, jdazey@centurytel.net), Nancy Fitzpatrick (Oregon Salmon Commission, nancy@oregonsalmon.org) or David Goldenberg (California Salmon Council, golden59@pacbell.net),* Sarah Bates, GSI fleet manager

Alaska Marine Conservation Council

Alaska State Legislature

House Fisheries Committee

February 19, 2013

The People of Alaska Place Chinook Salmon in High Regard



Chinook Bycatch in the Gulf of Alaska

- The North Pacific Fishery Management Council is Analyzing a Motion offered by Commissioner Campbell (ADF+G) to Cap the Chinook Bycatch in the GOA in the Non-Pollock Trawl Fisheries. This is the last of the trawl fisheries that are fishing without a cap.

Will Catch Shares Be the Solution to Chinook Bycatch?

- When caps were set in the Bering Sea, they were set higher than those recommended by the U.S. Fish and Wildlife Service, the U.S. Department of State, the Yukon River Panel, the Federal Subsistence Board, and the Alaska Board of Fisheries. In the Gulf of Alaska, the 25,000 cap set on the Pollock fishery exceeds the 10-year average. The hard caps set will prevent high bycatch rates, but do little to reduce bycatch of Chinook and Chum salmon.

Every Chinook Salmon Counts

- At times of low abundance, every fish counts. While other users have had to reduce their harvest to conserve Chinook salmon with tremendous economic and cultural impacts, the trawl fisheries must do the same.

- While there are a number of factors contributing to the current poor state of our Chinook salmon runs, bycatch mortality is one factor that we *can* control.

Wastefulness Is Not the Alaskan Way

- Alaska has a reputation for sustainable fisheries Management. We can and must do better when it comes to reducing bycatch.
- The best tools for reducing bycatch are caps on prohibited species, observation and sampling, and finally research funding to analyze the samples to determine river of origin and migration paths.

How Can the Legislature Help?

- A resolution from the legislature to the North Pacific Fishery Management Council that supports reduction of Chinook salmon bycatch in the Gulf of Alaska and Bering Sea would let the Governor-appointed Council know that the commercial, charter, sport, and subsistence fishermen of Alaska are being represented in their call for reductions in Chinook salmon bycatch.


All Users of Chinook Salmon
Thank You!

Questions? www.akmarine.org



Alaska Marine Conservation Council



Annual Report

Chinook Salmon Bycatch Reduction Incentive Plan

2011

NMFS IPA No. __CP IPA__

IPA Representative:

Stephanie Madsen
At-sea Processors Association
P.O. Box 32817
Juneau, AK 99803
(907) 523-0970
smadsen@atsea.org

Technical Representative:

Karl Haflinger
Sea State, Inc.,
P.O. Box 74
Vashon, WA 98070
(206) 463-7370
karl@seastateinc.com

April 1, 2012

Introduction

Amendment 91 to the Bering Sea and Aleutian Islands Groundfish Fishery Management Plan (BSAI FMP) limits Chinook salmon bycatch in the eastern Bering Sea (EBS) pollock fishery. The rules and regulations implementing Amendment 91 came into force at the start of the 2011 fishery. Amendment 91 is an innovative approach to managing Chinook salmon bycatch in that it combines a prohibited species catch (PSC) limit on the amount of Chinook salmon that may be caught incidentally by the fishery with an incentive plan agreement (IPA) and performance-standard requirement designed to minimize bycatch to the extent practicable in all years. The approach is designed to motivate fishery participants to avoid Chinook salmon bycatch at the individual vessel level under any condition of pollock and Chinook abundance in all years. The vessel-level incentives are created through contracts among the fishery participants.

The Chinook Salmon Bycatch Reduction Incentive Plan (CP IPA) reported on here is designed to provide the incentives necessary to accomplish the goals and objectives of Amendment 91. The plan builds on experience gained in the development and refinement of time-and-area-based, rolling "hot-spot" avoidance programs. The plan creates incentives to avoid salmon bycatch by restricting the pollock fishing opportunities of vessels with poor Chinook bycatch performance while allowing vessels with good performance less restricted access to the fishing grounds. Losing access to good pollock fishing increases vessel operating costs and reduces product values. Avoiding grounds restrictions reduces operating costs and allows for the production of more high-value products (especially during the A-season), thus increasing profits.

The incentive plan is designed to work in concert with the annual Chinook salmon PSC limits specified in Amendment 91. The limits depend on whether the fishery participants develop IPAs. If IPAs are developed, then the annual limit is 60,000 Chinook during any two-out-of-seven years, and 47,591 Chinook in other years. During 2011 all pollock vessels participated in an IPA and the catcher-processor (CP) sector IPA participants included vessels harvesting the American Fisheries Act (AFA) CP Sector and Alaska Community Development Quota (CDQ) pollock allocations. For the CP sector, the Chinook quota was 13,516 fish and the pollock quota was 36 percent of the non-CDQ directed fishing allocation. For the CDQ sector, the Chinook quota was 3,883 fish and the pollock quota was 10 percent of the annual directed fishing allocation. These pollock and Chinook quotas were further allocated among the seasons and the participating vessels. Table 1 shows the CP IPA 2011 "day-one" allocations of pollock and Chinook salmon PSC quota.

Primary IPA components include: (1) data gathering, monitoring, reporting, and information sharing; (2) identification of bycatch avoidance areas (BAA); and (3) fishing-area prohibitions for vessels with poor bycatch performance. Additional components include: (1) an A-season closed area of approximately 755 square nautical miles on the northern flank of the Bering Canyon; and (2) a set of conditional, B-season closed areas of approximately 1,295 square miles along the outermost EBS shelf. Vessels are prohibited from fishing in the B-season areas beginning on October 15th and

continuing through to the end of the season during those years when the aggregate bycatch of all plan vessels during the month of September exceeds a preset threshold.

Table 1. CP IPA Day-One Allocations of Pollock and Chinook Salmon, 2011.

Vessel	Pollock (tons)	Chinook Salmon (n)
American Dynasty	41,737	1,318
American Triumph	41,737	1,318
Northern Eagle	41,737	1,318
Northern Jaeger	41,737	1,318
Ocean Rover	41,737	1,317
Arctic Fjord	44,766	1,205
Arctic Storm	38,433	1,271
Northern Hawk	59,316	1,378
Alaska Ocean	48,260	1,432
Pacific Glacier	47,745	1,433
Starbound	41,498	1,259
Island Enterprise	26,250	772
Kodiak Enterprise	26,250	772
Seattle Enterprise	26,250	772
Ocean Peace	1,327	66
Northern Glacier	515	3
Allocation Buffer	0	447
Total Allocation	569,295	17,399

Incentive Measures

One of the most practical and direct methods to create incentives to avoid Chinook salmon bycatch is to limit the pollock fishing opportunities of a vessel when bycatch performance is poor. This simple approach works especially well for catcher-processors because efficient processing requires an uninterrupted flow of fish, and this can be achieved most reliably with unrestricted access to the grounds. Because experience has shown that high, local concentrations of pollock may often be found where concentrations of Chinook are also high (the vessels can "see" the pollock but not the Chinook), limiting access to local areas of relatively high Chinook bycatch is an efficient way to create a financial incentive to avoid Chinook salmon bycatch. The reason for this is that losing access to good pollock fishing grounds increases vessel operating costs and reduces the amount of products that can be produced during a day of fishing. A vessel that retains nearly unrestricted access to good pollock fishing

opportunities avoids costs associated with moving and finding pollock in other areas, and so the vessel can produce more products each day.

About a decade of industry experience has shown that the most efficient way to reduce salmon bycatch to the maximum extent practicable is to focus incentive programs on those areas where Chinook salmon bycatch is highest when compared to the amount of pollock harvested. To accomplish this, vessel performance benchmarks are calculated in a way that reflects the amount of pollock harvested. The first step in creating a program to avoid Chinook bycatch is to employ data gathering, reporting, and information sharing to identify local areas of relatively high Chinook abundance on the pollock grounds. Pollock catch and Chinook bycatch records from all fishery participants are gathered, compiled, and evaluated each week during which an IPA vessel catches pollock. In this analysis, areas of relatively high Chinook bycatch are identified (bycatch avoidance areas; BAA). Should vessels continue to fish in these areas, high Chinook bycatch is likely to occur because local concentrations of Chinook routinely persist in time and space for several weeks.

An important component the evaluation of potential BAA is the generation of a useful grounds-wide index of salmon abundance. This "baseline" index of relative salmon abundance on the grounds over time is called the base rate. More information about the methods used to identify the base rate is in the IPA agreement (available at: www.fakr.noaa.gov/sustainablefisheries/bycatch/salmon/chinook/ipa/chinook_salmon_ipa_2010.pdf). The base rate also takes into consideration the amount pollock harvested.

To establish and maintain incentives to avoid Chinook bycatch under any condition of pollock and Chinook salmon abundance, the bycatch performance of the IPA vessels is measured both currently (most recent two weeks) and cumulatively (over the entire fishing season). To evaluate current performance, vessel performance is measured during the prior two weeks and compared to a standard that represents better-than-average performance. The measure of current vessel bycatch performance is called the vessel bycatch ratio. The bycatch ratio is calculated by dividing the number of Chinook caught incidentally by the vessel during the prior two weeks by the metric tons of pollock caught by the vessel during the prior two weeks. A two week period is used because experience has shown that day-to-day vessel bycatch performance is influenced by random factors associated with changes in weather, winds, water temperatures, and currents, and measuring performance over a two-week period "dampens" the effects of these random influences. This increases the usefulness of the measure in the creation of an incentive for the individual vessel to avoid bycatch.

If the current bycatch performance of an IPA vessel is not better than average, then the vessel is prohibited from fishing in the BAA for a week. Because the base rate is calculated by aggregating pollock catch and bycatch data from all vessels fishing for pollock, the base rate provides a measure of the average bycatch performance of the vessels fishing for pollock. The plan establishes the better-than-average-performance standard at 75 percent of the base rate. So every plan vessel with current bycatch performance higher than 75 percent of the base rate is prohibited from fishing within the BAA for seven days (i.e., the following week). If during the following week the current bycatch performance of a vessel operating under a fishing prohibition remains

higher than 75 percent of the base rate, then the vessel is prohibited again from fishing in the bycatch avoidance areas for an additional seven days. A seven-day fishing prohibition is called a weekly fishing prohibition.

The cumulative bycatch performance of a vessel is measured as the total amount (number) of Chinook salmon bycatch by the vessel during the fishing year relative to the pollock allocation assigned to that vessel (Table 1 shows the day-one" assignments for 2011). So the measure of cumulative vessel performance accumulates from the first day of fishing through to the last. Vessel cumulative bycatch performance is evaluated against a standard designed to magnify the incentive to avoid salmon bycatch during years when the baseline abundance of Chinook is medium and high. Based on analysis of more than a decade of CP catch records, an annual bycatch of 8,500 Chinook indicates a year when Chinook abundance on the grounds traditionally fished by CP vessels is at a medium level.

Cumulative bycatch performance is evaluated only for those vessels that receive a weekly fishing prohibition. For these vessels, if the cumulative Chinook bycatch rate is higher than the medium-abundance standard, then the vessel is prohibited from fishing in the BAA for two weeks. This standard is called the vessel cumulative amount, and a fourteen-day fishing prohibition is called an extended fishing prohibition. If vessel Chinook bycatch is greater than its cumulative amount, then it is subject to the extended fishing prohibition. Additional information about how the vessel cumulative amount is determined is in the IPA agreement.

Chinook Salmon Conservation Areas

Chinook salmon feeding migrations produce concentrations of Chinook in discrete, local areas along the EBS outer continental shelf, and many of these areas are well known to pollock fishermen. The areas are known to pollock fishermen because more often than not high concentrations of pollock are found in the areas. However, the precise times during which pollock and Chinook may be concentrated in any local area depends on a host of environmental and physical-oceanographic conditions that change with the seasons and the weather, such that it is not generally possible to know precisely where and when pollock and Chinook are concentrated together before going fishing for pollock.

Analysis of catch records over a decade or more has revealed the existence of one area along the outer continental shelf within which it seems that high concentrations of Chinook salmon exist almost every year during the winter fishery. Based on this analysis, an A-season fishing prohibition within an approximately 735 square mile area is included in the plan as a means to reduce bycatch. The area is called the A-season Chinook Salmon Conservation Area (CSCA).

Analysis of B season catch records over two decades shows that when migrating Chinook arrive on the outer continental shelf in sufficient numbers during September, the odds that high concentrations of Chinook will be encountered by the fishery in October appear to increase. To create an incentive to reduce bycatch during the latter portion of the B-season, the CP IPA includes "triggered" fishing prohibition for three

areas of approximately 1,295 square miles along the outermost shelf. These areas are called the B-season Chinook Salmon Conservation Area. To implement the incentive, all vessels are prohibited from fishing in the areas beginning on October 15th and continuing through to the end of the season during those years when the aggregate bycatch rate for all vessels during the month of September exceeds 0.015 Chinook per metric ton of pollock harvest (n/t; hereafter metric tons are referred to simply as tons). Maps of these Chinook Salmon Conservation Areas and the latitude and longitude coordinates of their boundaries are provided in the IPA agreement. The CP IPA also specifies the penalties levied on a vessel for violating a BAA prohibition or fishing in a CSCA when fishing there is prohibited. These penalties are $10,000 for the first annual violation, $15,000 for a second annual violation, and $20,000 for a third and each subsequent violation during a year, with every trawl inside a prohibited area considered a separate violation.

Effects of Incentive Measures on Individual Vessels

This annual report provides a qualitative evaluation and some quantitative information on the effectiveness of the plan. The CP IPA incentive program is largely an area-based program, and this evaluation relies heavily on spatial analysis of pollock trawl locations as well as the bycatch performance of the individual vessels. To begin an assessment of the IPA incentives on the individual vessels, the aggregate performance of the vessels in the 2011 fishery is tabulated and compared to performance during prior years. Table 2 shows the aggregate bycatch performance of CP IPA vessels during 2011.

Comparing years since just before the implementation of the AFA, Chinook salmon bycatch during 2011 is low, especially when adjusted for the size of the pollock catch. Since 1998, the number of bycatch Chinook is the fourth lowest, and only 25 percent higher than the lowest annual bycatch since then. After adjustment for the size of the pollock catch, the 2011 bycatch ratio is the second lowest over the time period, and just 15 percent above the lowest value (a difference of one salmon for every 1,000 tons of pollock catch).

Figure 1 shows how aggregate 2011 CP IPA Chinook bycatch performance compares with that of prior years. Since 1998 climate conditions over the EBS shelf and coastal Alaska are believed to have mainly determined the abundance of Chinook salmon on the pollock grounds, with the warm period during 2001 through 2005 believed to have increased both freshwater and marine survival. In 2011 the bycatch ratio remained at a very low level, continuing a slow downward trend that began in 2008.

Figure 2 shows how aggregate 2011 CP IPA chum bycatch performance compares with that of prior years. The pronounced effect of the warm-weather years on chum salmon survival is also apparent in the chum bycatch performance of the vessels. The bycatch ratios indicate that the abundance of chum salmon was likely higher in 2011 than during recent years. This is consistent with the summer of 2011 likely providing relatively favorable conditions for salmon on the EBS shelf, at least compared

to recent years, and these conditions probably persisted into the fall when concentrations of Chinook first moved onto the EBS shelf to feed.

Table 2. CP IPA Chinook Salmon Bycatch Performance, 2011.

Season	Pollock (t)	Chinook Salmon (n)	Ratio (n/t)
A	224,209	2,236	0.010
B	316,296	1,986	0.006
A + B	540,505	4,222	0.008

Figure 1. Chinook Bycatch Ratios, EBS Pollock, 1998-2011.

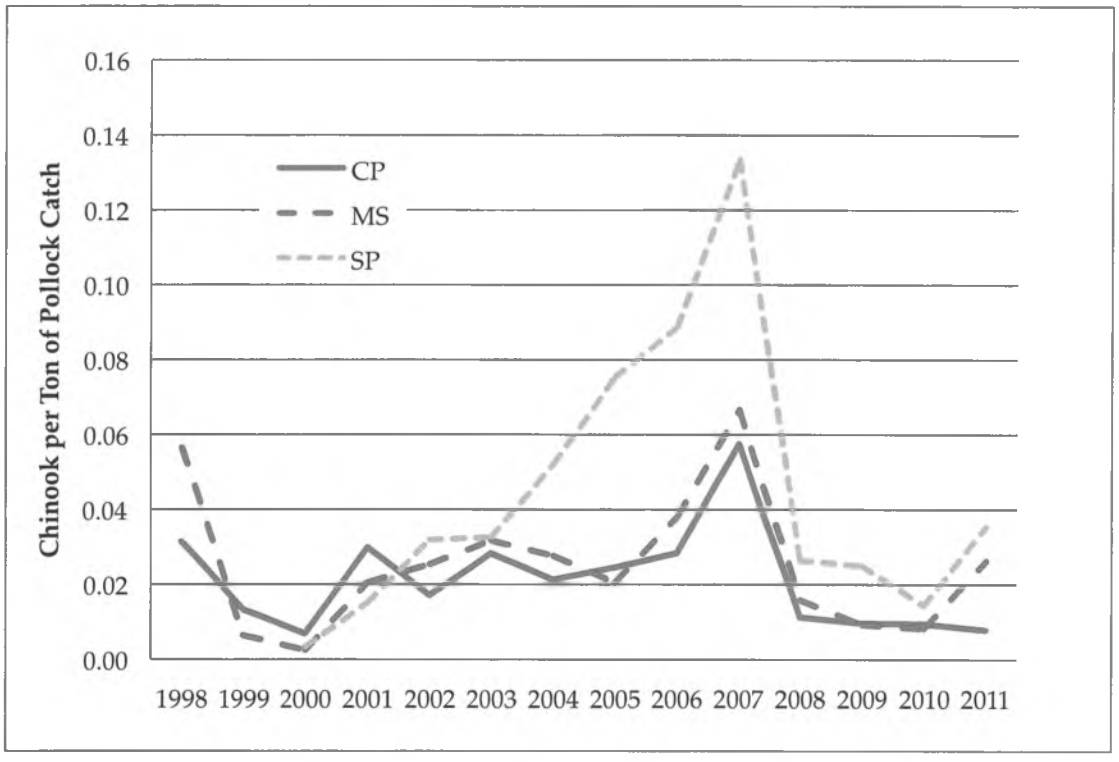


Figure 2. Chum Bycatch Ratios, EBS Pollock B-Season, 1998-2011.

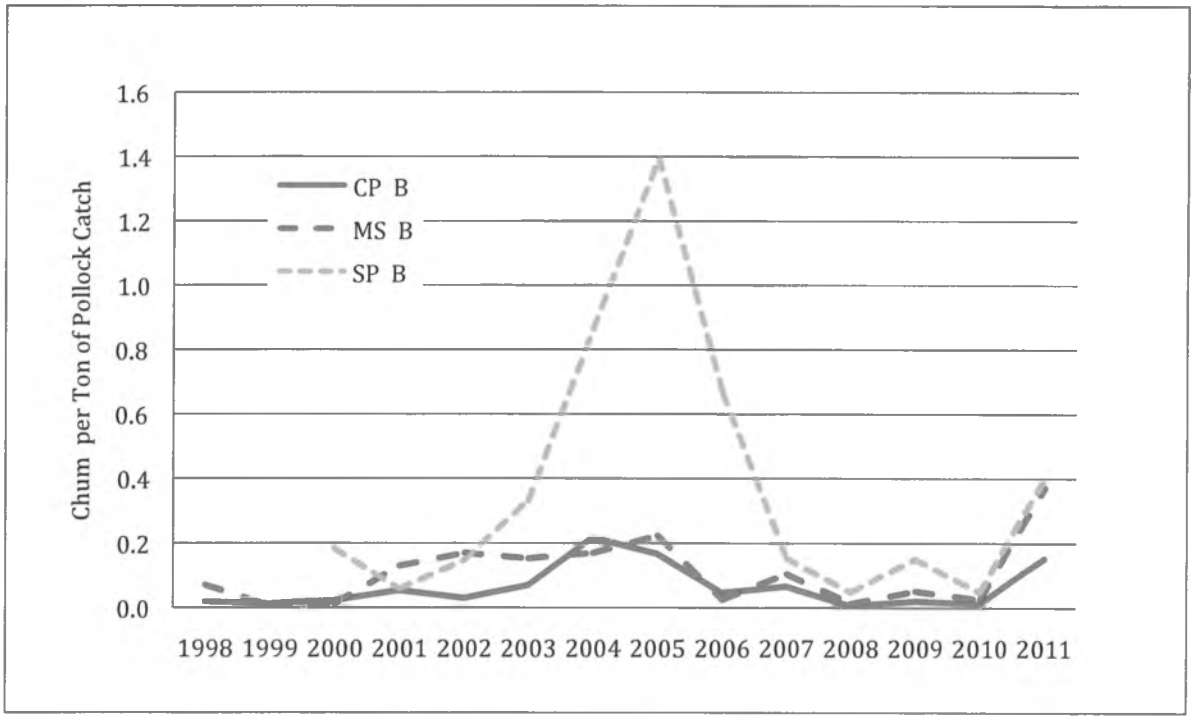


Figure 3 shows how the timing of 2011 IPA fishing activities compares with prior years. For the B-season, fishing spooled up very quickly at the start, but due to a combination of chum bycatch avoidance efforts and a grounds-wide reduction in pollock availability at the beginning of August, just about all of the vessels fished until the season ended. Despite this unusual pattern of effort, about 28,640 tons of pollock (about five percent of the annual quota) went uncaught.

Table 3 shows the Chinook salmon bycatch performance of the IPA vessels. Performance is shown by season because the Chinook bycatch environment is different during the A-and B-seasons. During the A-season, bycatch ratios are often double those of the B-season because when the season starts Chinook salmon are already feeding on the EBS shelf. As the season progresses, Chinook salmon migrate to basin waters, and abundance on the grounds generally reaches a low level by mid March. With the exception of one vessel, which did not catch very much pollock, vessel bycatch performance is tightly clustered around the A-season average ratio of 0.010 n/t.

During the B-season, and when fishing starts quickly, it is sometimes possible to almost complete fishing operations before Chinook salmon arrive on the shelf in the fall to feed. In other years they arrive earlier and great effort must be concentrated on limiting the bycatch. The weekly bycatch data shows that an initial wave of Chinook salmon arrived on the EBS outer continental shelf during the first week of September, and that a second wave arrived about the middle of October. The grounds-wide decrease in pollock availability that began during August persisted through to the end

of the season, and as a consequence, the risk of high pollock bycatch was significantly increased as just about all vessels were forced to fish through to the end of October.

Table 3 shows the range of vessel bycatch performance during the B-season. The data confirms that most vessels were very close to average performance. The exceptions are two vessels with double the average ratio and one at three times the average. The performance of these vessels was influenced most by a few high bycatch trawls near the end of the season. The main cause of this performance was the abrupt decrease in pollock availability during August and the subsequent requirement for most vessels to fish until the season ended. For one vessel (Northern Glacier), its only pollock fishing occurred late in October, and so the high ratio did not reflect many bycatch Chinook. In the latter case, the Northern Eagle obviously delivered the highest bycatch ratio, but the difference between its performance and average performance resulted in only 150 "additional" bycatch Chinook (the vessel did not catch a full share of B-season pollock).

The CP IPA agreement specifies that all fishing in the B-season CSCA is prohibited beginning on October 15th in those years when the bycatch performance for all plan vessels combined exceeds 0.015 n/t during the month of September. The IPA vessels caught 588 Chinook salmon and 59,189 tons of pollock in September, resulting in a bycatch ratio of 0.001 n/t. As such, the IPA vessels were not prohibited from fishing in the CSCA during the last two weeks of October.

Figure 3. Number of IPA Vessels in the Pollock Fishery by Week, 2000-2011.

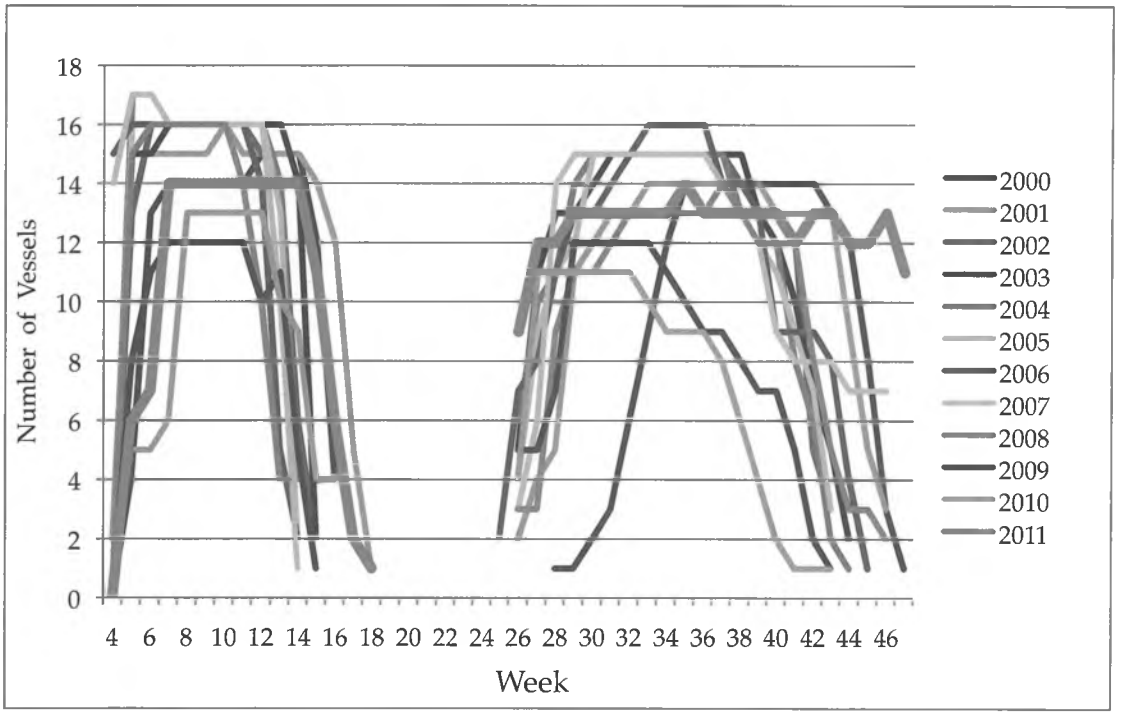


Table 3. CP IPA Pollock Catch and Chinook Bycatch Performance by Season and Vessel, 2011.

Vessel	A-Season Pollock (t)	Chinook Salmon A (n)	B-Season Pollock (t)	Chinook Salmon B (n)	A-Season Ratio (n/t)	B-Season Ratio (n/t)
American Dynasty	16,897	216	26,645	169	0.013	0.006
American Triumph	16,356	150	26,910	123	0.009	0.005
Northern Eagle	16,467	140	12,620	230	0.009	0.018
Northern Jaeger	16,032	90	23,799	154	0.006	0.006
Ocean Rover	16,660	127	24,922	98	0.008	0.004
Arctic Fjord	19,448	189	25,979	237	0.010	0.009
Arctic Storm	14,088	122	23,681	30	0.009	0.001
Northern Hawk	21,664	170	26,446	150	0.008	0.006
Alaska Ocean	22,290	255	29,799	149	0.011	0.005
Northern Glacier	485	22	1,446	16	0.045	0.011
Pacific Glacier	15,857	128	24,713	101	0.008	0.004
Starbound	14,454	185	22,249	147	0.013	0.007
Island Enterprise	11,105	143	21,023	184	0.013	0.009
Kodiak Enterprise	11,154	153	16,204	187	0.014	0.012
Seattle Enterprise	11,253	146	9,860	11	0.013	0.001
Ocean Peace	0	0	0	0		
Forum Star	0	0	0	0		
American Challenger	0	0	0	0		
Ocean Harvester	0	0	0	0		
Tracy Anne	0	0	0	0		
Neahkanie	0	0	0	0		
Sea Storm	0	0	0	0	Weighted Average	Weighted Average
Muir Milach	0	0	0	0		
Total	224,209	2,236	316,296	1,986	0.010	0.006

A-Season Fishery Details

The A-season fishery began on January 20th with vessels fishing along the 50 fathom curve to the east of 170° West longitude and well away from the shelf margin (100 fathom curve). All vessels experienced good daily catch rates with little Chinook bycatch and few tows with ratios higher than 0.075 n/t. [1] The incentive plan mandates that a short period at the beginning of each season be used to gather and evaluate catch and bycatch information and to assess the baseline abundance of Chinook on the grounds. The A-season period extends from January 20th to February 14th, and during this period the base rate is set at 0.040 n/t. The initial vessel performance evaluation was made on February 3rd (using the start-up base rate), and no BAA were identified. The average bycatch ratio (cumulative) through February 3rd was 0.015 n/t and the performance benchmark was 0.030 n/t. At this time a new, fishery-wide Chinook bycatch data sharing agreement was still being negotiated, and the technical representative could not use bycatch information from shore-plant catcher-vessels to identify BAA.

Figure 4 shows vessel trawl locations during the week following the first evaluation. At this time a portion of IPA vessels moved fishing operations to the northwest, within a 50-60 fathom depth band away from the shelf margin. The figure shows a half dozen trawl locations with moderate Chinook bycatch ratios (yellow stars) in depths close to 80 fathoms by vessels fishing to the south. Despite continuing, low average bycatch performance, these trawls resulted in the identification of the first BAA of the season. Figure 5 shows the BAA and the trawl locations from the performance evaluation of February 10th, with one vessel prohibited from fishing in the BAA. The trawl locations during February 12-18 confirm that vessels which had been fishing in the vicinity of the BAA moved to shallower grounds.

The performance evaluation sent to the vessels on February 17th shows two BAA in the same local area. These BAA were identified from a combination of IPA vessel and mothership catcher-vessel trawls, and two vessels were prohibited from fishing in the BAA. At this time the start-up period was complete and the base rate was recalculated using IPA and mothership catcher-vessel bycatch performance over the first three weeks of the season. This change reduced the base rate to 0.035 n/t and the vessel bycatch performance benchmark to 0.026 n/t. IPA vessel average bycatch ratio (cumulative) through February 17th was 0.015 n/t.

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[1] A rule of thumb for quick appraisal of vessel annual bycatch performance is the 0.050 n/t benchmark (one salmon in every 20 tons of pollock). When Chinook salmon is relatively abundant on the pollock grounds, it is a significant challenge for vessels to remain under this standard (given experience and technology). The figure legend breakpoints correspond to the 0.05 n/t benchmark as per the equation (0.40x0.075) + (0.60x0.035) = 0.05. The breakpoints in the A-season figure legends are twice those of the B-season.

Figure 4. Vessel Trawl Locations and Bycatch Performance, February 5-11, 2011.

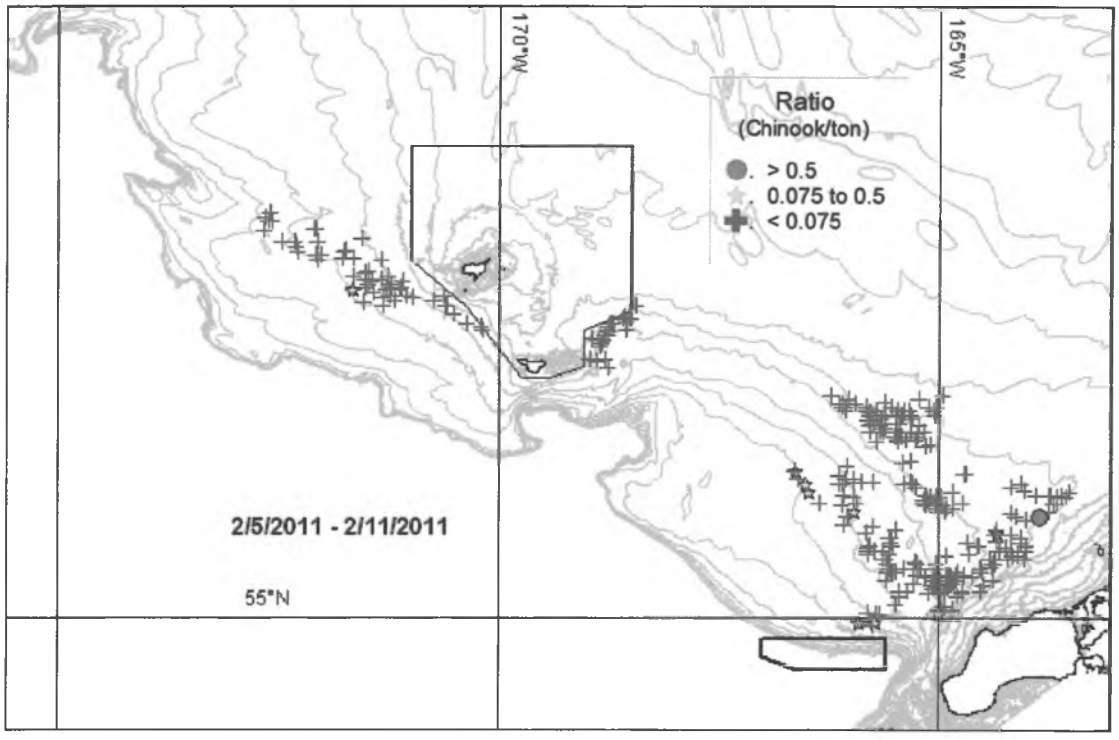
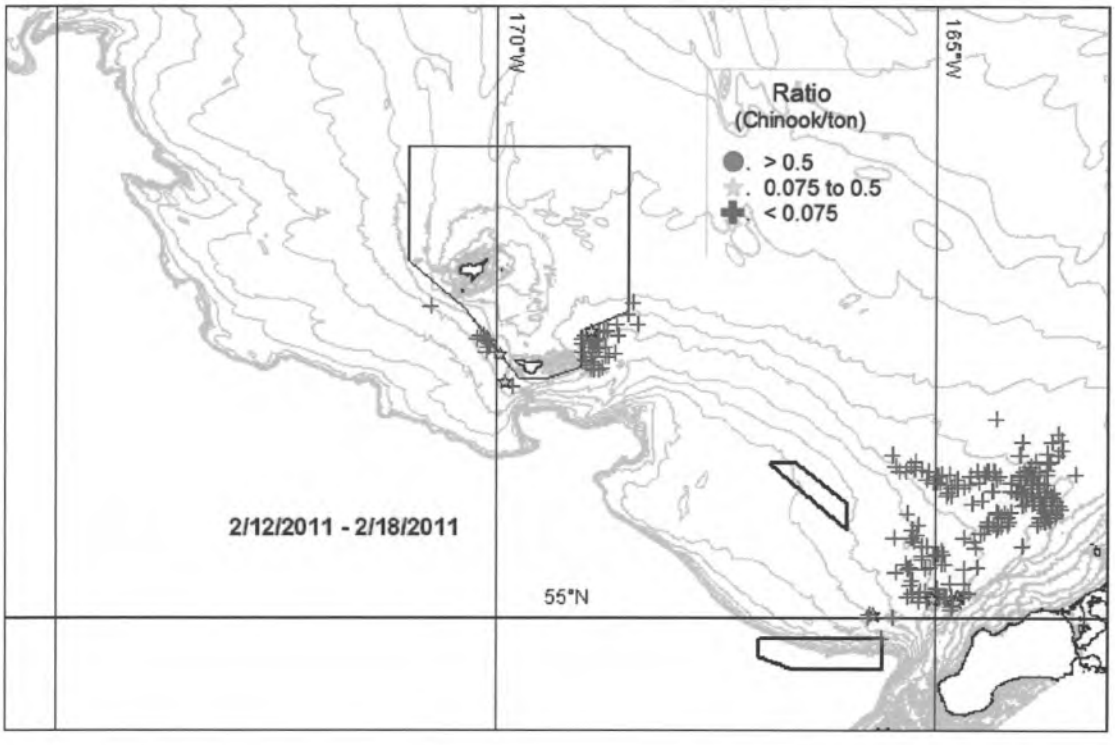


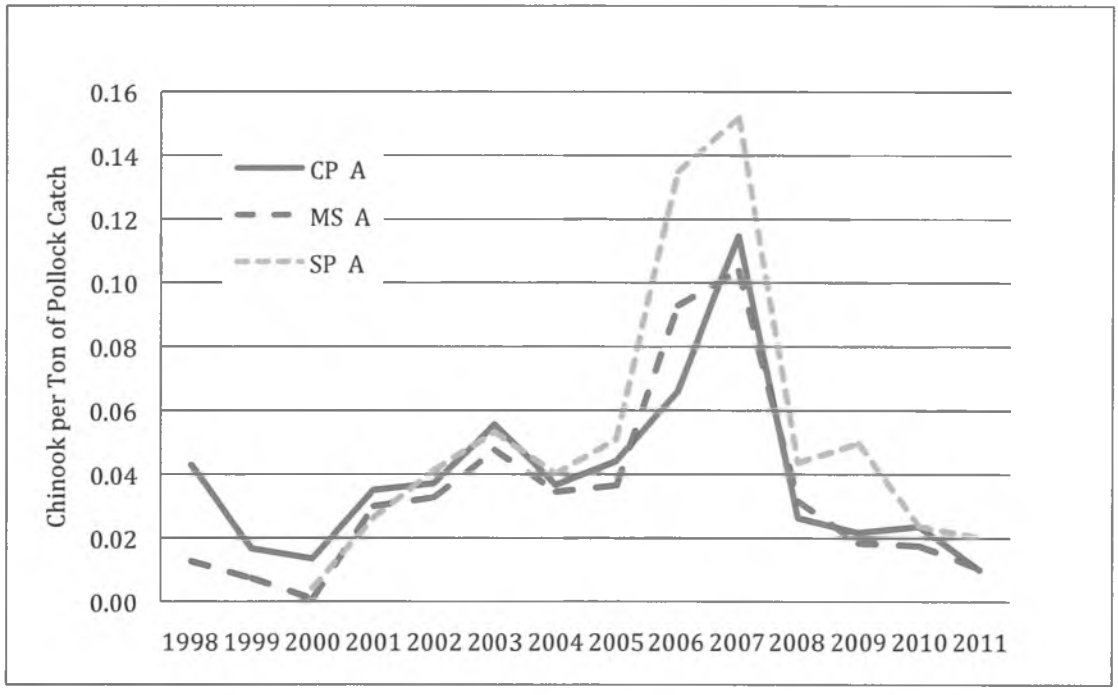
Figure 5. Vessel Trawl Locations and Bycatch Performance, February 12-18, 2011.



The performance evaluation sent to the vessels on February 24th was the first that could identify BAA using fishery-wide bycatch performance (the new Chinook data-sharing agreement was in place). The report shows high bycatch ratios in several areas from a combination of shore-plant and mothership catcher-vessel trawls, but all IPA vessels were below the performance benchmark. During the last week of February and through to the end of March IPA vessels located most fishing on grounds west of 170° West longitude and very few Chinook showed up as bycatch. At the beginning of March Chinook abundance on the grounds appeared to decrease, with high concentrations remaining only in the Bering Canyon (shore-plant catcher-vessel bycatch routinely identified BAA adjacent to the CSCA during March). The IPA vessels completed their A-season fishery during the first two weeks of April, again with very few bycatch Chinook. A final performance evaluation on April 14th showed a cumulative vessel average bycatch ratio of 0.010 n/t.

Figure 6 shows A-season bycatch ratios from 1998 through 2011. Despite what is believed to have been a similar level of Chinook abundance on the pollock grounds as during 2008-2010, the IPA vessels managed to achieve relatively low Chinook bycatch during 2011 A-season and so continued a trend of good bycatch performance that began in 2008.

Figure 6. Chinook Bycatch Ratios, EBS Pollock A-Season, 1998-2011.



B-Season Fishery Details

As Figure 3 shows, most IPA vessels were on the grounds as the B-season opened. The B-season data-gathering period extends from June 10th to July 14th, and during this period the base rate is set at 0.035 n/t. The initial vessel performance evaluation was made on July 14th using the start-up base rate and no BAA were identified. Pollock daily catch rates were good from the season start through to the end of July with virtually all fishing west of 170° West longitude. Very few concentrations of Chinook were encountered and no BAA were identified. During the second week of August the vessels experienced what many vessel masters characterized as a "never-before-seen," abrupt change in pollock availability. Figure 7 shows trawl locations for the IPA vessels during the first week of August, which was the last time the vessels were observed fishing on a substantial aggregation of pollock. The figure also shows a chum-salmon BAA over a large portion of the grounds above the Bering Canyon.

Figure 8 shows a pattern that characterized fishing after the abrupt change in pollock distribution. For the remainder of August the vessels encountered very few Chinook, fishing operations remained west of 170° West longitude, and no BAA were identified (again a chum-salmon BAA is shown in the figure). The September 1st evaluation showed a B-season cumulative average bycatch ratio of 0.001 n/t. However, just after the beginning of September it became evident that an initial wave of Chinook salmon had begun to feed along the shelf margin. At this time most IPA vessels moved fishing to shallower water to limit bycatch, locating most fishing in 50-80 fathom depth bands to the east of Pervents Canyon.

The September 22nd bycatch report was the first B-season report that included a BAA. It was over deep water in the Bering Canyon and affected the CDQ fishing operations of one vessel. By this time the cumulative average bycatch ratio had increased to 0.003 n/t (three bycatch Chinook for every 1,000 tons of pollock catch). During the last week of September the vessels moved most fishing to the southeast, with virtually all fishing taking place east of 170° West longitude by the end of September. The September 29th report again identified a BAA over deep water in the Bering Canyon, and again the CDQ fishing operations of one vessel were affected (same vessel).

During the middle of October a second wave of Chinook arrived and the number of trawls with bycatch ratio greater than 0.035 n/t increased noticeably. The second wave is typically made up of more numerous, smaller (younger) Chinook. In response one IPA vessel made a 500 nautical mile round-trip to evaluate fishing conditions between the Pribilof Islands and the US-Russia convention line. Most of these trawls showed bycatch ratios greater than 0.035 n/t and no IPA vessels moved fishing operations back to the northwest. During most of October IPA vessels fished in the vicinity of the Pribilof Islands (performance reports for the last three weeks of the season showed advisory BAA in the Bering Canyon).

Figure 7. Vessel Trawl Locations and Bycatch Performance, July 30 - Aug. 5, 2011.

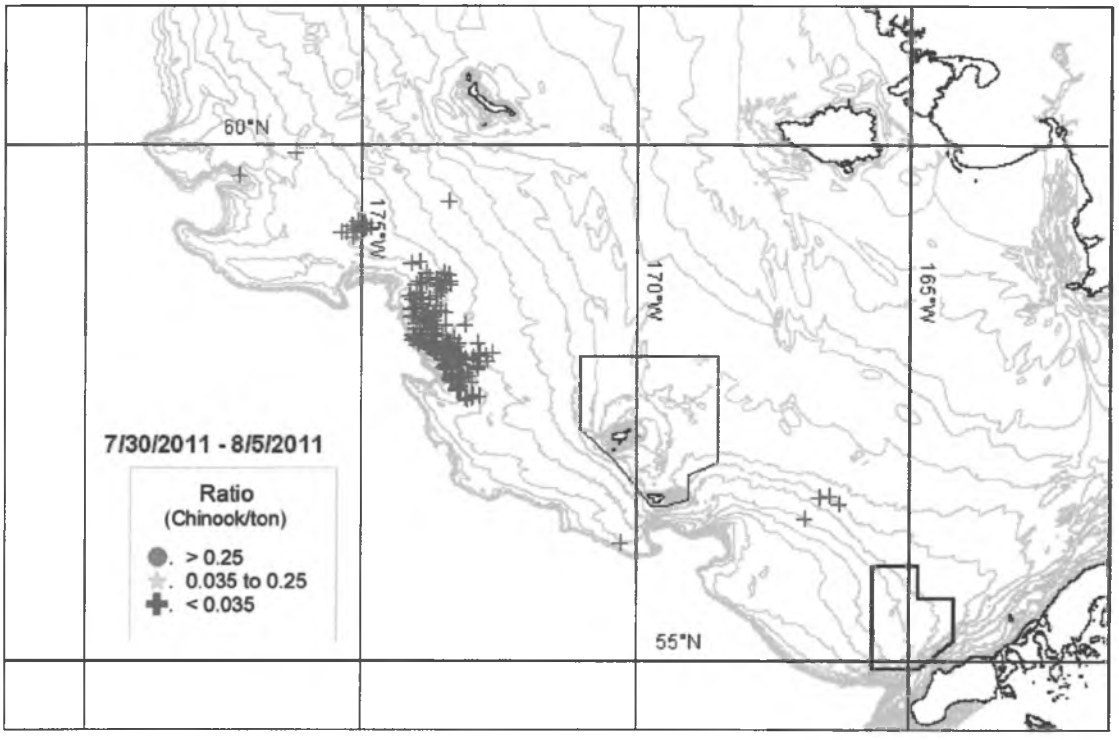
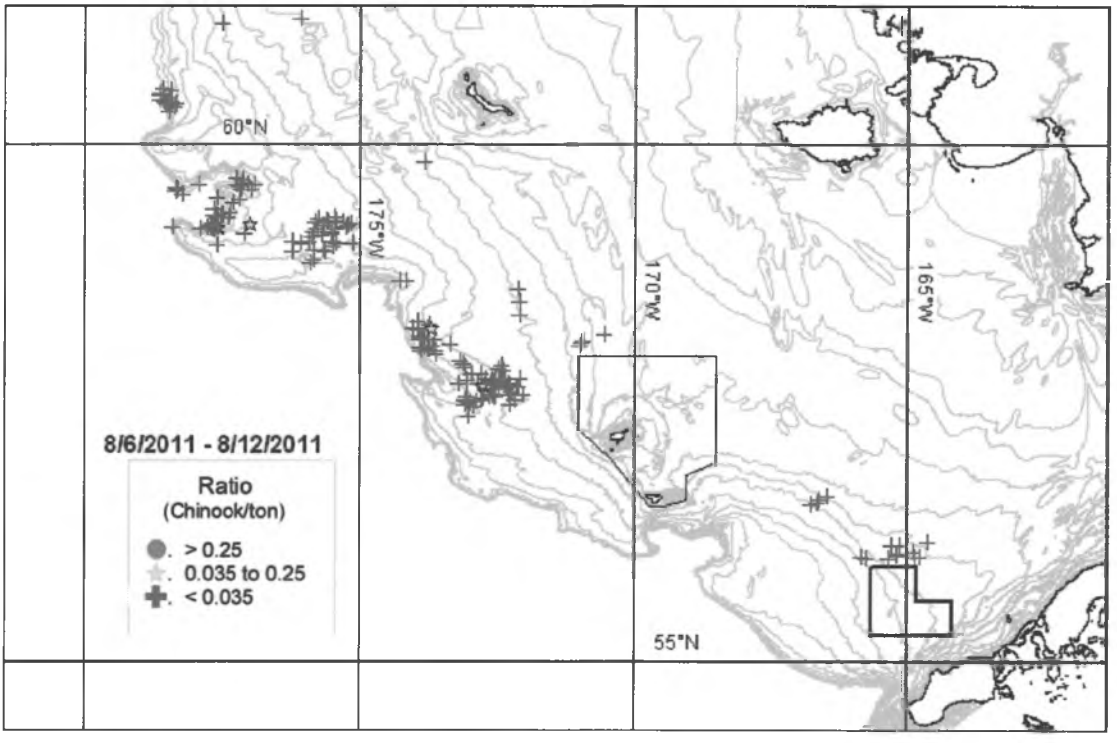


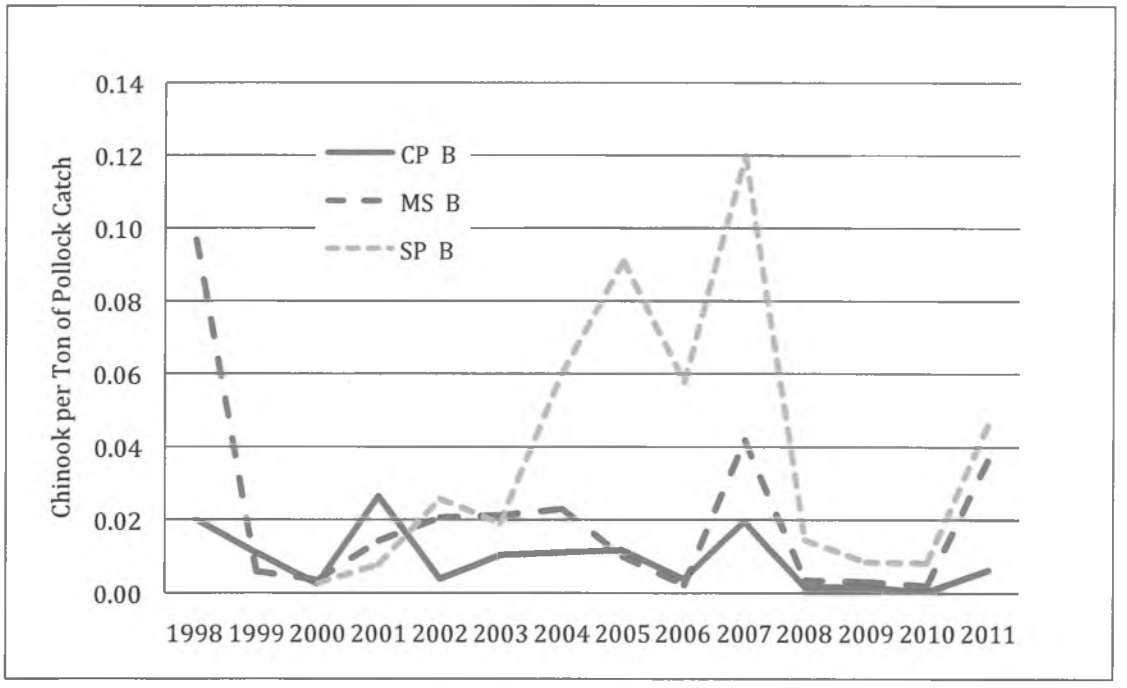
Figure 8. Vessel Trawl Locations and Bycatch Performance, August 6-12, 2011.



The final B-season report was distributed to the vessels on October 20th and showed the IPA vessels with a cumulative average bycatch ratio of 0.007 n/t. This ratio was one-third lower than for the mother-ship catcher vessels and just one-fourth as high as for shore-plant catcher-vessels.

Figure 9 shows Chinook bycatch ratios for the pollock fishery during the 1998-2011 B-seasons. The data shows that the unexpected, abrupt change in pollock abundance during the 2011 B-season resulted in a relatively adverse Chinook bycatch environment, at least when compared to recent years. Most IPA vessels fished for two weeks after the second wave of Chinook arrived, a period when Chinook abundance in local areas can reach high levels. IPA vessels responded to these conditions by fishing shallower grounds somewhat removed from the outer shelf, especially when concentrations of Chinook were believed present. After the pollock dispersed, the IPA vessels continued fishing on grounds to the northwest, and then, in what appeared to be a search for more favorable bycatch conditions, conducted a wholesale movement of fishing to grounds just east of 170° West longitude. The IPA vessels remained in this local area until the season closed, passing up good CDQ pollock fishing near the Bering Canyon because bycatch reports showed BAA and advisory BAA there.

Figure 9. Chinook Bycatch Ratios, EBS Pollock B-Season, 1998-2011.



Chinook Salmon Savings

The CP IPA is a time-and-area-based program that prohibits fishing in areas with high concentrations of Chinook salmon when compared to the abundance of pollock. Because performance benchmarks are calculated for each vessel individually, the program generates incentives to avoid Chinook bycatch for the individual vessel. This simple approach works especially well for CP vessels because efficient processing requires an uninterrupted flow of fish, and this can be achieved most reliably with unrestricted access to the grounds. Because CP vessels fully integrate catching and processing activities, the benefit of unrestricted access to good pollock fishing grounds includes economic profits that reflect both catching value and processing value. This obvious difference in operational structure is believed to play an outsized role in motivating the IPA vessels to avoid potentially significant risks to both catching and processing value from unexpected, repeated episodes of high Chinook bycatch. This economic motivation remains even when bycatch is anticipated to remain below the annual limit. [1]

A close examination of the trawl locations in space and time, their bycatch ratios, and the bycatch performance of all of the IPA vessels shows clearly that the vessels changed their fishing strategy to avoid Chinook bycatch. The most salient feature of this changed approach was for vessels to locate initial fishing operations away from the outer margins of the shelf. Depending on the locations of pollock concentrations, any profitable movement of fishing to deeper water was accomplished via a deliberate, slow, and cautious progression while maintaining awareness of information about Chinook concentrations within the area. Evidence of local Chinook concentrations generally caused vessels fishing in deep water to move fishing to more shallow grounds. This behavior occurred in multiple areas when trawl bycatch ratios showed high concentrations of salmon, as, e.g., when a wave of Chinook salmon moved into a local area to feed.

Close tracking of the trawl locations and their bycatch ratios shows that Chinook bycatch would have been higher had IPA vessels not moved fishing when bycatch ratios showed concentrations of Chinook. Combining the trawl locations, their bycatch ratios, and the locations of both BAA and advisory BAA within the same week also shows that IPA vessels located very few trawls along the edges of the BAA, and in those few cases where trawls approached the edge of a BAA, very little Chinook bycatch was recorded.

Another way to look at bycatch performance is to make an evaluation using statistics. In this case, the statistics describe the distribution of the vessel bycatch ratios (relative performance). The hypothesis is that the current, Amendment 91-compliant

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[1] A mothership and its catcher-vessels also integrate catching and processing activities, but the incentives in the mothership catcher-vessel IPA do not extend all the way down to the individual vessel.

IPA program creates a more uniform incentive to avoid Chinook salmon bycatch among the individual vessels. In the prior program, the bycatch performance of a cooperative vessel group was evaluated against a performance benchmark, and under some circumstances, incentives to avoid bycatch weakened for an individual vessel. With a more uniform incentive, the distribution of vessel bycatch performance is expected to narrow, reflecting more uniform vessel performance.

The standard deviation of a distribution provides information about data dispersion. A low standard deviation indicates that the data points tend to be very close to the mean, whereas high standard deviation indicates that the data points are spread out over a large range of values. To interpret this statistic, it is believed that stronger, more uniform incentives for the individual vessel would reduce the "variability" of the observations. In this case, the standard deviation would be lower.

Skewness is another out-come statistic that may provide some perspective on incentive changes. Skewness is a measure of the asymmetry of the distribution of a random variable, and can be positive or negative. Negative skew indicates that the tail on the left side of the distribution is longer than the right side; a positive skew indicates that the right-side tail is longer than the left. A zero value indicates that the values are relatively evenly distributed on both sides of the mean, usually implying a symmetric distribution. To interpret this statistic, it is believed that stronger incentives for the individual vessel would reduce the likelihood of poor-performance outliers, thus increasing the symmetry of the distribution.

Table 4 shows features of the IPA vessel Chinook bycatch performance distribution during the 2008-2011 A-seasons. Salient changes in the distribution features for 2011 coincide with the implementation of the Amendment 91 CP IPA. Analysis of the IPA vessel data 2008-2011 seems to indicate approximately similar Chinook abundance on the grounds. A similar comparison of B-season performance was not considered useful, as the bycatch environment was significantly tougher in 2011 than during any of the previous three B-seasons (total IPA vessel bycatch for the 2008-2010 B-seasons combined is 797 Chinook). That a large change in bycatch conditions occurred during the same year that the Amendment 91 program was implemented makes it more difficult to measure the separate effect of the incentive change.

The IPA vessel pollock catch also changed during 2008-2011, ranging from a low of 140,000 tons in 2009 to a high of 224,000 tons in 2011. However, the influence of a larger pollock quota on the strength of the individual vessel incentive to avoid Chinook bycatch is a matter of opinion. The "experimental" conditions that did occur provide data consistent with a more uniform distribution of IPA vessel bycatch performance during the 2011 A-season. A skew of zero indicates that there were no poor-performance outliers in the distribution (no right-hand tail). The distribution coefficient of variation, which is a normalized measure of dispersion (standard deviation corrected for scale), is reduced by roughly half under the Amendment 91 program as compared to the 2008-2010 A-seasons.

Table 4. IPA Vessel A-season Bycatch Performance Distribution Features, 2008-2011.

Year	N (vessels)	Mean Ratio (n/t)	Standard Deviation (n/t)	Skewness	Coefficient of Variation
2008	16	0.026	0.013	0.2	0.49
2009	12	0.022	0.011	0.7	0.49
2010	13	0.025	0.011	0.8	0.43
2011	14	0.010	0.003	0.0	0.25

The 2011 year was the first for the CP IPA program. The program identified relatively few BAA during both seasons, and most were selected based on the bycatch performance at shore-plant and mothership catcher-vessel fishing locations. Nevertheless, the 2011 bycatch performance of the IPA vessels is just about the best recorded since 1998, and this period includes the salmon "crisis" years during which Chinook abundance on the grounds was low. The analyses carried out to assess the effectiveness of the CP IPA leaves an impression that the vessels relied on spatial, temporal, and bycatch performance data from a large number of individual pollock trawls to guide a cautious adaptation to the new program. The changed fishing strategy that resulted perhaps limited the number of BAA identified during 2011.

IPA Amendments

There were no amendments to the CP IPA during 2011.

Salmon Bycatch Research

The EBS pollock industry has supported research to reduce salmon bycatch for about ten years. During 2011 support was provided for research to improve the genetic baseline used to identify the stock of origin of chum salmon, and for efforts to develop a trawl-net section designed to reduce salmon bycatch. The design of the trawl-net section allows salmon caught by the trawl to swim free before the net is hauled back. A pelagic pollock trawl with the section installed is a salmon-excluder trawl.

Most but not all excluder-trawl development has been supported by the North Pacific Fishery Research Foundation via the development and execution of exempted fishing permits (EFP). The current EFP allows research to proceed during the 2011 and 2012 pollock seasons. A final report on these activities will be provided after the completion of the research planned for the 2012 A- and B-seasons.

EFP activities during 2011 focused on measuring chum-salmon escapement using the excluder-trawl design developed during 2010. Trials were made using a catcher vessel and a high-horsepower, catcher-processor vessel. The most recent design places

the excluder section just in front of the cod end where water flow (inside the net) is slowest. Prior designs placed the section more forward, where water flow is faster, in part due to the tapered shape of the net. Because chum salmon are not thought to be strong swimmers, it was believed that chum escapement rates from earlier designs (generally poor, less than three percent) could be improved upon with a revised design that would be easier for salmon to escape from. However, the trials did not reveal any improvement in chum escapement, with an average for all trials less than ten percent (but pollock escapement remained very low, about one-half of one percent).

The initial A-season trials occurred in an area with some intermittent Chinook salmon bycatch as well as reliable chum bycatch of between 30 and 100 fish. When Chinook were encountered, escapement averaged close to 40 percent, but chum escapement remained less than ten percent. The results reinforced conclusions drawn from video observations that chum and Chinook salmon behave differently inside the trawl and-or have different swimming abilities, or may react differently to escape path location. However, the EFP allowed for a total bycatch of just 125 Chinook for the A-season trials, and so research operations had to leave the area after making only eight trials. This limited the amount of data obtained about simultaneous Chinook and chum escapement.

Experimental fishing trials during the 2011 B-season were designed to investigate a modification of the excluder design that reduced somewhat the escape path. The hypothesis was that the change might allow slowly-swimming salmon to escape more frequently. The trials showed no change for both chum and pollock escapement. As no Chinook salmon were present where the trials were made, no information was obtained on whether the modification might affect Chinook escapement.

During 2011 the pollock industry also supported a research project to conduct a comprehensive gap analysis of deficiencies in genetic sample locations, sample sizes, and sample quality for Bering Sea and North Pacific Rim chum salmon populations. The project is headed by Dr. Tony Gharrett at the University of Alaska and the objective is to add genetic information for approximately 50 populations to the coast-wide genetic baseline for chum salmon. A second part of the project will develop new, single nucleotide polymorphism (SNP) markers to improve discrimination of coastal western Alaskan chum salmon, including lower Yukon River, Kuskokwim River, and Norton Sound populations.

If successful, the project will provide some new methods that may be used by NOAA Fisheries and Alaska Department of Fish and Game geneticists to detect and estimate the proportions of western Alaska chum salmon stocks taken in both directed and incidental fisheries. In particular, improved stock-or-origin estimates can be used to inform estimates of impacts of groundfish fisheries on chum stocks as well as provide temporal and spatial information that may be useful for forecasts of salmon abundance. This work is relevant to management of western Alaska chum salmon populations that support subsistence and commercial fisheries, and also should provide useful information about other North Pacific Ocean stocks of conservation and treaty interest.

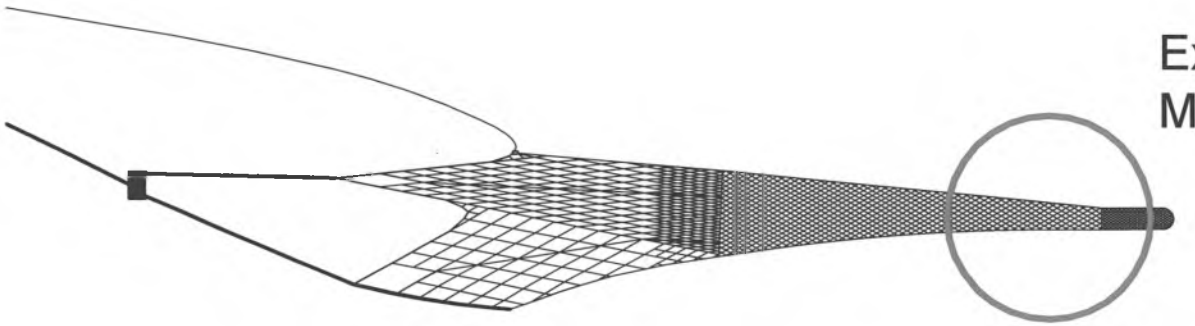
Use of New Gear Technologies

It is estimated that about half of the IPA vessels used salmon-excluder trawls for some portion of trawls made during 2011. One vessel conducted fishing trials that required the use of an excluder-trawl during 2011. A survey-based assessment of the degree that IPA vessels embody new technology to avoid Chinook bycatch will be provided in the 2012 annual report.

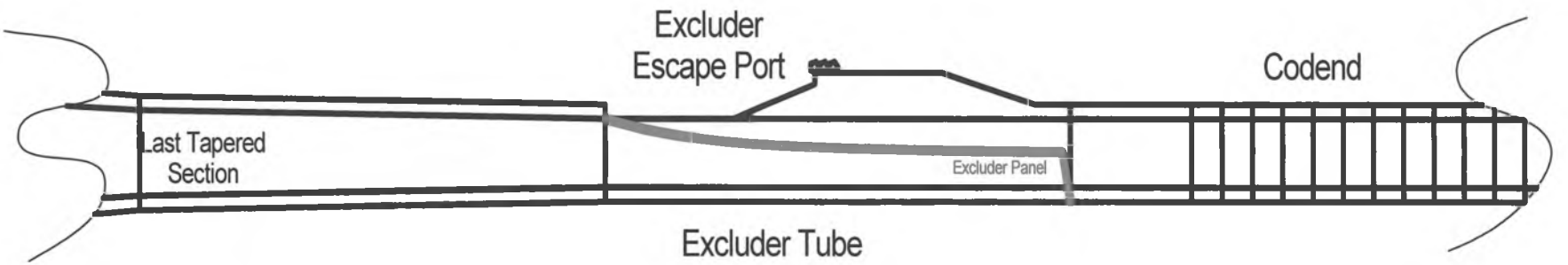
Salmon Excluder Update

February 2013

Salmon Excluder

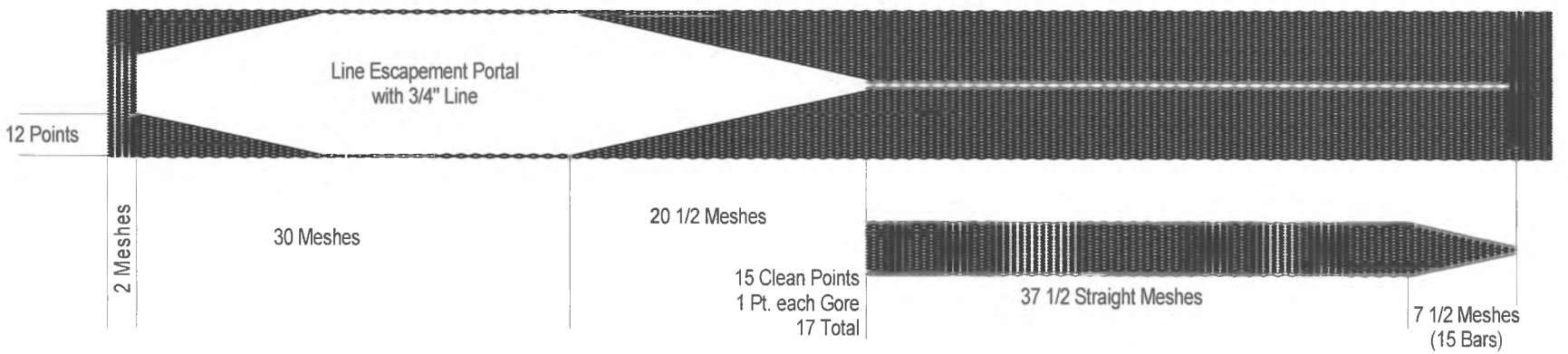


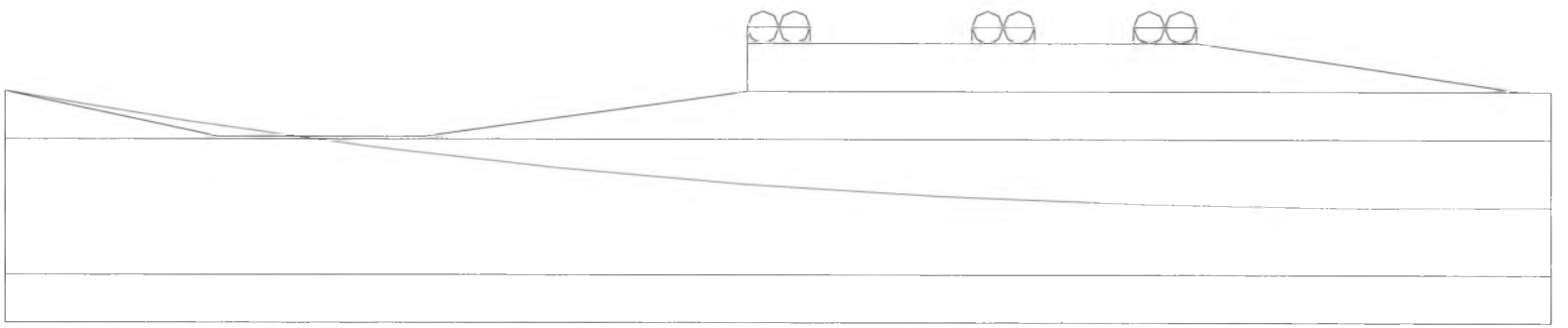
Excluder Location in a Midwater Trawl



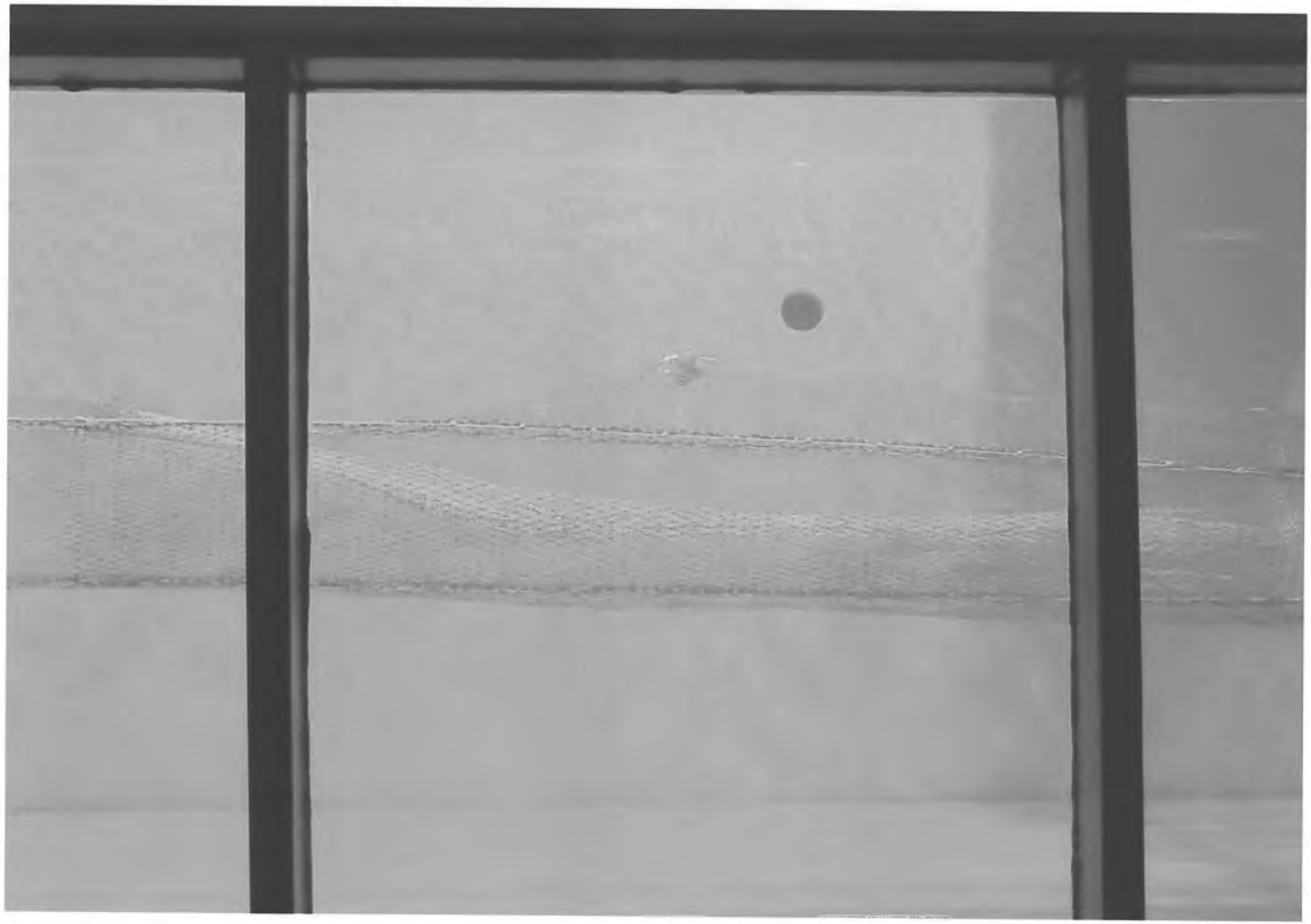
2010 EFP Excluder

Tube Excluder Section
100 Meshes Long by 46 Points Wide





Model of 2010 Excluder in Flume Tank



Results of excluder testing on Chinook Escapement; 2009 - 2010

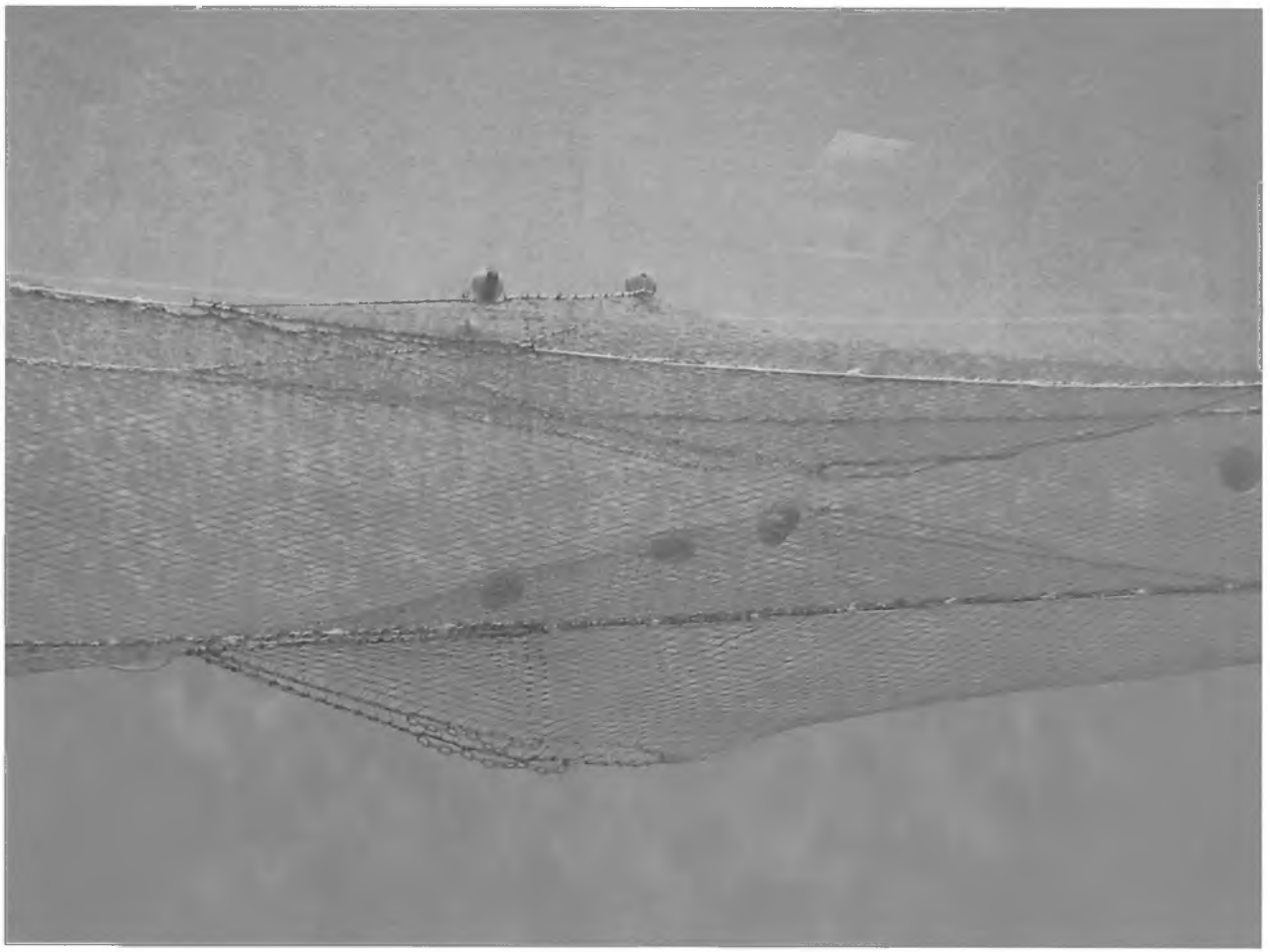
Test /date	Vessel	Codend salmon #	Recap salmon #	Salmon escape %
Winter 2009 P1	Pac Prince	726	91	11.1%
Winter 2009 P2	Pac Prince	1079	209	16.2%
Winter 2009	Starbound	720	70	8.9%
Fall 2009 P1 (chum)	Starbound	196	5	2.5%
Fall 2009 P2 (chum)	Starbound	643	34	5.0%
Winter 2010 P1	Pac Prince	122	62	33.7%
Winter 2010 P2	Pac Prince	37	25	40.3%
Winter 2010 P1	Starbound	150	49	24.6%
Winter 2010 P2	Starbound	38	21	35.6%

Future excluder design

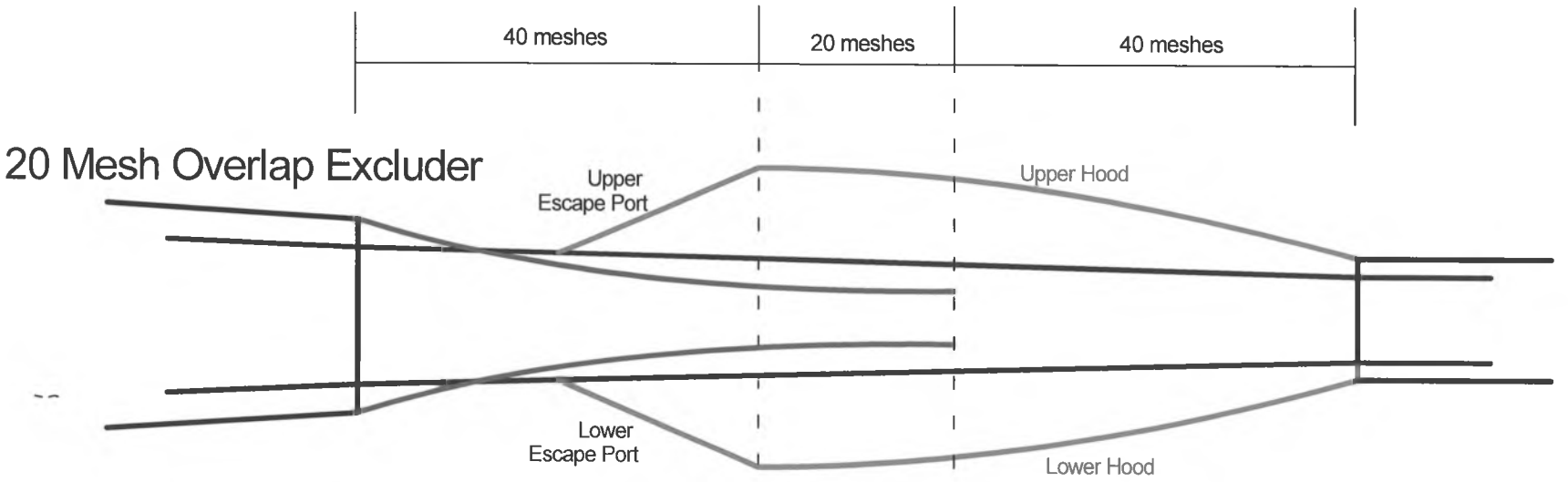
- Provide multiple escapement routes
- Increase both Chinook and chum salmon escapement rates
- Eliminate "touchy" excluder tuning issues
- Stabilize the design for wider horsepower ranges and fishing conditions.

Future excluder design – Over/Under Excluder Concept

Over/Under Excluder – 1:2 scale model in the flume tank. October 2011..



Over/Under Excluder Development



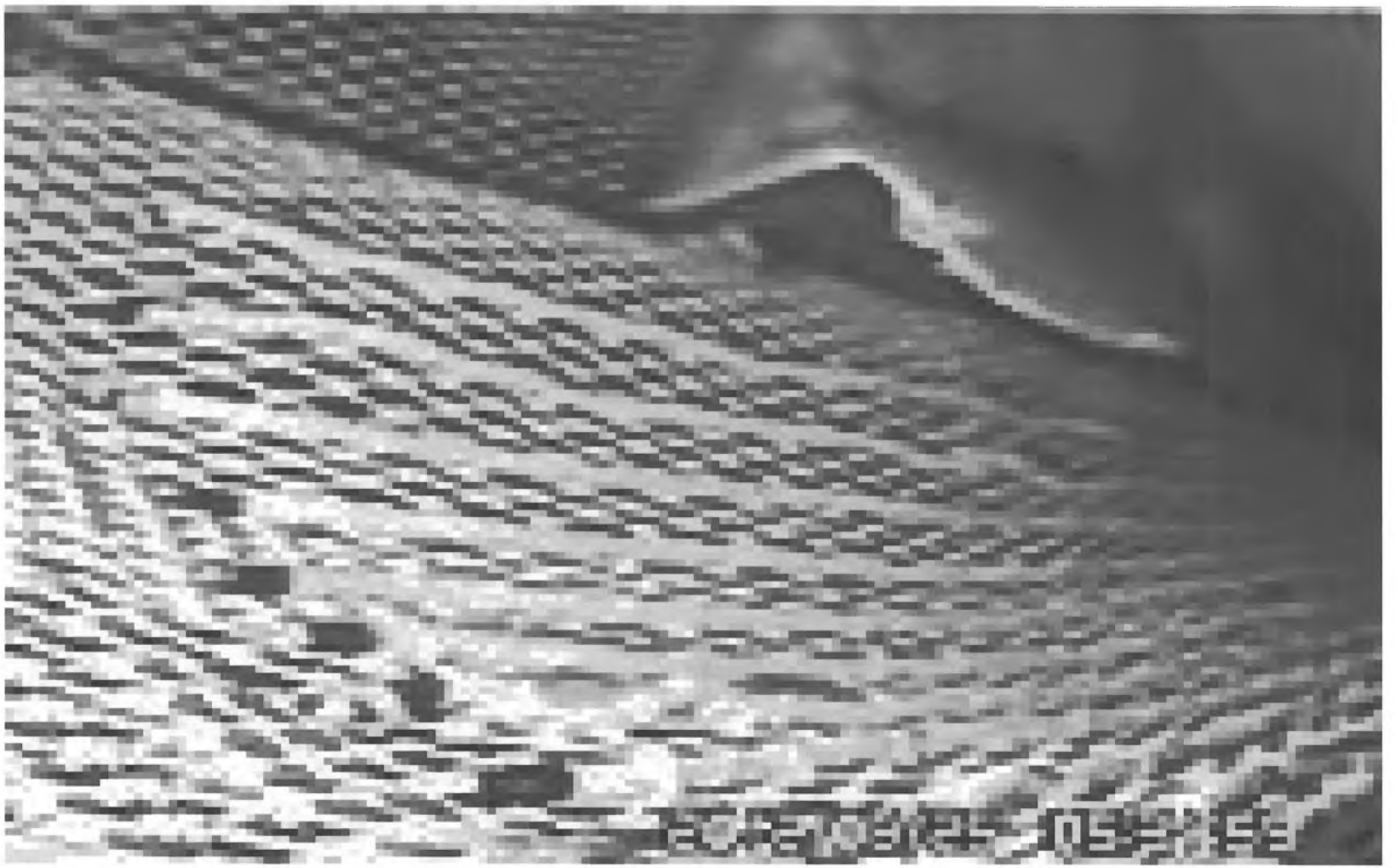
Over/Under Excluder Development

- Initial test fishing with the Over/Under Excluder took place during the 2012 B Season
- 2012 Test Goals:
  - Identify design flaws
  - Refine initial design characteristics
  - Obtain rough escapement estimates for both Chinook and chum salmon.

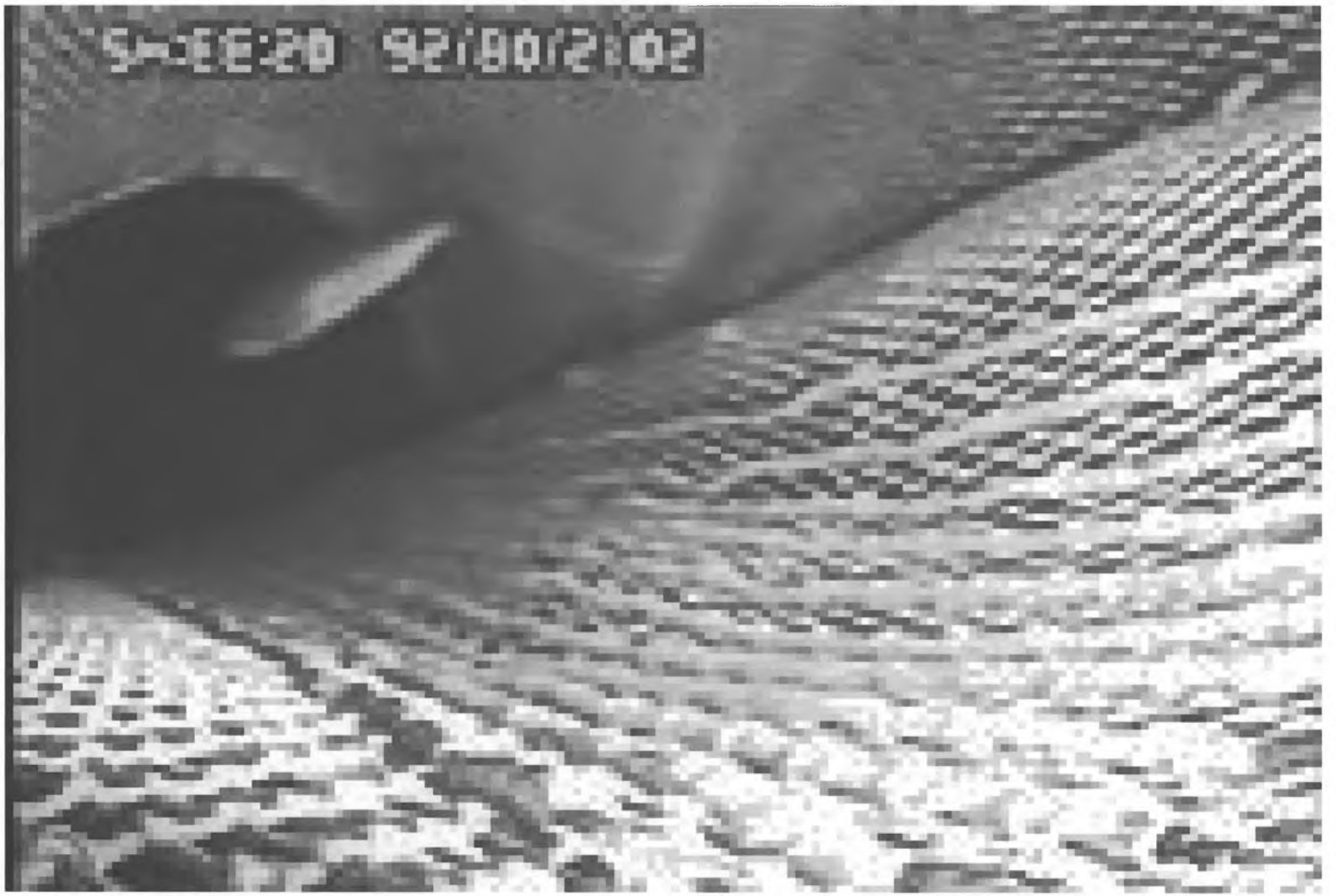
Over/Under Photos



Over/Under Photos



Over/Under Photos



Inshore Salmon Savings Incentive Plan – SSIP

Managing Chinook Bycatch for the Bering Sea Inshore Pollock Sector



Bering Sea Pollock Fishery Chinook Bycatch Regulations

- New regulations for Chinook salmon came into place in 2011 – Amendment 91
- Implemented a Hard Cap on Chinook salmon bycatch in the Bering Sea pollock fishery
- Provided 3 Hard Cap options

Amendment 91

- Three Options

  1. 60,000 Chinook Hard Cap with Incentive Plan Agreement (IPA)

  2. 47,591 Chinook Hard Cap with no vessels participating in an IPA

  3. Up to 28,496 Chinook in an Opt Out Pool for vessels choosing not to participate in an IPA when a portion of the fleet does participate in an IPA.

Amendment 91

- Options 1 & 2 Include sub allocations to each pollock sector.
    1. CDQ
    2. Catcher/Processor
    3. Mothership
    4. Inshore

IPA Requirements

1. Provide incentives at the individual vessel level
2. Incentivize vessels to avoid Chinook bycatch at all levels of abundance in all years
3. Reward vessels that successfully avoid Chinook and/or penalize vessels that fail to avoid Chinook

IPA Requirements

4. Incentives must influence fishing decisions at levels below the hard cap

5. Hold Bycatch to a Performance Standard of 47,591 in most years

IPA Requirements

- The Incentive Plan Agreement must describe how each vessel will manage their bycatch to keep total bycatch below the sector level regulatory Performance Standard
  - The Agreement must contain rules to prevent the sum of vessel bycatch within a sector from exceeding that sector's portion of 47,591 in any 3 years within a consecutive 7 year period

INSHORE SECTOR'S SALMON SAVINGS INCENTIVE PLAN - SSIP -





IPAs found at: http://www.fakr.noaa.gov/sustainablefisheries/bycatch/default.htm

Inshore SSIP Rules

- Each vessel receives a Base Cap Allocation – its share of 47,591 Performance Standard and an Annual Use Limit – its share of the 60,000 Hard Cap

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- Base Cap allocations are made pro rata to a vessel's pollock allocation

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- Vessels may not exceed their Base Cap Allocation unless they earn Salmon Savings Credits - The *Incentive* in SSIP

Inshore SSIP Rules

- Each vessel receives a Base Cap Allocation – its share of 47,591 – the Performance Standard and an Annual Use Limit – its share of the 60,000 Hard Cap
- Base Cap Allocations are made pro rata to a vessel's pollock allocation
- Vessels may not exceed their Base Cap Allocation unless they earn Salmon Savings Credits – The *Incentive* in SSIP
- Savings Credits bridge the gap between the Performance Standard and the Hard Cap

Inshore SSIP Rules

- Salmon Savings Credits
  - When a vessel's annual Chinook bycatch is below its Base Cap, Salmon Savings Credits are earned

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  - When a vessel's annual Chinook bycatch is below its Base Cap, Salmon Savings Credits are earned
  - One credit earned for every 3 salmon avoided below the Base Cap

Inshore SSIP Rules

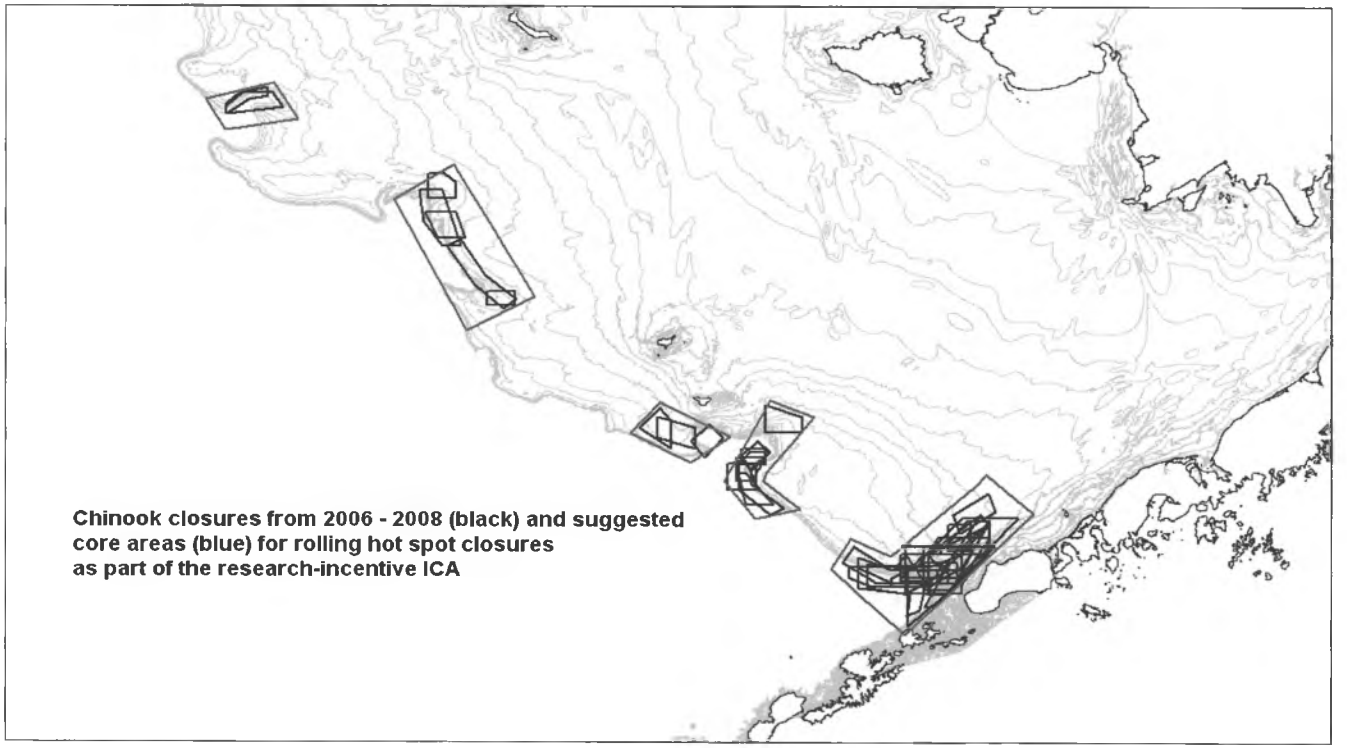
- Salmon Savings Credits
  - When a vessel's annual bycatch falls below its Base Cap it earns Salmon Savings Credits.
  - One credit earned for every 3 salmon avoided below the Base Cap.
  - Credits are saved in a Salmon Savings Credit Account until used – Unused credits expire after 5 years

Inshore SSIP Rules

- Salmon Savings Credits
  - When a vessel's annual bycatch falls below its Base Cap it earns Salmon Savings Credits.
  - One credit is earned for every 3 salmon avoided below their Base Cap.
  - Credits are saved in a Salmon Savings Credit Account until used – Unused credits expire after 5 years
  - Vessels may not exceed their share of the 60,000 Hard Cap in any given year even if the have Salmon Savings Credits to do so

Inshore SSIP Rules

- Includes a Rolling Hot Spot Program
- Includes a Chinook Conservation Closure in the A Season



Chinook closures from 2006 - 2008 (black) and suggested core areas (blue) for rolling hot spot closures as part of the research-incentive ICA

Inshore SSIP Summary

- Under the SSIP program the 60,000 Hard Cap is not a Hard Cap in the usual sense.
- SSIP participants have their share of the 60,000 limit available to them only if they earned the necessary Salmon Savings Credits.
- The SSIP rules make it impossible for participants to continuously approach bycatch levels at, or even near, the hard cap.

Inshore SSIP Summary

- SSIP Program contains mechanisms that guarantees average bycatch will be at or below the 47,591 level.

- The 47,591 or less bycatch average is not theoretical or experimental; but rather an **absolute fact**.

- SSIP program provides incentives to keep bycatch at or below 35,000 Chinook salmon

AT-SEA PROCESSORS ASSOCIATION

Partners for Healthy Fisheries

House Special Committee on Fisheries

Chinook Salmon Bycatch Reduction Incentive Plan

February 19,2013

Amendment 91 Limits

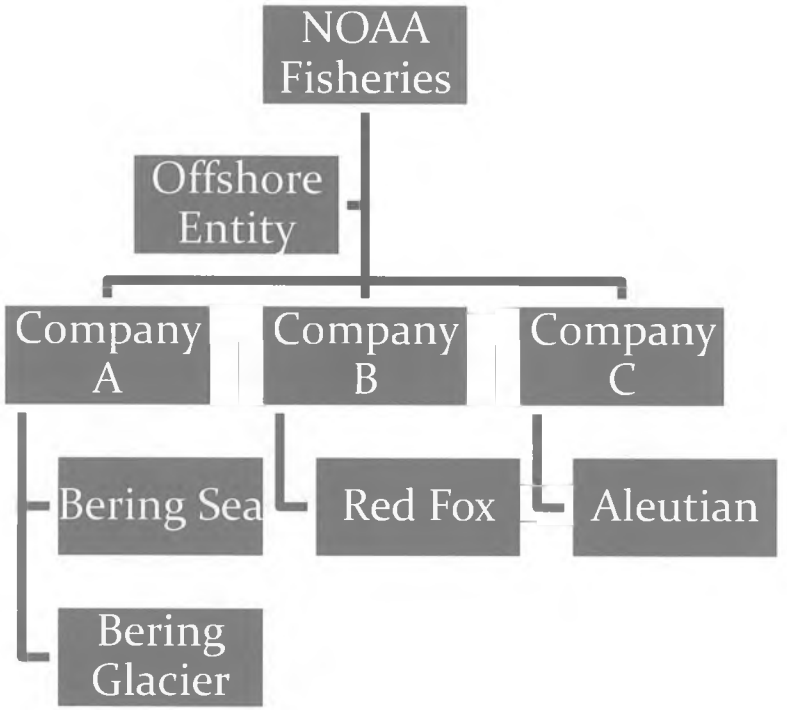
	Annual Threshold Amount	60,000 limit
Inshore	26,484	33,390
Mothership	3,707	4,674
CDQ	3,883	4,896
CP	13,516	17,040
PCC		
HSCC		
OP		

A season		13,818
B season		3,222



A Chinook Salmon Bycatch Avoidance Program

Allocation of Salmon Bycatch Cap



IPA Required Components

1. Incentive(s) that ensure operator of each vessel will avoid Chinook salmon at all times while fishing for pollock in the BS.

2. Rewards for avoiding Chinook salmon, penalties for failure to avoid Chinook salmon at vessel level, or both.

3. Incentive measures to promote reductions in a vessel bycatch rates relative to what would have occurred in absence of the IPA.

4. A description how incentive measures promote savings in any condition of pollock or Chinook salmon abundance in a manner that is expected to influence decisions by vessel operators to avoid Chinook salmon bycatch.

IPA Required Components

5. How the IPA ensures operator of each vessel will manage bycatch to remain below the sector performance standard.

6. Annual reports are due April 1st
   * comprehensive description of incentive measures
   * description of how measures affected individual vessels
   * evaluation of whether measures were effective in achieving salmon savings beyond the levels that would have been achieved in the absence of the measures.
   * description and rationale of any amendments to the terms of the IPA.

7. Minimum participation
   * must represent at least 9% pollock quota
   * at least two unaffiliated AFA companies or CDQ groups.

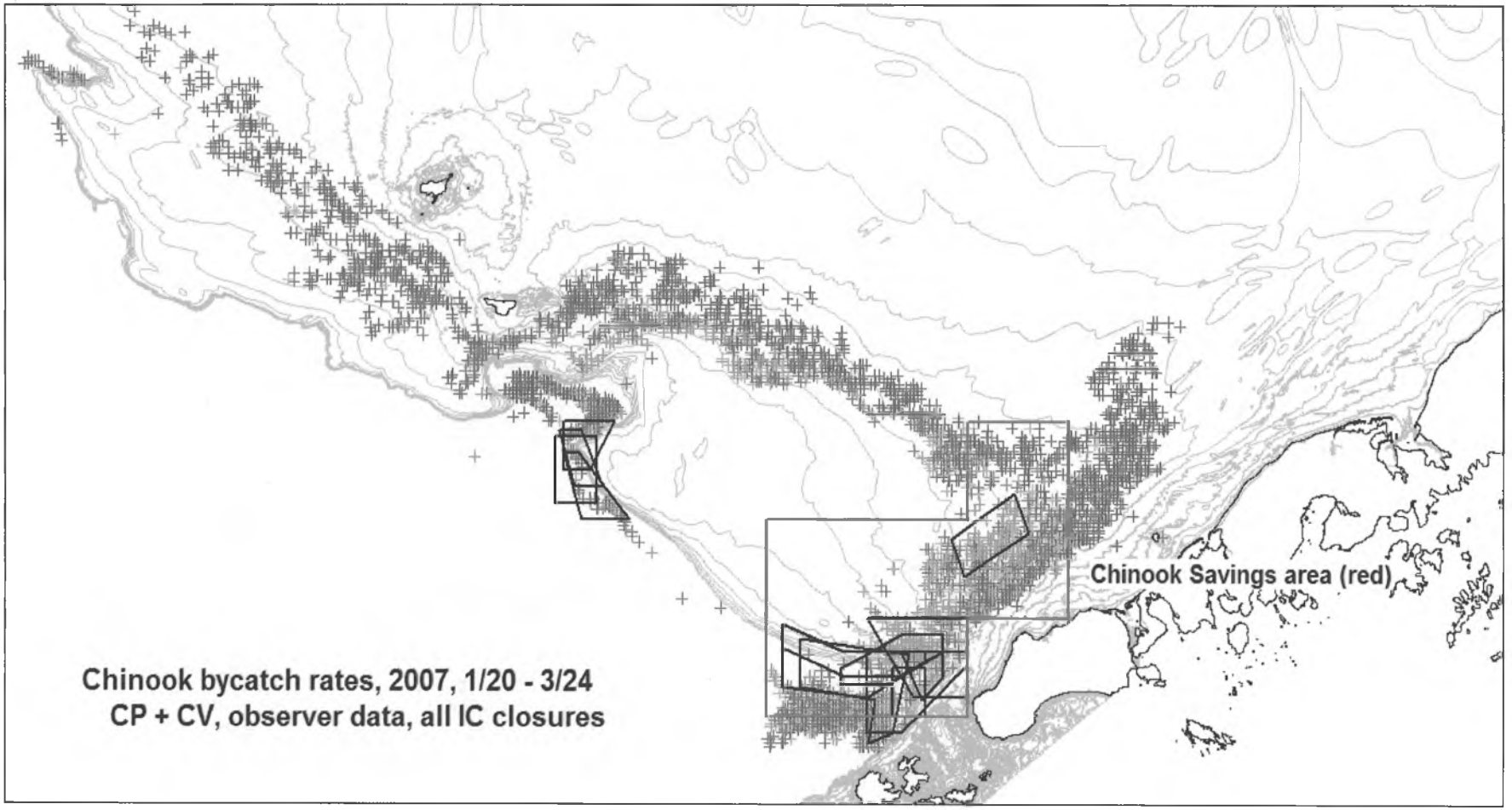
companies or

PCC Chinook IPA Development

The RHS program creates incentives to avoid salmon bycatch at low and moderate levels of abundance of salmon on the grounds.

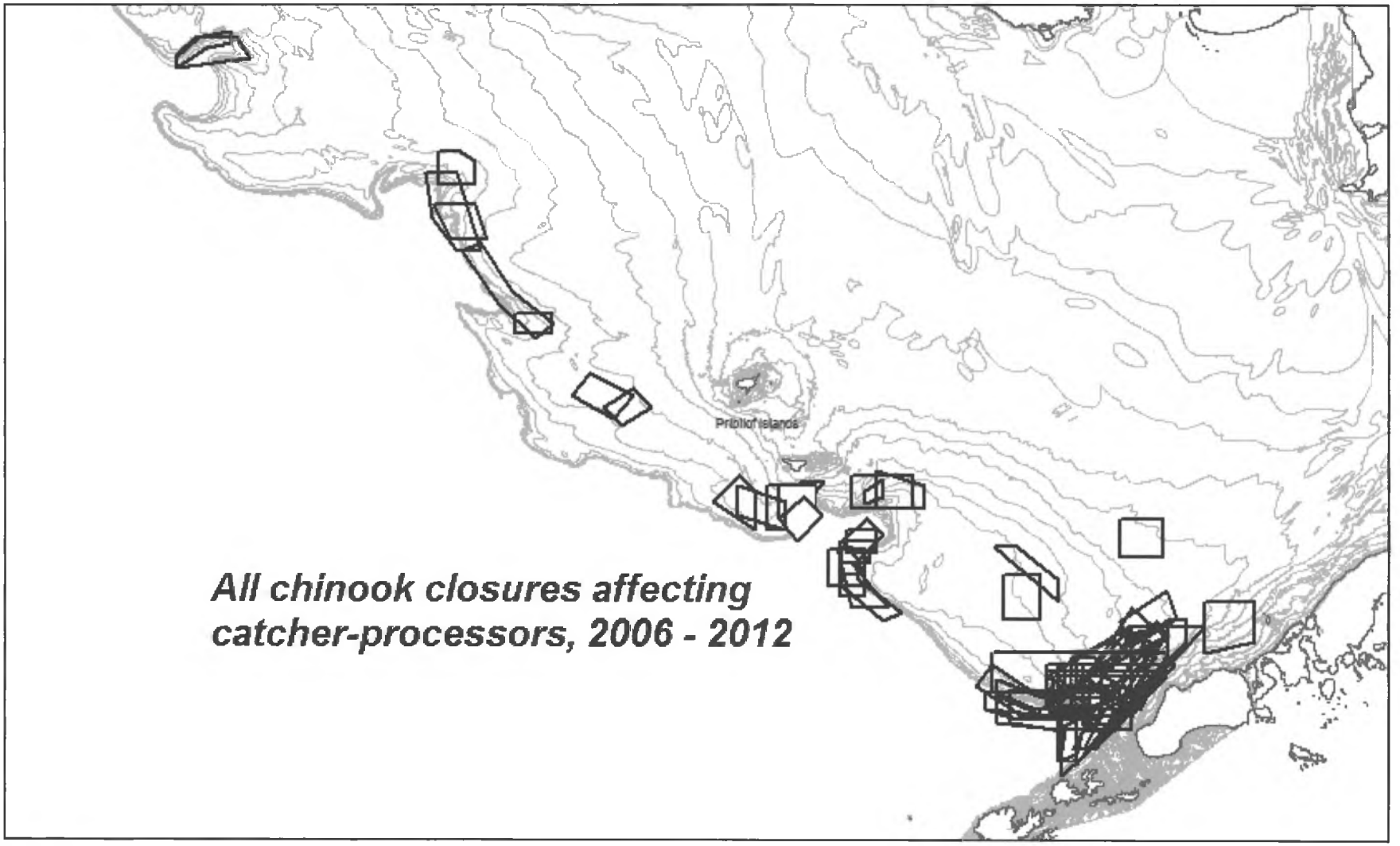
- How to identify *bycatch avoidance areas*?
- Who is allowed to fish inside the areas?
- If a vessel is excluded from avoidance areas.... for how long?

Rolling Hot Spot -- A Season 2007



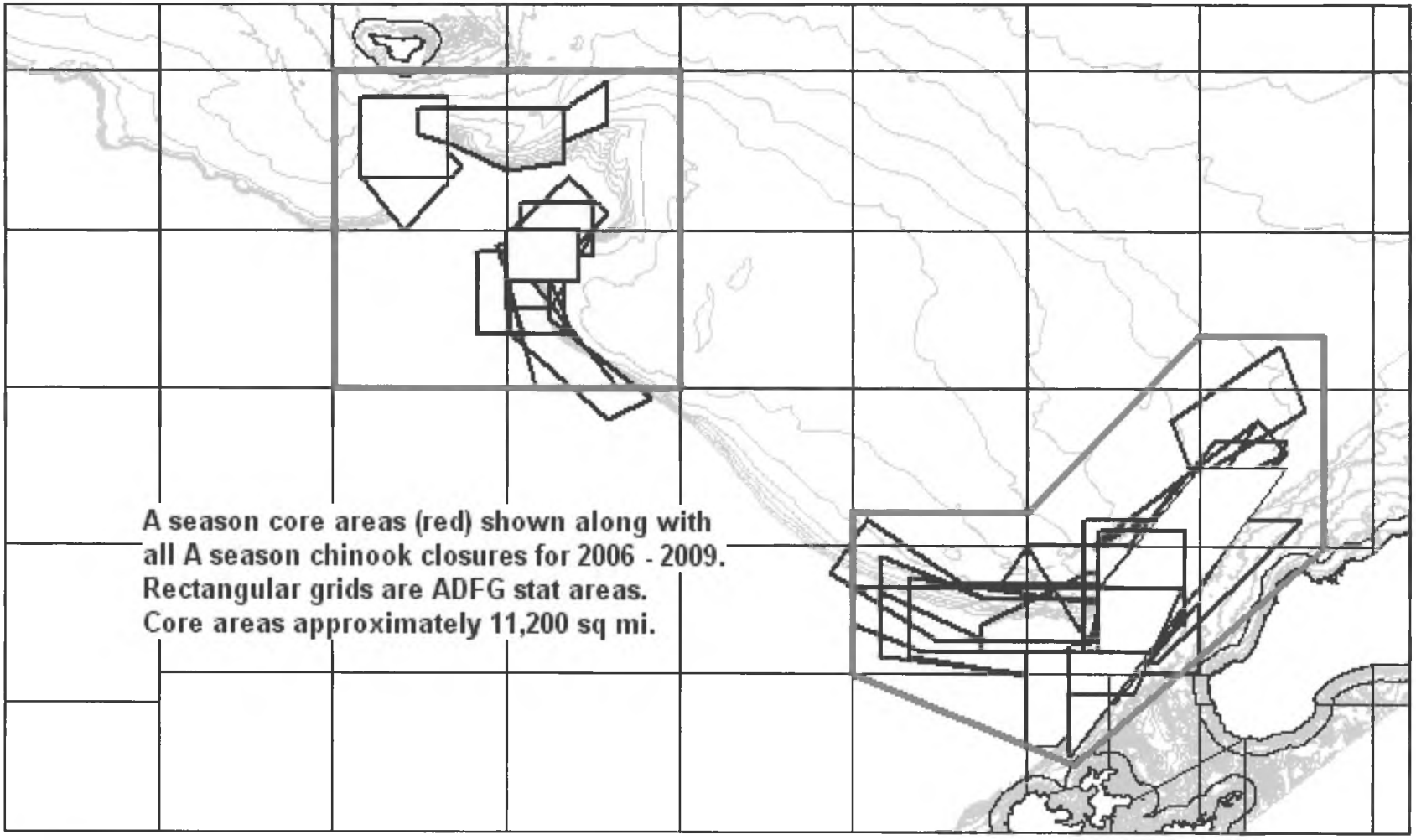
Sea State, Inc.

CP Chinook Closures 2006-2012



Bycatch Avoidance Core Areas

A season



A season core areas (red) shown along with all A season chinook closures for 2006 - 2009. Rectangular grids are ADFG stat areas. Core areas approximately 11,200 sq mi.

How to identify avoidance areas?

- Bycatch avoidance areas are identified by comparing pollock-fishery bycatch performance* to a *base rate* of Chinook bycatch (n/mt). Areas ,within the core areas ,with bycatch rates higher than base rate may be specified as avoidance areas.

- The base rate is an important program parameter, and is allowed to change over time to reflect changes in salmon abundance on the grounds.

- Except at the start of the season,** the base rate is calculated as a 3 week rolling average.

- A minimum value (floor) is established at 3.5 Chinook per 100 tons of pollock catch (0.035/mt).

- Vessels are prohibited from fishing in the Chinook Salmon Conservation Area during the A season.

*bycatch data from all the pollock fishery cooperatives.
** the start of the season rate is set equal to base rate from th
entire prior A season with same floor. Beginning February 1
a 3-week rolling average during the current A season.

Who is allowed to fish in those areas?

- Vessel bycatch performance is calculated using two week rolling sums of pollock catch and Chinook bycatch (n/mt).

- A vessel with a bycatch rate (n/mt) higher than 75 percent of the base rate must fish outside the bycatch avoidance areas during the current week.

If vessels are excluded from avoidance areas....for how long?

The X-RHS program creates incentives to avoid salmon bycatch at moderate to high levels of abundance on the grounds. The X-RHS adds to the incentives of the RHS by imposing a second vessel performance benchmark based on the amount of CP (fleet) Chinook bycatch.

- All vessels prohibited from fishing in the avoidance areas are subject to the X-RHS incentive.
- Vessel bycatch performance is calculated as Chinook salmon bycatch (n).
- Vessel bycatch performance is compared to a benchmark based on a CP-sector equivalent, cumulative A-season bycatch of 8,500 Chinook.*
- If vessel Chinook bycatch is higher than the benchmark, then it must fish outside of bycatch avoidance areas for 2 weeks.
- Vessel benchmarks are adjusted to compensate for pollock transfers.

*8,500 represents about half of the CP-sector limit of 17,040 Chinook or 63% of the sector annual threshold amount of 13,516 Chinook.

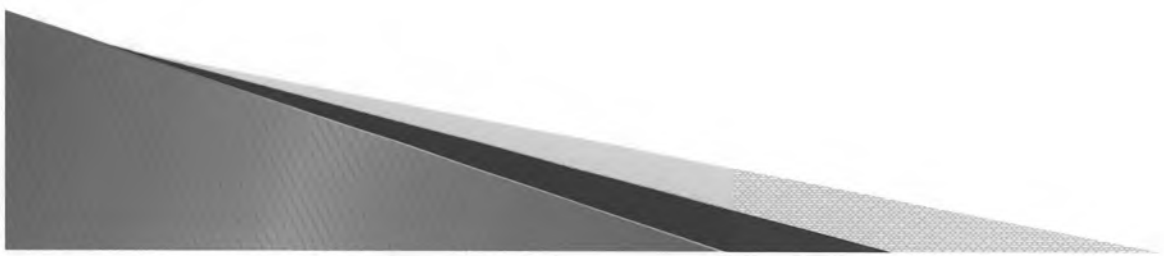
Buffer Components

Limit Buffer -to ensure the bycatch limit can be conserved.

115 salmon

Use Rules

1. A company taking bycatch from the limit must stop fishing.
2. A penalty would be paid for every salmon used.
3. To regain the right to go fishing, a company must replace all limit-buffer salmon: no refund of penalty funds.
4. Established using a company levy in proportion to its pollock allocation.
5. Penalty funds will be redistributed to companies in proportion to its pollock allocation



Buffer Components

Market Buffer

250 salmon

Use Rules

1. A company must use 95 percent of its non-buffer allocation before taking salmon from the market buffer.
2. A company would pay a penalty for every salmon from the market buffer.
3. Established using a company levy in proportion to its pollock allocation.
4. Maximum cap of 30% that any one company can use.
5. Penalty funds will be redistributed to companies in proportion to its pollock allocation.

Draft 2012 –Final Report Due April 1

DRAFT Table 2. CP IPA Chinook Salmon Bycatch Performance, 2012

Season	Pollock (t)	Chinook Salmon (n)	Bycatch Ratio (n/t)
A	218,011	2836	0.013
B	327,003	97	0.002
A + B	545,014	2933	0.005

North Pacific Fishery Management Council – Update on Chinook Bycatch



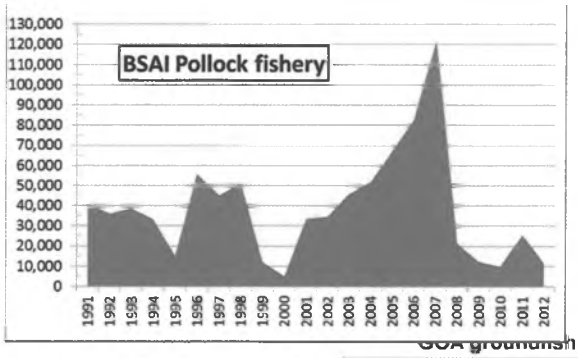
North Pacific Fishery Management Council

- manages offshore Federal fisheries off Alaska (3-200 miles) with NMFS
- Management governed by the Magnuson-Stevens Act (U.S. Federal law). Balance of 10 National Standards, including:
  - Minimize (salmon) bycatch to extent practicable
  - Prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery (e.g., the Alaska groundfish fisheries)
  - Provide for the sustained participation of and minimize adverse impacts on fishing communities

Salmon bycatch in the Alaska groundfish fisheries

NOTE: Council does not regulate any salmon fisheries (State of Alaska), only salmon bycatch occurring in offshore groundfish fisheries

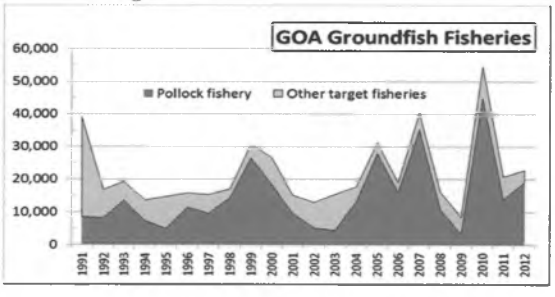
- Trawl fisheries catch Chinook salmon as bycatch
  - In the Bering Sea, bycatch is in the pollock fishery
  - In the GOA, it is mostly in the pollock fishery (~75%), but also in flatfish, Pacific cod, and rockfish fisheries
- By law, bycatch is counted, but cannot be retained or sold prohibited



Chinook bycatch 1991-2012

(number of salmon)

- Note difference in scale between BSAI and GOA
- Most recent 5-year averages (2008-2012):
  - BSAI pollock: 16,079
  - GOA pollock: 18,325
  - GOA other: 6,217



What action has the Council taken? Bycatch limits that close the fishery

- Bering Sea pollock fishery
  - 60,000 Chinook salmon bycatch limit, with incentive plans to remain below 47,951 salmon *(implemented 2011)*
    - Apportioned by sector (catcher vessel, catcher processor, mothership, CDQ) and inshore cooperative
    - If sector exceeds its apportionment of 47,591 Chinook salmon 3 times in 7 year period, sector's limit will permanently reduce to lower cap
    - Council receives annual report on incentive programs

What action has the Council taken? Bycatch limits that close the fishery

- GOA pollock fishery
  - 25,000 Chinook salmon bycatch limit *(implemented mid-2012)*
    - Apportioned between the central and western regulatory area pollock fisheries
- GOA non-pollock fisheries
  - Limits currently under review range from 5,000-12,500 Chinook salmon
    - Council final action scheduled for June

What action has the Council taken? Stock of origin research

- Purpose:
  - to understand relationship between Chinook salmon bycatch in the groundfish fisheries and the status of individual Chinook stocks

What action has the Council taken? Stock of origin research

- Bering Sea
  - Basis of Council action in 2009 (PSC limit)
    - bycatch and genetics information from 2005-2007
    - AEQ model provided information on proportional stock of origin of bycatch, broken out to regional and western Alaska river systems
    - Coastal western Alaska is largest component of bycatch
  - Since 2011: systematic sampling procedure for Chinook
    - including full census and increased observer coverage (min. 100%)
  - genetic breakdown of samples presented each April
    - April 2013 is first time will receive complete annual report based on full census and systematic sampling protocol (for 2011)
  - Best information on impact rate to western Alaska
    - bycatch was between 0.7% - 2.4% of combined run sizes in 2011
    - *See Stram and Ianelli paper from AYKSSI, December 2012*

What action has the Council taken? Stock of origin research

- GOA
  - Very limited information to date
    - Insufficient samples for stock composition analysis
    - Indication of presence of stocks from limited samples (primarily from pollock fishery) and coded wire tags
  - Systematic sampling procedure now underway in pollock fishery (result of Council action)
    - Census from observed and unobserved pollock deliveries, but lower observer coverage than Bering Sea
  - Genetic breakdown of available samples each April
    - awaiting 2011 results; 2010: stocks present predominantly Pacific Northwest, British Columbia, and coastal southeastern AK
  - Full retention under review in non-pollock fisheries
    - Census sampling will likely not be possible, but other sampling methodology may be used.

What action has the Council taken?

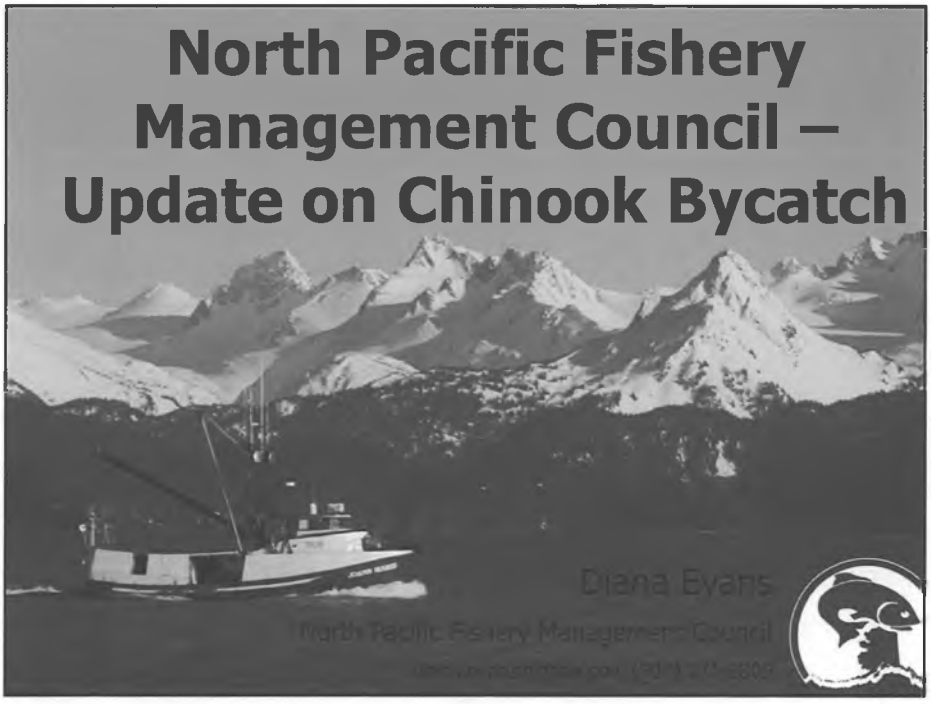
- Extensive outreach to coastal and interior communities
  - Purpose: solicit input on salmon bycatch actions prior to Council action, promote 2-way dialogue
  - Community meetings, participation at subsistence regional advisory council meetings, regional large forums (e.g., AVCP, YRDFA, YRP), statewide teleconferences
- Food bank donations
  - Council amended requirements in 1996 to allow donation of bycaught salmon to food banks
  - Voluntary industry program; heightened participation in recent years, in Bering Sea and GOA
  - Donations of salmon and halibut in 2012:
    - BSAI: 73,000 lbs; ~85% salmon
    - GOA: 30,000 lbs; ~15% salmon

What action is the Council taking? Chinook salmon bycatch reduction in other management actions

- Bering Sea chum salmon bycatch reduction
  - Measures to reduce chum salmon bycatch in pollock fishery need to be tempered by concurrent objective to not increase Chinook salmon bycatch
  - To date, measures under consideration have been shown to exacerbate Chinook bycatch reduction. Council is developing more adaptive approaches.
- Development of bycatch management tools for GOA underway
  - Council considering cooperative management and bycatch avoidance incentives for trawl fisheries
  - Necessary in context of Chinook salmon PSC limits as well as recent halibut and crab protections

Summary

- Chinook salmon bycatch reduction is continuing priority for Council
- Management achieved through hard cap limits as well as incentive programs
- Regular reporting of Chinook salmon bycatch levels allows the Council to react to potential problems



North Pacific Fishery Management Council

- manages offshore Federal fisheries off Alaska (3-200 miles) with NMFS
- Management governed by the Magnuson-Stevens Act (U.S. Federal law). Balance of 10 National Standards, including:
  - Minimize (salmon) bycatch to extent practicable
  - Prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery (e.g., the Alaska groundfish fisheries)
  - Provide for the sustained participation of and minimize adverse impacts on fishing communities

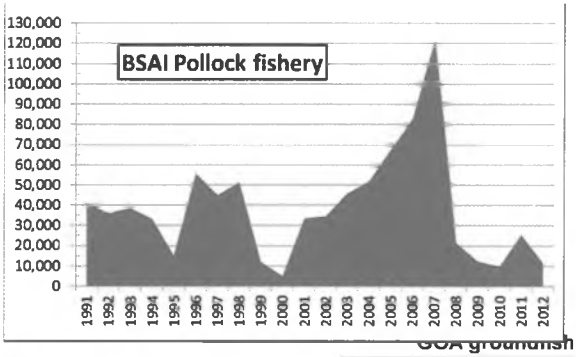
Salmon bycatch in the Alaska groundfish fisheries

NOTE: Council does not regulate any salmon fisheries (State of Alaska), only salmon bycatch occurring in offshore groundfish fisheries

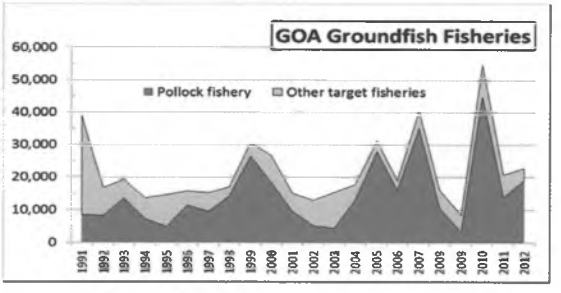
- Trawl fisheries catch Chinook salmon as bycatch
  - In the Bering Sea, bycatch is in the pollock fishery
  - In the GOA, it is mostly in the pollock fishery (~75%), but also in flatfish, Pacific cod, and rockfish fisheries
- By law, bycatch is counted, but cannot be retained or sold

Chinook bycatch 1991-2012

(number of salmon)



GOA groundfish fisheries



- Note difference in scale between BSAI and GOA
- Most recent 5-year averages (2008-2012):
  - BSAI pollock: 16,079
  - GOA pollock: 18,325
  - GOA other: 6,217

What action has the Council taken? Bycatch limits that close the fishery

- Bering Sea pollock fishery
  - 60,000 Chinook salmon bycatch limit, with incentive plans to remain below 47,951 salmon *(implemented 2011)*
    - Apportioned by sector (catcher vessel, catcher processor, mothership, CDQ) and inshore cooperative
    - If sector exceeds its apportionment of 47,591 Chinook salmon 3 times in 7 year period, sector's limit will permanently reduce to lower cap
    - Council receives annual report on incentive programs

What action has the Council taken? Bycatch limits that close the fishery

- GOA pollock fishery
  - 25,000 Chinook salmon bycatch limit *(implemented mid-2012)*
    - Apportioned between the central and western regulatory area pollock fisheries
- GOA non-pollock fisheries
  - Limits currently under review range from 5,000-12,500 Chinook salmon
    - Council final action scheduled for June

What action has the Council taken? Stock of origin research

- Purpose:
  - to understand relationship between Chinook salmon bycatch in the groundfish fisheries and the status of individual Chinook stocks

What action has the Council taken? Stock of origin research

- Bering Sea
  - Basis of Council action in 2009 (PSC limit)
    - bycatch and genetics information from 2005-2007
    - AEQ model provided information on proportional stock of origin of bycatch, broken out to regional and western Alaska river systems
    - Coastal western Alaska is largest component of bycatch
  - Since 2011: systematic sampling procedure for Chinook
    - including full census and increased observer coverage (min. 100%)
  - genetic breakdown of samples presented each April
    - April 2013 is first time will receive complete annual report based on full census and systematic sampling protocol (for 2011)
  - Best information on impact rate to western Alaska
    - bycatch was between 0.7% - 2.4% of combined run sizes in 2011
    - *See Stram and Ianelli paper from AYKSSI, December 2012*

What action has the Council taken? Stock of origin research

- GOA
  - Very limited information to date
    - Insufficient samples for stock composition analysis
    - Indication of presence of stocks from limited samples (primarily from pollock fishery) and coded wire tags
  - Systematic sampling procedure now underway in pollock fishery (result of Council action)
    - Census from observed and unobserved pollock deliveries, but lower observer coverage than Bering Sea
  - Genetic breakdown of available samples each April
    - awaiting 2011 results; 2010: stocks present predominantly Pacific Northwest, British Columbia, and coastal southeastern AK
  - Full retention under review in non-pollock fisheries
    - Census sampling will likely not be possible, but other sampling methodology may be used.

What action has the Council taken?

- Extensive outreach to coastal and interior communities
  - Purpose: solicit input on salmon bycatch actions prior to Council action, promote 2-way dialogue
  - Community meetings, participation at subsistence regional advisory council meetings, regional large forums (e.g., AVCP, YRDFA, YRP), statewide teleconferences
- Food bank donations
  - Council amended requirements in 1996 to allow donation of bycaught salmon to food banks
  - Voluntary industry program; heightened participation in recent years, in Bering Sea and GOA
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AYKSSI paper-Hypothesis #5: Ocean Bycatch/Ecosystem Overfishing – Fishery caused mortality or changes in Bering Sea ecosystem structure and function have contributed to the decline of AYK-region Chinook salmon stocks.

Diana L. Stram, North Pacific Fishery Management Council and James N. Ianelli, Alaska Fisheries Science Center, NOAA.

Note that per request this paper only addresses the 'ocean bycatch' component of this hypothesis

Introduction

The North Pacific Fishery Management Council (NPFMC or Council) is one of eight regional councils established by the Magnuson Fishery Conservation and Management Act in 1976 to oversee management of the nation's fisheries. With jurisdiction over the million square mile Exclusive Economic Zone (EEZ) off Alaska, the Council has primary responsibility for groundfish management in the Gulf of Alaska (GOA) and Bering Sea and Aleutian Islands (BSAI), including cod, pollock, flatfish, mackerel, sablefish, and rockfish species harvested mainly by trawlers, hook and line longliners and pot fishermen.

While the State of Alaska has management authority for salmon stocks, the NPFMC is responsible for managing the bycatch of salmon species in the groundfish fisheries. Of groundfish fisheries in the Bering Sea, the walleye pollock fishery is responsible for the majority of the salmon taken as bycatch. Chinook and chum salmon are the main species taken incidentally (<0.1% of the salmon bycatch is made up of other species). Consequently, the Council has enacted management measures to minimize the bycatch of Chinook and chum salmon in the pollock fishery since the mid-1990s. Early management measures focused on large scale area closures in the Bering Sea based on historic spatial concentrations of bycatch. These areas would close during times of high bycatch. In 2011 the Council's new management program for Chinook salmon went into effect. This program imposes a strict limit on Chinook salmon bycatch in the pollock fishery. The limits are apportioned by season and fishery sector which if reached would prohibit further pollock fishing for those vessels. Additional measures are being considered currently for chum salmon bycatch by the Council.

Chinook salmon bycatch in the EBS pollock fishery occurs in both the winter (A) and summer (B) seasons (Table 1) while chum salmon bycatch occurs only in the B season (Table 2).

Table 1 Chinook salmon bycatch from the pollock fishery, 1991-2012 by season.

Year	A-season	B-Season	Total
1991	38,791	2,114	40,906
1992	25,691	10,259	35,950
1993	17,264	21,252	38,516
1994	28,451	4,686	33,136
1995	10,579	4,405	14,984
1996	36,068	19,554	55,623
1997	10,935	33,973	44,909
1998	15,193	36,130	51,322
1999	6,352	5,627	11,978
2000	3,422	1,539	4,961
2001	18,484	14,961	33,444
2002	21,794	12,701	34,495
2003	32,609	12,977	45,586
2004	23,104	28,595	51,699
2005	27,285	40,050	67,335
2006	58,287	24,306	82,592
2007	69,139	52,350	121,488
2008	16,574	4,842	21,415
2009	9,683	2,718	12,401
2010	7,624	2,067	9,692
2011	7,136	18,363	25,499
2012	7,773	3,577	11,350

Table 2 Non-Chinook (chum) salmon mortality in BSAI pollock directed fisheries 1991-2012.

Year	Total
1991	28,951
1992	40,274
1993	242,191
1994	92,672
1995	19,264
1996	77,236
1997	65,988
1998	64,042
1999	45,172
2000	58,571
2001	57,007
2002	80,782
2003	189,185
2004	440,468
2005	704,552
2006	309,630
2007	93,783
2008	15,267
2009	46,127
2010	13,222
2011	191,445
2012	22,213

Evidence for/against hypothesis

In conjunction with the Council's decision on a new management program for Chinook salmon bycatch in the EBS pollock fishery a comprehensive analysis (an environmental impact statement or EIS) as required under the National Environmental Policy Act (NEPA) was prepared to assist the policy makers with the impacts of their alternatives management decisions on the environment. This Chinook FEIS (NPFMC/NMFS 2009) evaluated, to the extent possible, proposed hypotheses for bycatch fluctuations, the impact of current levels of bycatch to western Alaskan rivers as well as the potential impact of the proposed management measures. Information below summarizes some of the methods employed and analysis completed in 2009 to facilitate management decisions. Following this an updated (through A-season 2012) analysis is provided using a simplified assumption to estimate the adult equivalent (AEQ) returns to western Alaska.

Why have bycatch levels fluctuated?

In conjunction with the FEIS analysis, potential changes in fishing patterns or practices that could contribute to increased bycatch in some years was investigated. Tow duration based on NMFS observer data indicated that a measure of total hours fishing increased by about 20% in 2006 and 2007. This compares with a nearly three-fold increase in the levels of Chinook bycatch (Figure 1). This suggests that other factors may affect bycatch levels. Increased numbers of Chinook found on the pollock fishing grounds due to run-sizes or environmental conditions clearly affects the magnitude of bycatch. Changes in fishing gear depth were examined to be similar through this period. Anecdotally, trawl gear (dimensions, net material etc.) has changed over time but information on this is unavailable for analysis. Seasonally, for the period 1991-2007 February averages to be the highest month of bycatch in the pollock fishery even though the average tow duration is relative low whereas October tends to be the second-highest month when bycatch occurs and is also when the average tow duration is the highest (Figure 2). Over time, tow duration in October has steadily increased (Figure 3).

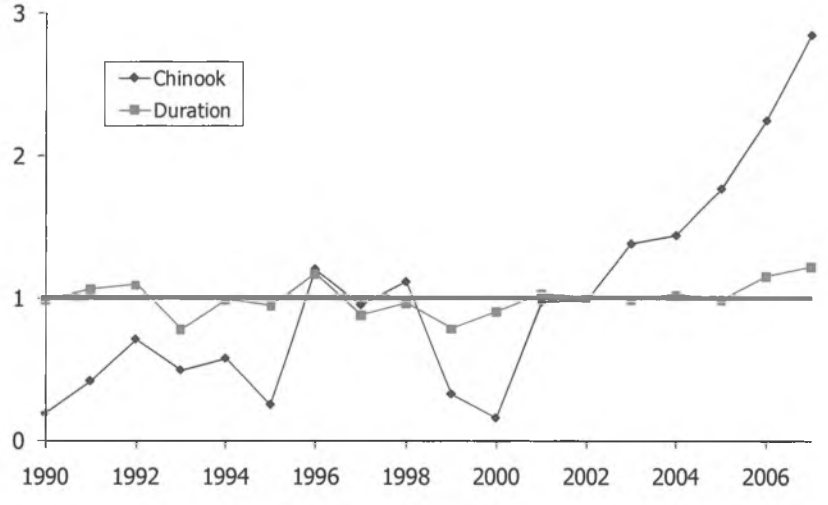


Figure 1. Standardized (to have mean values of 1) relative Chinook catch and pollock fishing effort (annual total hours spent towing).

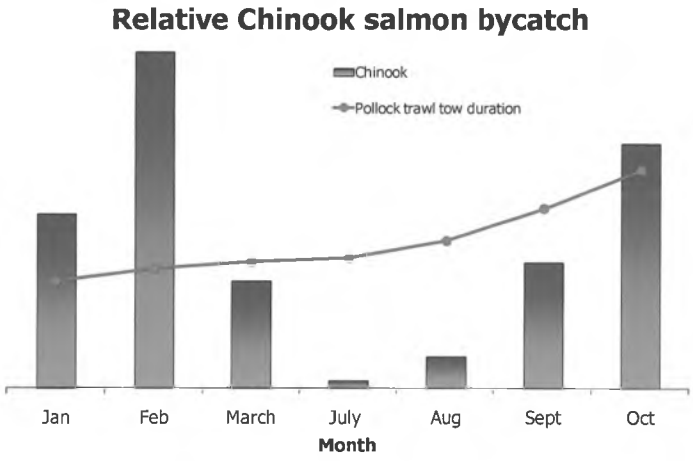


Figure 2. Average relative Chinook bycatch (columns) and tow duration (marked line) by month based on NMFS observer data, 1991-2007.

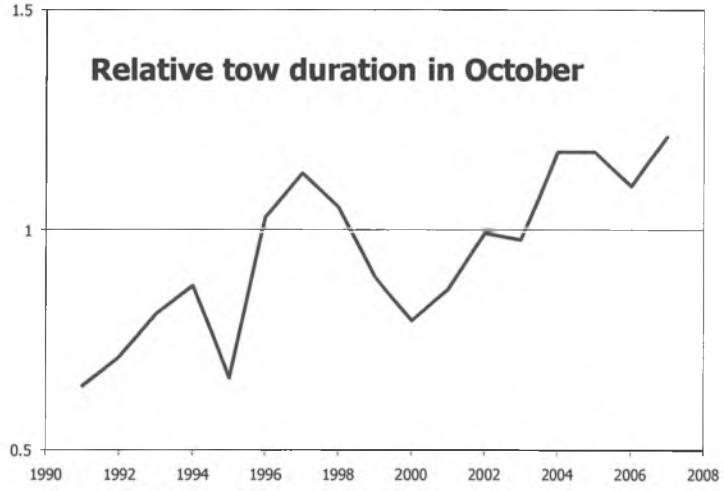


Figure 3. Average relative tow duration (scaled to have mean value of 1.0) for October based on NMFS observer data, 1991-2007.

AEQ analysis of Chinook bycatch

An adult equivalency model was developed for use in the FEIS (NPFMC/NMFS 2009). To understand impacts on Chinook populations, a method was developed to estimate how the different bycatch numbers would propagate to adult equivalent spawning salmon. Estimating the adult equivalent bycatch is necessary because not all salmon caught as bycatch in the pollock fishery would otherwise have survived to return to their spawning streams. Currently, accurate in-season Chinook salmon abundance levels are unavailable. Therefore, the analysis relied on analyses of historical data. Developing regulations designed to reduce the impact of bycatch requires methods that appropriately assess the impact of bycatch on the various salmon populations. A stochastic "adult equivalence" model was developed, which accounts for sources of uncertainty. The model is an extension of Witherell et al.'s (2002) evaluation, and relaxes a number of that study's assumptions.

Adult-equivalency (AEQ) of the bycatch was estimated to translate how different management cap levels may affect Chinook salmon stocks. This is distinguished from the annual bycatch numbers that are recorded by observers each year for management purposes. The AEQ bycatch applies the extensive observer datasets on the length frequencies of Chinook salmon found as bycatch and converts these to the ages of the bycaught salmon, appropriately accounting for the time of year that catch occurred. Coupled with information on the proportion of salmon that return to different river systems at various ages, the bycatch-at-age data is used to pro-rate, for any given year, how bycatch affects future potential spawning runs of salmon.

Evaluating impacts to specific stocks was done by using historical scale-pattern analysis (Myers et al.1984, Myers and Rogers 1988, Myers et al. 2003) and preliminary genetics studies from samples collected in 2005, 2006 and 2007 (Seeb et al. 2008). While sample collection issues exist and different methodologies were employed (scale pattern analyses and genetic analyses), these stock estimates nonetheless provide similar overall proportions of between 54-60% for western Alaska. The consistency of these results from these different methodologies lends credibility to this general estimate. Where possible, historical run sizes were contrasted with AEQ mortality arising from the observed pollock fishery Chinook bycatch to river of origin. Additional information on the methodology for the AEQ analysis is available in Chapter 3 of the FEIS (NPFMC/NMFS 2009).

One issue that should be highlighted in estimating the AEQ to regions of origin was in equating the actual bycatch levels to the samples collected opportunistically for genetics between 2005 to 2007. The Seeb et al. (2008) study analyzed samples taken from the bycatch during the 2005 B season, both A and B seasons during 2006, and a sample from an excluder test fishery during the 2007 A season. Where possible, the genetics samples from the bycatch were segregated by major groundfish bycatch regions. Effectively, this entailed a single region for the entire fishery during winter (which is typically concentrated in space to the region east of 170°W) and two regions during the summer, a NW region (west of 170°W) and a southeast region (east of 170°W). The genetic sampling distribution varies considerably by season and region compared to the level of bycatch.

The samples used in the Seeb et al. (2008) analysis were obtained opportunistically for a study to evaluate using scales and other tissues as collected by the NMFS observer program for genetic sampling. Unfortunately, during this study, the collected samples failed to cover the bycatch in groundfish fisheries in a comprehensive manner. For example, in 2005 most sampling was completed prior to the month (October) when most of the bycatch occurred (Figure 4). To account for these sampling issues we computed a weighted average of the samples over years within regions and seasons. The 2005 B-season stock composition results were given one third of the weight since sampling effort was low during October of that year (relative to the bycatch) while the 2006 B-season stock composition data was given two-thirds of the weight in simulating stock apportionments. For the A season, the 2007 data (collected from a limited number of tows) were given one fifth the weight while the 2006 was weighted 4 times that value.

Once these mean stock composition estimates (and associated uncertainties) were obtained, it was necessary to apply the stratum-specific stock composition levels (Table 3) to the stratum specific bycatch totals to arrive at an annual stock-specific bycatch level for application in the model (Figure 5). An important feature of this analysis is that the bycatch amounts by location and season were used explicitly for the estimates of the relative contribution of bycatch from different salmon regions. This is also an important distinction from previous studies (e.g., Myers et al, 2003) which assumed that the stock identification samples were proportional to the season and area specific bycatch over all years.

For the purposes of assigning the bycatch to region of origin, the level of uncertainty is important to characterize. While there are many approaches to implement assignment uncertainty, the method chosen here assumes that the stratified stock composition estimates are unbiased and that the assignment

uncertainty based on a classification algorithm (Seeb et al. 2008) adequately represents the uncertainty (i.e., the estimates and their standard errors are used to propagate this component of uncertainty). Inter-annual variability is introduced two ways: (1) by accounting for inter-annual variability in bycatch among strata; and (2) by using the point estimates (and errors) from the data over the different years (2005-2007) while weighting appropriately for the sampling intensity. The procedure for introducing variability in regional stock assignments of bycatch followed a Monte Carlo procedure with the point estimates and their variances used to simulate beta distributed random variables (which have the desirable property of being bounded by 0.0 and 1.0) and applied to the catch weightings (for the summer/fall (B) season) where areas are disaggregated. Areas were combined for the winter fishery since the period of bycatch by the fishery is shorter and from a more restricted area.

Application of GSI to estimate the composition of the bycatch by reporting region suggests that, if the goal is to provide estimates on the stock composition of the bycatch, there is a need to adjust for the magnitude of bycatch occurring within substrata (e.g., east and west of 170°W during the B season, top panels of Fig. 5). Applying the stock composition results presented in over different years and weighted by catch gives stratified proportions that have similar characteristics to the raw genetics data (Table 4). Importantly, these stratified stock composition estimates can be applied to bycatch levels in other years which will result in overall annual differences in bycatch proportions by salmon stock region. These simulations can be characterized graphically in a way that shows the covariance structure among regional stock composition estimates. This application extrapolates beyond the current analysis of these genetic data however and additional investigation of the temporal variation in stock composition is recommended.

The preliminary stock composition estimates for this more recent study based on the genetics are shown broken out by regions, year and season for the 9 stock units identified (Table 3). Accounting for sampling variability, the mean stock compositions by strata, and mean apportionments of the bycatch to stock (region) of origins by area and season of the pollock fishery are shown in Table 4.

While stock units differ from previous studies in levels of aggregation, results for western Alaskan aggregate river systems (e.g., AYK region) are similar to the scale-pattern study presented by Myers and Rogers (1988) and Myers et al. (2003; Table 5). The three studies indicate similarities in overall estimates of stock composition by river system even though aggregation levels, years of samples, and methodologies differ (Table 5). However, comparisons of stock composition estimates from other areas are more variable. For example the contribution from Cook Inlet stocks ranges from 4%-31% amongst studies while Russian stocks vary from 2%-14% (Table 5). There is particular variation amongst the two scale patterns studies (Myers and Rogers 1988 and Myers et al. 2003) for these other stocks. Impacts were characterized in aggregate Coastal western Alaska grouping (which includes the lower Yukon, Kuskokwim and other minor stocks) as well as by individual river system.

Table 3. ADF&G preliminary estimates of stock composition based on genetic samples stratified by year, season, and region (SE=east of 170°W, NW=west of 170°W). Standard errors of the estimates are shown in parentheses and were used to evaluate uncertainty of stock composition. Source: Seeb et al. 2008.

Year / Season / Area	PNW	Coast W AK	Cook Inlet	Middle Yukon	N AK Penin	Russia	TBR	Upper Yukon	Other
2005 B SE	45.3%	34.2%	5.3%	0.2%	8.8%	0.6%	3.3%	0.0%	2.4%
N = 313	(0.032)	(0.032)	(0.019)	(0.003)	(0.021)	(0.005)	(0.016)	(0.001)	(0.015)
2005 B NW	6.5%	70.9%	2.2%	4.7%	6.7%	2.0%	3.5%	2.8%	0.7%
N = 543	(0.012)	(0.047)	(0.011)	(0.013)	(0.042)	(0.007)	(0.012)	(0.009)	(0.008)
2006 B SE	38.4%	37.2%	7.5%	0.2%	7.0%	0.6%	4.3%	0.1%	4.7%
N = 309	(0.029)	(0.032)	(0.020)	(0.004)	(0.019)	(0.005)	(0.017)	(0.002)	(0.020)
2006 B NW	6.4%	67.3%	3.0%	8.0%	2.1%	3.3%	0.5%	8.0%	1.4%
N = 296	(0.016)	(0.035)	(0.020)	(0.020)	(0.016)	(0.013)	(0.007)	(0.019)	(0.014)
2006 A All	22.9%	38.2%	0.2%	1.1%	31.2%	1.1%	1.1%	2.3%	1.9%
N = 902	(0.015)	(0.038)	(0.004)	(0.005)	(0.039)	(0.004)	(0.007)	(0.006)	(0.011)
2007 A All	9.4%	75.2%	0.1%	0.5%	12.0%	0.2%	0.1%	0.1%	2.4%
N = 380	(0.016)	(0.031)	(0.004)	(0.005)	(0.025)	(0.003)	(0.002)	(0.003)	(0.014)

Table 4. Mean values of catch-weighted stratified proportions of stock composition based on genetic sampling by season, and region (SE=east of 170°W, NW=west of 170°W). Standard errors of the estimates (in parentheses) were derived from 200 simulations based on the estimates from Table and weighting annual results as explained in the text.

Season / Area	PNW	Coast W AK	Cook Inlet	Middle Yukon	N AK Penin	Russia	TBR	Upper Yukon	Other
B SE	45.0%	34.7%	5.1%	0.1%	8.6%	0.6%	3.4%	0.0%	2.4%
	(0.025)	(0.024)	(0.017)	(0.002)	(0.016)	(0.004)	(0.014)	(0.001)	(0.014)
B NW	6.4%	68.9%	2.6%	6.6%	4.4%	2.7%	1.8%	5.6%	1.0%
	(0.010)	(0.023)	(0.012)	(0.011)	(0.019)	(0.007)	(0.006)	(0.012)	(0.008)
A All	12.1%	67.7%	0.1%	0.6%	16.0%	0.4%	0.2%	0.6%	2.3%
	(0.012)	(0.021)	(0.003)	(0.004)	(0.019)	(0.002)	(0.002)	(0.003)	(0.010)

Table 5. Comparison of stock composition estimates for three different studies on Chinook bycatch samples taken from trawl fisheries in the eastern Bering Sea.

Study	Myers and Rogers (1988)				Myers et al (2003)			Seeb et al. 2008		
Years sampled	1979-1982				1997-1999			2005-2007[1]		
Stocks and estimated aggregate % composition in bycatch	Western AK	60%			56%					
		Yukon	Bristol Bay	Kusko-kwim	Yukon	Bristol Bay	Kusko-kwim			
		17%	29%	24%	40%	34%	26%			
Smaller scale breakouts (where available) listed to the right (with associated % contrib. of aggregate below)	Coastal WAK (also includes Norton Sound)							48%		
								Lower Yukon	Kusko-kwim	Bristol Bay
								Na	Na	Na
	Middle Yukon							3%		
	Upper Yukon							3%		
	NAK Penin							13%		
	Cook Inlet	17%			31%			4%		
	SEAK/Can	9%			8%					
	TBR							2%		
	PNW[2]							23%		
	Russia	14%			5%			2%		
	Other[3]							3%		

[1] note for purposes of comparison, only 2006 stock composition estimates *averaged annually and across regions* are shown here.

[2] PNW is an aggregate of 54 stocks from British Columbia, Washington, Oregon and California. For a full list of stocks included see Table 3-7 of FEIS (NPFMC/NMFS 2009).

[3] 'other' is comprised of minor components after aggregation to major river systems as described in Table 3-7 of FEIS (NPFMC/NMFS 2009).

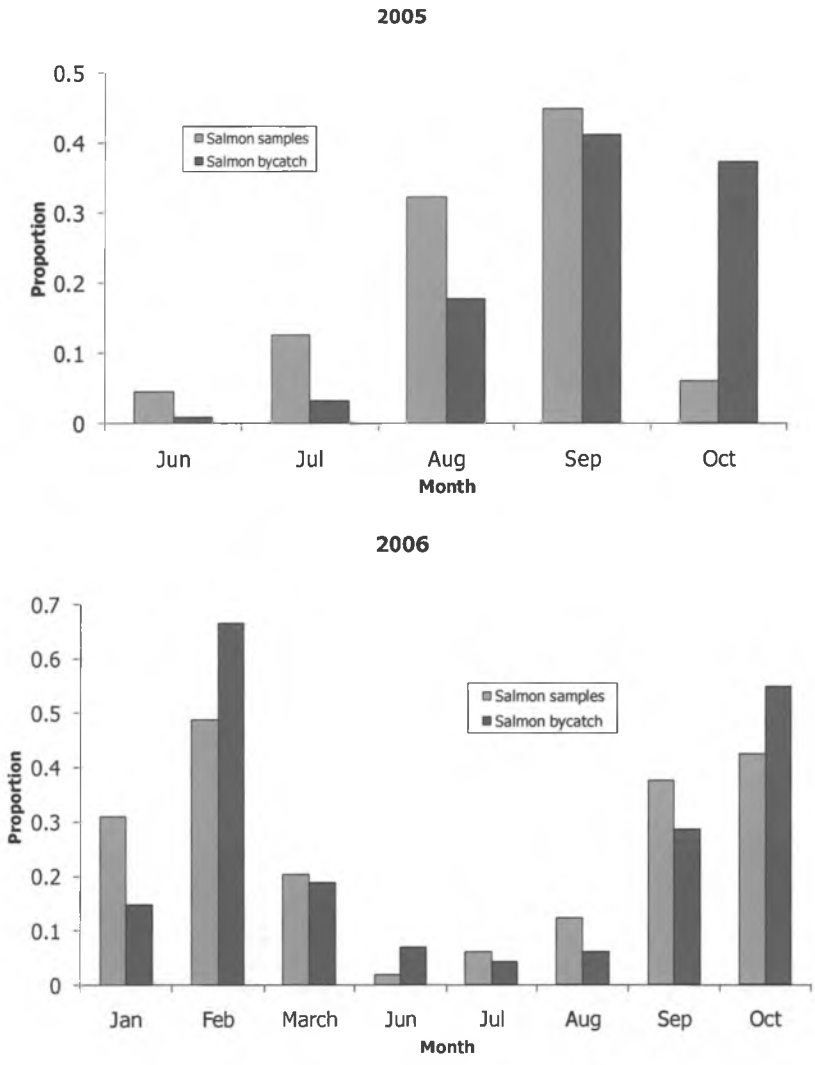


Figure 4. Proportion of Chinook salmon samples collected for genetics compared to the proportion of bycatch by month for 2005 B-season only (top panel) and 2006 A and B season combined (bottom panel).

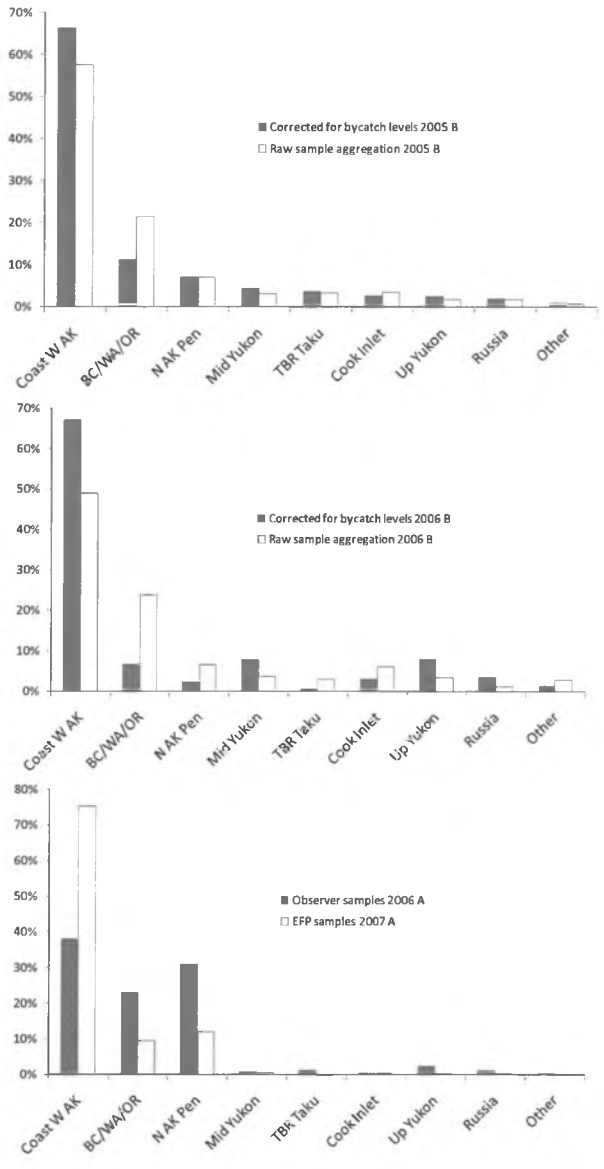


Figure 5. Chinook salmon bycatch results by reporting region for 2005 B season (top), 2006 B season (middle), and the 2006 and (partial sample) of 2007 A seasons (bottom). The top two panels include uncorrected results where bycatch differences between regions (east and west of 170°W) are ignored (empty columns).

AEQ results and estimated proportions to western Alaska

The pattern of bycatch relative to AEQ is variable. In some years, the bycatch records may be below the actual AEQ, due to the lagged impact of previous years catches. For example, in 2000, as shown in Figure 6, actual bycatch is below the predicted AEQ bycatch. This is because 1996-1998, the actual bycatch was high. The impacts from those high bycatch years show up in the AEQ bycatch for subsequent years. Some of the Chinook salmon caught as bycatch in those years would not have returned to their river of origin in the year of bycatch. Based on their age and maturity, they might have returned up to one to four years later. Some proportion of the bycatch would not have returned in any year due to ocean mortality.

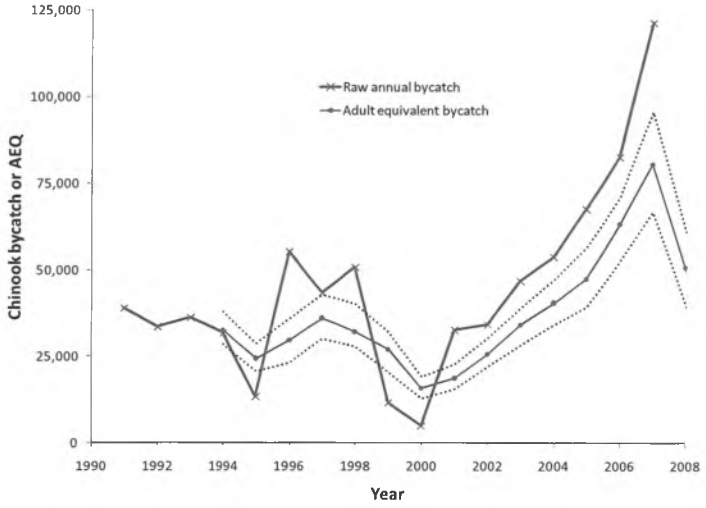


Figure 6. Time series of Chinook actual and adult equivalent bycatch from the pollock fishery, 1991-2007 (2008 raw annual bycatch also indicated separately). The dotted lines represent the uncertainty of the AEQ estimate, due to the combined variability of ocean mortality, maturation rate, and age composition of bycatch estimates.

Historical estimates of AEQ are shown for the aggregate coastal western Alaska stocks (Figure 7; which includes the lower Yukon River, Kuskokwim, Bristol Bay and other components). Note that indicating historical AEQ removals by region implies that the relative distribution of salmon bycatch occurring in space and time would be the same as what was observed during the genetics sampling years (2005-2007). As described previously, the relative intensity of inter-annual patterns of pollock fishing areas and seasons affects the relative contribution of various stocks by year in the bycatch (Figure 8). As the proportion of fishing in the NW region of the EBS increases, the proportional contribution of Upper Yukon Chinook in the bycatch increases. Likewise the relative proportional increase in fishing in the SE results in an increase in the bycatch of Chinook stocks from the Pacific Northwest.

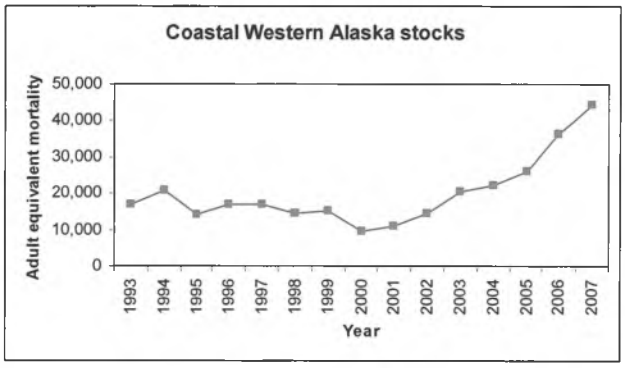


Figure 7. Annual estimated pollock fishery adult equivalent removals on stocks from the Coastal western Alaska returns, 1993-2007.

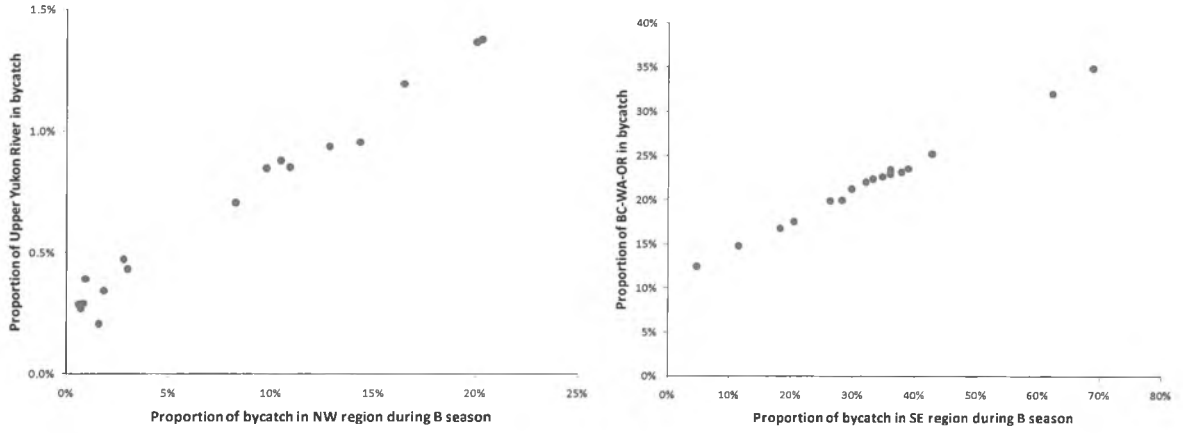


Figure 8. Illustration of how the overall proportion of Upper Yukon River relates to the bycatch proportion that occurs in the NW region (west of 170°W; top panel) and how the proportion of the BC-WA-OR (PNW) relates to the SE region (east of 170°W; bottom panel) during the summer-fall pollock fishery, 1991-2007.

Update to AEQ analysis

A short study extends the analysis provided in the FEIS (and summarized above) through to 2012, by relating season- and area-specific PSC totals with the estimates of impact on numbers of returning adult equivalent Chinook salmon. Without re-running the AEQ model, it is possible to derive a simple calibration using regression analysis against available data on the absolute PSC levels by season and region in order to predict the anticipated impact of bycatch on in-river runs.

Two pieces of information are required. First, a time series of AEQ estimates is needed, which take into account age structure of the PSC, where and when the PSC occurred, the maturation rates observed for Chinook salmon, and the available information on stock identification. These are taken from the FEIS, and provided in Table 6. Second, Chinook salmon PSC by the pollock fleet in the eastern Bering Sea, updated through A-season 2012 (i.e., the winter fishery), are in Table 7.

Since the AEQ model from the EIS clearly indicates a lag effect (e.g., Fig. 6), and given that genetic estimates of stock identification vary by bycatch locales, creating a simple proxy approach that retains these characteristics was desired. For example, let the AEQ (y_t) estimate in year t be

$$y_t = \beta_0 + \beta_1 T_{t-1} + \beta_2 T_{t-2} + \beta_3 A_t + \beta_4 B_{t-1}^{SE} + \beta_5 B_{t-1}^{NW} \ldots$$

where T_{t-1} is the total Chinook PSC in the previous year, A_t is the PSC in the A-season in year t, B_{t-1}^{NW} is the PSC in the NW region in the previous year's B-season and so on. The coefficients β_i are parameters to be estimated. A variety of models were proposed and AIC (Akaike 1974) statistic was used as a model selection criteria.

A stepwise model selection procedure ("stepAIC", Crawley 2007) in R was used to select among diverse sets of models. For coastal western Alaska Chinook salmon stocks, the following model was selected:

```
lm(formula = AEQ ~ A_0 + A_1 + BNW_0 + BNW_1 + BSE_0 + BSE_1)
```

with coefficients and diagnostics:

```
Residuals:
    Min      1Q  Median      3Q     Max
-1522.4  -497.6  -137.8   574.0  1455.7

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 5854.33118  589.69481   9.928 2.24e-05 ***
A_0            0.34787    0.02317  15.016 1.39e-06 ***
A_1            0.20676    0.03171   6.521 0.000328 ***
BNW_0          0.32788    0.10000   3.279 0.013506 *
BNW_1          0.30027    0.10223   2.937 0.021804 *
BSE_0         -0.13617    0.03739  -3.642 0.008263 **
BSE_1          0.10771    0.03604   2.989 0.020265 *
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1106 on 7 degrees of freedom
Multiple R-squared: 0.9931,    Adjusted R-squared: 0.9872
F-statistic: 167.8 on 6 and 7 DF,  p-value: 3.346e-07
```

all indicating a reasonable fit (~99% of the variability explained).

In words, this model indicates that coastal western Alaska Chinook salmon AEQ in year *t* can be well approximated with Chinook salmon PSC records on A-season catches in years *t* and *t-1* (A_0 and A_1 in the notation above) together with the same statistics for B-season but stratified to be east and west of 170°W (i.e., columns 2, 4, and 5 of Table 7 with appropriate lags). Applying recent data allows one to estimate updated AEQ impacts for coastal western Alaska and for 2011 the impact ranged from 5.4 thousand to 11.5 thousand Chinook salmon (Fig. 9; Table 8). Even though the 2012 A-season Chinook PSC presently was relatively low (less than 9,000 fish) due to the higher PSC in 2011 (25,510 fish) the impact (in AEQ –in rivers terms) has already reached 12.5 thousand Chinook salmon (with 95% prediction interval ranging from 9.5 to 15.4 thousand fish).

As noted in the FEIS (NPFMC/NMFS 2010), genetic delineation was plausible for the middle and upper Yukon Chinook runs. The same model selection process resulted in a model that indicated for the Upper Yukon stock that the PSC in the current-year A season and regionally split B-seasons explained nearly 96% of the variability:

```
lm(formula = AEQ ~ A_0 + BNW_0 + BSE_0 + BSE_1)        Upper Yukon

Residuals:
    Min      1Q  Median      3Q     Max
-70.747 -15.037   1.346  20.120  49.114

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 61.8881130 18.7598286   3.299  0.00925 **
A_0          0.0028181  0.0006251   4.509  0.00147 **
BNW_0        0.0406229  0.0031203  13.019 3.83e-07 ***
BSE_0       -0.0034026  0.0011900  -2.859  0.01880 *
BSE_1        0.0034277  0.0010548   3.250  0.01000 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 36.44 on 9 degrees of freedom
Multiple R-squared: 0.9713,    Adjusted R-squared: 0.9586
F-statistic: 76.23 on 4 and 9 DF,  p-value: 6.143e-07
```

Projecting this model forward for the Upper Yukon indicates variability with the upper 95% confidence bands from 2008-2012 ranging from 180 fish to 387 fish (Fig. 10; Table 9).

For the middle Yukon region, the characteristic and selected model was very similar to results from the Upper Yukon:

```
lm(formula = AEQ ~ A_0 + BNW_0 + BSE_0 + BSE_1)        Middle Yukon

Residuals:
   Min     1Q Median     3Q    Max
-86.00 -14.69  -1.94  23.43  54.11

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 71.3855795 22.7854771   3.133  0.01206 *
A_0          0.0025905  0.0007592   3.412  0.00772 **
BNW_0        0.0493457  0.0037899  13.020 3.83e-07 ***
BSE_0       -0.0036238  0.0014453  -2.507  0.03346 *
BSE_1        0.0040784  0.0012812   3.183  0.01112 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 44.26 on 9 degrees of freedom
Multiple R-squared: 0.9697,    Adjusted R-squared: 0.9562
F-statistic: 71.95 on 4 and 9 DF,  p-value: 7.897e-07
```

Results for the middle Yukon show the upper 95% confidence bands from 2008-2012 ranging from 210 fish to 451 fish (Fig.11; Table 10).

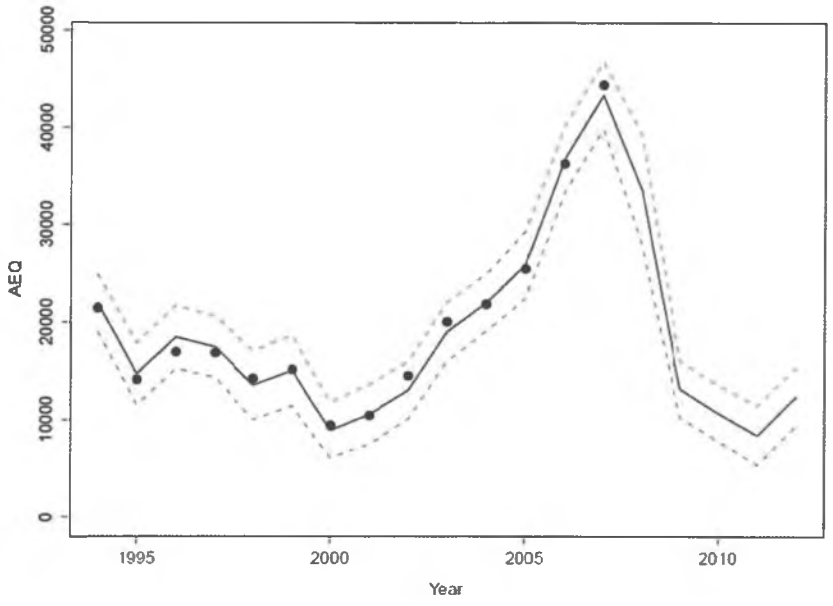


Figure 9. Estimated **coastal western Alaska** Chinook salmon adult equivalent mortality (AEQ; in numbers of fish) due to PSC in the eastern Bering Sea pollock fishery.

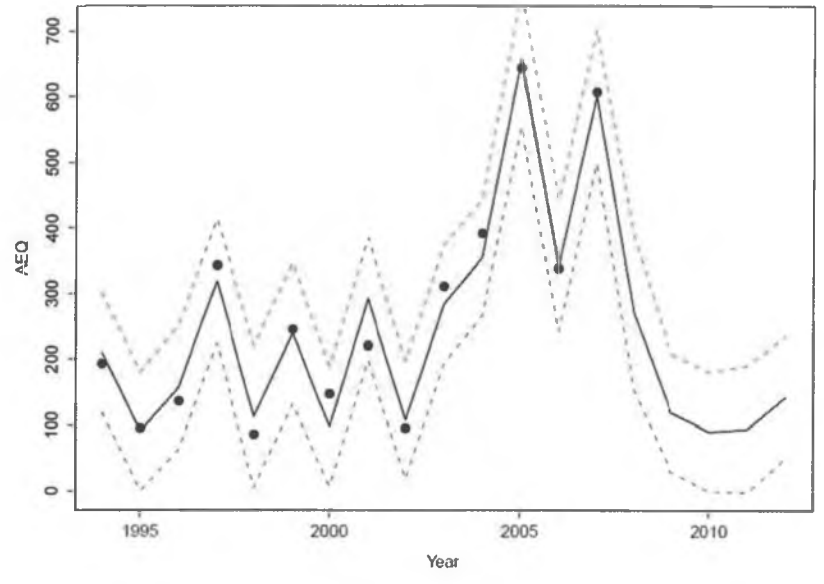


Figure 10. Estimated **Upper Yukon** Chinook salmon adult equivalent mortality (AEQ; in numbers of fish) due to PSC in the eastern Bering Sea pollock fishery.

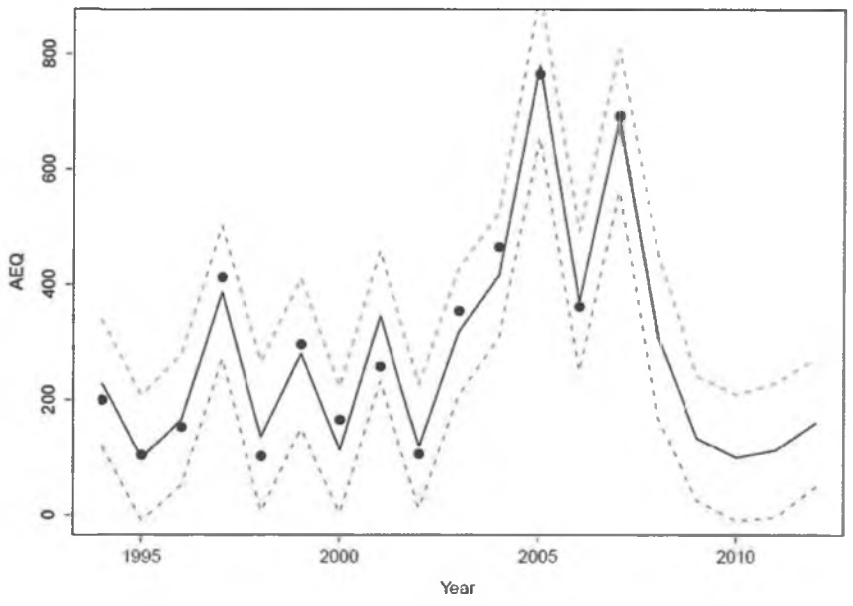


Figure 11. Estimated **Middle Yukon** Chinook salmon adult equivalent mortality (AEQ; in numbers of fish) due to PSC in the eastern Bering Sea pollock fishery.

Table 6. Median values of stochastic simulation results of AEQ Chinook mortality attributed to the pollock fishery by region, 1994-2007. These simulations include stochasticity in natural mortality (Model 2, CV=0.1), PSC age composition (via bootstrap samples), maturation rate (CV=0.1), and stock composition (as detailed above). **NOTE: these results are based on the assumption that the genetics findings from the 2005-2007 data represent the historical pattern of PSC stock composition (by strata).**

	BC, WA, OR, and CA	Coastal W. AK	Cook Inlet	Middle Yukon	N. Alaska Peninsula	Other	Russia	Upper Yukon	TBR (SE)	Total
1994	5,198	21,518	242	201	4,898	714	147	194	198	33,310
1995	5,635	14,084	415	104	3,302	532	112	96	279	24,559
1996	6,974	17,025	520	154	3,939	632	142	137	364	29,886
1997	11,376	16,895	1,276	413	3,364	715	277	343	783	35,442
1998	10,967	14,218	1,110	103	3,382	696	165	87	711	31,439
1999	6,429	15,099	573	297	3,193	561	188	245	387	26,973
2000	2,815	9,383	219	167	2,106	330	99	147	152	15,418
2001	3,694	10,473	349	260	2,141	375	149	221	238	17,899
2002	6,236	14,516	509	106	3,467	609	117	96	341	25,997
2003	5,743	20,065	398	356	4,424	679	207	311	292	32,475
2004	10,164	21,904	1,018	466	4,592	859	305	393	685	40,386
2005	11,169	25,462	1,203	767	5,107	923	439	645	772	46,487
2006	12,719	36,337	892	363	8,355	1,348	290	339	633	61,275
2007	18,079	44,380	1,597	694	9,743	1,688	485	608	1,069	78,344

Table 7. Chinook salmon PSC from the eastern Bering Sea pollock fishery (all sectors including CDQ) by season and by region during the B-season, 1991-2012 (as of July 16, 2012). NW and SE regions encompass the area west and east of 170°W, respectively.

Year	A-season	B-season	B-NW region	B-SE region	Total
1991	36,838	2,215	366	1,849	39,053
1992	23,413	10,258	213	10,045	33,671
1993	15,415	21,204	7,344	13,860	36,619
1994	27,285	4,605	892	3,713	31,890
1995	8,982	4,421	112	4,309	13,403
1996	35,985	19,488	1,021	18,467	55,473
1997	10,347	33,974	6,358	27,616	44,321
1998	15,118	36,127	820	35,307	51,245
1999	6,351	5,626	1,309	4,317	11,977
2000	2,410	668	379	290	3,078
2001	8,571	10,477	5,460	5,018	19,049
2002	10,076	2,524	200	2,324	12,599
2003	30,805	12,016	3,802	8,214	42,821
2004	24,493	27,589	6,578	21,011	52,082
2005	28,581	38,277	13,021	25,256	66,858
2006	58,952	23,560	2,444	21,116	82,512
2007	70,879	51,480	10,033	41,447	122,359
2008	16,938	4,819	793	4,026	21,757
2009	9,514	2,708	582	2,126	12,222
2010	7,834	2,220	144	2,077	10,054
2011	7,147	18,363	1,531	16,832	25,510
2012	8,289	299	9	290	8,588

Table 8. **Coastal western Alaska** Chinook salmon PSC impact (in AEQ terms) from the eastern Bering Sea pollock fishery (all sectors including CDQ), 1994-2012 (as of July 16, 2012). Columns 3-5 contain predictions based on the linear model described in the text; bolded numbers are point estimates of impact due to PSC.

Year	EIS AEQ Model	Linear Model Estimate	Lower CI	Upper CI
1994	21,518	22,018	19,064	24,972
1995	14,084	14,738	11,558	17,918
1996	17,025	18,547	15,310	21,784
1997	16,895	17,514	14,379	20,649
1998	14,218	13,597	10,054	17,141
1999	15,099	15,080	11,452	18,707
2000	9,383	8,949	6,077	11,820
2001	10,473	10,586	7,523	13,649
2002	14,516	13,060	10,118	16,002
2003	20,065	19,092	16,068	22,117
2004	21,904	22,066	19,160	24,973
2005	25,462	25,930	22,505	29,354
2006	36,337	36,827	33,451	40,203
2007	44,380	43,354	39,905	46,802
2008		**33,590**	27,953	39,227
2009		**13,239**	10,328	16,151
2010		**10,715**	7,833	13,597
2011		**8,437**	5,365	11,509
2012		**12,452**	9,470	15,434

Table 9. **Upper Yukon** Chinook salmon PSC impact (in AEQ terms) from the eastern Bering Sea pollock fishery (all sectors including CDQ), 1994-2012 (as of July 16, 2012). Columns 3-5 contain predictions based on the linear model described in the text; bolded numbers are point estimates of impact due to PSC.

Year	EIS AEQ Model	Linear Model Estimate	Lower CI	Upper CI
1994	194	210	119	301
1995	96	90	0	179
1996	137	157	63	251
1997	343	319	224	413
1998	87	112	5	220
1999	245	239	132	347
2000	147	98	7	188
2001	221	292	199	385
2002	96	108	18	197
2003	311	283	193	373
2004	393	355	266	444
2005	645	657	554	761
2006	339	342	242	442
2007	608	601	499	703
2008		**270**	153	387
2009		**119**	30	208
2010		**90**	0	180
2011		**94**	0	190
2012		**142**	50	234

Table 10. **Middle Yukon** Chinook salmon PSC impact (in AEQ terms) from the eastern Bering Sea pollock fishery (all sectors including CDQ), 1994-2012 (as of July 16, 2012). Columns 3-5 contain predictions based on the linear model described in the text; bolded numbers are point estimates of impact due to PSC.

Year	EIS AEQ Model	Linear Model Estimate	Lower CI	Upper CI
1994	201	229	119	340
1995	104	100	0	209
1996	154	166	52	280
1997	413	387	272	502
1998	103	136	5	266
1999	297	281	150	411
2000	167	113	3	223
2001	260	346	233	459
2002	106	119	11	228
2003	356	318	209	428
2004	466	417	309	525
2005	767	782	656	908
2006	363	371	250	493
2007	694	686	562	810
2008		**309**	167	451
2009		**133**	25	242
2010		**100**	0	210
2011		**113**	0	230
2012		**161**	49	273

The combined 2011 Alaska harvests of Chinook salmon are reported at 468,000 fish (Eggers and Carroll 2012). For western Alaska region, the combined run sizes are on the order of 500-800 thousand fish whereas for the Upper Yukon, the run sizes average around 75-100 thousand fish. In comparison, recent estimates of PSC impacts are on the order of 10 – 15 thousand Chinook for all of coastal western Alaska and in the 100-500 fish range for the middle and Upper Yukon.

Overview of Council action –Amendment 91

The Council took final action on Amendment 91, Chinook salmon PSC management measures in the Bering Sea pollock fishery in April 2009. NMFS approved regulations implementing Amendment 91 on August 30, 2010 (72 FR 53026), and the fishery has been operating under the requirements since January 2011. Amendment 91 established two Chinook salmon PSC limits (60,000 Chinook salmon and 47,591 Chinook salmon) for the Bering Sea pollock fishery. For each PSC limit, NMFS issues A season and B season Chinook salmon PSC allocations to the catcher/ processor sector, the mothership sector, the inshore cooperatives, and the CDQ groups. When a PSC allocation is reached, the affected sector, inshore cooperative, or CDQ group is required to stop fishing for pollock for the remainder of the season even if its pollock allocation had not been fully harvested.

NMFS issues transferable allocations of the 60,000 Chinook salmon PSC limit to those sectors that participate in an incentive plan agreement (IPA) and remain in compliance with the performance standard. Sector and cooperative allocations would be reduced if members of the sector or cooperative decided not to participate in an IPA. Vessels and CDQ groups that do not participate in an IPA fish under a restricted opt-out allocation of Chinook salmon. If a whole sector does not participate in an IPA, all members of that sector would fish under the opt-out allocation.

The IPA component was designed as an innovative approach for fishery participants to design industry agreements with incentives for each vessel to avoid Chinook salmon bycatch at all times and thus reduce bycatch below the PSC limits. To ensure participants develop effective IPAs, the final rule required that participants submit annual reports to the Council that evaluate whether the IPA is effective at providing incentives for vessels to avoid Chinook salmon at all times while fishing for pollock. The sector-level performance standard ensures that the IPA is effective and that sectors cannot fully harvest the Chinook salmon PSC allocations under the 60,000 Chinook salmon PSC limit in most years. Each year, each sector is issued an annual threshold amount that represents that sector's portion of 47,591 Chinook salmon. For a sector to continue to receive Chinook salmon PSC allocations under the 60,000 Chinook salmon PSC limit, that sector must not exceed its annual threshold amount three times within 7 consecutive years. If a sector fails this performance standard, it will permanently be allocated a portion of the 47,591 Chinook salmon PSC limit. Under Amendment 91, NMFS would issue transferable allocations of the 47,591 Chinook salmon PSC limit to all sectors, cooperatives, and CDQ groups if no IPA is approved, or to the sectors that exceed the performance standard.

This program was implemented in January 2011, thus the fishery has operated under the new program for one year. The first annual reports by the industry to the Council were provided in April 2012.

Status of 2011-12 first two years of implementation

2011 was the first year of implementation under the new program for Chinook bycatch management. The industry began with a voluntary stand down in late January to avoid Chinook. Incidental catch of Chinook salmon by the pollock fishery participants in the 2011 indicated that pollock fishery participants remained well below their limits and with catch much lower than in the recent five years. Total 2011 A-season PSC was 7,136 fish. This compares to Chinook salmon PSC ranging from 7,624 fish in the A season of 2010 to 69,139 fish in the A season of 2007. In the B-season incidental catch of Chinook salmon by the pollock fishery was also well below the seasonal PSC limits with a total B-season bycatch of 18,363. This is higher than B-season PSC in the previous 3 years but is substantially less than the B-season of 2007 where 25,499 fish were taken. The overall 2011 total Chinook PSC was 25,499. While this amount is higher than the recent years (driven by the increase in the B-season) this was nonetheless well below both the overall PSC limit under Amendment 91 as well as the (lower) performance standard established under that management program. In contrast, in 2012, the A-season PSC was 7,773 fish while B-season catch was substantially lower at 3,577.

Council consideration of chum measures and impacts on Chinook

The Council is now considering additional management measures targeted at chum salmon bycatch reduction on the EBS pollock fishery. As with the measures considered for Chinook, the Council is considering a combination of hard cap limits and area closures as well as conferring primary management responsibility to the industry to manage a rolling hotspot program as is done currently. Measures under consideration are intended to target proving protection for WAK chum stocks by focusing on June and July measures when genetic information has indicated there is a higher proportion of WAK bound chum on the fishing grounds (Kondzela et al. 2012; Gray et al, 2011, Gray et al., 2010). However, policy decisions for alternative management measures for chum must also consider the potential impact on the catch of Chinook salmon as a result of imposing additional management measures on the same pollock fishery. The pollock fishery catches both chum and Chinook salmon PSC in the B-season. The timing of this catch is dissimilar amongst the two species, with Chinook salmon caught in the latter part of the B season and chum salmon caught throughout the B season (Figure 12). Current analysis of the impact of various chum management measures under consideration show that chum measures appear to result in more fishing later in the year and thus will result in more Chinook bycatch. A revised industry-initiated and managed rolling hot-spot program is under consideration which attempts to address the balance between prioritization of Chinook and chum avoidance measures in the same season. The Council will

review a draft analysis in December 2012. Final action by the Council is likely in April 2013 with any regulations to implement a new program likely by 2015.

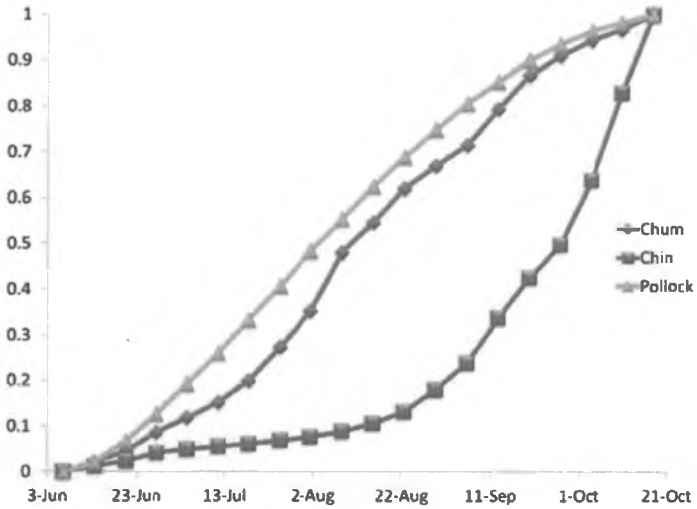


Figure 12. Mean relative values of pollock catch (triangles) compared with catch of chum (diamonds) and Chinook (squares) salmon species in the pollock fishery during the B-season.

Research Recommendation

Several recommendations for additional analyses to assist management are provided below based on experiences with analyzing these data for impact analyses as well as new genetics information.

1. AEQ/genetics analysis of bycatch on recent genetics data: To date the only AEQ and genetics evaluations on EBS bycatch that have been conducted have been done so in conjunction with Council analyses of modifying management measures. As a result of Amendment 91 annual reports of genetics of proportions from bycatch in the groundfish fisheries are being provided, however absent a Council decision to conduct an analysis of modifying management measures, no additional updated analysis of bycatch AEQ and genetic stock of origin is anticipated. Ideally an annual or periodic update to the Council on the genetic analysis of the bycatch (specifically in the EBS pollock fishery) would be advisable.
2. Spatial analysis of genetics for potential consistency over time: In evaluating appropriate management measures to reduce WAK bound Chinook (and chum) salmon additional analyses on the spatial consistency over time on a small a scale as possible would be extremely useful.
3. Evaluation of bycatch of Chinook in other EBS fisheries outside of pollock: Currently management measures are targeted at the EBS pollock fishery as this comprises the majority of the bycatch of both salmon species. Recent genetic stock composition proportions however include bycatch from other groundfish fisheries. To the extent that these fisheries bycatch could be examined separately for spatial and temporal consistency in genetic stock proportions this may give an indication of other fisheries contribution to bycatch impacts. Potentially should information indicate that fisheries outside of the EBS pollock fishery contribute less bycatch annually but a disproportionate impact consistently on some stocks (e.g. Upper Yukon Chinook) this would be informative for future management actions on other groundfish fisheries.

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AIFG

Pollock & Chinook bycatch

Closure fish area

Rolling Hotspot - smaller areas

2011 First Hard Cap. ranges

60,000 ↑ more than 2 of 7 years

47,000 Performance Std.

Manage to lower

each individual vessel

incentive cumulative

GOA

Limited access

Hard cap 25,000

2012 → 20,000

Bob Clark (BS) High abundance Look age genetics

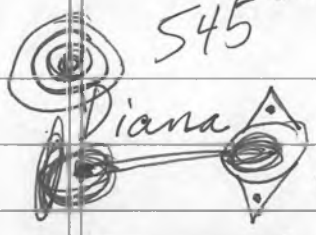
Research plan Higher proportion of Ak in Pollock A

~42% ? 20 upper Yukon

Research plan GOA

anticipate GOA + BC lower 48

545 000 net pollock
ch 2,930.



uncertainty + no confidence limits

Art Nelson Yakon
96% ↓ from 20 yr. Average
Substitution unmet

02/19/13 Presenta-tion: Herring and Fish Protein Marketing Project

<TARGET><BILL></BILL><SUBJECT>02-19-13 Presentation Herring and Fish Protein Marketing Project</SUBJECT><COMM>HFSH28</COMM></TARGET>

Herring & Seafood Protein Powder

Marketing & Development Projects

Bruce Schactler
ASMI Global Food Aid Director
February 19, 2013
Juneau, Alaska

Alaska Global Food Aid Program

Goals

- Create new economic opportunities & jobs in Alaska by:
  - Developing under-utilized biomass
    - Canned Herring
    - Seafood Protein Powder
    - Other marine resources
  - Reactivating canneries
  - Developing new facilities

Alaska Global Food Aid Program

Goals

- Developing New Alaska Seafood Products by:
  - Identifying promising new products
  - Finding partners
  - Seeking opportunities for R&D
  - Laying groundwork with agencies and potential markets
  - Promoting Alaskan resources

Alaska Global Food Aid Program

Results

- Expanding jobs and creating new opportunities in coastal Alaska will:
  - Reduce waste going into the sea
  - Recover wasted resources
  - Transform them into a concentrated source of high quality marine nutrients
  - Promote sustainability of Alaska fisheries

Alaska Global Food Aid Program

Modeling after canned salmon

- Started with just 10,000 cases sold in 2004
  now grant requests exceed a million cases
- Actual sales in 2012 exceeded $10 million for domestic and foreign food aid market

Alaska Global Food Aid Program

The market comes to us

- Global market loves AK Salmon and our program caught the attention of USDA
- USDA asks us to identify new sources of shelf-stable AK seafood products
- Herring selected as potentially viable product for this segment
  - Excellent nutrition delivered by underutilized marine resource
  - Canned herring family is common throughout the world

Alaska Global Food Aid Program

The market comes to us 2

- Identify the species
  - Herring as an excellent protein source
  - Stock plentiful due to decrease in herring roe demand
- Identify product form
  - Canned herring eaten all over the world
  - Build evidence base for value of the new products

Alaska Global Food Aid Program

The market comes to us 3

- Identify production technology
  - Use existing machinery as much as possible
  - source specialized machinery as needed

⇨**Western Alaska is well positioned to develop production capacity**

Alaska Global Food Aid Program

Production starts

- Initiate pilot production
  - Find industry partner
  - Identify shelf-stable form: canned product
- Identify PVO partner for demonstration projects
  - Uganda
  - Liberia

⇨**Create demand for new products**

Alaska Global Food Aid Program

We follow the market

- Make modifications to the canned product line
  - Canned Herring fillets
- React to market / create demand
  - Expand to worldwide fresh & frozen market

Alaska Global Food Aid Program

How are we doing it?

- Attract new markets at home and abroad
  - Use our successful market strategy
  - Identify potential clients/customers
  - Educate and seek partners for pilot and demonstration projects / early adopters
    - Consumer testing of new products in the field
    - Developing recipes
    - Building the evidence base for value of the new products

⇨**Create demand for new products**

Alaska Global Food Aid Program

Canned Herring Pilot Project Liberia 2012-2013

- Alaska donated 62,976 cans of Alaska Herring
- Beneficiaries - 500 women, children & adults with HIV in 5 programs run by Samaritan's Purse and partners
- Trained project staff & developed recipes with cooks
- Interviewed consumers - very high acceptability
- Measured impact on growth & development- 9 months

Alaska Global Food Aid Program

only solid protien in world food aid programs other than dried milk

Acceptability is High



- Liberians love the Alaska Canned Herring
- Extremely grateful to the Alaska Seafood Marketing Institute for the donation

Alaska Global Food Aid Program

42% Impact

Overall



- 42% of malnourished individuals improved to a normal, healthy nutrition status
- Significant improvement in nutrition status for adults overall

Alaska Global Food Aid Program

Impact

HIV/AIDS



Herring delivers improved measurable nutritional benefits for people with HIV

Alaska Global Food Aid Program

Impact

Nutrition Improved

71%

- 71% of HIV positive malnourished participants have improved their nutrition status

80%

- 80% of them improved to normal

Alaska Global Food Aid Program

4 cans/week

Feedback

- A pull tab/ pop top lid
- Canning the Herring with oil, like sardines
- Adding seasoning to the Herring



Alaska Global Food Aid Program

AGFAP links its products to the growing international demand

Canned Salmon
Canned Herring
Seafood Powder

Alaska Global Food Aid Program

Powder

- Super nutritious powder
- New product of choice in food aid
- Potential made from waste and byproducts
- Pilot project in the works
  - Start with Salmon- Extremely successful
  - Modeled after Salmon
  - Byproduct salmon industry

Alaska Global Food Aid Program

Consumer Testing

High Ratings

- Ghana
- Guatemala
- Guinea-Bissau
- Liberia
- Mozambique
- Nigeria
- South Africa
- Uganda
- USA

Alaska Global Food Aid Program

Canned fish on the shelves in Liberia

Canned Mackerel & Tuna



Salmon

Alaska Global Food Aid Program



In South Africa and the USA, we found...
Alaska Canned Salmon & German Canned Herring

Why no Alaska Herring?

Alaska Global Food Aid Program

In 2013 we will continue to work with the New Products

Applying our successful marketing strategy and R&D



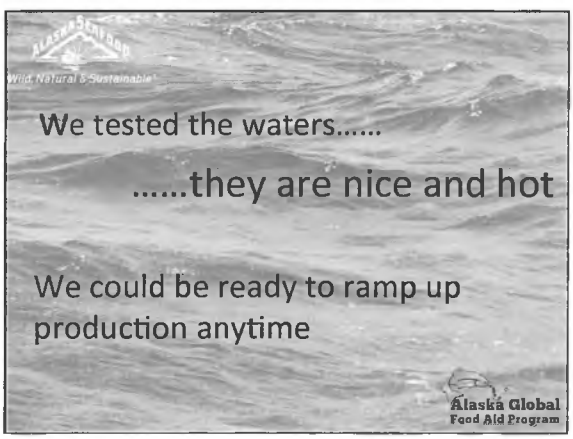
What's next?

- A second and third data point like Liberia
  - Presentation to customers
  - Find partner
  - Continue to fine-tune product and product form
  - New customers waiting-USDA and NGOd
  - To meet customer wants and needs
    - Ex. In Liberia wanted Herring packaged with more seasoning and oil
- Commercial market place- fresh product to international market

Alaska Global Food Aid Program


We have new customers at the ready
• Two organizations are ready to include Canned herring in international programs
• USDA asked us to do a tasting with their domestic program staff so they can introduce in the AMS/FNS domestic programs
Alaska Global Food Aid Program


We have new customers at the ready
• Organizations all over the world ready to buy
• Anxious to see our testing
• NGOs need to see the specifications
Alaska Global Food Aid Program


We tested the waters.....
.....they are nice and hot
We could be ready to ramp up production anytime
Alaska Global Food Aid Program


For more information:
Bruce Schactler,
Director
ASMI Global Food Aid
www.alaskaseafood.com
Alaska Global Food Aid Program



Alaska Global Food Aid Program

ALASKA SEAFOOD®

Wild, Natural & Sustainable®

A Wild Taste of Food Aid

Recipe

Wild Alaska Herring and Maize Fritters

Wild, Natural & Sustainable®

Alaska Global Food Aid Program

Wild Alaska Herring and Maize Fritters
[Makes 24 small fritters]

Ingredients

2 cans	**Wild Alaska Herring** (7oz/200g)
¾	cup maize meal
¼	cup flour
1	teaspoon sugar
¼	teaspoon baking powder
½	tablespoon iodized salt
½	cup yogurt
1	egg
¾	cups maize kernels
½	cup onion, diced
½	cup peppers or celery, diced
	cooking oil



Photos © GF&N Inc.

Preparation

1. Combine the maize meal, flour, sugar, baking soda, and salt in a mixing bowl.
2. Stir in the yoghurt and egg.
3. Add the maize, onions, pepper or celery.
4. Drain the herring and gently mix into the mixture.
5. Heat the oil in a deep, wide saucepan until hot and a pinch of flour sizzles immediately.
6. Carefully drop a spoonful of the fritter batter into the oil. Fry for 3 minutes while rotating fritter. Remove when golden brown and drain of excess oil.

Suggested Condiments

yoghurt, chutney, piri-piri or other spicy sauce

Variation

Substitute **Wild Alaska Canned Salmon** (instead of Herring)



Alaska Global Food Aid Program
Food Aid Director:
Bruce Schactler
Alaska Seafood Marketing Institute
(Alaska) T: 907-738-6451
E: bschactler@ak.net

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global.alaskaseafood.org
Technical Assistance & Project Management:
Nina P. Schlossman PhD
1300 L Street NW, Suite 920, Washington DC 20005
T: 202-289-0624 • F: 202-289-0608
nina@globalfoodandnutrition.com

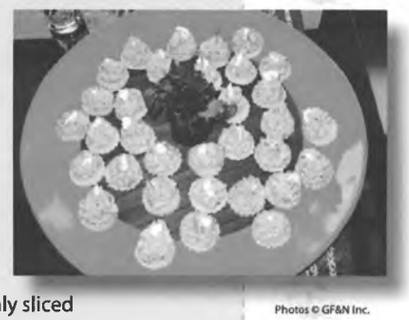
Recipe

Wild Alaska Herring Curried Spread

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Alaska Global Food Aid Program

Wild Alaska Herring Curried Spread
[Makes about 40 starter portions]



Photos © GF&N Inc.

Ingredients

1 can	**Wild Alaska Herring** (7oz/200g), well drained
2	tablespoons mayonnaise
2	teaspoons coarse-grain mustard
½	teaspoon curry powder
1	teaspoon sugar
1	pinch iodized salt
1	tablespoon scallion or chives, thinly sliced
	black pepper
	crackers/salty biscuits

Preparation

1. Combine mayonnaise, mustard, sugar, salt and scallions in a bowl.
2. Drain herring and stir into mixture.
3. Adjust seasoning and serve on crackers.

Variation

Substitute **Wild Alaska Canned Salmon** (instead of Herring)



Alaska Global Food Aid Program
Food Aid Director:
Bruce Schactler
Alaska Seafood Marketing Institute
[Alaska] T: 907-738-6451
E: bschactler@ak.net

Wild, Natural & Sustainable

global.alaskaseafood.org
Technical Assistance & Project Management:
Nina P. Schlossman PhD
1300 L Street NW, Suite 920, Washington DC 20005
T: 202-289-0624 - F: 202-289-0608
nina@globalfoodandnutrition.com

Recipe

Wild Alaska Salmon Salad

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Alaska Global Food Aid Program

Wild Alaska Salmon Salad
[Serves 4]



Photos © GF&N Inc.

Ingredients

1	can **Wild Alaska Salmon** (14.75oz/418g)
2	cups cooked rice
3	tablespoons vegetable oil
1	tablespoon lime juice or vinegar
½	small onion, finely chopped
½	cup celery, cucumber, or other local vegetable, finely chopped
¼	cup red or green pepper, finely chopped
1	teaspoon sugar
1	tablespoon parsley or coriander, fresh chopped – for garnish

Preparation

1. In a large bowl, combine onion, celery, pepper, lime juice or vinegar, oil and sugar.
2. Add rice and mix.
3. Add Salmon and combine gently.
4. Garnish with parsley or coriander and serve.

Variation

Instead rice, substitute bread or tortillas, or serve with either noodles or couscous. (Alternative: substitute 2 cans **Wild Alaska Canned Herring)**



Alaska Global Food Aid Program
Food Aid Director:
Bruce Schactler
Alaska Seafood Marketing Institute
[Alaska] T: 907-738-6451
E: bschactler@ak.net

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global.alaskaseafood.org
Technical Assistance & Project Management:
Nina P. Schlossman PhD
1300 L Street NW, Suite 920, Washington DC 20005
T: 202-289-0624 • F: 202-289-0608
nina@globalfoodandnutrition.com

Recipe

Wild Alaska Salmon Stir Fry

Wild, Natural & Sustainable®

Alaska Global Food Aid Program

Wild Alaska Salmon Stir Fry
[Serves 4]



Photos © GF&N Inc.

Ingredients

1	can **Wild Alaska Salmon** (14.75oz/418g)
2	tablespoons vegetable oil
4	cups cooked rice or noodles
1	cup carrots, finely sliced
1	cup snow peas, trimmed (or other green vegetables, sliced or diced)
1	tablespoon fresh ginger, peeled and minced
2	large garlic cloves, minced
3	tablespoons soy sauce
1	tablespoon sesame oil
2	tablespoons rice vinegar or other vinegar
1	pinch of sugar
½	cup sliced scallions or onions

Preparation

1. Heat oil in heavy size skillet over medium-to-high heat
2. Add carrots and cook for 3 minutes.
3. Add the peas, ginger, and garlic and cook for 3 minutes.
4. Add the sesame oil, soy sauce, rice vinegar, and sugar and cook another minute.
2. Add the scallions and Salmon, gently combine.
3. Serve over cooked rice or noodles.

Variation

Substitute the rice with cornmeal, sorghum, bulgur or beans, or serve with bread.
(Alternative: substitute 2 cans **Wild Alaska Canned Herring**)



Alaska Global Food Aid Program
Food Aid Director:
Bruce Schactler
Alaska Seafood Marketing Institute
[Alaska] T: 907-738-6451
E: bschactler@ak.net

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global.alaskaseafood.org
Technical Assistance & Project Management:
Nina P. Schlossman PhD
1300 L Street NW, Suite 920, Washington DC 20005
T: 202-289-0624 • F: 202-289-0608
nina@globalfoodandnutrition.com

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Alaska Global Food Aid Program

Wild Alaska Fish

NGO Partners:

- Africare
- Escuelas Populares Don Bosco
- Food for the Poor
- Humpty Dumpty Institute
- International Partnership for Human Development
- International Relief and Development
- Salesian Missions
- World Food Program
- World Help
- World Vision

New to Canned Salmon?

We are here to help Private Voluntary Organizations (PVOs) and other Non-Government Organizations (NGOs) include Canned Salmon in their food aid programs as others have successfully done.

ALASKA GLOBAL FOOD AID PROGRAM (AGFAP) was created in 2005 by Alaska Salmon fishermen to help feed the world's food-insecure the same nutritious canned salmon available in United States from food banks to school lunches. Since 2008, the Alaska Seafood Marketing Institute (ASMI) has spearheaded this unique humanitarian initiative.

ALASKA GLOBAL FOOD AID PROGRAM links Alaskan fishing communities with populations around the globe to fill nutrition gap while they develop self reliance, food security and their economic well-being. Canned Salmon is increasingly being adopted by private voluntary organizations (PVO), the World Food Program and other non-governmental organizations (NGO) in food aid programs.

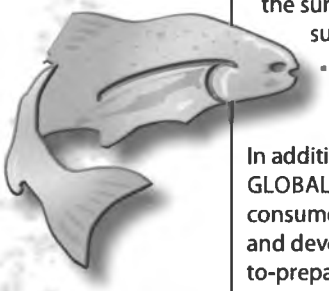
The inclusion of Wild Alaska Canned Salmon has vastly improved the taste and nutritional quality of food-aid baskets in countries from Bolivia, Jamaica, and Guatemala in the Americas, to Cambodia and Laos in Asia, and to Guinea-Bissau and Uganda in Africa.

These successful experiences with school children, women, the elderly, orphans, vulnerable children, refugees and people living with HIV have led other organizations to include Canned Salmon in their proposals for Haiti, Honduras, Cameroon and Liberia, showing how widely accepted fish is on all continents.

Sustainable Fishing

With over 34,000 miles of coastline and thousands of people in the fishing industry, the State of Alaska is the world's leading wild, sustainable fishery. Alaska's sustainable fishing practices over the last 50 years, protect its most important natural resource – its fisheries.

Sustainability as it pertains to Alaska seafood means that our fisheries can exist long-term without compromising the survival of the species or the health of the surrounding ecosystem.



In Development

In addition to the humanitarian component, ALASKA GLOBAL FOOD AID PROGRAM is working with food-aid consumers in Africa, Asia, and Latin America on research and development of new health-protecting and easy-to-prepare products made from Wild, sustainable Alaska seafood.

THE ALASKA GLOBAL FOOD AID PROGRAM is partnering with Alaska fishing and canning communities to bring nutritious Alaska Canned Salmon and Herring to local communities around the world.

Our Partners in:

Bolivia, Cambodia, Guatemala, Guinea-Bissau, Jamaica, Laos and Uganda

Frequently Asked Questions, that we can help answer:

- How will it fit into your commodity selection and food aid ration?
- How will mothers and other cooks incorporate Salmon into their meal planning?
- Will your program participants like it?
- Has it been used in similar programs and regions?
- Is it easy to handle, store and prepare?
- Will its cost translate into better nutrition and added value for your program participants?

Programs offering Canned Salmon:

US Department of Agriculture (USDA)

- US School Lunch; Women, Infants & Children Nutrition (WIC) and other domestic programs
- McGovern Dole International Food for Education & Child Nutrition Program
- Food for Progress

US Agency for International Development (USAID)

Food for Peace Program (PL 480 Title II) – Emergency and Development

For Technical Assistance:

The ALASKA GLOBAL FOOD AID PROGRAM assists NGOs and PVOs with program design, ration selection, recipe development, storage, handling and preparation of dishes integrating Canned Salmon and other food aid commodities with local ingredients to feed cultural tastes.

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Alaska Seafood Marketing Institute
[Alaska] T: 907-738-6451 • E: bschactler@ak.net

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Technical Assistance & Project Management:
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Wild Alaska Fish

Super Nutrition for All Ages

Wild, Natural & Sustainable®

Alaska Global Food Aid Program

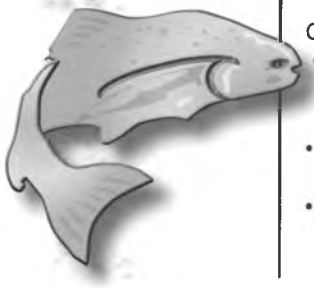
Health Benefits of Wild Alaskan Fish in Food Aid Programs

Canned Salmon is the only marine source of Omega-3 fatty acids and animal protein available in food aid programs today.

Alaska Canned Fish is the superior choice to improve the health of all population groups.

Alaska Canned Salmon and Herring are packed with nutrients including high quality protein and Omega-3 fatty acids.

Salmon is the only marine-source commodity currently in the food-aid basket. It promotes growth and delivers vital nutrients to keep every system in the body healthy.



Pregnant Women and Mothers

Healthy fats and protein from Canned Salmon are essential building blocks for proper tissue and brain development in babies and help prevent hypertension in women during pregnancy.

- Omega-3 fatty acids, similar to those found in Salmon, are a vital component of breast milk.
- Women who eat Salmon regularly have a higher content of these fats in their milk, essential for infant brain development *in utero* and the first months of life.
- Marine sources of Omega-3's improve efficiency of nutrient delivery to developing brains, nerves, and eyes.



Infants and Young Children

For the first six months, breast milk can provide all the nutrition infants need. From 6-24 months, babies need continued breastfeeding complemented with foods made from quality protein, grains, fruit, and vegetables. Salmon is a key ingredient to prevent malnutrition in young children, when mixed into complementary foods.

Canned Salmon is:

- Ready-to-use, hygienic and requires no water or cooking, limiting exposure to environmental contaminants that cause diarrhea.
- An excellent source of easily-digestible animal protein.
- A concentrated source of calcium, phosphorus and magnesium, which promote strong bones and teeth along with linear growth.

School-Age Children Kindergarten - Grade 12

Providing a nutritious meal in schools improves students' attendance, test scores, and their overall health.

- Adolescents have a particularly high need for bone-growth minerals, abundant in Canned Salmon.
- Teenage girls, where young marriage and pregnancy before age 18 are prevalent, particularly benefit from the Omega-3 fats and protein in preparation for a healthy pregnancy.
- The school meal is often the only opportunity to provide the essential fats and nutrients that children need for growth and learning. Many Food for Education Programs include Canned Salmon in school feeding.

People Living with HIV/ AIDS & Chronic Illness

Salmon is an outstanding source of nutrition benefitting individuals with HIV/AIDS and other chronic diseases. Proper nutrition not only improves the effectiveness of medicines, but strengthens the immune system against infection.

- For people living with HIV/AIDS, the consumption of Salmon improves their immune response, lowers blood lipid levels, maintains metabolism, and improves the effectiveness of ARV therapy. Salmon helps promote the development of muscle mass and prevent fat redistribution problems.
- Eating Salmon benefits heart health; it helps lower blood pressure and reduce inflammation that can lead to heart disease and stroke.
- Salmon consumption increases insulin sensitivity, which is important to prevent diabetes and its complications.

Super Nutrition for All Ages

Wild, Natural & Sustainable®

Alaska Global Food Aid Program

High Quality Marine Source Protein & Omega-3 FA's

- Only source of animal protein and marine omega-3 Fatty Acids approved for food aid.
- Canned Salmon is a "complete protein" providing all of the essential amino acids needed for health and is comparable to meat or eggs.
- Marine protein is easily digested for people of all ages.
- Wild Alaska Salmon and Herring provide 2 of the 3 essential Omega-3's, EPA and DHA.
- DHA is only found in oily fish and breast milk; it is a vital building block for the brain and eyes.



Photo courtesy of International Relief and Development's Food Program in Laos

Benefits of Wild Canned Salmon & Herring

- **Versatile** – Canned Fish combines easily with local ingredients
- **Sustainable** – supports renewable fishing practices
- **Long shelf life** – up to 6 years
- **Economical** –1 lb. can provides 4-5 servings
- **Hygienic** – does not need water for preparation
- **Time saver** – can be eaten from the can; requires no effort for caregivers
- **Easy to manage** – infestation-resistant; easy to stack and inventory



Photo © GF&N Inc.

Nutrition Facts

per 83.6g (3oz) serving

	SALMON	HERRING
Calories (kcal)	116.2	163
Protein (g)	16.54	13.7
Fat (g)	5.058	13.88
Carbohydrates (g)	0	0
Sodium (mg)	463.12	281.73
Potassium (g)	272.52	353.63
Phosphorus (mg)	272.52	190.61
Magnesium (mg)	28.36	26.75
Cholesterol (mg)	46	64
Calcium (mg)	178.06	68.31
Omega-3 EPA (g)	0.706	0.81
Omega-3 DHA (g)	0.674	0.576

Protein

Animal source protein is the best protein for growth, healing, and health. Canned Salmon and Herring provide all the essential amino acids needed by children and adults.

Calcium, Magnesium & Phosphorus

The bone minerals provide for linear growth. They are key to achieving optimal growth and height, and are abundant in Canned Salmon and Herring. These nutrients are in high demand especially during catch-up growth, for previously malnourished young children.

Omega-3 Fatty Acids

Essential for growing children, women, and the general population. Healthy fats are packed into Salmon and Herring. Nutrient-dense foods are key for small children. The more nutrition per bite of food, the better the child will grow.

For Technical Assistance:

The ALASKA GLOBAL FOOD AID PROGRAM assists NGOs and PVOs with program design, ration selection, recipe development, storage, handling and preparation of dishes integrating Canned Salmon and other food aid commodities with local ingredients to feed cultural tastes.

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Bruce Schactler
Alaska Seafood Marketing Institute
[Alaska] T: 907-738-6451 • E: bschactler@ak.net

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global.alaskaseafood.org

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Nina P. Schlossman PhD
1300 L Street NW, Suite 920, Washington DC 20005
T: 202-289-0624 • F: 202-289-0608 • nina@globalfoodandnutrition.com

Canned Wild Alaska Herring

Fact Sheet

Wild, Natural & Sustainable®

Alaska Global Food Aid Program

Nutritional Composition

Nutrients	Herring, Pacific (per 100g)	% of Daily Reference Value*
Macronutrients:		
Energy	195 kcal	9.75
Protein	16.39 g	**32.78**
Total Lipid	13.88 g	**21.35**
Total Omega-3	1.8 g	n/a
Carbohydrate	0 g	0.00
Fiber, total dietary	0 g	0.00
Minerals:		
Calcium	83 mg	8.30
Iron	1.12 mg	6.22
Iodine	66 mg	
Magnesium	32 mg	8.00
Phosphorus	228 mg	**22.80**
Potassium	423 mg	**12.09**
Sodium	74 mg	3.08
Zinc	0.53 mg	4.82
Copper	0.078 mg	8.67
Manganese	0.045 mg	1.96
Selenium	36.5 mcg	**66.36**
Vitamins:		
Vitamin C	0 mg	0.00
Thiamin	0.06 mg	4.00
Riboflavin	0.2 mg	**11.76**
Niacin	2.2 mg	**11.00**
Pantothenic acid	1 mg	**10.00**
Vitamin B-6	0.45 mg	**22.50**
Folate	5 mcg	1.25
Vitamin B-12	10 mcg	**166.67**
Vitamin A	106 U	2.12
Vitamin E	n/a	n/a
Vitamin D	n/a	n/a

* The U.S. Daily Reference Value (DV) is a guide for nutrition labeling (*Institute of Medicine 2006*)
* DV is based on a daily intake of 2,000 Calories and refer to individuals over four years of age.

Ingredients Pacific Herring, Salt

Product Information



Photo © GF&N Inc.

Canned Wild Alaska Herring is packed with many healthful nutrients, including high quality protein, calcium, magnesium and health-promoting marine Omega-3 fatty acids.

Recognizing the health benefits of seafood, *The United States Dietary Guidelines for Americans 2010* recommends doubling the consumption of fish in the U.S. to 8 oz (227 grams) a week. Herring promotes growth and development, delivering vital nutrients to keep every system vigorous throughout life.

Omega-3 fatty acids are essential for healthy brain and eye development; they prevent heart disease and reduce the risk of heart attack and stroke. They support healthy blood circulation and lower blood pressure. Omega-3 fatty acids have also been found to help moderate depression and anxiety.

Benefits of Canned Wild Alaska Herring

- **Natural:** no additives or preservatives
- **Sustainable:** supports renewable fishing practices
- **Eco-friendly:** needs no fuel for cooking
- **Hygienic:** needs no water for preparation
- **Shelf life:** stores for up to 6 years
- **Handling:** easy to transport, stack, inventory
- **Versatile:** integrates easily in local cooking
- **Economical:** one can of Herring provides two servings

For Technical Assistance:

The ALASKA GLOBAL FOOD AID PROGRAM assists NGOs and PVOs with program design, ration selection, recipe development, storage, handling and preparation of dishes integrating Canned Salmon & Herring with other food aid commodities with local ingredients to feed cultural tastes.

Alaska Global Food Aid Program
Food Aid Director:
Bruce Schactler
Alaska Seafood Marketing Institute
[Alaska] T: 907-738-6451 • E: bschactler@ak.net

Wild, Natural & Sustainable®

global.alaskaseafood.org
Technical Assistance & Project Management:
Nina P. Schlossman PhD
1300 L Street NW, Suite 920, Washington DC 20005
T: 202-289-0624 • F: 202-289-0608 • nina@globalfoodandnutrition.com

Wild Alaska Salmon Powder

Fact Sheet

Wild, Natural & Sustainable®

Alaska Global Food Aid Program

Product Information

Alaska Salmon Protein Powder contains many valuable nutrients with a balanced composition of essential amino acids and marine Omega-3 fatty acids.

Production begins with Wild Alaska Salmon. Salmon by-products are ground, heated, deboned, de-oiled. A gentle process yields a dry product that can be rehydrated while maintaining all the functionality and nutrition of the natural protein.

This unique process protects the proteins and fats from thermal degradation which yields a highly nutritious, digestible fish protein meal.

The dried powder is one of several products made from this process – delivering essential nutrients and salmon flavor in sauces, flakes and dry powder.



Photo © GF&N Inc.

Nutrition Facts

% of DV* for Protein (50g)	Amount of Protein (g)	Amount of Salmon Protein Powder (g)
10%	5	7
20%	10	14
30%	15	21
40%	20	28
50%	25	35

* The U.S. Daily Reference Value (DV) used as a guide for nutrition labeling (Institute of Medicine 2006)
* DV is based on a daily intake of 2,000 Calories and refer to individuals over four years of age

Ingredients: **Wild Alaska Salmon**
(optional antioxidants and mold inhibitors)

Shelf Life

12 months (typically); antioxidants and package type may extend shelf life

Applications

- Food flavoring
- Food ingredient or component
- Nutritional supplement
- Dietary therapy for individuals with compromised digestive systems
- Nutritional therapy for individuals with chronic illness

For Technical Assistance:

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Alaska Global Food Aid Program
Food Aid Director:
Bruce Schactler
Alaska Seafood Marketing Institute
[Alaska] T: 907-738-6451 • E: bschactler@ak.net

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global.alaskaseafood.org
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Nina P. Schlossman PhD
1300 L Street NW, Suite 920, Washington DC 20005
T: 202-289-0624 • F: 202-289-0608 • nina@globalfoodandnutrition.com

Africa: Liberia

Canned Herring in Samaritan's Purse Programs

THINK Homes · Safe Houses · Juvenile Transit Center · Early Childhood Development Centers · Voluntary Counseling and Testing Centers · Woman's Literacy Program

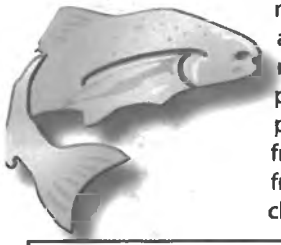
Alaska Global Food Aid Program

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In April 2012, Samaritan's Purse introduced **Alaskan Canned Herring** in several of their existing programs in Liberia, West Africa. ASMI teamed up with Samaritan's Purse, an international Christian relief organization, to provide nutritious **Alaskan Canned Herring** to over 500 victims of war including recovering child soldiers, victims of rape and abuse, and orphans and vulnerable children, as well as HIV positive men and women. The herring delivers health-promoting Omega 3-fatty acids, which are essential for the prevention of stunting and chronic malnutrition for the young participants under two years of age, and pregnant and breastfeeding mothers. Since the start of the pilot program, the overall number of malnourished participants has decreased and the majority of participants are a normal, healthy weight. Midline data collection is complete and the program will finish in February 2013.

The HIV positive men and women in the Samaritan's Purse Voluntary Counseling and Training (VCT) Center are perhaps in greatest need of the herring and are benefiting the most. The HIV positive participants are receiving 16 cans of herring a month to feed themselves and their families. Not only do the participants love the taste of the herring, but it also provides them with a great source of nutrients to help prevent against AIDS-related wasting and infections.

Since the start of the program, 80% of participants who were identified as mildly, moderately or severely malnourished at the beginning have shown improvement in their nutrition status, and 60% have recovered from malnutrition and are now a healthy weight. The herring is the only food that the individuals are receiving from the VCT center. Samaritan's Purse staff members said that before the pilot project, the patients would visit the clinic to get their medications, leaving before receiving counseling and checking their health status. Patients now routinely receive full care and counselling, and staff at the center acknowledge the role of herring provided by **ASMI/GFAP** in providing an incentive for return visits of patients at risk. The center is located far from the coast and more than a day's drive from the capital city of Monrovia making it challenging to obtain any form of fish. Through **ASMI/GFAP**, mothers and HIV positive individuals, with a high risk of malnutrition, are able to eat high quality fish protein 4 times a week.



Pilot Objectives:

1. To provide high quality marine protein and omega-3's to vulnerable women, children, and HIV positive men and women.

2. To examine acceptability of Canned Herring in Liberia.

3. To see how Canned Herring can help facilitate growth and development.

For Technical Assistance:

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In all program sites in Liberia, herring has contributed towards improved nutrition status in 50% of the malnourished population and 46% of beneficiaries indentified as malnourished at baseline are now fully recovered.

Samaritan's Purse has asked that **ASMI/GFAP** extend the program, specifically in the VCT program, because it is having such a big impact on the counseling center. Participants send their many thanks to ASMI/GFAP, and are excited that they will be receiving Alaskan Canned Herring for another 7 months, saying:

"The fish sent to Liberia, to Samaritan's Purse is very, very nice. Thanks for the fish! Bless you and your company!"



Alaska Global Food Aid Program

Food Aid Director:
Bruce Schactler
Alaska Seafood Marketing Institute
[Alaska] T: 907-738-6451 • E: bschactler@ak.net

Wild, Natural & Sustainable®

global.alaskaseafood.org
Technical Assistance & Project Management:
Nina P. Schlossman PhD,
1300 L Street NW, Suite 920, Washington DC 20005
T: 202-289-0624 • F: 202-289-0608 • nina@globalfoodandnutrition.com

Africa: Guinea Bissau

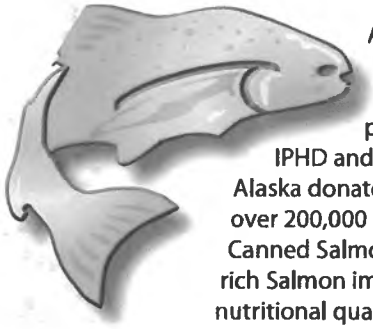
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Canned Salmon in Food for Education Programs
International Partnership for Human Development

Alaska Global Food Aid Program

International Partnership for Human Development (IPHD) had been seeking a good protein source to improve the diets of the children in their McGovern-Dole International Food for Education and Child Nutrition Program in Guinea-Bissau. They turned to Alaska Canned Salmon to meet their needs.

While their coastal waters in the Atlantic Ocean are home to one of the largest fish reserves in the world, the price of local fish was out of reach for the people served by the program, most of whom live on less than a dollar a day.



ALASKA GLOBAL FOOD AID PROGRAM partnered with IPHD and the State of Alaska donated and shipped over 200,000 servings of Canned Salmon. The protein rich Salmon improved the nutritional quality of the meals for 38,000 children in primary school and kindergarten.

The introduction of Canned Salmon in food aid programs in Guinea-Bissau was a success. It complemented the local food basket and integrated easily with regional recipes.
Cooks incorporated Salmon into a variety of local dishes, using pinto beans from the program and other ingredients provided by the parents, including rice, peanut butter, baobab leaves, cassava, pepper grass, palm fruits, onions, tomatoes and potatoes.

Children specially liked recipes including Salmon mixed with cassava or sweet potato in a Salmon Ragout (Stew), with rice in Rafogado de Salmon (Risotto), Calda Branca and Canja de Salmon (Soup).

Cooks favored the Salmon because it was easy to prepare, with or without cooking equipment and Project staff found the Canned Salmon easy to transport, store and handle.



The Canned Salmon was part of IPHD's initiatives with local Parent Teacher Associations to increase school attendance (primarily among girls), promote malaria prevention, repair schools and improve school sanitation systems. Its success has led to the inclusion of Alaska Canned Salmon in other programs in Africa.

For Technical Assistance:

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Canned Salmon is ideal for food aid purposes anywhere in the world. It provides concentrated protein and energy for people of all ages in all types of food aid projects e.g., school feeding, disaster relief, food-for-work and maternal/child health projects.



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Food Aid Director:
Bruce Schactler
Alaska Seafood Marketing Institute
[Alaska] T: 907-738-6451 • E: bschactler@ak.net

Wild, Natural & Sustainable®

global.alaskaseafood.org
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Nina P. Schlossman PhD
1300 L Street NW, Suite 920, Washington DC 20005
T: 202-289-0624 • F: 202-289-0608 • nina@globalfoodandnutrition.com

Africa: Uganda

Canned Salmon & Herring in Food Assisted Development Programs

Pilot Project with World Help

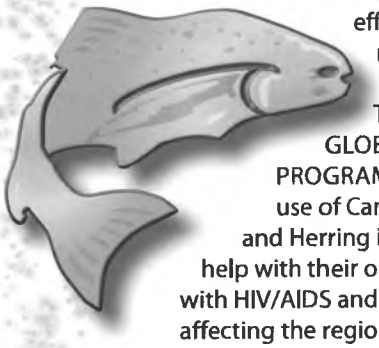
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Alaska Global Food Aid Program



The greatest need for quality, nutritious foods for food aid programs is in Africa. With the high prevalence of malnutrition, HIV/AIDS, and other chronic diseases, Canned Salmon and Herring offer super nutrition. The high quality protein and the marine sources of Omega-3 fatty acids, and the fact that they do not require much energy to prepare, make these products ideal for the most vulnerable. Canned Salmon is used in school feeding programs throughout the world.

In Uganda, World Help, an NGO partner, found Canned Salmon and Herring to be well accepted and have a positive effect on children's nutritional status.



The ALASKA GLOBAL FOOD AID PROGRAM piloted the use of Canned Salmon and Herring in Uganda to help with their ongoing struggle with HIV/AIDS and severe drought affecting the region.

A portion of the project also targets refugees returning from the Congo, to show how canned fish can be used in disaster aid, specifically with orphans and vulnerable children receiving primary education.

The Salmon was served four times a week, complementing the daily ration of pulses, oil, and rice with a few local ingredients provided by the community. This sample program allowed World Help to integrate the Canned Salmon into local recipes and activities for participants. Canned Herring delivers more than twice the Omega-3 fatty acids as Salmon, and the same high quality protein. At a potentially lower price, Canned Herring is a product with great possibilities for food aid programs worldwide. It also provides an opportunity to support rural Alaska communities by creating and expanding a market for an underutilized resource as well as developing new infrastructure.



Canned Salmon and Herring are ideal for food aid purposes anywhere in the world. It provides concentrated protein and energy for people of all ages in all types of food aid projects e.g., school feeding, disaster relief, food-for-work and maternal/child health projects.



For Technical Assistance:

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Alaska Global Food Aid Program

Food Aid Director:
Bruce Schactler
Alaska Seafood Marketing Institute
[Alaska] T: 907-738-6451 • E: bschactler@ak.net

Wild, Natural & Sustainable®

global.alaskaseafood.org
Technical Assistance & Project Management:
Nina P. Schlossman PhD
1300 L Street NW, Suite 920, Washington DC 20005
T: 202-289-0624 • F: 202-289-0608 • nina@globalfoodandnutrition.com

Asia: Cambodia

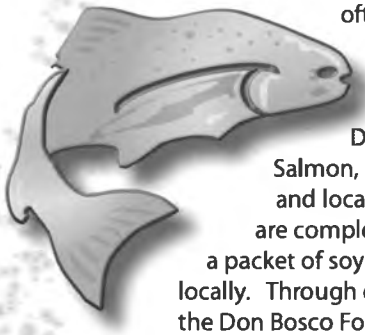
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Alaska Global Food Aid Program

Canned Salmon in Food for Education & Food for Progress Programs

International Relief & Development, Humpty Dumpty Institute, Salesian Missions, Don Bosco Cambodia & Cambodian Hope

Cambodia is one of the poorest countries in the world and has the highest infant, child, and maternal mortality rates in Asia. For this reason, food and other development aid programs are relied upon to help keep children in school and out of child labor markets.



School feeding is of great value as the meal served in school is often the only meal a child eats in a day.

Dishes made with Salmon, rice and local vegetables are complemented with a packet of soy milk produced locally. Through counterparts, the Don Bosco Foundation and Cambodia Hope, the program extends beyond the schools to provide canned salmon to child brick-makers, women garment-workers and individuals with HIV/AIDS.



"Many of our schools do not even have cooking utensils," explains a teacher, *"the canned salmon allows us to prepare meals for the children using what we already have."*

Since 2003, children have enjoyed Alaska Canned Salmon through the Salesian Missions' Food for Progress Program and the McGovern Dole International Food for Education and Child Nutrition Program.

For many of these people, Salmon is the only source of animal protein in their diet. Salmon's unique nutritional properties render it therapeutic for the chronically ill, the undernourished, and those with compromised immune systems.

Alaska Canned Salmon is easy to transport and prepare. It does not require cooking or potable water, a feature that is appreciated by teachers and program administrators in Cambodia.

Program participants of all ages like the taste of the Alaska Salmon. Because fish is eaten throughout the country, the Salmon integrates well with local ingredients.





In 2008, International Relief and Development (IRD) began its Safe Educational Opportunities Project in Khammouane Province in 110 schools. The project is operated in joint partnership with the Humpty Dumpty Institute and the Mine Advisory group, and is modeled after its project in Laos.

Designed to improve education and nutrition of primary school students, especially girls, IRD serves nutritious school meals and provides Canned Salmon in their take home rations. The program renovates schools, digs wells, builds latrines, clears school yards of unexploded mines, develops gardens and provides teacher training.

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Alaska Global Food Aid Program
Food Aid Director:
Bruce Schactler
Alaska Seafood Marketing Institute
[Alaska] T: 907-738-6451 • E: bschactler@ak.net

Wild, Natural & Sustainable®

global.alaskaseafood.org
Technical Assistance & Project Management:
Nina P. Schlossman PhD
1300 L Street NW, Suite 920, Washington DC 20005
T: 202-289-0624 • F: 202-289-0608 • nina@globalfoodandnutrition.com

Asia:
Laos
Safe Education Opportunities

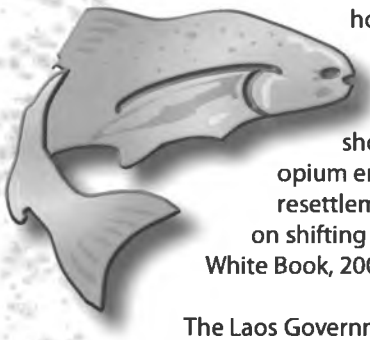
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Canned Salmon in Food for Education Programs
Humpty Dumpty International/International Relief and Development & the World Food Program

Alaska Global Food Aid Program

In 2007, Alaska Canned Salmon became an integral part of the successful Landmine Removal and Food for Education programs of Humpty Dumpty Institute (HDI) and International Relief and Development (IRD) in Laos. Canned Salmon is part of a take-home ration given to thousands children annually in primary schools.

Starting in 2008, the World Food Program (WFP) included Canned Salmon, to improve the diets of 100,000 children in their new Food for Education Program in Laos. WFP has been working in the country since 1976, targeting households affected by natural disasters and policy-induced shocks such as opium eradication, resettlement, and the ban on shifting agriculture (WFP White Book, 2008).



The Laos Government is making education a top priority. HDI/IRD and WFP partner with the Government to increase enrollment and retention of children, especially girls, in primary schools.

To improve the safety of students, HDI is working to remove landmines from school grounds.

The HDI/IRD and WFP programs have been effective in building school attendance in Laos, where historically only 50% of children complete primary school. Laos, where 39% of the population lives below the poverty line, is one of Southeast Asia's least developed countries. Alaska Canned Salmon provides the high quality protein and other nutrients the students need to grow healthy bodies and strong bones. For most children, Salmon is the only animal protein they consume.

Alaska Canned Salmon is distributed through the United States Department of Agriculture (USDA) McGovern-Dole International Food for Education and Child Nutrition Program (FFE).

HDI/IRD and WFP provide food as an incentive to keep children in school. The FFE program offers students and their teachers a nutritious mid-morning snack and distributes monthly take-home rations to students who attend at least 80% of school days.

Starting September 2010, the program expects to feed 19,000 children daily, serving 3.45 million snacks yearly.

Virtually all participating schools report that students attend at least 80% of classes.

Healthy Meals for the Family

Monthly Take Home Rations
Alaska Canned Salmon
Corn Soy Blend
Red Beans
Rice

Alaska Canned Salmon is Well Accepted in Laos

School children and their families find Alaska Canned Salmon tasty and easy to prepare. It fits well with local recipes, is easy to integrate with local ingredients in the family food basket.

Program participants find the flavor of the Salmon superior to sardines in tomato sauce and other available fish.



For Technical Assistance:

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Alaska Global Food Aid Program
Food Aid Director:
Bruce Schactler
Alaska Seafood Marketing Institute
[Alaska] T: 907-738-6451 • E: bschactler@ak.net

Wild, Natural & Sustainable®

global.alaskaseafood.org
Technical Assistance & Project Management:
Nina P. Schlossman PhD
1300 L Street NW, Suite 920, Washington DC 20005
T: 202-289-0624 • F: 202-289-0608 • nina@globalfoodandnutrition.com

Latin America:
Bolivia

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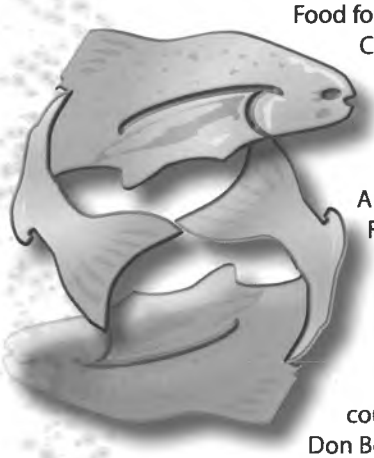
Canned Salmon in Food for Education Programs
Salesian Missions and Don Bosco Public Schools

Alaska Global Food Aid Program

In keeping with cultural practices and changing needs in the country, food aid programs in Bolivia work to reduce child malnutrition and improve household food availability through increased agricultural productivity and incomes along with integrated health, education, water and sanitation programs.



As an adjunct to these activities, school meals are getting more nutritious. Bolivian children enjoyed Alaska Canned Salmon in their school lunches through a project born out of the Salesian Missions' successful experience with Canned Salmon in their McGovern-Dole International Food for Education and Child Nutrition Program (FFE) over four years in Cambodia.



ALASKA GLOBAL FOOD AID PROGRAM partnered with the Salesian Missions and their local counterpart, the Don Bosco Public Schools. Their 250 schools in Bolivia reach approximately 100,000 students.

The ALASKA GLOBAL FOOD AID PROGRAM donated two containers of Canned Salmon, which supplied about 400,000 servings of Salmon.

The schools are in very poor areas and few have any cooking facilities. Parents provided onions, tomatoes and other items and teachers prepare the meals with the help of the students.

Primary and secondary school-age children found the Canned Salmon to be delicious in sandwiches or salad prepared with local ingredients. The students creatively recycled the empty cans as pencil holders in their art classes and invented a song of thanks for the Salmon.



The project started in October 2006 and operated in rural Chapare, situated in the tropical lowland department of Cochabamba and in El Alto, a sprawling peri-urban community in the highlands of Bolivia.

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Alaska Global Food Aid Program
Food Aid Director:
Bruce Schactler
Alaska Seafood Marketing Institute
[Alaska] T: 907-738-6451 • E: bschactler@ak.net

Wild, Natural & Sustainable®

global.alaskaseafood.org
Technical Assistance & Project Management:
Nina P. Schlossman PhD
1300 L Street NW, Suite 920, Washington DC 20005
T: 202-289-0624 • F: 202-289-0608 • nina@globalfoodandnutrition.com

Central America: Guatemala

Canned Salmon in Food for Education Programs

Food for the Poor

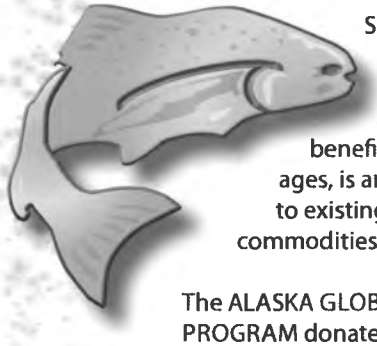
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Alaska Global Food Aid Program



Guatemala has some of the lowest health and nutrition indicators in Central America. Development aid programs aim to improve the lives of the country's people in the spheres of politics, economics, health and nutrition.

Food for the Poor has been contributing to this effort in Guatemala and 11 other countries in Central America and the Caribbean for many years. Food for the Poor turned to nutrient-rich Canned Salmon to diversify and improve the nutritional content of their food aid baskets.



Salmon, a concentrated source of protein and energy for beneficiaries of all ages, is an ideal addition to existing food aid commodities and local diets.

The ALASKA GLOBAL FOOD AID PROGRAM donated about 200,000 servings of Canned Salmon to Food for the Poor to try in Guatemala. The cans are easy to transport and can be stored for up to six years. Unlike many other protein rich foods, Canned Salmon does not require potable water or cooking facilities for preparation.

The initial successful distribution of Canned Salmon in their general relief programs led Food for the Poor in Guatemala to request 300 metric tons (MT) per year for its 2006-2008 McGovern-Dole International Food for Education and Child Nutrition Program and 700 MT in its Food for Progress program in Jamaica.

While recipients were a bit skeptical about the new food, when it was combined with local vegetables, tossed in salads and served with favorite spices in tortillas, over 60,000 mothers and children were soon singing the praises of Salmon.



Mothers report that their children enjoyed the Salmon so much they continue to ask for it.

Through Food for the Poor, the program provided Canned Salmon to health clinics, dispensaries, hospitals and senior facilities. Young and old alike are pleased with the taste and comprehensive nutritional value that have been added to their meals.





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Alaska Global Food Aid Program

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Bruce Schactler
Alaska Seafood Marketing Institute
[Alaska] T: 907-738-6451 • E: bschactler@ak.net

Wild, Natural & Sustainable®

global.alaskaseafood.org

Technical Assistance & Project Management:
Nina P. Schlossman PhD
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Asia:
Cambodia

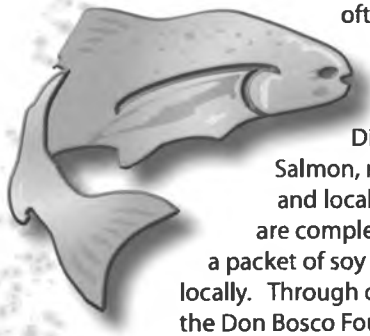
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Alaska Global Food Aid Program

Canned Salmon in Food for Education & Food for Progress Programs

International Relief & Development, Humpty Dumpty Institute, Salesian Missions, Don Bosco Cambodia & Cambodian Hope

Cambodia is one of the poorest countries in the world and has the highest infant, child, and maternal mortality rates in Asia. For this reason, food and other development aid programs are relied upon to help keep children in school and out of child labor markets.



School feeding is of great value as the meal served in school is often the only meal a child eats in a day.

Dishes made with Salmon, rice and local vegetables are complemented with a packet of soy milk produced locally. Through counterparts, the Don Bosco Foundation and Cambodia Hope, the program extends beyond the schools to provide canned salmon to child brick-makers, women garment-workers and individuals with HIV/AIDS.



"Many of our schools do not even have cooking utensils," explains a teacher, *"the canned salmon allows us to prepare meals for the children using what we already have."*

Since 2003, children have enjoyed Alaska Canned Salmon through the Salesian Missions' Food for Progress Program and the McGovern Dole International Food for Education and Child Nutrition Program.

For many of these people, Salmon is the only source of animal protein in their diet. Salmon's unique nutritional properties render it therapeutic for the chronically ill, the undernourished, and those with compromised immune systems.

Alaska Canned Salmon is easy to transport and prepare. It does not require cooking or potable water, a feature that is appreciated by teachers and program administrators in Cambodia.

Program participants of all ages like the taste of the Alaska Salmon. Because fish is eaten throughout the country, the Salmon integrates well with local ingredients.





In 2008, International Relief and Development (IRD) began its Safe Educational Opportunities Project in Khammouane Province in 110 schools. The project is operated in joint partnership with the Humpty Dumpty Institute and the Mine Advisory group, and is modeled after its project in Laos.

Designed to improve education and nutrition of primary school students, especially girls, IRD serves nutritious school meals and provides Canned Salmon in their take home rations. The program renovates schools, digs wells, builds latrines, clears school yards of unexploded mines, develops gardens and provides teacher training.

For Technical Assistance:

The ALASKA GLOBAL FOOD AID PROGRAM assists NGOs and PVOs with program design, ration selection, recipe development, storage, handling and preparation of dishes integrating Canned Salmon and other food aid commodities with local ingredients to feed cultural tastes.

Alaska Global Food Aid Program
Food Aid Director:
Bruce Schactler
Alaska Seafood Marketing Institute
[Alaska] T: 907-738-6451 • E: bschactler@ak.net

Wild, Natural & Sustainable®

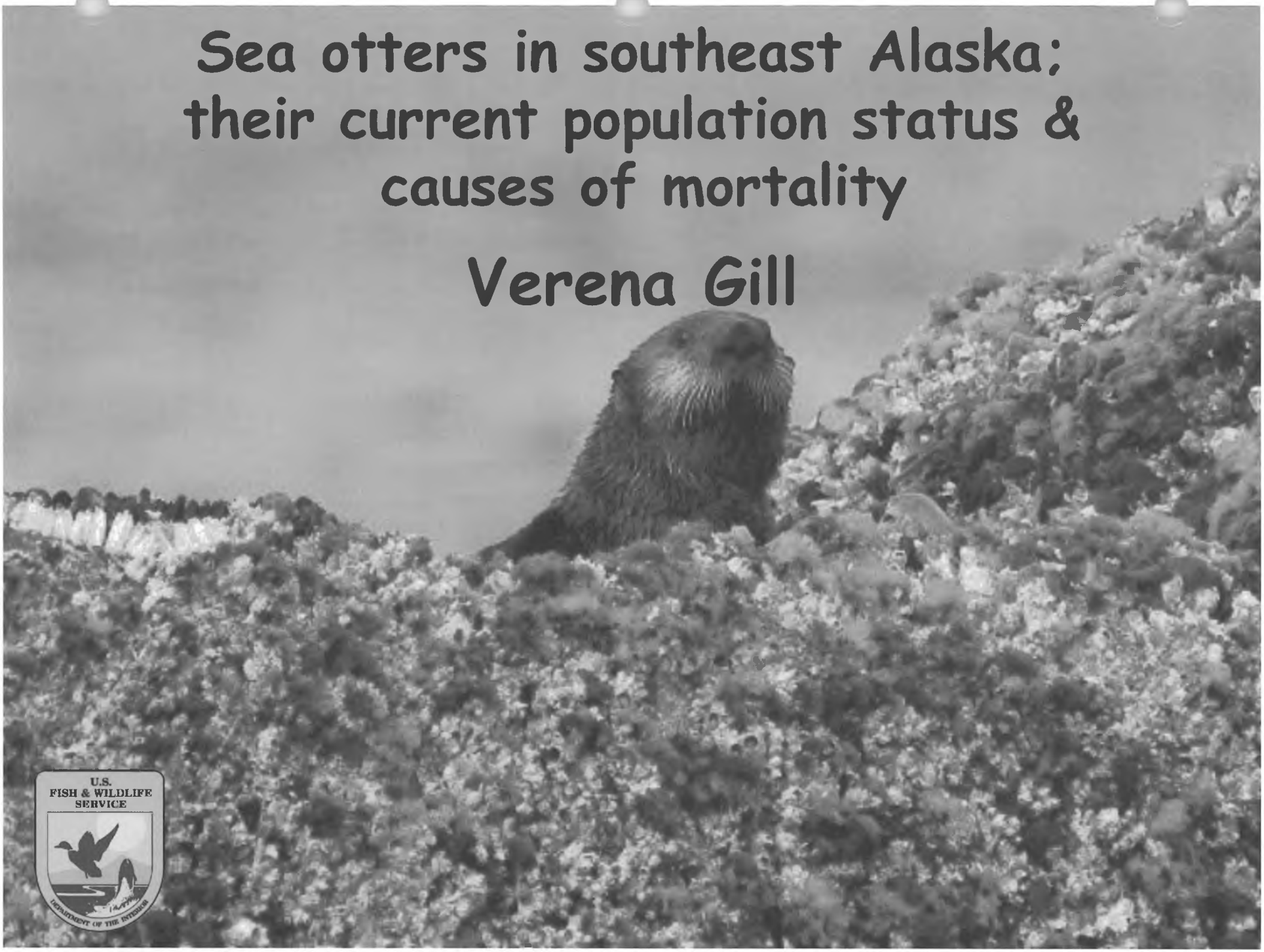
global.alaskaseafood.org
Technical Assistance & Project Management:
Nina P. Schlossman PhD
1300 L Street NW, Suite 920, Washington DC 20005
T: 202-289-0624 • F: 202-289-0608 • nina@globalfoodandnutrition.com

02/21/13 Overview: Sea Otter Science

<TARGET><BILL></BILL><SUBJECT>02-21-13 Overview Sea Otter Science</SUBJECT><COMM>HFSH28</COMM></TARGET>

Sea otters in southeast Alaska; their current population status & causes of mortality

Verena Gill



Outline of presentation



- Population trend & abundance of sea otters in SE Alaska
- Sources of mortality in SE AK

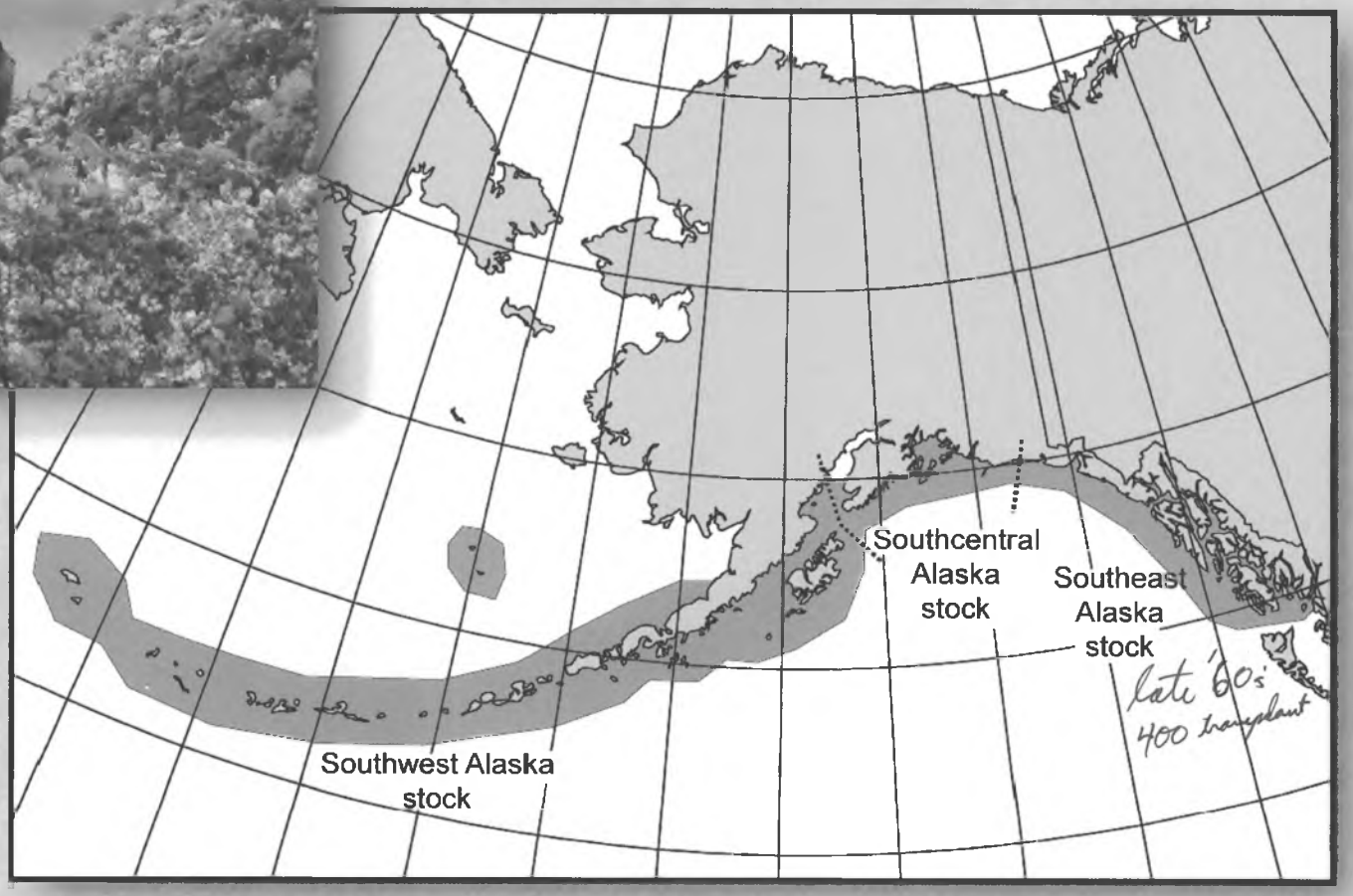
Population trend of sea otters in SE Alaska



U.S. FISH & WILDLIFE SERVICE

There are 3 population stocks of northern sea otters in Alaska





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SERVICE

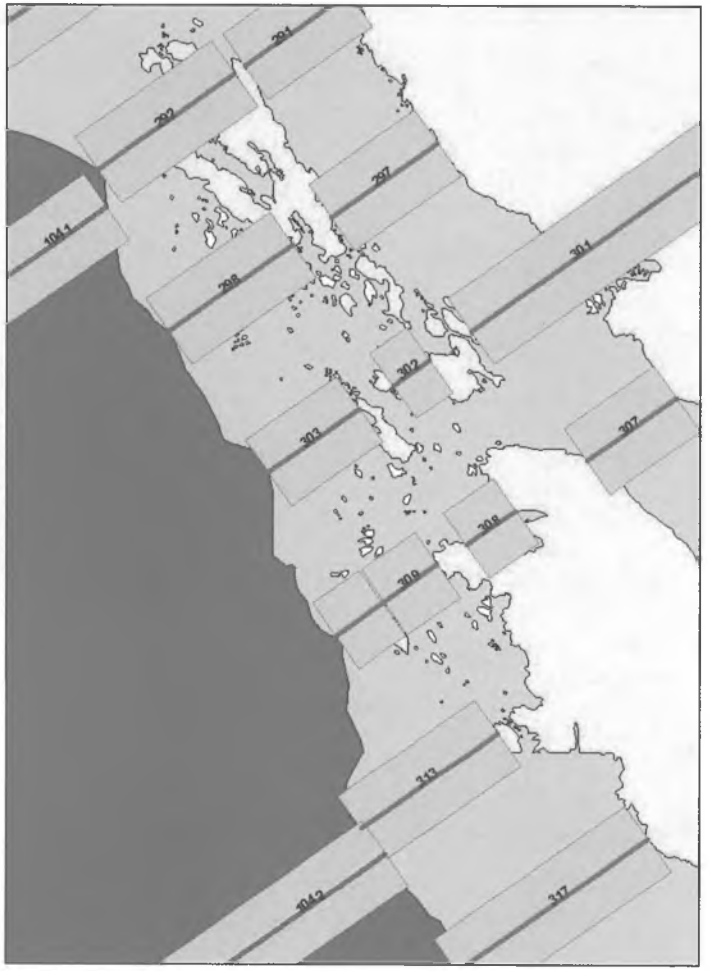
2010-2012 aerial survey in SE AK



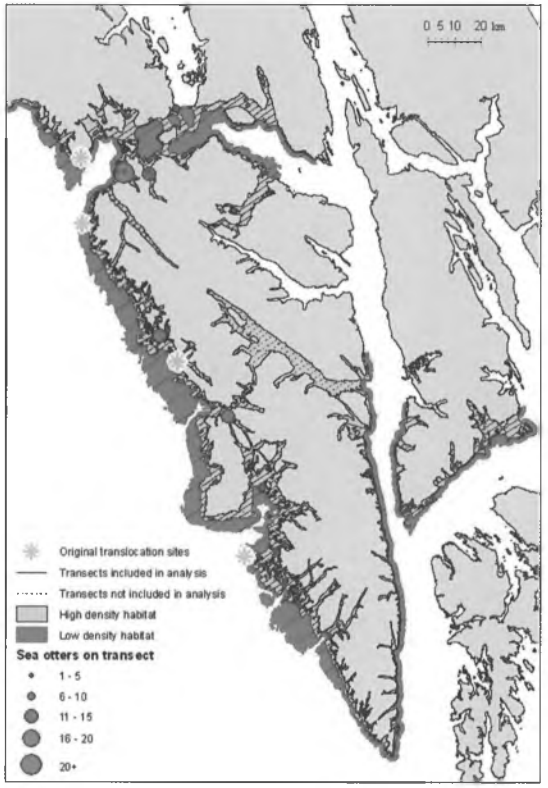


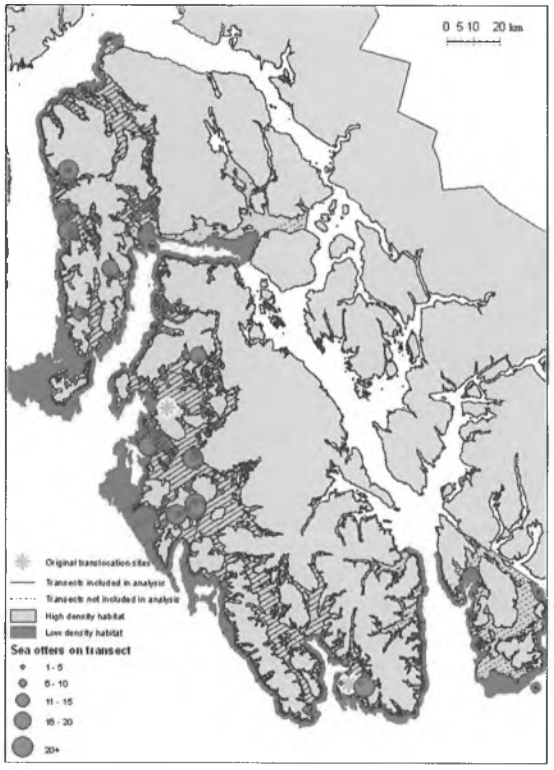
USGS
science for a changing world

U.S. FISH & WILDLIFE SERVICE



Current annual growth rates; 12-14% yr^{-1} increase across stock; but Glacier Bay driving the increase in north





2003 = 10,563

2012 = 25,712

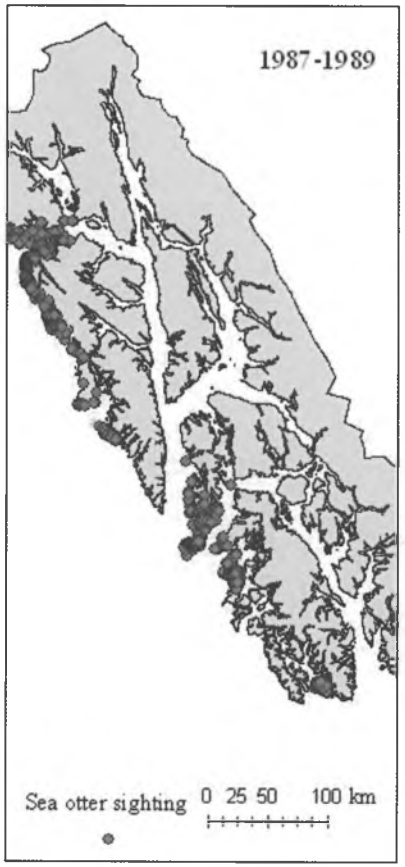
U.S. FISH & WILDLIFE SERVICE

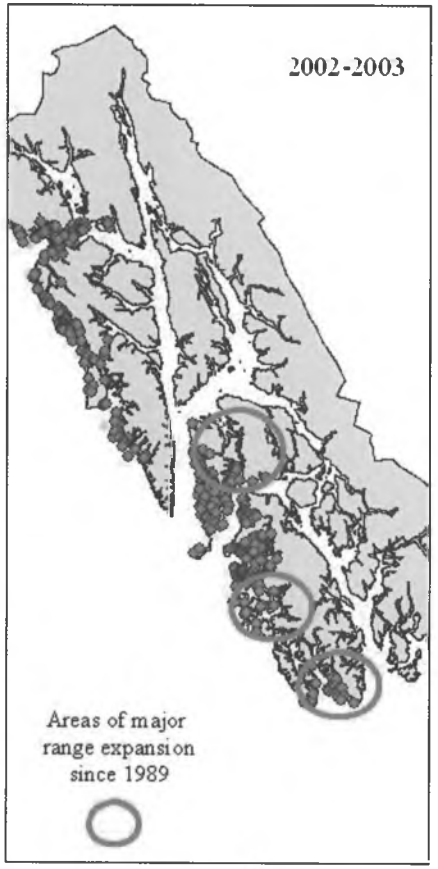
USGS science for a changing world

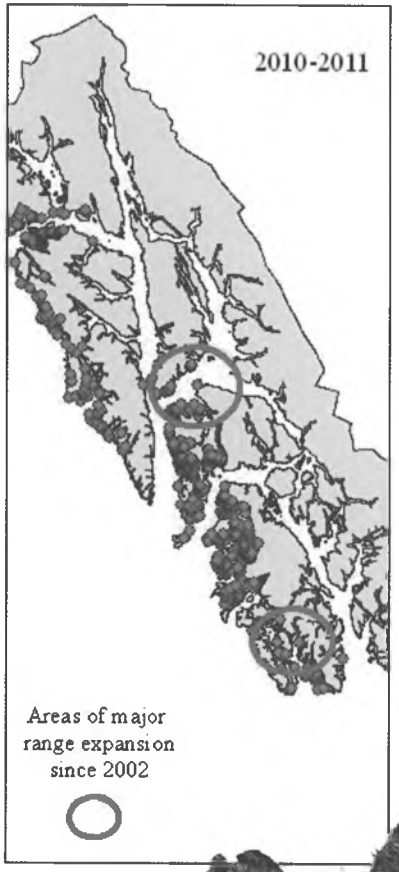
Latest SE stock assessment (2013)

Survey Area	Year	Adjusted Estimate	CV	N_{MIN}	Reference
North Gulf of Alaska	2000	32	0.38	24	USGS unpublished data
Glacier Bay NP	2012	8,508	0.20	7,201	Esslinger, Bodkin, & Weitzman (2013)
Northern Southeast Alaska (NSE)	2011	2,717	0.22	2,270	Gill and Burn unpublished data
Southern Southeast Alaska (SSE)	2010	12,873	0.18	11,099	Gill and Burn unpublished data
Yakutat Bay	2005	1,582	0.33	1,203	Gill and Burn (2007)
Current Total		**25,712**		**21,798**	
2008 SAR Total		10,563		9,136	

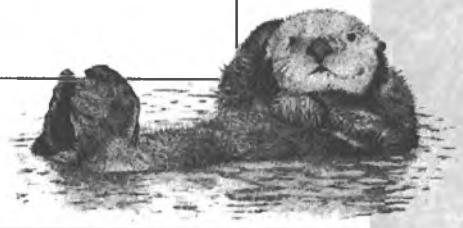
Range expansion 1987-2011





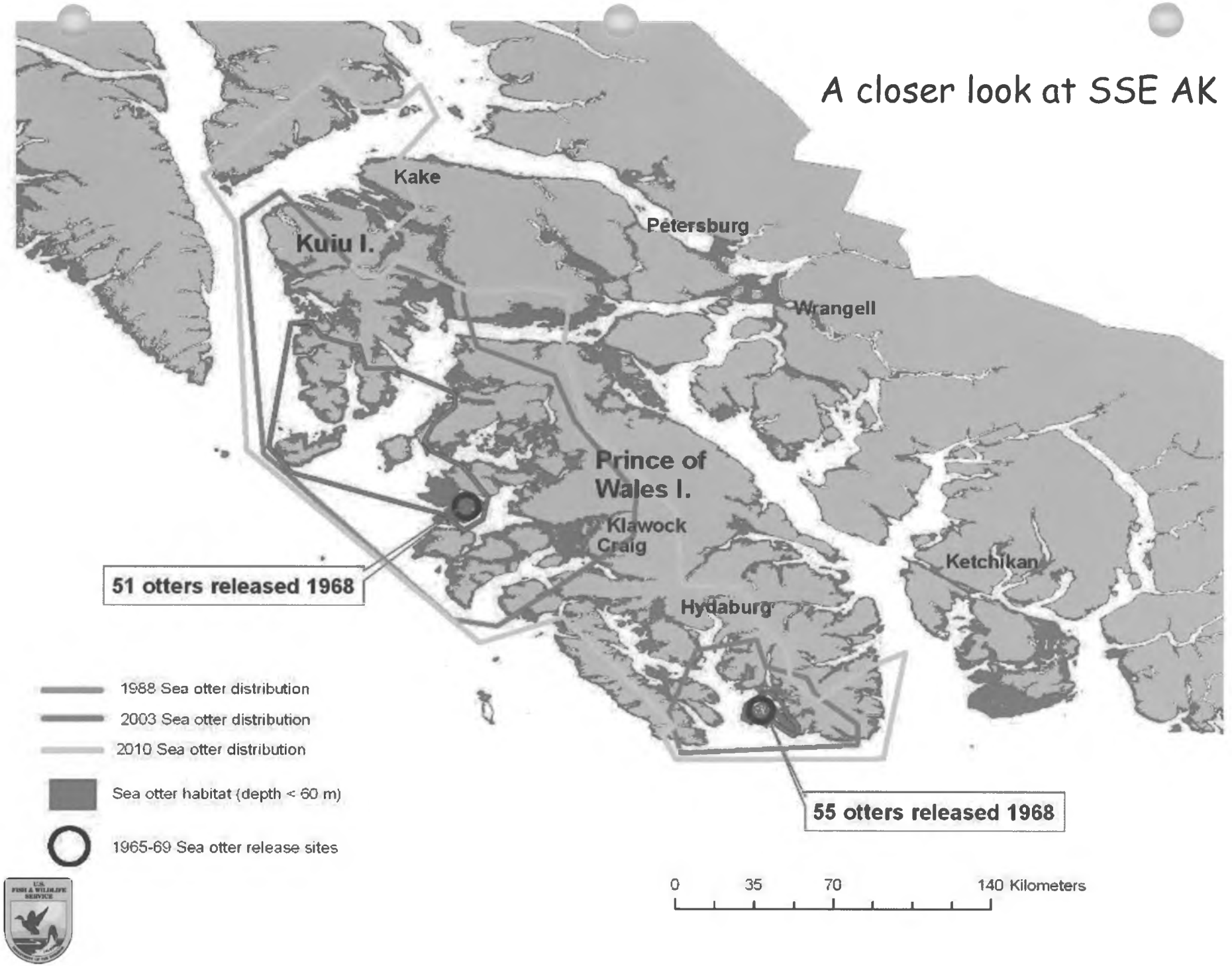


4+/- expansion of Glacier Bay left out



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A closer look at SSE AK
Kake
Kuiu I.
Petersburg
Wrangell
Prince of Wales I.
Klawock
Craig
Ketchikan
Hydaburg
51 otters released 1968
55 otters released 1968
1988 Sea otter distribution
2003 Sea otter distribution
2010 Sea otter distribution
Sea otter habitat (depth < 60 m)
1965-69 Sea otter release sites
0
35
70
140 Kilometers

Potential Biological Removal (PBR) of sea otters from SE AK stock is 2,180

PBR = *the maximum number of animals, <u>not including natural mortalities</u>, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimal sustainable population.*

PBR is the product of the minimum population estimate, one-half the maximum theoretical net productivity rate, and a recovery factor: PBR = N_{MIN} x 0.5 R_{MAX} x F_R. The recovery factor (F_R) for this stock is 1.0 as population levels have been stable or increasing with a known human take. For the SE AK stock of sea otters, PBR = 2,180 animals (21,798 x 0.5(0.2) x 1.0).

(- 8,500 for Glacier Bay)



*no hunting allowed in Glacier Bay but large pop in GB contributing to PBR

Sources of mortality





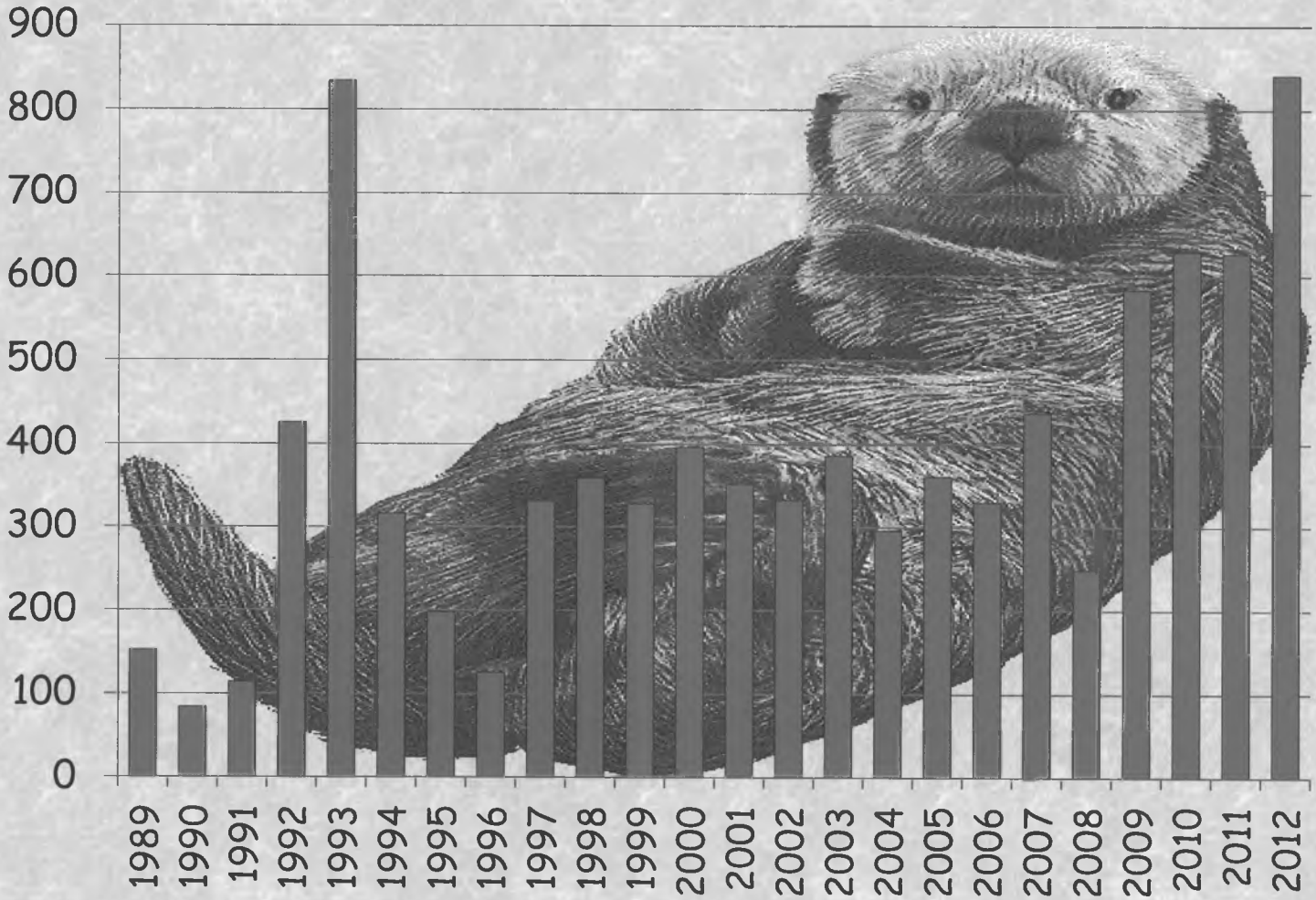






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Reported subsistence harvest of sea otters from SE AK, 1989-2012.



Do these harvest represent population density or simply human availabil

Locations of reported subsistence harvest of sea otters from SE AK, last 5 yrs.

Village	2008	2009	2010	2011	2012	total
Coffman Cove	0	0	0	21	0	21
Craig (4)	15	44	136	98	63	356
Hoonah (5)	30	27	53	28	127	265
Hydaburg	0	0	0	20	14	34
Juneau	31	33	35	3	7	109
Kake	7	2	17	21	94	141
Ketchikan	9	0	11	14	0	34
Klawock (3)	7	199	58	49	58	371
Naukati Bay	0	0	0	3	64	67
Pelican	10	3	4	21	2	40
Sitka (1)	126	141	218	201	285	971
Wrangell	6	18	9	0	11	44
Yakutat (2)	8	117	89	149	117	480
	249	584	630	628	842	2933

Even if PBR not reached, local depletion can be a problem

Health and disease program

- When possible, recover all sea otter carcasses reported across Alaska
- Necropsy all depending decomposition status
- Full work up on fresh dead animals
- All live-captured animals are also screened
- Samples to various collaborators for testing and variety of studies



Sample sizes for screening

- Average of 80 dead otters sampled annually across AK; av. 7/yr in SE AK
- Live captures sporadic; 31 otters in SE AK 2011





Testing and studies for sea otter disease surveillance



Testing

- microbiology, virology, protozoal, fungal, biotoxins, histopathology

Specific studies

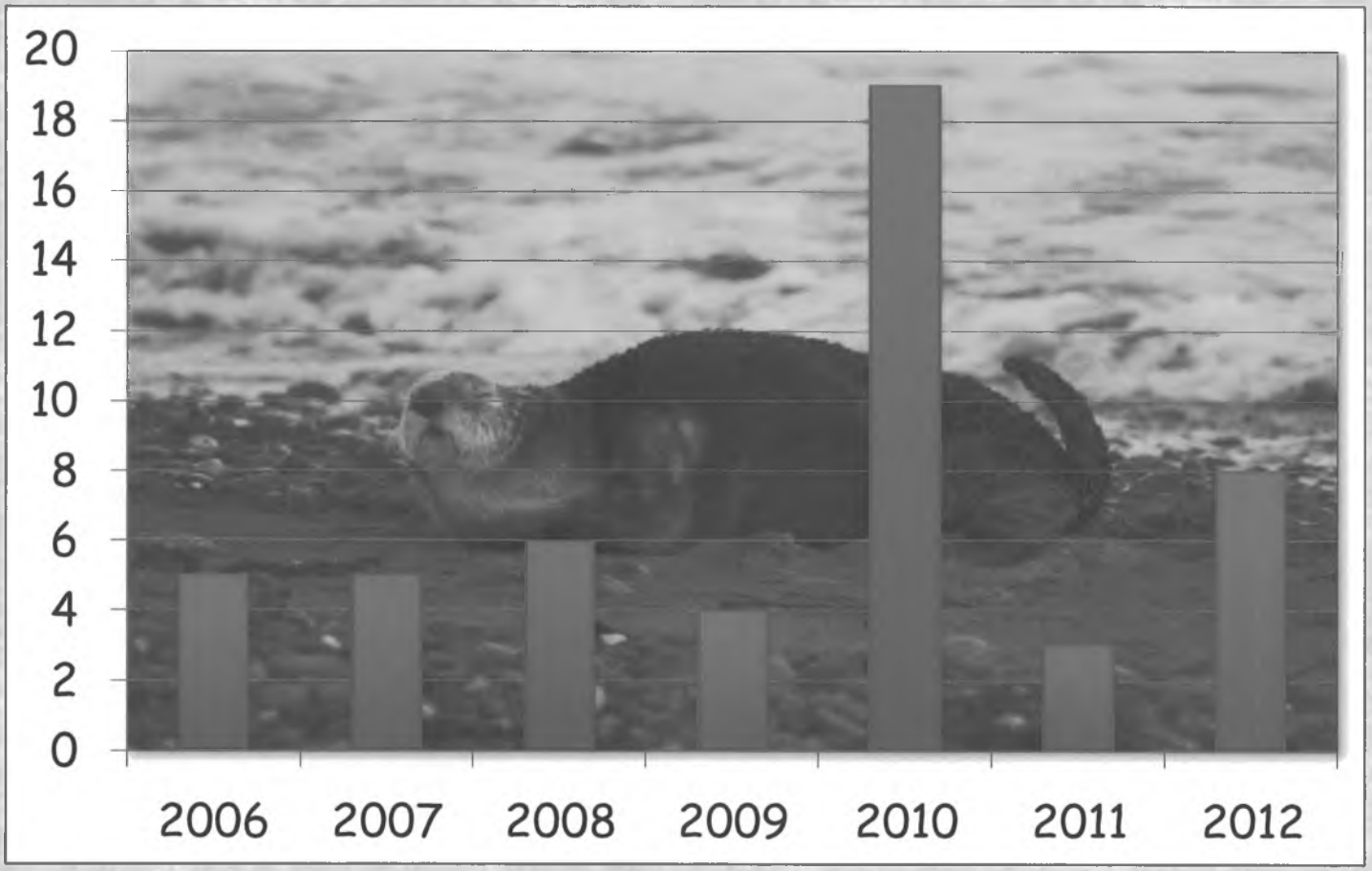
- Protozoal encephalitis surveillance
- Bacterial flora surveillance
- Morbillivirus surveillance, focusing on PDV
- Avian influenza surveillance
- Herpes virus surveillance
- *Bartonella* spp. surveillance
- Contaminants (PBDE, PFC)
- Biotoxin surveillance (Domoic acid & PSP)
- Coxiella (Q fever) surveillance
- Clinical pathology (serum chemistry & complete hematologic analyses) of live sea otters

Biotoxin surveillance project

- Project with NOAA
- Urine, pericardial fluid, stomach contents
- 137 sea otters tested for DA and Saxitoxin (PSP) that died 2005-2010 from various causes 39 (28%) had DA detected (Glacier Bay to Kodiak)
- 12 (9%) had PSP detected (Juneau to Kodiak)
- Had otter deaths related to PSP (Kodiak)
- All age classes, all sexes, all years, across range
- 30/31 live captured otters had PSP detected in May 2011 in SE AK



Number of sea otter carcasses recovered in SE AK



most from Glacier Bay

Location of carcasses recovered in SE AK

2006-2012

Location	Number
Glacier Bay	32
Sitka	13
Yakutat	2
Craig	1
Juneau	1
Kake	1
TOTAL	**50**



Fauna most

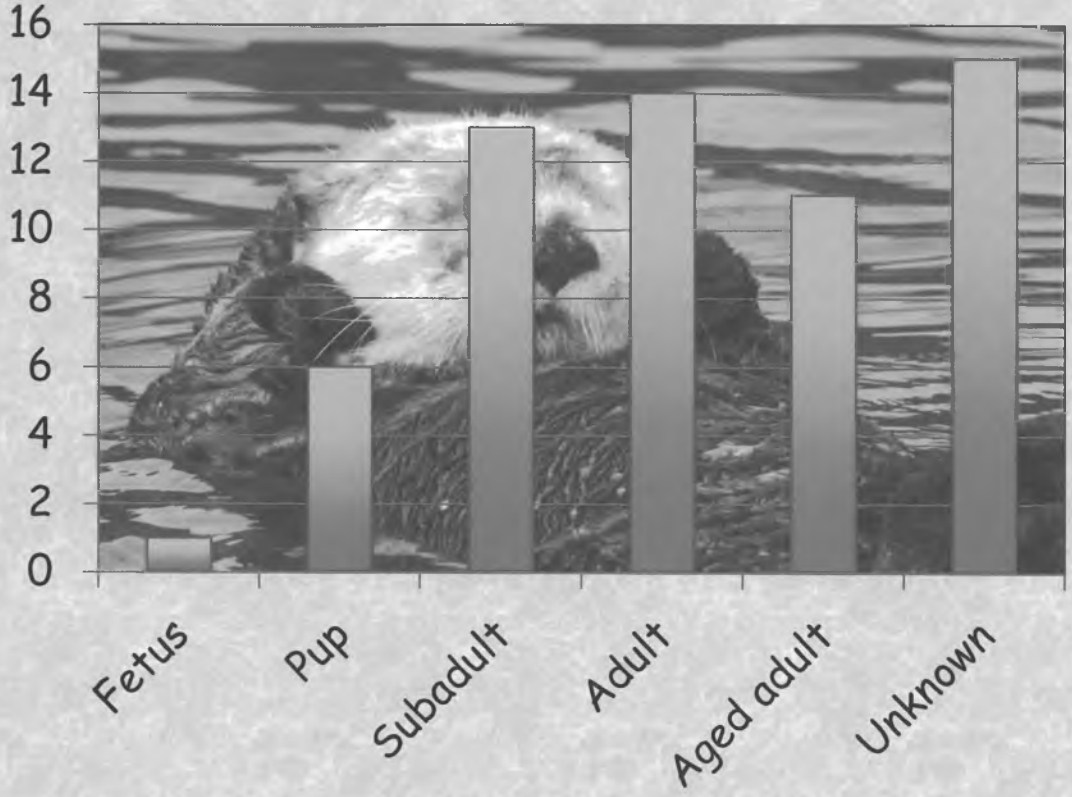
Age & sex composition of carcasses found in SE AK 2006-2012; profile is adult male



Male

Female

Unknown



Of documented CODs 2006-2012, trauma is #1 in SE AK

Cause of death	Number
Undetermined	23
Gunshot (not reported hunting)	6
General Trauma	6
Valvular endocarditis	4
Starvation	4
Torsion	2
Pup abandonment	1
Aortic aneurysm	1
Drowning	1
Heart failure	1
Sepsis	1
TOTAL	**50**

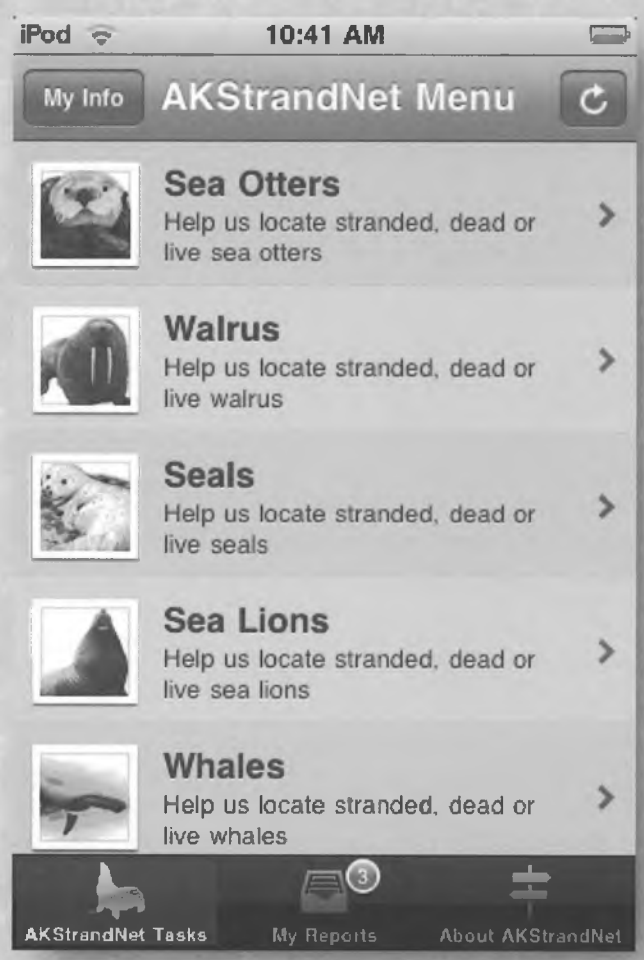
SE AK sea otters are healthy

- Survey of live captures and stranded animals show that otters in SE have good body condition, healthy, and relatively disease free compared with other AK stocks.

- Only major current finding is presence of Saxitoxin (PSP).



Ways to increase samples; AKStrandNet on iTunes (free)





Sea otters and kelp forests

+



-





James A. Estes

University of California
Santa Cruz

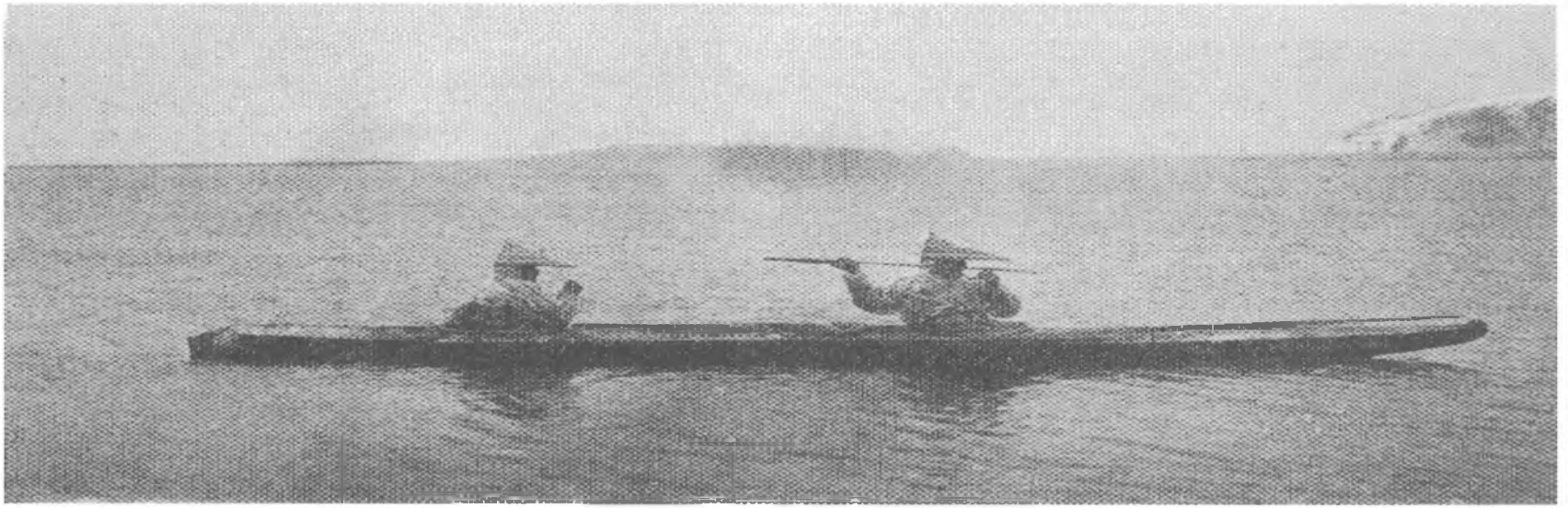
Question?

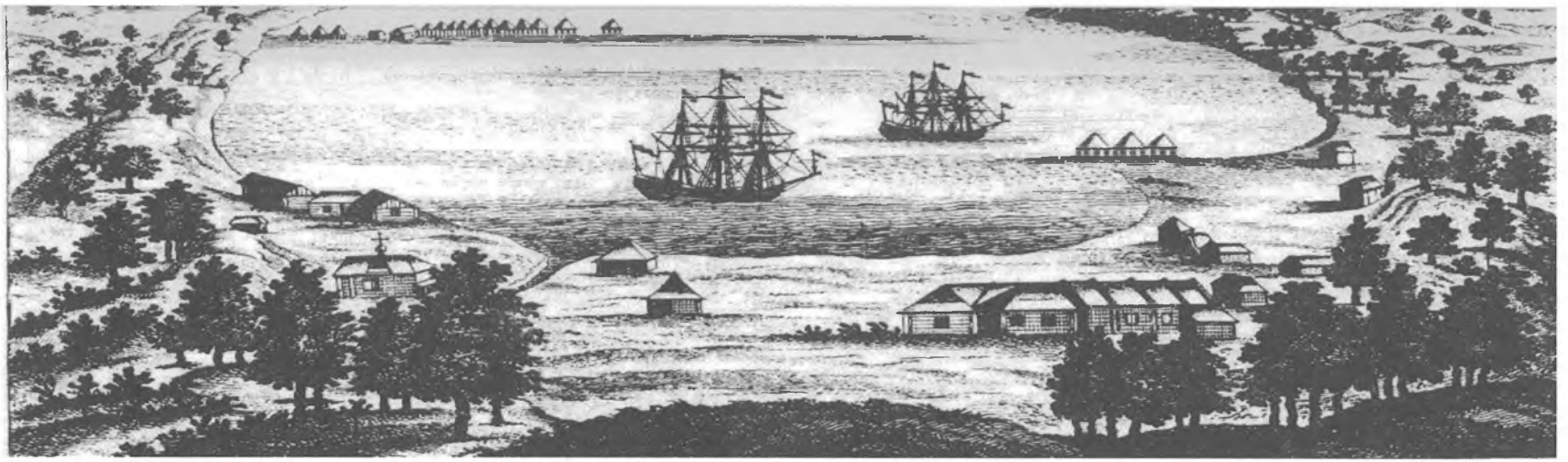
What are the effects of sea otters on kelp forest ecosystems?

Approaches

History

depletion fur trade
repopulation drugs
in ecology





Players



Sea otters



Coastal fishes



Sea urchins

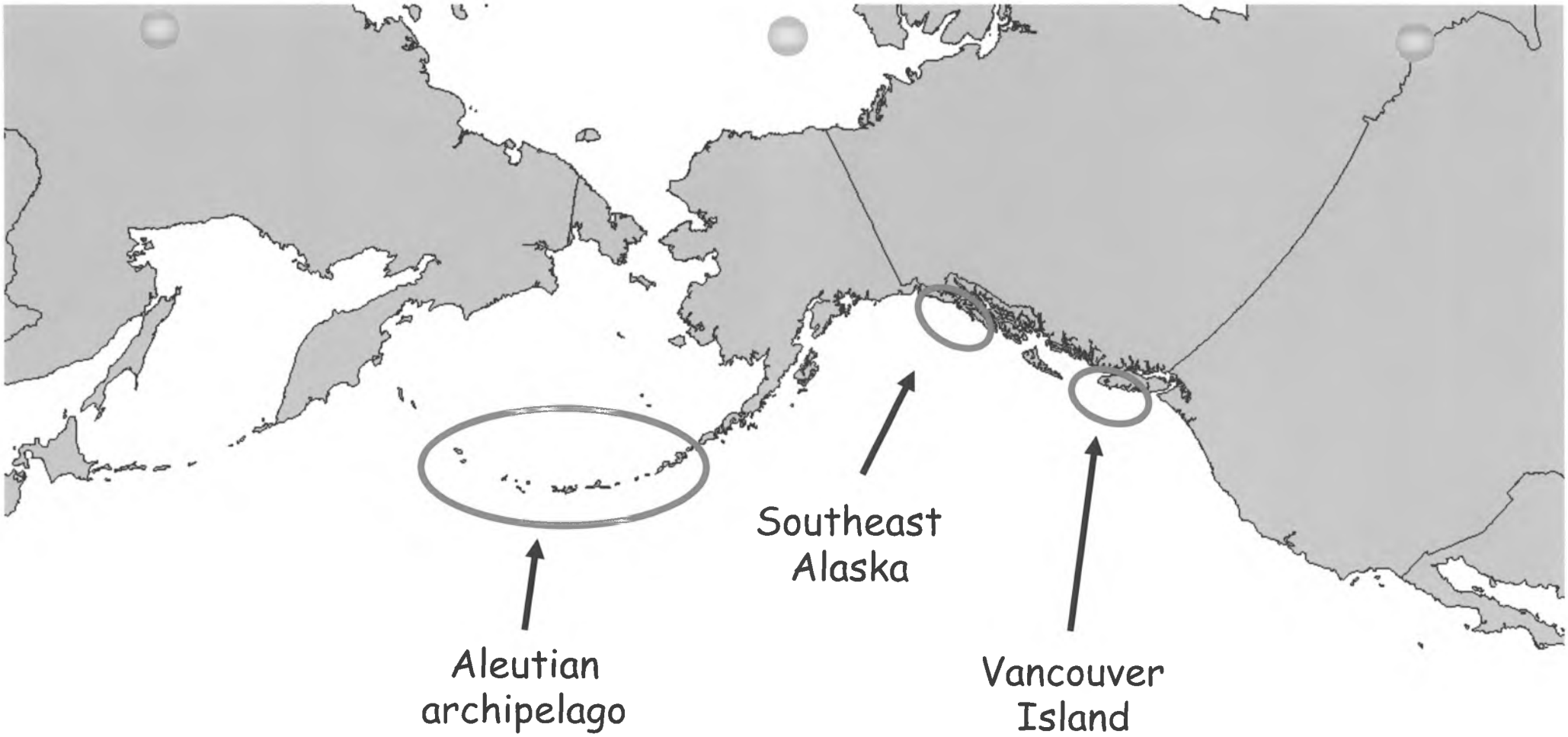


O=C=O

Carbon dioxide



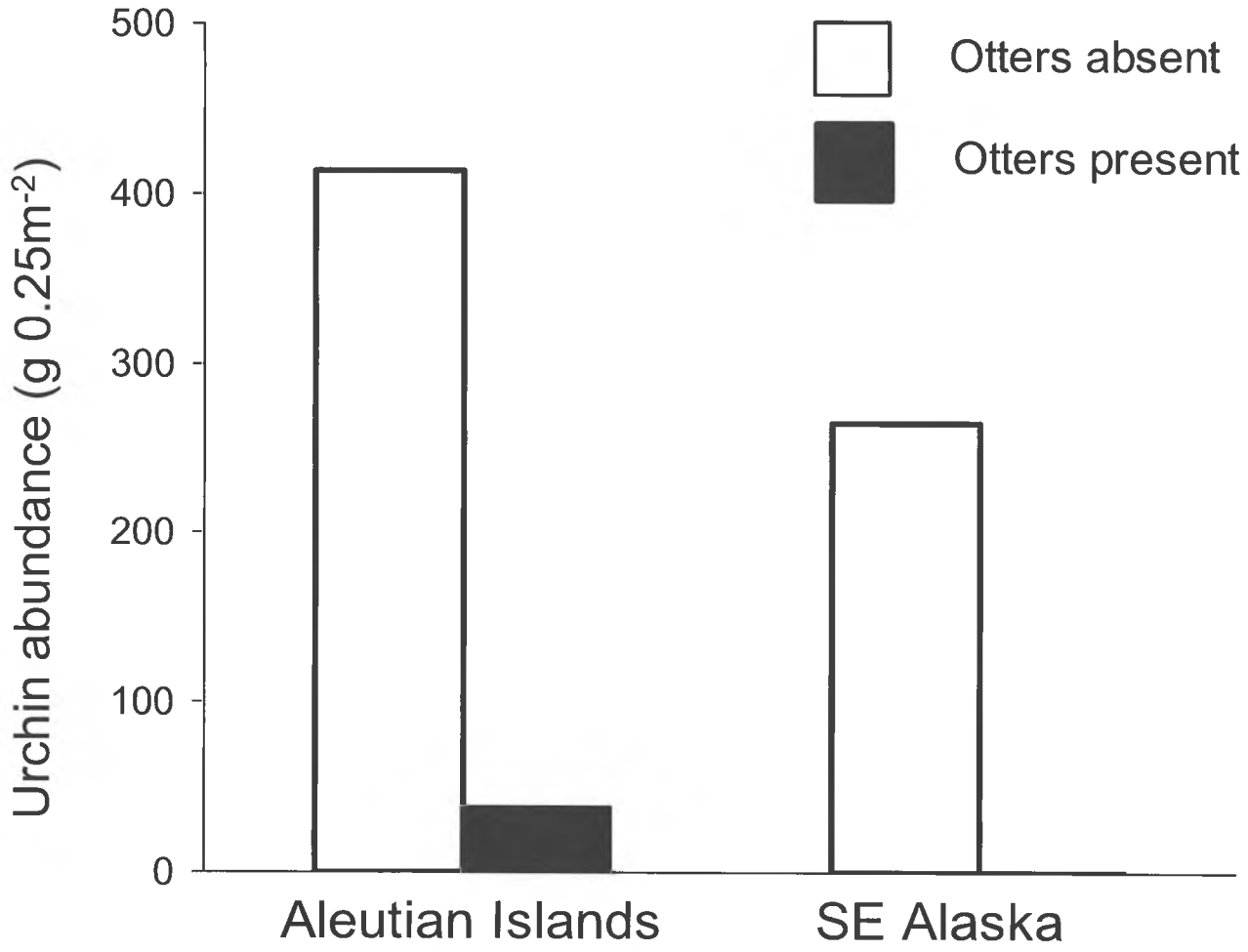
Kelp



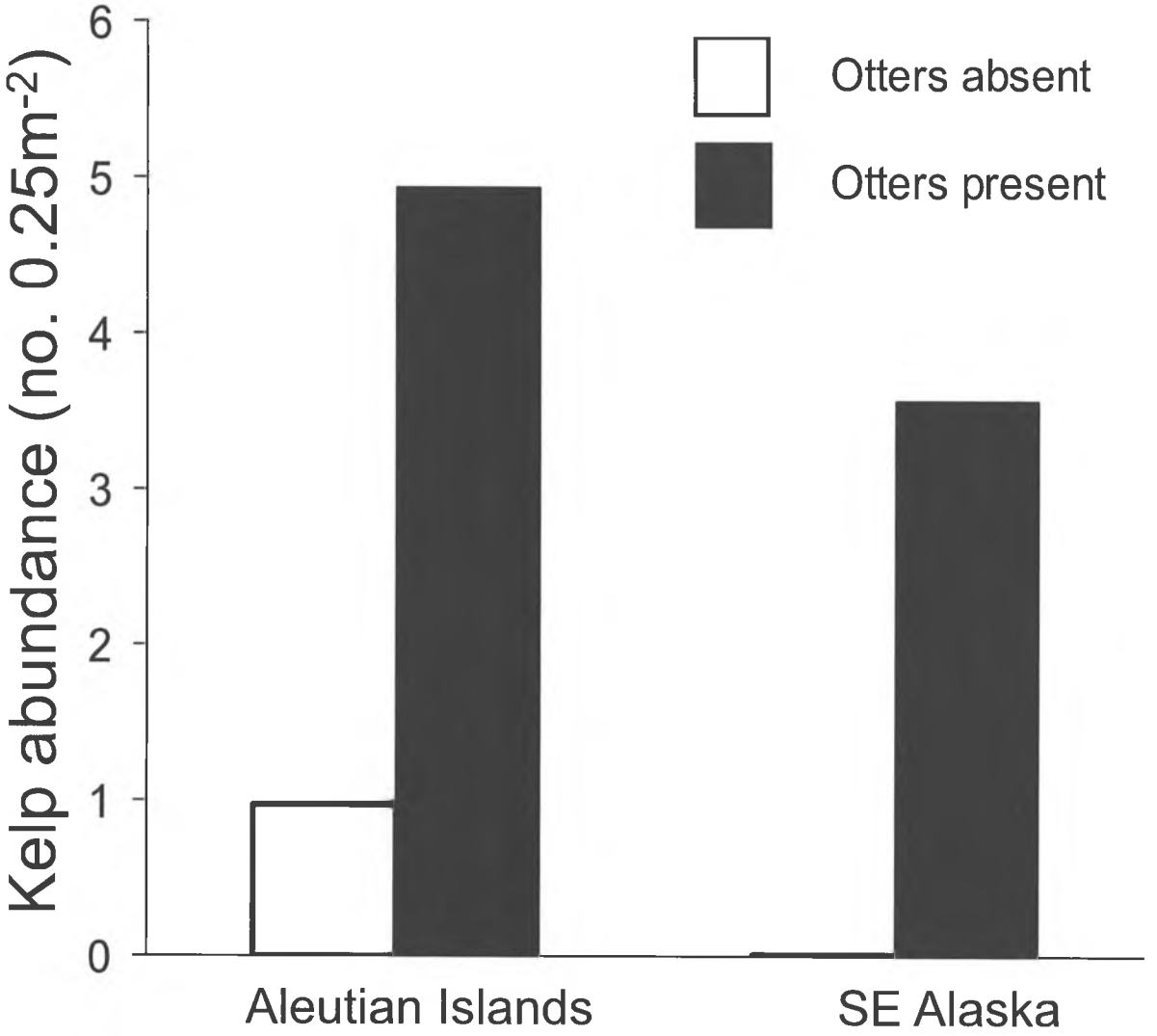
Approach:

- With vs. without otters
- Before vs. after otters

Direct effect--sea otters on sea urchins



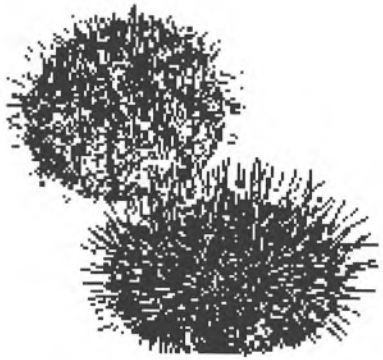
Indirect effect—sea otters on kelp



A "trophic cascade"











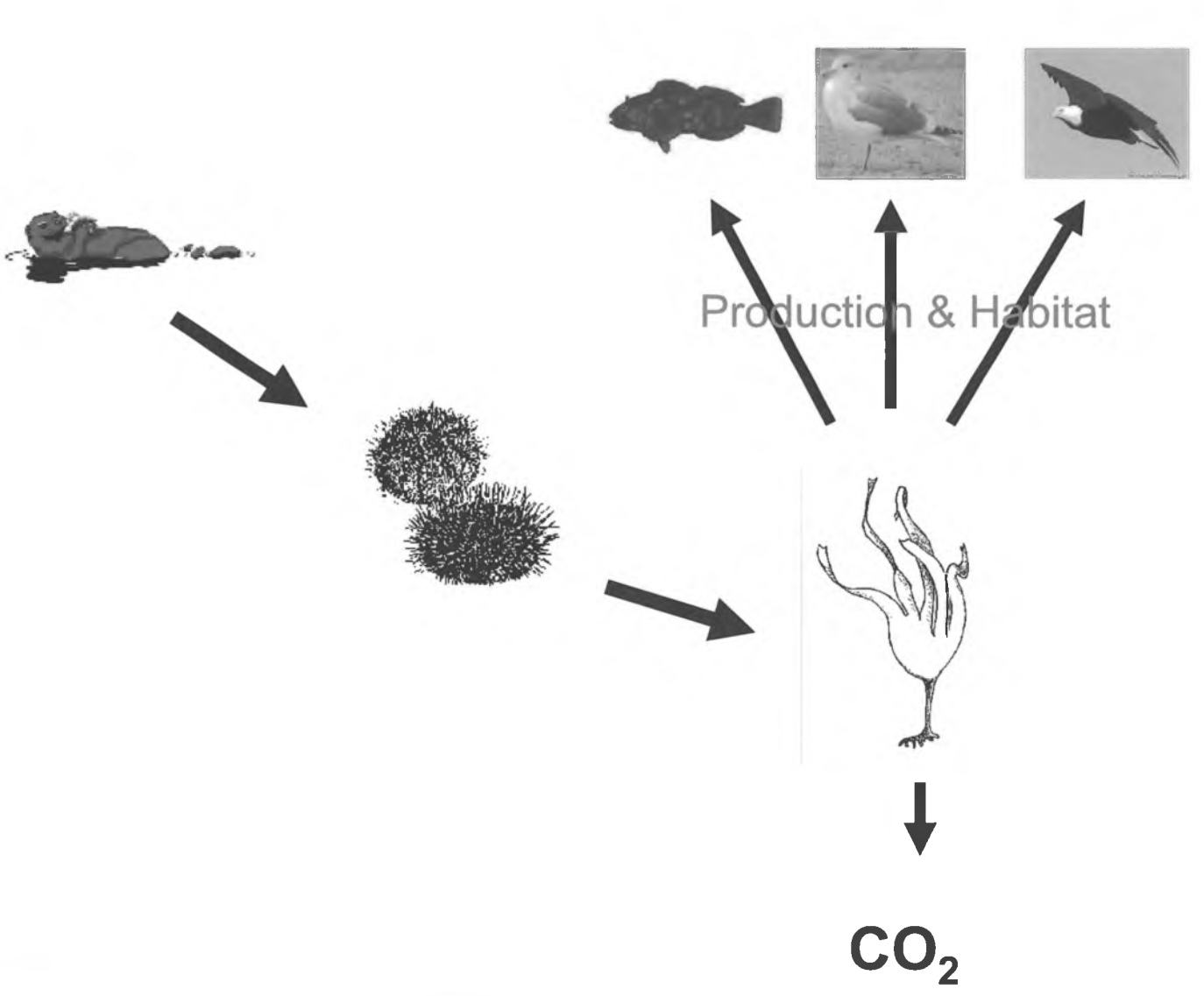








Influences of sea otter-kelp forest trophic cascade on other species and ecosystem processes?



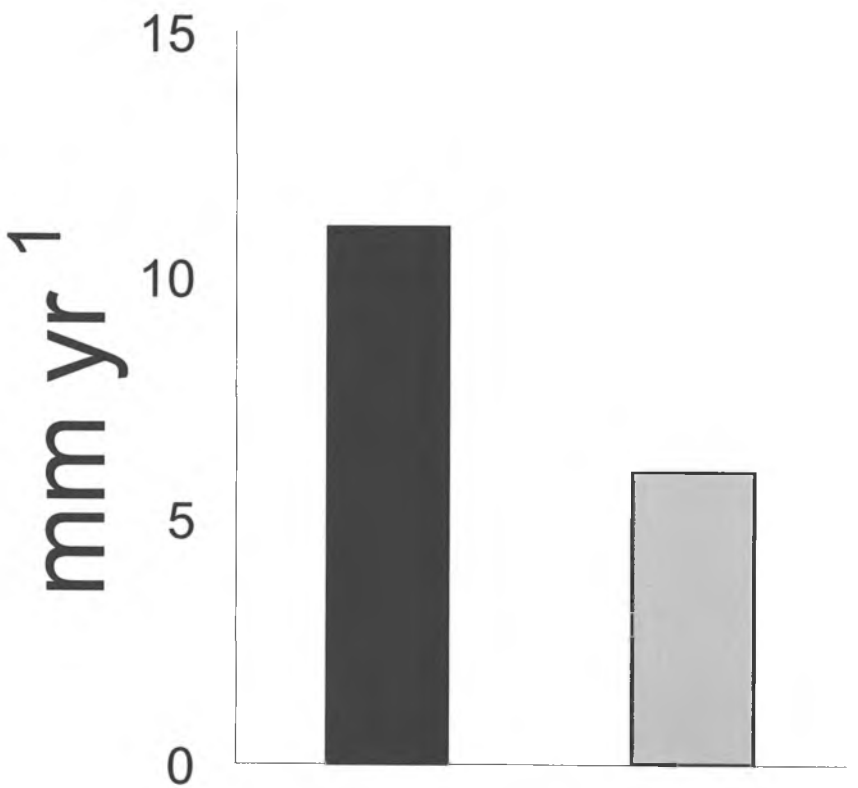
Production

Sea otters

Abundant

Absent

Mussel growth rate



Duggins et al., *Science*, 1989

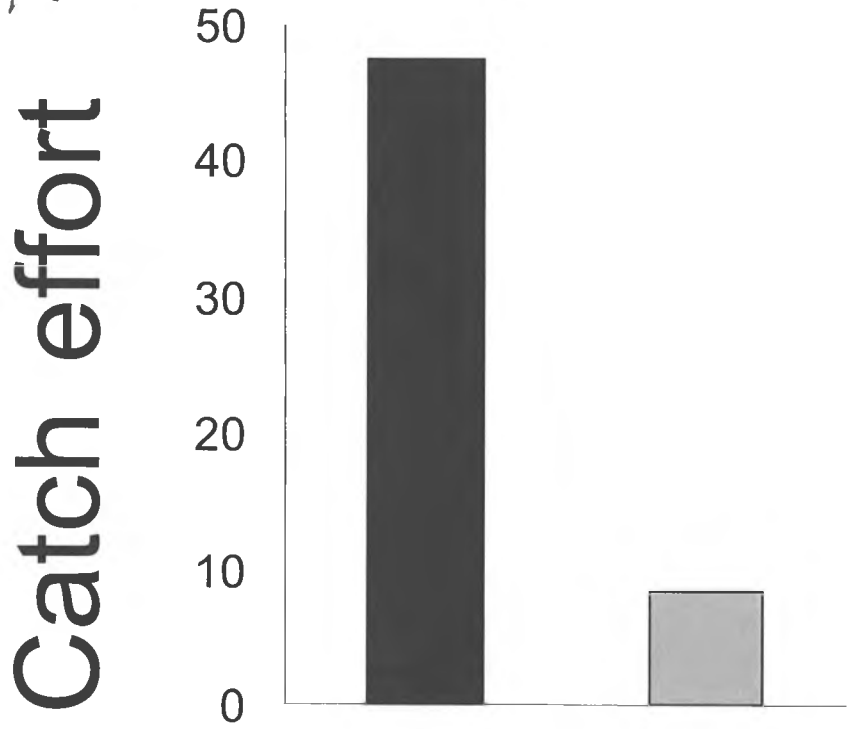
Kelp forest fish abundance

Sea otters

Abundant

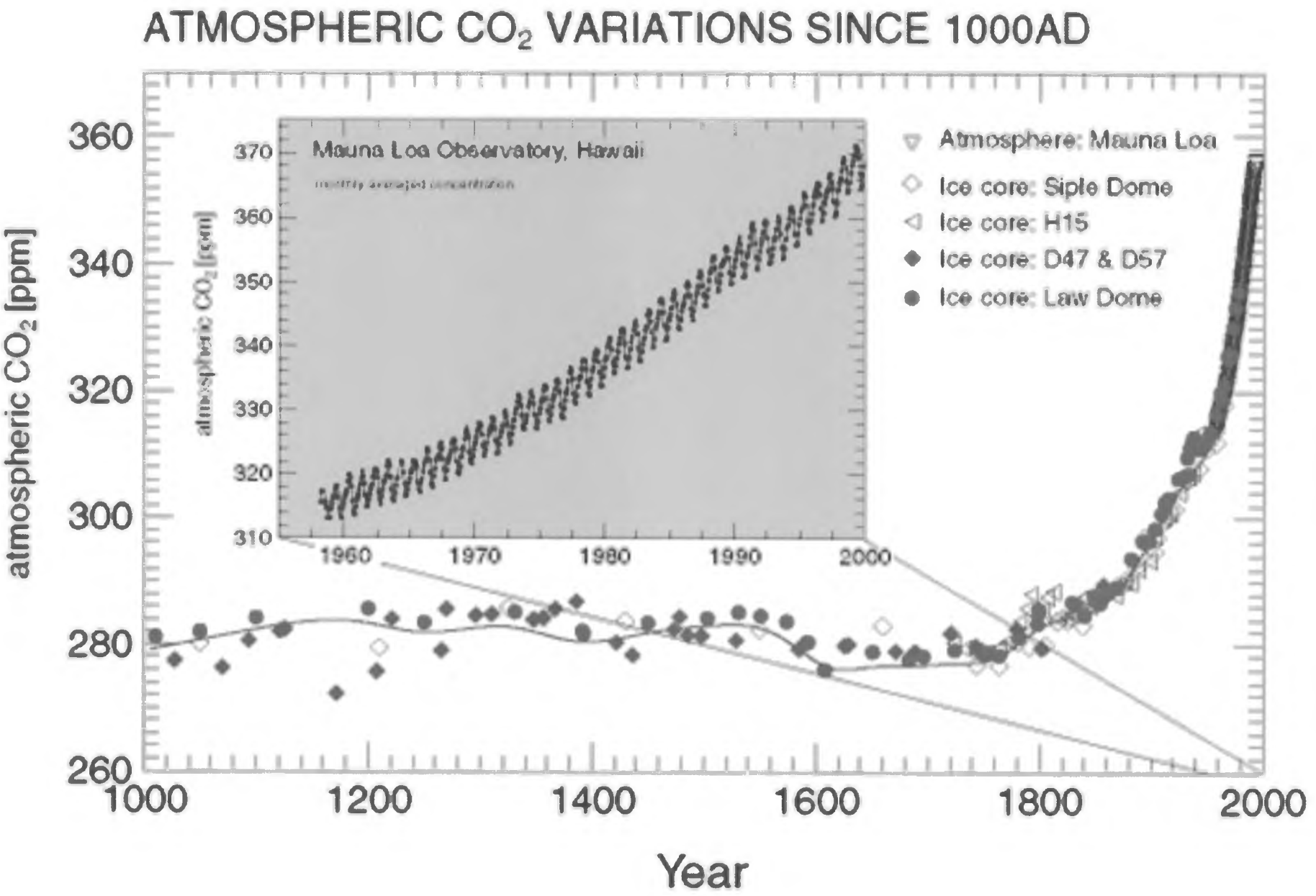
Absent





Reisewitz et al., *Oecologia*, 2006

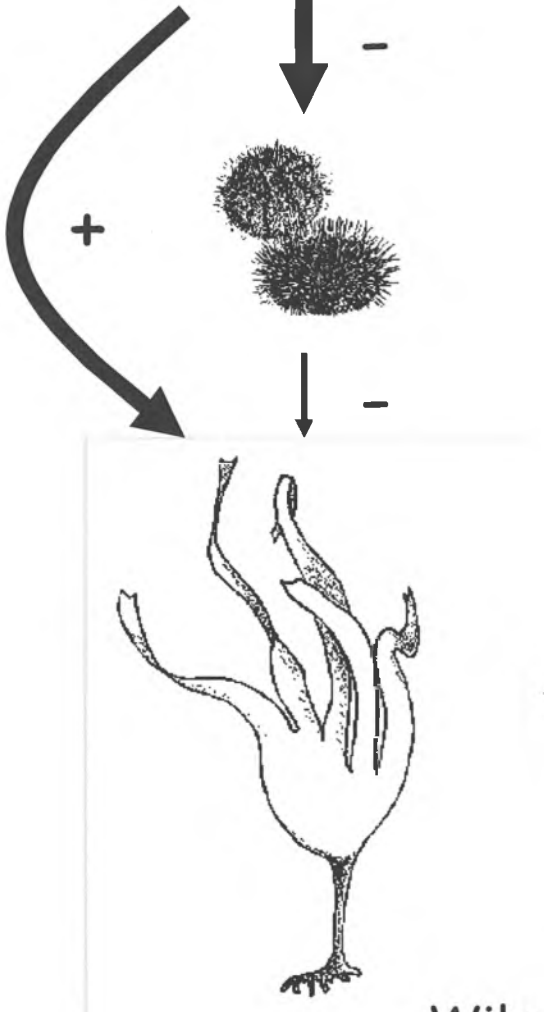
Sea otters and carbon



Mitigation by sea otters?







CO_2

Wilmers et al. *Front. Ecol. Env*, 2012

Comparison of kelp carbon dynamics between scenarios with and without sea otters at ecologically effective densities.

	Sea otters absent	Sea otters present
Kelp biomass (wet weight)	75-133 gm^{-2}	911-1618 gm^{-2}
Kelp carbon	8-14 gCm^{-2}	101-180 gCm^{-2}
NPP	25-70 $gCm^{-2}yr^{-1}$	313-900 $gCm^{-2}yr^{-1}$
	Difference in scenarios with and without otters in Alaska and British Columbia	
Kelp carbon	4.4 to 8.7 TgC	
Atmospheric carbon pool	5.6 to 11 %	
Atmospheric carbon pool since pre-industrial times	21 to 42 %	
Value of kelp carbon standing stock if European Carbon Trading value	$304 to $603 million	

Table 2. Potential yearly value of sea otter impact on atmospheric carbon sequestration by kelp. Scenarios represent the percentage of yearly kelp NPP that is transported to the deep ocean where it may persist for long periods of time. We present an order of magnitude variation in scenarios as much uncertainty remains on total carbon transport to the deep ocean.

Sequestration scenarios*	Carbon sequestration $tCyr^{-1}$	Yearly value*
1%	$(1.3 - 4.5) \times 10^5$	\$9-31 million
5%	$(0.6 - 2.3) \times 10^6$	\$44-157 million
10%	$(1.3 – 4.5) \times 10^6$	\$87-314 million
50%	$(0.6 – 2.3) \times 10^7$	\$436-1,570 million

* Yearly value is based on Dec 10, 2010 Futures on the European Carbon Exchange.

Concluding Points

I. Sea otters have a strong ***direct negative effect*** on kelp forest invertebrates (shellfish)

II. This direct negative effect on invertebrates results in a strong ***indirect positive effect*** on kelp abundance and distribution

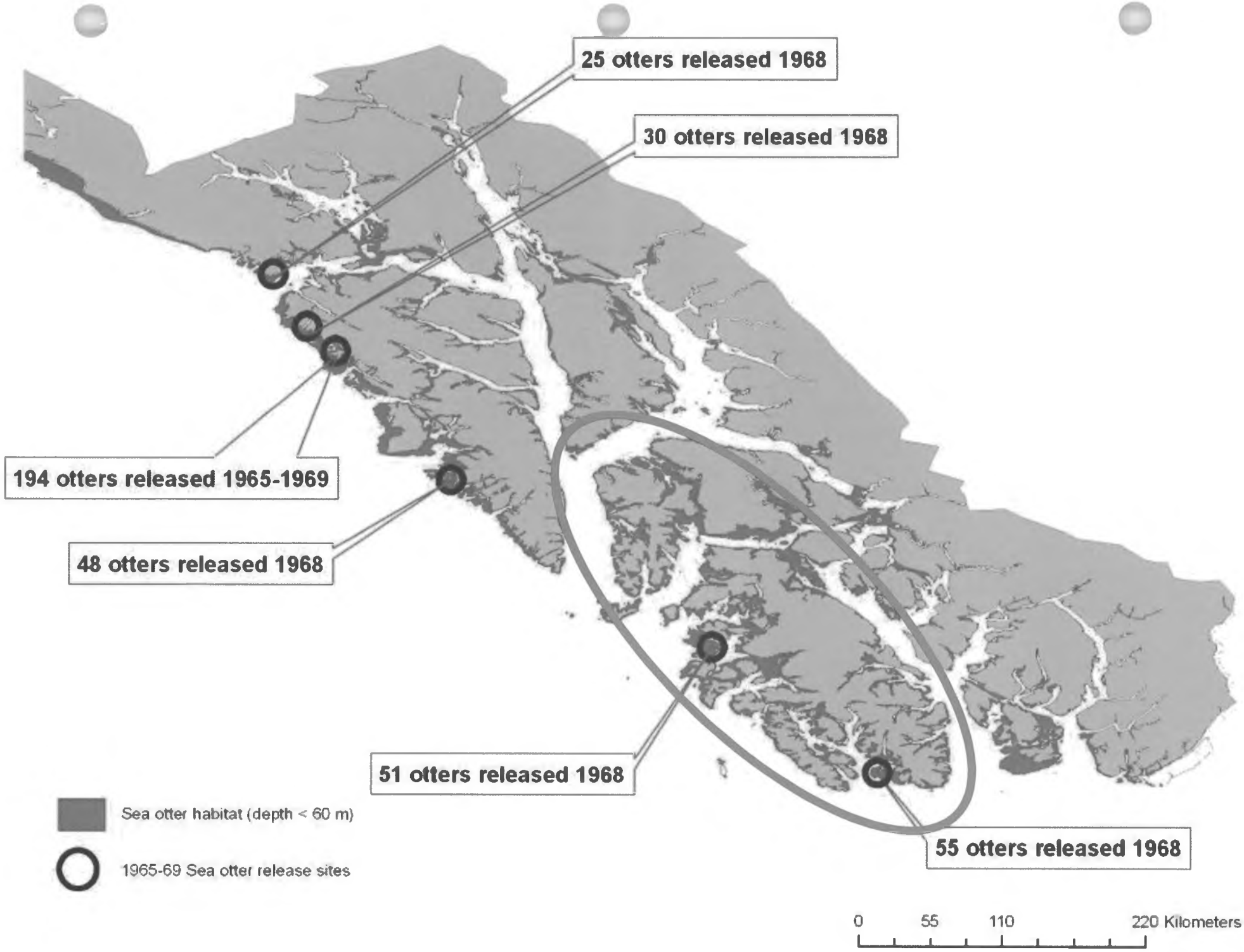
III. Kelp forests have myriad effects of other species and ecological processes

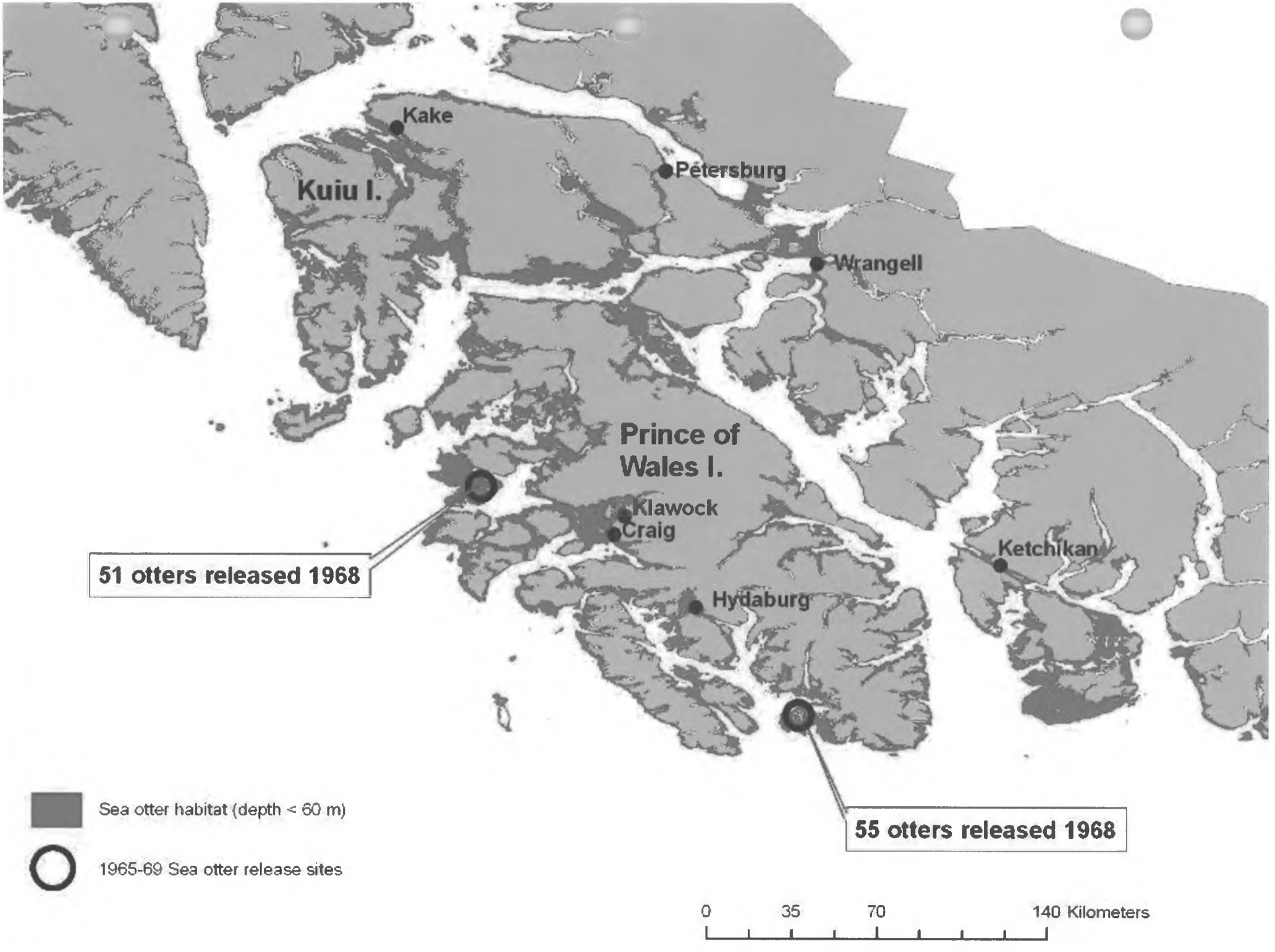
IV. Sea otter management should weigh the costs and benefits of all these effects

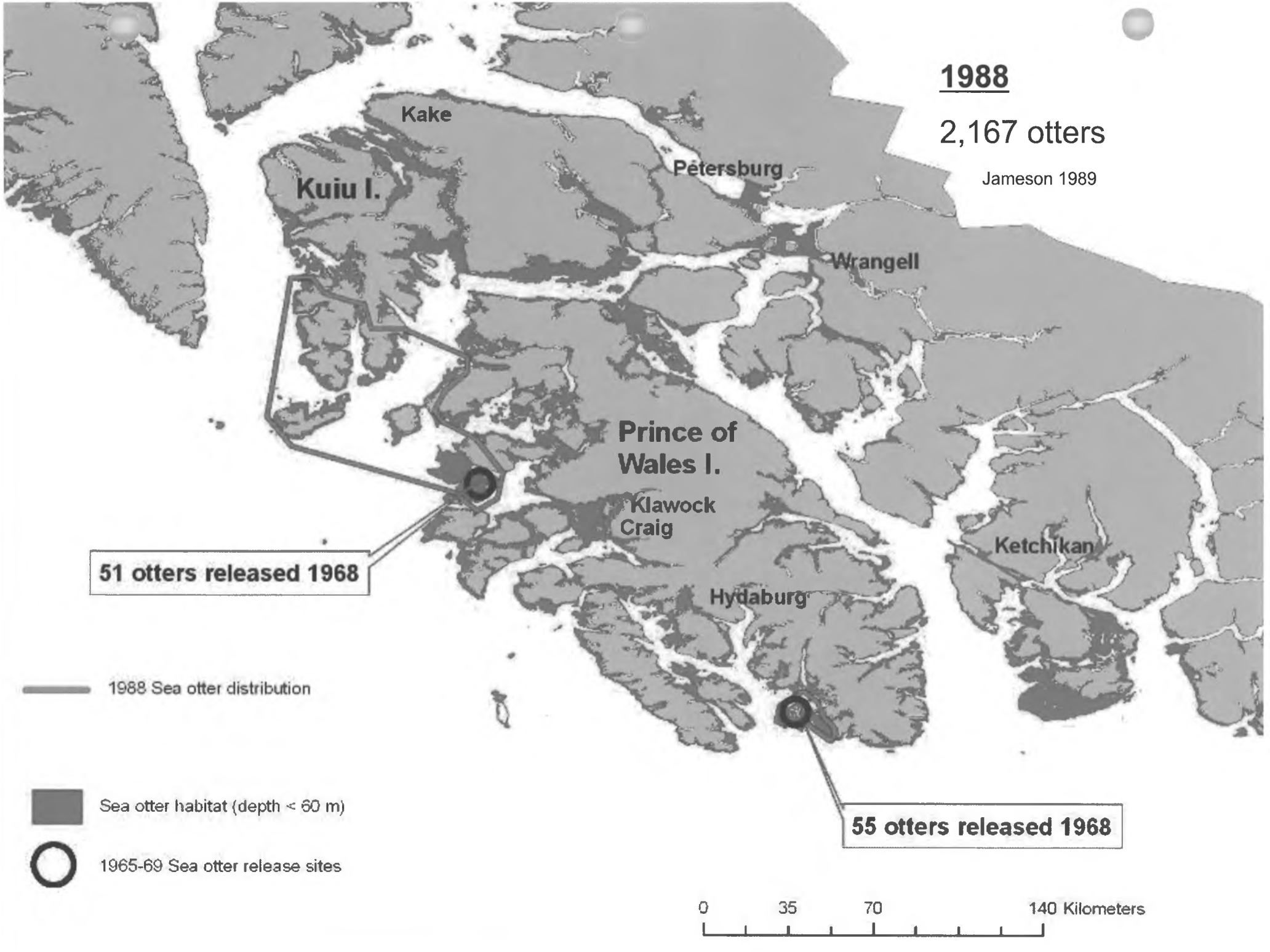
Recovery of the sea otter population and conflicts with shellfish users in Southeast Alaska

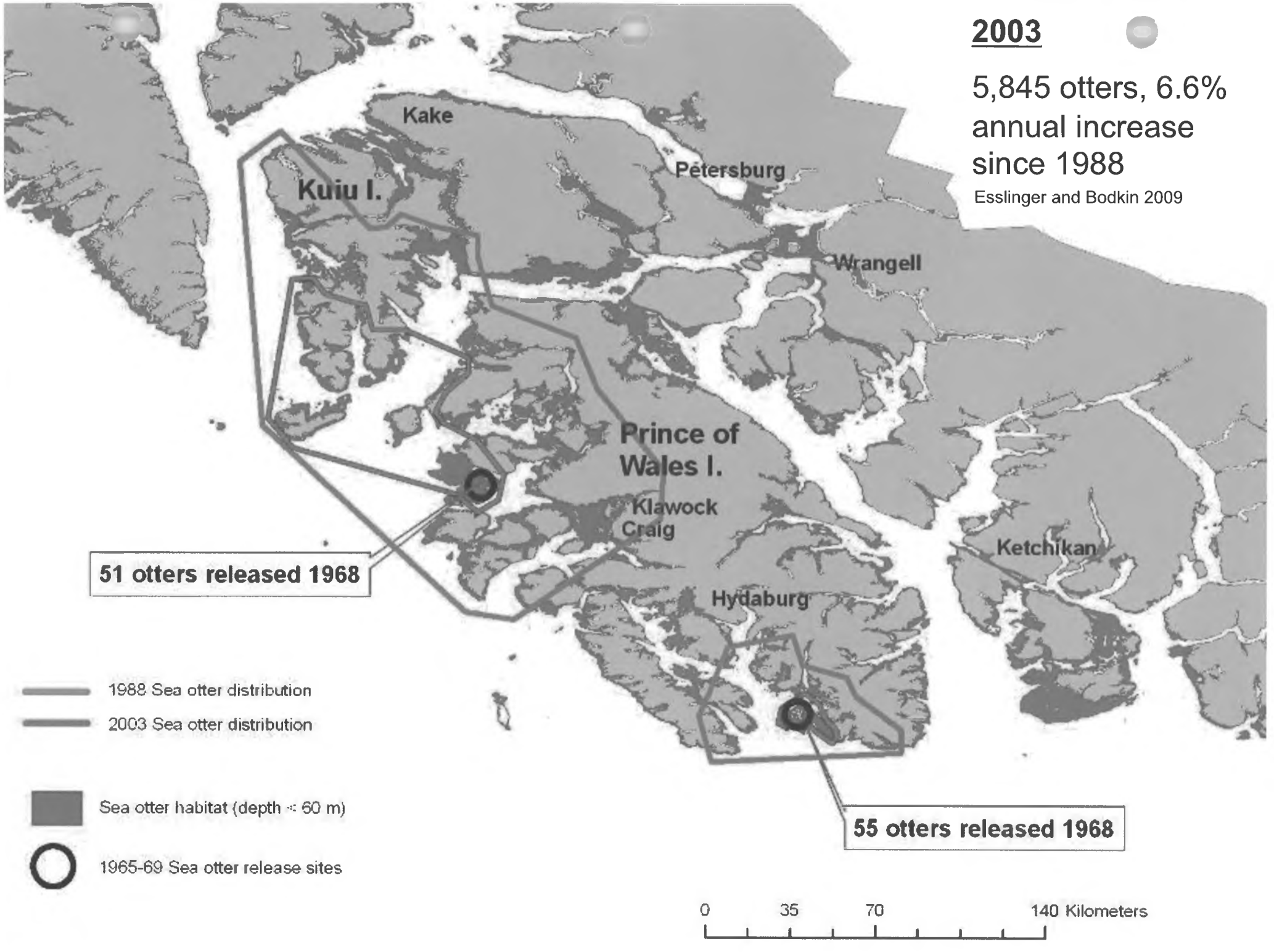


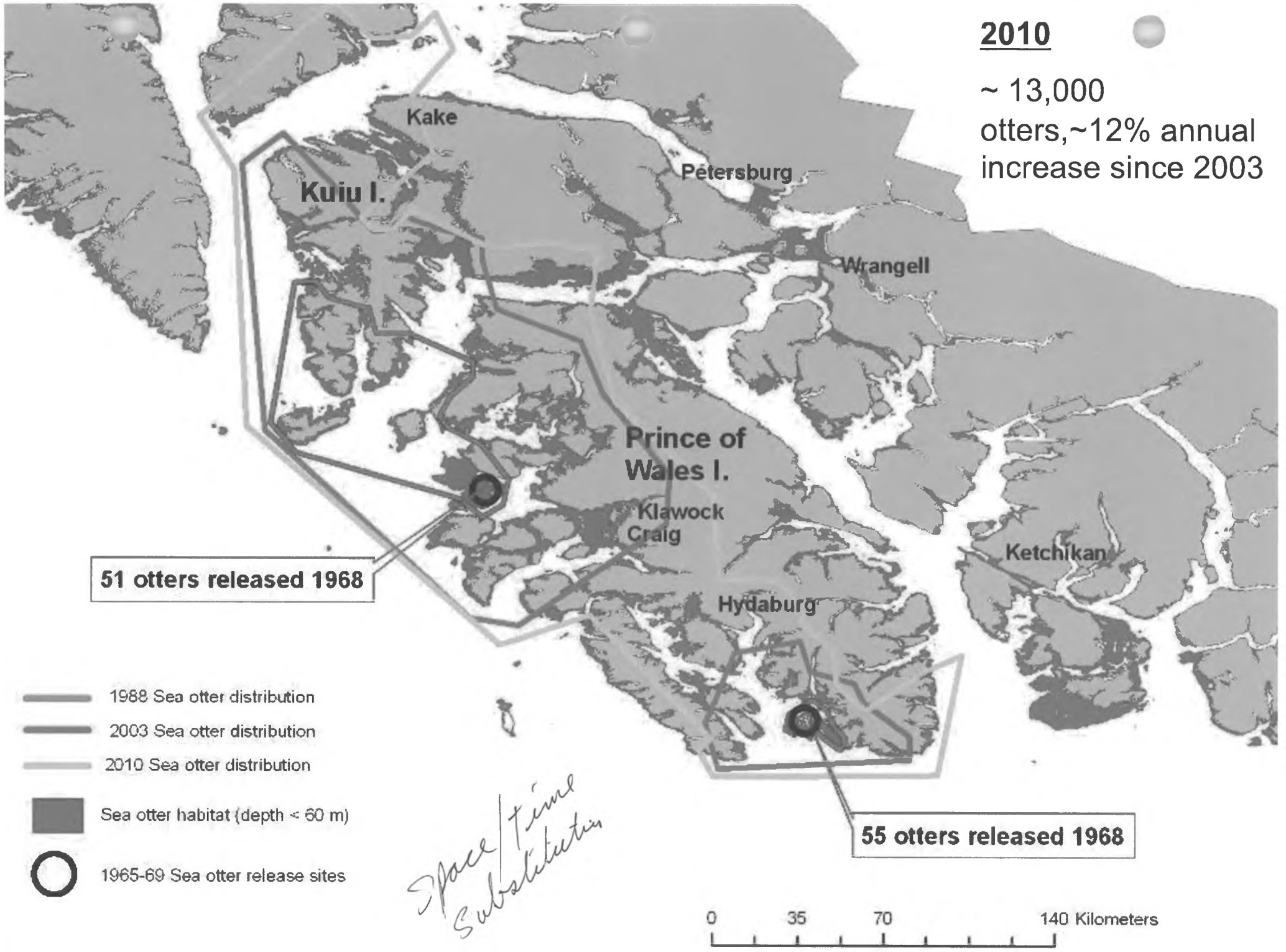
Ginny Eckert[1], Zac Hoyt[1], Sean Larson[1], Verena Gill[2], Sunny Rice[1].
[1]School of Fisheries & Ocean Sciences, UAF & [2]USFWS


25 otters released 1968
30 otters released 1968
194 otters released 1965-1969
48 otters released 1968
51 otters released 1968
55 otters released 1968
Sea otter habitat (depth < 60 m)
1965-69 Sea otter release sites
0
55
110
220 Kilometers


Kake
Petersburg
Kuiu I.
Wrangell
Prince of Wales I.
Klawock
Craig
Ketchikan
Hydaburg
51 otters released 1968
55 otters released 1968
Sea otter habitat (depth < 60 m)
1965-69 Sea otter release sites
0
35
70
140 Kilometers


1988
2,167 otters
Jameson 1989
Kake
Petersburg
Kuiu I.
Wrangell
Prince of Wales I.
Klawock
Craig
Ketchikan
Hydaburg
51 otters released 1968
55 otters released 1968
1988 Sea otter distribution
Sea otter habitat (depth < 60 m)
1965-69 Sea otter release sites
0
35
70
140 Kilometers


2003
5,845 otters, 6.6% annual increase since 1988
Esslinger and Bodkin 2009
Kake
Petersburg
Kuiu I.
Wrangell
Prince of Wales I.
Klawock
Craig
Ketchikan
Hydaburg
51 otters released 1968
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2003 Sea otter distribution
Sea otter habitat (depth ≤ 60 m)
1965-69 Sea otter release sites
0
35
70
140 Kilometers

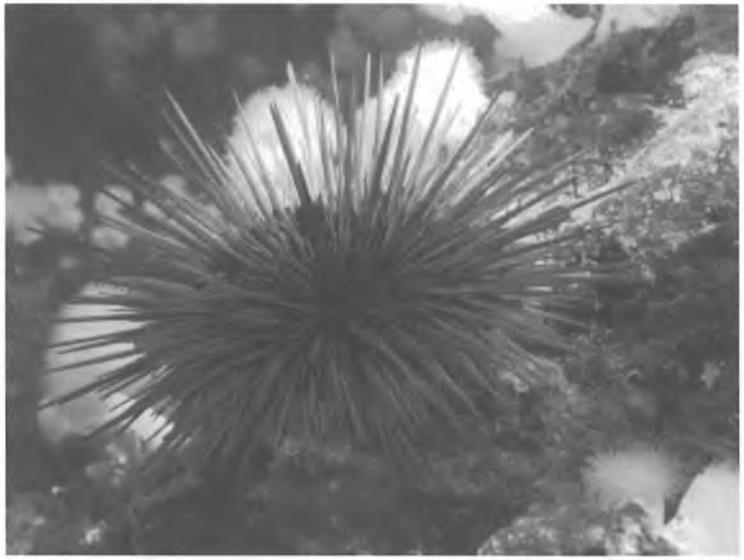

2010
~ 13,000 otters,~12% annual increase since 2003
Kake
Petersburg
Kuiu I.
Wrangell
Prince of Wales I.
Klawock
Craig
Ketchikan
Hydaburg
51 otters released 1968
55 otters released 1968
1988 Sea otter distribution
2003 Sea otter distribution
2010 Sea otter distribution
Sea otter habitat (depth < 60 m)
1965-69 Sea otter release sites
Space | Time Substitution
0
35
70
140 Kilometers

Fisheries affected in southern SE AK



Dungeness crab, *Cancer magister*

no dungeness surveys



Red sea urchin, *Strongylocentrotus franciscanus*

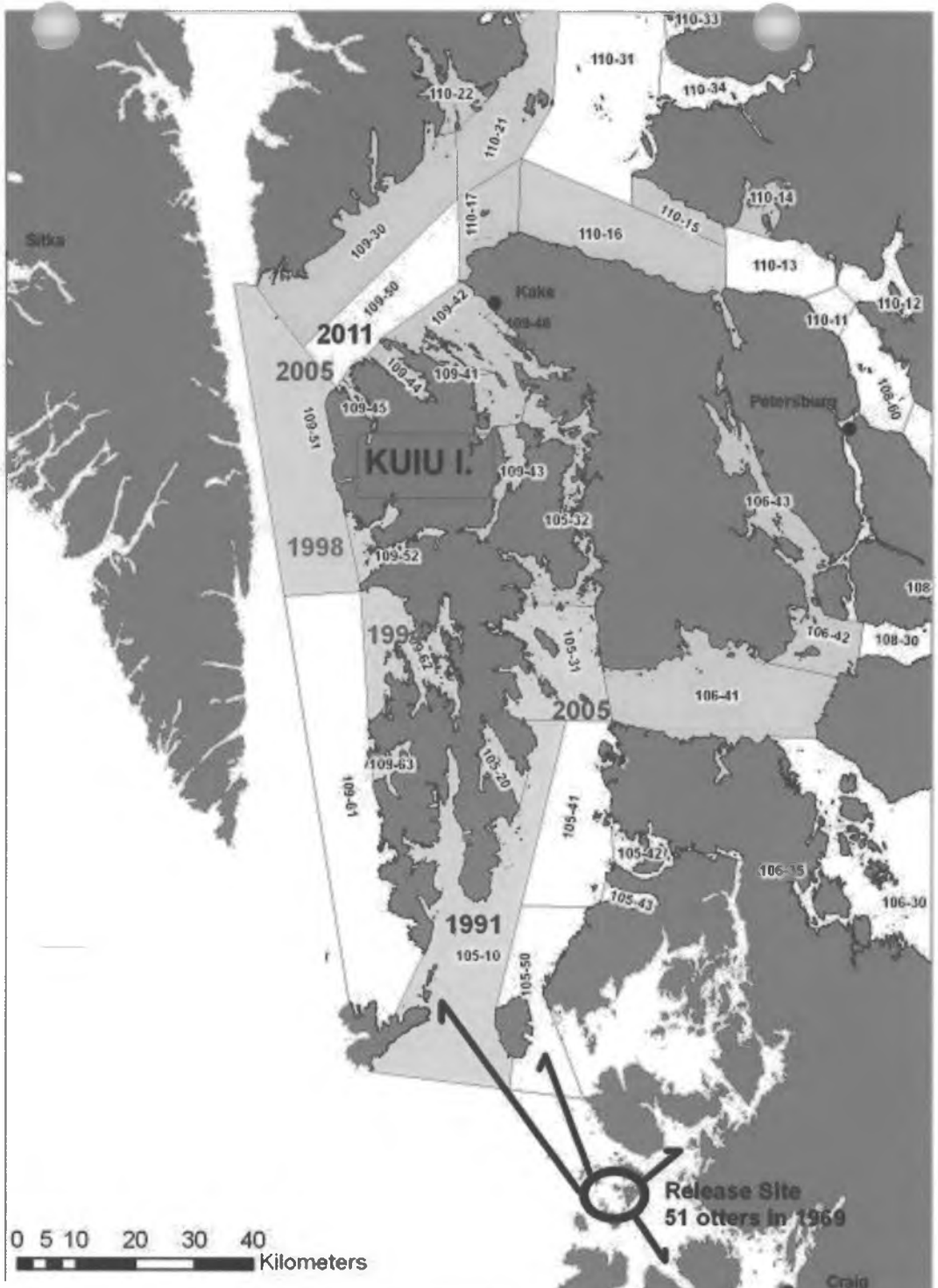


California sea cucumber, *Parastichopus californicus*



Geoduck clam, *Panopea abrupta*

Dungeness crab impacts



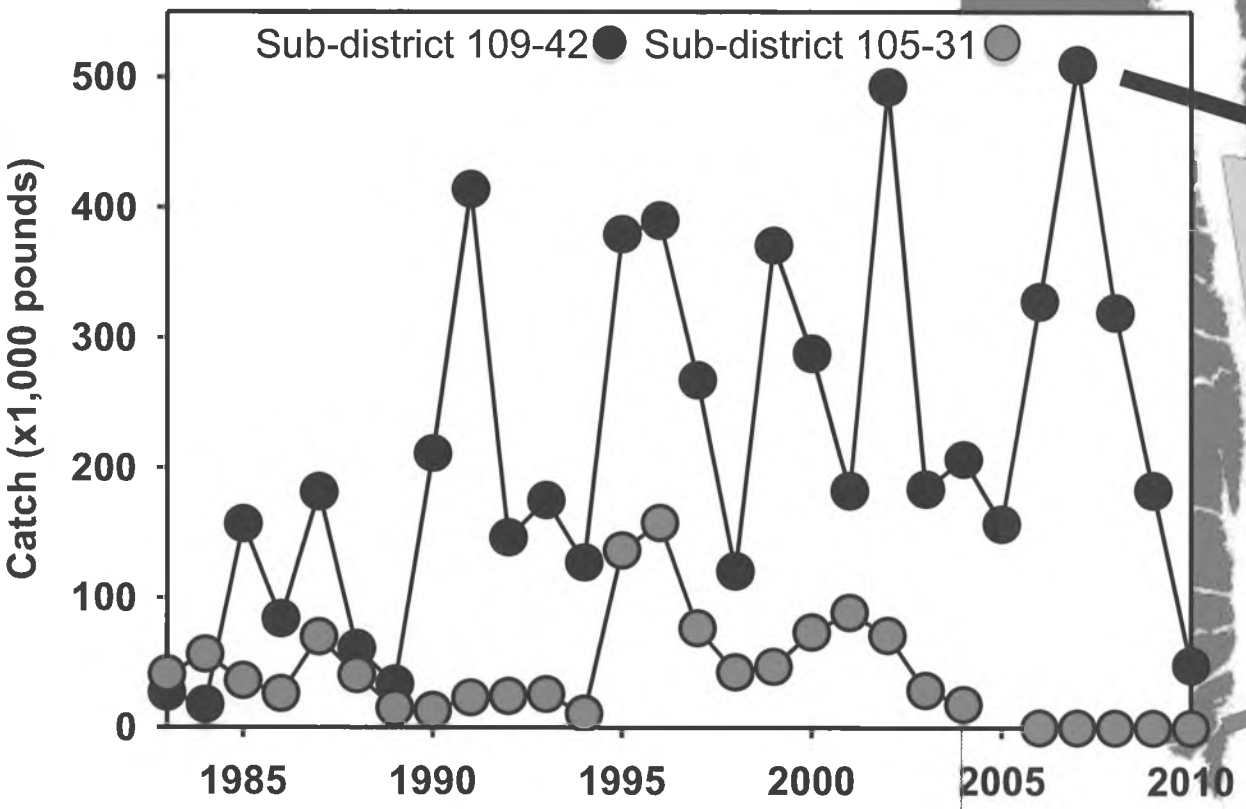
ADF&G subdistricts no longer commercially viable

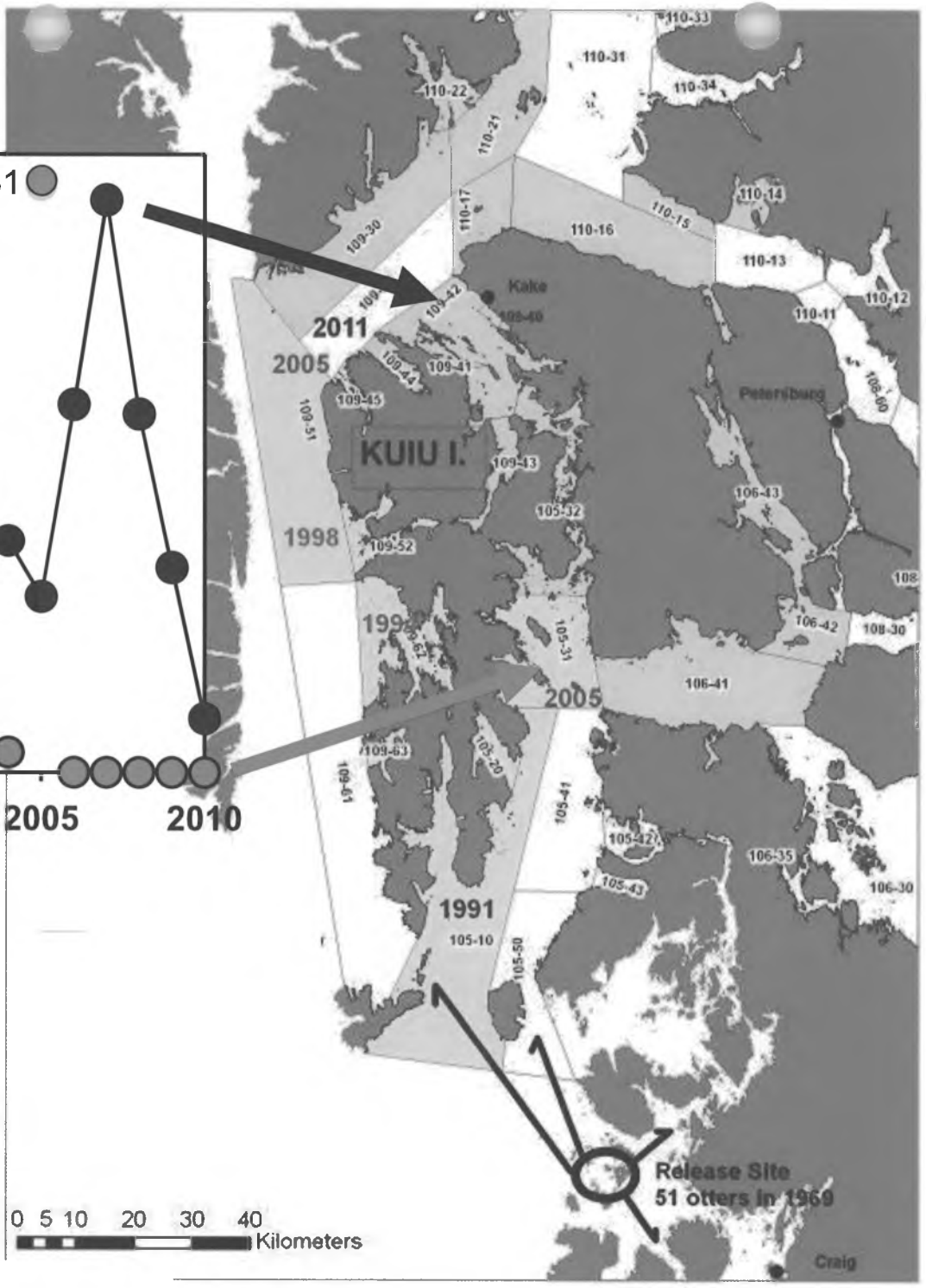
ADF&G subdistricts still commercially viable

ADF&G subdistricts with little fishing effort or currently unaffected by sea otters

Preliminary, do not distribute. Source : ADF&G 2011

Dungeness crab impacts





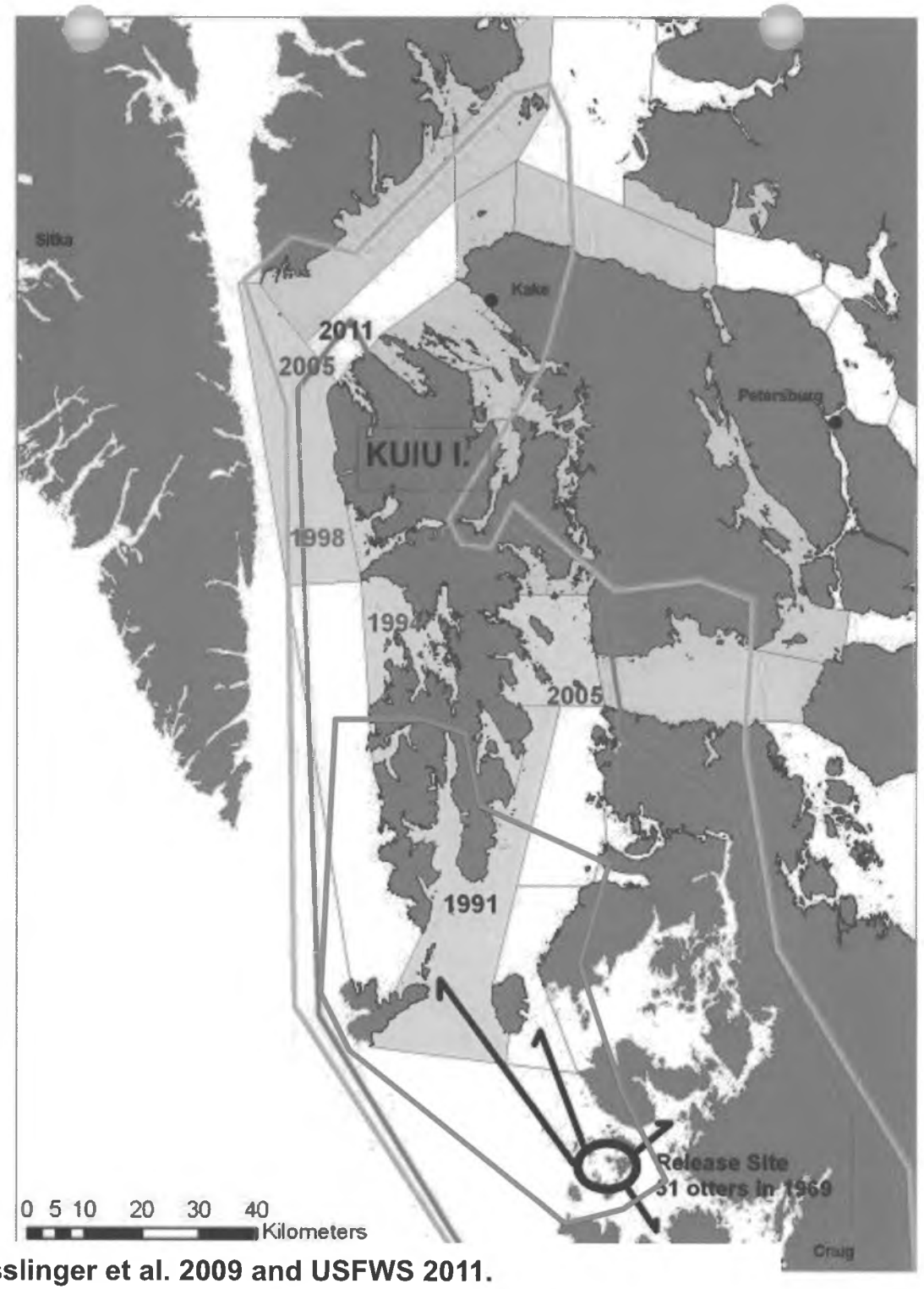
ADF&G subdistricts no longer commercially viable

ADF&G subdistricts still commercially viable

ADF&G subdistricts with little fishing effort or currently unaffected by sea otters

Preliminary, do not distribute. Source : ADF&G 2011

Sea otter persistence and viability of the commercial Dungeness crab fishery appear spatially correlated



1988 sea otter distribution

2003 sea otter distribution

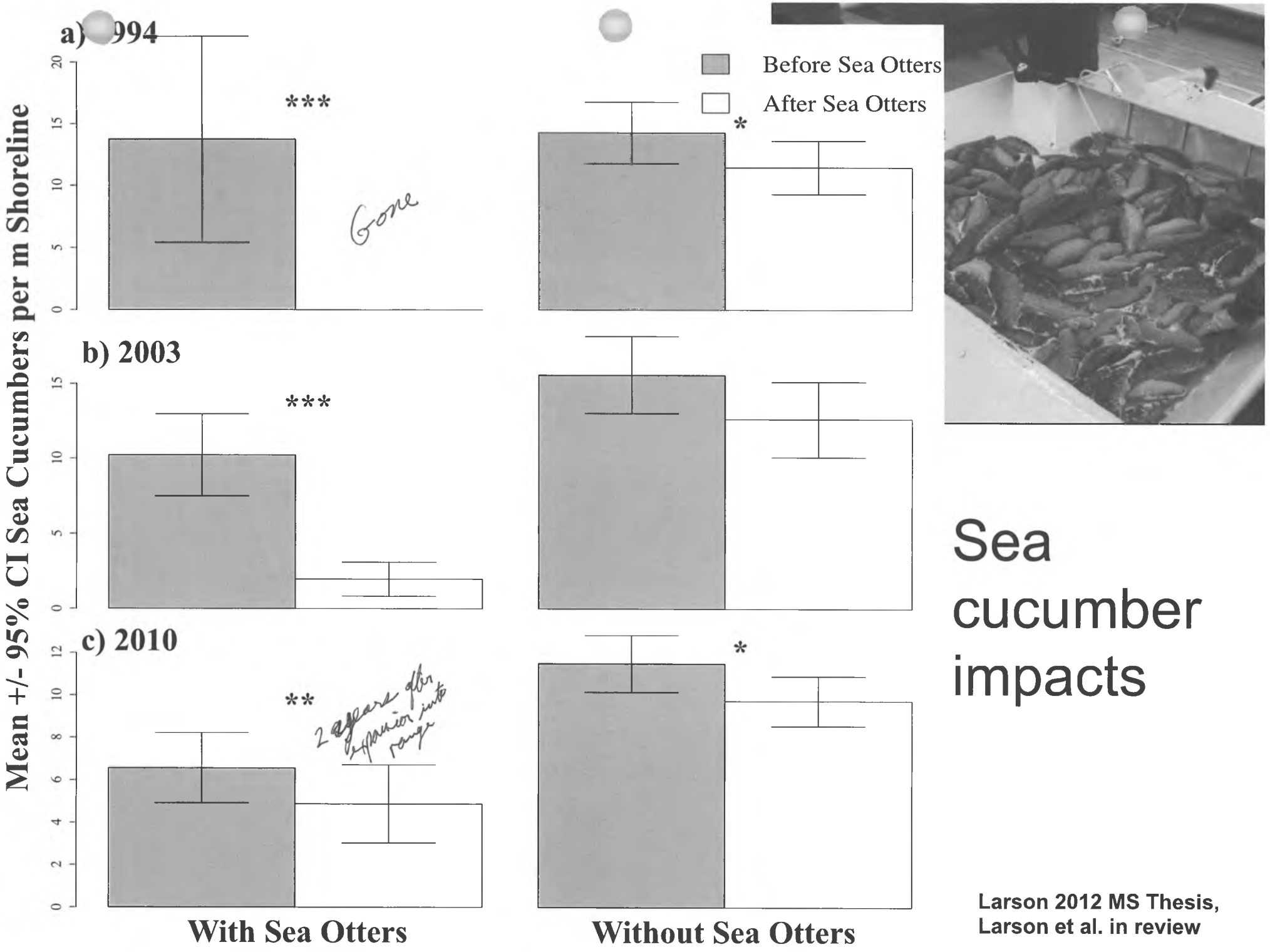
2010 sea otter distribution

ADF&G subdistricts no longer commercially viable

ADF&G subdistricts still commercially viable

ADF&G subdistricts with little fishing effort or currently unaffected by sea otters

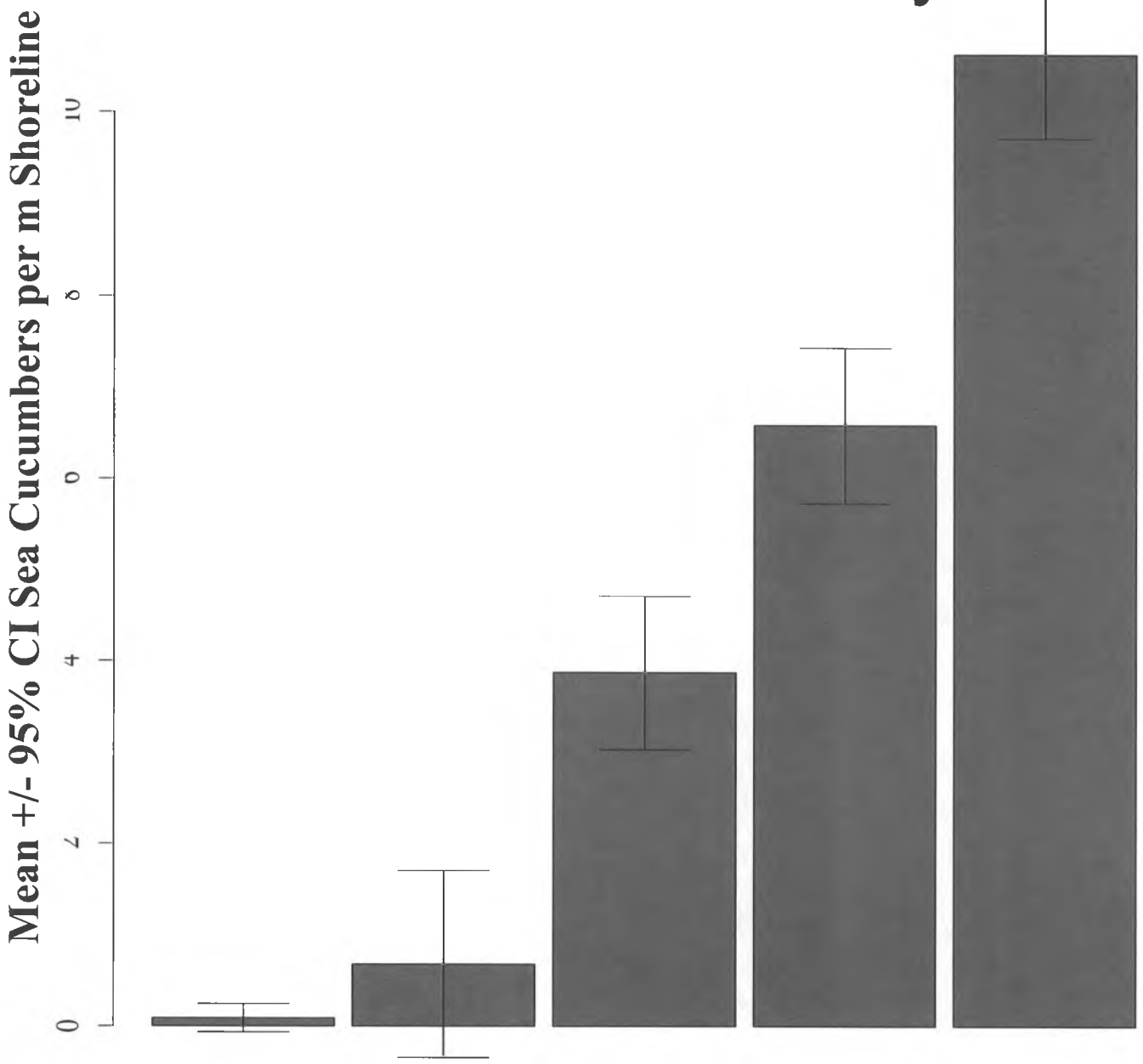
Preliminary, do not distribute. Source : ADF&G 2011, Esslinger et al. 2009 and USFWS 2011.



Sea cucumber impacts

Larson 2012 MS Thesis,
Larson et al. in review

Sea cucumber density

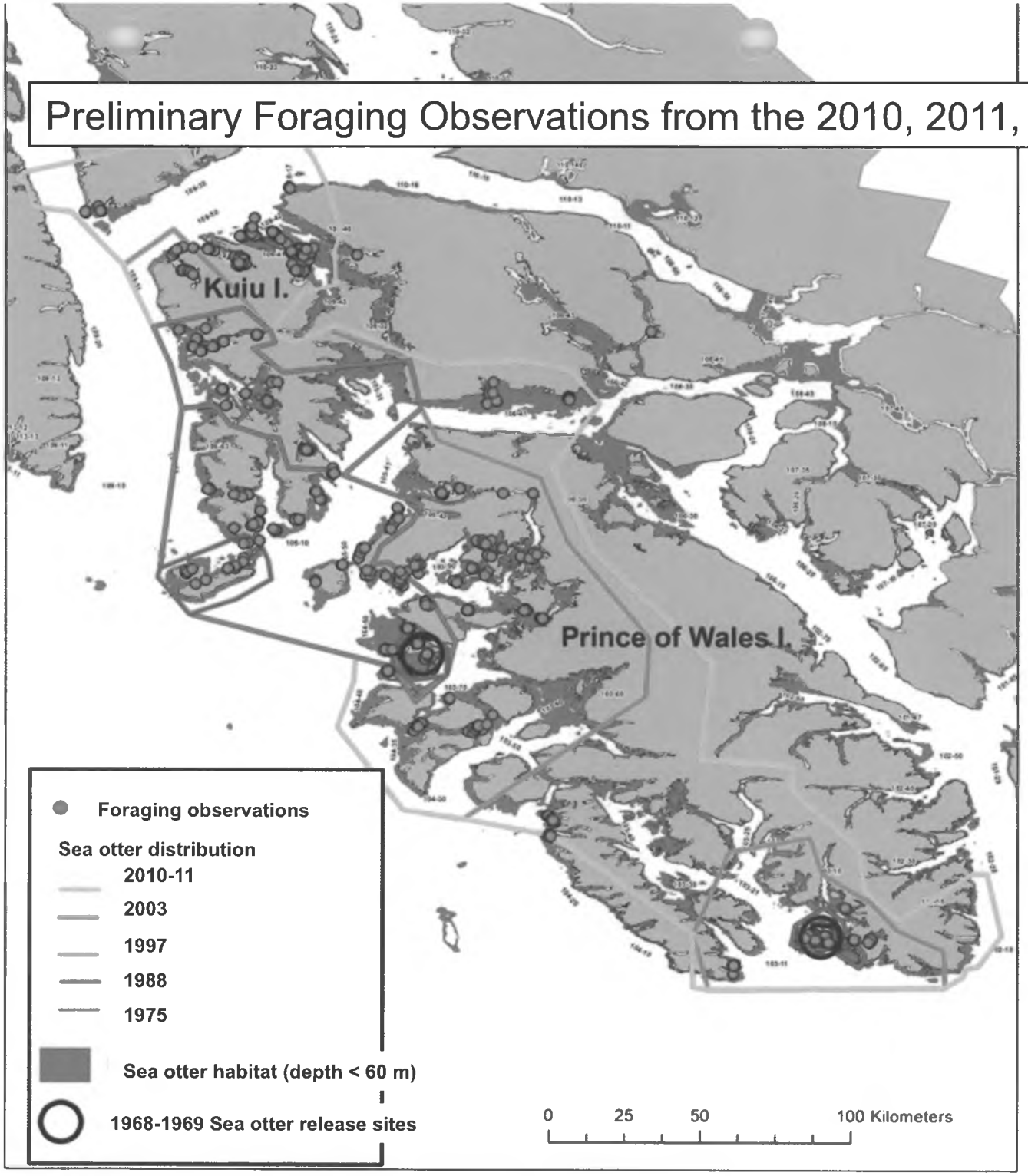




Larson 2012 MS Thesis,
Larson et al. in review


Foraging
data collection

Preliminary Foraging Observations from the 2010, 2011, and 2012 field seasons



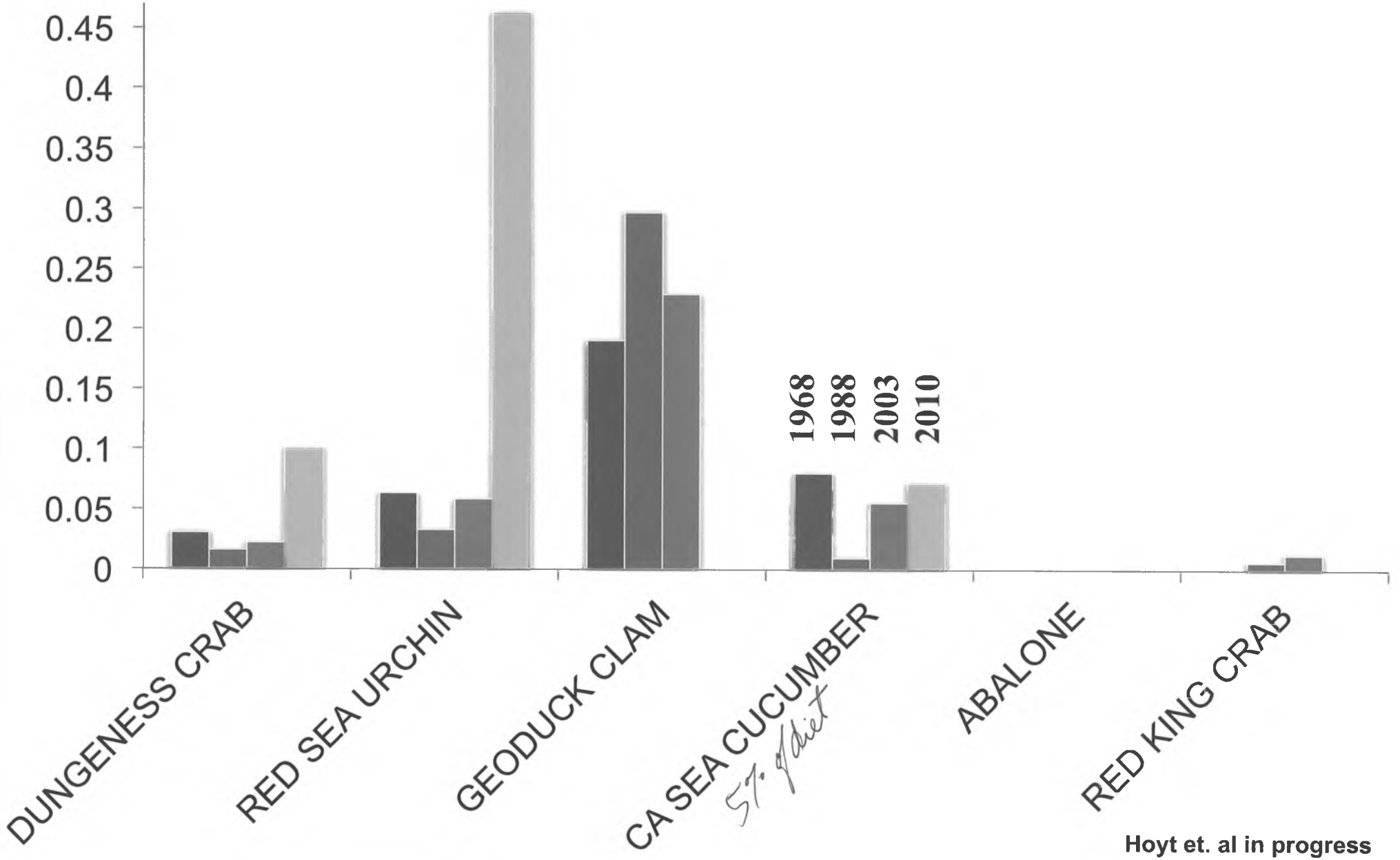
6117 foraging dives

9 sampling areas

699 foraging bouts

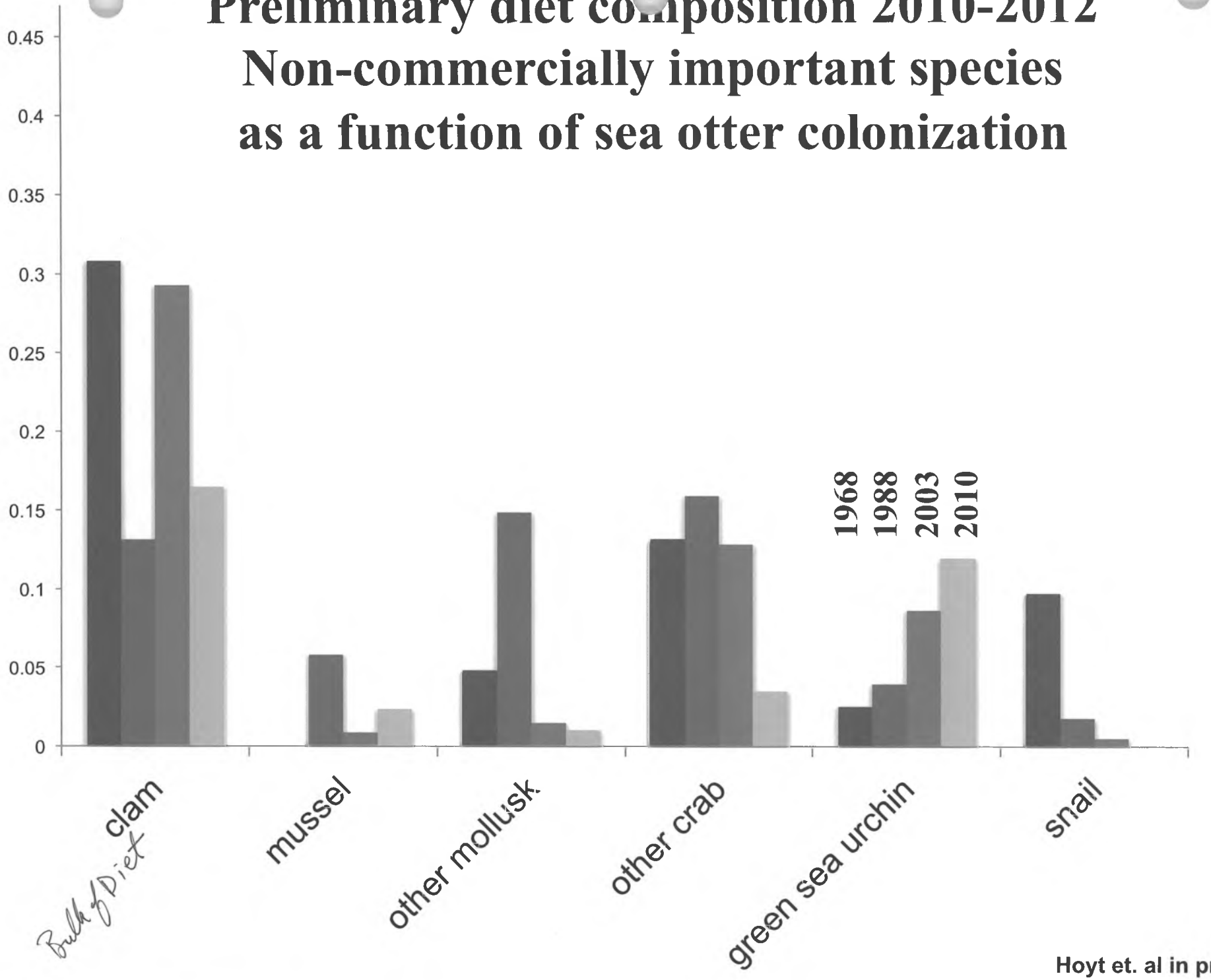
Hoyt et. al in progress

Preliminary diet composition 2010-2012
Commercially important species
as a function of sea otter colonization



Hoyt et. al in progress

Preliminary diet composition 2010-2012
Non-commercially important species
as a function of sea otter colonization



Hoyt et. al in progress

Much information still needed…

1. Other roles of sea otters
   a. role in kelp forest ecosystem
   b. positive fishery impacts (ex. herring, rockfish, salmon)
   c. tourism
2. Are areas without otters suitable otter habitat? Where are they likely to expand?
3. Standing stock biomass of Dungeness crab in the region
4. Changes in fisheries

   e.g. compression of Dungeness fleet
5. Otter distribution and abundance pre-fur trade & shellfish distribution and abundance at that time

Thank you!



02/28/13 Overview: Chinook Salmon Bycatch #2

<TARGET><BILL></BILL><SUBJECT>02-28-13 Overview Chinook Salmon Bycatch #2</SUBJECT><COMM>HFSH28</COMM></TARGET>

Inshore Salmon Savings Incentive Plan – SSIP

Managing Chinook Bycatch for the Bering Sea Inshore Pollock Sector



118 AFA catcher vessels
Deliver RSW
Dutch + floater +
to Kingcove.

Bering Sea Pollock Fishery Chinook Bycatch Regulations

- New regulations for Chinook salmon came into place in starting 2011 – Amendment 91
- Implemented a Hard Cap on Chinook salmon bycatch in the Bering Sea pollock fishery
- Provided 3 Hard Cap options

Previously Triggered closer areas exemption to Rolling Hot Spot still in ↑ place for chum salmon C/P

Amendment 91

- Three Hard Cap Options:

1. 60,000 Chinook Hard Cap & 47,591 Performance Standard with Incentive Plan Agreement (IPA) incentive plan agreement.

Add choice to participate

2. 47,591 Chinook Hard Cap with no vessels participating in an IPA

3. Up to 28,496 Chinook in an Opt Out Pool for vessels choosing not to participate in an IPA when a portion of the fleet does participate in an IPA.

IPA Requirements

1. Provide incentives at the individual vessel level
2. Incentivize vessels to avoid Chinook bycatch at all levels of abundance in all years
3. Reward vessels that successfully avoid Chinook and/or penalize vessels that fail to avoid Chinook

Excluder device 30-35% approx 40% but stronger sewing larger chinook can get out

Sea state Co. – move to avoid high bycatch areas – Active web site on their boat how stand against others + also not spot weekly or scores.

IPA Requirements

4. Incentives must influence fishing decisions at levels below the hard cap

5. Hold Bycatch to a Performance Standard of 47,591 in most years

IPA Requirements

- The Incentive Plan Agreement must describe how each vessel will manage their bycatch to keep total bycatch below the sector level regulatory Performance Standard
  - The Agreement must contain rules to prevent the sum of vessel bycatch within a sector from exceeding that sector's portion of 47,591 in any 3 years within a consecutive 7 year period

Amendment 91

Inshore sectors

- Options 1 & 2 Include sub allocations to each pollock sector.

    1. CDQ
    2. Catcher/Processor
    3. Mothership
    4. Inshore

Sector Hard Cap Limits

1. HARD CAP AVAILABLE IN ONLY 3 OF 7 YEARS
2. EXCEEDING THE PERFORMANCE STANDARD – NOT REACHING THE HARD CAP - COUNTS AS ONE OF THE 3 YEARS

	Performance Standard - 47,591	IPA Hard Cap - 60,000
All Sectors	47,591	60,000
Inshore	26,484	33,390
Mothership	3,707	4,674
C/P	13,516	17,040
CDQ	3,883	4,896

3 out of 7 years.

Sector Performance Standard Allocations

1. THE **PERFORMANCE STANDARD** IS THE BYCATCH LIMIT TYPICALLY IN PLAY
2. ALLOCATIONS MADE SEASONALLY
3. ALLOCATIONS MADE TO THE VESSEL LEVEL

	Performance Standard - 47,591	IPA Hard Cap - 60,000
All Sectors	47,591	60,000
Inshore	26,484	33,390
Mothership	3,707	4,674
C/P	13,516	17,040
CDQ	3,883	4,896

INSHORE SECTOR'S SALMON SAVINGS INCENTIVE PLAN - SSIP -





IPAs found at: http://www.fakr.noaa.gov/sustainablefisheries/bycatch/default.htm

Inshore SSIP Rules

- Each inshore vessel receives a Base Cap Allocation
  - its share of the 26,484 Inshore Performance Standard.

- And an Annual Use Limit
  - its share of the 33,390 Inshore Hard Cap Limit.

- Allocations and limits are made Pro Rata to each vessel's pollock allocation.

95,96,97 historic pollock allocation % of Chinook use limit

Inshore SSIP Rules

- Vessels may not exceed their Base Cap Allocation unless they earn Salmon Savings Credits - The ***Incentive*** in SSIP

1 credit for each 3 salmon below

Inshore SSIP Rules

- Salmon Savings Credits
  - When a vessel's annual Chinook bycatch is below its Base Cap, Salmon Savings Credits are earned.
  - Savings Credits bridge the gap between the Performance Standard and the Hard Cap Limit.
  - One credit earned for every 3 salmon avoided below the Base Cap.

Inshore SSIP Summary

credits are cumulative for 5 years then expire 1st in 1st out + can only use up to the hard cap limit

- Under the Inshore SSIP program the 33,390 Hard Cap Limit is not a "Hard Cap" in the usual sense.

- Inshore SSIP participants have their share of the 33,390 Limit available to them only if they earned the necessary Salmon Savings Credits.

- The SSIP rules make it impossible for participants to continuously approach bycatch levels at, or even near, the Hard Cap Limit.

Inshore SSIP Summary

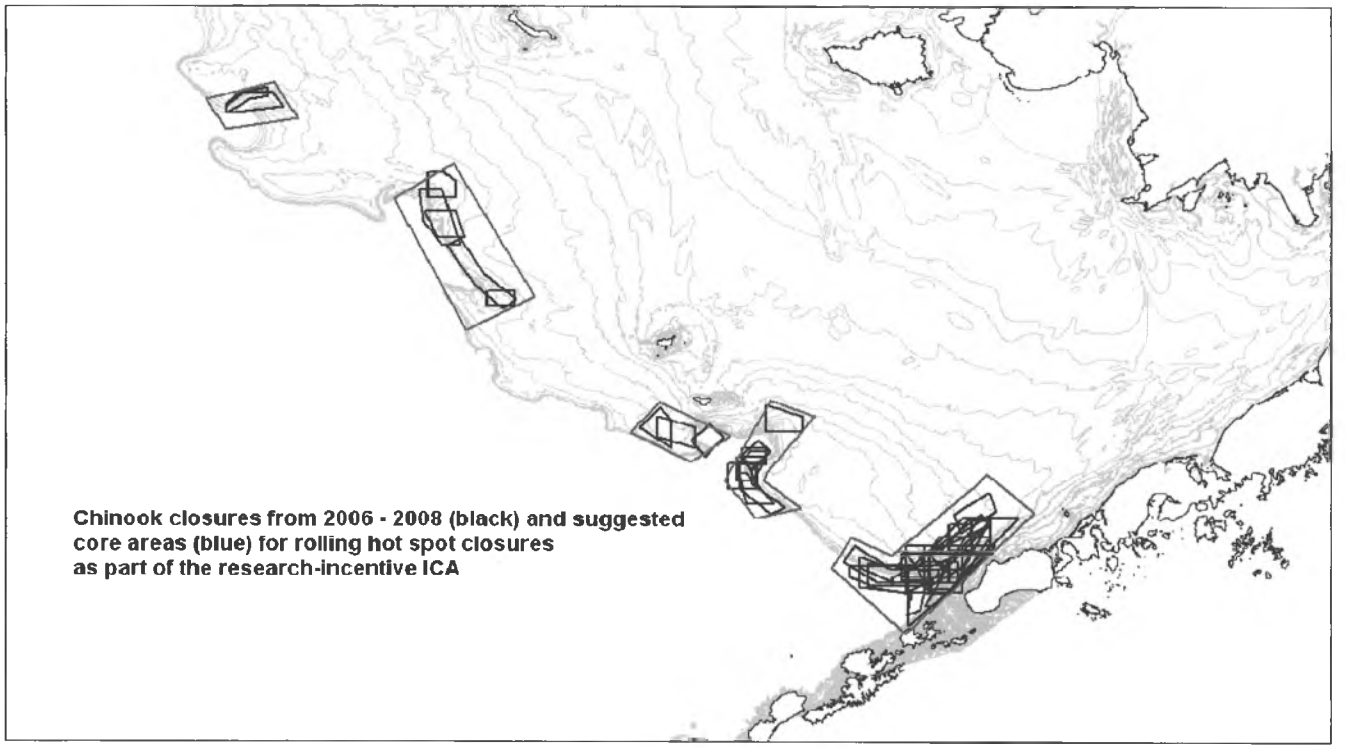
- SSIP Program contains mechanisms that guarantees average bycatch will be at or below the Performance Standard level.

- The 26,484, ***or less***, bycatch average is not theoretical or experimental; but rather an **absolute fact**.

- The Inshore SSIP program provides incentives to keep inshore average annual bycatch at or below ***21,750 Chinook salmon.***

Fishing Grounds Access Controls

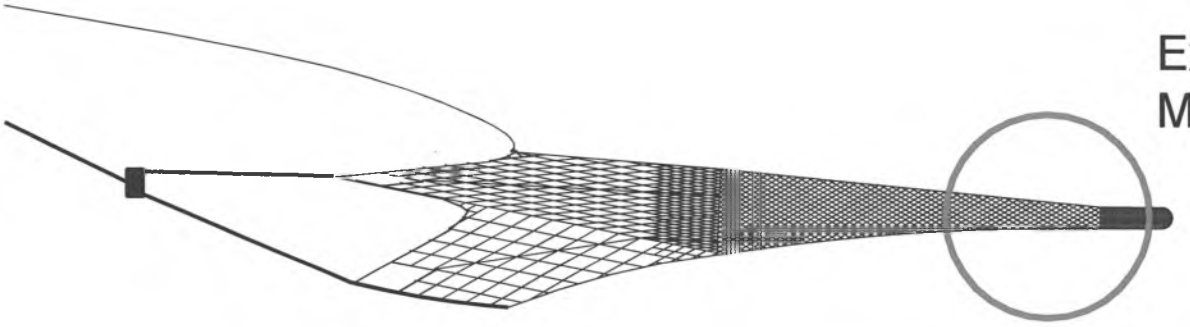
- Includes a Rolling Hot Spot Program during times with low Chinook bycatch
- Includes a Chinook Conservation Closure in the A Season



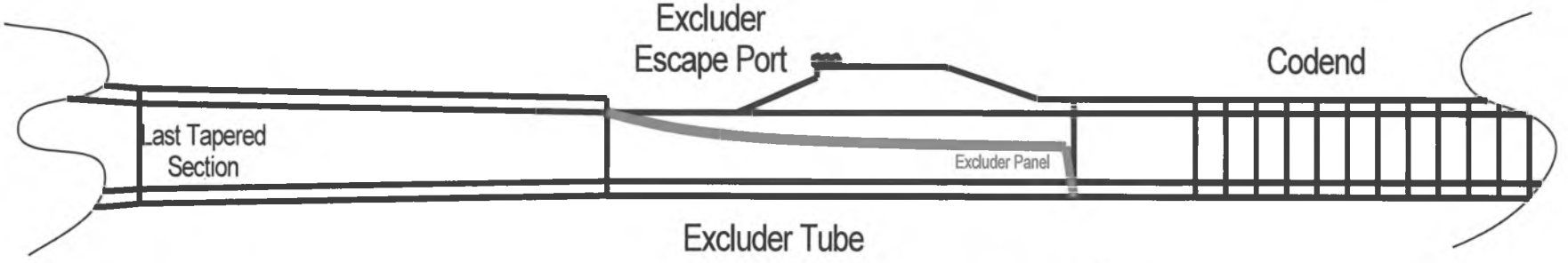
Salmon Excluder Update

February 2013

Salmon Excluder



Excluder Location in a Midwater Trawl



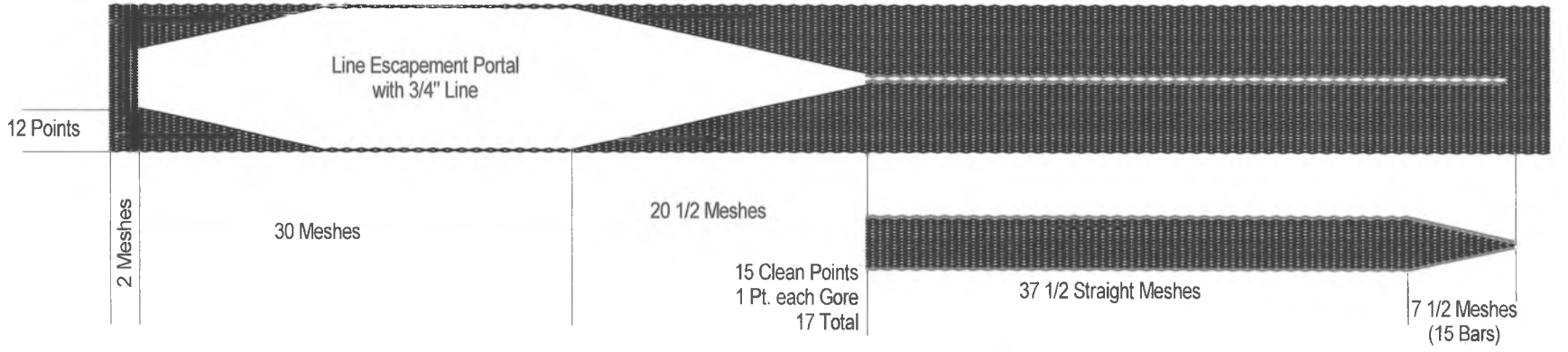
12 yr. ago.

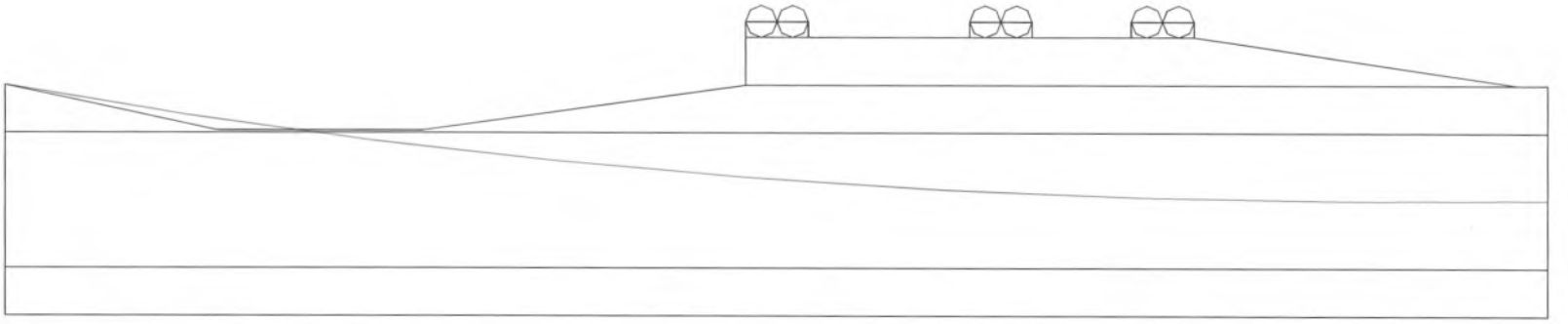
35% chinook escape
1% pollock escape.

2010 EFP Excluder

now does not lower efficacy of the Trawl

Tube Excluder Section
100 Meshes Long by 46 Points Wide





Model of 2010 Excluder in Flume Tank

St Johns Newfoundland.



Results of excluder testing on Chinook Escapement; 2009 - 2010

Test /date	Vessel	Codend salmon #	Recap salmon #	Salmon escape %
Winter 2009 P1	Pac Prince	726	91	11.1%
Winter 2009 P2	Pac Prince	1079	209	16.2%
Winter 2009	Starbound	720	70	8.9%
Fall 2009 P1 (chum)	Starbound	196	5	2.5%
Fall 2009 P2 (chum)	Starbound	643	34	5.0%
Winter 2010 P1	Pac Prince	122	62	33.7%
Winter 2010 P2	Pac Prince	37	25	40.3%
Winter 2010 P1	Starbound	150	49	24.6%
Winter 2010 P2	Starbound	38	21	35.6%

higher up catches

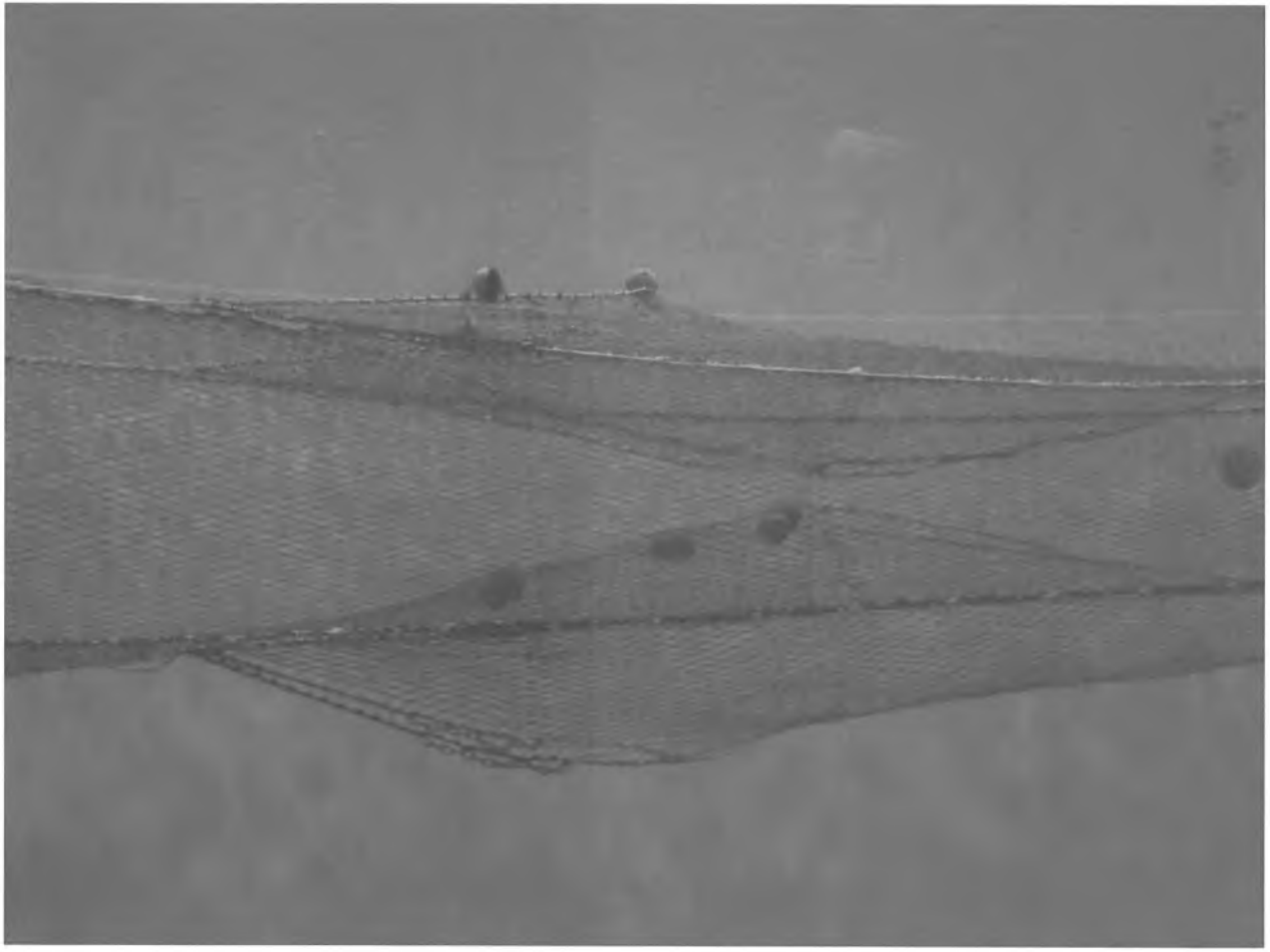
factory

Future excluder design

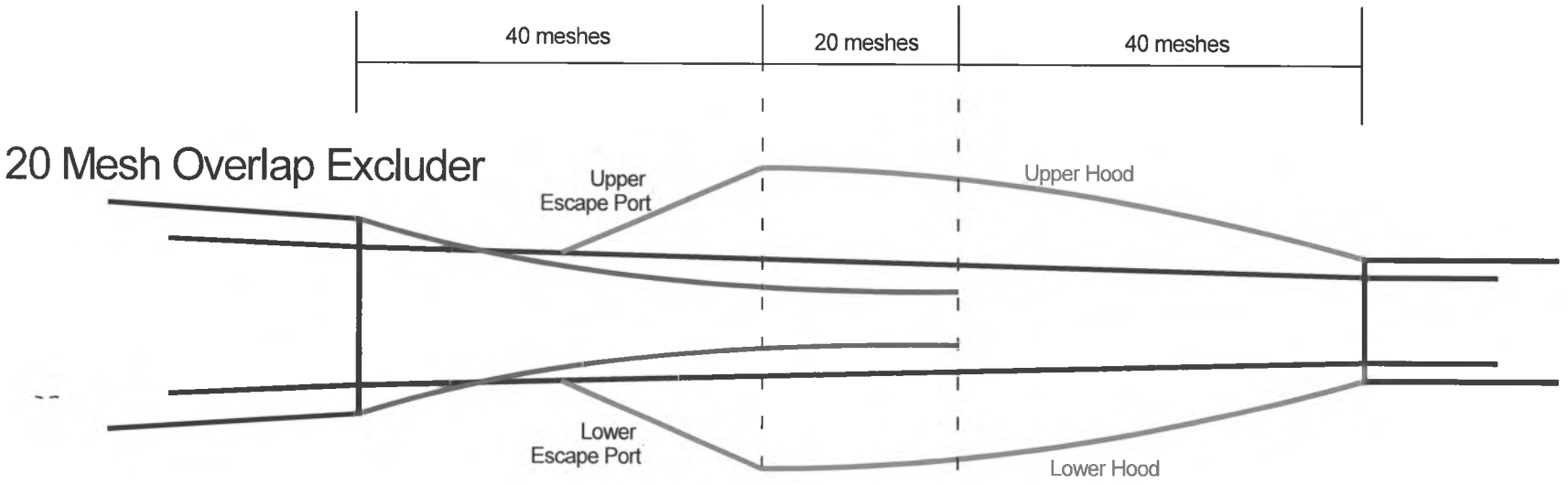
- Provide multiple escapement routes
- Increase both Chinook and chum salmon escapement rates
- Eliminate "touchy" excluder tuning issues
- Stabilize the design for wider horsepower ranges and fishing conditions.

Future excluder design – Over/Under Excluder Concept

Over/Under Excluder – 1:2 scale model in the flume tank. October 2011..



Over/Under Excluder Development

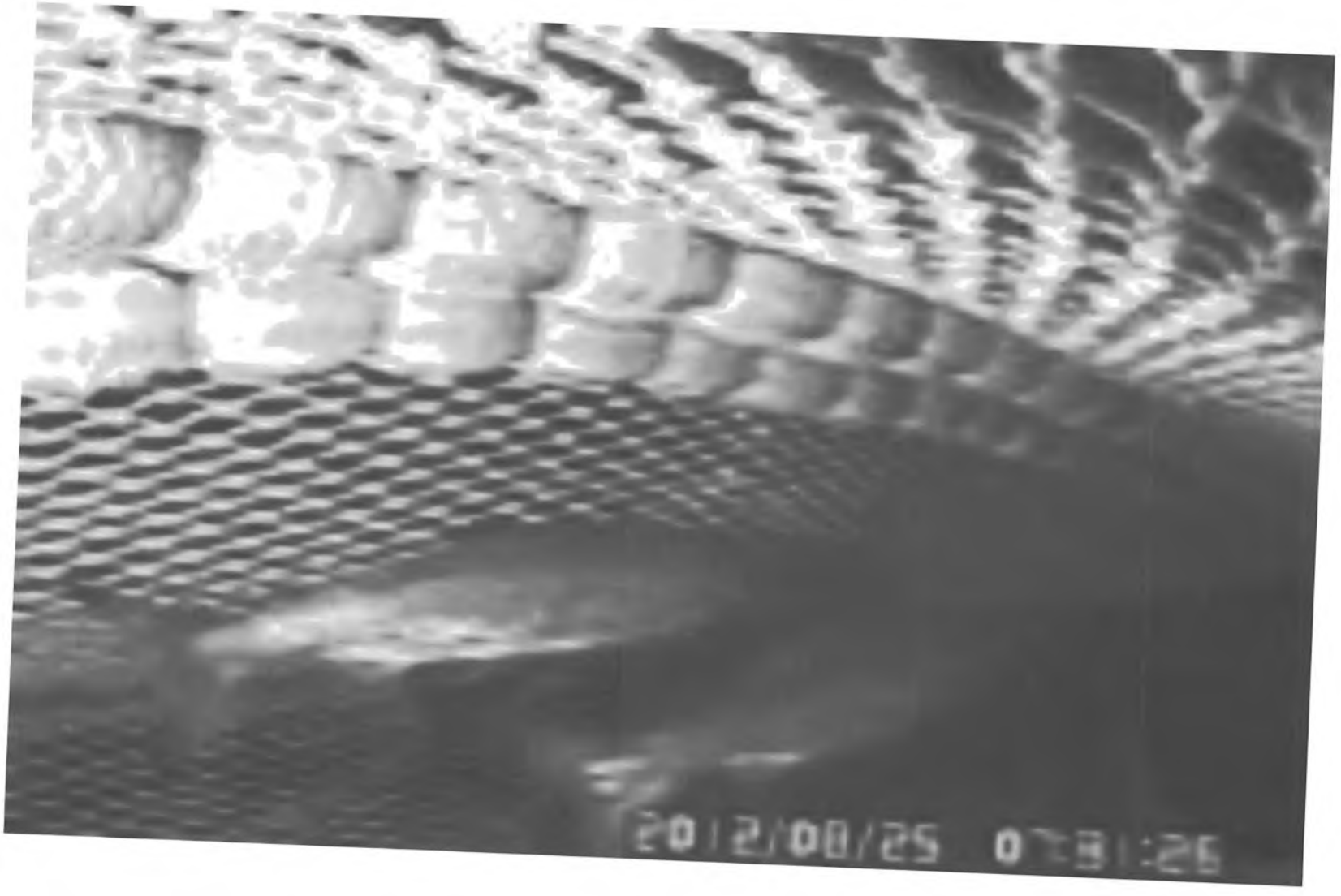


clear escapement ~ 20%

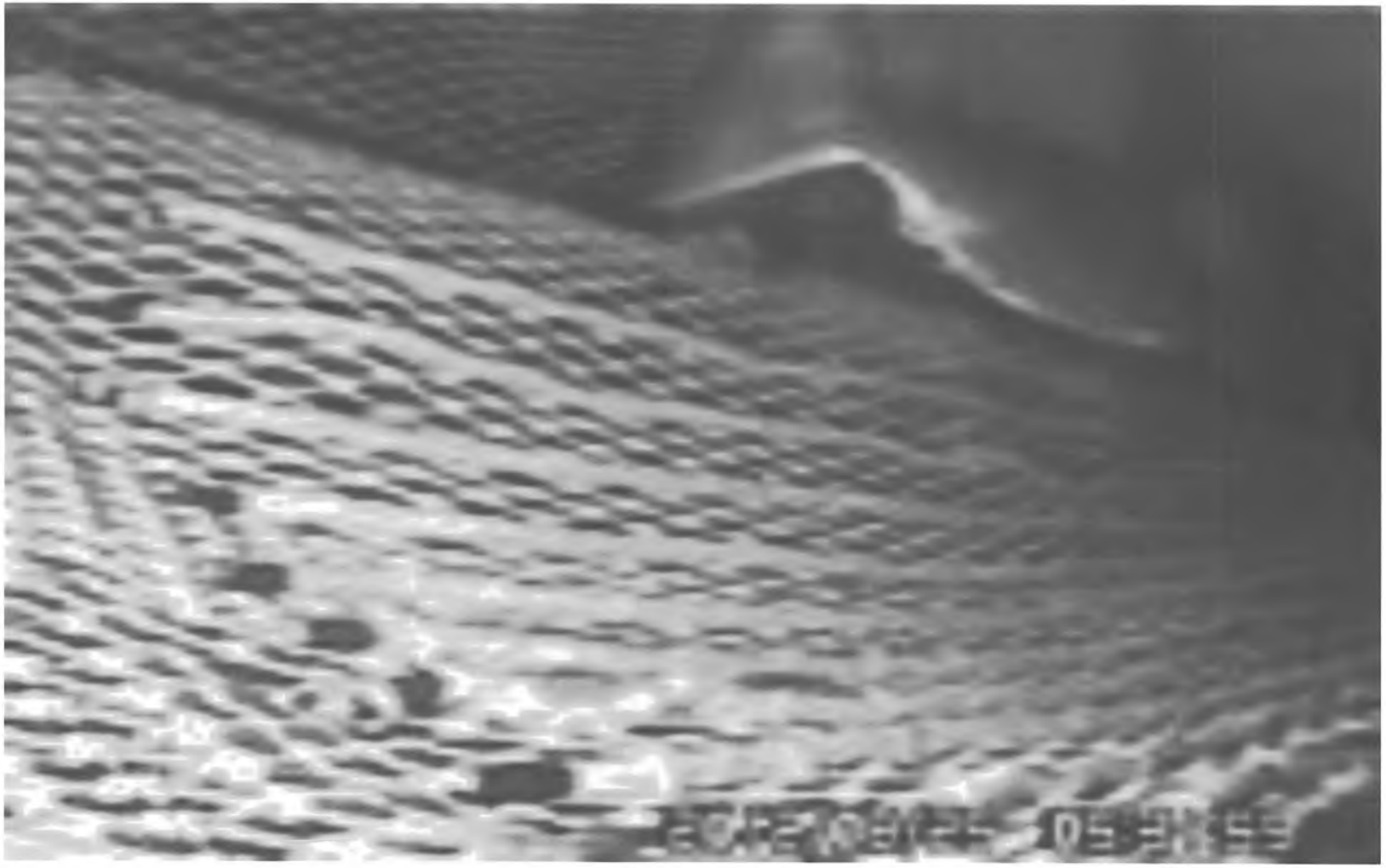
Over/Under Excluder Development

- Initial test fishing with the Over/Under Excluder took place during the 2012 B Season
- 2012 Test Goals:
  - Identify design flaws
  - Refine initial design characteristics
  - Obtain rough escapement estimates for both Chinook and chum salmon.

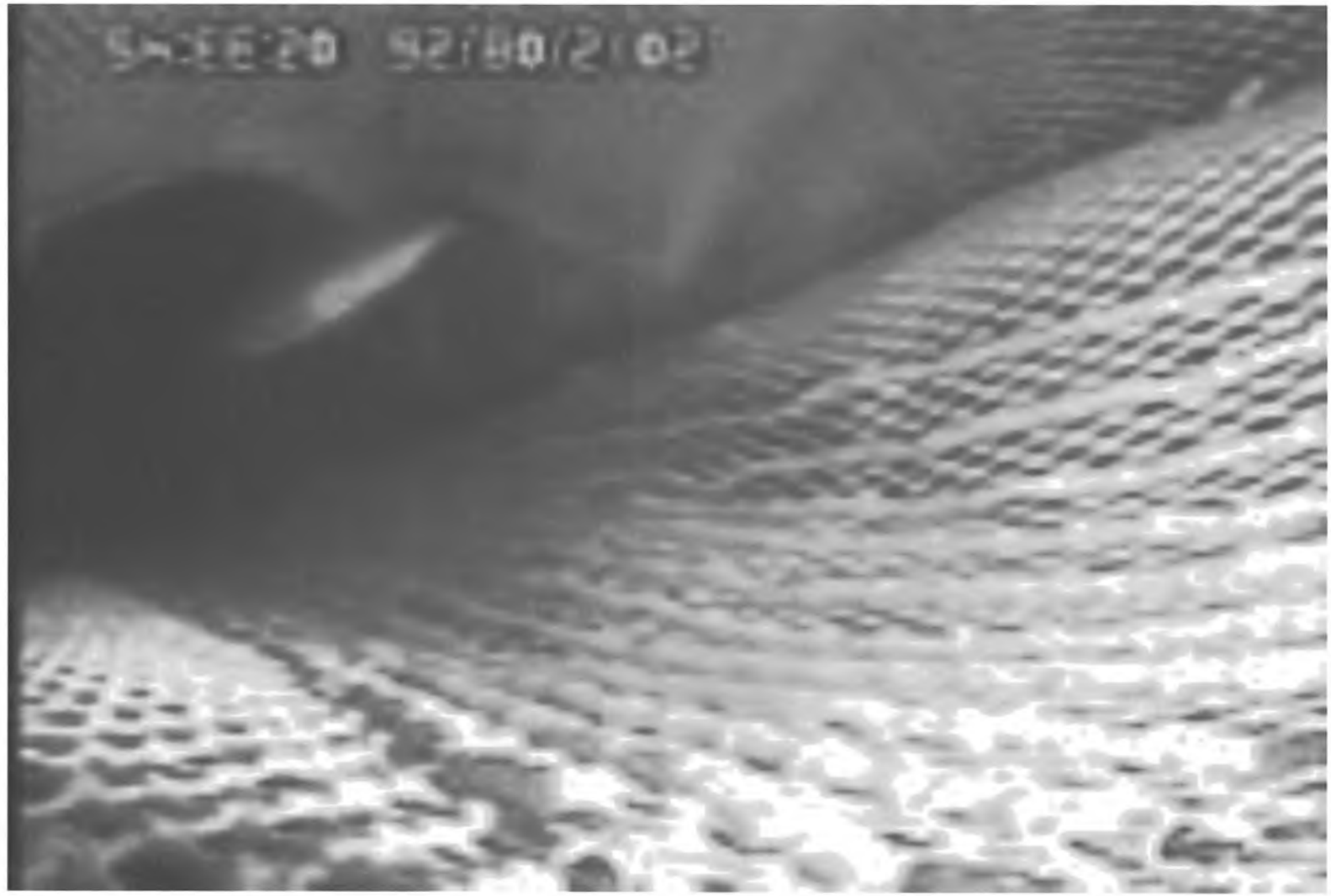
Over/Under Photos



Over/Under Photos



Over/Under Photos



Salmon Bycatch in the Gulf of Alaska & Bering Sea Groundfish Fisheries

Alaska House Fisheries Committee
February 28, 2013

Becca Robbins Gisclair
Yukon River Drainage Fisheries Association
Alaska Marine Conservation Council



Yukon River Drainage Fisheries Association
Promoting healthy, wild salmon fisheries on the Yukon River

Chinook Salmon Bycatch: Background

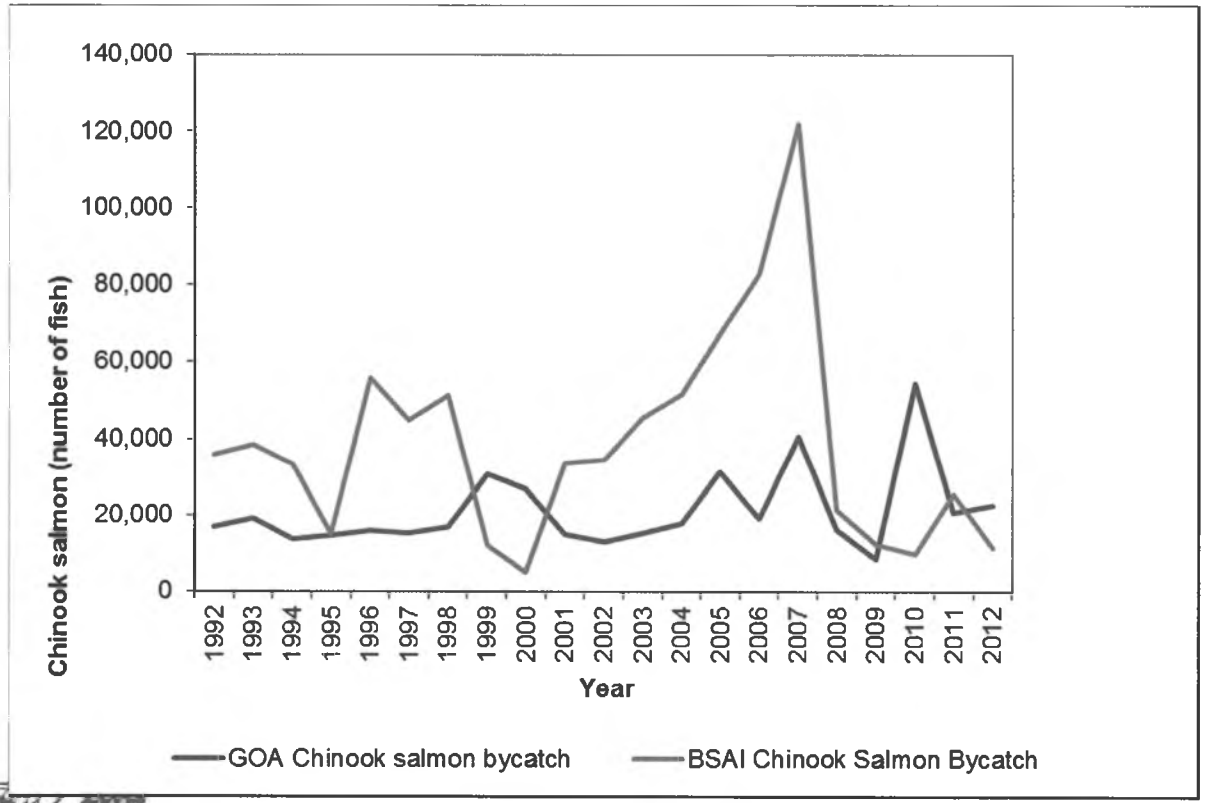
- Pollock fishery catches salmon (mainly Chinook and chum) as bycatch.
- Salmon caught in the pollock fishery is a "prohibited species" and must be counted and then discarded or donated to food banks.
- Gulf of Alaska: Salmon caught as bycatch in the non-pollock fisheries as well.





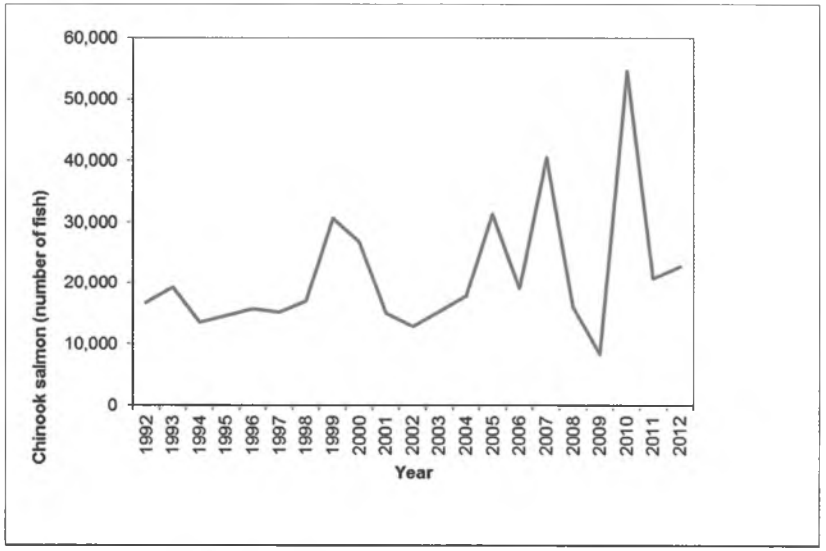
Walleye pollock (*Theragra chalcogramma*)

Chinook Salmon Bycatch: Gulf of Alaska & Bering Sea



Gulf of Alaska Chinook Salmon Bycatch: Trends

Chinook Salmon Bycatch: GOA Groundfish Fisheries



Percentage of bycatch by fishery

Year	Pollock	Other Groundfish
1991	22%	78%
1992	49%	51%
1993	70%	30%
1994	53%	47%
1995	34%	66%
1996	72%	28%
1997	62%	38%
1998	84%	16%
1999	86%	14%
2000	69%	31%
2001	63%	37%
2002	40%	60%
2003	29%	71%
2004	74%	26%
2005	89%	11%
2006	84%	16%
2007	87%	13%
2008	66%	34%
2009	38%	62%
2010	82%	18%
2011	67%	33%

Gulf of Alaska Chinook Salmon Bycatch: Stock of Origin



Stocks Present Include:

- Coastal southeastern Alaska
- Other
  - Includes Western GOA (stock grouping includes Deshka, Karluk, Kasilof, Kenai, Ninilchik, Willow)
- Pacific Northwest
- British Columbia

Because of limited samples: no percentage information, just presence/absence

Gulf of Alaska: Chinook Salmon Stock Status

- 7 Stocks of Concern (6 Upper Cook Inlet & Karluk R.);
- 2012: setnet fishery almost completely shut down, Kenai River was closed to all recreational Chinook salmon fishing;
- 2012: Only 4 out of 12 escapement goals were met in Upper Cook Inlet;
- Disaster Declaration for Upper Cook Inlet: Economic losses estimated at almost $27.7 million to commercial fisheries and direct and indirect losses to sport fisheries. Additional losses to subsistence.

Gulf of Alaska Chinook Salmon Bycatch: Current Management

Pollock Fishery:

- Hard cap of 25,000, started in 2012.

Non-pollock Fishery:

- Council considering hard caps, range 5,000-12,500;
- Scheduled for final action June 2013.

Next Steps

- Central Gulf of Alaska trawl catch share program.

Gulf of Alaska Chinook Salmon Bycatch: Recommendations

Pollock Fishery:

- Reduce hard cap of 25,000 by at least half;
- Current cap exceeds 10 year average bycatch of 18,400.

Non-pollock Fishery:

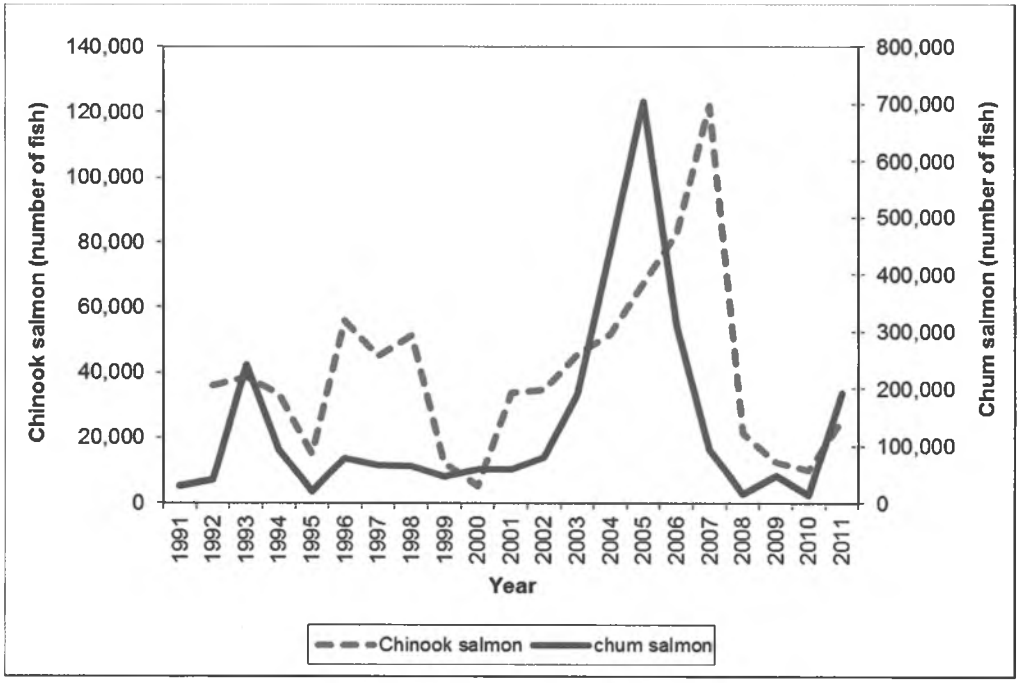
- Adopt hard cap of 5,000;
- Reduce bycatch from 10 year average of 5,800.

Trawl Catch Share Program

- Additional and **significant** reductions in salmon bycatch.



Bering Sea Chinook Salmon Bycatch: Trends

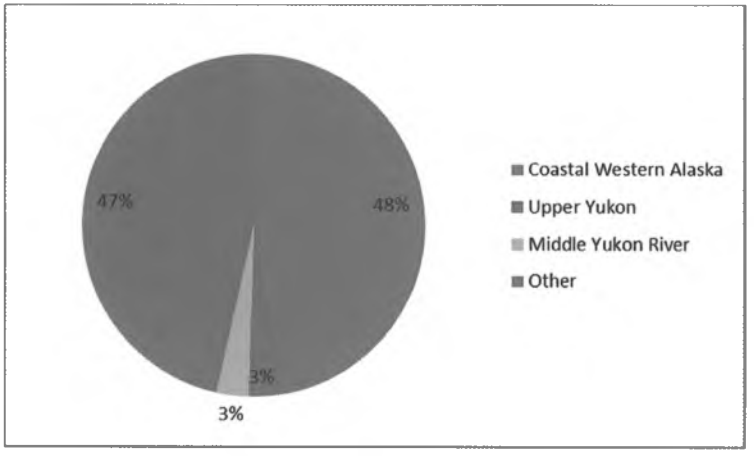


* Chum salmon bycatch occurs in B season only

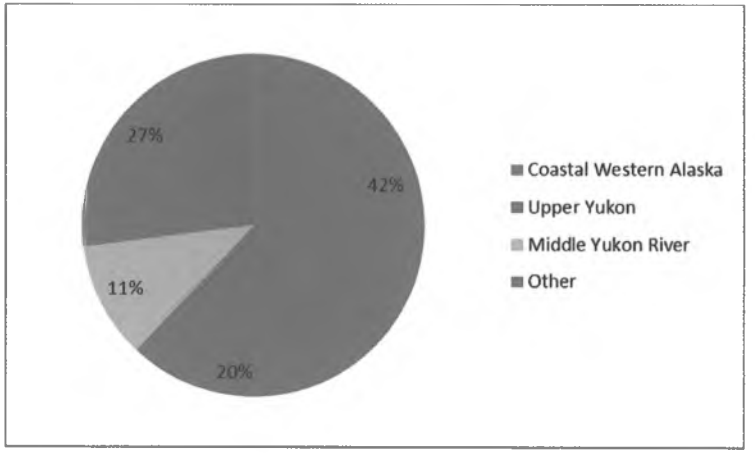
Bering Sea Chinook Salmon Bycatch: Stock of Origin

Genetic Stock Composition

2005-2007



2010



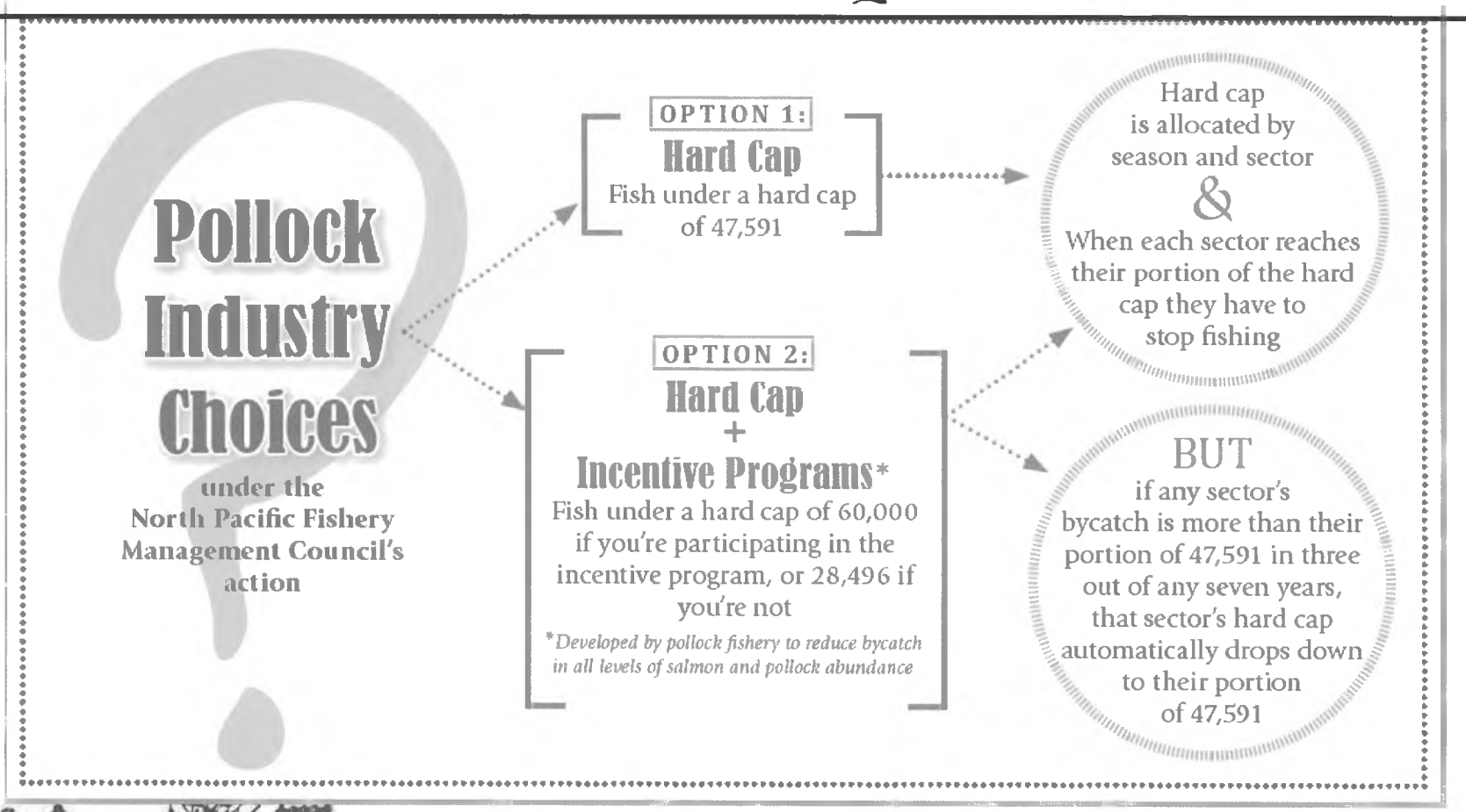
Coastal Western Alaska includes Kuskokwim, Lower Yukon, Norton Sound and Bristol Bay

Other includes N. Alaska Peninsula, **Cook Inlet**, the Pacific Northwest, Southeast Alaska, the Pacific Northwest (lower 48) and Russia

Bering Sea: Chinook Salmon Stock Status

- 2 Stocks of Concern: Yukon River Chinook and Norton Sound;
- Disaster declarations for 2008-2012 for the Yukon River and 2011-2012 for the Kuskokwim River;
- Yukon River:
  * Subsistence severely restricted: 2011 and 2012 harvest well below amounts necessary for subsistence (ANS);
  * No directed commercial harvests of Chinook salmon;
  * Canadian escapement goal only been met in 2 out of the last 5 years;
  * Mean run size of Canadian-origin Chinook salmon) declined 45% for the period 1998-2010 compared to 1982-1997;
- 2012: severe subsistence restrictions due to low returns on the Kuskokwim as well.

Bering Sea Chinook Salmon Bycatch: Current Management



Yukon River Drainage Fisheries Association
Promoting healthy, wild salmon fisheries on the Yukon River

Bering Sea Chinook Salmon Bycatch: Recommendations

Reduce overall cap by at least half

- Western Alaska groups, the Alaska Board of Fisheries, Federal Subsistence Board and many others requested a cap of 30,000 initially;
- 60,000 hard cap could result in catch of over 40,000 Western Alaska fish according to 2010 genetic data (without adjusting for marine mortality).





Pollock spills from a trawl net onto the deck of the Saga Sea, a factory trawler fishing in the Bering Sea, Alaska.
© Natalie Fobes/Corbis



Questions?



01/28/14 Overview: Alaska Department of Fish and Game, Division of Commercial Fisheries

<TARGET><BILL></BILL><SUBJECT>01-28-14 Overview Alaska Department of Fish and Game, Division of Commercial Fisheries</SUBJECT><COMM>HFSH28</COMM></TARGET>

Alaska Department of Fish & Game
Division of Commercial Fisheries

Cora Campbell – Commissioner

Jeff Regnart – Director

Division of Commercial Fisheries Mission

Manage subsistence, commercial, and personal use fisheries in the interest of the economy and general well bring of the citizens of the state, consistent with the sustained yield principal, and subject to allocations through public regulatory processes

Division of Commercial Fisheries Primary Responsibilities

- Manage subsistence, commercial, and personal use fisheries within state waters
- Manage shellfish species and some groundfish out to 200 miles
- Conduct applied research on Alaska's aquatic resources
- Plan and permit salmon hatcheries and mariculture operations
- Negotiate fishing agreements subject to the Pacific Salmon Treaty and Alaska-Yukon Treaty
- Coordinate with federal and international fisheries management agencies

Division of Commercial Fisheries
Core Services

- Harvest management
- Stock assessment and applied research
- Aquaculture permitting
- Customer service and public involvement

Harvest Management

- Supporting the Board of Fisheries in establishing regulations and management plans
- Opening and closing fishing areas and setting fishing times
- Collecting harvest and biological data
- Writing annual management reports to synthesize information





Harvest Management Components

- **Inseason Management**
  - Employ a cadre of fisheries managers proximate to the fisheries
  - Managers have broad authority to open and close fisheries
- **Applied Science**
  - To ensure that management of Alaska's fisheries is consistent with the sustained yield principle

Southeast Alaska Salmon Seine Fishing



Crab Boat Setting Pots in the Bering Sea



Stock Assessment and Applied Research

- Salmon Escapement Enumeration:
  - Weirs, towers, sonar, foot/aerial surveys
- Juvenile salmon estimation
- Groundfish and shellfish surveys
- Herring spawn deposition and hydroacoustic surveys
- Aerial surveys for herring
- Dive surveys
- Biological, genetic, coded-wire tag sampling

Salmon Enumeration and Sampling







Salmon Enumeration and Sampling









And More…





Other Examples of Stock Assessments…

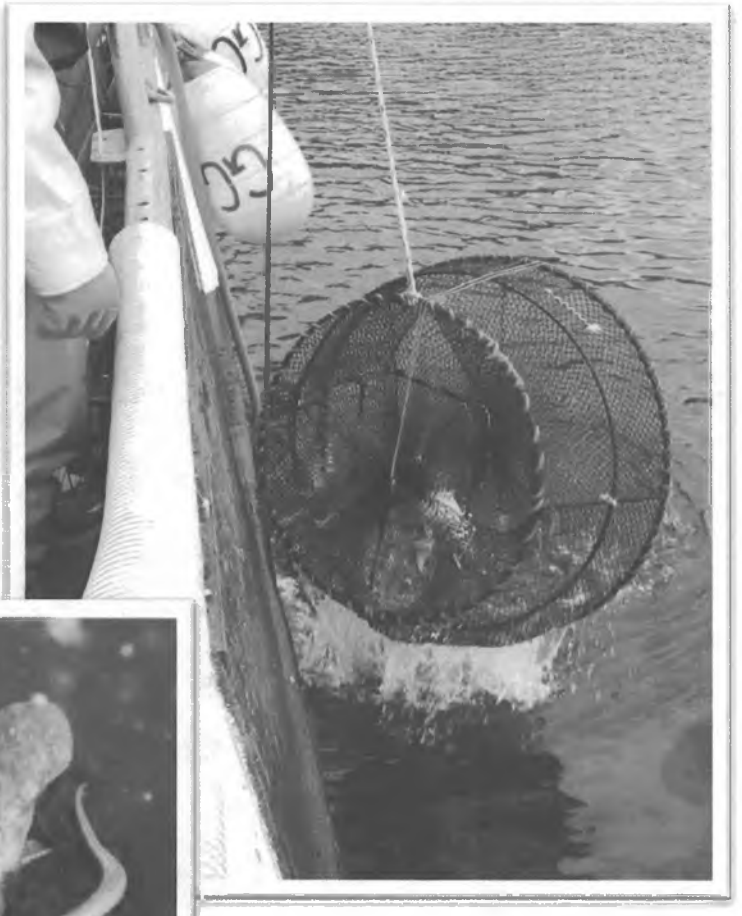


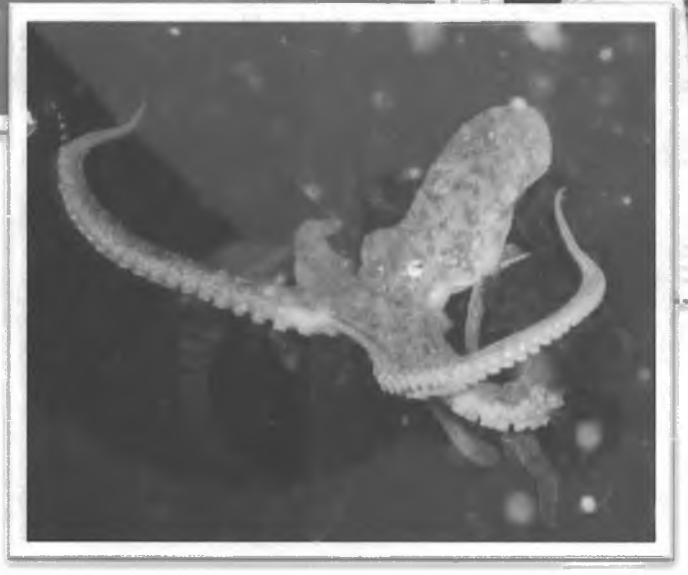




And Yet More...







Aquaculture Permitting



- Private nonprofit salmon hatcheries
- Aquatic shellfish hatchery
- Aquatic shellfish farms

Salmon Hatchery Program

- Department partners with operators to increase salmon harvests, while protecting wild stocks
- Our research has increased consumer confidence in Alaskan salmon by assuring the marketplace that these products come from a sustainable managed program
- Puts more dollars in fishermen's pockets

Hatchery / Wild Research Project

- Department partnered with hatchery operators to study interactions of hatchery stocks with wild stocks
- CIP funding and industry funding
- Long-term project will yield better salmon research and enhance our partnership with industry

Customer Service and Public Involvement

- Design and maintain division website
- Publish brochures and other informational materials on divisional programs
- Produce custom reports from fish ticket and other databases
- Develop and administer divisional publication policies and procedures

Laboratory Services

- Pathology Laboratory
- Coded Wire Tag and Otolith Aging Laboratory
- Genetic Stock Identification Laboratory



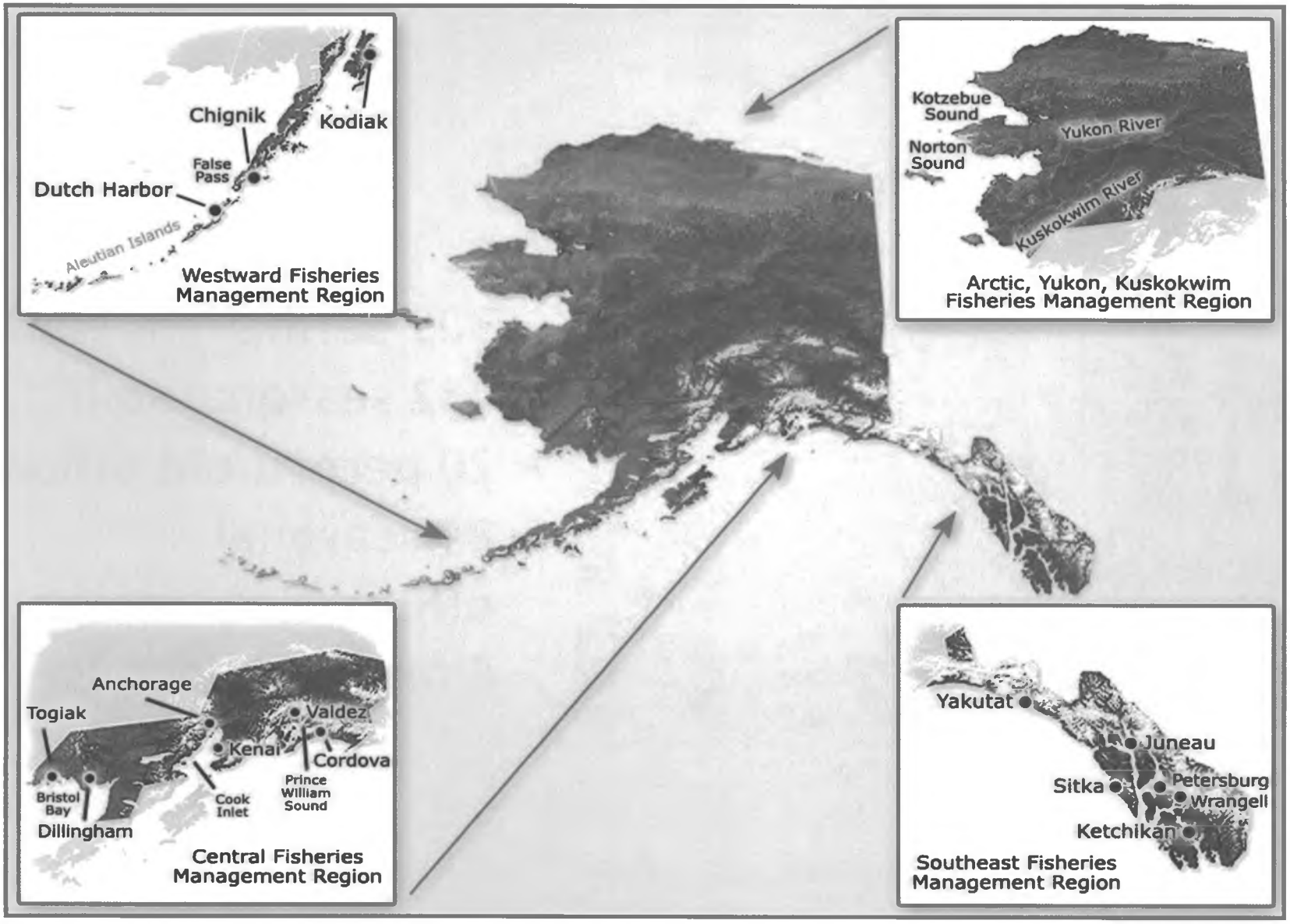
Data Processing

- Fish tickets systems
- eLanding electronic catch reporting system
- Internet-accessible inseason catch and escapement databases
- Geographical information system databases
- Internet-accessible news release database
- Seafood processor/buyer intent to operate system
- Commercial Operator Annual Reports (COAR)
- Databases for biological data

Organization of the Division

- Southeast Fisheries Management Region – Douglas
- Central Fisheries Management Region – Anchorage
- A-Y-K Fisheries Management Region – Anchorage
- Westward Fisheries Management Region – Kodiak
- Divisional Headquarters – Juneau

Fisheries Management Regions



Permanent and Seasonal Staff



Dive crew aboard the *R/V Kestrel* in 2002.

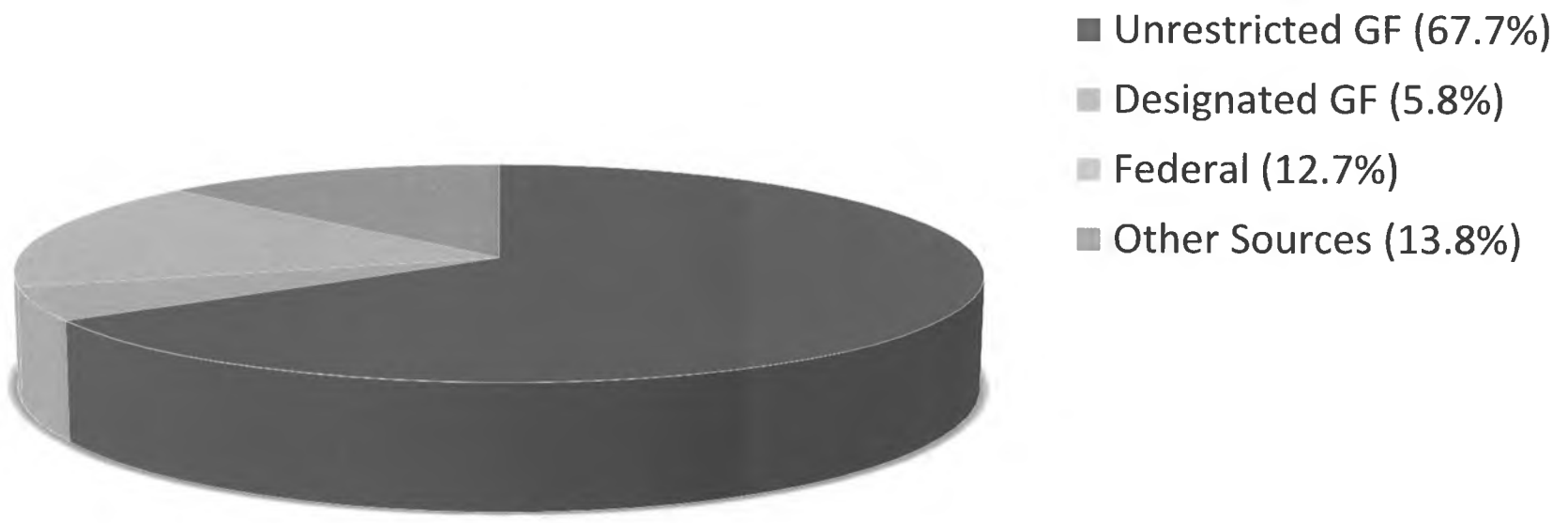
FY2015

- 309 permanent staff
- 432 seasonal staff
- 20 permanent offices
- 84 seasonal offices/field camps
- 6 research vessels

FY2015 Budget Request

Total Request = $73,260.8

(in thousands)

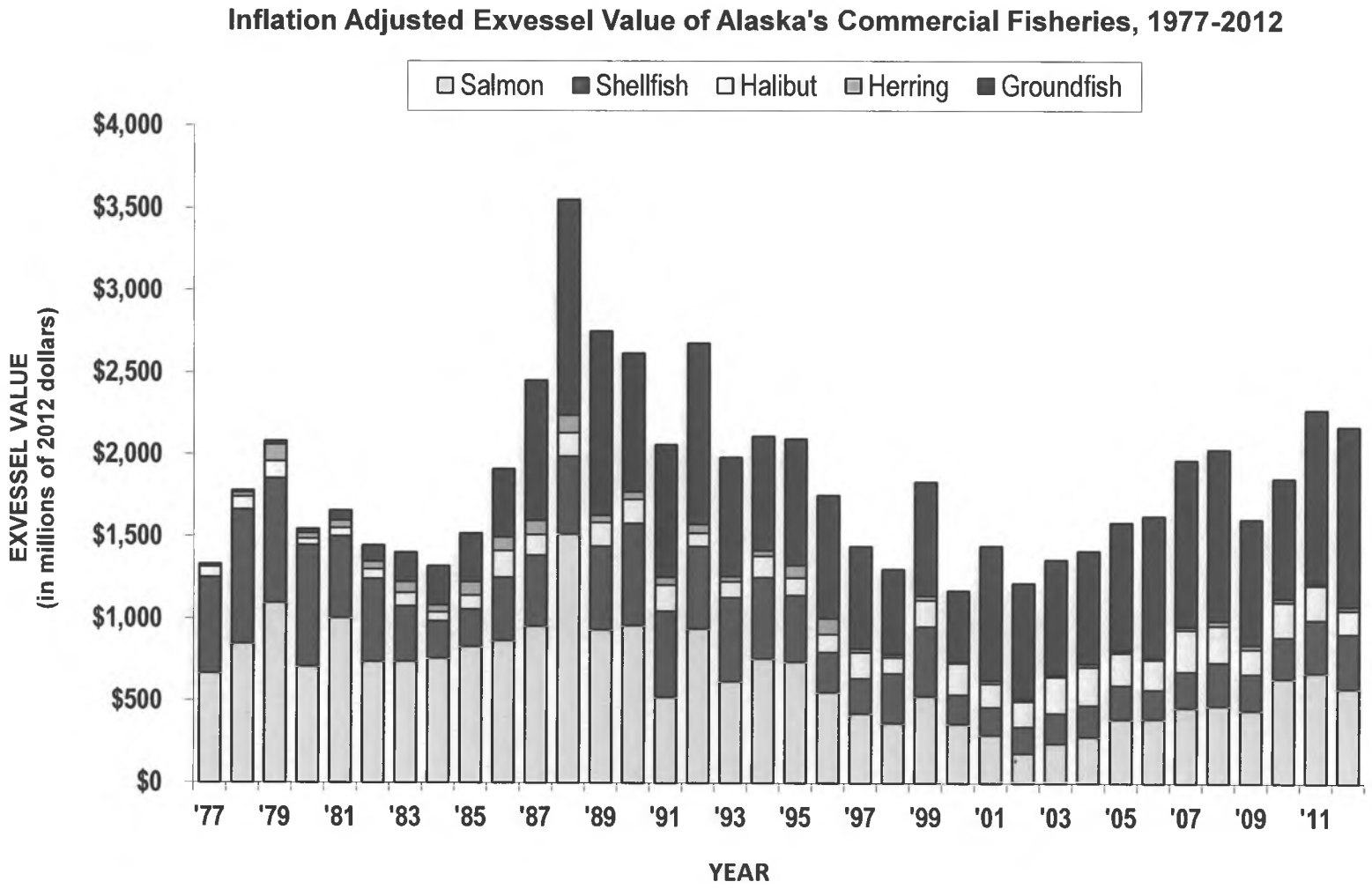


Economic Impact of Seafood Industry on Alaska's Economy in 2011

(Source: McDowell Group 2013)

- **Generated 63,100 Alaskan jobs in seafood harvesting, processing sectors, and support industries**
- **Approximately 41,530 of these employees were Alaskan residents**
- **Generated $1.73 billion in direct payments to labor with $1.28 billion going to Alaska residents**
- **Generated total seafood sales of $4.6 billion.**

Exvessel Value of Alaska's Commercial Fisheries



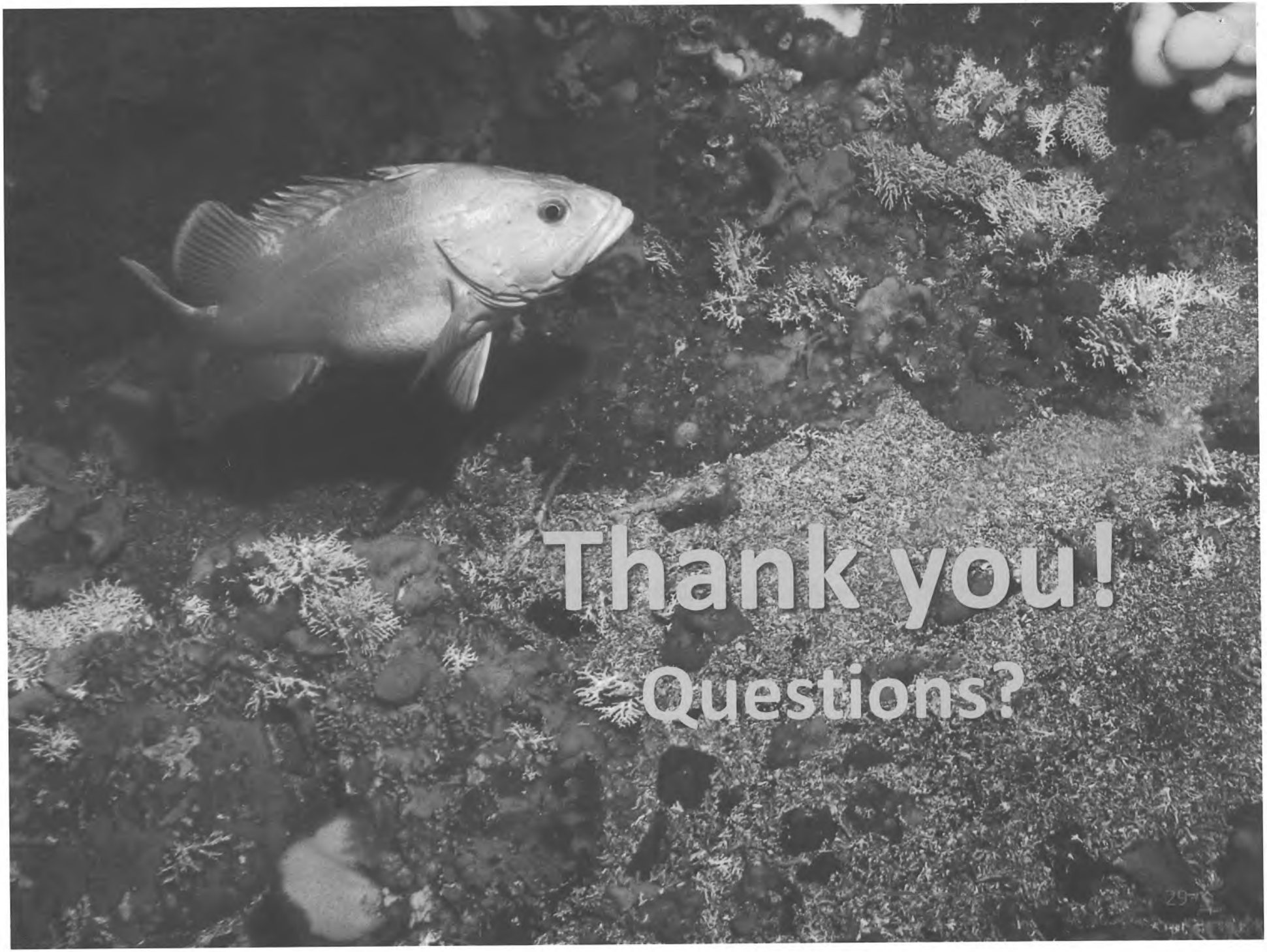
Divisional Highlights of 2013

- Commercial salmon harvest value approaches record
- Western Alaska salmon stock identification program
- Commercial shellfish harvest value approaches record
- Assisted with organizing the Chinook Salmon Symposium

Divisional Highlights of 2013

- Assisted in the development of the Statewide Chinook Salmon Research Plan

- Assisted in the State's efforts to provide retailers and non-governmental organizations with credible elements of independent sustainability programs


Thank you!
Questions?

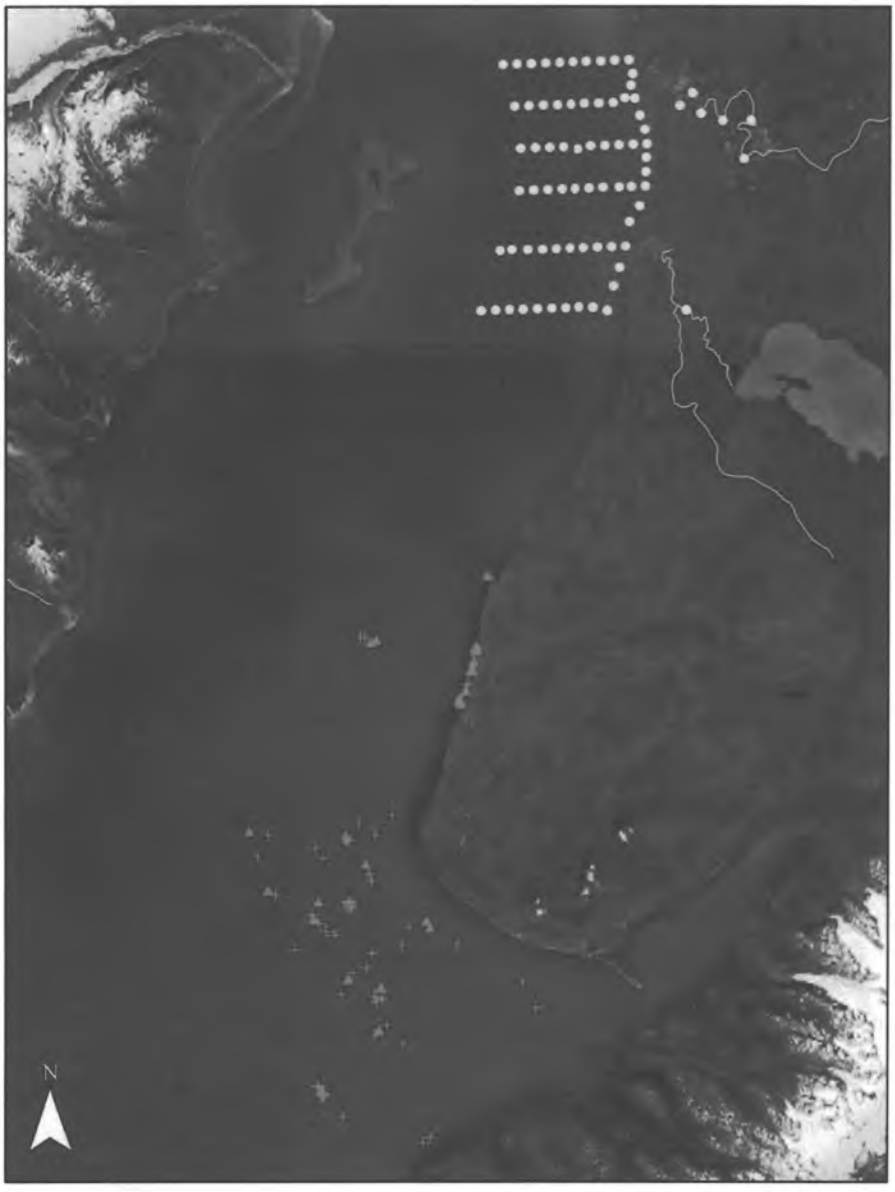
KINTAMA

Chinook and Sockeye Salmon Migration Patterns in Cook Inlet, 2013.

Report to the State of Alaska, Department of Fish and Game, Division of Commercial Fisheries

By Kintama Research Services Ltd.

Publication Date: 20 December 2013



Location of the acoustic-tracking array (yellow dots) and the release sites of acoustic-tagged Chinook (red triangles) and sockeye (red crosses) salmon in Cook Inlet 2013.

Alaska Department of Fish & Game
Division of Commercial Fisheries

Chinook and Sockeye Salmon Migration Patterns

in Cook Inlet, 2013.

Report to the State of Alaska, Department of Fish and Game, Division of Commercial Fisheries

Prepared By: David W. Welch, Aswea D. Porter, & Paul Winchell
Kintama Research Services Ltd.
110-1850 Northfield Road,
Nanaimo, British Columbia,
Canada V9S 3B3
Email: david.welch@kintama.com

Publication Date: 20-December-2013

Cora Campbell – Commissioner

Jeff Regnart – Director

KINTAMA

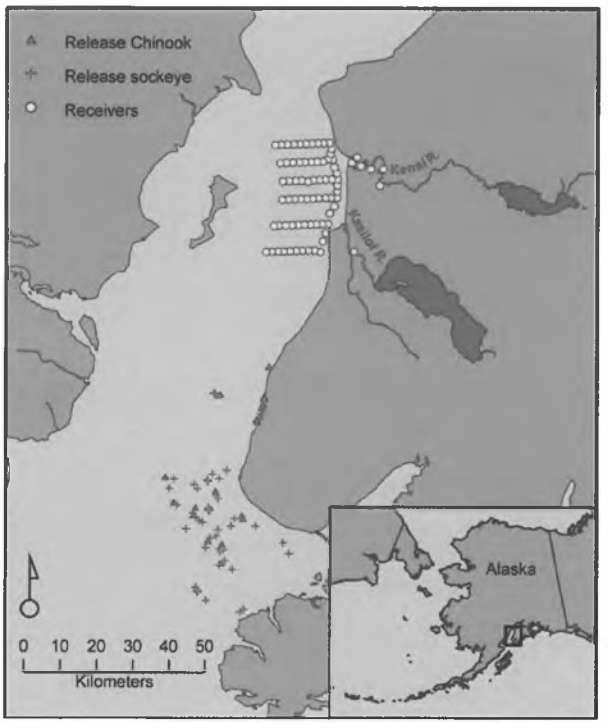
Summary

Introduction

Steadily worsening returns of Chinook salmon are occurring over a wide range of Alaskan rivers, including Cook Inlet's Kenai River Chinook population. The widespread nature of the decline suggests that the likely cause of the problem lies in the ocean—but with the marine phase of the life history poorly understood, questions of "where and when" significant declines are established remain unclear. The reduced productivity of Kenai River Chinook complicates attempts to manage the still productive sockeye stocks while ensuring escapement goals are achieved for both species. Because the sockeye fisheries also catch Chinook, an ability to identify biological differences between the two species that could potentially reduce Chinook catch when sockeye fisheries are underway would be useful in refining management strategies. The primary goal of this study was to identify species-specific differences in migration depth or other movement patterns for adult sockeye and late-run Kenai & Kasilof Chinook returning to spawn that could provide a stronger biological basis for management decisions.

Methods

To address these questions, a marine telemetry array consisting of 70 receivers was deployed in a sparse grid starting at the western (offshore) edge of the eastside set net (ESSN) fishery area and extending westward approximately 1/3rd of the way across Cook Inlet (Summary Figure 1). Additional receivers were placed in the Kasilof and Kenai Rivers to monitor the freshwater phase of the migration. Acoustic receivers record the unique serial number transmitted by each acoustically-tagged fish along with the date and time of the detection. All acoustic tags used in this study were equipped with a pressure sensor reporting fish depth at the



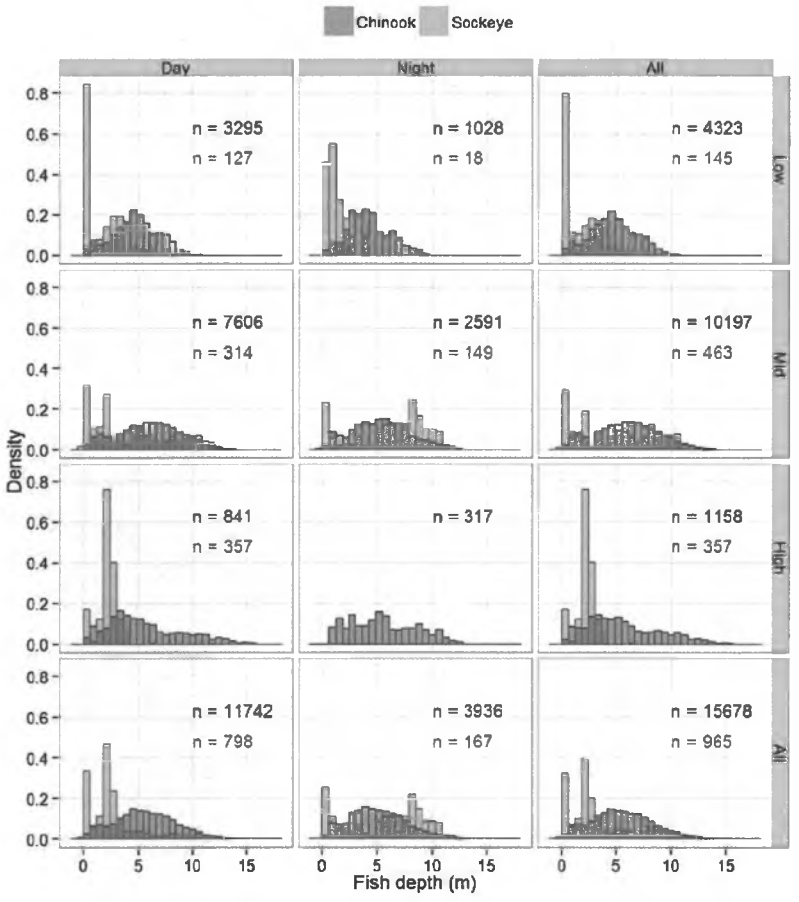
Summary Figure 1. Location of the acoustic telemetry array and release sites for tagged adult sockeye and Chinook salmon in Cook Inlet, 2013.

time of transmission. A total of 25 adult Chinook and 51 adult sockeye were caught in Lower Cook Inlet and tagged with paired external disc tags and internal acoustic tags. The fish were then released to continue their migration northwards over the acoustic array.

Key Results

1) **Establish the depth distributions of Chinook and sockeye salmon as they enter the ESSN fishing district.**

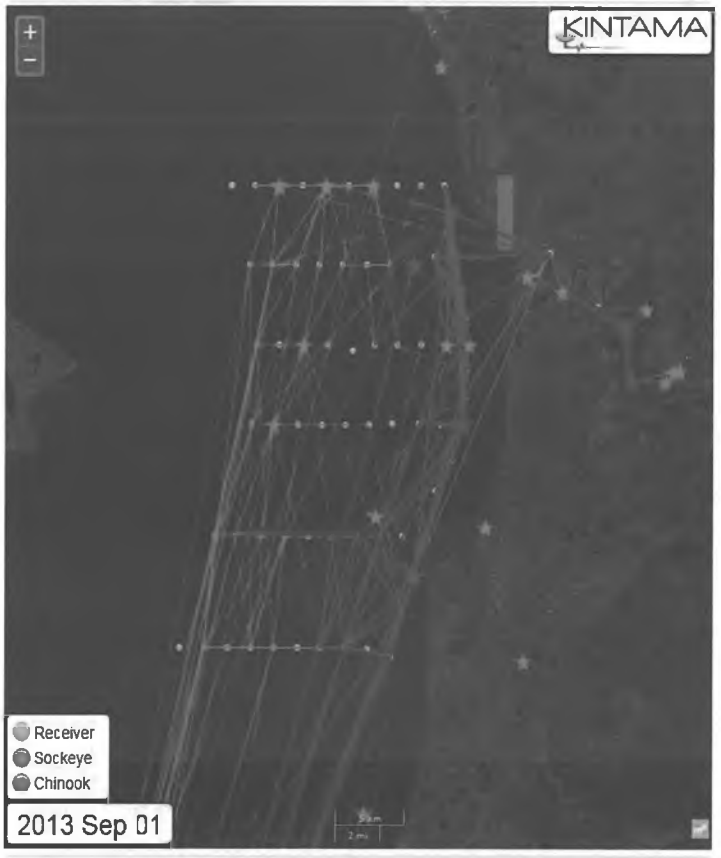
The marine receivers recorded 16,608 depth measurements for Chinook and 3,389 depth measurements for sockeye. When depth data are restricted to those receivers sited just along the western boundary of the ESSN, the number of detections remains very similar for Chinook (15,678), but drops to only 965 for sockeye, reflecting the fact that most sockeye spent their time well offshore of the ESSN. The median depth of the sockeye and Chinook when calculated using data for the entire marine array was 1.21 m and 4.85 m, respectively; when restricted to receivers sited along the western boundary of the ESSN, these median depths were 1.82 m for sockeye and 4.85 m for Chinook. Although Chinook occasionally rose to near-surface waters, a clear difference in water column use was evident (Summary Figure 2).



Summary Figure 2. Distribution of migration depths of adult sockeye and Chinook salmon along the western edge of the ESSN fishing district in 2013.

2) **Establish the differences in entry patterns of Chinook and sockeye salmon into the ESSN fishing district in relation to date, tide stage, and wind velocity.**

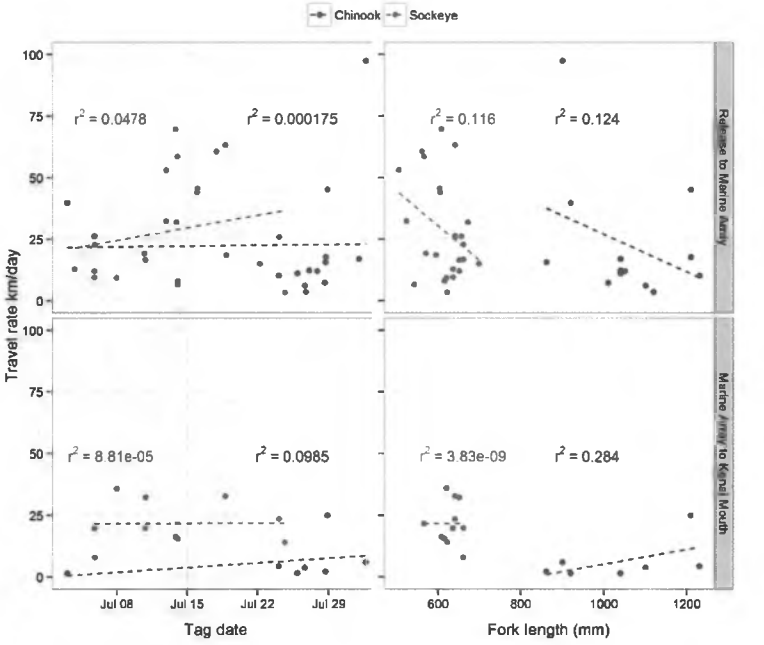
Chinook and sockeye were found to have strikingly different marine behaviors, with Chinook repeatedly "patrolling" north-south almost exclusively along the western boundary of the ESSN, and sockeye found mainly farther offshore (Summary Figure 3). (An animation of the movements of the tagged salmon that can be dynamically zoomed, panned, and queried is available on the Kintama website: www.http://kintama.com/animator/CookInlet2013/). The observed behavior suggests that Chinook may spend a significant portion of their time within the ESSN and beyond the maximum detection range of the receivers. As receivers were not placed within the 1.5 nautical mile (2.5 km) wide ESSN, the length of time Chinook may spend in this area cannot be quantified at this time. No evidence was found that entry into the ESSN was strongly related to date, stage of the tide or wind.



Summary Figure 3. Screen clip from the animation of the Cook Inlet project in 2013 showing the inshore distribution of Chinook relative to sockeye. Lines indicate the movement path of each fish as represented by detections on the acoustic array and tags recovered by the fishery. Stars indicate the last known location of each fish. The animation can be accessed at www.http://kintama.com/animator/CookInlet2013/. (The vertical blue bars on the animation show how tide height changes with time for locations within Cook Inlet).

3) **Establish the differences in migration rates of Chinook and sockeye salmon in relation to tagging date and fish length.**

There was no evidence that the migration rates of sockeye or Chinook were affected by either tagging date or fish length. Salt-water travel rates from 1) release to first detection on the marine array, and 2) from first detection on the marine array to river entry showed little relationship with release date or fish size in either species (r2<0.3; Summary Figure 4).



Summary Figure 4. Comparison of the effect of release data and fish length on the travel rate of Chinook and sockeye from (top) release to first detection on the marine array and (bottom) from the marine array to river entry.

4) **Establish whether tidal fluctuations affect milling behavior of Chinook and sockeye salmon in the Kenai River estuary.**

The majority of Chinook and sockeye initially entered the river and migrated upstream on either a flood or slack tide. At RKm 2 (Snug Harbor), only two fish had detections while the tide was ebbing significantly; one of these fish did not migrate upriver and the other logged only a single detection on a falling tide as it milled back and forth between the detection sites at RKm 2 and 4.5. At RKm 4.5, (Inlet Fish), neither species was recorded during ebbing tides. The influence of tide dropped by RKm 8.2 (Kenai Bridge), as 62% of Chinook and 81% of sockeye detections were recorded during flooding tides.

Only two fish showed evidence of milling in the Kenai River estuary. Fish 9484 moved back and forth three times between the two lowest receivers in the Kenai River; fish 9535 was detected once at the Kenai River mouth and then disappeared for 7 hours before being detected at the river mouth again and then proceeding upstream. Most of these upriver movements occurred during flooding tides. All other tagged salmon migrated directly up the Kenai River after river entry.

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1. Methods

1.1. Acoustic array

Acoustic-tagged salmon were detected by VEMCO VR2W acoustic receivers deployed in Central Cook Inlet, and in the Kenai and Kasilof rivers (Figure 1). In Cook Inlet, we deployed 70 receivers in early June in a sparse grid starting at the western (offshore) edge of the eastside set net (ESSN) fishery area and extending westward approximately 15 km or 1/3rd of the way across the channel. The grid consisted of a series of 6 east-west lines spaced ca. 5 km apart. We deployed 10 receivers in each line. We also sited 2 receivers midway between each line (for a total of 10 units) to provide greater resolution along the outer boundary of the ESSN fishing zone. We recovered and successfully uploaded 54 of these receivers Aug 27th-September 5th. Four of the remaining 16 receivers did not respond when polled and are considered lost. An additional 8 receivers did respond when polled (i.e., they were in their deployed position) but did not rise to the surface and were possibly held down by the strong tidal currents. The last 4 receivers were displaced by fishing activities or other causes and then returned to Kintama by members of the public. We downloaded these units and screened the detections to estimate the date and time they were pulled from their deployed positions (see section B.4).

To monitor the freshwater phase of the migration, we worked with ADF&G to deploy 11 receivers in the Kenai River between June 9th and July 2nd. Single receivers were installed at Snug Harbor and Inlet Fisheries (RKms 2 and 4); and paired receivers were installed at RKm 8.2 (the Kenai River Bridge), RKm 13.8 (lower Chinook sonar site), RKm 22.0 (upper Chinook sonar site), RKm 25.3 (Harry Gaines Fish Camp), and RKm 30.6 (sockeye sonar site). On June 19th, ADF&G deployed an additional 2 receivers in the Kasilof River at RKm 12.1 on the mountings for the ADF&G sonar. All freshwater deployments were successfully recovered and downloaded Aug 8th-24th.

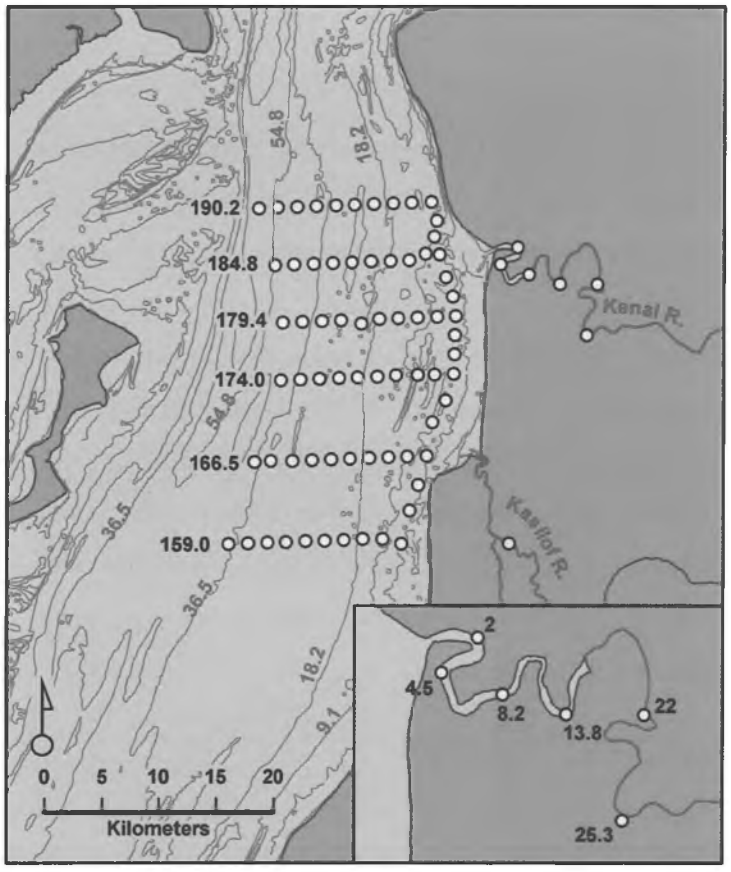


Figure 1. The acoustic array deployed in Cook Inlet and the Kenai and Kasilof rivers in 2013. Yellow circles represent individual acoustic receivers. Number labels to the left of east-west receiver lines are the distance in kilometers from the mouth of Cook Inlet. Inset: numbers beside receiver deployments are the river kilometer (RKm) from the mouth of the Kenai River. The receiver deployed in the Kasilof River was at RKm 12.1.

1.2. Tagging

1.2.1. Tagging procedure

Maturing Chinook and sockeye salmon were captured and tagged in southern Cook Inlet between July 1st and August 1st 2013. In order to obtain a representative sample of the Kenai River salmon, tags were applied approximately in proportion to the abundance of each species as the run entered Cook Inlet. Capture efforts were initially conducted with commercial troll gear and focused on offshore waters where it was thought that the majority of Kenai River Chinook likely migrate[1]. Because

[1] ADF&G (2013). Request For Proposal: Chinook and Sockeye Migration Patterns in Cook Inlet. Page 24.

the captures of tagged Chinook were very low offshore (see Results), we began capturing Chinook using sport troll gear in the inshore near Anchor Point in late July.

Salmon were tagged with paired external disc tags and internal acoustic tags. External tags were numbered orange Petersen disc tags; internal tags were VEMCO V16P-3H acoustic transmitters (16 mm diameter; 67 mm length; 26 g weight in air). The acoustic tags transmitted the unique ID code of the tag and the current depth. (These data along with the date and time of transmission are recorded by the acoustic receiver.) Both tag types were labeled "Return for Reward" in case of capture by the fishery. The disc tags were attached through the musculature below the dorsal fin. We implanted acoustic tags into the abdominal cavity of the first three sockeye using surgical techniques (July 1st and 2nd, 2013); however, we switched to using a gastric implantation technique for the remainder of the tagging (from July 2nd) when we found that the surgical incision tended to gape. After tagging, each fish was measured, and a DNA tissue sample was taken from the axillary process of the pelvic fin. Fish were then released to the ocean close to their capture location (Figure 2).

Detailed handling and tagging methods are available in Appendix A.

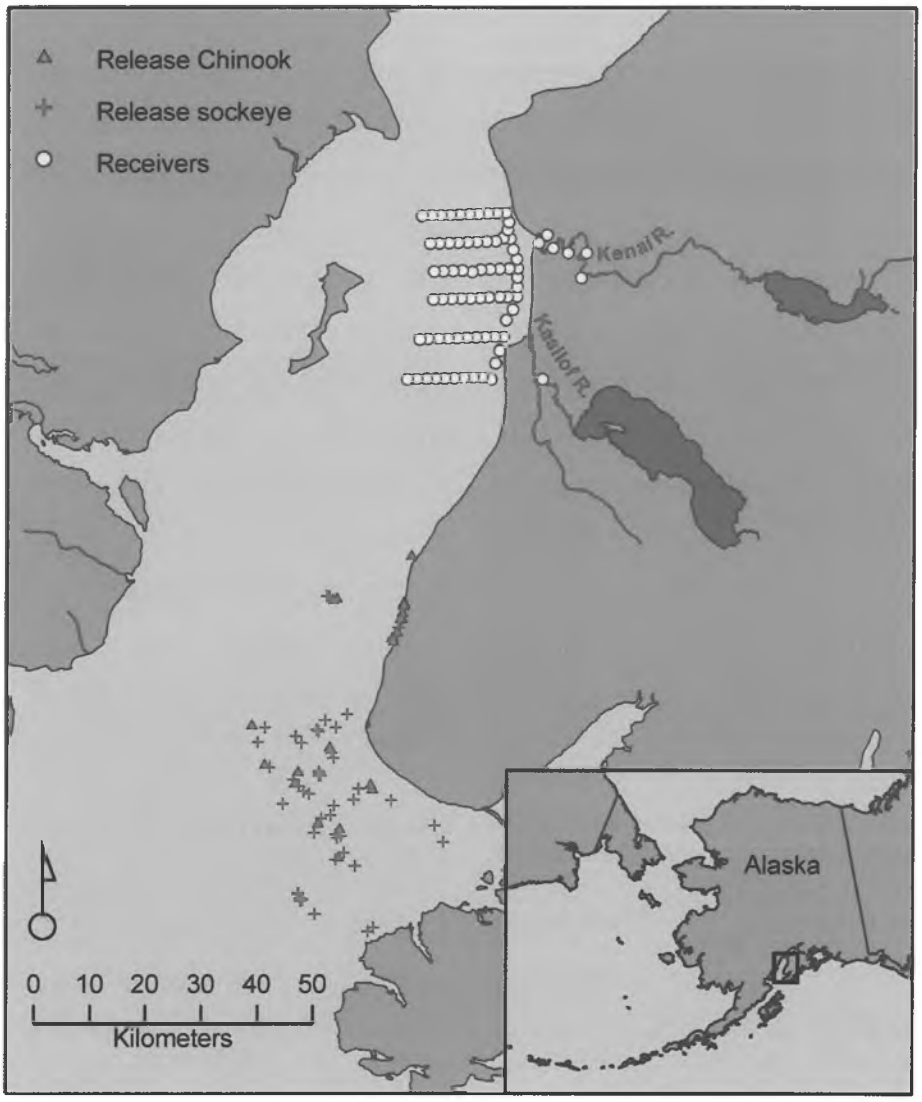


Figure 2. Location of release sites for tagged Chinook and sockeye relative to the telemetry array.

1.2.2. Sensor accuracy

In order to assess the accuracy of the pressure sensors in the acoustic tags, we deployed six tags previously returned from the fishery and eight receivers in Sproat Lake, B.C., between Oct 23rd and Dec 4th. Three tags were deployed at each of 5.2 or 3.0 m below the surface (close to the mean recorded depth of the Chinook and sockeye—see Results 2.5) on a taut mooring with all floatation placed sub-surface to reduce the risk of vandalism. Three major rainfall events occurring while this study was

running increased the water level in the lake and thus the depth of the tags. A water level gauge[2] at the outflow of Sproat Lake (only a few km from the study site) indicated that water levels there changed by a maximum of 0.9 m and thus should be closely correlated to water level changes above the tags. To limit the effect of water level changes, we used only sensor transmissions on days where the water level at the gauge was within 0.25 m of its level on the day the tags were deployed (Oct 23rd). The results show that one depth sensor failed (although the tag continued transmitting; see Appendix B.6 for other failed sensors), and one tag stopped transmitting before the end of the study. Apparently the tag that stopped transmitting had not been turned off when originally recovered from the fishery and the programmed kill time of 150 days post-activation was exceeded during the lake deployment. The maximum average difference between the approximate deployed depth of the tags and the reported depth by the remaining sensors was 0.58 m. Because the tags were programmed to have a depth resolution of 0.6 m, this indicates that the tags were generally within 1 interval of true depth and that instrument errors were substantially smaller than the difference in species-specific mean depths measured in this study. There was also no indication that the accuracy of the tags' depth sensors changed over time.

Table 1. Comparison between the approximate depth (m) of VEMCO V16 tags deployed in Sproat Lake B.C. and the depth values reported by pressure sensors in the tags.

		Transmitted Depth (m)				
Deployed Depth (m)	Tag	N	Mean	SE	SD	Difference between deployed and transmitted depths (m)
5.2	9485	69583	4.75	0.004	0.95	-0.45
	9487	71519	4.83	0.004	1.17	-0.37
	9524	61921	5.21	0.004	0.95	0.01
3.0	9491	70389	3.04	0.002	0.59	0.04
	9499	50166	3.58	0.002	0.47	0.58

[2] Environment Canada hydrometric station 08HB008: http://www.wateroffice.ec.gc.ca/index_e.html

1.3. Data screening

The detections data are screened in various ways prior to analysis. Details on these screens are available in Appendix B.

1.4. Data analysis

For simplicity in the main report, analytical methods are described in Appendix C.

2. Results

2.1. Tagging

A total of 26 Chinook and 51 sockeye were tagged and released as part of the 2013 study. Tagging locations are shown in Figure 2. Because offshore Chinook catches were low using the commercial troller f/v West Bank (Figure 3), beginning on July 23rd Kintama (at its own cost) supplemented tagging efforts by chartering two sport fishing boats to troll in the very shallow waters (1.5-2.7 m; 5'-9') just off the beach north of Anchor Point, where most Kenai Chinook are known to be caught. (Offshore tagging operations were partially or completely shut down from 18-20 July because of bad weather; fishing near the beach then had to wait further before starting because the water was heavy with debris from the storm).

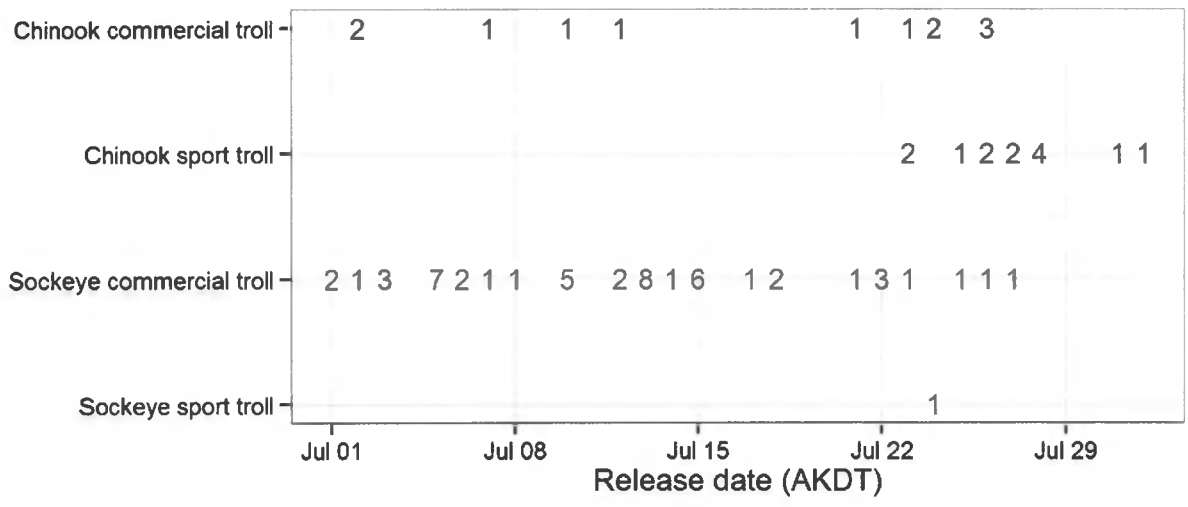


Figure 3. Number of acoustic-tagged, adult Chinook and sockeye grouped by capture method and capture/release date.

Capture depths varied by location for maturing Chinook (as well as immature "feeders"; Figure 4). Adult Chinook were consistently caught only on the bottom lures by the troller in maximum water depths of 30-35 m (100'-120') despite substantial proportions of the other lures on each troll line also being rigged for Chinook. (Each of the 6 troll wires was rigged with flashers and lures spaced approximately 2 fathoms apart; the total number of hooks fished therefore depended upon water depth, but was typically 4-6 vertically spaced lures/troll wire, yielding a total of 24-36 lures). In the inshore, maturing Chinook were captured at <5 m. Maturing sockeye were widely distributed in the water column offshore with most fish captured at water depths between 3.5-11 m. The single sockeye captured with the inshore sport gear was caught at ~2.5 m depth.

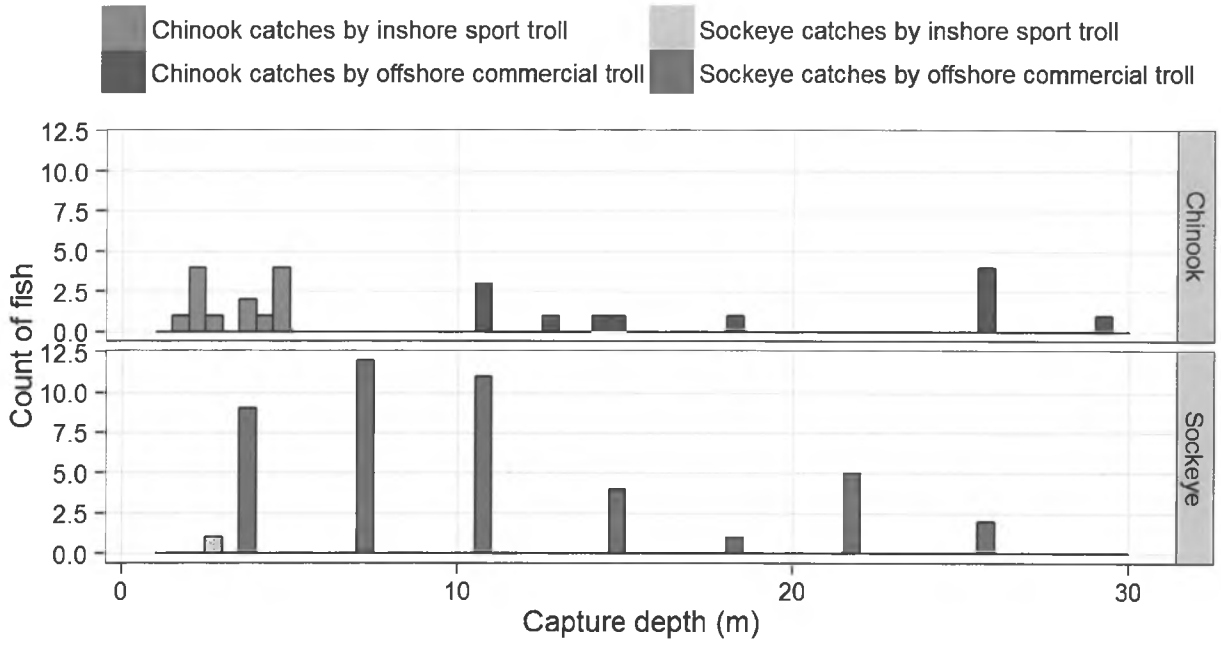


Figure 4. Capture depth by capture location (fishing method) for maturing Chinook and sockeye tagged in southern Cook Inlet 2013.

Although daily catch rates for maturing Chinook were low in the offshore region of southern Cook Inlet, maturing Chinook were likely widely distributed across at least the eastern and central parts of lower Cook Inlet, a region 40 nautical miles wide. The estimated run size of ca. 22,000 Kenai Chinook (17,000 escapement[3] + 5,000 harvest[4]) yields a migration density of 550 Kenai Chinook per mile per month, or a daily migration of ca. 18 Chinook crossing per linear mile across the Inlet. These low densities (plus the fact that Chinook would only typically bite just after the change to the ebb tide) strongly suggest that maturing Chinook are not just confined to the nearshore region off Anchor Point where most sports fishermen operate, but that they are difficult to catch in the offshore because they are thinly distributed near-bottom over a wide region.

Sockeye catch rates were also lower than the planned target of 70 adults, but for a different reason. Early catches using the offshore troll vessel were ample to provide the target of 70 sockeye for

[3] http://www.adfg.alaska.gov/sf/FishCounts/index.cfm?ADFG=main.kenaiChinook

[4] ADF&G reports a preliminary 2013 commercial Chinook harvest in lower Cook Inlet of 5,098 king salmon. www.adfg.alaska.gov/static/applications/dcfnewsrelease/371793118.pdf

tagging if these catch rates had continued, unfortunately, catches dropped to virtually nothing after 18 July (Figure 3).

Overall, there were four reasons for the shortfall in tagging numbers. We outline these issues here to document them and to suggest how the study design could be modified in future years.

1. The original direction in the RFP required tagging across lower Cook Inlet in order to ensure that salmon were tagged from all regions of Cook Inlet (in case salmon migrating through other parts of the inlet had different behaviors); this resulted in some fishing effort being expended in western or west-central Cook Inlet where few or no Chinook (and very little other animal life) was present. In general, we found the region farther to the west biologically unproductive (no birds or sea mammals seen at the surface, no sign of plankton or fish on the echo sounder, and no salmon catches when trolling).

2. It was challenging to tag fish in proportion to abundance because future catch rates were unknown. When sockeye were abundant early in July, we reserved substantial tag numbers for use later in the run; unfortunately, sockeye catches dropped sharply after mid-July, leaving us with insufficient numbers to meet the tagging goal.

3. Bad weather. Fishing was shut down (or terminated early during the day) several times because of storms.

4. The exposed nature of Cook Inlet and the poor bottom for secure anchoring made it necessary to steam for 2-3 hrs at the beginning and end of each day in order to find a safe anchorage (typically near Seldovia) on all but the most favorable weather days. Because the salmon were biting primarily near the turn to the ebb tide, potentially productive fishing time was often lost to the logistics of moving to and from the fishing ground.

In future years, additional fishing vessels could be used to increase the numbers of tagged salmon in the offshore. For sockeye, an additional offshore troller would be needed because of the limitations imposed by the timing of tides, poor weather, and the short periods that salmon actively fed each day. Additional fishing using one or more smaller boats fishing very near to shore off Anchor Point would yield substantial increases in catch for Chinook in a region where substantial proportions of the maturing Chinook appear to be returning to the Kenai River. Offshore, a second troller would also

improve Chinook tagging rates because only the near-bottom troll hooks catch Chinook, and bottom lures were often rendered ineffective by halibut captures.

2.2. Technical performance

Detection efficiency on both the marine and freshwater components of the tracking array was 100%, with all tagged animals detected in the Kenai or Kasilof Rivers previously detected on one or more of the receivers forming the marine array, and all tagged animals detected on up-river receivers in the Kenai River previously detected on the lower river receivers[5]. It was not possible to evaluate detection efficiency of the two Kasilof River receivers deployed on opposite sides of the river at the ADF&G Didson site because no receivers were placed farther upstream, but their detection efficiency may have been poor; only one sockeye was detected (three detections) and on only one of the two receivers, despite the river being relatively narrow.

2.3. Detections

For both species, approximately 50% of tagged fish were detected on the marine array, and approximately 25% were detected entering the Kenai and Kasilof rivers (Table 2). We discuss these numbers further in section 2.11 Apparent survival. Because we released more sockeye than Chinook, these percentages mean that more sockeye were detected by the acoustic array. However, differences in the migration behavior of the two species resulted in far more detections for individual Chinook than sockeye (see section 2.4 Movements) and thus provided a stronger dataset per individual.

[5]This does not mean that every tagged fish was detected by every receiver when the fish were within the theoretical detection range.

Table 2. Detections recorded by the acoustic array deployed in Cook Inlet in 2013. First columns report the count of maturing Chinook and sockeye detected; second columns report the count of detections recorded for these fish. (A total of 25 tagged Chinook and 51 tagged sockeye were released in lower Cook Inlet).

		Number of Fish Detected[6]		Number of Detections	
		Chinook	Sockeye	Chinook	Sockeye
Entire Marine Array (includes ESSN Boundary)		13	27	18,232	3,422
ESSN Boundary		12	17	17,190	969
Kenai River	**RKm 2 Snug Harbor**	7	11	169	175
	RKm 4.5 Inlet Fish	7	10	207	176
	RKm 8.2 Bridge	7	9	304	368
	RKm 13.8 Lower King Sonar	5	9	35	301
	RKm 22 Upper King Sonar	3	7	10	13
	RKm 25.3 Gaines Dock	7	9	386	71
	RKm 30.6 Sockeye Sonar	3	7	28	73
Kasilof R.	**RKm 12.1 Sockeye Sonar**	0	1	0	3

2.4. Movements

Animation of the detection data (http://kintama.com/animator/CookInlet2013/) revealed major differences in the pattern of movement of the two species, with tagged Chinook migrating almost exclusively as close to shore as our instrumentation was deployed (the western offshore boundary of the ESSN), and then repeatedly "patrolling" north and south along the offshore boundary for up to 20 days before river entry (Figure 5; Figure 6; Figure 7). In contrast, the marine distribution of tagged sockeye was much broader in the eastern third of Cook Inlet (where instrumentation was emplaced). Sockeye migrated primarily offshore and then moved rapidly past the western boundary of the ESSN fishing district with all but one sockeye present near the ESSN boundary for one day or less before entering the Kenai River. In general, both species were detected evenly along the ESSN boundary (Figure 6), although more Chinook were detected at the receivers 6.5 and 10 km south from the Kenai River, which some individual Chinook used as the southern limit before turning around and swimming north again while milling near the river mouth.

[6] Totals include several fish that were not included in the assessment of migration depth: 2 Chinook and 1 sockeye with faulty depth sensors; and 1 sockeye that was detected entering the Kasilof River. The sockeye with the faulty depth sensor was detected on the outer array before being recovered in the fishery near Kodiak Island.

A lack of receivers within the first 1.5 nautical miles (2.7 km) of the eastern shore of Cook Inlet, where the ESSN operates, is a limitation in the observational power of the 2013 array design for Chinook because the majority of Chinook detections are from receivers sited along the outer edge of the ESSN. This suggests that undetected Chinook may simply have remained farther inshore, beyond the range of our instrumentation (a maximum of roughly 700 m). Similarly, the limited western extent of the marine sub-arrays likely prevented complete detection of sockeye, which were more abundant on the offshore half of the marine array.

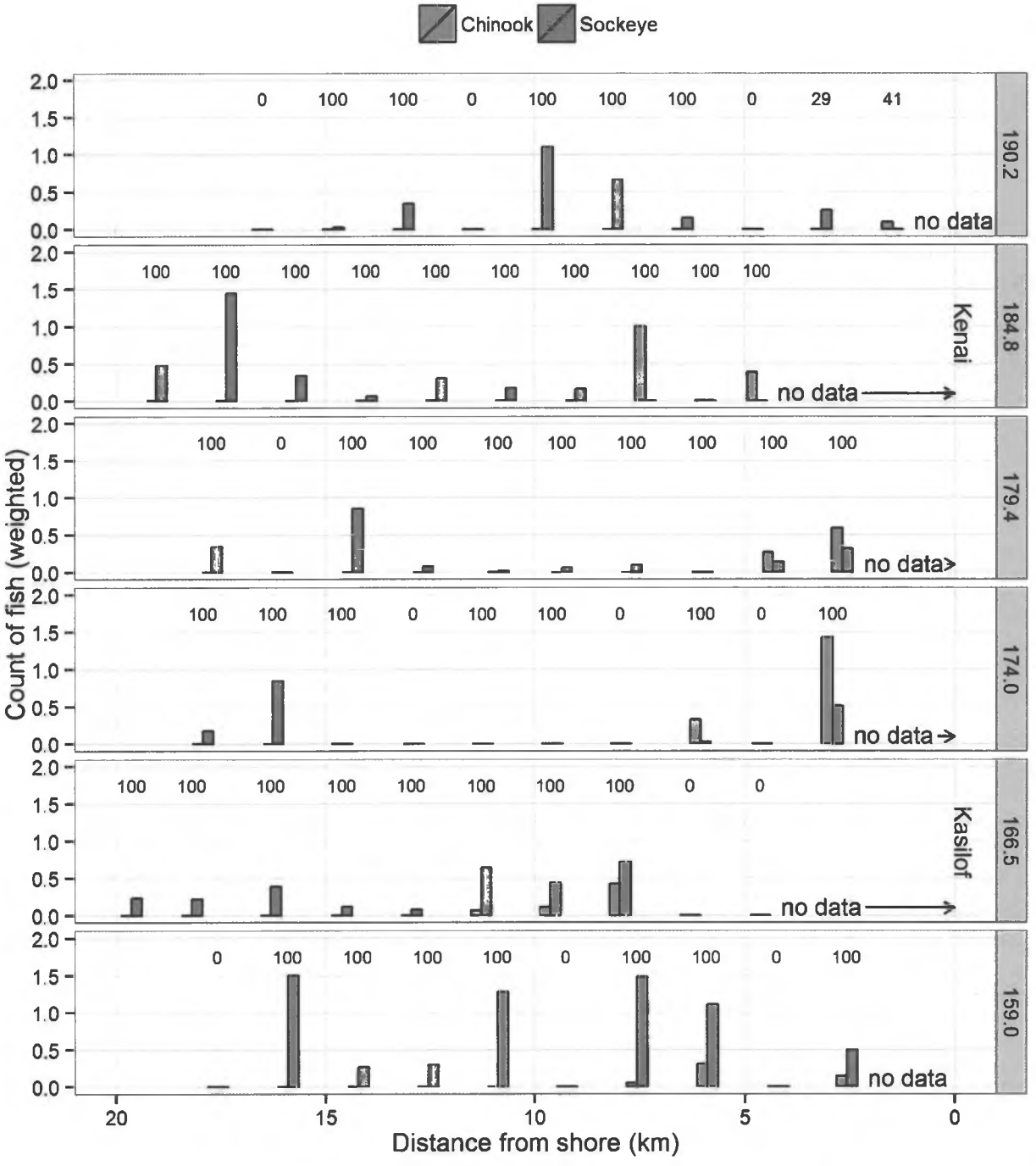


Figure 5. Distribution of adult sockeye and Chinook salmon migrating over the marine array. If a fish was detected at more than one receiver, a proportion was allocated to the receiver, e.g., if an ID code was detected on two receivers, each receiver was assigned a value of 0.5. The values above the bars indicate the proportion of time that the receiver was operational during the season. "No data" indicates the extent of the inshore region (within the ESSN) lacking instrumentation.

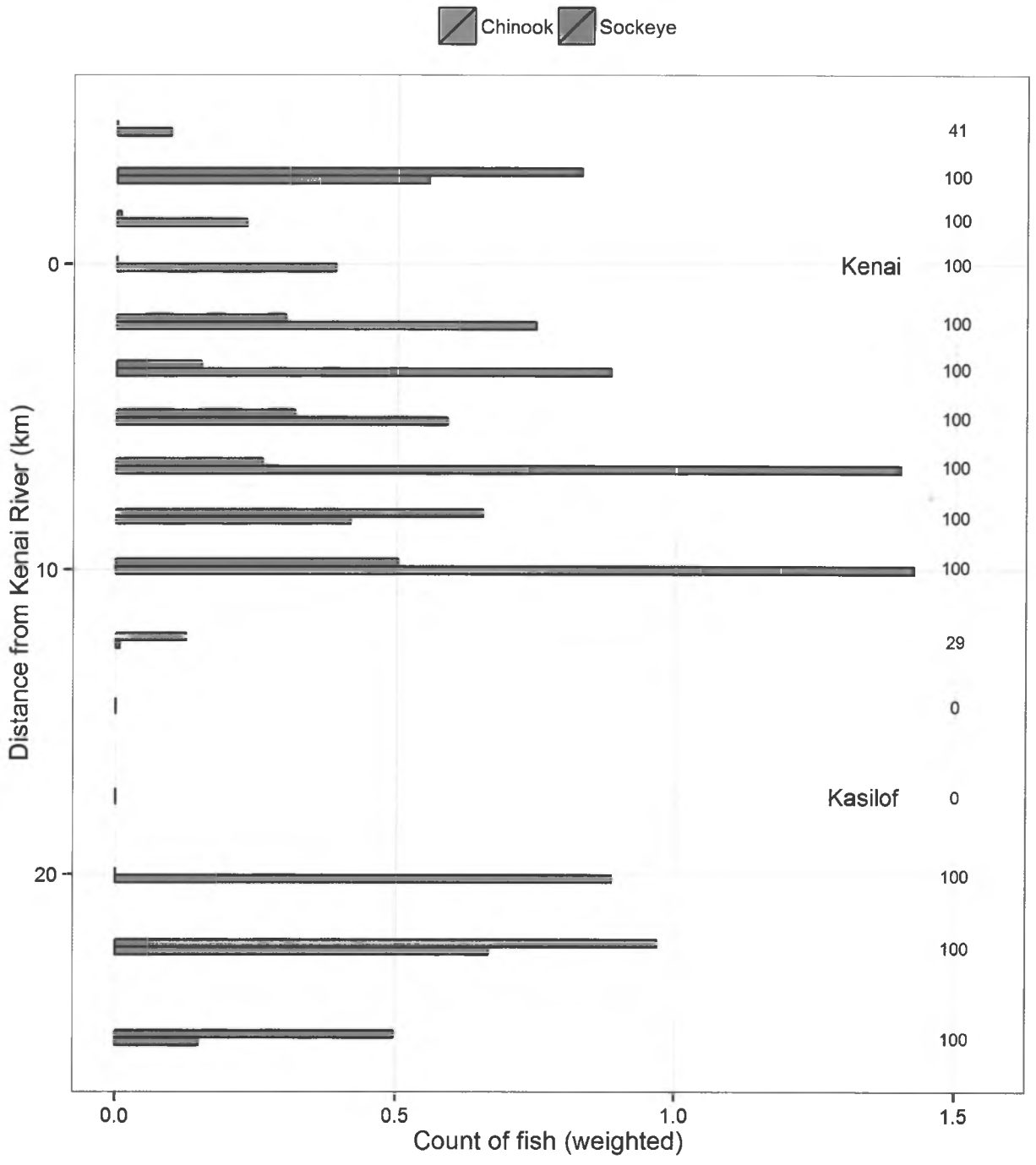


Figure 6. Distribution of adult sockeye and Chinook salmon as they migrated over the north-south row of acoustic receivers bordering the western edge of the ESSN fishery in Cook Inlet 2013. If a fish was detected at more than one receiver, a proportion was allocated to the receiver, e.g., if an ID code was detected on two receivers, each receiver was assigned a value of 0.5. The values to the right of the bars indicate the proportion of time that the receiver was operational during the season.

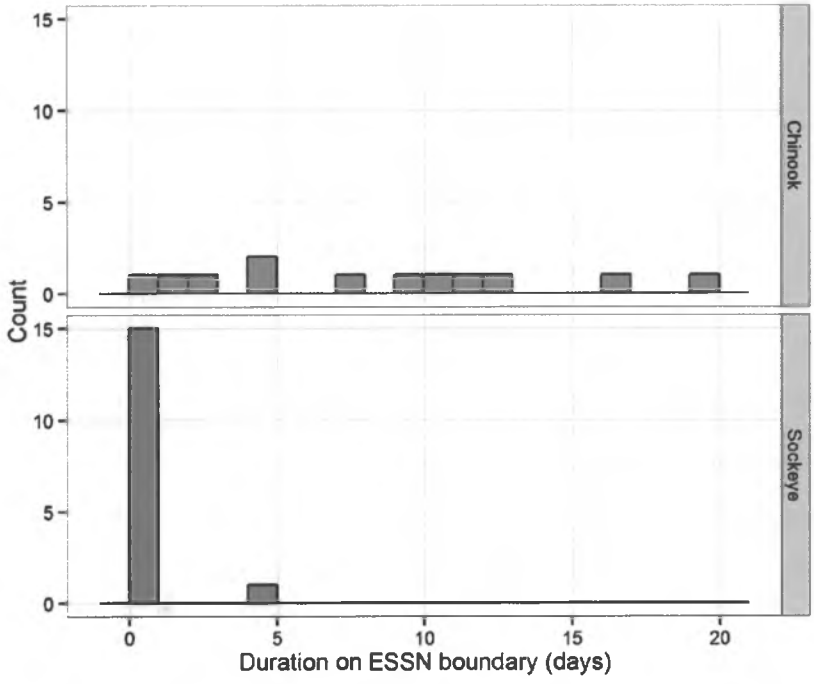


Figure 7. Time between first and last detection (duration) of adult sockeye and Chinook salmon on the north-south row of acoustic receivers bordering the western edge of the ESSN fishing district.

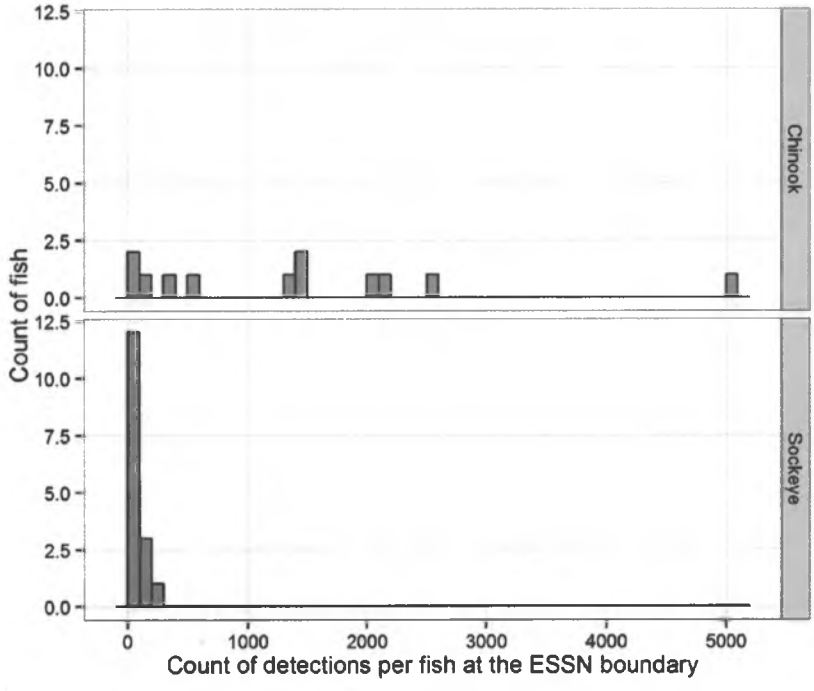


Figure 8. Distribution of the number of detections recorded for individual adult sockeye and Chinook salmon on the north-south row of acoustic receivers bordering the western edge of the ESSN fishing district.

2.5. Depth distributions near the ESSN

Chinook and sockeye detected on the receivers sited along the offshore boundary of the ESSN showed significant differences in the depth of migration. At the boundary, the receivers recorded a total of 15,678 depth measurements for 10 individual Chinook, and 965 depth measurements for 16 individual sockeye. The median depths were 4.8 and 1.8 m respectively, a 3 m difference. Over the broader area represented by the marine array as a whole, the receivers recorded 16,608 depth measurements for 11 individual Chinook and 3,389 depth measurements for 25 individual sockeye. The large increase in the number of detections for sockeye relative to the count along the ESSN boundary reflects their mostly offshore distribution. The Chinook migrated closer to shore and were mainly detected along the ESSN boundary. Despite their distribution over deeper offshore water, the median depth for sockeye over the full marine array was slightly shallower than along the ESSN boundary (1.2 m); the median depth for Chinook was unchanged (4.8 m).

To better assess the amount of time tagged Chinook and sockeye spent at each depth along the western boundary of the ESSN, we calculated the relative depth distribution using all observations collected over the receivers forming the ESSN boundary (Figure 9) after excluding the data from three failed depth sensors (Appendix B). We then calculated the proportion of the total detections that occurred between the surface and different maximum depths (the cumulative depth distribution), as this measurement reflects the proportion of time each species spends near the surface (Figure 10).

These summaries show that sockeye spent 50% of their time in the top 1.8 m (6') of the water column, while Chinook spent only ca. 12% of their time at such shallow depths (Table 3). For both species, depth in the water column bore little relationship to bottom depth (Figure 11).

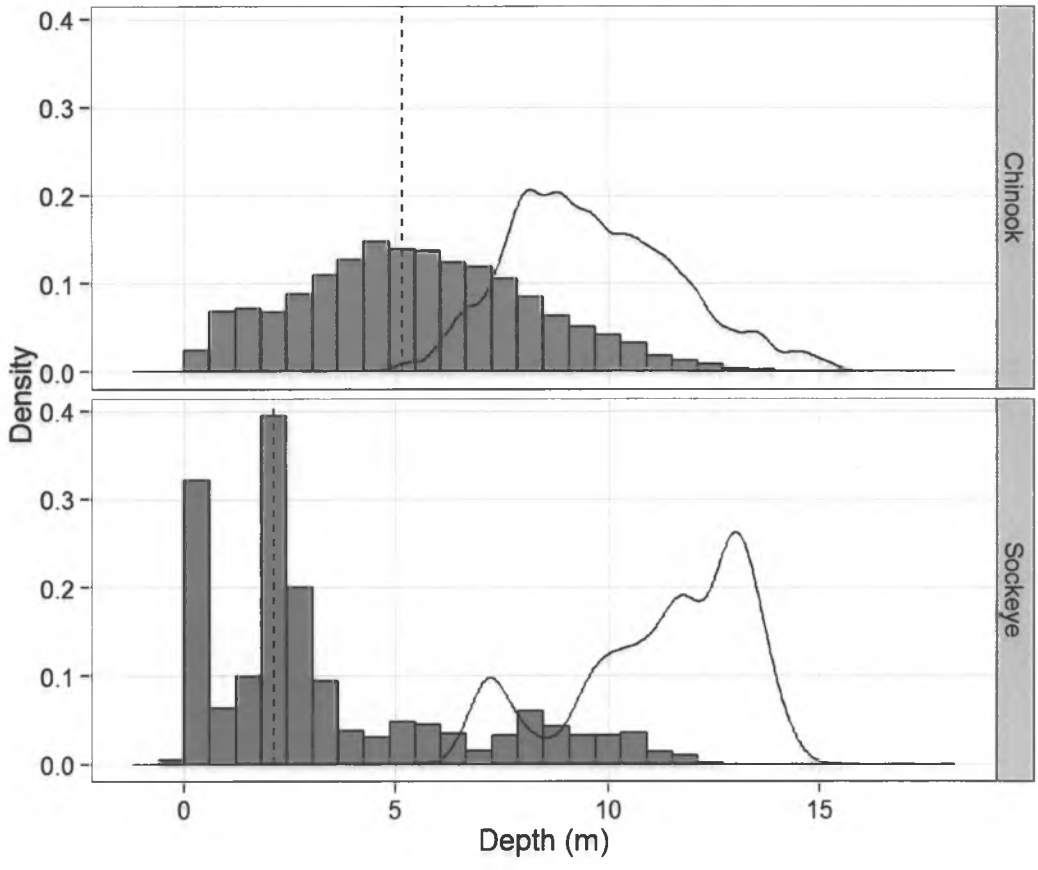


Figure 9. Depth distribution (m) of adult sockeye and Chinook salmon migrating over the row of acoustic receivers bordering the western edge of the ESSN fishing district. Colored bars indicate the depth distributions of acoustic-tagged fish. Black lines indicate the distribution of seafloor bottom depths at the time (i.e. adjusted for tide level) and location (i.e. receiver site) each fish was detected. Distributions were calculated using all depth measurements pooled by species. Vertical dashed lines indicate the median depth.

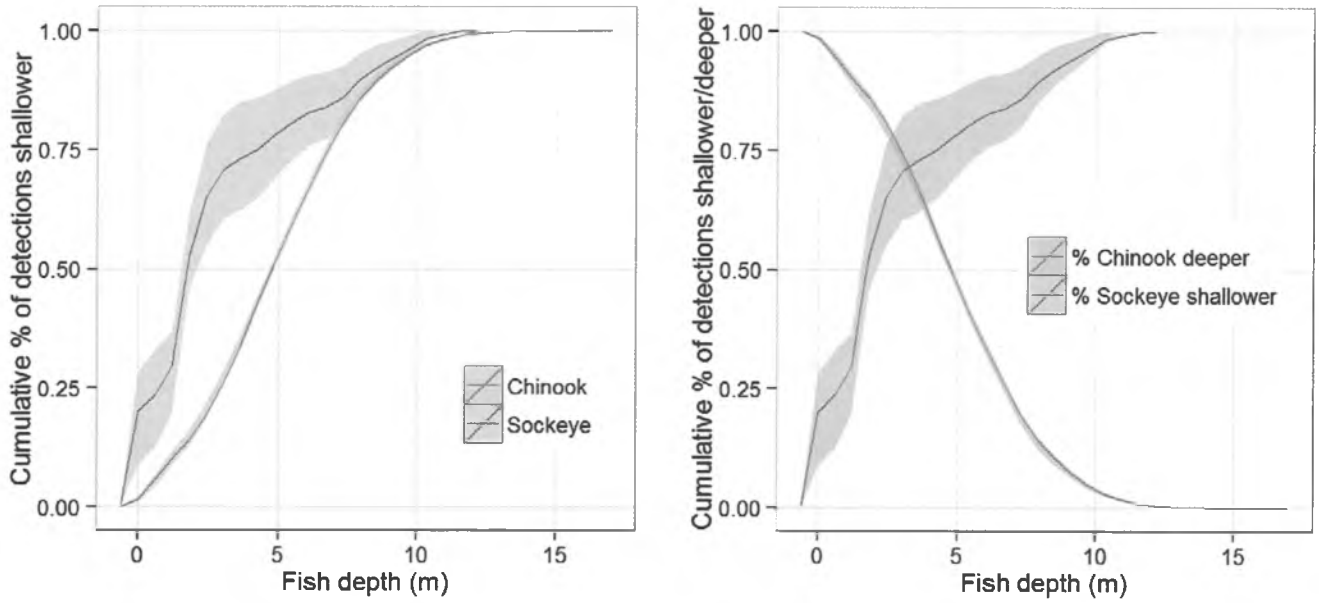


Figure 10. (Left) Cumulative depth distribution of tagged sockeye (red) and Chinook (blue) near the ESSN. (Right) The same data, but showing for Chinook the proportion of time Chinook spent deeper than a given depth. The lines show the jackknifed mean and the shaded areas span the minimum and maximum of the jackknifed replicates (see Appendix C Data Analysis).

Table 3. Cumulative depth distribution of tagged sockeye and Chinook near the western boundary of the ESSN fishing district.

Depth (m)	Cumulative percent of detections shallower	
	Chinook	Sockeye
1	6%	24%
2	14%	54%
3	19%	66%
4	34%	74%
5	51%	78%
6	59%	81%
7	74%	84%
8	86%	90%
9	89%	92%
10	95%	96%

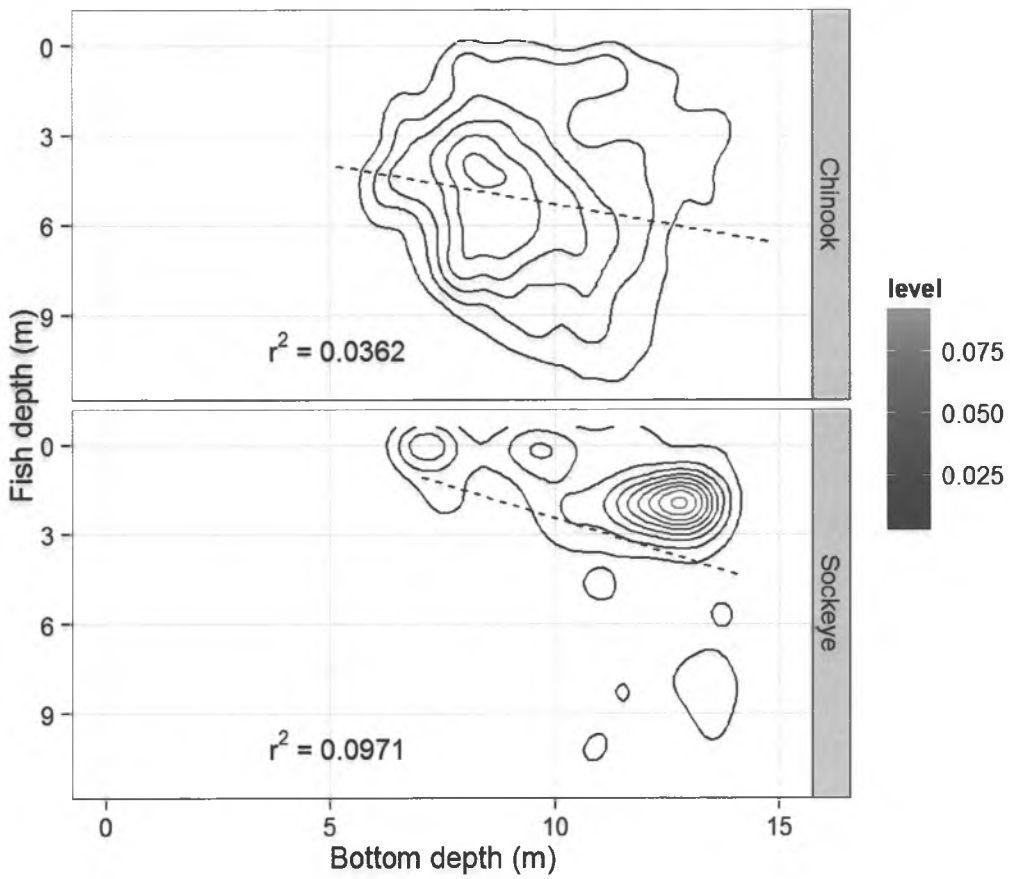


Figure 11. Depth distribution (m) of adult sockeye and Chinook salmon relative to seafloor bottom depth (m) near the ESSN fishing district. Seafloor bottom depths are specific to the time (i.e. adjusted for tide level) and location (i.e. receiver site) each fish was detected. Distributions were calculated using all depth measurements pooled by species.

As a final step, we examined the relationship between the fork length and migration depth near the ESSN (Figure 12). There was no evidence that fork length influenced migration depth for either species.

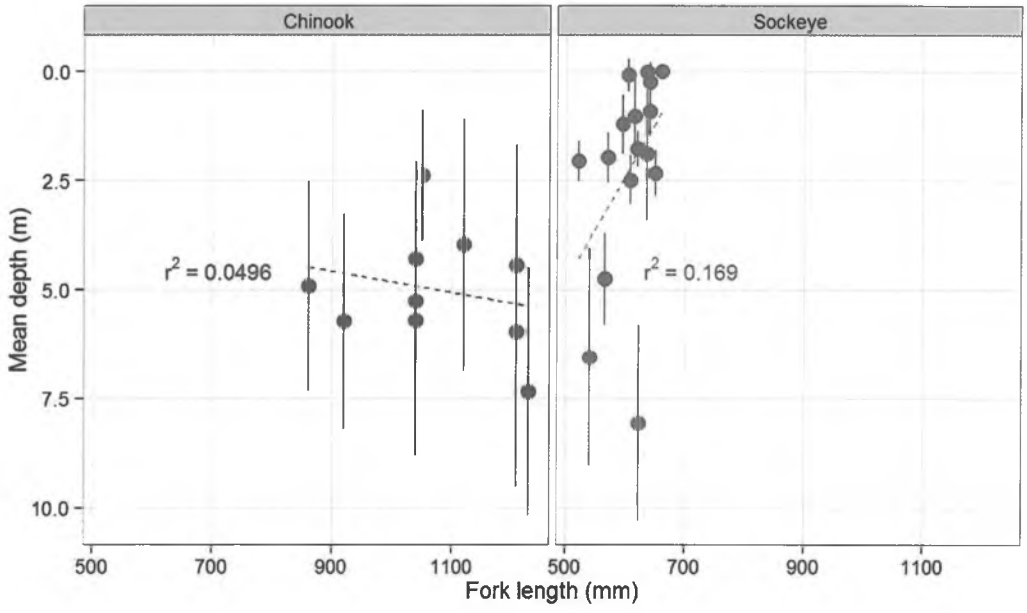


Figure 12. Mean migration depth (m) relative to fork length (mm) for individual Chinook and sockeye adult salmon near the ESSN fishing district. Error bars show the standard deviation of the mean.

Appendix D provides supplementary figures and tables as well as a supporting analysis focused on the depth distribution for each tagged individual.

2.6. *Effect of tides and time of day on depth distributions near the ESSN*

To examine the effect of time of day and tidal stage on migration depth (and to look for possible interactions between tide and light level) we compared the depth distribution of Chinook and sockeye using trellis plots, where the rows divide the available depth data by the stage of the tide[7] at the time depth was recorded, and the columns divide the data by day or night[8]. We used a density histogram to

[7] We defined 'high' tides as those ≥ the 80th percentile of tide heights predicted for the Kenai River mouth during the interval the tagged fish were migrating over the marine array, and 'low' tides as those≤ the 20 th percentile of tide heights during this same interval (see Appendix C).

[8] We defined 'day' as the interval between sunrise and sunset, and 'night' as the interval between sunset and sunrise (see Appendix C).

show the relative distribution of the detections for each species (Figure 13). Then to more simply assess the proportion of time sockeye spent shallower than a given depth versus the proportion of time Chinook spent deeper than a given depth, we plotted the Chinook cumulative depth distribution (CDD) as its complement (1-CDD; Figure 14).

The difference between the median depth of the two species (vertical lines) provides a useful measure of the depth separation possible at different times of day or stages of the tide. At night, the difference in median depth was reduced because the sockeye moved deeper while Chinook moved slightly (average 0.8 m) towards the surface. Although the depth distribution of sockeye in the offshore region of the array was similar to the sockeye depth distribution near the western boundary of the ESSN, data for the latter are quite limited and considerable caution should be used in interpreting the effect of the tides on depth. Additionally, the number of detections recorded during mid-tide may not accurately reflect the occurrence of tagged fish near the ESSN boundary because the detection range of the receivers is expected to drop when the tidal currents are strong; it is not known if this effect applies equally over all depths. Perhaps the most confident conclusion is that during daylight hours different stages of the tides appeared to have at best only a minor effect on the depth difference between Chinook and sockeye.

Some circumstantial evidence that Chinook spent much of their time in shallower waters within the ESSN comes from an assessment of the number of tag detections collected by the nearshore array receivers at different stages of the tide (Figure E-4). Fewer Chinook detections were recorded at high tides than at low tides. This suggests that the Chinook moved farther inshore on the rising tide and away from the receivers, thus decreasing the opportunity to detect them at the western edge of the ESSN where the receivers were sited. In contrast, sockeye detections were few (reflecting their presence primarily offshore), but slightly greater at high tides, perhaps suggesting that during high tides they staged near the ESSN prior to their migration into the river. (We show in the next section that there is clear evidence that both species entered the river on either flood tides or slack water).

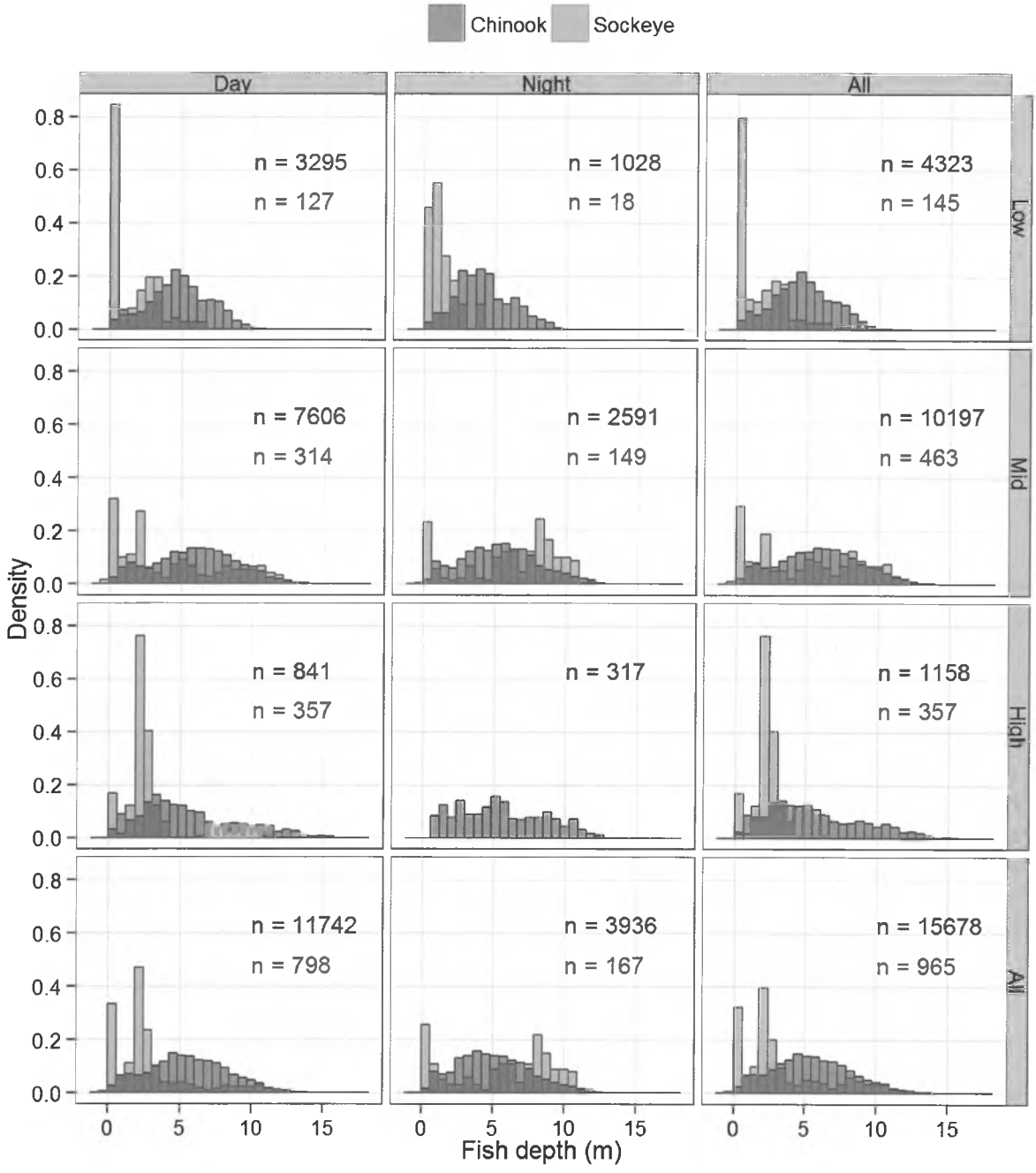


Figure 13. Depth distributions (m) of adult sockeye and Chinook salmon along the western edge of the ESSN fishing zone; n: sample size.

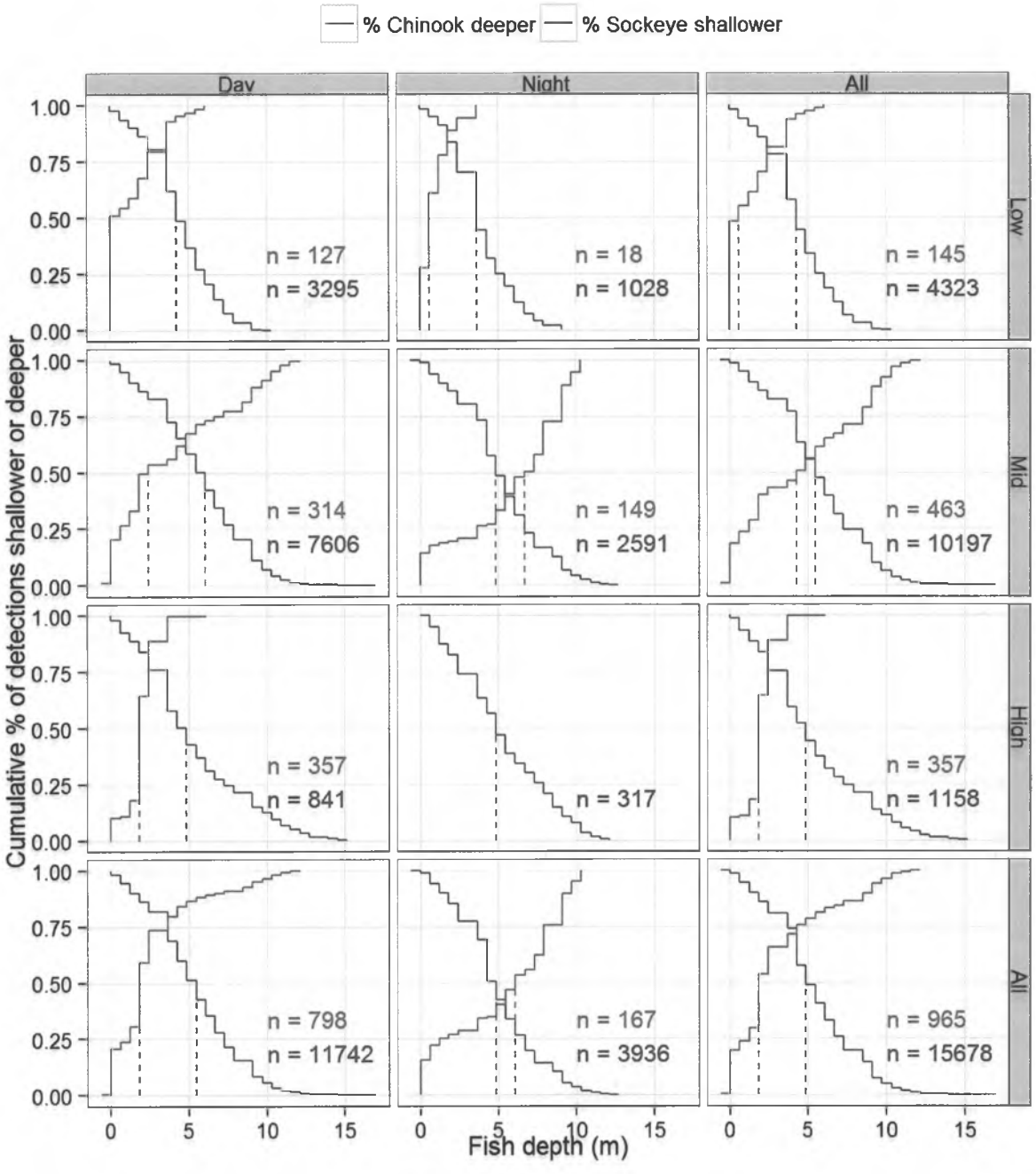


Figure 14. Cumulative depth distributions (m) of adult sockeye and Chinook along the western edge of the ESSN fishing district; n: sample size. Distributions show the proportion of time sockeye spent shallower than a given depth and the proportion of time Chinook spent deeper than a given depth. The vertical lines show the median depths.

2.7. *Entry patterns into the ESSN and Kenai River in relation to time of day, tide stage, and wind velocity*

There was little evidence that entry into the ESSN was strongly related to date, stage of the tide or wind. For river entry, the majority of Chinook and sockeye initially entered the Kenai River and migrated upstream on either a flood tide or slack water (Table 4). At RKm 2 (Snug Harbor), 74% of Chinook detections and 78% of sockeye detections were recorded as the tide was rising. Of the remaining detections at this site most were recorded at slack water or on a tide that was still ebbing, but nearly slack (classed as Ebbing in Table 4). Only 14 detections (of 2 individuals) were recorded at RKm 2 while the tide was falling significantly; one of these fish did not migrate upriver and the other logged only a single detection on a falling tide as it milled back and forth between the detection sites at RKm 2 and 4.5. At the next site upstream (RKm 4.5, Inlet Fish), no detections of either species were recorded during ebbing tides. The influence of tide dropped somewhat by RKm 8.2 (the Kenai Bridge), as 62% of Chinook detections and 81% of sockeye detections were recorded during flooding tides, suggesting that both species took advantage of tidal conditions primarily to move past the river mouth as quickly as possible and then continued migrating upriver irrespective of the stage of the tide once past the river mouth.

Appendix E provides figures that present the environmental conditions during entry to the ESSN.

Table 4. Number of detections (number of individual fish in brackets) recorded at the detection sites in the lower Kenai River during different tidal stages. Ebb, slack, and flood tides were defined based on whether the tide height predicted for the Kenai River mouth was lower, equal, or higher than in the preceding half hour, respectively.

	Site	RKm	Ebbing	Flooding	Slack
Chinook	Snug Harbor	2	2 (2)	125 (6)	42 (1)
	Inlet Fish	4.5	0	186 (6)	21 (1)
	Kenai Bridge	8.2	114 (3)	190 (6)	0
Total			**116 (5)**	**501 (18)**	**63 (2)**
Sockeye	Snug Harbor	2	38 (4)	137 (8)	0
	Inlet Fish	4.5	0	176 (10)	0
	Kenai Bridge	8.2	71 (2)	297 (7)	0
Total			**109 (6)**	**610 (25)**	**0**

2.8. Migration rates

Travel rates were slow in the ocean, sped up on river entry, and then gradually slowed again as the fish migrated upriver (Figure 15). Marine travel rates reflect milling behavior; the fish travelled an unknown distance further than the straight line distance used to calculate the travel rates. The extensive milling the Chinook displayed before entry to the Kenai River reduced their travel rate both relative to sockeye and to the other migration segments. As well, travel rates were somewhat slower for Chinook than sockeye between release and arrival at the marine array, indicating that Chinook may have also milled more along southern areas of the ESSN fishery. Both species moved from the array directly into the Kenai River mouth, although Chinook made this transition more rapidly. Once in the river, almost all fish migrated directly upstream without evidence of milling. At upriver sites, the influence of river current may have contributed to reduced travel rates.

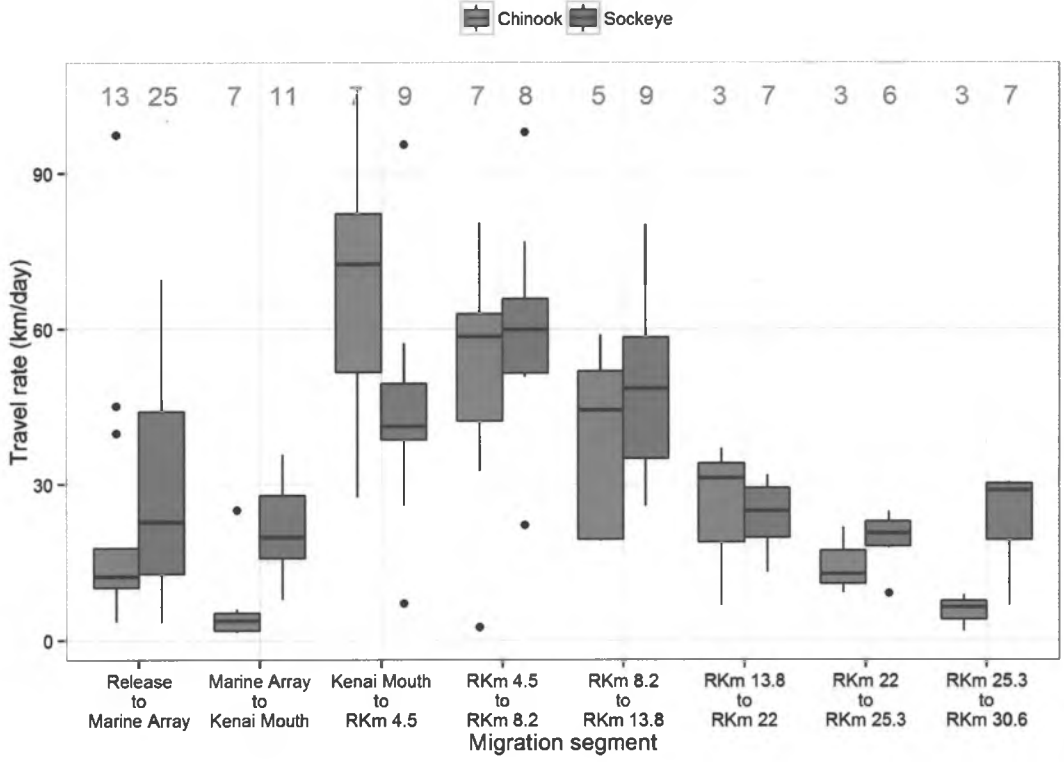


Figure 15. Travel rates (km/day) of tagged adult sockeye and Chinook salmon during different phases of the migration.

Travel rates from release to arrival at the marine array and from the marine array to freshwater entry of both sockeye and Chinook showed little relationship with release date or fish size (Figure 16). One possible exception was that a few (4 of 5) sockeye tagged mid-month may have travelled more quickly between release and arrival at the southern-most line of marine receivers (line 159; circle symbols in top left corner of Figure 16; $r^{\wedge 2}=0.52$). To increase sample size and further assess this possible relationship, we also plotted travel rates for those fish first detected on more northerly regions of the marine array (instead of only those detected on the southern line); however, once these fish were included there is little evidence that the time of tagging or fish size had a substantial influence on subsequent travel rate. Similarly, there was no evidence that once either species reached the marine array that their subsequent entry into freshwater was related to tagging date or fish size.

Appendix F provides supplementary figures and tables on travel times and rates.

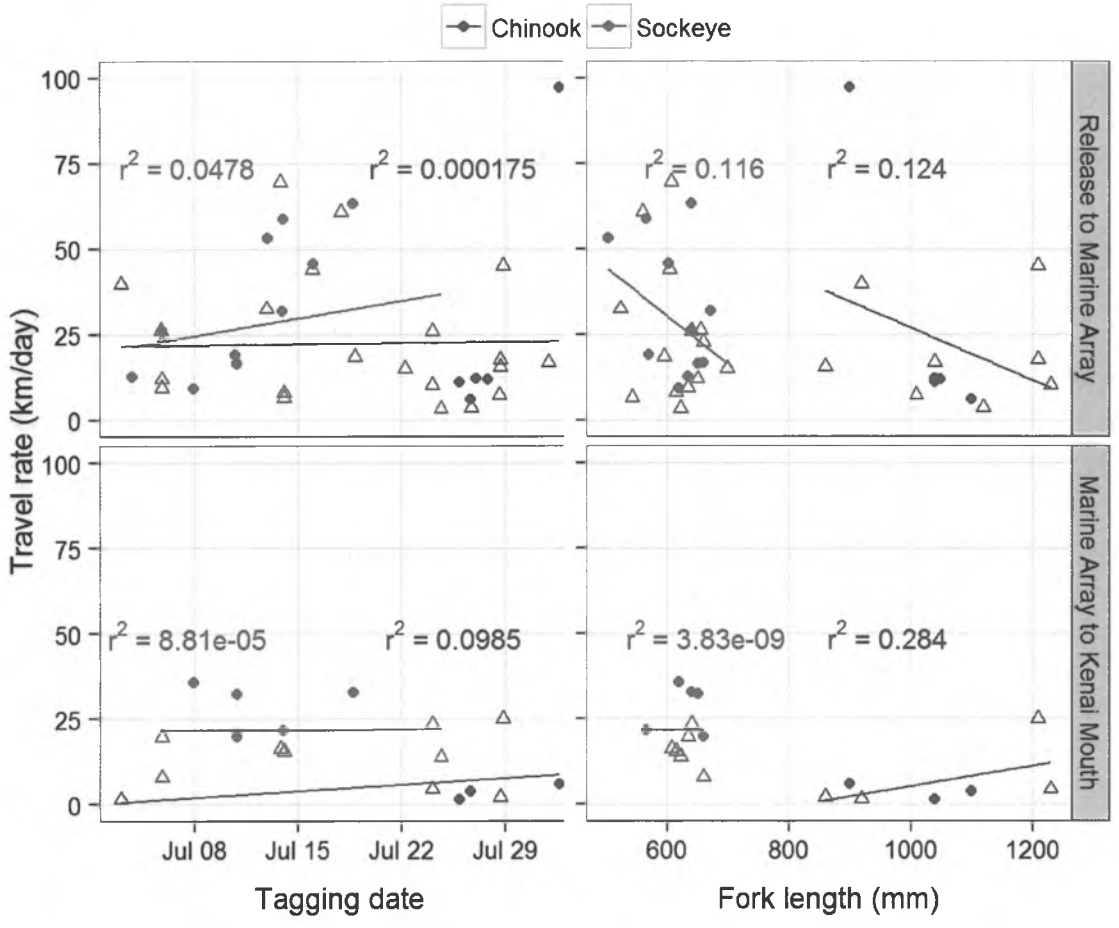


Figure 16. Marine travel rates (km/day) for adult sockeye and Chinook in relation to tagging date and fork length (mm). Rates were calculated for two migration segments: (top) between release and arrival at the marine array, and (bottom) from first arrival at the marine array until entry into the Kenai River (river kilometer 2). Circles show fish first detected on the most southern line of receivers in the marine array (line 159); triangles show fish first detected on any other marine line. The r-squared values were calculated across all rate estimates for each species in each segment.

2.9. *Effect of tides on milling behavior in the estuary*

Most tagged salmon migrated directly up the Kenai River after river entry; only two showed evidence of milling in the Kenai River estuary (Figure 17). Fish 9484 (a Chinook) was detected moving back and forth three times between the two lowest receivers in the Kenai River; fish 9535 (a sockeye) was detected once at the Kenai River mouth and then disappeared for 7 hours before being detected at the river mouth again and then proceeding upstream. These movements appear to be coordinated with

tides; however, the sample size is small. All other tagged salmon migrated directly up the Kenai River after river entry.

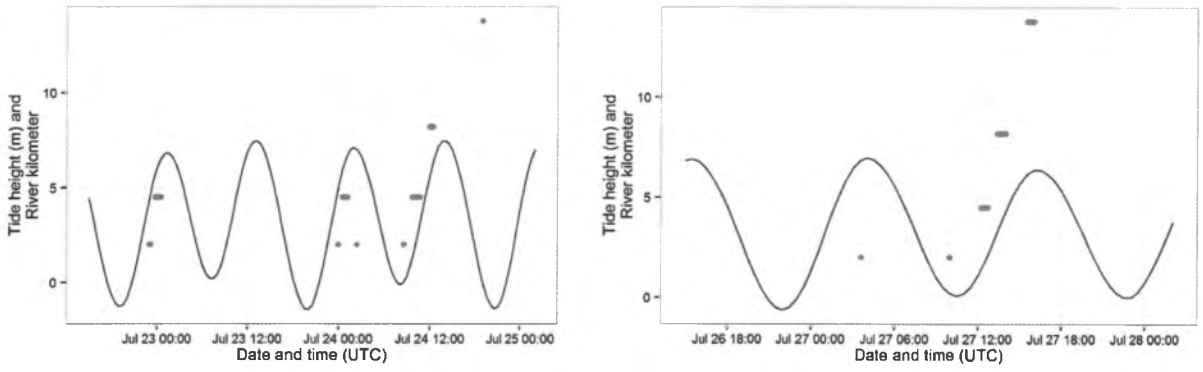


Figure 17. Detections of the two fish that milled in the Kenai River estuary displayed with tide height (m) as estimated at the Kenai River mouth. Red dots represent detections recorded at four sites in the Kenai River; blue lines indicate tide height; tag 9484 is on the left and tag 9535 is on the right. Note the y-axis represents both tide height (m) and location of detection sites by river kilometer.

2.10. DNA analysis

Tissues samples were collected from 25 Chinook and 50 sockeye salmon that received an acoustic tag. Mixed stock analyses (MSA) were conducted for the Chinook using a baseline for Upper Cook Inlet Chinook salmon similar to that reported in Barclay et al. (2012). MSA results for Chinook were inconclusive, likely due to the small sample size and the presence of fish in the sample from populations not present in the baseline. (DNA analysis of sockeye tissue samples was not complete at the date of writing). The acoustic tagging results suggested that some Chinook salmon tagged in the offshore area of Cook Inlet may not have been from Upper Cook Inlet populations. Out of the 12 Chinook tagged offshore, 8 were never detected by the acoustic array and 2 of these tagged Chinook were later reported caught in areas outside of Upper Cook Inlet (Jakolof Bay and Columbia River). Conversely, out of 13 fish caught and tagged in the nearshore off Anchor Point, 11 were later relocated in Upper Cook Inlet. Because the genetics results were equivocal, it is not possible to confidently exclude from the analyses Chinook that were not from Cook Inlet populations.

2.11. Apparent survival

Fish not detected by the marine array do not necessarily die. Properly designed telemetry arrays measure what is technically referred to as "*apparent survival*", or the progressive disappearance of tagged fish after release as they migrate over elements of the tracking array. For simplicity, we refer to this as "*survival*"; however, "*apparent survival*" is more accurate because several factors can reduce the number of tagged salmon in addition to mortality. In the present study, these factors are (i) sockeye and Chinook from stocks not originating from the Kenai or Kasilof Rivers which were tagged but would never migrate to these rivers[9]; (ii) tag loss from extrusion (in surgically implanted individuals) or regurgitation (in individuals whose tag was inserted in the stomach); iii) incomplete detection by the receiver array; (iv) tag failure; and, (v) mortality occurring as a result of tagging (fish capture, handling, tagging or release procedures).

Just over half the tagged Chinook and sockeye released in southern Cook Inlet were detected on the marine array (Figure 18; Figure 19; Table 2; Table 5). Half of the animals detected on the marine array were then detected entering the Kenai or Kasilof Rivers, providing an overall apparent survival to river entry of 25%. Within the Kenai River, where multiple sets of receivers allowed us to track the upstream movements of the tagged salmon, all 7 Chinook detected entering the Kenai River mouth were detected as high up as RKm 25 (River Mile 15; Harry Gaines' Fish Camp), so had excellent in-river survival[10]. The sockeye also had good in-river survival, with 9 of the 12[11] fish (75%) initially reaching the Kenai River mouth detected at RKm 25.

[9] We partially addressed this concern by removing fish from the apparent survival calculations (n=2 Chinook; n=2 sockeye) that were recovered south of the release site (see Appendix B); however, we could only remove individuals whose tags were returned.

[10] Only three of these 7 Chinook were subsequently detected at the final detection site, the ADF&G Didson sonar site at RKm 30.6 (mile 18). The number of detections of each of the tagged animals was lower than at the preceding detection site (Harry Gaines), suggesting that harmonic coupling of the electronics with the Didson sonar may have reduced the sensitivity of the receivers.

[11] One additional sockeye was detected in the Kasilof River.

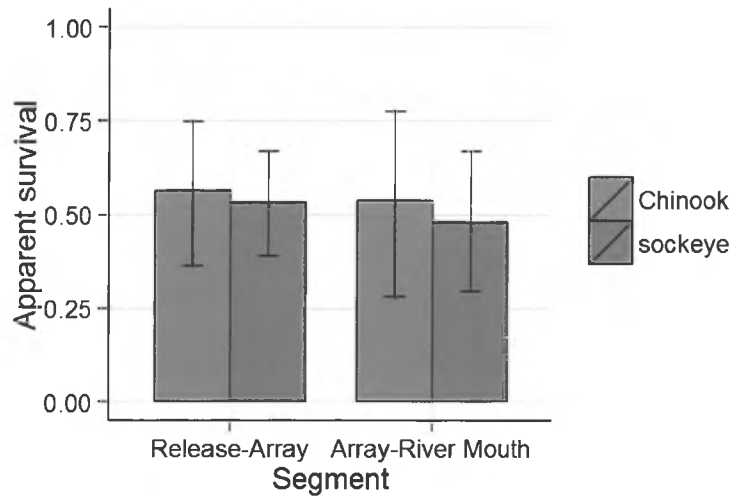


Figure 18. Apparent survival of acoustic tagged Chinook and sockeye between release and arrival on the marine array, and from the arrival on the array until entry into the Kenai River mouth. Error bars are 95% confidence intervals. Survival rates calculated using standard Cormack-Jolly-Seber methods in R. We excluded fish recovered by the fishery south of the release site from these calculations as well as one sockeye detected in the Kasilof River because the detection efficiency of the Kasilof receivers is unknown.

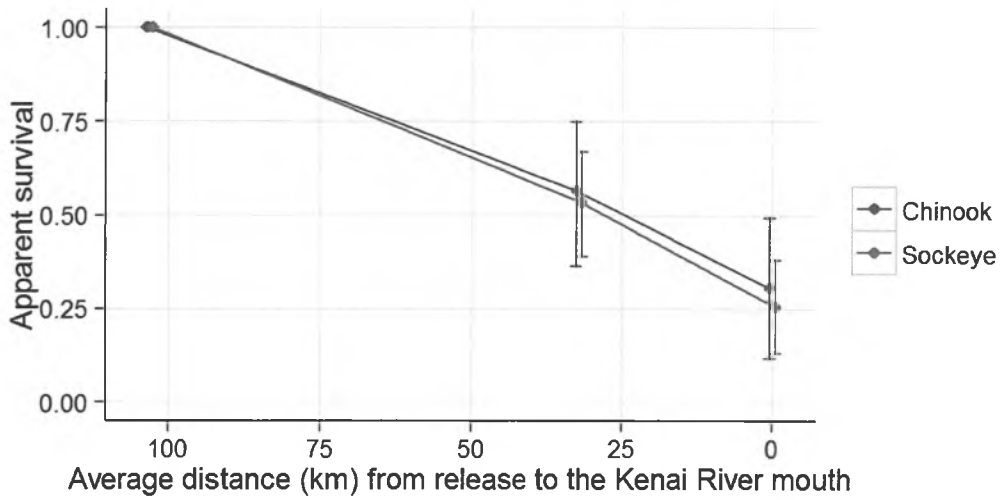


Figure 19. Apparent marine survival for acoustic tagged Chinook and sockeye by distance from release. The points represent apparent survival at release; between release and arrival at the marine array; and between release and arrival at the Kenai River mouth. Error bars are 95% confidence intervals. Survival rates calculated using standard Cormack-Jolly-Seber methods in R. We excluded fish recovered in fisheries south of the release site from these calculations as well as one sockeye detected in the Kasilof River because the detection efficiency of the Kasilof receivers is unknown. Distance from the Kenai River mouth was calculated for each fish for the shortest in-water path and then averaged across all fish (see section C Data Analysis).

Table 5. Apparent survival over the marine and freshwater components of the array (standard error in brackets). We excluded from these calculations fish recovered by the fishery south of the release site and the sockeye that was detected in the Kasilof River because the detection efficiency of the Kasilof receivers is unknown12. Numbers detected at each detection site are available in Table 2. N=sample size.

Species	N Released	N for Survival[13]	Release to Marine Array[14]	Marine Array to Kenai R. Mouth[15]	Release to Kenai R. Mouth
Chinook	25	23	57% (10%)	54% (14%)	30% (10%)
Sockeye	51	47	53% (7%)	48% (10%)	26% (6%)

Although apparent survivals in the ocean appear low post-release (see Discussion), they were higher for Chinook captured and tagged in shallow waters near Anchor Point (46% survival to the Kenai R mouth), than for Chinook tagged offshore (10%[16] to the Kenai R mouth; Figure 20). Chinook released inshore had a shorter distance to travel to the Kenai River mouth (average of 73 km versus 102 for the offshore fishery), but survivals for the inshore fish were still higher when scaled by distance (inshore: 90% survival/km; offshore: 80% survival/km). However, sample sizes were small when subdivided by capture site.

[12] Kasilof River had two receivers placed at the Didson Sonar site, and detected only 1 tagged salmon (3 detections total), suggesting that detection data for the Kasilof River may be poor.

[13] We excluded fish recovered by the fishery south of the release site from these calculations (see Appendix B). We also excluded one sockeye detected in the Kasilof River because the detection efficiency of the Kasilof receivers is unknown.

[14] Detection efficiency of the marine sub-arrays was perfect; no tagged salmon were detected on the freshwater (river) array without first being detected on the marine array.

[15] Detection efficiency of the Kenai River freshwater sub-array was also perfect; at most Kenai River receiver sites no tagged salmon were detected upstream that were not first detected on the downstream sites.

[16] Excludes two Chinook caught and tagged in offshore Cook Inlet that were later recovered by the fishery south of the release site: 1 recovered in the Columbia River; 1 recovered from Seldovia.

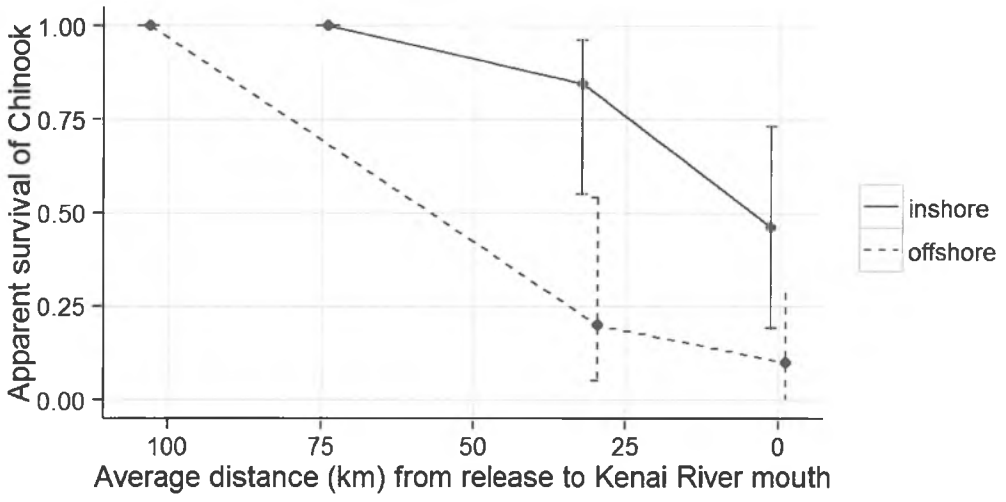


Figure 20. Apparent marine survival for Chinook captured and tagged in southern Cook Inlet either offshore or inshore near Anchor Point. Points represent apparent survival at release; between release and arrival at the marine array; and between release and until arrival at the Kenai River mouth. Error bars are 95% confidence intervals. Apparent survival rates calculated using standard Cormack-Jolly-Seber methods in R. We excluded fish recovered by the fishery south of the release site from these calculations. Distance from the Kenai River mouth was calculated for each fish for the shortest in-water path and then averaged across all fish by capture location (see section C, Data Analysis).

3. Discussion

The technical aspects of the 2013 Cook Inlet telemetry study were generally successful; the marine array detected 100% of the tagged sockeye and Chinook that were subsequently recorded entering the Kenai or Kasilof Rivers, and most freshwater receivers in the Kenai River also detected 100% of all tagged animals migrating upstream. These results were probably due to the tag programming chosen, which partially compensated for the sparse grid of ocean receivers (1.5 km spacing). A few simultaneous detections of a tagged animal on adjacent receivers demonstrated that this specialized programming allowed detection ranges≥700 m when circumstances were favorable. Only one pair of receivers was placed in the Kasilof at the ADF&G Didson SONAR site, precluding assessment of performance, but performance may have been poor; just one sockeye was detected (3 times) and by only one of the two paired receivers. Local conditions can degrade sound transmission and it seems likely that mounting some of the tracking receivers on the ADFG Didson sonars may have

degraded performance of the receiver. If the study is to be repeated, it would be useful to place a foam sleeve around the receivers to dampen possible resonant coupling.

The major identified limitations on the 2013 results are the small number of salmon tagged and the lack of reliable genetic assignment from the DNA samples collected. Although the number of tagged salmon was substantially lower than the target of 70 tagged adults per species, the large number of depth measurements collected for these tagged fish provided enough information to calculate reasonable depth distributions for Chinook and sockeye in the ocean. The near perfect detection efficiency of both the marine and Kenai River sub-arrays also gives high statistical confidence in the proportions of tagged fish first reaching the areas covered by the marine array, and then entering the Kenai River.

A novel result stemming from the present study was the detailed information on the behaviour and distribution of Chinook in the ocean, especially the repeated north-south marine movements of Chinook recorded in the nearshore prior to river entry. In contrast to Chinook, tagged sockeye were distributed further offshore and transited rapidly through the ESSN to reach the river. Both species then migrated directly through the river mouth at high speeds (primarily on flood tides or at slack water) before slowing down again upriver. The timing and speed of river entry may have evolved to allow the fish to avoid predators congregating at the choke point formed by the river mouth.

Migration depths were surprisingly shallow at the ESSN boundary for both species (median depth for sockeye: 1.8 m; Chinook: 4.8 m), as well as over the entire marine array (median depth sockeye: 1.2 m; Chinook: 4.8 m). The similarity in the depth distributions across these two zones is most interesting for sockeye because the majority of sockeye detections were recorded away from the ESSN boundary in deeper water (while most Chinook were detected along the ESSN).

In general, the Chinook migrated ~3 m deeper than the sockeye and were deeper in the water column than sockeye under all tidal conditions and particularly during daylight hours. For both species, depth in the water column bore little relationship to bottom depth. These results apply primarily to approximately the outer 500 m of the ESSN region, where most Chinook were detected and where receivers could effectively monitor tagged salmon.

Prior to the start of our study, the expectation was that essentially all maturing Chinook tagged in 2013 would return to the Kenai River, similar to 2012. Consistent with that view, no tagged Chinook were detected in the Kasilof River. However, even after excluding two Chinook captured to the south of the array in Jakolof Bay (southern Cook Inlet) and the lower Columbia River, the low apparent Chinook survival rate of 30% (7/23) between release and Kenai River entry is surprising, but close to the sockeye apparent survival rate of 26% (12/47; Figure 21)[17]. Both species had high in-river survival: all Chinook and the majority of sockeye (9 of 12 entering the Kenai) were subsequently detected well upstream. The three apparent sockeye losses are consistent with several sockeye tags being returned from fishermen fishing within the river.

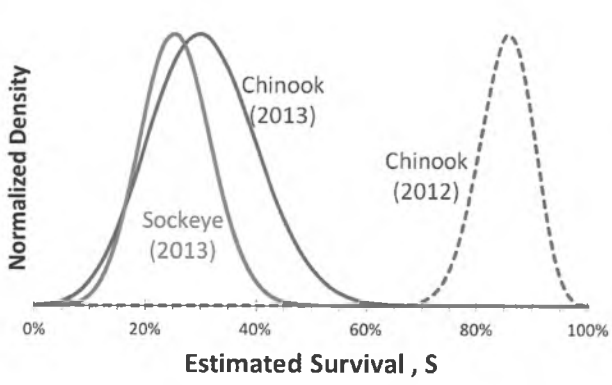


Figure 21. Probability density functions showing apparent survival from release near Anchor Point to river entry for Chinook in 2012 (dashed blue; ADFG study) & 2013 (solid blue) and sockeye in 2013 (red).

The x-axis shows survival and the y-axis shows relative density. Note that sockeye and Chinook survival were very similar in 2013. Calculations assume perfect detection of all surviving tagged adults reaching freshwater, which may not be true in 2012. The effect of poorer in-river detection would be to increase survival in 2012 but also widen the statistical uncertainty as to the true survival.

The 2013 apparent survival rates from release to river entry based on 23 tagged Chinook[18] can be compared with the reported 2012 results when ADF&G tagged and released 49 radio-tagged and 5 acoustic-tagged Chinook near Anchor Point[19]. In total, 87% of the radio-tagged and 60% of the acoustic-tagged adult Chinook were detected in either the Kenai or Kasilof Rivers, yielding a minimum 2012 combined survival estimate to river entry of 85% (SE=9.7%)[20], or a 95% confidence interval of 75%-95%. This is far higher than our apparent survival rate for Chinook of 30% (SE=9.6%), despite

[17] Sockeye survival increases to 27% (13/48) if the fish detected in the Kasilof River is included.
[18] 25 Chinook were tagged, but one tagged Chinook was reported caught in the lower Columbia River and a second was caught in Jakolof Bay south of the release site. A complete 2013 survival estimate for Kenai & Kasilof River Chinook would require excluding other tagged Chinook not from these two river systems but is not possible because of problems with the DNA analysis.
[19] ADF&G (2012). Chinook Salmon Migration Patterns in Upper Cook Inlet-- Summary of First-Year Pilot Study acoustic tag study. Unpublished Report. 4 pp.
[20] (49*87% + 5*60%)/(49+5)=85%. An approximate 95% confidence interval on this value can be calculated as twice the standard error on this proportion, or $\pm 2*(S(1-S)/N)^{0.5}$, or ±9.7%.

apparently perfect detection on the array and perfect in-river survival over the Kenai receivers during upstream migration.

The cause of the large difference between the 2012 and 2013 Chinook survival estimates is unclear. It seems unlikely that the lower survivals in 2013 were an artifact of the tagging procedure because fish were not noticeably affected by tagging in either year. Also, if Kintama's tagging protocols were at fault (as opposed to the methods used in 2012), we would expect that sockeye marine survival would be substantially lower than Chinook (since the sockeye are targeted by the commercial fishery), and that in-river survival of tagged Kenai River Chinook would be less than 100% (assuming tagging effects persist). Neither effect was observed.

Other possible explanations for the poor apparent marine survival rates are poor performance of the single detection site in the Kasilof River, and higher-than-expected tagging of maturing Chinook ultimately migrating to rivers other than the Kenai. Unfortunately, given problems with the Chinook DNA analysis in 2013, it is not possible to distinguish between these factors at the time of writing.

There is evidence that Chinook tagged farther offshore in Cook Inlet may have included a greater proportion of non-Cook Inlet origin Chinook. Apparent survival to the marine array was 85% for inshore releases and only 16% for offshore releases, while survival for both release zones was close to 50% between arriving at the array and Kenai River entry. Although some of this difference can possibly be accounted for by the shorter average migration distance of the inshore releases to the marine array (43 km vs 72 km), the large difference in apparent survival after release suggests that at least some offshore tagged Chinook were destined for other rivers. This conclusion is further supported by the fact that two Chinook tagged offshore were subsequently recovered from southern Cook Inlet (Jakolof Bay) or entirely outside Cook Inlet (Columbia River). A broader array would be needed to address these issues, both by identifying the movement of tagged salmon into other parts of Cook Inlet (or their emigration out of Cook Inlet entirely), and by measuring the post-release survival of tagged salmon just before they reached the ESSN.

4. Future Work

The magnitude of the disappearance of the tagged Chinook and sockeye suggests that a more extensive telemetry array would be a valuable addition to the study design. Telemetry lines stretching eastward into the ESSN and westward fully across Cook Inlet would better allow identification of Chinook and sockeye movements north of the tagging site. In addition, a telemetry line situated just south of the ESSN would be useful for evaluating whether there was poor post-release survival prior to reaching the main marine telemetry array to the north. Finally, without reliable genetic results to identify Kenai River Chinook, a southern sub-array sited somewhere near the Barren Islands to monitor the exit from Cook Inlet of tagged animals migrating to other regions of the coast would be useful, but costly.

In future years, fish capture protocols should also be modified to focus on tagging fish in those areas and times where they are most abundant, in order to increase the number of tagged salmon released. The capture rates achieved in 2013 suggest that two or more vessels would be required in the offshore Cook Inlet area plus at least one small boat fishing the very nearshore off Anchor Point. Post-season, the behavior of tagged salmon from different tagging groups could then be compared to try to identify possible differences in behavior between different tagging groups and areas.

Finally, the expansion of acoustic arrays around Alaska would allow a much broader look at survival of Chinook during all phases of their marine life history, and allow a quantitative assessment of when and where the poor survival affecting many Alaskan Chinook stocks is occurring in the ocean. Such data will be critical to moving beyond speculation as to the causes of the current decline in adult returns of Chinook to many of Alaska's rivers. A large-scale Alaskan telemetry array would also have broad utility to many of Alaska's other valuable fisheries.

5. Acknowledgements

We thank ADF&G staff, particularly Mr Mark Willette, for support and advice during this study, and particularly for agreeing to mount acoustic receivers at their Kenai & Kasilof sonar sites—this allowed us to deploy substantially more tracking receivers in freshwater than would otherwise be the case. We thank Captain Dave Beam (Cordova; Montague Marine Research, LLC), Casey Pape, and other crew for their able assistance in deploying and recovering the marine array, Mr Ritchie Davis

(Juneau; F/V West Bank) for his incredible skills and assistance trolling for Chinook, and Mr Steve Walli (Anchor Point) and Dan Calhoun (Homer) for their agreement and great willingness to assist on very short notice with additional nearshore sportfish trolling to supplement the number of tagged Chinook when contacted in the middle of July. Without all of you this study would not have been successful.

6. Appendices

A. Fish Handling and Tagging Methods

A.1. Summary statistics

A.1.1. Total salmon tagged

Maturing Chinook: 25
Maturing Sockeye: 51

A.1.2. Fishing effort

Total fishing effort:	317.25 hours.
Full Fishing:	28 June-02 August 2013
Minimal Fishing:	July 18 – due to weather
No Fishing:	July 09, 19, 20 – due to weather

A.2. Tagging operations

Most fishing for adult salmon used a 53' commercial troller, F/V West Bank, but from July 23rd- August 2nd, two smaller sport fishing boats were also hired to help increase catch rates of maturing Chinook by fishing in very shallow waters along the beach off Anchor Point. Fish were captured using commercial or sport troll gear.

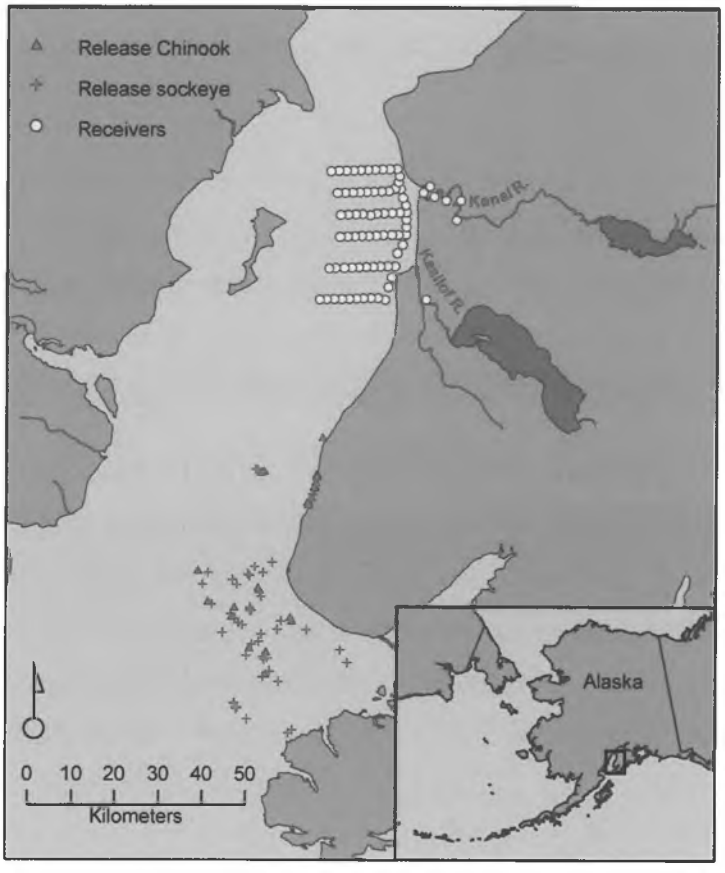


Figure A-1. **Map showing 2013 study. Red triangles show release locations; yellow dots show the location of telemetry receivers.**

Two tagging tanks were set up with independent power and controls for the recirculating pumps and aeration systems. A light sedative dose of an approved fisheries anesthetic (AQUI-S® 20E[21]) was put in the tank water to produce an average AQUI-S® 20E working concentration of 104.4 ppm for Chinook and 128.6 ppm for sockeye[22]. Because the adult Chinook and sockeye were found to be quite docile in the tagging sling once they were inverted and a hood covered their eyes, a decision was made in late July that the use of AQUI-S® 20E was unnecessary for most gastric tagging of sockeye and Chinook[23] (Table A-1). Finally, artificial fish slime (Vidalife) was introduced into the tank water and spread over tagging surfaces that would come in contact with the fish to minimize damage to the mucous layer.

We implanted acoustic tags into the abdominal cavity of the first three sockeye using surgical techniques on June 1st and 2nd, 2013 (Table A-2). However, the surgical incision tended to gape, probably due to pressure from the developing gonads on the abdominal wall. As a result, we switched to using a gastric implantation technique starting July 2nd for the majority of Chinook and sockeye that were tagged, N=25 and N=48 respectively.

Sockeye and smaller Chinook were lifted directly from the water into the tagging tank, while larger Chinook were netted and transferred using a long-handled landing net. Fish were quickly and carefully positioned upside-down in a neoprene sling. A rubber mouthpiece was then inserted into the mouth to irrigate the gills with recirculating oxygenated water. A neoprene hood was placed over the head eyes to help calm the fish. The acoustic tag was placed into a flexible PVC tube, which was inserted through the mouth and esophagus into the stomach. A plunger inside the tube was depressed to dislodge the tag, placing it in the stomach. DNA tissue samples (5-10 mm clipped from the axillary process of the pelvic fin) were then collected from every acoustically tagged salmon except one sockeye (July 10th, 2013), placed into individually labeled vials with ethanol, and given to ADF&G staff for analysis. Finally, paired numbered Petersen disc tags stating "*Return for Reward*" and listing Kintama's toll-free telephone number and email address were attached to both sides of the back using a nickel pin

[21] AQUI-S® 20E is approved under the Investigational New Animal Drug (INAD) program run by the Aquatic Animal Drug Approval Partnership (AADAP) Program.
[22] The three sockeye with tags surgically implanted were anesthetized with a heavier dose (Table A-2).
[23] Some informal experiments using incidentally-caught coho demonstrated that coho were much less docile, and strongly fought being turned on their backs and hooded; it is likely that AQUI-S® 20E would be required if a future study included coho.

run through the back musculature and between the fin rays approximately 2/3^{rds} back from the leading edge of the dorsal fin.

Nine of the first 11 sockeye and the first two Chinook tagged were released directly into the ocean immediately following the procedure (Figure A-1; Figure A-2; Table A-3). Part way through tagging operations on July 5th, a decision was made to implement a revival tank, where fish were held in fresh, flow-through seawater until recovery from the anesthetic. Prior to, and certainly after the implementation of the revival tank, tagged fish were lively and swimming actively at the time of release.

Procedure times are summarized in Table A-4 and Table A-5, with individual times listed Table A-8.

A.3. Tagging results

A variety of data were recorded throughout the procedure:

- Date and time of capture, as well as capture coordinates.
- Capture depth (if available; Table A-5).
- Fork length (FL), and mid-eye fork length (MEFL) (Figure A-3; Table A-5).
- Sex (if determinable with confidence). Chinook: 2 male, 8 female, 15 undetermined; sockeye: 10 male, 4 female, 37 undetermined.
- Time of induction (capture time), time out of induction (Table A-8).

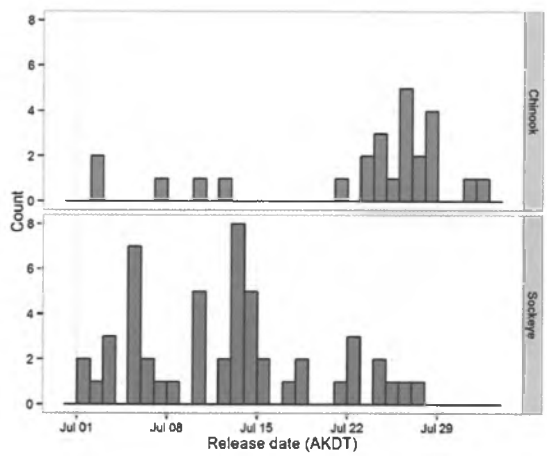


Figure A-2. Daily count of tagged Chinook and sockeye released between July 1st and August 2nd (start and end of tagging operations).

- Date and time of release, and release coordinates (Table A-3). Table A-5 provides a summary of 'handling times'.
- Water quality in the tagging tank at the time of tagging (Table A-6).
- Observations on fish condition and disposition were also recorded if merited;
  - not fully revived (after the first few immediate releases, the revival tank was implemented as previously documented),
  - bleeding slightly from mouth (N=8; as a result of capture on fishing tackle),
  - evidence of old injuries (N=4) or fresh injury (N=1); assessed as non-detrimental to fish health and survival after tagging)

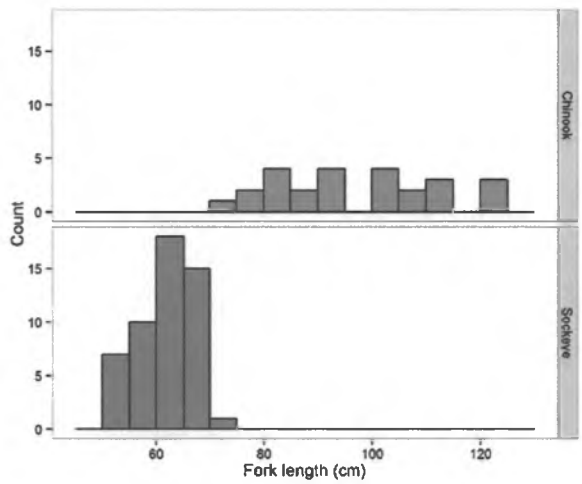


Figure A-3. Fork length frequency histogram of tagged salmon.

A.4. Bycatch

All bycatch was released at the side of the boat, as quickly as possible, taking care to minimize harm. Daily bycatch by species is summarized in Table A-9.

A.5. Tables

Table A-1. AQUI-S® 20E use.

	Chinook	Sockeye
Tagged with Sedative	19	47
Tagged without Sedative	6	4

Table A-2. Concentration of AQUI-S® 20E and handling particulars of the first 3 heavily anesthetized sockeye, into each of which an acoustic tag was surgically implanted.

	Duration (minutes)		
Anesthetic Concentration (ppm)	Induction	Recovery	Handling
888.9	11	209	220
733.3	12	0	12
888.9	12	87	99

Table A-3. Release locations (decimal degrees) and release date/time (AKDT)

Species	Release Latitude	Release Longitude	Local Release Date/Time
SOCKEYE	59.77399	-152.19007	01-Jul-2013 14:19
SOCKEYE	59.65341	-151.91340	01-Jul-2013 19:46
SOCKEYE	59.70971	-152.17808	02-Jul-2013 13:18
CHINOOK	59.77957	-152.23172	02-Jul-2013 17:08
CHINOOK	59.71572	-152.19422	02-Jul-2013 20:43
SOCKEYE	59.66951	-152.07198	03-Jul-2013 10:44
SOCKEYE	59.67838	-152.08681	03-Jul-2013 10:56
SOCKEYE	59.68822	-152.10248	03-Jul-2013 11:08
SOCKEYE	59.50614	-152.09827	05-Jul-2013 10:26
SOCKEYE	59.50376	-152.09778	05-Jul-2013 10:34
SOCKEYE	59.49800	-152.09290	05-Jul-2013 11:06
SOCKEYE	59.49597	-152.08532	05-Jul-2013 11:21
SOCKEYE	59.49523	-152.08655	05-Jul-2013 11:28
SOCKEYE	59.49397	-152.09120	05-Jul-2013 11:45
SOCKEYE	59.47181	-152.04746	05-Jul-2013 11:58
SOCKEYE	59.44116	-151.88194	06-Jul-2013 10:23
SOCKEYE	59.44745	-151.86515	06-Jul-2013 11:48
CHINOOK	59.74093	-151.98556	07-Jul-2013 11:18
SOCKEYE	59.79151	-151.92558	07-Jul-2013 14:16
SOCKEYE	59.77083	-151.96306	08-Jul-2013 16:16
CHINOOK	59.67132	-151.85438	10-Jul-2013 05:32
SOCKEYE	59.67115	-151.89633	10-Jul-2013 11:00
SOCKEYE	59.76512	-152.01951	10-Jul-2013 13:12
SOCKEYE	59.76854	-152.02620	10-Jul-2013 13:21
SOCKEYE	59.76817	-152.02383	10-Jul-2013 14:00
SOCKEYE	59.78338	-151.99673	10-Jul-2013 15:43
SOCKEYE	59.72186	-151.97336	12-Jul-2013 14:19
SOCKEYE	59.73019	-151.97955	12-Jul-2013 15:07
CHINOOK	59.67849	-151.85985	12-Jul-2013 23:23
SOCKEYE	59.64513	-151.97743	13-Jul-2013 12:34
SOCKEYE	59.64708	-151.98191	13-Jul-2013 12:44
SOCKEYE	59.69360	-152.02285	13-Jul-2013 14:44
SOCKEYE	59.69773	-152.02120	13-Jul-2013 17:12
SOCKEYE	59.69901	-152.02160	13-Jul-2013 17:27
SOCKEYE	59.70024	-152.02174	13-Jul-2013 17:41
SOCKEYE	59.70086	-152.02190	13-Jul-2013 17:49
SOCKEYE	59.69456	-152.01520	13-Jul-2013 18:28
SOCKEYE	59.75092	-152.21450	14-Jul-2013 11:51
SOCKEYE	59.75887	-152.09126	15-Jul-2013 12:25
SOCKEYE	59.66518	-152.05407	15-Jul-2013 13:49
SOCKEYE	59.59287	-151.96909	15-Jul-2013 15:25
SOCKEYE	59.59875	-151.97447	15-Jul-2013 15:50
SOCKEYE	59.55765	-151.97587	15-Jul-2013 16:34
SOCKEYE	59.54676	-151.91550	15-Jul-2013 17:43
SOCKEYE	59.58101	-151.63357	17-Jul-2013 14:16
SOCKEYE	59.65140	-151.79595	18-Jul-2013 10:19
SOCKEYE	59.60821	-151.65944	18-Jul-2013 12:44
SOCKEYE	59.62489	-152.01774	21-Jul-2013 21:11
CHINOOK	59.56298	-151.96630	21-Jul-2013 21:23
SOCKEYE	59.56849	-151.94892	22-Jul-2013 10:56
SOCKEYE	59.60200	-152.04226	22-Jul-2013 12:10
SOCKEYE	59.65070	-152.13770	22-Jul-2013 13:40
CHINOOK	59.60880	-151.96013	23-Jul-2013 16:45
CHINOOK	59.94458	-151.74363	23-Jul-2013 17:13
CHINOOK	59.94313	-151.74547	23-Jul-2013 17:37
SOCKEYE	59.98168	-151.97270	23-Jul-2013 18:10
SOCKEYE	59.92820	-151.75502	24-Jul-2013 07:58
CHINOOK	59.97932	-151.94828	24-Jul-2013 20:24
CHINOOK	59.97683	-151.96000	24-Jul-2013 20:40
SOCKEYE	59.62993	-151.98845	25-Jul-2013 13:30
CHINOOK	59.92222	-151.76035	25-Jul-2013 13:36
CHINOOK	59.70253	-152.08776	25-Jul-2013 17:05
CHINOOK	59.96465	-151.73493	26-Jul-2013 07:07
CHINOOK	59.95310	-151.74058	26-Jul-2013 09:20
SOCKEYE	59.59583	-151.95705	26-Jul-2013 12:08
CHINOOK	59.61868	-152.02890	26-Jul-2013 13:45
CHINOOK	59.68367	-152.09950	26-Jul-2013 15:12
SOCKEYE	59.74802	-152.07430	26-Jul-2013 16:05
CHINOOK	59.91293	-151.77321	27-Jul-2013 12:28
CHINOOK	59.96924	-151.73386	27-Jul-2013 17:36
CHINOOK	59.94375	-151.74746	28-Jul-2013 06:50
CHINOOK	59.96784	-151.73506	28-Jul-2013 08:12
CHINOOK	59.96543	-151.73484	28-Jul-2013 08:43
CHINOOK	59.91269	-151.77712	28-Jul-2013 12:35
CHINOOK	59.90810	-151.77218	31-Jul-2013 14:55
CHINOOK	60.04397	-151.70480	01-Aug-2013 07:40

Table A-4. Handling times of tagged fish that were released immediately after the tagging procedure without a recovery interval. Times reported in mm:ss.

		Chinook	Sockeye	Species Combined
Count of Tagged Fish (N)		6	9	15
After Sedation	Average	11:00	10:53	10:56
	Minimum	06:00	05:00	
	Maximum	13:00	17:00	
Count of Tagged Fish (N)		6	4	10
No Sedation	Average	10:30	07:00	09:06
	Minimum	07:00	05:00	
	Maximum	20:00	10:00	

Table A-5. The duration of each stage of the tagging procedure, broken down by species, and troll method. Times reported in mm:ss

		Chinook			Sockeye			Species Combined		
		Commercial	Sport	Combined	Commercial	Sport	Combined	Commercial	Sport	Combined
Count of Fish Tagged (N)		7	12	19	43	1	44	50	13	63
Induction Duration	Average	06:43	08:55	**08:04**	07:59	05:00	**07:55**	07:48	08:37	**07:58**
	Minimum	04:00	04:00		03:00	N/A		03:00	04:00	
	Maximum	10:00	13:00		25:00	N/A		25:00	13:00	
Recovery Duration	Average	04:43	02:45	**03:28**	06:25	03:00	**06:20**	06:11	02:46	**05:31**
	Minimum	00:00	00:00		00:00	N/A		00:00	00:00	
	Maximum	11:00	07:00		34:00	N/A		34:00	07:00	
Handling Duration	Average	11:26	11:40	**11:35**	14:24	08:00	**14:15**	13:16	11:23	**13:27**
	Minimum	06:00	05:00		05:00	N/A		05:00	05:00	
	Maximum	17:00	18:00		40:00	N/A		40:00	18:00	

*Excluding fish tagged without using anesthetic; excluding first 3 surgically implanted sockeye.

Table A-6. Water quality conditions during tagging.

		Chinook	Sockeye
Sedative Concentration (ppm)*	Average	104.4	128.6
	Minimum	66.7	88.3
	Maximum	183.3	133.3
Water Temp (°C)	Average	11.8	9.3
	Minimum	9.0	6.5
	Maximum	15.0	11.5
Dissolved Oxygen (ppm)	Average	11.5	10.6
	Minimum	9.0	8.2
	Maximum	12.3	12.6

***Excluding the first 3 sockeye surgically implanted using a heavy sedative dose. Also excludes fish tagged without sedative (Chinook, N=19; Sockeye, N=44).**

Table A-7. Capture statistics by the capture vessel/method. All fish caught using the sport fishing vessels were captured in shallow, nearshore waters. Capture depth of sockeye caught by commercial troll calculated on N=44.

		Chinook			Sockeye		
		Commercial	Sport	Combined	Commercial	Sport	Combined
Count of Tagged Fish (N)		12	13	25	50	1	51
FL (mm)	Average	853	1075	968	612	622	612
	Minimum	700	860		503	N/A	
	Maximum	1040	1230		710	N/A	
MEFL (mm)	Average	764.6	960.8	866.6	561	565	561.2
	Minimum	620	790		456	N/A	
	Maximum	940	1040		650	N/A	
Capture Depth (m)	Average	18.7	3.5	10.8	10.9	2.7	10.7
	Minimum	11	1.8		3.7	N/A	
	Maximum	29.3	4.9		25.6	N/A	

Table A-8. Induction, recovery, and retention durations for tagged individuals. Times reported in h:mm.

Species	Induction Duration	Recovery Duration	Overall Handling Duration	Species	Induction Duration	Recovery Duration	Overall Handling Duration
SOCKEYE	0:11	3:29	3:40	SOCKEYE	0:25	0:05	0:30
SOCKEYE	0:12	0:00	0:12	SOCKEYE	0:08	0:26	0:34
SOCKEYE	0:12	1:27	1:39	SOCKEYE	0:06	0:07	0:13
CHINOOK	0:11	0:00	0:11	SOCKEYE	0:05	0:05	0:10
CHINOOK	0:06	0:00	0:06	SOCKEYE	0:08	0:04	0:12
SOCKEYE	0:05	0:00	0:05	SOCKEYE	0:07	0:12	0:19
SOCKEYE	0:11	0:00	0:11	SOCKEYE	0:04	0:10	0:14
SOCKEYE	0:09	0:00	0:09	SOCKEYE	0:10	0:09	0:19
SOCKEYE	0:08	0:00	0:08	SOCKEYE	0:05	0:08	0:13
SOCKEYE	0:16	0:00	0:16	SOCKEYE	0:12	0:09	0:21
SOCKEYE	0:06	0:00	0:06	CHINOOK	0:04	0:03	0:07
SOCKEYE	0:14	0:00	0:14	SOCKEYE	0:05	0:16	0:21
SOCKEYE	0:17	0:00	0:17	SOCKEYE	0:04	0:08	0:12
SOCKEYE	0:06	0:06	0:12	SOCKEYE	0:06	0:04	0:10
SOCKEYE	0:10	0:05	0:15	CHINOOK	0:04	0:11	0:15
SOCKEYE	0:06	0:02	0:08	CHINOOK	0:13	0:05	0:18
SOCKEYE	0:08	0:02	0:10	CHINOOK	0:10	0:07	0:17
CHINOOK	0:06	0:03	0:09	SOCKEYE	N/A	0:00	0:10
SOCKEYE	0:05	0:04	0:09	SOCKEYE	0:05	0:03	0:08
SOCKEYE	0:08	0:04	0:12	CHINOOK	N/A	0:00	0:09
CHINOOK	0:10	0:07	0:17	CHINOOK	N/A	0:00	0:08
SOCKEYE	0:10	0:04	0:14	SOCKEYE	N/A	0:00	0:05
SOCKEYE	0:08	0:04	0:12	CHINOOK	0:10	0:06	0:16
SOCKEYE	0:07	0:05	0:12	CHINOOK	N/A	0:00	0:10
SOCKEYE	0:07	0:03	0:10	CHINOOK	0:06	0:03	0:09
SOCKEYE	0:05	0:05	0:10	CHINOOK	0:06	0:05	0:11
SOCKEYE	0:12	0:03	0:15	SOCKEYE	N/A	0:00	0:08
SOCKEYE	0:05	0:12	0:17	CHINOOK	N/A	0:00	0:09
CHINOOK	0:06	0:09	0:15	CHINOOK	N/A	0:00	0:07
SOCKEYE	0:08	0:07	0:15	SOCKEYE	N/A	0:00	0:05
SOCKEYE	0:09	0:05	0:14	CHINOOK	0:04	0:01	0:05
SOCKEYE	0:06	0:03	0:09	CHINOOK	0:05	0:01	0:06
SOCKEYE	0:03	0:03	0:06	CHINOOK	0:04	0:05	0:09
SOCKEYE	0:04	0:05	0:09	CHINOOK	0:13	0:00	0:13
SOCKEYE	0:09	0:08	0:17	CHINOOK	0:13	0:00	0:13
SOCKEYE	0:06	0:34	0:40	CHINOOK	0:13	0:00	0:13
SOCKEYE	0:06	0:17	0:23	CHINOOK	N/A	0:00	0:20
SOCKEYE	0:04	0:12	0:16	CHINOOK	0:10	0:00	0:10

N/A in the 'Induction Duration' column indicates that NO anesthetic (AQUI-S® 20E) was used

Table A-9. Bycatch recorded and released.

	SPECIES													
	SOCKEYE (UNTAGGED)	SOCKEYE (UNFIT)	IMMATURE CHINOOK	MATURE CHK <400mm	COHO	PINK	CHUM	HALIBUT	PACIFIC COD	WALLEYE POLLOCK	DOLLY VARDON	IRISH LORD	GREENLING	VESSEL
29-Jun-13			1						2	3				F/V WEST BANK
30-Jun-13	1	1				1		21						F/V WEST BANK
01-Jul-13	1	2						9						F/V WEST BANK
02-Jul-13	3					2		30						F/V WEST BANK
03-Jul-13	2	1				1	1	17						F/V WEST BANK
04-Jul-13						1		19		1	1			F/V WEST BANK
05-Jul-13	7	3	3		5	17	6	18						F/V WEST BANK
06-Jul-13	2		4		6	5		1	3	5				F/V WEST BANK
07-Jul-13			2			1		18	1	2				F/V WEST BANK
08-Jul-13			2		2	1		13						F/V WEST BANK
09-Jul-13														F/V WEST BANK
10-Jul-13	1	1	1		7	9		27	5		1			F/V WEST BANK
11-Jul-13								4						F/V WEST BANK
12-Jul-13		2	1		1	2		10	2					F/V WEST BANK
13-Jul-13	11	1	2					23						F/V WEST BANK
14-Jul-13						5	3	3						F/V WEST BANK
15-Jul-13		7			2	14	3	22		3				F/V WEST BANK
16-Jul-13														F/V WEST BANK
17-Jul-13			2			2	4			4				F/V WEST BANK
18-Jul-13		2			2	5		3		2				F/V WEST BANK
19-Jul-13														F/V WEST BANK
20-Jul-13														F/V WEST BANK
21-Jul-13					1	21		15		5	1			F/V WEST BANK
22-Jul-13			2			17	2							F/V WEST BANK
23-Jul-13		2	1		4	60		9				1		COMBINED (ALL 3 VESSELS)
24-Jul-13			3		2	20		3			1	1	1	COMBINED (ALL 3 VESSELS)
25-Jul-13			1		2	15	1	11	1		1			COMBINED (ALL 3 VESSELS)
26-Jul-13			1		2	12		12		1				COMBINED (ALL 3 VESSELS)
27-Jul-13			2		3			12					1	COMBINED (ALL 3 VESSELS)
28-Jul-13						1		14						COMBINED (ALL 3 VESSELS)
29-Jul-13														M/V REFLECTIONS & SERENITY
30-Jul-13														M/V REFLECTIONS & SERENITY
31-Jul-13														M/V REFLECTIONS & SERENITY
01-Aug-13														M/V REFLECTIONS & SERENITY
02-Aug-13														M/V REFLECTIONS & SERENITY
TOTALS	**28**	**22**	**28**	**0**	**39**	**212**	**20**	**314**	**14**	**26**	**5**	**2**	**2**	

B. Detections Data Screening

Prior to analysis, we screen the data to identify 1) false detections; 2) single transmissions that were recorded on more than one receiver; 3) the date of displacement for receivers that were pulled from position (likely by fishing activities) and returned to us by the public; and 4) fish that were likely not of Kenai River origin.

B.1. Clock-drift correction

VEMCO submerged receivers rely on crystal oscillators to keep track of time. Due to manufacturing variations, the frequency of the crystal oscillators varies slightly between receivers. Over time, the clock drifts and loses or gains time. A receiver may drift up to 4 seconds per day. Some of the time drift is due to changes in temperature, however, the majority of the drift is due to the variations in the oscillator. Therefore, the drift is highly linear and can be corrected (http://vemco.com/wp-content/uploads/2013/10/vue_manual.pdf).

We corrected the receivers for clock drift using the automatic correction function in VEMCO's VUE software.

B.2. False detection screening

We identified and excluded any detection likely to be false (as a result of aliasing or tag collisions) using the First and Second Acceptance Criteria recommended by VEMCO (Pincock 2008; see http://www.vemco.com/pdf/false_detections.pdf) with a modification to the Second Criteria. Detections met the first criteria if there was at least one short interval (<0.5 hour) between successive detections of an ID code on a receiver and if there were more short intervals (<0.5 hour) between detections than long ones (>0.5 hour). Detections not meeting the first criteria were then examined individually (second criteria) to determine if they were supported by detections on other sub-arrays in a temporally logical sequence (including release) along the migratory path and if they were recorded when the probability of collision between multiple tags was low (i.e., at times when there was a silent interval of >5 minutes on at least one side of the detection in question). VEMCO acoustic tags generally have a very low false positive rate: we identified four of 24573 detections as false.

B.3. Duplicate detections

The VEMCO V16 acoustic tags we used in the Cook Inlet study in 2013 are powerful and a single transmission was occasionally detected by more than one receiver. We removed these duplicates from the marine detections.

We used the following criteria to identify duplicate detections:

1) the tag numbers must match;

2) the depth measurements must match;

3) the receiver serial numbers must be different; and

4) the detections must be recorded within the minimum transmission interval of the tag (<15 s).

This screen identified 205 duplicate detections.

B.4. Last date of valid detection screening

When receivers are accidentally displaced from their deployment position (usually by fishing activity), they are sometimes returned to Kintama by members of the public. We are usually able to download the data from these units; however, we do not always know the date and time they were displaced. Fishing crews are often able to provide dates when units were caught in their nets, providing us with accurate displacement dates, but receivers found floating or washed ashore may have been displaced much earlier.

When the date of displacement is not available, we estimate it by comparing the date and time of each tag ID logged with the date and time of the same tag ID on neighboring units that remained in position throughout the study period. The last date with a difference of less than one hour between tag detections on neighboring receivers is accepted as the last date of valid detection, and otherwise valid detections recorded for later dates are excluded from any analysis that is sensitive to receiver position. This process can only be used for receivers that have data (empty units cannot be screened) and that have neighboring units that also recorded detections.

In 2013, there were 4 receivers returned to Kintama by members of the public. From these, we identified 35 detections of 4 individual fish as being recorded after the receiver was displaced.

B.5. Stock of origin screening

This study focuses on Chinook and sockeye from the Kenai and Kasilof rivers; however, fish were captured at sea and we do not know the stock of origin. Tissue samples were collected from each acoustic-tagged fish for genetic stock analysis, but results were not conclusive for Chinook, and were not yet available for sockeye at the time of writing. Prior to the start of our study, it was assumed that most fish captured in lower Cook Inlet in 2013 would return to the Kenai or Kasilof rivers, similar to 2012. However, there is now some evidence that fish from other stocks were included in our sample (see Discussion). These fish were unlikely to be detected by the acoustic array and would appear to be mortalities.

To partially address this concern, we removed fish from the analyses (n=2 Chinook; n=3 sockeye) that were recovered south of the release site; however, we could only remove individuals whose tags were returned in the fishery. To further focus the results on the Kenai River, we also removed the one sockeye that was detected in the Kasilof River. Removal of the Kasilof sockeye was particularly important for the survival analysis because the detection probability of the single detection site in the Kasilof River was unknown.

We removed 6 fish:

1) 1 Chinook caught in the Columbia River;
2) 1 Chinook caught near Seldovia;
3) 1 sockeye caught near Seldovia;
4) 1 sockeye caught near Kodiak Island;
5) 1 sockeye caught in Kachemak Bay; and
6) 1 sockeye caught in the Kasilof River.

B.6. Failed depth sensors

All depth measurements for three tags read 2.5 m above the water surface, indicating that the pressure sensors were broken:

1) 9563 was a Chinook detected 1529 times between Aug 2nd and 9th;

2) 9572 was a Chinook detected 95 times between Aug 2nd and 6th; and

3) 9501 was a sockeye detected 15 times over 1.5 hours on July 19th.

Acoustic tag 9501 was returned by the fishery and VEMCO confirmed that the sensor had failed. We removed all three of these fish from the depth analysis.

VEMCO reports that the pressure sensors used in this study are their most reliable model and they have had no previous failures reported from the field. That we had 3 of these sensors fail out of 76 tags (39 with detections) is a cause for concern. Both Kintama and VEMCO are running various assessments using additional tags. In particular, Kintama has deployed multiple tags at the mean migration depths of the Chinook and sockeye measured in this study to evaluate their accuracy and precision. These results were not complete at the time this report was prepared.

C. Data Analysis

C.1. Distribution on marine array

To identify possible migratory pathways within Cook Inlet, we plotted the number of fish that were detected at each receiver on each of the six east-west lines deployed in the marine array. We also assessed the distribution of fish detected entering the ESSN by plotting fish counts at each receiver along the eastern boundary of the marine array. Because individual fish are usually heard at more than one receiver on a line, we allocated a proportion of each fish to each of the receivers on which it was detected (i.e., if a fish was heard once at each of three positions, each unit was allocated 0.33 of a fish).

C.2. Vertical distributions on entry to the ESSN fishing district

We assessed the vertical distributions of Chinook and sockeye on entry to the ESSN and in relation to daylight and stage of tide. Entry to the ESSN was represented by all detections recorded on the north-south line of receivers bounding the western edge of the ESSN district (and the eastern edge of the marine array). Note that fish detected at this boundary may not actually be 'entering' the ESSN at the detection site; they may be anywhere within detection range of these receivers (~700 m) either inside or outside the ESSN fishing district.

We classified detections as occurring during day or night using the sunrise and sunset times specific to the day they were recorded. Sunrise/sunset times were obtained for at the Kenai Municipal Airport using the calculator provided by Horizon Network Security (http://www.cmpsolv.com/cgi-bin/sunset?page=bob&exper=new97&loctype=City&loc=Kenai%2C+AK&date=28%2F06%2F2013&tz=Zulu&tzcustom=&q=d2&aviation=yes&astro=yes&colors=white&datefmt=3). We defined 'day' as the interval between sunrise and sunset, and 'night' as the interval between sunset and sunrise.

We obtained estimates of tide level at the Kenai River Mouth from Nobeltec software Tides and Currents Professional version 3.5.107. The tidal data were for the interval between July 1st and August 20th which corresponds to the release of the first acoustic-tagged fish and the last detection on the marine array. They were reported with a 30 minute resolution and relative to the Mean Lower Low Water datum. Each detection was associated with the tide level predicted closest to the time the detection was recorded. We defined 'low' tides as tides $\leq$ the 20th percentile of tide heights ($\leq$ 1.4 m),

'high' tides as tides $\geq$ the 80th percentile of tide heights ($\geq$ 5.4 m), and intermediate tides as tides between the 20th and 80th percentiles.

Because the number of depth measurements varied by individual fish, there was the possibility that unique behaviour by one or a few individuals who were detected frequently could bias the results. Accordingly, we present the depth distributions data for each species in two ways: 1) with depth transmissions as the unit of replication, and 2) with individual fish as the unit of replication. In the first approach, we simply summarized all the depth transmissions by species regardless from which fish they originated. In the second approach, we allocated a proportion of each fish to each of its depth transmissions (i.e., if a fish was detected 100 times, each detection was weighted as 0.01). Thus, the total number of detections for each individual summed to one. Using the fish as the unit of replication in this manner reduced the influence of individuals with high detection counts, but in exchange, individuals for which we have little information were weighted the same as those whose depth distributions are well known.

To further investigate the influence of individual animals on the cumulative depth distributions, we calculated the jackknife distribution for the *m* fish of each species that were detected by resampling the data *m* times while successively leaving out all the detections from one individual fish. We then calculated the mean, minimum, and maximum values at each depth across these resampled cumulative distributions.

There was little difference in results between the methods where the unit of replication was 1) the detection, or 2) the fish. For simplicity, the main report body presents results based on detections. Results based on individual fish are included in Appendix D.

C.3. Entry patterns into the ESSN fishing district in relation to time of day, tide stage, and wind velocity

We assessed if entry of tagged Chinook and sockeye to the ESSN was related to time of day, tide stage, or wind velocity (wind speed and direction). We did not assess if entry to the ESSN was related to date (as specified in the RFP) because date was confounded by release timing after tagging (Figure E-1) and, therefore, reflects both run-timing and our fishing schedule rather than a variable that can be used to inform fishery management.

Entry to the ESSN was represented by all detections recorded on the north-south line of receivers bounding the western edge of the ESSN district (and the eastern edge of the marine array). Note that fish detected at this boundary may not actually be 'entering' the ESSN at the detection site; they may be anywhere within detection range of these receivers (~700 m) either inside or outside the ESSN fishing district.

Sources for sunrise/sunset times and tide levels are provided in section C.2. We defined 'day' as the interval between sunrise and sunset, and 'night' as the interval between sunset and sunrise. We defined 'low' tides as tides $\leq$ the 20th percentile of tide heights ($\leq$ 1.4 m), 'high' tides as tides $\geq$ the 80th percentile of tide heights ($\geq$ 5.4 m) , and intermediate tides as tides between the 20th and 80th percentiles. We further defined ebb, slack, and flood tides defied based on whether the tide height predicted for the Kenai River mouth was lower, equal, or higher than in the preceding half hour, respectively (tides were predicted at ½ hour intervals).

We used hourly wind speed and direction measurements for the NOAA meteorological station at Nikiski (Station number: 09455760) to represent wind conditions at the western boundary of the ESSN fishing district (http://tidesandcurrents.noaa.gov/met.html?id=9455760). Each detection was associated with the wind speed and direction measurements recorded closest to the time the detection was recorded.

Because the number of detections varied by individual fish, there was the possibility that unique behaviour by one or a few individuals who were detected frequently could bias the results. Accordingly, we assessed entry to the ESSN for each species in two ways: 1) with each detection the unit of replication, and 2) with individual fish as the unit of replication. In the first approach, we simply summarized (by species) the environmental conditions occurring when each detection was recorded regardless of the fish from which it originated. In the second approach, we allocated a proportion of each fish to each of its detections (i.e., if a fish was detected 100 times, the environmental conditions occurring when the detection was recorded were weighted as 0.01). Thus, the total number of detections for each individual summed to one. Using the fish as the unit of replication in this manner reduced the influence of individuals with high detection counts, but in exchange, individuals for which we have little information were weighted the same as those whose depth distributions are well known.

There was little difference in results between the methods where the unit of replication was 1) the detection, or 2) the fish. Results from both methods are included in Appendix E.

C.4. Travel times and rates

Travel time (days) was calculated for each fish from release until first detection on the marine array, from this first detection on the marine array until arrival at the Kenai River Mouth at RKm 2 (Snug Harbor), and from arrival at one detection site until arrival at the next for all sites in the Kenai River (RKms 2, 4.5, 8.2, 13.8, 22, 25.3, and 30.6). These estimates could only be made for fish detected at both detection sites bracketing the segment in question. Arrival was defined as the first detection at each detection site.

Travel rate was calculated for each fish as follows:

$$Travel\ rate = \frac{Distance}{Travel\ time}.$$

For this equation, distance was measured for each fish along the shortest route in water. We present travel rates in both kilometers/day and body lengths/second (BL/sec). We used fork length at tagging as the body length measure.

C.5. Migration rates in relation to tagging date and fish length

Travel rates were calculated as described in section C.4. Fish length (fork length) and tag date were recorded at time of tagging.

C.6. Milling behavior of Chinook and sockeye salmon in the Kenai River estuary in relation to tidal fluctuations

We used the three detection sites at or below the Kenai River Bridge (RKms 2, 4.5, and 8.2) to investigate the influence of tidal fluctuations on milling behaviour in the Kenai River estuary. Estimates of tide level at the Kenai River Mouth were from Nobeltec software Tides and Currents Professional version 3.5.107. These data were reported with a 30 minute resolution and relative to the Mean Lower Low Water datum. We defined 'milling' in the following ways:

1. a gap in the detection sequence at a single detection site of >1 hour; or
2. detection at a detection site upstream followed by detection at a site downstream.

For each fish that displayed milling behaviour, we plotted its detection sequence overlaid with the time series of tide levels.

C.7. Survival analysis

Estimates of survival and detection probabilities were calculated using the Cormack-Jolly-Seber[24] (CJS) model for live-recaptured animals implemented with Program MARK (White and Burnham 1999) through the R[25] package RMark[26]. This model estimates survival (ϕ) and detection probabilities (p) within a likelihood framework.

The survival estimates are termed "apparent survival" and represent the joint probability of migration to the Kenai River and survival through each segment of the array. Any fish that did not migrate to the Kenai River were counted as mortalities. For simplicity, we have abbreviated "apparent survival" as "survival".

We estimated survival for acoustic-tagged Chinook and sockeye in two segments of their migration: 1) between release and arrival at the marine acoustic array at line 159.0 (Figure 1), and 2) from there until arrival at the Kenai River mouth. Fish were considered to have survived to reach line 159 if they were detected anywhere on the marine array. They were then considered to have survived to reach the Kenai River Mouth if they were detected at either of the receivers deployed at RKms 2 or 4. Detections upstream were used to estimate the detection probability at the River Mouth.

The method of using the entire marine array to represent detection at line 159 has the potential to bias the survival estimates if fish swam over a portion of the marine array undetected and died before reaching the river mouth. In this case, the mortality would appear to have occurred between release and line 159 rather than in the next segment over the marine array. We used a more complex CJS model[27] to

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[24] 1) Cormack RM (1964) Estimates of survival from the sighting of marked animals. Biometrika 51:429-438
2) Jolly GM (1965) Explicit estimates from capture-recapture data with both death and immigration- Stochastic model. Biometrika 52:225-247
3) Seber GAF (1965) A note on the multiple recapture census. Biometrika 52:249-259

[25] R Core Team (2013). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL http://www.R-project.org/.

[26] Laake, J.L. (2013). RMark: An R Interface for Analysis of Capture-Recapture Data with MARK. AFSC Processed Rep 2013-01, 25p. Alaska Fish. Sci. Cent., NOAA, Natl. Mar. Fish. Serv., 7600 Sand Point Way NE, Seattle WA 98115.

[27] We added a digit to the capture history sequence by dividing the marine array into 2 segments: 1) line 159 represented arrival at the marine acoustic array because it formed the southern edge of the grid; and 2) the rest of the marine receivers

investigate this possible source of bias: the survival estimates for Chinook were unchanged and the survival estimates for sockeye were increased by only 3% which is well within 1 standard error.

We estimated cumulative survival from release to the Kenai River mouth as the product of the two segment estimates. Because detection probability was 100% at the River mouth (i.e., all fish detected upstream were also detected at the Mouth), we calculated the standard error of the cumulative survival estimates as the standard error of a proportion[28].

$$Standard\ error = \sqrt{\frac{Survival(1 - Survival)}{Number\ released}}.$$

were combined and used to boost the number of fish detected beyond line 159. Given the study design, this method provided the largest possible sample size to estimate detection probability and survival to line 159.

[28] When detection probability is 100%, the CJS model returns the same results as the following expression:

$$Survival = \frac{Number\ detected}{Number\ released}$$

D. Sections 2.5 Depth distributions near the ESSN; and 2.6 Effect of tides and time of day on depth distributions near the ESSN– Supplementary

Because the number of depth measurements varied by individual fish, it was possible that unique behavior by one or a few individuals who were detected frequently could bias the results. To investigate this prospect, we present the depth distributions data for each species in two ways: 1) with depth transmissions as the unit of replication, and 2) with individual fish as the unit of replication. In the first approach, we summarized all the depth transmissions by species regardless from which fish they originated. In the second approach, we allocated a proportion of each fish to each of its depth transmissions (i.e., if a fish was detected 100 times, each depth measurement was weighted as 0.01). Because the results were similar between the two methods, we reported only the results based on detections in the main report body. This appendix presents the results based on individual fish.

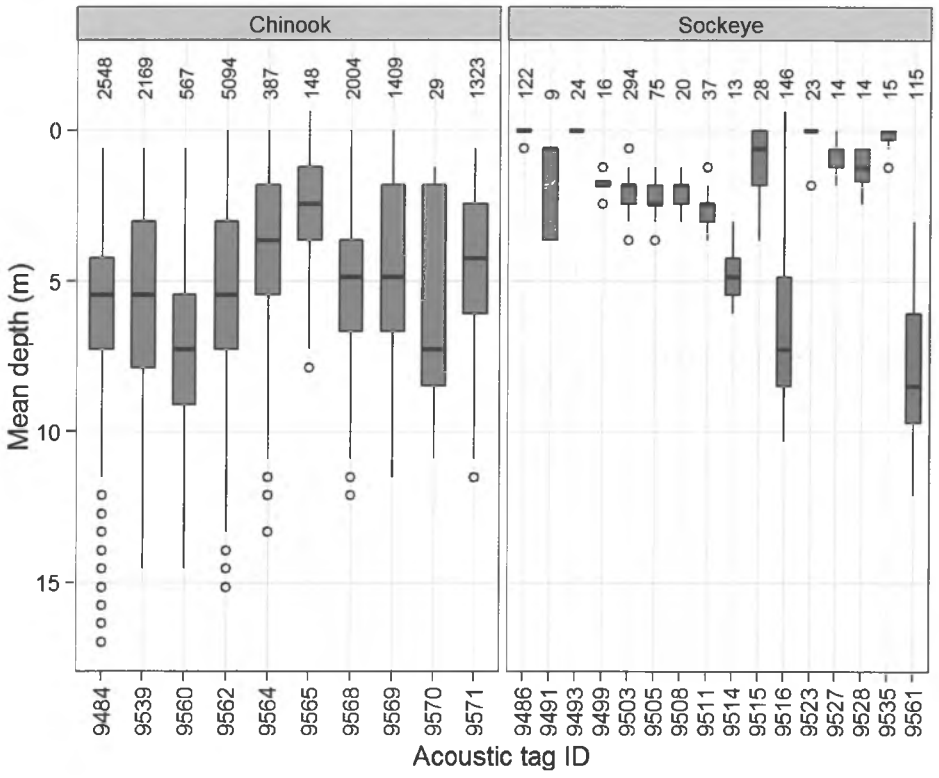


Figure D-1. Depth distribution (m) of individual adult sockeye and Chinook salmon migrating over the row of acoustic receivers bordering the western edge of the ESSN fishery. Numbers along the top of the plots are the sample size. The top and bottom of each box are the 25th and 75th percentiles, the central band is the median, and the whiskers extend to the minimum and maximum values exclusive of outliers which are shown as circles.

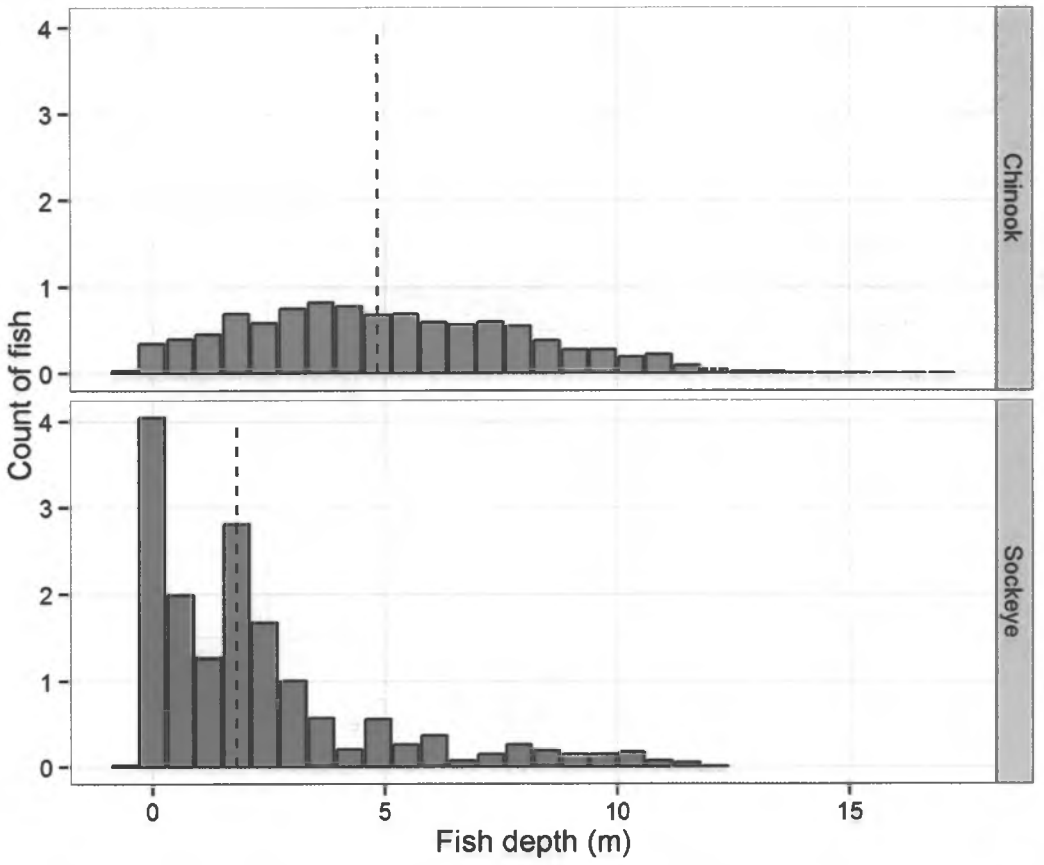


Figure D-2. Depth distribution (m) of adult sockeye and Chinook salmon migrating over the row of acoustic receivers bordering the western edge of the ESSN fishery. Distributions were calculated by weighting each depth measurement by the number of depth measurements recorded by each individual fish (i.e., if a fish was detected 100 times, each depth measurement was weighted as 0.01). The vertical lines show the median depth.

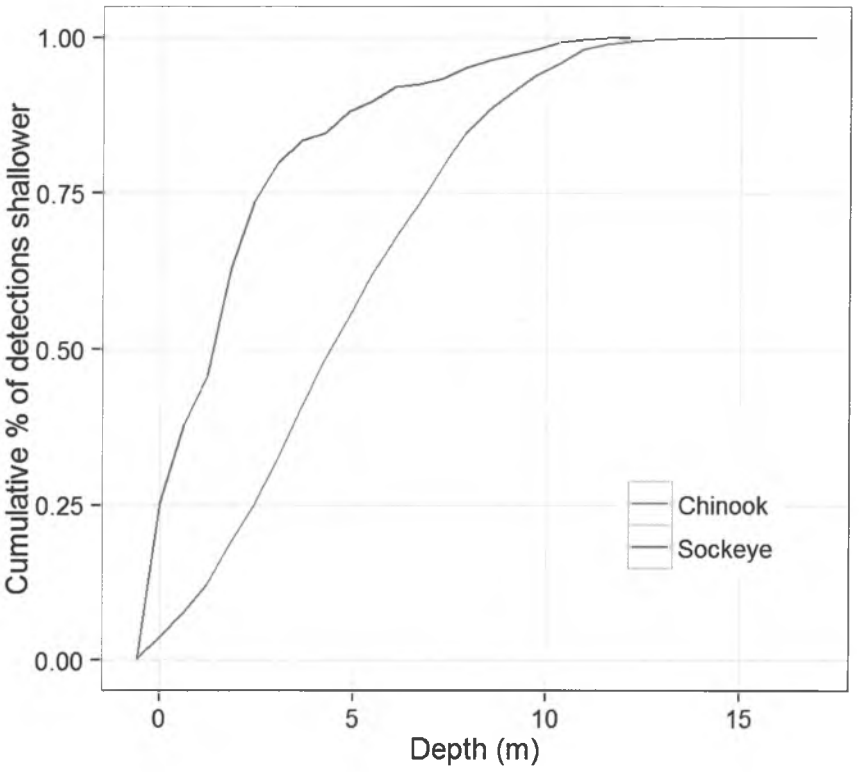


Figure D-3. Cumulative depth distribution of tagged sockeye (red) and Chinook (blue) near the western boundary of the ESSN. Distributions were calculated by weighting each depth measurement by the number of depth measurements recorded by each individual fish (i.e., if a fish was detected 100 times, each depth measurement was weighted as 0.01).

Table D-1. Cumulative depth distribution of tagged sockeye and Chinook near the western boundary of the ESSN fishing district. Distributions were calculated by weighting each depth measurement by the number of depth measurements recorded by each individual fish (i.e., if a fish was detected 100 times, each depth measurement was weighted as 0.01).

Depth (m)	Cumulative percent of detections shallower	
	Chinook	Sockeye
1	8%	38%
2	19%	63%
3	25%	74%
4	41%	83%
5	55%	88%
6	62%	90%
7	73%	93%
8	85%	95%
9	89%	96%
10	94%	98%

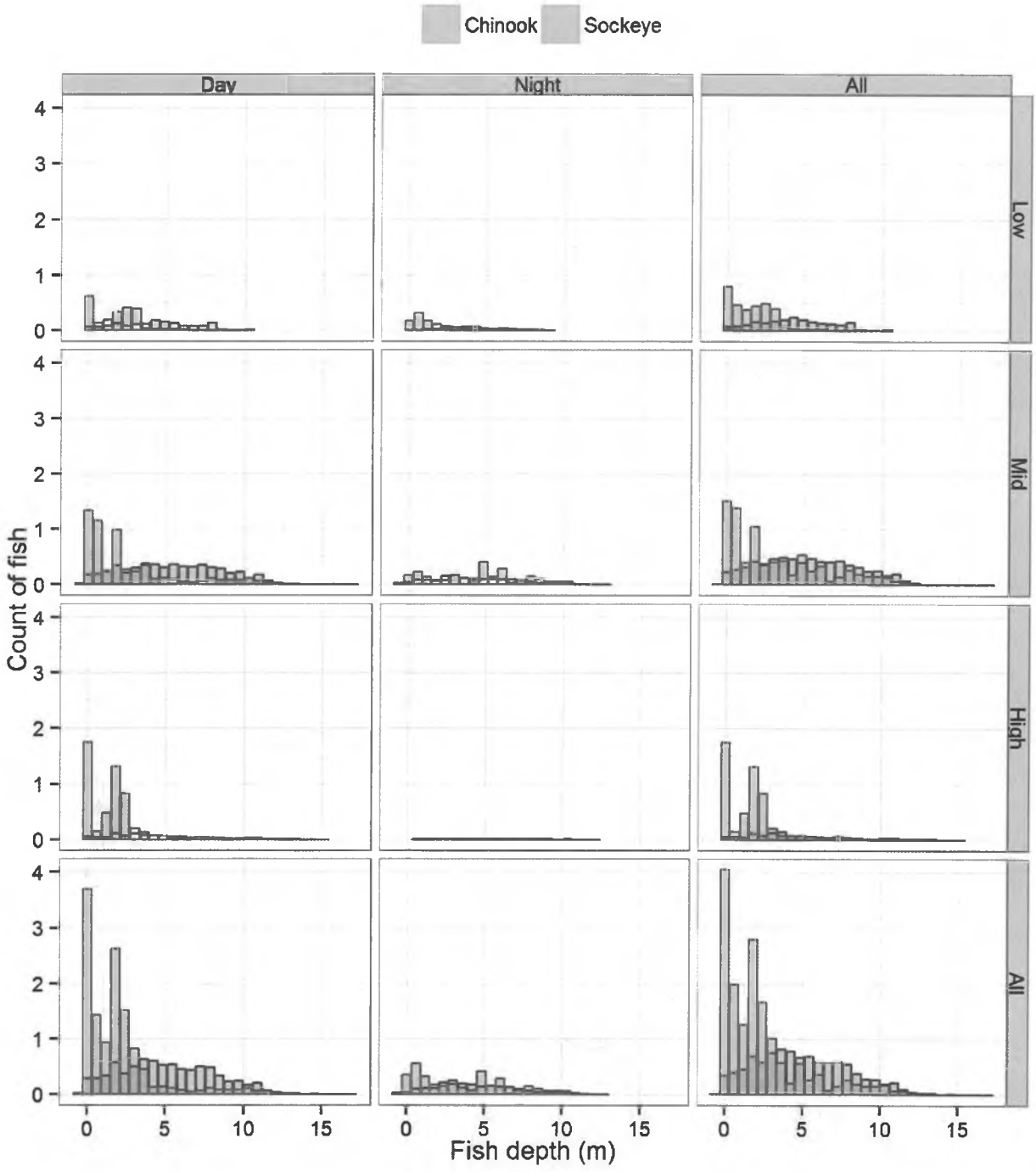


Figure D-4. Depth distributions (m) histograms of adult sockeye and Chinook salmon along the western edge of the ESSN fishing zone. Distributions were calculated by weighting each depth measurement by the number of depth measurements recorded by each individual fish (i.e., if a fish was detected 100 times, each depth measurement was weighted as 0.01).

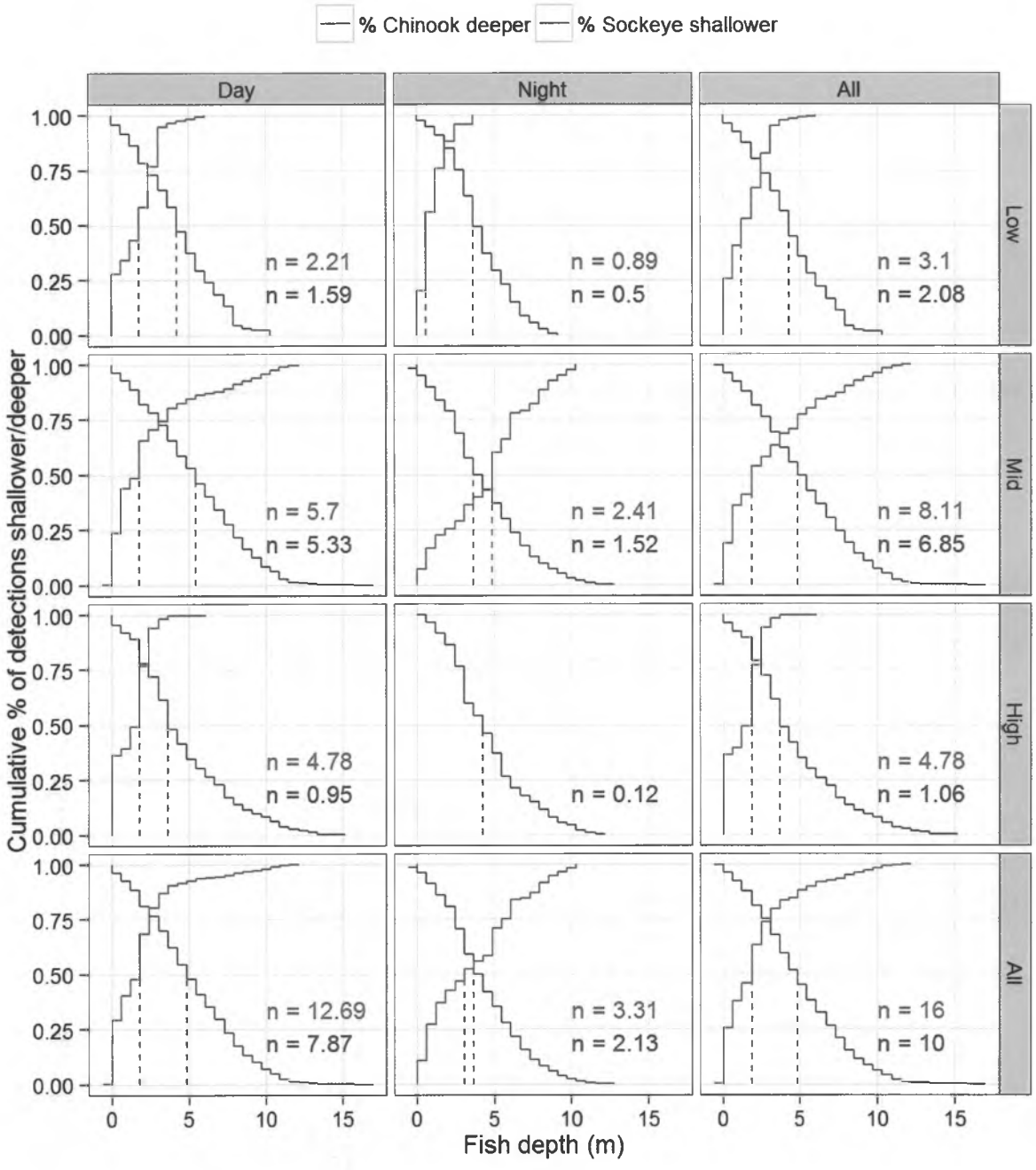


Figure D-5. Cumulative depth distributions (m) of adult sockeye and Chinook along the western edge of the ESSN fishing district; n: sample size. Distributions show the proportion of time sockeye spent shallower than a given depth and the proportion of time Chinook spent deeper than a given depth. Distributions were calculated by weighting each depth measurement by the number of depth measurements recorded by each individual fish (i.e., if a fish was detected 100 times, each depth measurement was weighted as 0.01).

E. Section 2.7 Entry patterns into the ESSN and Kenai River in relation to time of day, tide stage, and wind velocity—Supplementary

This appendix presents supplementary figures for the investigation into the effects of environmental conditions on entry to the ESSN fishing district. "Entry" to the ESSN was represented by all detections by all detections recorded on the north-south line of receivers bounding the western edge of the ESSN district (and the eastern edge of the marine array). Note that fish detected at this boundary may not actually be 'entering' the ESSN at the detection site; they may be anywhere within detection range of these receivers (~700 m) either inside or outside the ESSN fishing district.

Several of the figures in this appendix are presented twice using 1) the detection as the unit of replication and 2) the fish as the unit of replication. In the first approach, we simply summarized the environmental conditions by species when each detection was recorded. In the second approach, we allocated a proportion of each fish to each of its depth transmissions (i.e., if a fish was detected 100 times, the environmental condition when each detection was recorded were weighted as 0.01). Thus, the total number of detections for each individual summed to one. Using the fish as the unit of replication in this manner reduced the influence of individuals with high detection counts, but in exchange, individuals for which we have little information were weighted the same as those whose distributions are well known.

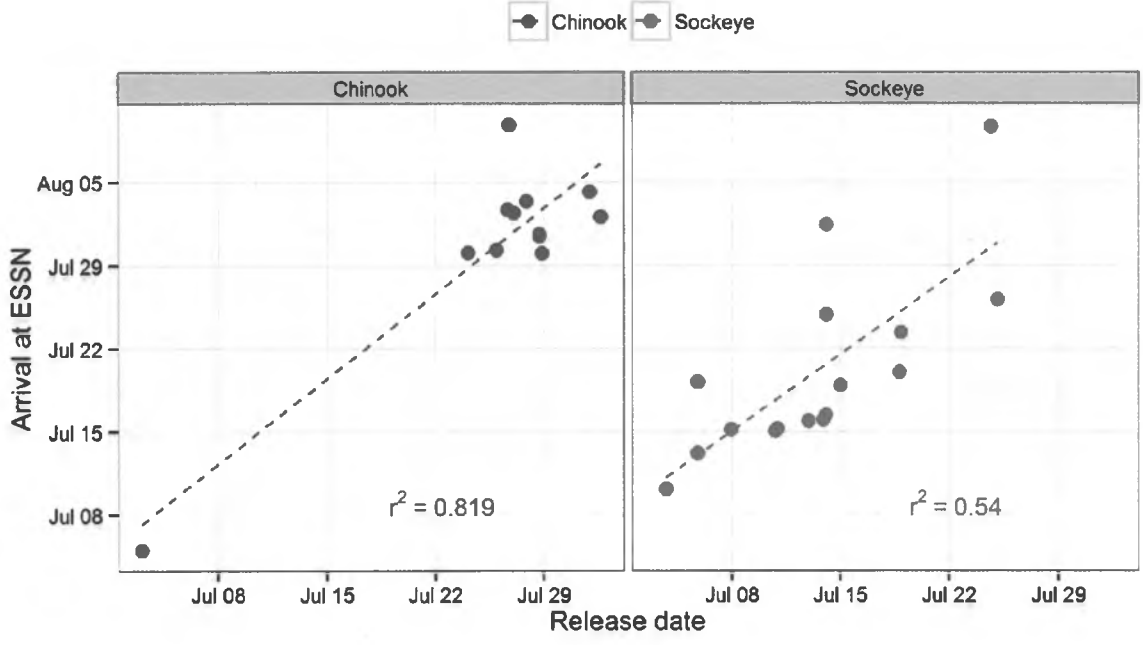


Figure E-1. Relationship between release date and arrival of tagged adult sockeye and Chinook salmon at the western boundary of the ESSN fishing district.

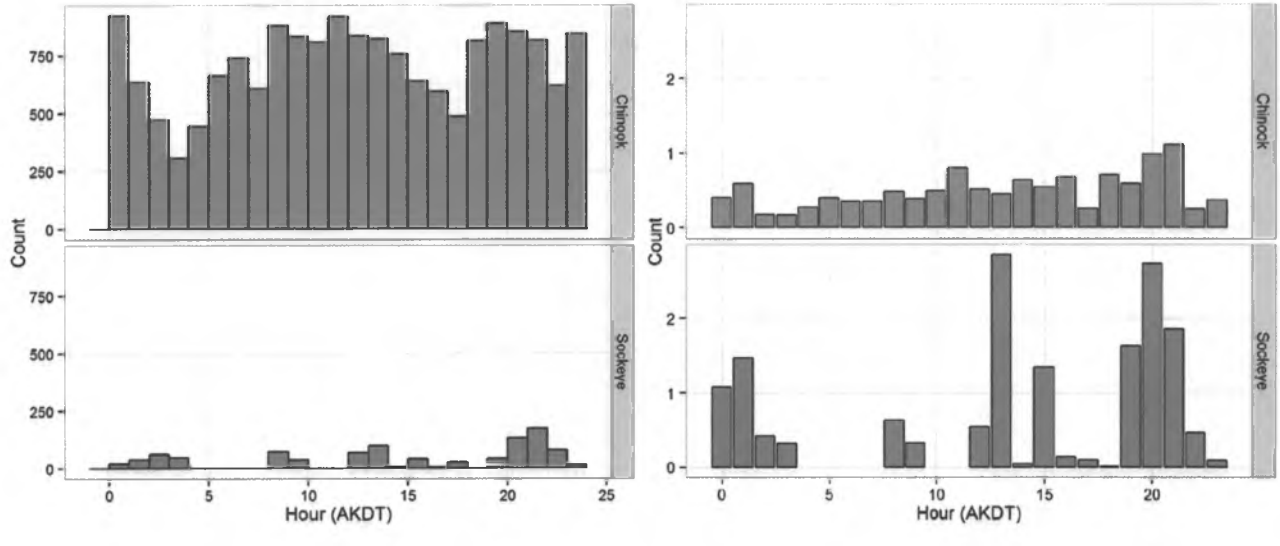


Figure E-2. Distribution of the number of detections recorded by hour (all days combined) for adult Chinook and sockeye salmon as they migrated over the north-south line of acoustic receivers along the western edge of the ESSN fishing district. Left: by detection; right: by fish.

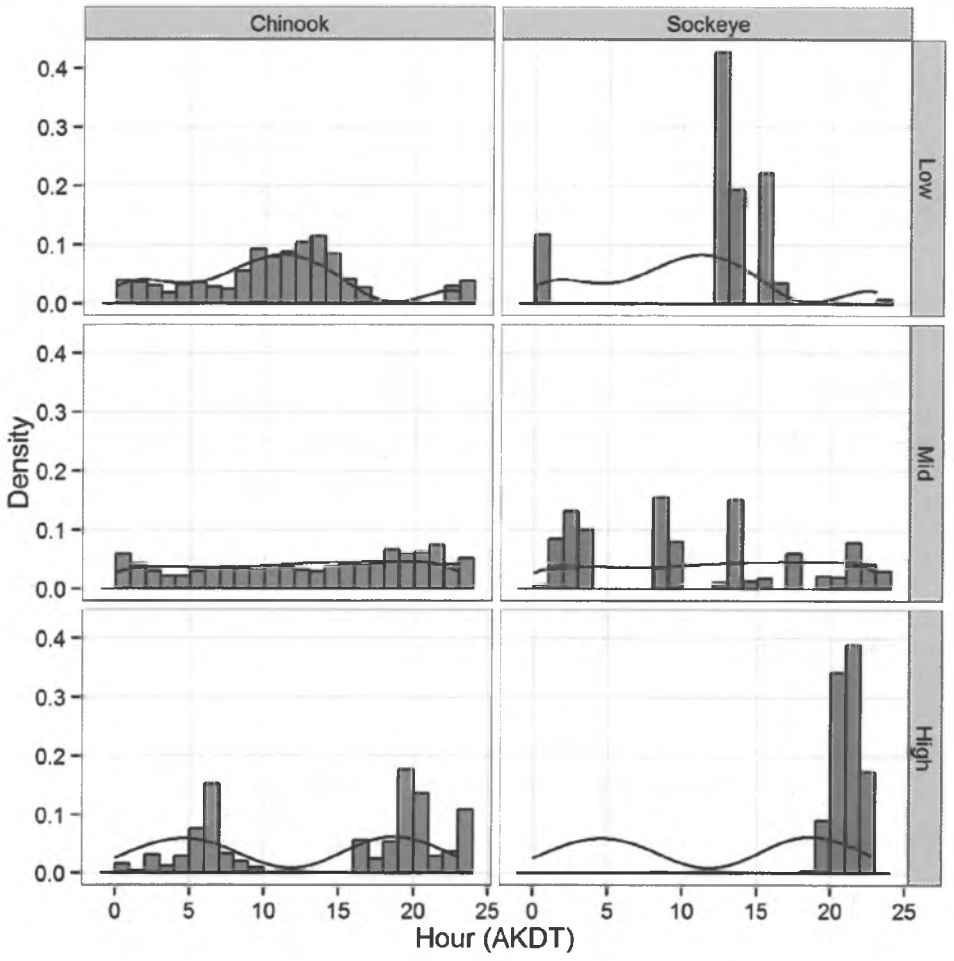


Figure E-3. Density distribution of detections recorded by time of day (AKDT) and binned by tide height for adult Chinook and sockeye salmon as they migrated along the western edge of the ESSN fishing district. The black line represents the hourly distribution of tides predicted for the migration period and binned by tide height (i.e., these are the tide heights that were available to the salmon).

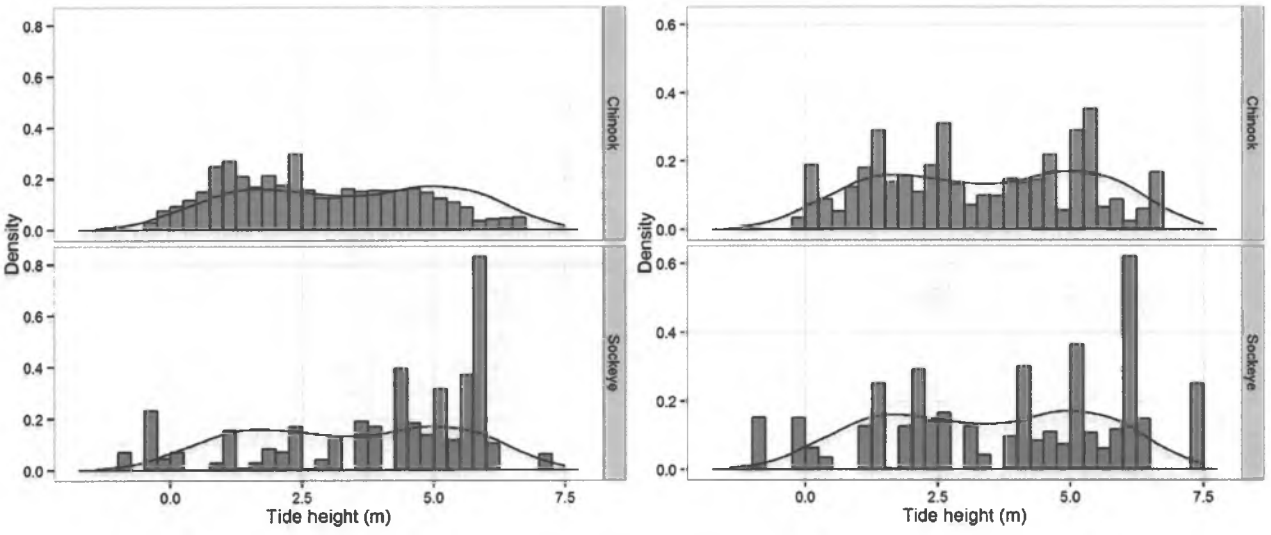


Figure E-4. Density distribution of detections recorded by tide height (m) for adult Chinook and sockeye salmon as they migrated over the north-south line of acoustic receivers along the western edge of the ESSN fishing district. Left: by detection; right: by fish. The black line represents the distribution of tide height during the migration period (i.e., these are the tide heights that were available to the salmon). Tide heights were predicted for the Kenai River mouth at 0.5 hour intervals and relative to Mean Lower Low water.

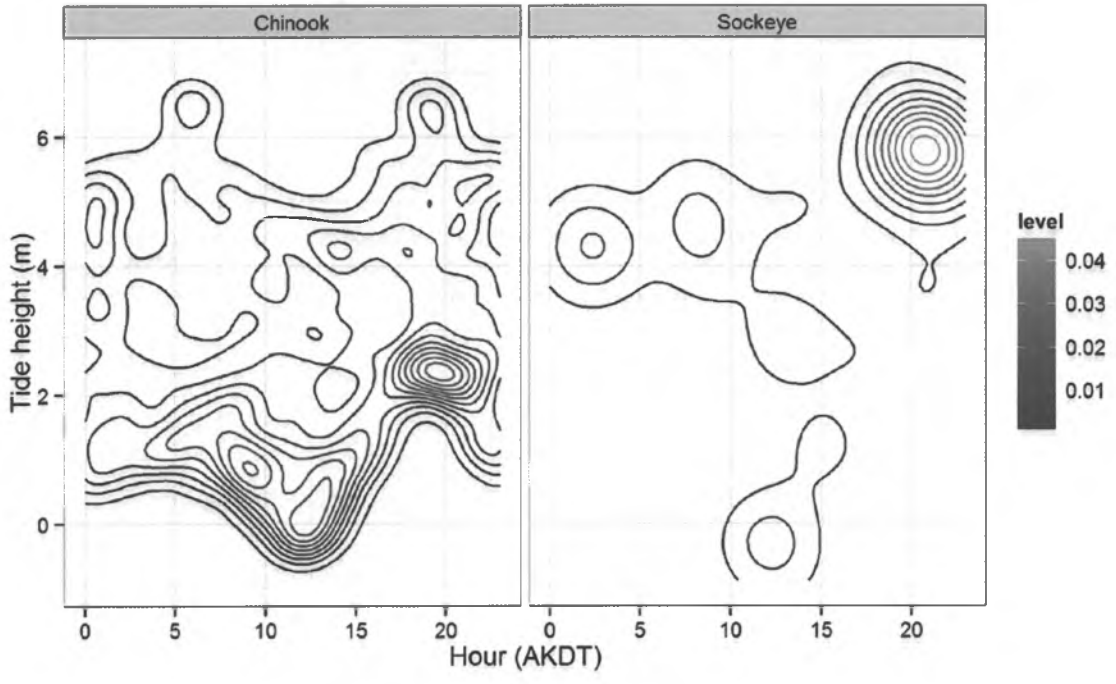


Figure E-5. Contour plot of adult sockeye and Chinook detections relative to tide height (m) and hour of day (AKDT) along the western edge of the ESSN fishing district. Tide heights were predicted for the Kenai River mouth and are relative to Mean Lower Low water.

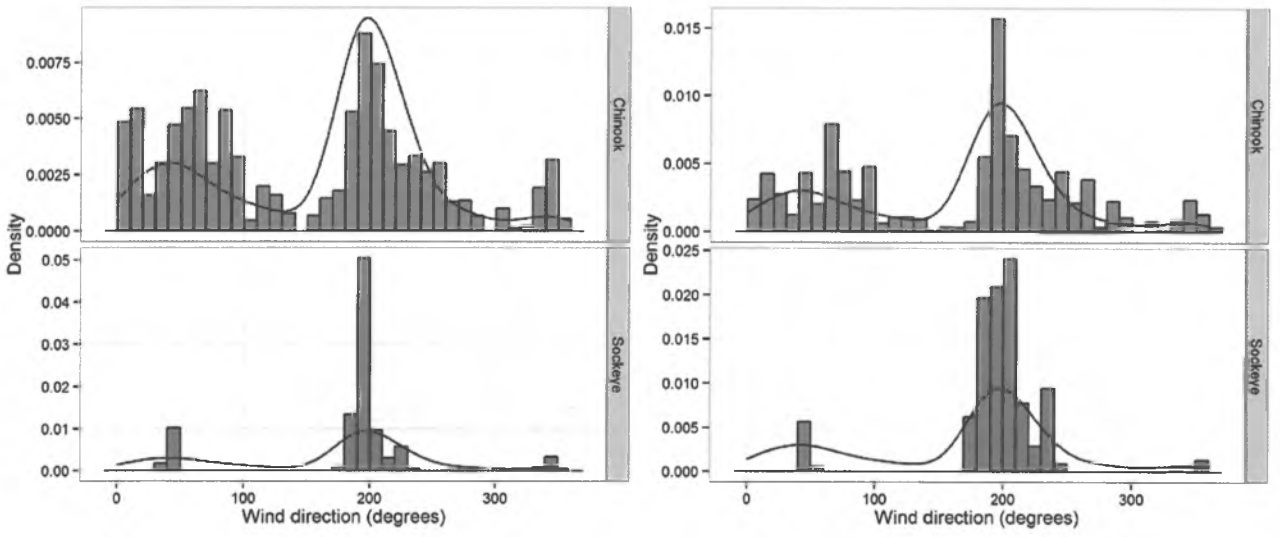


Figure E-6. Density distribution of detections recorded by wind direction (degrees) for adult Chinook and sockeye salmon as they migrated over the north-south line of acoustic receivers along the western edge of the ESSN fishing district. Left: by detection; right: by fish. Wind blows from the direction indicated. North is at 0 degrees; east is at 90 degrees; south is at 180 degrees, and west is at 270 degrees. The black line represents the distribution of wind direction during the migration period (i.e., these are the wind directions that were available to the salmon). Wind direction was measured at hourly intervals at the NOAA meteorological station at Nikiski.

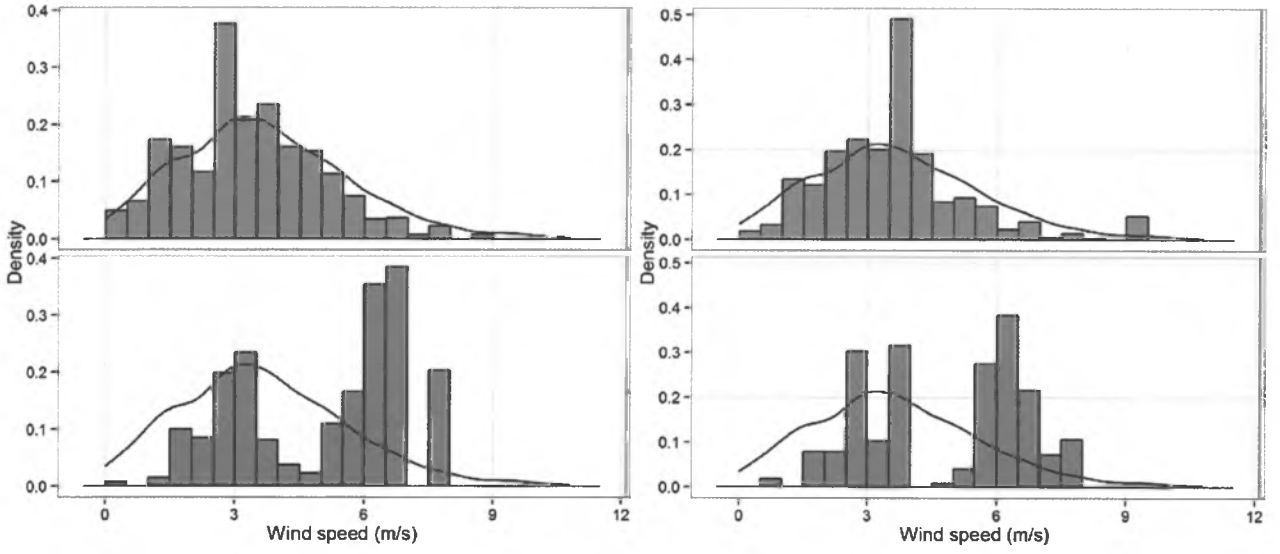


Figure E-7. Density distribution of detections recorded by wind speed (m/s) for adult Chinook and sockeye salmon as they migrated over the north-south line of acoustic receivers along the western edge of the ESSN fishing district. Left: by detection; right: by fish. The black line represents the distribution of wind speed during the migration period (i.e.,

these are the wind speeds that were available to the salmon).Wind speed was measured at hourly intervals at the NOAA meteorological station at Nikiski.

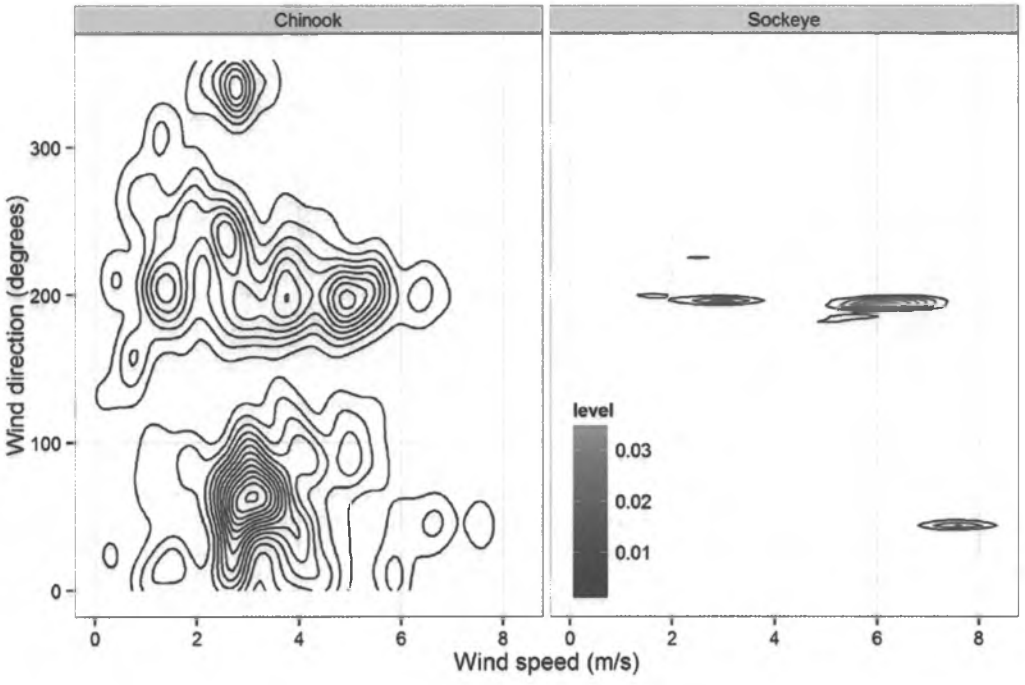


Figure E-8. Contour plot of adult sockeye and Chinook detections relative to wind speed (m/s) and direction (°N) along the western edge of the ESSN fishing district. Wind variables were measured at hourly intervals at the NOAA meteorological station at Nikiski.

F. Section 2.8 Migration rates— Supplementary

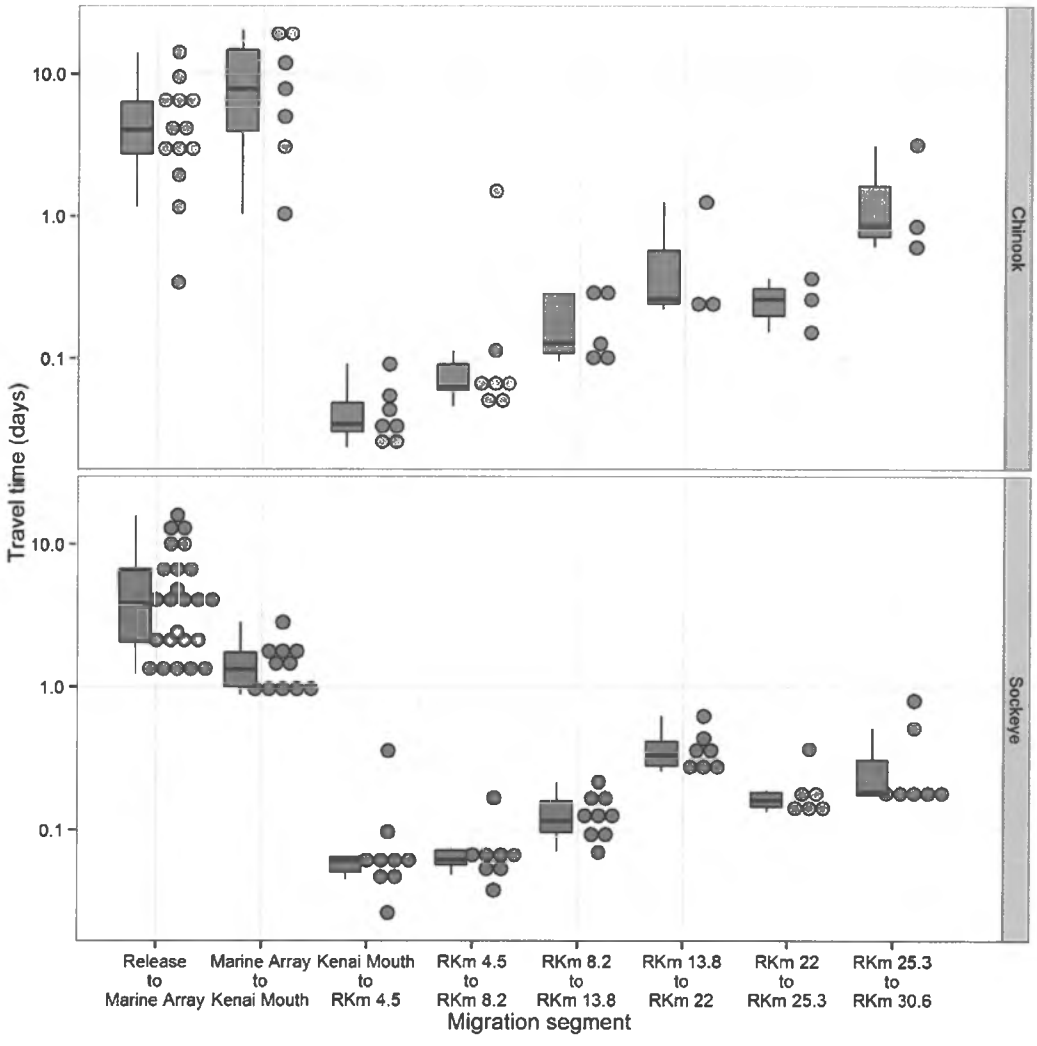


Figure F-1. Travel time (days) distribution for adult sockeye and Chinook migrating between segments of the acoustic array. Travel times were calculated from release to the first detection on the marine array, from the marine array to RKm 2 in the Kenai River, and then between all detection sites in the Kenai River. The top and bottom of each box are the 25th and 75th percentiles, the central band is the median, and the whiskers extend to the minimum and maximum values exclusive of outliers.

Table F-1. Travel time (days) for adult sockeye and Chinook migrating between segments of the acoustic array. Travel times were calculated from release to the first detection on the marine array, from the marine array to RKm 2 in the Kenai River, and then between all detection sites in the Kenai River. Travel times are listed beside the end of the segment.

						Percentiles						
Species	**Detection Site**	**N**	**Mean**	**SE**	**SD**	**Min**	**10th**	**25th**	**Median**	**75th**	**90th**	**Max**
Chinook	Marine Array	13	4.90	1.04	3.77	0.34	1.32	2.73	4.03	6.35	9.03	14.12
	RKm 2 Snug Harbor	7	9.57	2.80	7.40	1.04	2.25	4.02	7.81	14.93	18.86	20.22
	RKm 4.5 Inlet Fish	7	0.04	0.01	0.02	0.02	0.03	0.03	0.03	0.05	0.07	0.09
	RKm 8.2 Kenai Bridge	7	0.27	0.21	0.54	0.05	0.05	0.06	0.06	0.09	0.67	1.51
	RKm 13.8 Lower King Sonar	5	0.18	0.04	0.10	0.10	0.10	0.11	0.13	0.29	0.29	0.29
	RKm 22 Upper King Sonar	3	0.58	0.34	0.58	0.22	0.23	0.24	0.26	0.76	1.06	1.26
	RKm 25.3 Gaines Dock	3	0.26	0.06	0.11	0.15	0.17	0.21	0.26	0.31	0.35	0.37
	RKm 30.6 Sockeye Sonar	3	1.54	0.81	1.41	0.61	0.66	0.73	0.85	2.01	2.70	3.17
Sockeye	Marine Array	25	5.14	0.84	4.19	1.22	1.33	2.06	3.87	6.71	11.53	16.01
	RKm 2 Snug Harbor	11	1.46	0.18	0.60	0.88	0.90	1.00	1.32	1.74	1.88	2.85
	RKm 4.5 Inlet Fish	9	0.09	0.03	0.10	0.03	0.04	0.05	0.06	0.06	0.15	0.36
	RKm 8.2 Kenai Bridge	8	0.07	0.01	0.04	0.04	0.05	0.06	0.06	0.07	0.10	0.17
	RKm 13.8 Lower King Sonar	9	0.13	0.02	0.05	0.07	0.09	0.10	0.12	0.16	0.18	0.22
	RKm 22 Upper King Sonar	7	0.37	0.05	0.13	0.26	0.26	0.28	0.33	0.42	0.51	0.63
	RKm 25.3 Gaines Dock	6	0.19	0.04	0.09	0.13	0.14	0.15	0.16	0.18	0.28	0.37
	RKm 30.6 Sockeye Sonar	7	0.32	0.09	0.25	0.17	0.17	0.18	0.18	0.35	0.63	0.81

Table F-2. Cumulative travel time (days) for adult sockeye and Chinook migrating over the acoustic array. Travel times were calculated from release to the first detection on the marine array, and from release to all detection sites in the Kenai River. Note that these travel times do not increase continuously along the migratory pathway because the number of fish detected at different points in the river varies.

						Percentiles						
Species	Detection Site	N	Mean	SE	SD	Min	10th	25th	Median	75th	90th	Max
Chinook	Marine Array	13	4.90	1.04	3.77	0.34	1.32	2.73	4.03	6.35	9.03	14.12
	RKm 2 Snug Harbor	7	12.95	3.00	7.93	2.20	4.08	7.20	14.83	17.39	21.74	24.49
	RKm 4.5 Inlet Fish	7	13.00	2.99	7.92	2.29	4.15	7.24	14.86	17.43	21.77	24.52
	RKm 8.2 Kenai Bridge	7	13.27	3.07	8.13	2.35	4.24	7.32	14.92	18.21	22.69	24.56
	RKm 13.8 Lower King Sonar	5	10.86	3.42	7.64	2.64	3.84	5.63	9.24	15.03	19.06	21.74
	RKm 22 Upper King Sonar	3	11.79	5.35	9.27	3.90	5.01	6.68	9.46	15.73	19.49	22.00
	RKm 25.3 Gaines Dock	7	15.09	3.01	7.98	4.26	6.50	8.86	15.45	21.51	23.36	25.18
	RKm 30.6 Sockeye Sonar	3	13.59	5.24	9.08	4.87	6.48	8.88	12.89	17.95	20.98	23.00
Sockeye	Marine Array	25	5.14	0.84	4.19	1.22	1.33	2.06	3.87	6.71	11.53	16.01
	RKm 2 Snug Harbor	11	7.27	1.54	5.11	2.10	2.72	2.97	5.69	9.77	13.55	17.71
	RKm 4.5 Inlet Fish	10	6.92	1.51	4.78	2.17	2.70	3.78	5.44	7.72	12.51	17.80
	RKm 8.2 Kenai Bridge	9	8.49	1.68	5.04	2.82	3.34	5.19	7.69	11.96	14.50	17.87
	RKm 13.8 Lower King Sonar	9	8.62	1.68	5.04	2.96	3.44	5.29	7.81	12.03	14.66	17.99
	RKm 22 Upper King Sonar	7	8.13	1.56	4.14	3.26	3.60	5.15	8.14	10.50	13.29	14.23
	RKm 25.3 Gaines Dock	9	8.25	1.68	5.04	3.39	3.87	4.59	6.84	8.48	15.20	18.36
	RKm 30.6 Sockeye Sonar	7	7.64	1.35	3.57	4.17	4.19	5.12	7.36	8.56	11.03	14.60

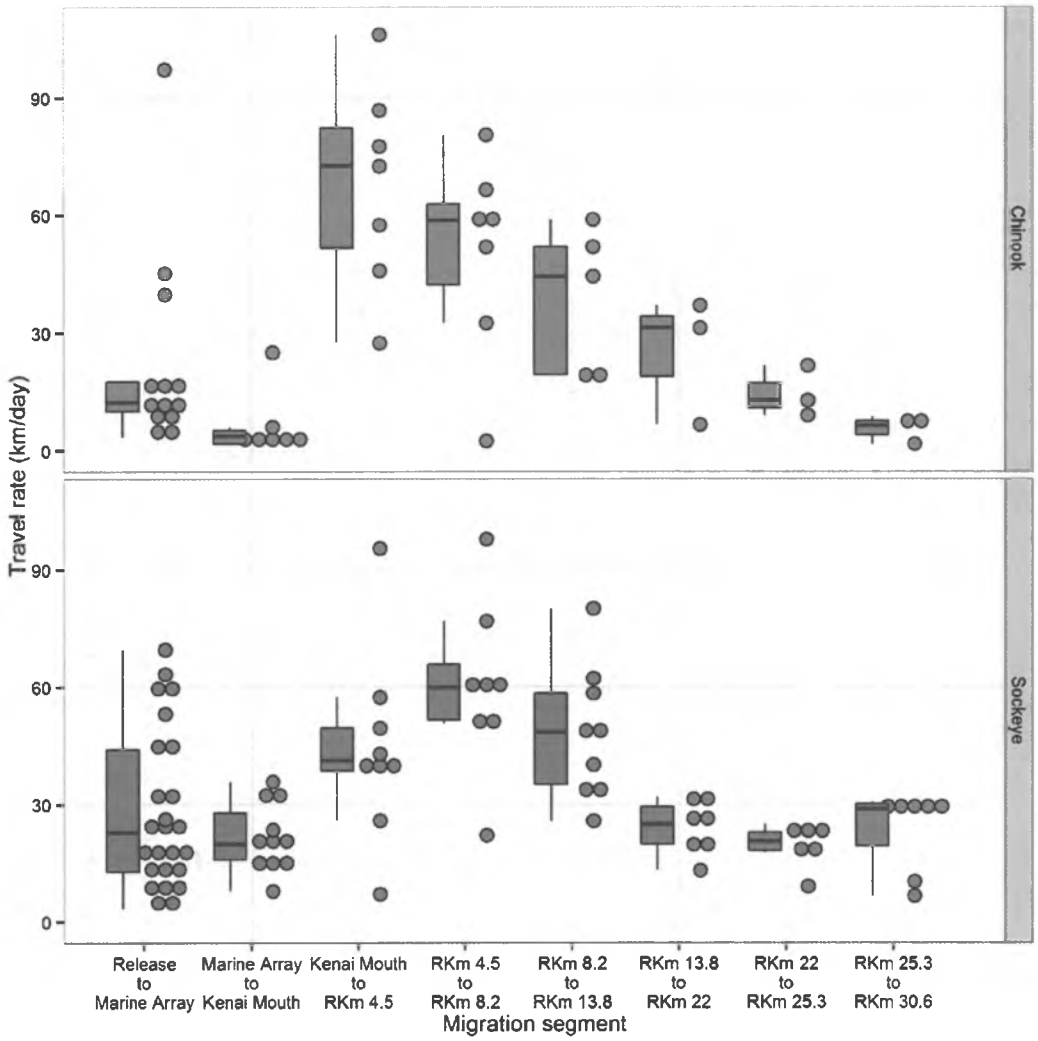


Figure F-2. Travel rate (km/day) distribution for adult sockeye and Chinook migrating between segments of the acoustic array. Rates were calculated from release to the first detection on the marine array, from the marine array to RKm 2 in the Kenai River, and then between all detection sites in the Kenai River. The top and bottom of each box are the 25th and 75th percentiles, the central band is the median, and the whiskers extend to the minimum and maximum values exclusive of outliers.

Table F-3. Travel rates (km/day) for adult sockeye and Chinook migrating between segments of the acoustic array. Rates were calculated from release to the first detection on the marine array, from the marine array to RKm 2 in the Kenai River, and then between all detection sites in the Kenai River. Travel rates are listed beside the end of the segment.

						Percentiles						
Species	**Detection Site**	**N**	**Mean**	**SE**	**SD**	**Min**	**10th**	**25th**	**Median**	**75th**	**90th**	**Max**
Chinook	Marine Array	13	22.66	7.10	25.60	3.52	6.33	10.15	12.25	17.66	44.03	97.29
	RKm 2 Snug Harbor	7	6.31	3.18	8.41	1.44	1.46	1.83	3.70	5.18	13.58	25.00
	RKm 4.5 Inlet Fish	7	67.67	9.95	26.33	27.48	38.51	51.68	72.46	82.15	94.55	106.14
	RKm 8.2 Kenai Bridge	7	50.22	9.67	25.58	2.46	20.49	42.20	58.56	62.83	72.05	80.48
	RKm 13.8 Lower King Sonar	5	38.68	8.26	18.46	19.10	19.22	19.40	44.30	51.84	56.00	58.78
	RKm 22 Upper King Sonar	3	24.87	9.32	16.14	6.53	11.46	18.85	31.17	34.04	35.76	36.91
	RKm 25.3 Gaines Dock	3	14.44	3.75	6.50	9.00	9.74	10.84	12.68	17.16	19.85	21.64
	RKm 30.6 Sockeye Sonar	3	5.53	2.05	3.56	1.67	2.59	3.96	6.24	7.46	8.19	8.68
Sockeye	Marine Array	25	28.27	3.98	19.90	3.28	8.50	12.76	22.73	44.03	59.85	69.58
	RKm 2 Snug Harbor	11	21.67	2.63	8.74	7.85	13.90	15.77	19.77	27.81	32.67	35.81
	RKm 4.5 Inlet Fish	9	44.11	8.00	24.01	6.99	22.10	38.63	41.17	49.45	64.94	95.45
	RKm 8.2 Kenai Bridge	8	60.12	7.69	21.74	22.10	42.08	51.51	59.84	65.79	83.10	97.82
	RKm 13.8 Lower King Sonar	9	47.93	5.66	16.98	25.69	31.10	34.99	48.45	58.35	65.70	80.08
	RKm 22 Upper King Sonar	7	23.95	2.58	6.82	13.05	16.49	19.75	24.86	29.23	31.17	31.82
	RKm 25.3 Gaines Dock	6	19.26	2.31	5.66	8.96	13.32	18.07	20.50	22.77	23.95	24.78
	RKm 30.6 Sockeye Sonar	7	23.52	3.93	10.40	6.57	8.79	19.27	28.77	30.12	30.36	30.50

Table F-4. Travel rates (body lengths/second) for adult sockeye and Chinook migrating between segments of the acoustic array. Rates were calculated from release to the first detection on the marine array, from the marine array to RKm 2 in the Kenai River, and then between all detection sites in the Kenai River. Travel rates are listed beside the end of the segment.

						Percentiles						
Species	**Detection Site**	**N**	**Mean**	**SE**	**SD**	**Min**	**10th**	**25th**	**Median**	**75th**	**90th**	**Max**
Chinook	Marine Array	13	0.26	0.09	0.33	0.04	0.07	0.10	0.14	0.21	0.49	1.25
	RKm 2 Snug Harbor	7	0.07	0.03	0.08	0.02	0.02	0.02	0.04	0.06	0.14	0.24
	RKm 4.5 Inlet Fish	7	0.77	0.12	0.31	0.26	0.46	0.60	0.82	0.97	1.06	1.18
	RKm 8.2 Kenai Bridge	7	0.55	0.11	0.28	0.03	0.26	0.48	0.57	0.71	0.83	0.90
	RKm 13.8 Lower King Sonar	5	0.45	0.10	0.22	0.18	0.21	0.24	0.55	0.57	0.65	0.70
	RKm 22 Upper King Sonar	3	0.27	0.10	0.18	0.06	0.12	0.20	0.35	0.37	0.38	0.39
	RKm 25.3 Gaines Dock	3	0.16	0.06	0.10	0.09	0.09	0.10	0.12	0.20	0.24	0.27
	RKm 30.6 Sockeye Sonar	3	0.06	0.02	0.04	0.02	0.03	0.05	0.08	0.08	0.08	0.08
Sockeye	Marine Array	25	0.55	0.08	0.41	0.06	0.16	0.23	0.40	0.84	1.21	1.32
	RKm 2 Snug Harbor	11	0.40	0.05	0.16	0.14	0.26	0.30	0.36	0.51	0.59	0.67
	RKm 4.5 Inlet Fish	9	0.81	0.15	0.45	0.13	0.41	0.68	0.74	0.87	1.23	1.78
	RKm 8.2 Kenai Bridge	8	1.10	0.15	0.42	0.39	0.74	0.94	1.10	1.22	1.52	1.84
	RKm 13.8 Lower King Sonar	9	0.88	0.11	0.32	0.45	0.56	0.61	0.90	1.04	1.20	1.51
	RKm 22 Upper King Sonar	7	0.44	0.05	0.12	0.25	0.30	0.35	0.46	0.54	0.56	0.56
	RKm 25.3 Gaines Dock	6	0.35	0.04	0.11	0.16	0.24	0.33	0.38	0.41	0.44	0.47
	RKm 30.6 Sockeye Sonar	7	0.43	0.07	0.19	0.13	0.16	0.34	0.52	0.54	0.55	0.57

02/04/14 Overview: Department of Revenue Tax Division - Salmon Product Development Tax Credit

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State of Alaska
Department of Revenue
Salmon Product Development Tax Credit Overview

A Presentation to the House Fisheries Committee
February 4, 2014

Angela M. Rodell
Commissioner
Alaska Department of Revenue

Original Law

- HB 90 enacted in 2003 to address downturn in Alaska salmon industry
- Intended to encourage "*new investment in new equipment for new products, not new investment for old equipment for the same products*"

  Sen. Ben Stevens, testimony before House Special Committee on Fisheries, March 5, 2003

Original Law

- Granted processors a credit against the fisheries business tax (FBT) for expenditures promoting the manufacture of a "value-added salmon product" (SPD credit)
- Also granted a credit against the FBT for expenditures promoting manufacture of marketable products from salmon waste (Utilization credit)

Original Law

- Qualifying SPD credit expenditures included equipment used for:
  - Filleting, skinning, portioning, mincing, forming, extruding, stuffing, injecting, mixing, marinating, preserving, drying, smoking, brining, packaging, blast freezing, or pin bone removal
- Qualifying Utilization credit expenditures included:
  - Equipment producing marketable products from waste, custom processing or disposal fees, or costs to transport waste to the product manufacturer

Original Law

- Credits limited to 50% of expenditure
- Annual limit at 50% of tax on salmon
- Credits do no reduce municipal share
- 3-year carryover allowed for unused credits
- Tax recaptured if equipment sold, removed from service or ceases to be "qualified", before end of 3rd year
- Date for putting qualified property into service sunsetted on 12/31/05

2006 Amendments

- SB 164 refined definition of qualifying expenditures, "*making it clear that processors should be producing new, innovative salmon products in order to benefit from this program*"

  Sen. Bert Stedman, Sponsor Statement

- SB 164 added to the list of qualifying expenditures the costs to convert traditional canning equipment to pop-top canning

2006 Amendments

- SB 164 identified non-qualifying expenditures:
  - Vehicles, forklifts, conveyors, cranes, pumps and other transporting equipment
  - Knives, gloves, tools, supplies, materials and other equipment that is not processing, packaging or product finishing equipment
  - Other equipment which is incidental to production, packaging or finishing of value-added salmon products
  - Overhaul, retooling or modification of existing equipment, except pop-top canning conversion

2006 Amendments

- SB 164 provided a definition for the term "value added salmon product":

> *"the product of a salmon that is processed beyond heading, gutting, or separation in a manner that materially enhances the value of the salmon product, such as shelf-stable, retort pouched, smoked, pickled, or filleted salmon, ikura, leather, or jerky"*

2006 Amendments

- SB 164 also identified products that **do not** qualify as value-added salmon products:
  - products subjected to only one or more of heading, gutting, freezing, packaging, quality assurance practices, or value retention practices
  - salmon skeins or other unprocessed salmon products whether fresh or frozen
  - canned salmon, except for salmon products in a pop-top can
  - products produced out of the state

2006 Amendments

- SB 164 extended the date for putting qualified property into service until 12/31/08
- The Utilization credit was not extended and sunsetted 12/31/05

2008 Amendments

- HB 321 expanded the list of qualifying equipment. According to the sponsor
  - "*The Salmon Product Development Tax Credit encourages and accelerates the development and production of value-added salmon products in Alaska by providing an economic incentive to make the necessary investments in new technology and equipment*".

    Rep. Bill Thomas, Sponsor Statement

2008 Amendments

- HB 321
  - Added fillet line conveyor systems to the list of qualifying expenditures
  - Requires DOR to provide a process for applicants to obtain credit pre-approval of planned expenditures
  - Extended the date for putting qualified property into service until 12/31/11

2010 Amendments

- HB 344 added ice machines to the list of qualifying expenditures and extended the date for putting qualified property into service until 12/31/15
- According to the sponsor

> *"Extending the tax credit beyond its current sunset date of December 31, 2011 will allow the industry to continue the progress that is being made in developing and producing salmon products that will keep Alaska's fisheries competitive in world markets"*
>
> Rep. Bill Thomas, Sponsor Statement

Statistics

Gross Revenue from Fisheries Business Tax and SPD and Utilization Credits Claimed

	Gross Revenue	Credits Claimed*	% of Revenue
FY 2004	26,319,585	(1,379,475)	5.2%
FY 2005	25,941,837	(2,314,258)	8.9%
FY 2006	32,203,813	(3,058,516)	9.5%
FY 2007	29,910,171	415,745	-1.4%
FY 2008	35,909,264	(4,501,973)	12.5%
FY 2009	42,151,283	(3,121,697)	7.4%
FY 2010	32,653,241	(4,074,071)	12.5%
FY 2011	45,669,159	(2,057,255)	4.5%
FY 2012	50,581,499	(71,598)	0.1%
FY 2013	46,905,206	(1,832,081)	3.9%

*Does not reduce municipal share

As reported on DOR Annual Reports

Statistics

SPD Credit Detail

Calendar Year	Claimed Costs	Qualified Costs	Non-qualified Costs	No. of Taxpayers	Pre-approval Requests
2003	2,322,209	823,471	1,498,738	18	-
2004	6,569,081	1,462,600	5,106,481	25	-
2005	6,468,981	3,252,045	3,216,936	22	-
2006	5,792,524	2,514,286	3,278,238	29	-
2007	14,220,435	8,605,488	5,614,947	27	-
2008	10,336,099	7,506,510	2,829,589	21	-
2009	11,989,657	9,408,320	2,581,337	13	6
2010	2,149,908	2,052,163	97,745	13	4
2011	3,958,959	3,958,959	*	19	4
2012	8,178,560	8,178,560	*	13	3
Total	**71,986,413**	**47,762,400**	**24,224,013**		

*Audits in progress

THANK YOU

Please find our contact information below:

Angela M. Rodell
Commissioner
Department of Revenue
angela.rodell@alaska.gov
(907) 465-2300

Bruce Tangeman
Deputy Commissioner
Department of Revenue
bruce.tangeman@alaska.gov
(907) 269-0721



dor.alaska.gov

02/06/14 Overview: Alaska Seafood Marketing Institute

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An overview of the

Alaska Seafood Marketing Institute

February 6th, 2014

Alaska State Legislature

House Fisheries Committee



ALASKA SEAFOOD

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Summary

- Alaska Seafood Industry
- ASMI Budget
- ASMI Organization
  -industry involvement
- ASMI Programs - Video
- Opportunities & Challenges



ALASKA SEAFOOD

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Impact of Alaska Seafood Industry

Alaska seafood directly employs 62,650 workers in Alaska, over 28,200 are Alaska residents .

Including multiplier effects, accounts for 81,000 jobs, $6.7 billion in economic output, and $2.1 billion in labor income within AK .

Accounts for 10 percent of all civilian labor income in AK, and 7 percent of all resident labor income.

Southcentral is home to most participants but participation rate highest in western Alaska, Kodiak, and Southeast.

Source: McDowell Group



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Alaska is Top U.S. Seafood Producer, By a Wide Margin

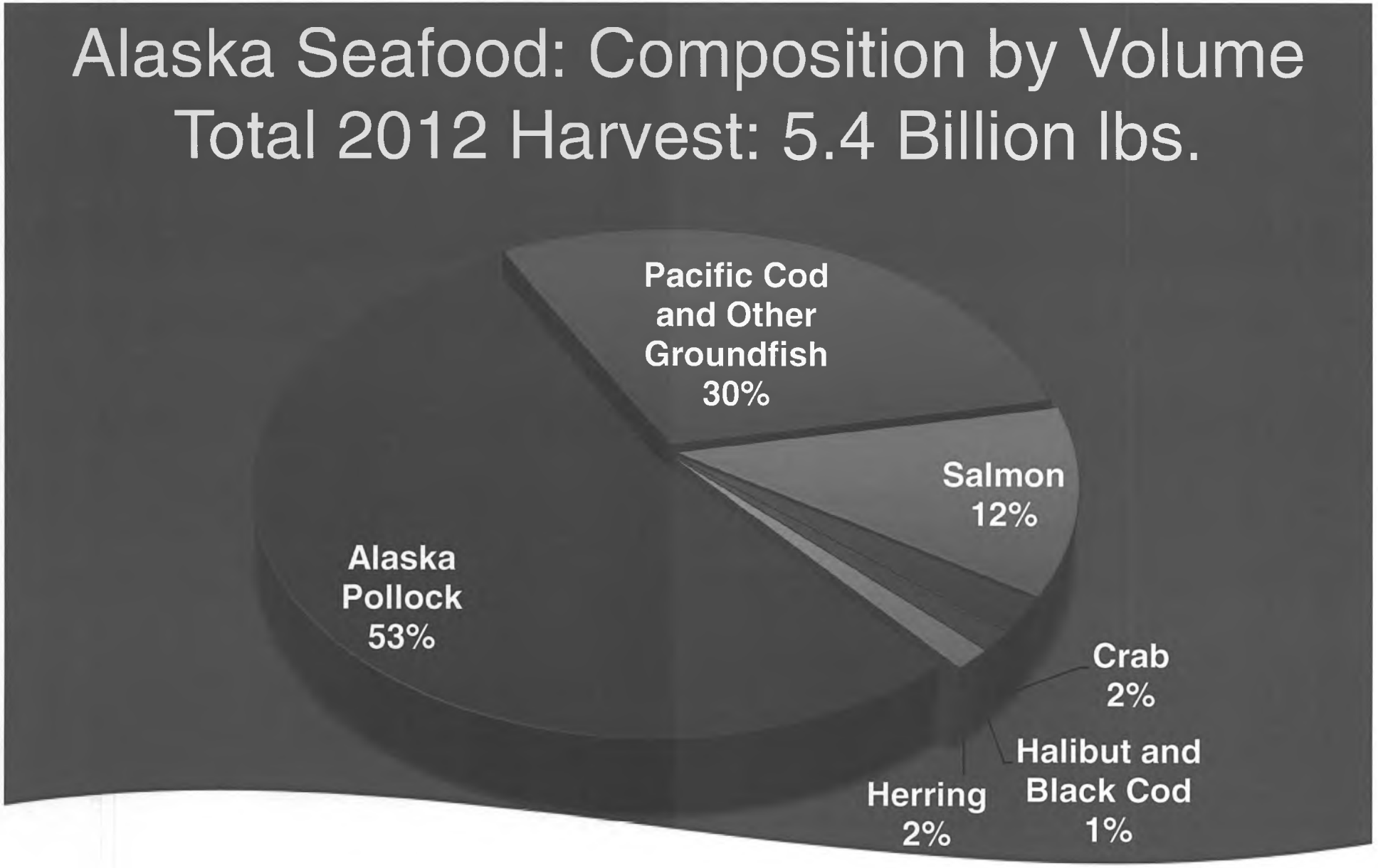


Source: NMFS and ADFG.

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Alaska Seafood: Composition by Volume
Total 2012 Harvest: 5.4 Billion lbs.



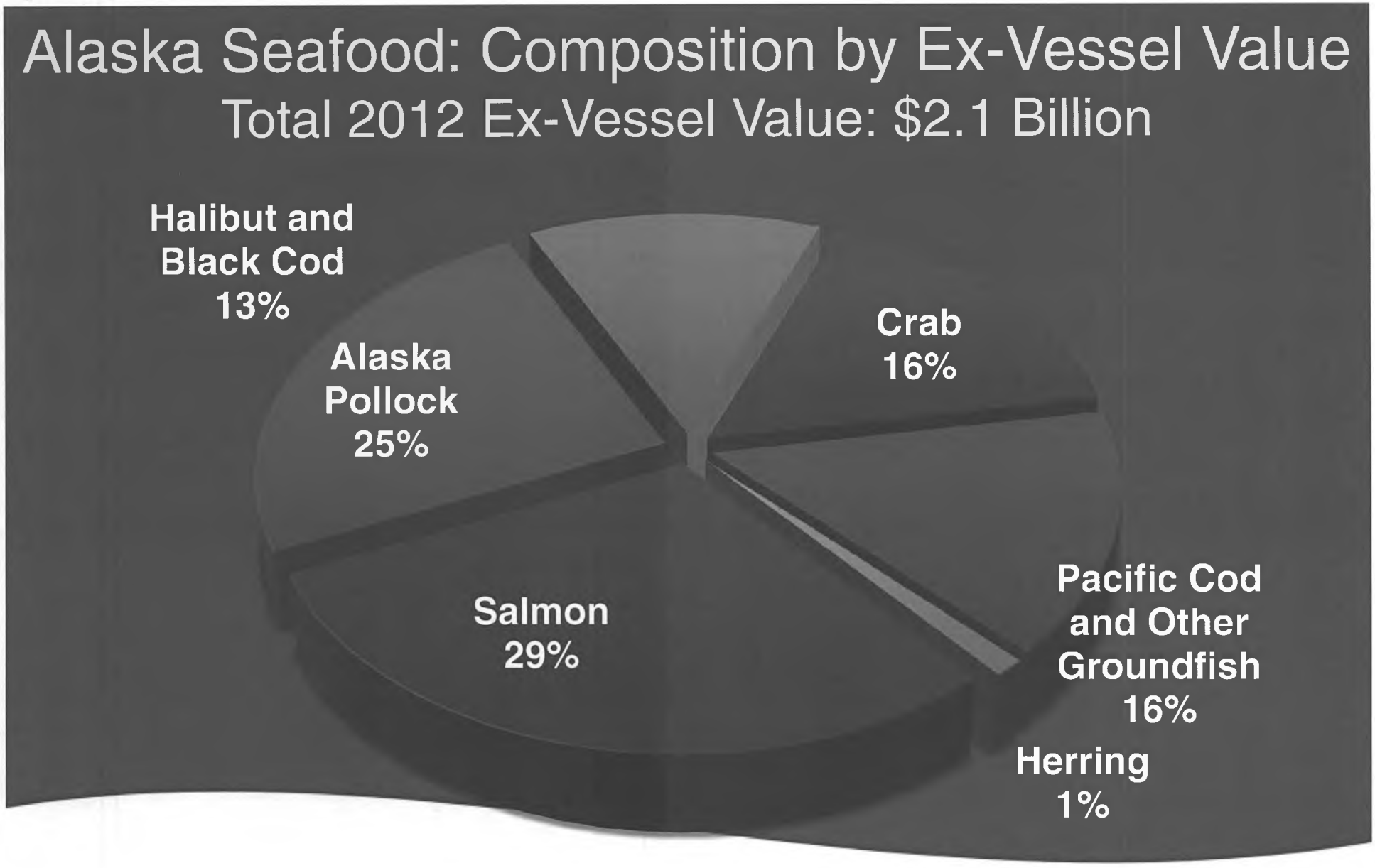
Source: NMFS, ADFG.

ALASKA SEAFOOD

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Alaska Seafood: Composition by Ex-Vessel Value

Total 2012 Ex-Vessel Value: $2.1 Billion



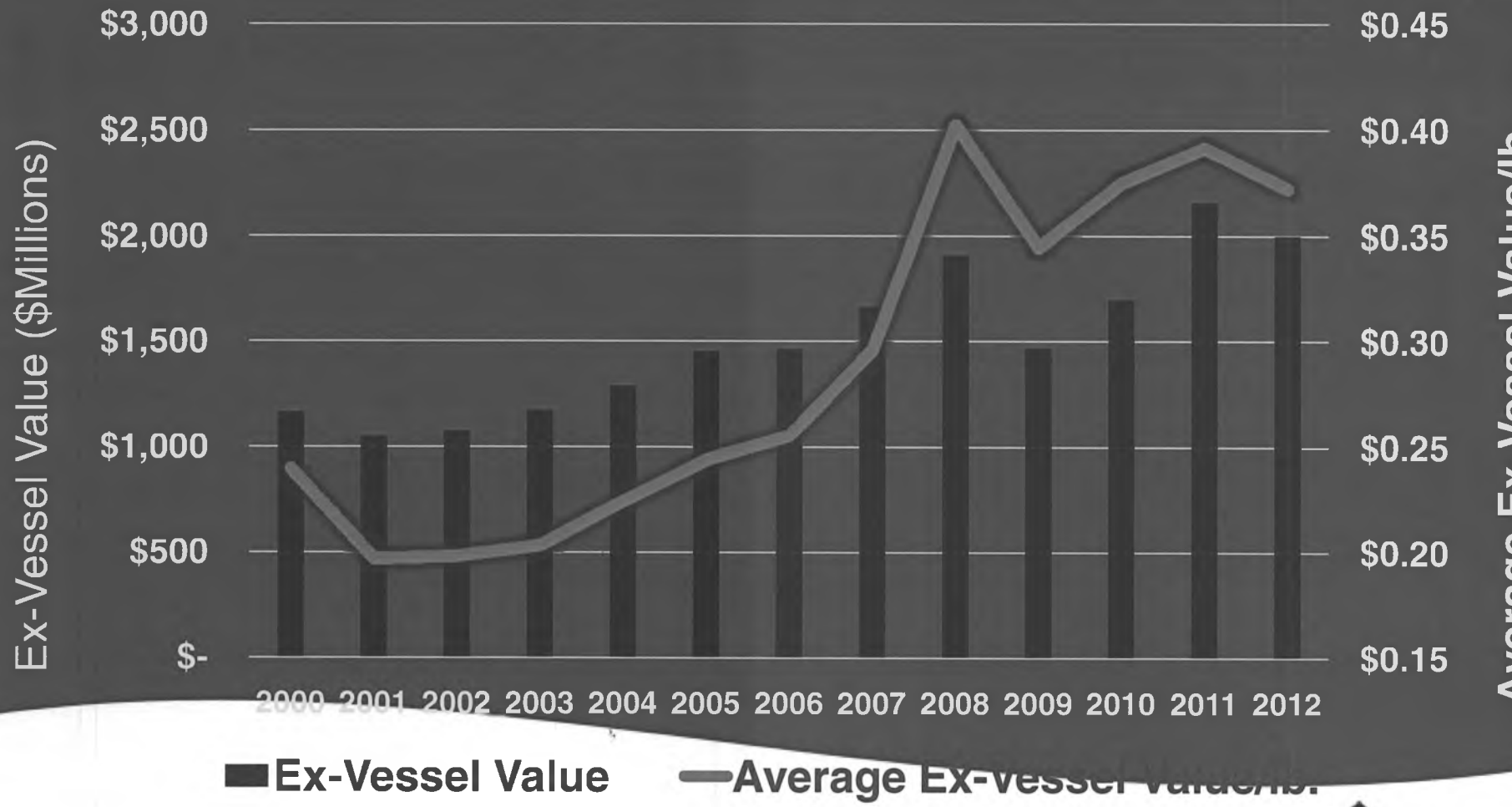
Source: NMFS,ADFG, and ASMI

ALASKA SEAFOOD

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Ex-Vessel Value of AK Seafood

Alaska Seafood was worth over $2.0 billion in 2012



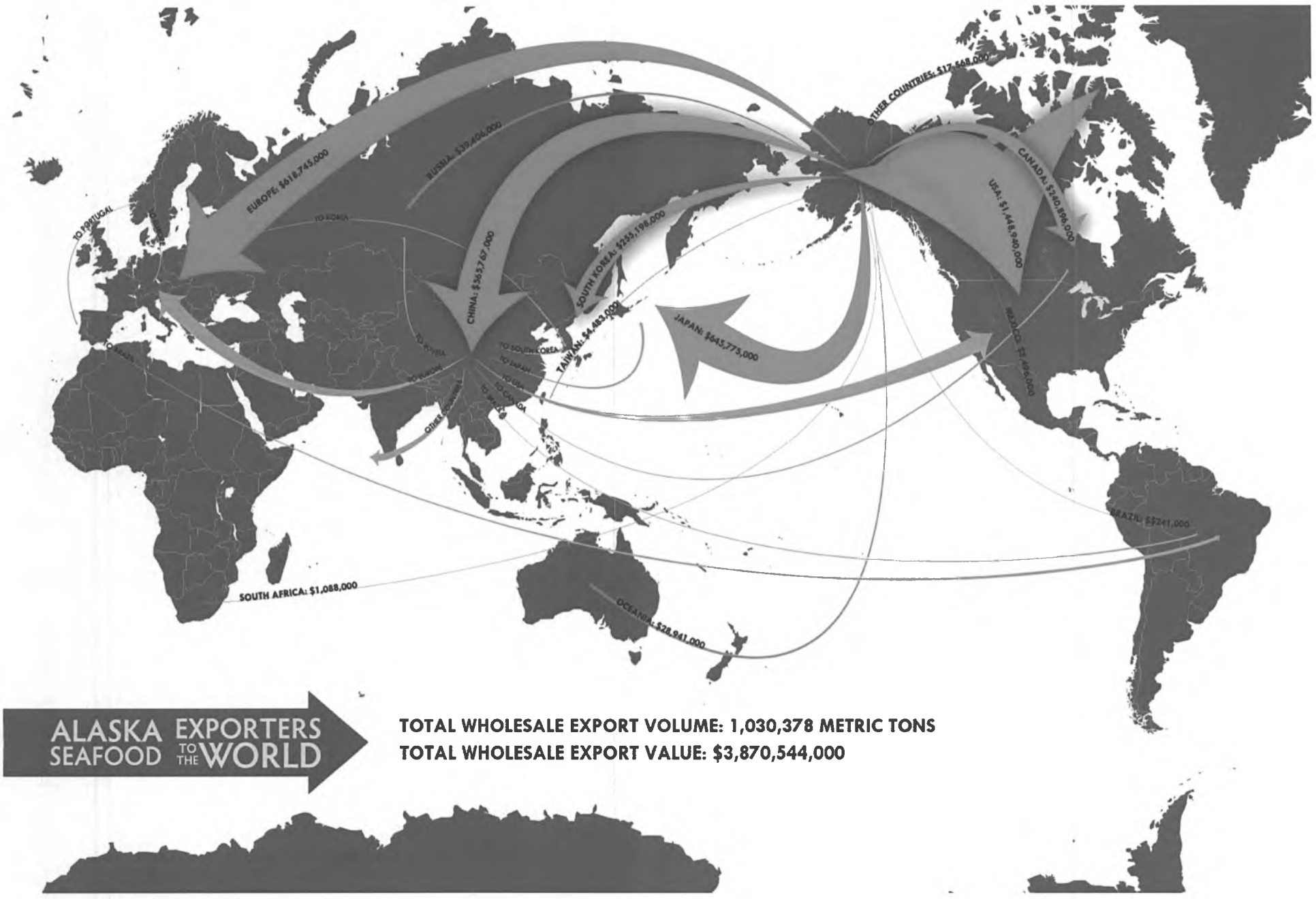
Source: ADFG, NMFS, ADOR, and McDowell Group estimates.

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EXPORTED VALUE OF ALASKA SEAFOOD

ORANGE ARROWS=VALUE OF SEAFOOD EXPORTED GREEN = ESTIMATED RE-EXPORTS TO MAJOR RE-PROCESSORS



ALASKA SEAFOOD EXPORTERS TO THE WORLD

TOTAL WHOLESALE EXPORT VOLUME: 1,030,378 METRIC TONS

TOTAL WHOLESALE EXPORT VALUE: $3,870,544,000

Alaska is the 6th Largest Seafood Exporter

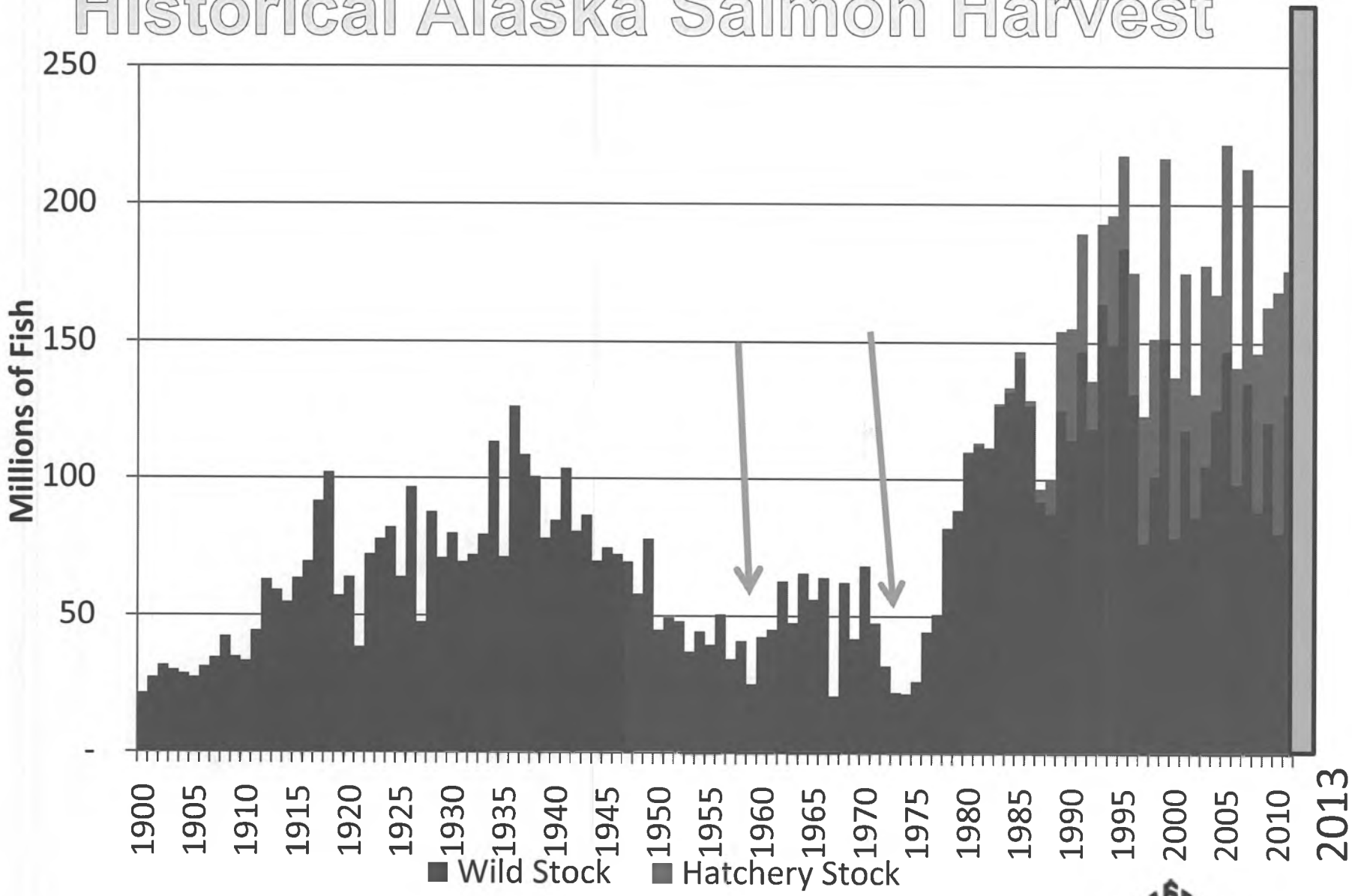
2012 Rank	Country (Primary Exporters)	Seafood Exports in Billions of $US (2012)
1	Norway	$9.5
2	Russia	4.5
3	Vietnam	4.2
4	Chile	3.9
5	Canada	3.7
6	***ALASKA***	**3.2**

Source: NMFS and Global Trade Atlas.

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Historical Alaska Salmon Harvest



ALASKA SEAFOOD

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Alaska Salmon by Species - 2013

Species	Ex-Vessel Value	Pct.	Volume (lbs)	Pct.
Chinook	$19,208,000	3%	281,000	<1%
Keta	$74,067,000	11%	143,556,000	14%
Coho	$35,757,000	5%	33,007,000	3%
Pink	$277,160,000	40%	691,806,000	66%
Sockeye	$284,951,000	41%	177,720,000	17%
Total	$691,143,000	-	1,049,705,000	-

- First time over 1 billion pounds
- Record pink harvest and near record coho harvest
- Sockeye missed projections in Bristol Bay
- Keta below projections but still large harvest

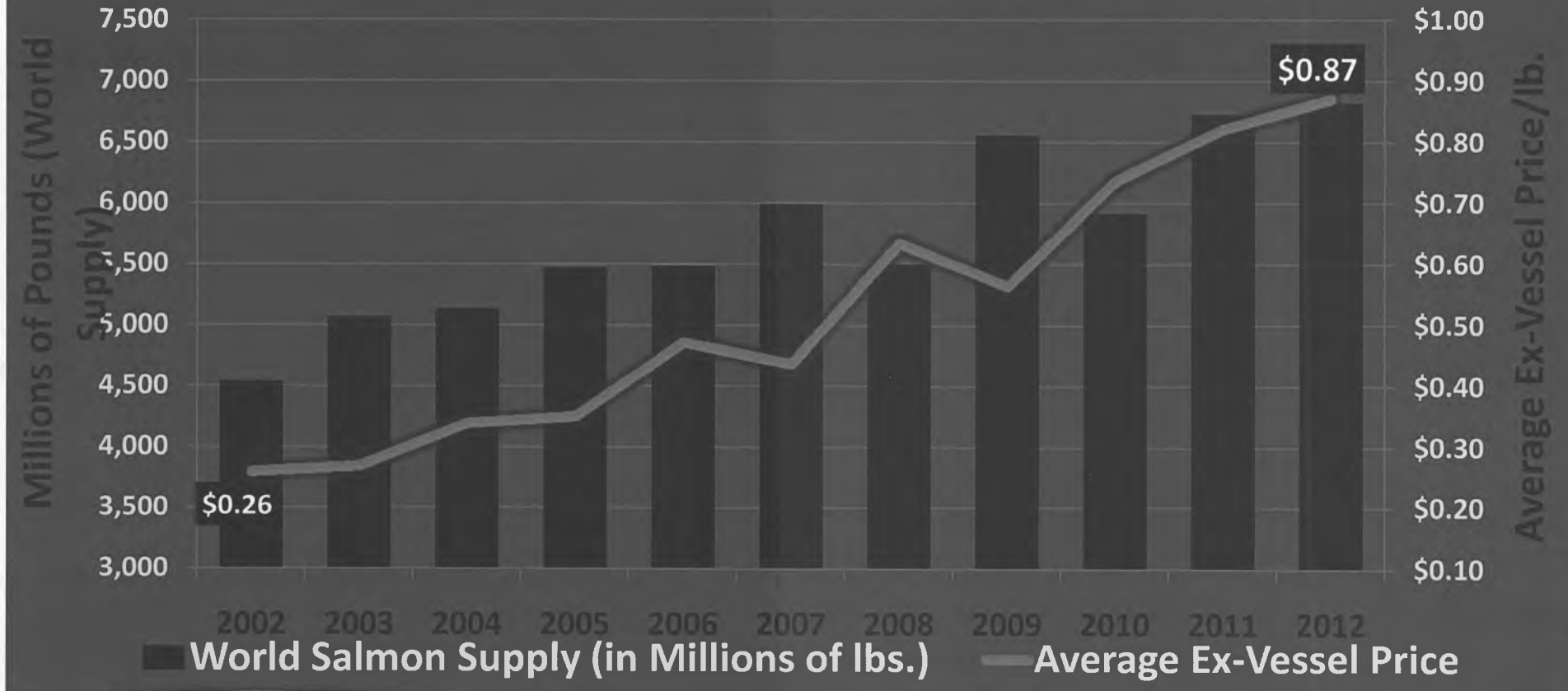
Note: Data is preliminary and does not include bonuses or retro-payments.
Source: ADFG

ALASKA SEAFOOD

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Alaska Salmon Ex-Vessel Price

Rising Value for Wild Alaska Salmon Despite Increased Supply



Note: 2012 supply data is preliminary.

Source: ADFG, FAO, Groundfish Forum, Salmon of the Americas, and Russian Federal Fisheries Agency.

ALASKA SEAFOOD

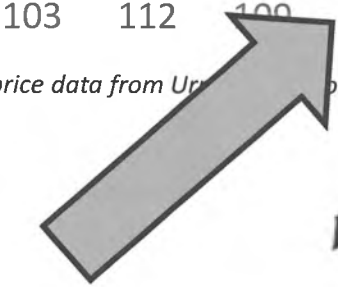
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Successful Salmon Marketing

Every Major Alaska Salmon Product Has Outperformed Farmed Salmon Since 2007

	Price in 2007	Price Index 2007	2008	2009	2010	2011	2012	Price in 2012
Avg. Ex-Vessel Price of AK Salmon	$0.44	100	145	129	169	188	208	$0.91
First Wholesale Price of AK Salmon	$1.75	100	133	123	140	151	149	$2.61
Frozen H/G Sockeye	$2.05	100	113	125	146	156	141	$2.89
Canned Sockeye ($/case)	$97.29	100	111	122	126	172	198	$192.60
Frozen H/G Pink	$0.77	100	121	120	168	188	166	$1.28
Canned Pink ($/case)	$56.48	100	106	134	140	144	177	$99.73
Frozen H/G Keta	$0.92	100	122	133	174	198	150	$1.38
Keta Roe	$7.93	100	194	116	116	165	211	$16.72
Frozen H/G Coho	$2.38	100	114	97	113	109	120	$2.85
Fresh H/G Chinook	$3.42	100	134	94	103	120	113	$3.86
Farmed Salmon (Norwegian Wholefish)	$3.43	100	106	103	112	[illegible]	92	$3.15

Alaska salmon prices from Alaska Salmon Price Report and ADFG, farmed salmon price data from Ur[illegible]omtell (annual average).

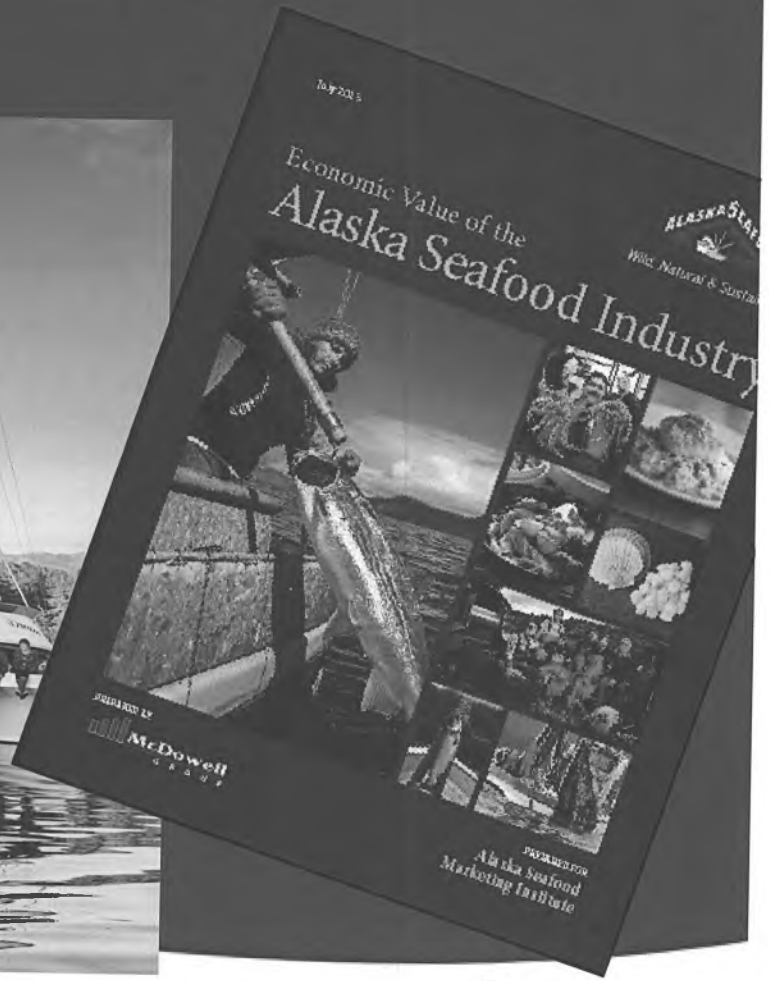


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Seafood Economic Information





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ASMI'S WEEK AT A GLANCE...FEBRUARY, 2014

International

- *China*, Alaska Seafood Festival Ole Retail Chain
- *China*, Promo w/130 restaurant chain
- *Spain*, Madrid Fusion booth
- *Italy*, Identita Golose Milan Int'l cooking convention
- *Germany*, exhibitor Fish Int'l Seafood Show
- *Japan*, Alaska seafood class-Asahi Culture Center
- *UK*, 20pg Alaska Seafood feature, trade magazine
- *EU*, Retail, Foodservice, Online promos
- Last week...presented at WTC Alaska's Alaska-China Business Conference "China Business – Seafood Perspective"

Domestic

- *Retail*, Kansas City Food Show
- *Retail*, Canned salmon marketing campaign
- *Communications*, Symphony of Seafood
- *Communications*, Launch photo contest
- *Foodservice*, Landry's Corp Annual Meeting
- *Foodservice*, Sodexo school lunch program
- *Technical*, Sustainable Fisheries Partnership
- *Food Aid*, Working with USDA programs



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ASMI Budget

$22.5 million spend plan

Revenue Sources -

- 1/2% industry tax ($8 to $12 million)
- State of Alaska General Funds ($7.8 million)
- Federal Market Access Program ($4.5 million)





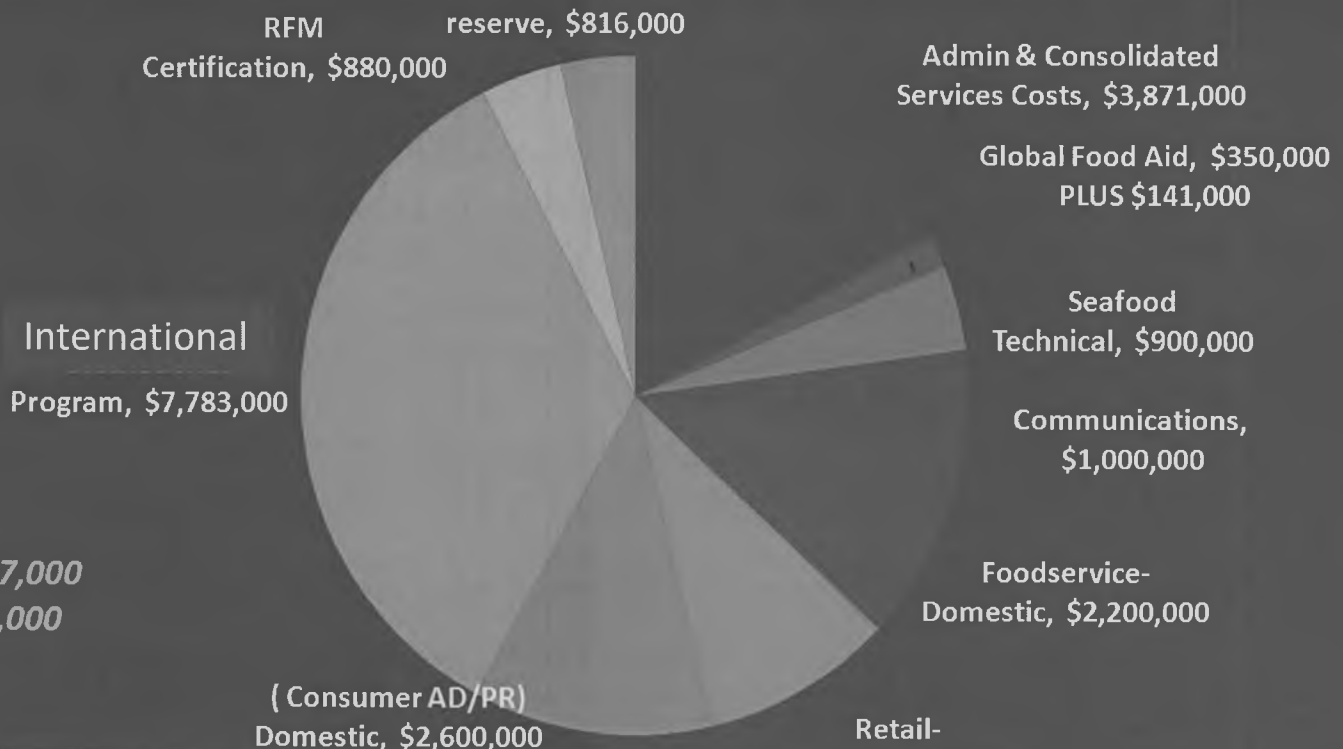
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FY14 ASMI Program Budget

Operating Budget spend planned= $ 22,500,000.00

Capital Budget spend planned = $ 141,000.00



MAP funds=$ 4,137,000
Match GF=$ 3,646,000

Wild, Natural & Sustainable®

LEAD BY INDUSTRY





- **A partnership** of public and private sectors to foster economic development
- **Guided by Governor-appointed Board of Directors**: five processors, two commercial harvesters

Species Committees

- Salmon
- Halibut-Sablefish
- Shellfish
- Whitefish

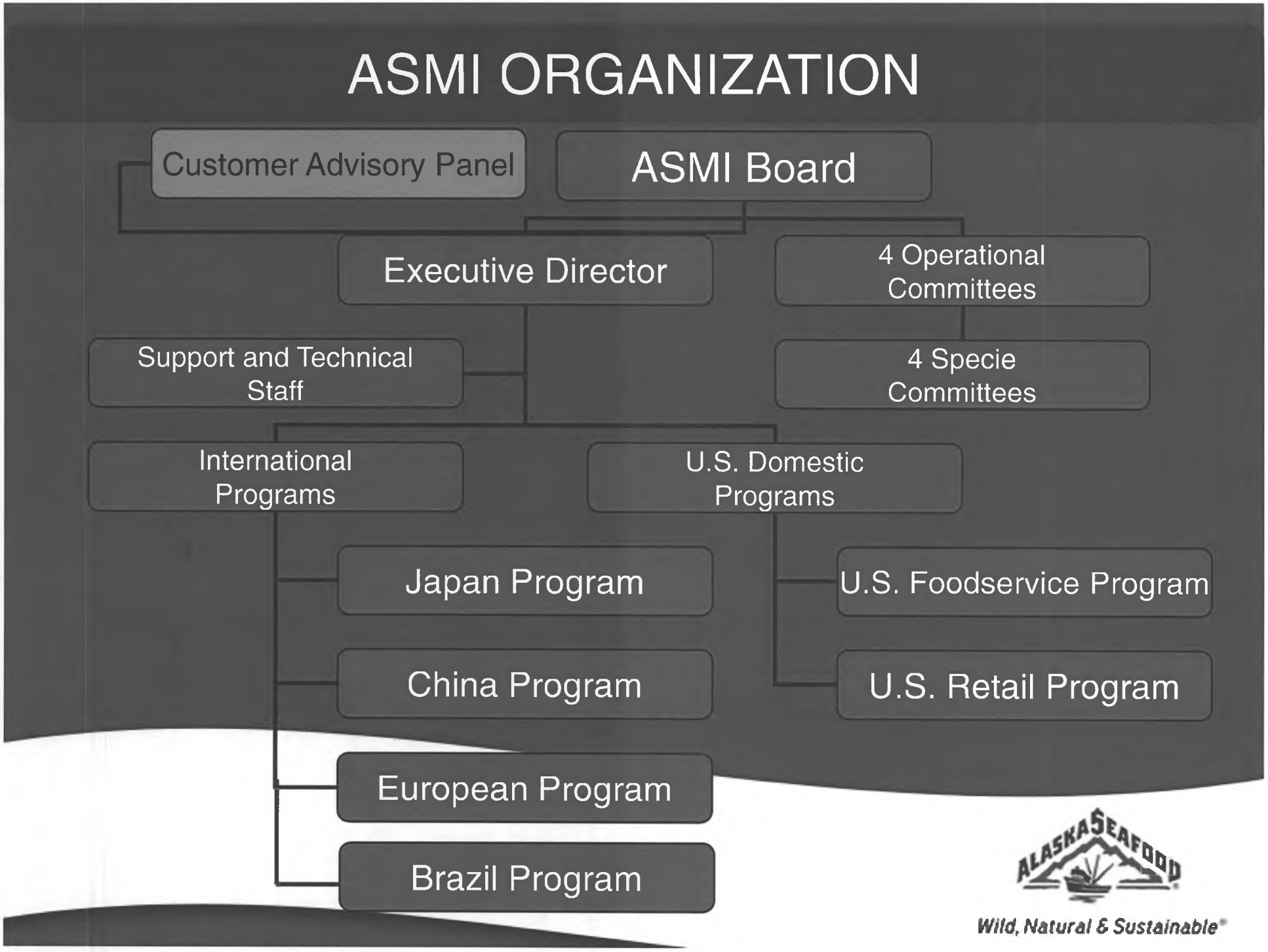
Operational Committees

- International Marketing
- Seafood Technical
- Foodservice Marketing
- Retail Marketing

ALASKA SEAFOOD

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ASMI ORGANIZATION



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ASMI Mission: increase the economic value of Alaska seafood resource through:

- Increasing positive awareness of the Alaska Seafood brand
- Collaborative marketing programs that align ASMI and industry marketing efforts for maximum impact within the food industry
- Championing the sustainability of Alaska seafood harvests resulting from existing Alaska fisheries management imperatives. (State of Alaska Constitution and Magnuson-Stevens Fishery Management and Conservation Act.)
- Proactive marketing planning to address short and long-term goals while remaining flexible and responsive to a changing environment and economy
- Quality assurance, technical industry analysis, education, advocacy and research
- Prudent, efficient fiscal management

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ASMI BUILDS 'ALASKA' BRAND

Alaska Seafood remains the second most commonly specified brand on U.S. Menus!

Source: Datassential 2012 – largest menu database in the U.S.



- ASMI promotes all species of Alaska seafood, under the "Alaska" brand.
- AS 16.51.110 prohibits ASMI promoting seafood by geographic origin other than from the state generally, geographic region of the state, or specified brand name.
- Alaska Constitution -Article 8, Section 4

  "Sustained Yield –

  Fish, forests, wildlife, grasslands, and all other replenishable resources belonging to the State shall be utilized, developed, and maintained on the sustained yield principle, subject to preferences among beneficial uses."

ALASKA SEAFOOD

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The Alaska Brand

Consumers are more likely to recommend Alaska seafood than any other protein tested

Alaska seafood	45%
Alaska salmon	43%
USDA Prime sirloin	38%
Angus beef	37%
New England seafood	33%
USDA Organic chicken	32%
Atlantic salmon	31%
Louisiana/gulf seafood	28%
Kobe beef	26%
Farm-to-table pork	24%
Farmed seafood	20%
Asian seafood	18%

How likely are you to recommend the following to a friend, family member or colleague?

Source: Datassentials 2013

Unaided, consumers cite Alaska as the #1 source of great seafood

Alaska	45%
Maine	35%
Florida	19%
Louisiana/New Orleans	16%
California/Los Angeles	10%
Massachusetts/Boston	8%
Washington	7%
Japan	6%
Maryland	5%
Hawaii	4%
Canada	2%
Oregon	2%
China	2%
New England	2%
Mississippi	2%
Texas	2%
New York	2%

OTHER SOURCES CITED, 1% EACH:
Alabama, South Carolina, Virginia, New Jersey, North Carolina, USA, Gulf Coast, Spain, Rhode Island, Mexico, Chile, East Coast, Australia, Connecticut, Iceland, Michigan, Norway

Which US states or countries come to mind when you think of sources of great seafood?

Source: Datassentials 2013

ASMI Programs

Through communications, public relations and advertising activities, millions of people around the world are exposed to positive message about Alaska Seafood.

US Retail Marketing
Communications
International Marketing
US Foodservice Marketing
Seafood Technical
Global Food Aid

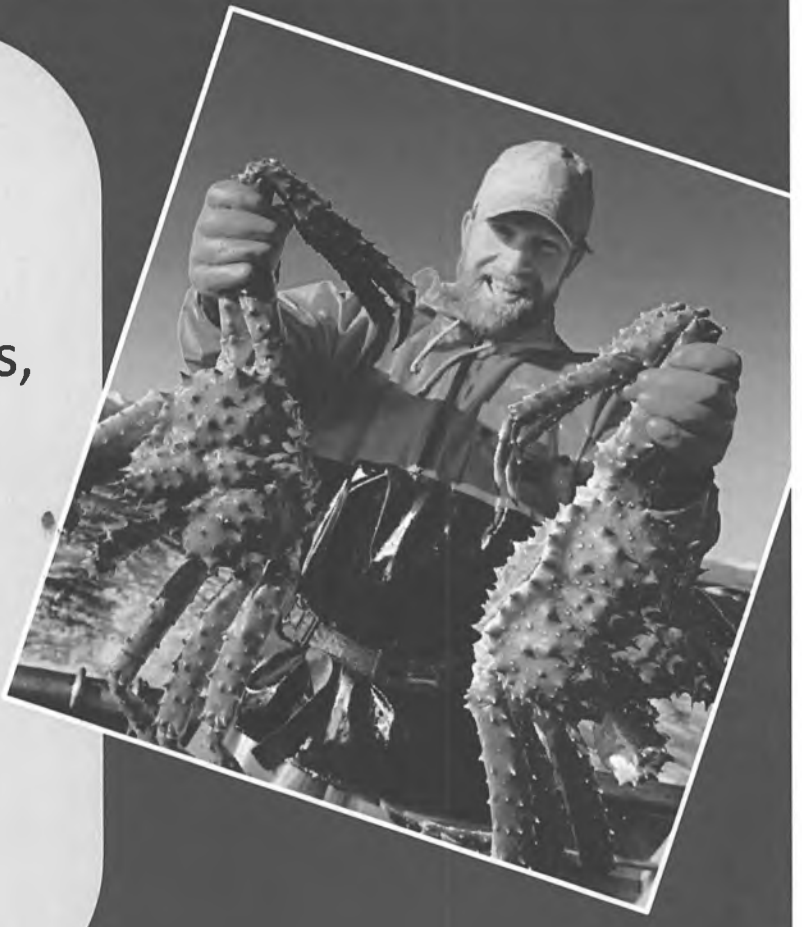






ASMI International Programs

- Japan
- China
- Northern EU (Ireland, The Netherlands, U.K., Sweden, Denmark, Finland)
- Western EU (France, Belgium)
- Central EU (Germany, Austria, Switzerland, Poland, Czech Republic)
- Southern EU (Spain, Italy, Portugal)
- Eastern Europe (Russia, Ukraine)
- Brazil

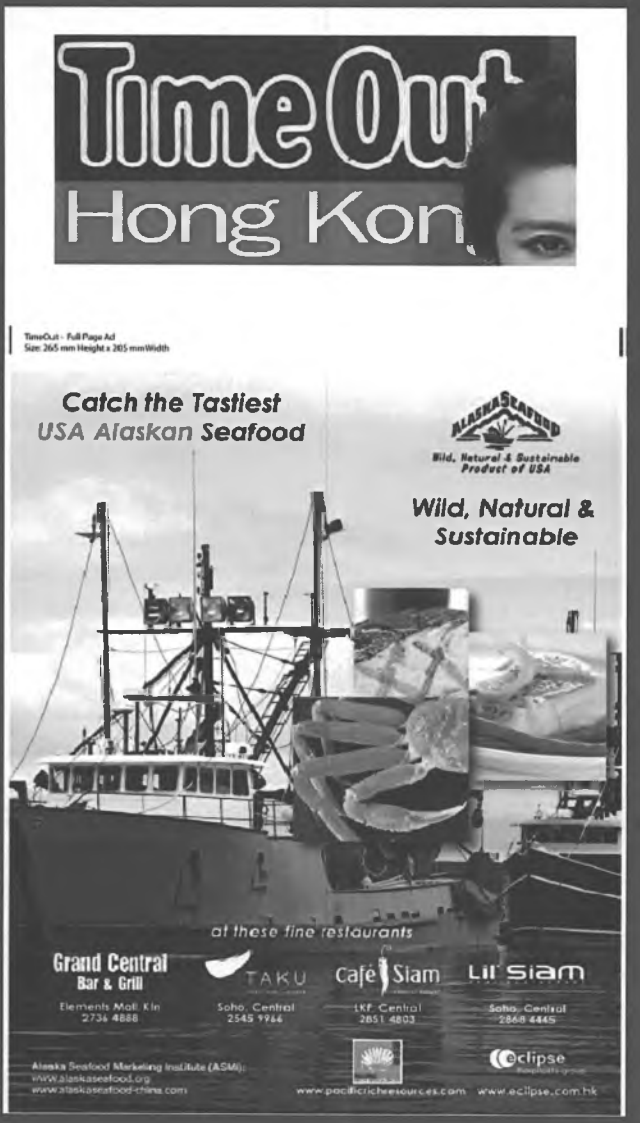


ALASKA SEAFOOD

Wild, Natural & Sustainable®

International Activities

- Consumer PR/Advertising
- Retail Promotions
- Trade Shows
- Business Development
- Trade PR/Advertising
- Hotel and Restaurant Promotions
- Chef Training
- Web and Social Media



ALASKA SEAFOOD

Wild, Natural & Sustainable®

株式会社ジュピターテレコム

J:COM

J:COM Japan

ALASKA SEAFOOD

天然のおいしさを、アラスカから。





- Japan's largest cable channel (9.2 million homes) filmed a 5 part series on Alaska
- Juneau, Sitka, Kodiak, Dutch Harbor, and Nome
- Each episode aired 3 x generating ad value of nearly $2 million dollars
- ASMI owns all HD Footage generated by the trip

ESE 2013: April 23-25

EUROPEAN SEAFOOD EXPOSITION

- 22 companies had booth or table space in the Alaska Seafood Pavilion
- Sustainability booth to educate buyers about the RFM
- **On-site sales of $35 million and projected annual sales of $544 million**
- 70 trade leads from 24 countries

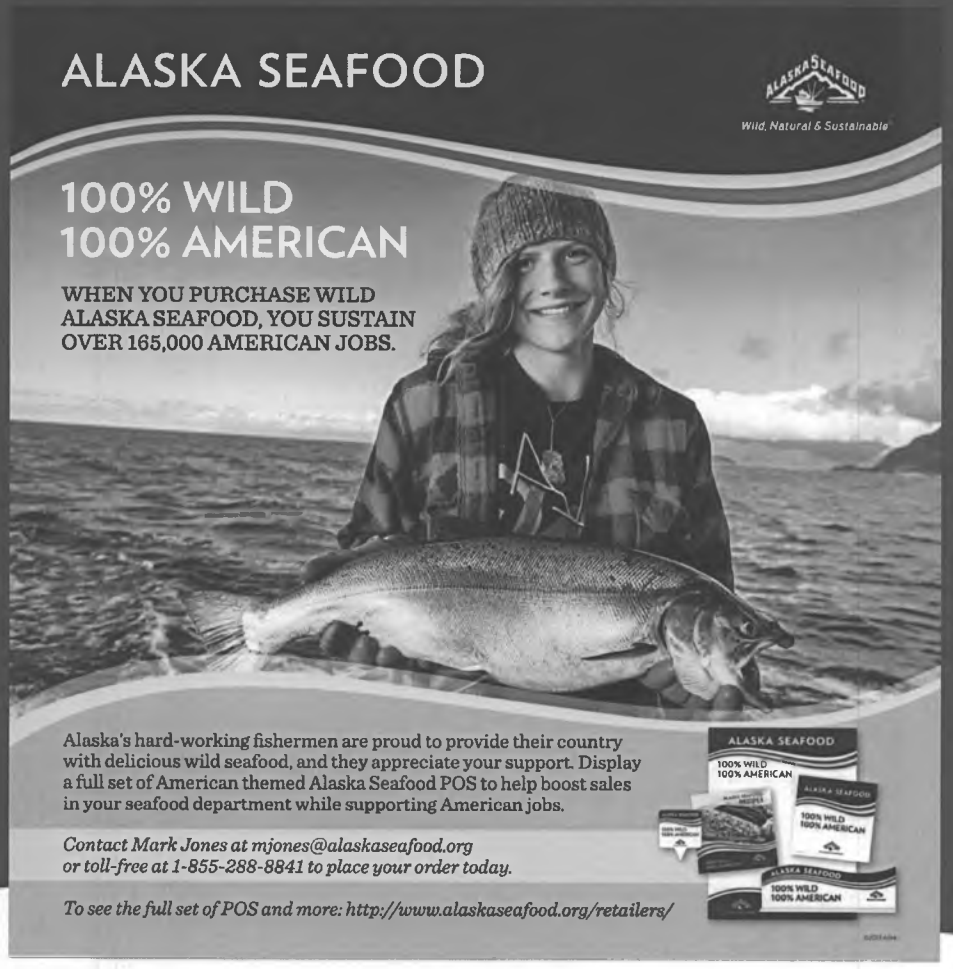


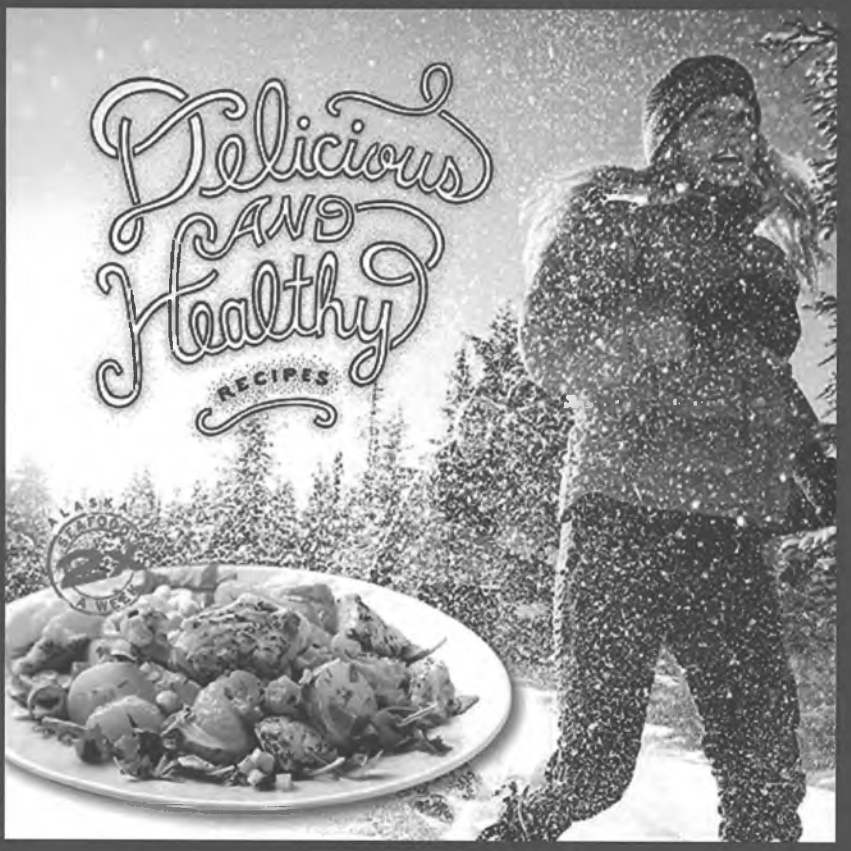


ALASKA SEAFOOD®

Sauvage, Naturel & Durable

U.S. Domestic Retail Merchandising



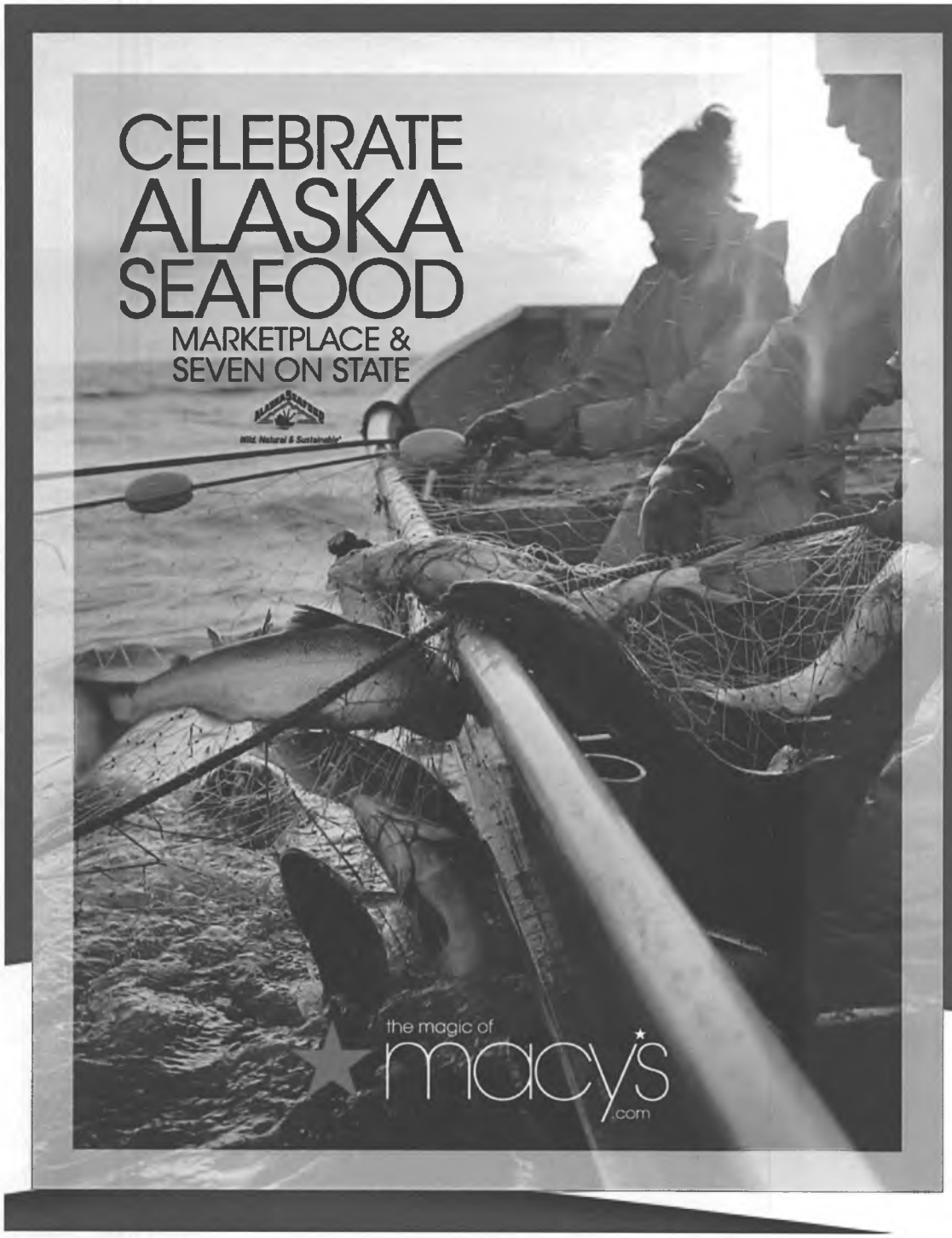


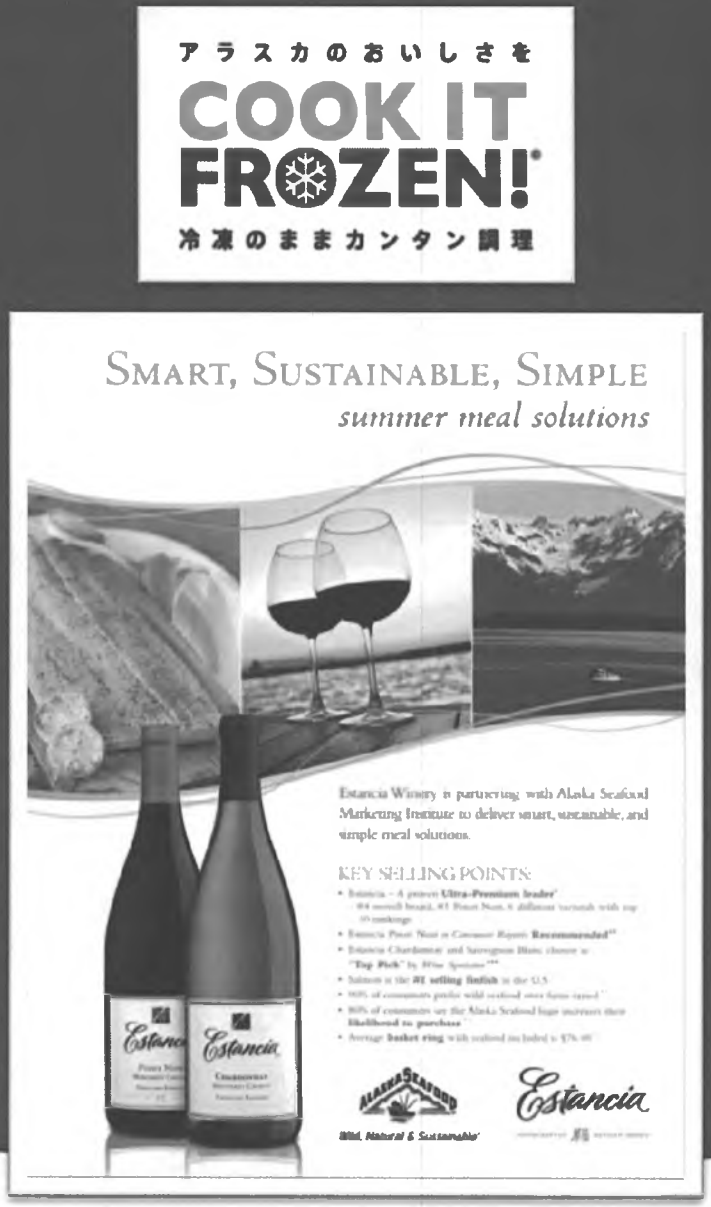
ALASKA SEAFOOD

Wild, Natural & Sustainable®

Retail Training







Joint Promotions



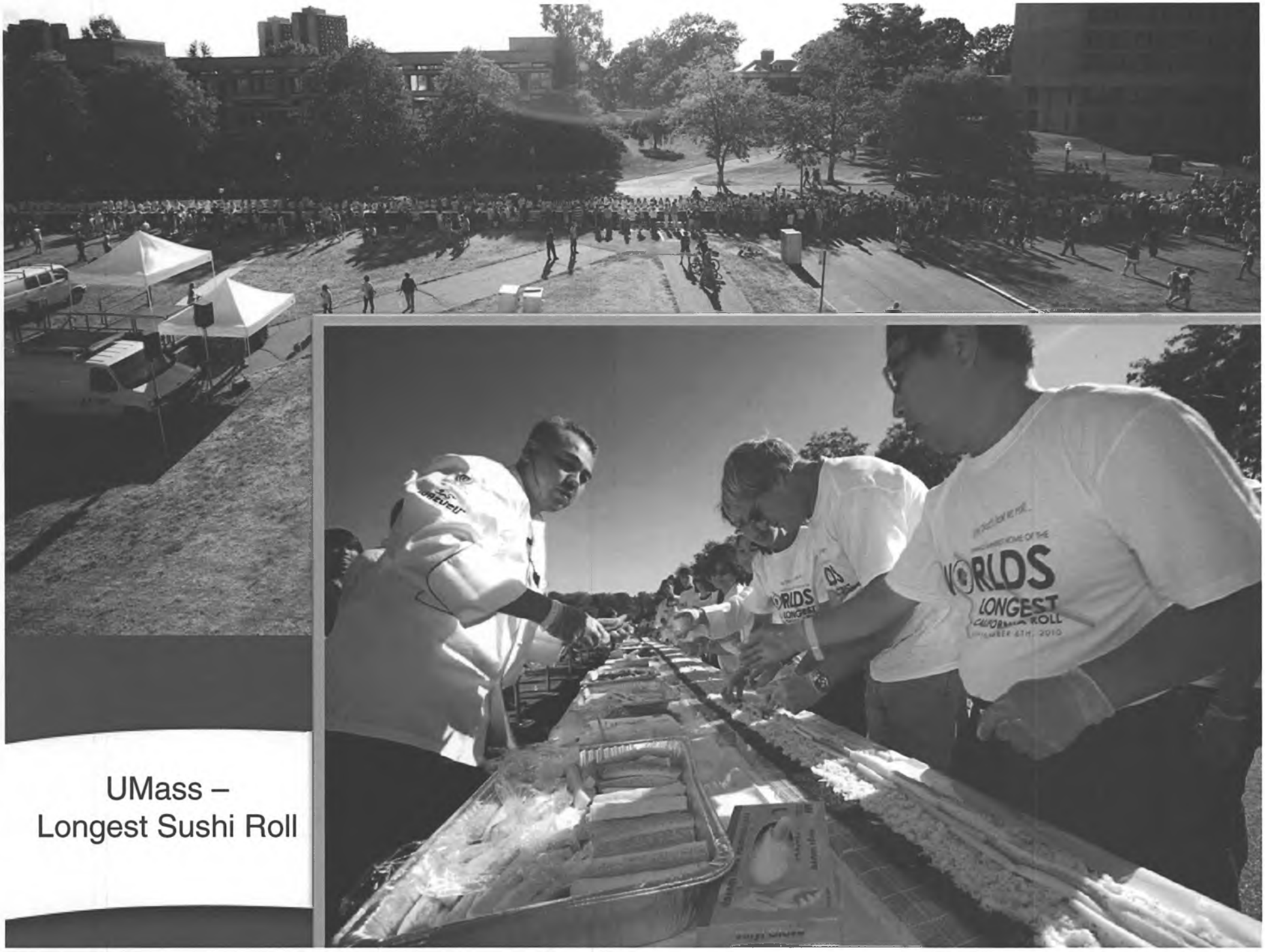
Sonic Drive-In

Jason's Deli



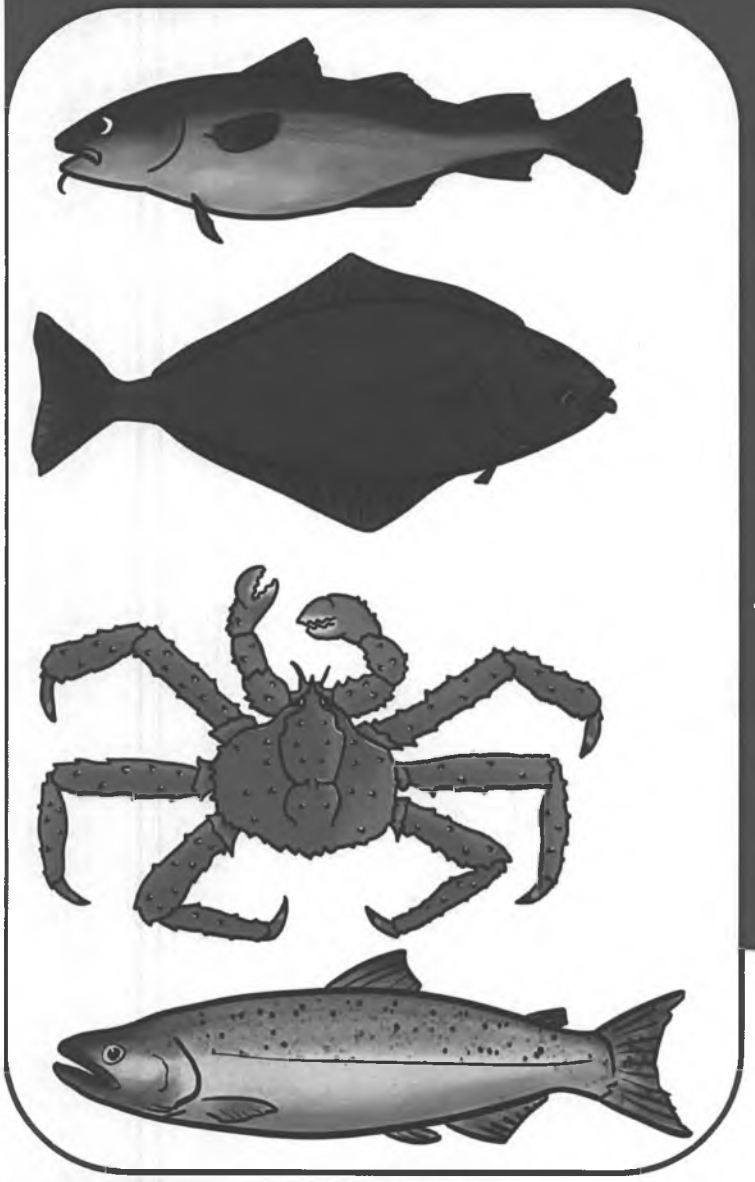
ALASKA SEAFOOD

Wild, Natural & Sustainable®



UMass –
Longest Sushi Roll

ASMI Consumer PR Program



Goal: The Consumer PR program is designed to **maintain the highest possible value perception for Alaska Seafood** among consumers.

Objective: Continue to brand and effectively **link** Alaska's unique position: **wild, natural** and **sustainable** seafood with **superior taste** and **texture**.

Core Principle: ASMI conducts marketing activities that provide the **largest economic benefit** for its industry members.

ALASKA SEAFOOD

Wild, Natural & Sustainable®


Cooking Light
25 Healthy Dishes for a Perfect Summer
Our light & breezy cookbook: New twists on classic favorites
SECRETS
20-MINUTE SUCCESS
Sloppy Joes, Chowders, Salads
salt!
Sustainable Choice
Wild-caught Alaskan halibut is the best option. If not available, opt for other U.S. or Canadian wild-caught Pacific halibut, or substitute striped bass or U.S. line-caught cod.
CALORIES 266; FAT 10.4g (sat 1.3g, mono 5.8g, poly 2g); PROTEIN 24.6g; CARB 19.8g; FIBER 2.6g; CHOL 34mg; IRON 1.6mg; SODIUM 394mg; CALC 93mg
Julianna Grimes is senior food editor at Cooking Light.
The New York Times
It's Wild-Salmon Season
By MARK BITTMAN
RAW
GRILLED
POACHED
BURGER
Cucumbers, Soy and Ginger
Lemon and Herb
Mustard and Shallots
Crème Fraîche and Caviar
Harissa
Curried With Yogurt Sauce
Chipotle and Avocado
Apricot, Mustard and Soy
Tarragon Mayonnaise
With Salsa
5 DINNERS, 1 BAG GROCERIES FOODS THAT FIGHT BELLY FAT
EatingWell
WHERE GOOD TASTE MEETS GOOD HEALTH
The Best of Spring
41
Fresh
ALASKA SEAFOOD
Wild, Natural & Sustainable

Consumer & Trade Events







FAO-Based Responsible Fisheries Management Certification



CERTIFIED RESPONSIBLE
ALASKA SEAFOOD
FISHERIES

ALASKA SEAFOOD

Wild, Natural & Sustainable®

Alaska Cod









ALASKA SEAFOOD

Wild, Natural & Sustainable®

Coordinated Marketing

Alaska Airlines

Alaska Railroad Corporation
EST. 1914

Alaskan Brewing Co.



Alaska GROWN
fresher by far

ALASKA
TravelAlaska.com

Alaska Seafood
Wild, Natural & Sustainable®

Opportunities

- Emerging Markets
- School Lunch Program
- Chef Alliance
- Kikkan Randall

Challenges

- Social Media
- Fukushima
- IUU
- Certification
- Pinks!

ALASKA SEAFOOD

Wild, Natural & Sustainable®

Buyers Mission to Alaska Brazil





Série Alaska

- 3 Retail Buyers (Pao de Acucar, Zaffari, Cencosud) and one importer (Noronha Pescados)
- Company meetings, visits to fishing grounds, plant and vessel tours in Seattle, Juneau, Excursion Inlet, and Cordova
- Noronha Pescados is launching an Alaska series of products this year

ALASKA SEAFOOD

Selvagem, Natural & Sustentável

Online Promotion with TMALL.COM China

- Asia's leading online retailer
- November 11th is the equivalent of "Cyber Monday" **but 2 x the sales!**
- Homepage pre-sale advertisement from October 14 – 20, 2013
- Special Alaska seafood webpage selling 12 species and featuring 2 Alaska seafood videos

天猫 TMALL.COM

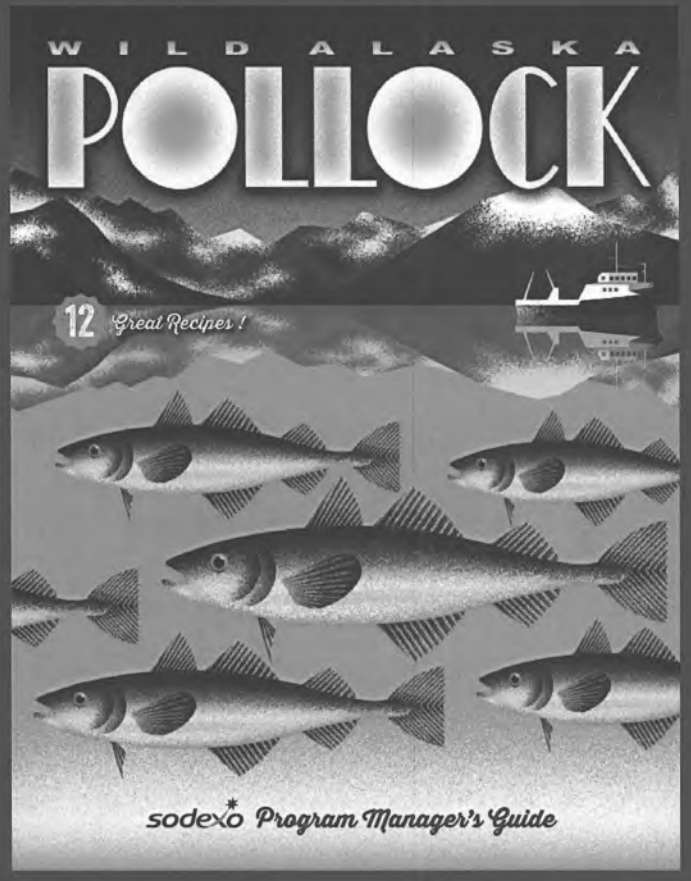


ALASKA SEAFOOD

野生·天然·持续

Sodexo: K-12 School Project

- Leading foodservice management company.
- Provides K-12 foodservice in 500 schools districts throughout the U.S.
- Provides 2 ½ million meals per day in 3,000 schools.
- In 2012, ASMI and GAPP worked on a pilot program with Alaska pollock.
- The program was a success and resulted in a national program



ALASKA SEAFOOD
Wild, Natural & Sustainable®

Alaska Seafood Chef Alliance

The Alaska Seafood Chef Alliance develops partnerships between Alaska seafood and the culinary world. The chefs make a vital connection in the media and at events, serving as well-versed brand ambassadors for Alaska Seafood.

Increased from 18 to 26 chefs in FY13 by adding:

- Hugh Acheson, Atlanta
- Anita Lo, New York
- Tony Maws, Boston
- Giuseppe Tentori, Chicago
- Erik Slater, Seward
- Jason Porter, Girdwood
- Rick Moonen, Las Vegas
- Roy Yamaguchi, National






@Kikkanimal





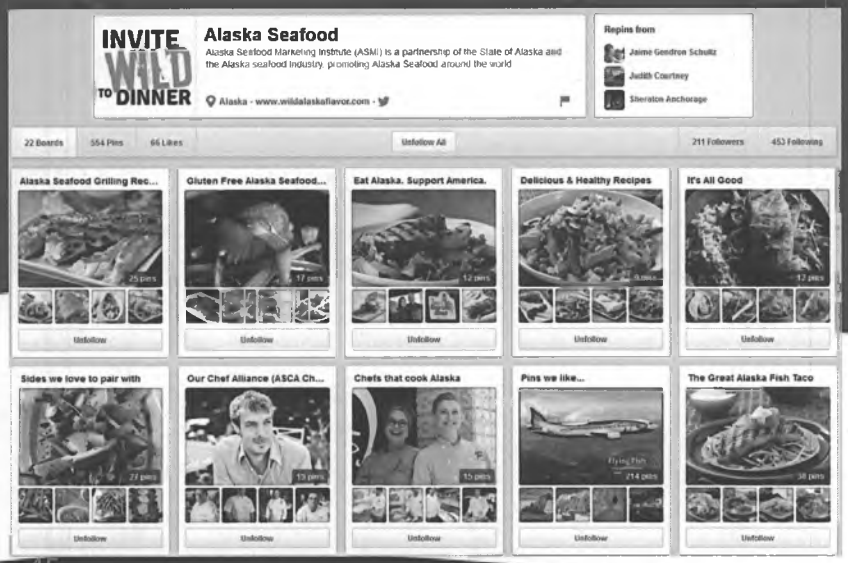


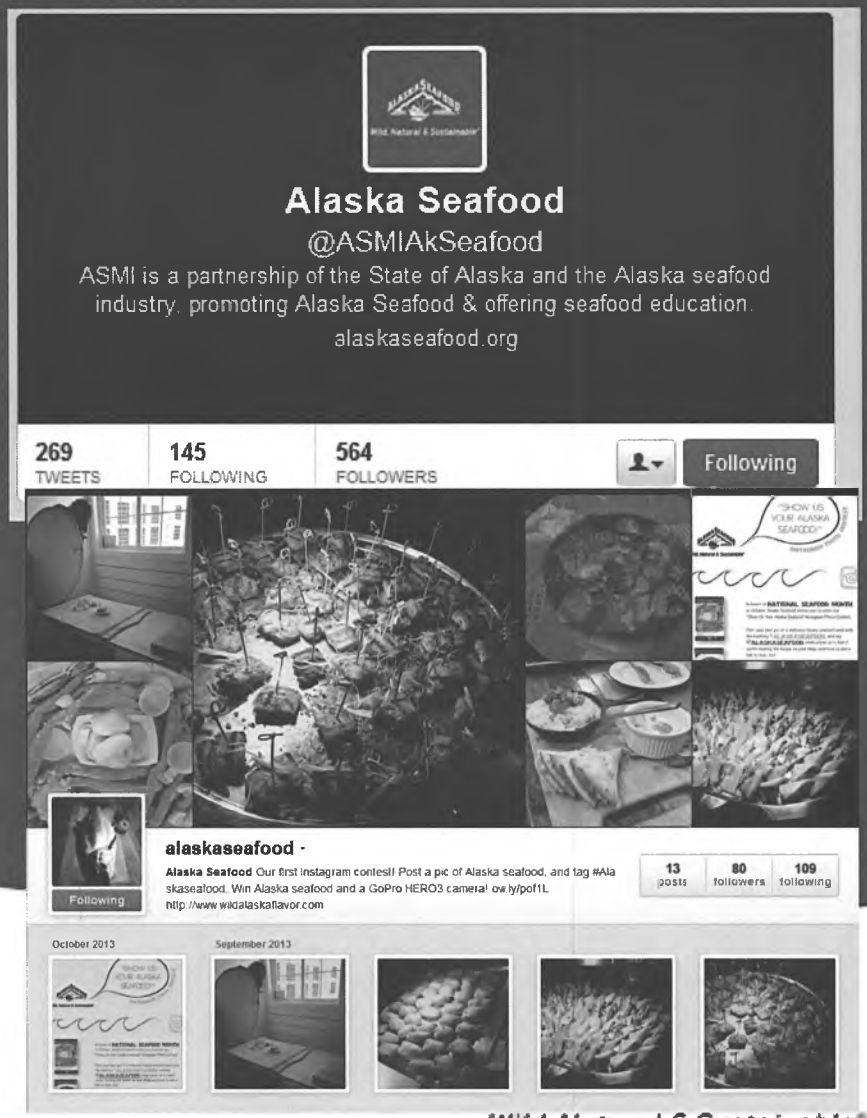
ALASKA SEAFOOD

Wild, Natural & Sustainable®

ASMI Social Media Campaigns
Facebook, Twitter, Pinterest, Instagram & YouTube



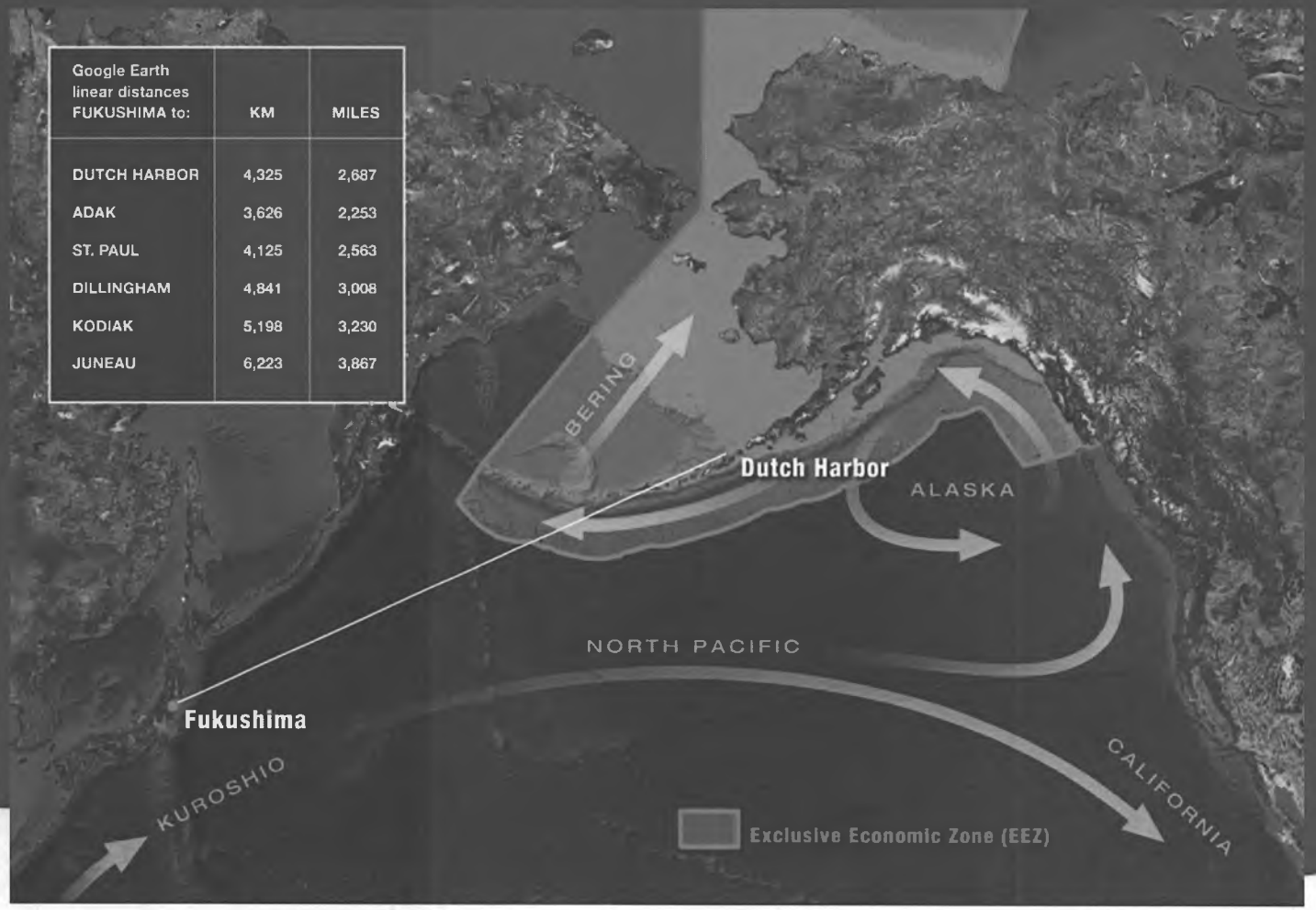




Fukushima Radiation

- March 2011 Tsunami
- Increase in bombastic "press"
- Social Media chatter
- Informing constituents
- Testing?

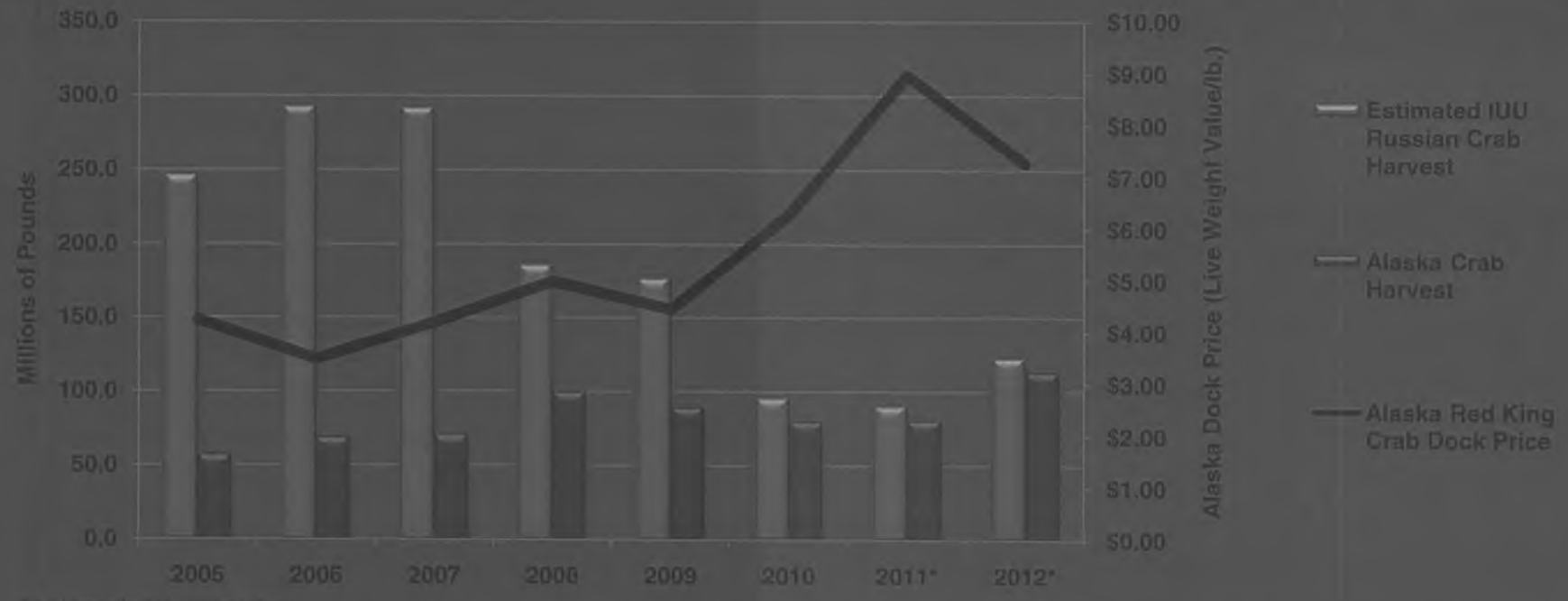
Google Earth linear distances FUKUSHIMA to:	KM	MILES
DUTCH HARBOR	4,325	2,687
ADAK	3,626	2,253
ST. PAUL	4,125	2,563
DILLINGHAM	4,841	3,008
KODIAK	5,198	3,230
JUNEAU	6,223	3,867



ALASKA SEAFOOD

Wild, Natural & Sustainable®

IUU Crab Fishing



* Indicated preliminary data.

Sources: National Marine Fisheries Service, Alaska Department of Fish and Game, and McDowell Group Estimates, based on FAO, Global Trade Atlas, and

ALASKA SEAFOOD

Wild, Natural & Sustainable®



- June Letter to Seafood Suppliers
- Bentonville Visit in September
- The Sustainability Consortium Discussion
- Walmart Executives Visit Alaska
- Announcement Last week

adn.com Anchorage Daily News

New Wal-Mart policy will allow Alaska salmon

ALASKA SEAFOOD

Wild, Natural & Sustainable®

Pinks!

- 216 million fish harvested
- Canned pink salmon marketing plan
- US Food Aid



ALASKA SEAFOOD

Wild, Natural & Sustainable®

Legislative Visit: Spain, Portugal & France









ALASKA SEAFOOD

Salvaje, Natural & Sostenible

Thank you





Mike Cerne
mcerne@alaskaseafood.org
907-465-5560

@ASMIakseafood

Facebook.com/alaskaseafood

www.alaskaseafood.org

ALASKA SEAFOOD

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02/20/14 Presentation: Sea Otter Impacts in S.E. Alaska; Invasive Species in Sitka; and Interagency MOU

<TARGET><BILL></BILL><SUBJECT>02-20-14 Presentation Sea Otter Impacts in S.E. Alaska; Invasive Species in Sitka; and Interagency MOU</SUBJECT><COMM>HFSH28</COMM></TARGET>

Status Update on an Invasive Colonial Tunicate in Whiting Harbor, Sitka
February 20, 2014

Alaska Department of Fish and Game Contacts:
Director, Charlie Swanton- charles.swanton@alaska.gov; phone: 465-6184 or 321-0955
Asst. Director, Mini Cherian - mini.cherian@alaska.gov ; phone: 465-2751
Invasive Species Program Coordinator, Tammy Davis- tammy.davis@alaska.gov ; phone: 465-6183 or 209-2492

Contemporary Overview: Between 2010 and 2011, USFWS granted $110K to ADF&G to respond to a newly detected invasive tunicate, *Didemnum vexillum (D. vexillum,)* in Whiting Harbor, Sitka. ADF&G completed a dive survey of Whiting Harbor to map the known distribution of the invasive tunicate, bagged and disposed of infested lantern nets dangling in the water column from aquatic farm infrastructure, as well an infested portion of the Whiting Harbor AquaFarm infrastructure was decommissioned. A local contractor was hired to investigate reports of invasive tunicates, outreach the issue to stakeholders, including southeast aquatic farmers, and to develop a decision-based response plan. A Capitol Improvement Project (CIP) was appropriated in FY13 ($500K) to remove the former aquatic farm structural material and conduct containment and eradication activities of the invasive tunicate. Prior to receipt of CIP funds, a severe fall storm caused the destruction of the aquatic farm structure. The balances of USFWS funds ($32K) were expended to clean up the destroyed farm infrastructure. The department has continued to respond to the invasive tunicates in Whiting Harbor with CIP funds.

- A detailed survey of distribution and mapping was conducted by ADF&G staff in fall 2012 (see fig. 1); results used for planning and solicitation of a marine environmental contractor via a request for proposals (RFP). The RFP was issued on April 8, 2013 and closed May 21, 2013.
    - We received no proposals from private contractors during the request period. Since ADF&G had been given the impression there were suitable interested parties, several contractors were contacted after closure of the RFP to gain input as to why proposals were not submitted. Potential contractors cited lack of sufficient time to prepare and implement treatment trials, lack of availability due to existing workload, and unfeasible expectations for the project.
    - Numerous follow-up conversations were had with potential contractors over the course of the summer and early fall; the Smithsonian Environmental Research Center (SERC)
        - is interested in working on this project,
        - are experts in the field of marine invasive species and have participated with the Alaska *D. vexillum* rapid response team since detection in 2010,
        - have laboratory experience investigating methods for killing marine tunicates, and have a history of working in Alaska waters.

- In December 2013, all remaining infrastructure was removed from Whiting Harbor, loaded into shipping containers and delivered to Washington State for disposal. Whiting Harbor is free of floating structures.
    - This activity completes a key objective of the CIP as all floating docks and superstructures at the site have been disposed.
    - Two large warning buoys were deployed near the entrance to Whiting Harbor in the summer of 2013 urging boaters to refrain from entering in the bay.

- In late November 2013, the online version of Marine Pollution Bulletin published a paper authored by SERC research staff reporting results of various treatments used to cause mortality on *D. vexillum* in aquarium-sized trials conducted in Sitka.

    - In the winter of 2014, discussions with SERC continued with ADF&G requesting a scope of work to collaborate on conducting large-scale treatment trials based upon their published experiments.
    - A draft scope of work (SOW) was received on January 3, 2014 from SERC, detailing multiple phases of work to be completed within a 12-15 month timeframe. Proposed treatments include: Chlorine, high concentration saline, and cement dust, as well as a combination of these agents. Each has been successful at inducing mortality of *D.vexillum* over short durations of 2-4 hours of exposure.
    - SERC is an agency recognized by the state such that the formal bid processes do not apply allowing ADF&G to enter into a direct contract to conduct the work.
    - ADF&G and SERC are working toward development of a final SOW to meet the department's objectives and avoid nonessential expenditures. A final agreement is expected to be executed by the end of February.

North Pacific Research

- Upon agreement by both parties, initiation of expedited permitting (DEC and US Army Corps of Engineers) and field trials of various containment devices will commence with full scale deployment tentatively scheduled for August 2014. Given this timeline and assuming successful completion of proposed activities, the following will take place:

    - Data analysis and results reporting (October-November, 2014)
    - Collaborative ADF&G/SERC full scale eradication and monitoring program proposal to be submitted to North Pacific Research Board (NPRB) in December 2014.
    - Anticipated full scale control program instituted in spring 2015 with periodic monitoring continuing at least through 2017.

- Financial information (CIP $500K)
    - Removal of nets and a segment of the aqua farm superstructure (August 2011)-$26K (USFWS)
    - Removal of destroyed aqua farm debris and structures (November 2011)- $32K (USFWS)
    - Sitka-based contractor and outreach (2011)-$36.6K (USFWS)
    - Underwater mapping of infestation established on seafloor (Summer 2012)- $36K
    - Signage in Whiting Harbor (Spring 2013)-$7K
    - Removal of floating docks and superstructure (Fall 2013)-$19K
    - CIP Balance available for control and monitoring as of February 2014-$431K

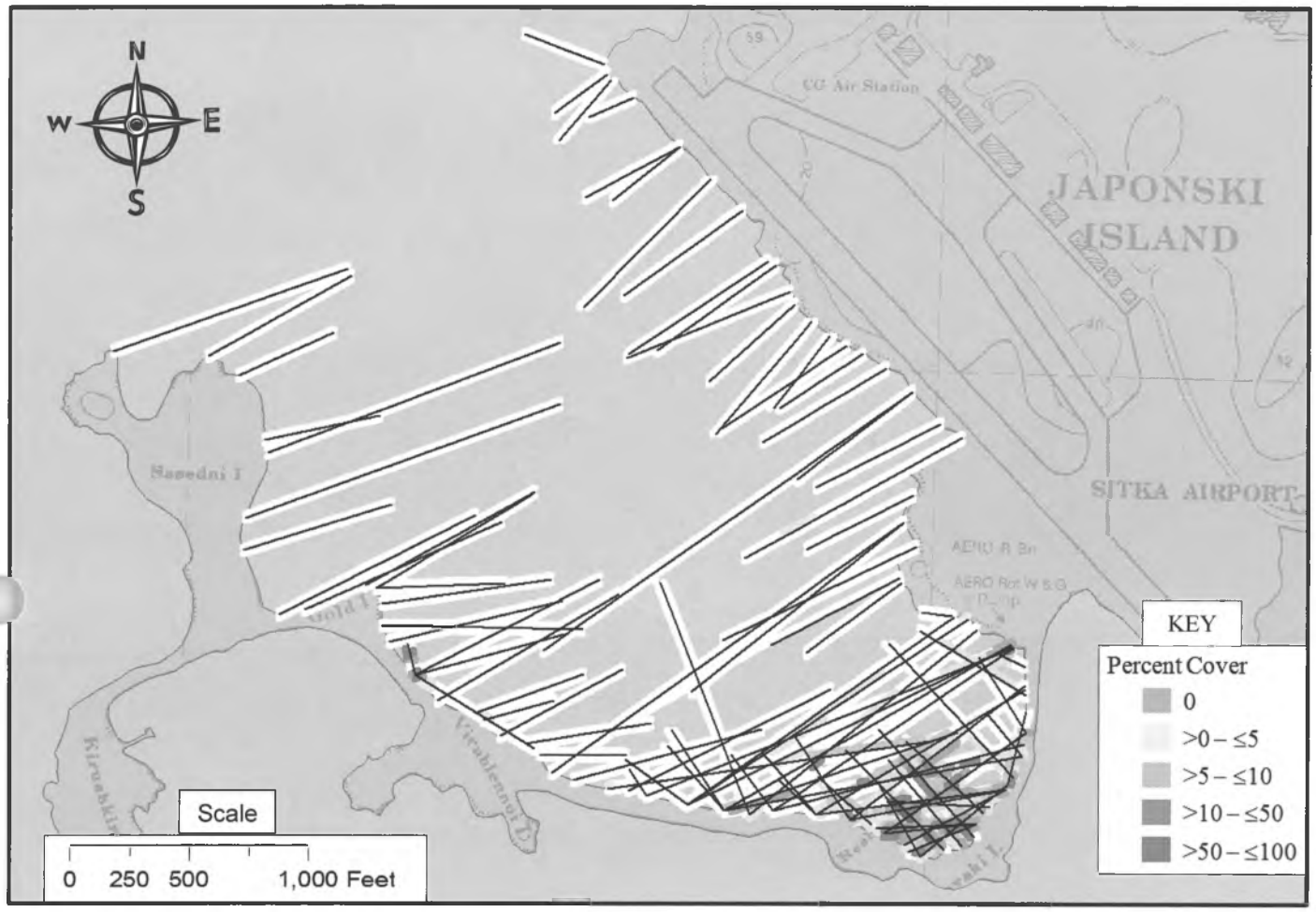


Figure 1. Distribution of *Didemnum vexillum* on the seafloor by percent cover with completed transects, August 2012.

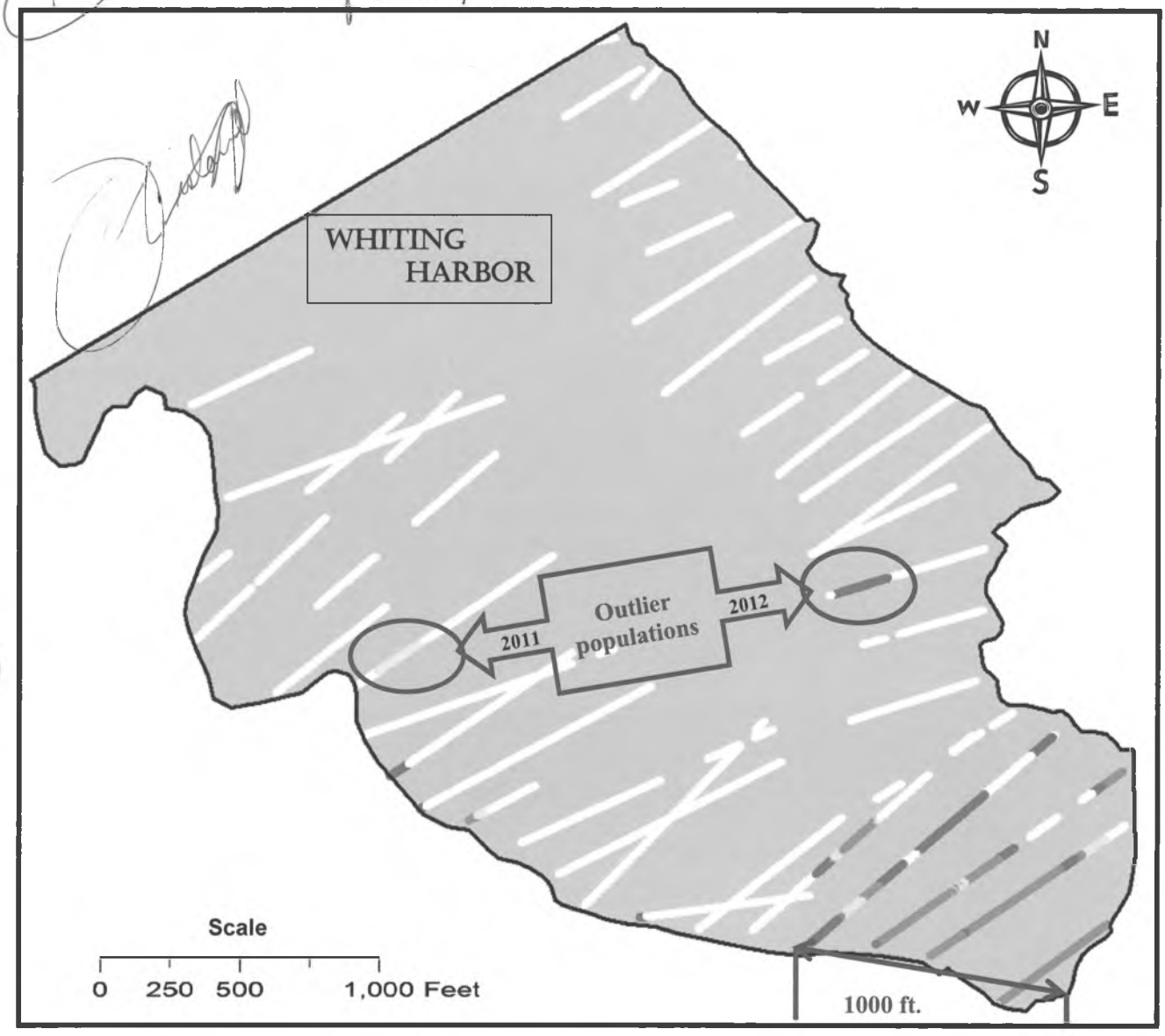


Figure 2. Change in observed distribution of invasive tunicate in Whiting Harbor between 2011 and 2012.

KEY

White represents areas of Whiting Harbor sampled in both 2011 and 2012, where *D. vexillum* was not found either year.
Gray represents areas of Whiting Harbor that were not sampled in both 2011 and 2012.
Yellow represents locations where *D. vexillum* was found within Whiting Harbor in 2011 but not 2012.
Red represents locations where *D. vexillum* was found within Whiting Harbor in 2012 but not 2011.
Orange represents locations where *D. vexillum* was found within Whiting Harbor in both 2011 and 2012.

KCAW SITKA LOCAL NEWS

ANB Harbor replacement moves forward

by Rachel Waldholz, KCAW

December 23, 2013 10:00 am



Contractors with Seattle-based Pacific Pile and Marine set a piling in ANB Habor in mid-December. (KCAW photo/Rachel Waldholz)

In November, work began on Sitka's ANB harbor. The $7.7 million project will demolish all of the existing structures and replace them with new floats and pilings by early spring. But a small invader in the harbor has added a wrinkle to the usual process.

Workers with the Seattle-based contractor Pacific Pile and Marine are driving piles into the seafloor at ANB Harbor. Sitka City Engineer Dan Tadic watches from the parking lot at ANB Hall.



In between drilling, workers blow air into the piling to clear out cuttings and advance the drill, sending water and cuttings spitting out of the top of the piling. (KCAW photo/Rachel Waldholz)

"What they're doing right now, they've got the basically the tip of the piling on rock, and they're starting to drill into the rock," Tadic says. "And every few feet or so they're using air to blow the cuttings back out of the piling, so it almost looks like the water is boiling."

The contractors are drilling about 13 feet into rock to set the pilings. They stop occasionally to flush out the cuttings. At those moments, with water bubbling up and cuttings spraying from the top of the piling, it looks like they've struck oil.

The contractors will put in over 60 new galvanized-steel pilings, ranging from 12 to 24 inches in diameter. Those will be followed by brand new floats. The work has to be done by March 15, in time for herring season.

But there's a side story to the project. In 2010, volunteers with Sitka's Bioblitz survey found a pair of invasive tunicates – small marine invertebrates – in ANB harbor, as well as several other Sitka harbors.

These tunicates aren't d. vex (Didemnum vexillum), an invasive tunicate that many Sitkans have heard about before — and that is sometimes compared to the creature from the 1950's horror movie, *The Blob*. D. vex can grow extremely fast, blanketing and smothering entire ecosystems. It was found in Sitka's Whiting Harbor in 2010 — and that's still the only place in Alaska that it's been found.

The tunicates in ANB harbor are called botrylloides, or harbor star and golden chain tunicates. And they've been much better behaved than d. vex – so far.

Marnie Chapman is a biologist at the University of Alaska Southeast.

"We're interested in watching the botrylloides group," Chapman says. "Because even though at this point there hasn't been demonstrated massive growth of these, a lot of times what invasives do is they can hang out at very low levels and then all of a sudden something will change about the environment and then they're able to grow and expand rapidly."

The concern is that, given the right conditions, the botrylloides in ANB Harbor could suddenly explode, choking out native species. So though the botrylloides have remained fairly contained thus far, officials hope to avoid spreading them further. Because of this, the ANB Harbor project permit requires that all of the material from the harbor be disposed of in a different way than usual.

"A lot of times what happens in Alaska is bits and pieces of harbors get sent all over the place when harbors are decommissioned," Chapman said. "And so it's potentially a really effective way of spreading invasive species to really pristine areas in Alaska, to take pieces of harbors and move them somewhere else."

Instead, the material from ANB harbor will be barged down to Seattle and disposed of on land. The wood will be taken to a landfill. The steel piling will be recycled. And officials hope the process will prevent the harbor's invasive stow-aways from hitching a ride to any other Alaskan ports.

Memorandum of Understanding
between
The Alaska Department of Natural Resources,
Alaska Department of Fish and Game, and
Alaska Department of Environmental Conservation

With Regard to Invasive Freshwater Aquatic Plants

January 15, 2013

Memorandum of Understanding between the Alaska Department of Natural Resources (hereinafter "DNR"), the Alaska Department of Fish & Game (hereinafter "DF&G"), and the Alaska Department of Environmental Conservation (hereinafter "DEC") (jointly referred to herein as the "Parties");

WHEREAS, the Parties recognize that *Elodea spp.* is an aquatic plant that is a noxious weed in Alaska, which is degrading fish habitat and displacing native flora and fauna. *Elodea spp* alters freshwater habitats by decreasing the flow of water and increasing sedimentation;

WHEREAS, DNR oversees the Division of Agriculture ("DoA"), Soil and Water Conservation Districts ("SWCDs") and the Division of Mining, Land and Water ("DMLW"). The Invasive Weeds Program within the DoA manages invasive weeds and agricultural pests through its strategic plan that identifies the goals and action strategies needed to accomplish objectives that would be reviewed on an annual basis. The SWCDs are one of the cooperative entities that assist in invasive weeds and agricultural pest management, education, outreach, and removal. DMLW is the land manager who is responsible for permitting the use of mechanical methods of removal in state waters;

WHEREAS, the Division of Sport Fish within DF&G is tasked with managing the threat invasive species pose to the aquatic ecosystems of the state. In 2002 ADF&G developed a statewide management plan for aquatic species wherein it identified aquatic species considered to be the highest threat, pathways for introduction, and management actions;

WHEREAS, the Pesticide Control Program within DEC is responsible for protecting public health and the environment through regulation of pesticide use, sale and distribution in Alaska;

WHEREAS, there are different methods for eradication of invasive aquatic plants including manual or mechanical removal, herbicide application, and use of biological control organisms. Each method has its advantages and disadvantages with regard to efficacy, permitting, effect on surrounding ecosystem, and costs;

WHEREAS, the Parties wish to cooperate in the undertaking of eradicating *Elodea spp.* in Alaska;

NOW, THEREFORE, the Parties agree as follows:

1. Management and coordinative authority for submersed and partially emerged freshwater invasive aquatic plants, is the responsibility of DNR with assistance provided as needed by DF&G and DEC.
2. DNR will work with DF&G and DEC to conduct an examination of existing management methods for aquatic invasive plants and chart a strategic plan that prioritizes critical areas, provides permitting requirements, and addresses advantages and disadvantages of eradication methods.
3. The Parties will develop a coordinated and efficient permitting process for all methods of control by providing the end-users a list of permits required along with corresponding points of contact. This coordination may also include an examination of one or more general permits related to invasive aquatic plants in freshwater.
4. The Parties will provide each other with quarterly summary information on aquatic invasive plant issues so that each agency is fully aware and adequately informed.
5. The Parties will conduct a statewide dialogue with regard to permits needed to eradicate freshwater aquatic invasive plant species and expand public outreach and education programs on freshwater aquatic invasive plants and the need for and methods of eradication.
6. The Parties agree to develop a plan to better coordinate an effective interagency response, in the case of a detected invasive aquatic plant population that has not dispersed widely, to verify, delineate, contain, and when feasible, implement the plan to eradicate freshwater invasive aquatic plants.
7. The Parties will initiate efforts to examine the most effective and least costly method to eliminate further introduction of Elodea to the State, including education, outreach, and even prohibition of sales or distribution of Elodea in the State of Alaska.

The Parties have caused this Memorandum of Understanding to be executed as of the date of the last signature below.

Alaska Department of Natural Resources

By: _____

Name: Ed Fogels
Title: Deputy Commissioner

Alaska Department of Fish & Game

By: Cora Campbell

Name: Cora Campbell
Title: Commissioner

Alaska Department of Environmental Conservation

By: Larry Hartig 1/16/13

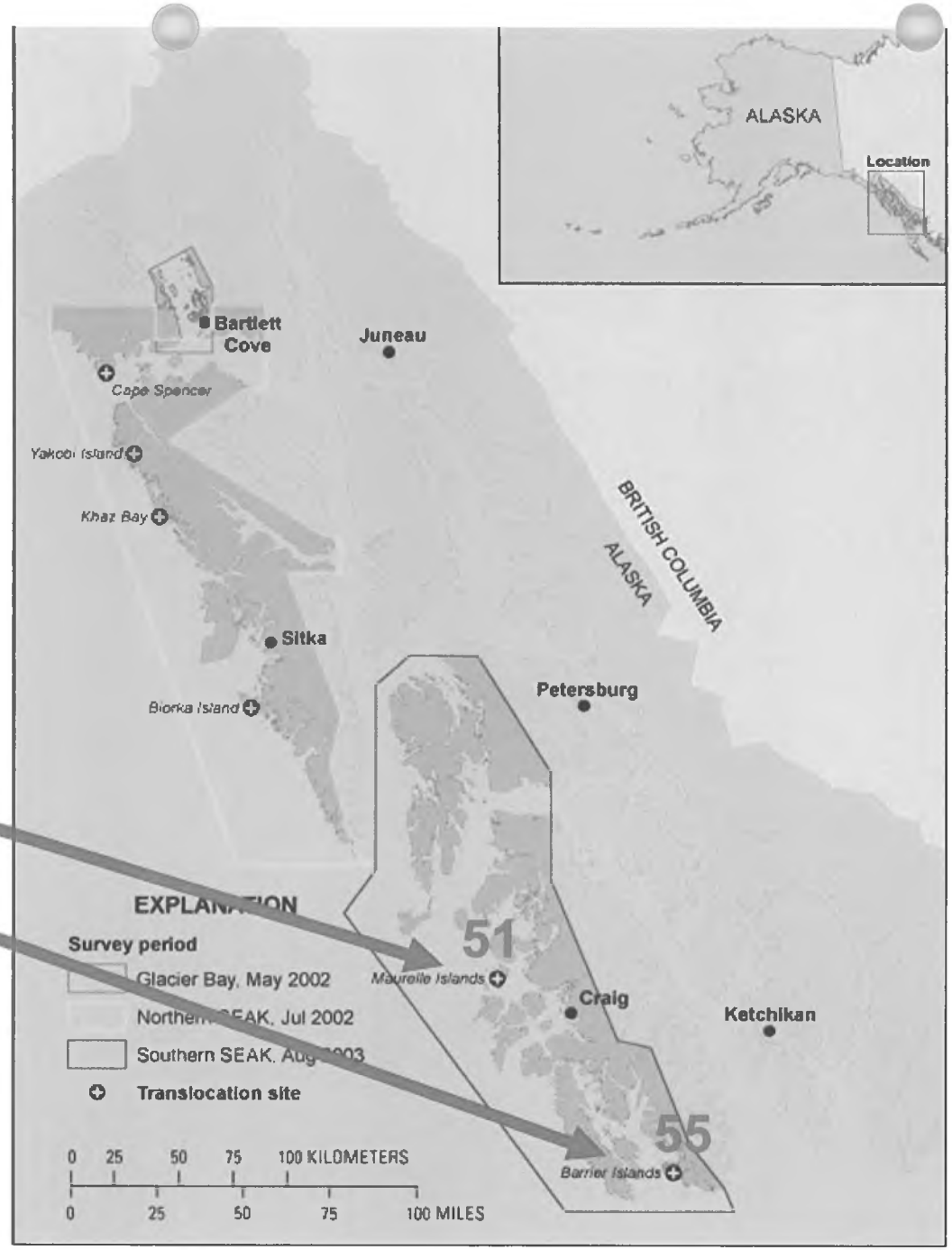
Name: Larry Hartig
Title: Commissioner

Sea Otters in Southeast Alaska



Translocation Sites

- Cape Spencer
- Yakobi Island
- Khaz Bay
- Biorka Island
- Maurelle Islands
- Barrier Islands



1960's Release

Maurelle Islands

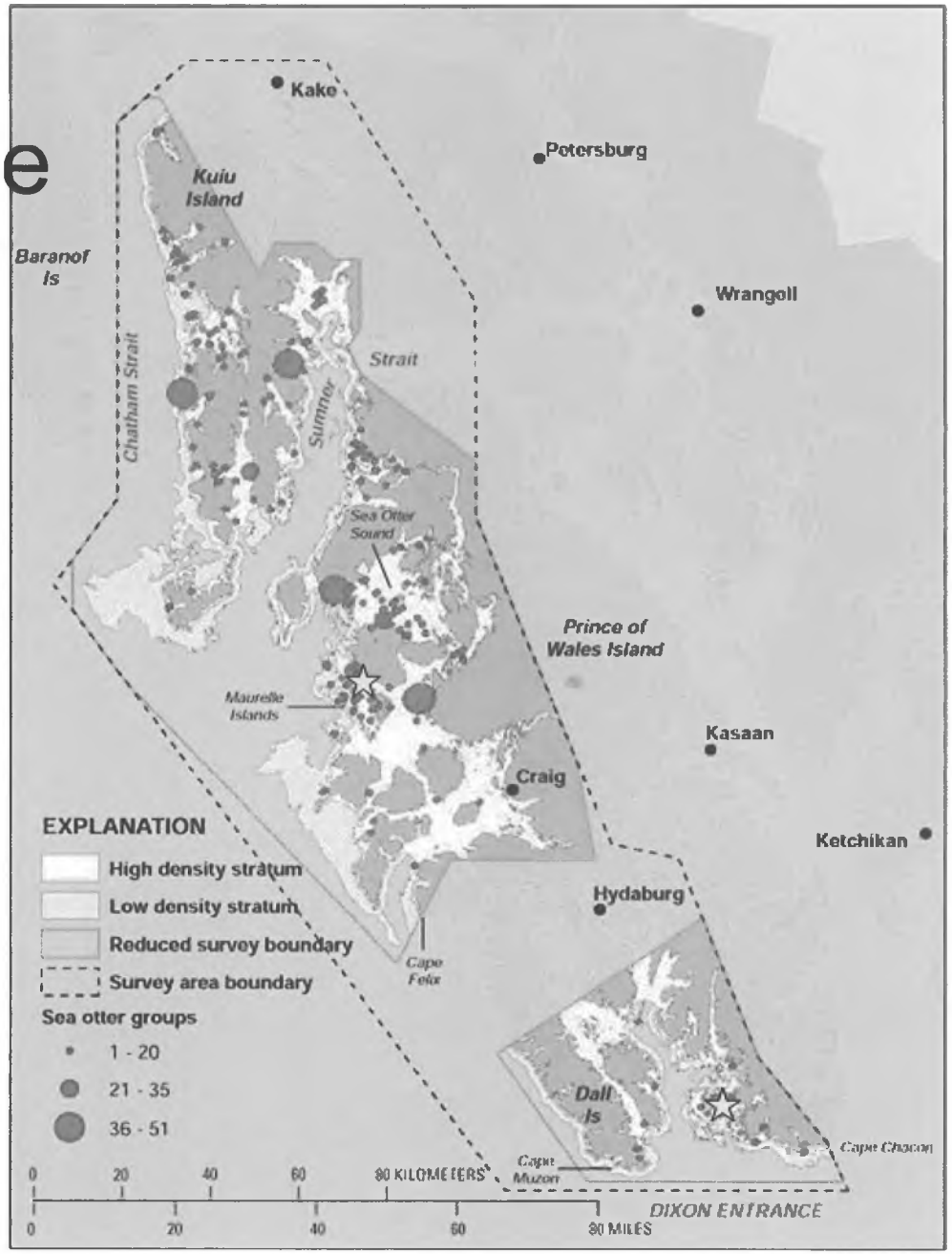
51 otters

Barrier Islands

55 otters

Sea Otters have spread throughout southern southeast Alaska by 12% to 14% per year

Esslinger and Bodkin 2009



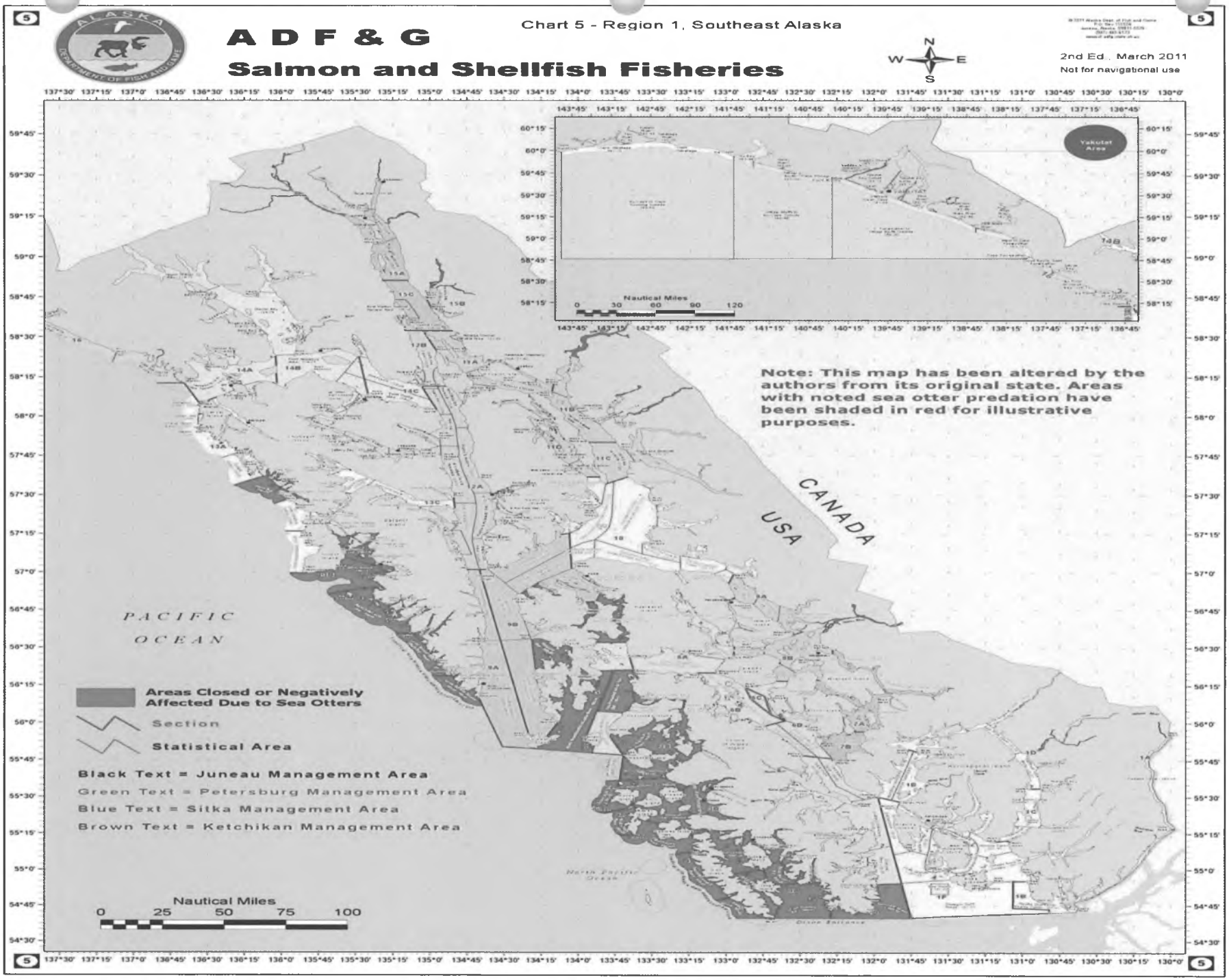
Current annual growth rates; 12-14% yr^{-1} increase across stock; but Glacier Bay driving the increase in north

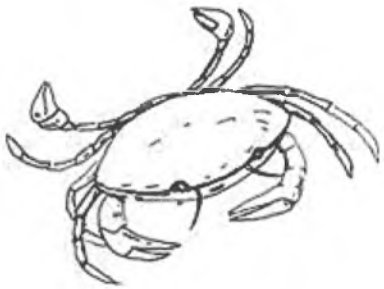




2003 = 10,563

2012 = 25,712


ADF&G
Salmon and Shellfish Fisheries
Chart 5 - Region 1, Southeast Alaska
2nd Ed., March 2011
Not for navigational use
Yakutat Area
Nautical Miles
0 30 60 90 120
Note: This map has been altered by the authors from its original state. Areas with noted sea otter predation have been shaded in red for illustrative purposes.
CANADA
USA
PACIFIC OCEAN
Areas Closed or Negatively Affected Due to Sea Otters
Section
Statistical Area
Black Text = Juneau Management Area
Green Text = Petersburg Management Area
Blue Text = Sitka Management Area
Brown Text = Ketchikan Management Area
Nautical Miles
0 25 50 75 100



The sea otter diet is extremely diverse











Specialists and generalists. High metabolic rate so can eat up to 23% of body weight by day

Fisheries affected in southern SE AK - value $16 million dollar (2008 -09)



Dungeness Crab



Red Sea Urchin



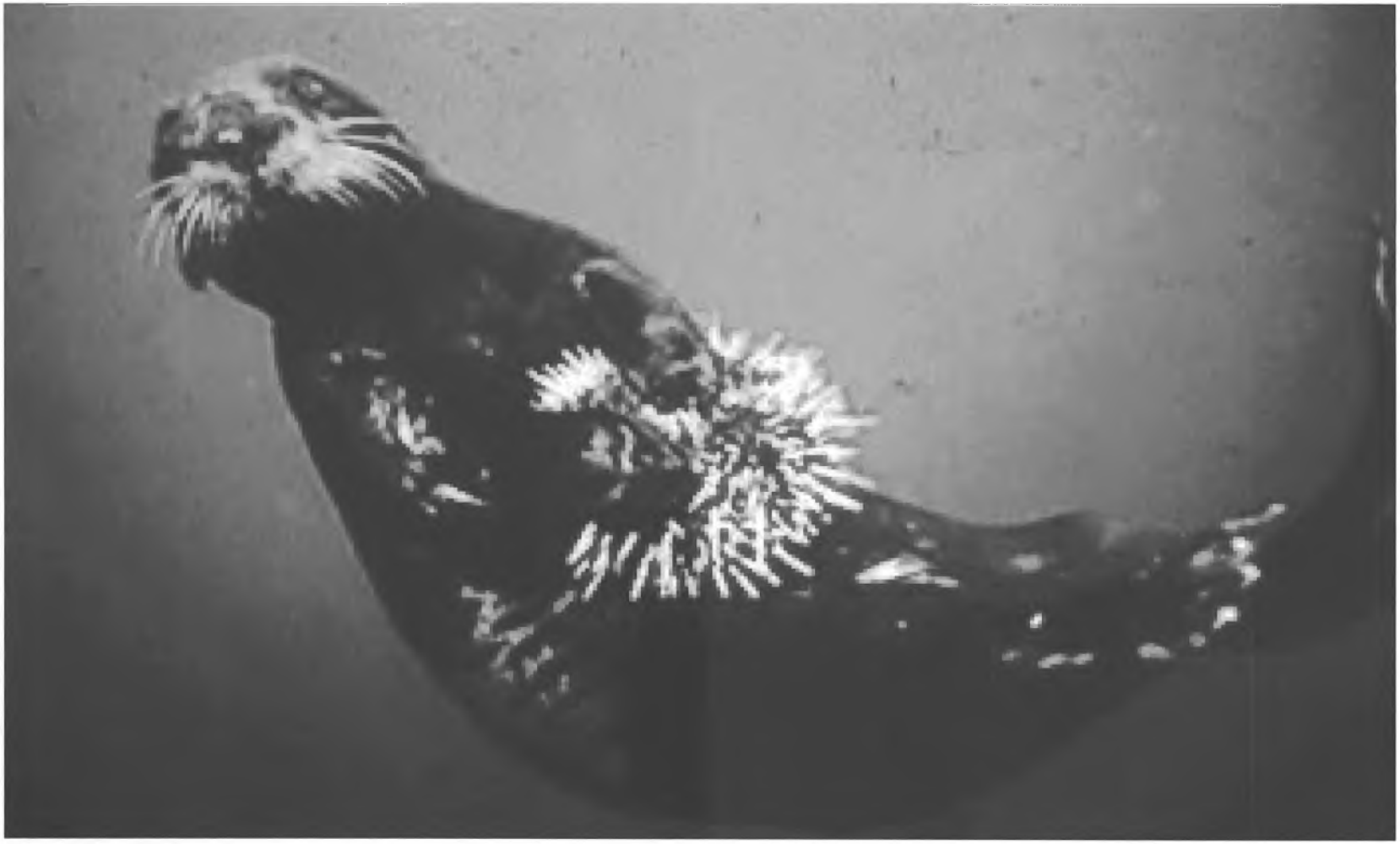


Economic Impacts of Sea Otter Predation on Southeast Alaska

Commercial Fisheries

Fishery	Estimated Pounds Lost due to Sea Otter Predation	Estimated Ex-Vessel Value Lost Due to Sea Otter Predation	Estimated Wholesale Value Lost Due to Sea Otter Predation	Time Period
Sea Cucumbers	3,254,000	$5,294,000	$8,951,000	1996-2011
Geoducks	530,500	$3,237,000	$4,210,000	2005-2011
Red Sea Urchins	3,102,000	$1,024,000	$3,972,000	1995-2005
Dungeness Crab	2,681,000	$3,317,000	$5,301,000	2000-2011
Total	9,567,500	$12,872,000	$22,434,000	
Source: ADF&G				McDowell Group, Inc.

In short, commercial dive fishing and large populations of sea otters cannot coexist in the same waters. In addition, once the commercially viable biomass of crab and macro invertebrates – such as sea cucumbers and geoducks - is gone, it likely will not return given sustained sea otter predation.



Louie Flora

From: Rep. Paul Seaton
Subject: FW: Sea otter impacts

From: Joel Randrup [mailto:jkrandrup@gci.net]
Sent: Thursday, February 20, 2014 7:55 AM
To: Rep. Paul Seaton
Subject: Sea otter impacts

Dear Representative Seaton,

Please help the commercial crab and dive fisherman of southeast by supporting some sort of a financial assistance plan to replace the lost income we are experiencing because of the invasive sea otter. The sea otter is an extremely efficient predator in our marine ecosystem. Because it is unregulated the negative impact on our state's marine resources is profound. I believe it is the right of the state of Alaska to manage its own resources in an active management program to maintain a balance of species. The areas the sea otter are overpopulating are both and ecological and economic disaster for Southeast.

The challenge is for us to fight for and win our rights to manage our own state. It has been documented that the sea otter has negatively affected the economy of southeast. The McDowell Group report on Sea Otter Impacts on Commercial Fisheries in Southeast Alaska has documented the economic impact the sea otters are having on our fisheries. I believe we need a hands on approach to resource management and cannot keep following the wait and see management by the federal government. There is not much time or area left for us to use for making a living and protect our marine ecosystem from the devastating effects of overpopulation by the sea otter. It seems that if we have federal involvement in our resources we cannot follow our own constitution and manage all our resources. It has been extremely difficult to witness the devastation of our subsistence and commercial resources that support our way of life in southeast.

There has been excellent work done by the sea otter committee that helped clear up the definition of significantly altered. This work may help increase the sea otter harvest by the natives in southeast. Hopefully efforts in the legislature will be successful and provide financial support for the native population to produce handicrafts. Such efforts are a good step forward, however, they are not enough to stop the rapidly increasing population of the sea otter. We need to manage this efficient predator in our marine ecosystem by taking over their management from the federal government, and if we do not then we need to figure out a financial plan to help the displaced fishermen and their respective communities. Without active management the future is very dark for the crab and dive fisheries of Southeast Alaska.

Sincerely,

Joel Randrup

03/06/14 Presentation: Community Fishing Associations

<TARGET><BILL></BILL><SUBJECT>03-06-14 Presentation Community Fishing Associations</SUBJECT><COMM>HFSH28</COMM></TARGET>

Community Fishing Associations

Strengthening Alaska's Fishing Communities Amidst the Gulf of Alaska Catch Share Program

The North Pacific Fishery Management Council is in the process of developing a catch share program (rationalization) for the Gulf of Alaska trawl fishery. As the current title suggests, the Gulf of Alaska (GOA) Trawl Bycatch Management Program is in response to a growing management concern: bycatch of critical species, particularly Chinook salmon, halibut and Tanner crab in the Gulf of Alaska trawl fisheries.

Catch share programs or individual transferable quota (ITQs) programs allocate a specific portion of the fishery resource to participants thus ending the 'race for fish' and providing the trawl fleet with the tools needed to reduce bycatch. Nevertheless, nearly 20 years of direct experience with catch share programs in Alaska demonstrates clearly how catch share programs can adversely impact fishing dependent coastal communities. The problems encountered in catch share programs in Alaska and around the world are widespread, well-documented and now predictable. These include:



- absentee ownership of quota
- fewer locally based vessels
- high leasing fees
- rapid vessel consolidation
- consolidation of quota ownership
- lower crew pay and job loss
- out-migration of fisheries based wealth and fishery access opportunities from communities

What is a Community Fishing Association?

Direct allocations to fishing communities were authorized in the 2006 reauthorization of the Magnuson-Stevens Act (MSA). Under this provision, fishing communities are eligible to receive initial allocations of quota, or to purchase or hold quota. The North Pacific Fishery Management Council held a workshop on Community Fishing Associations (CFAs) at their Seattle meeting in February 2014 to inform the Council and other North Pacific stakeholders on key issues and elements that need to be considered in order to facilitate the inclusion of a CFA in a GOA Bycatch Management Program. The workshop provided valuable real-world examples of how CFAs benefit communities, support new generations of fishermen, and promote growth and stability of fishing businesses.

There is a NEW management construct, proven successful on both the east and west coasts, that can help mitigate the community impacts caused by catch share programs: Community Fishing Associations (CFAs). CFAs ensure that a portion of the fishing quota is anchored in the community in perpetuity. The strongest CFAs have quota allocated at the time a catch share program is started. Quota allocated to the community is then used to address community goals of keeping a local fleet, encouraging participation by future fishermen, equitable crew compensation and vessel/owner residency. Creating a CFA as part of the GOA Bycatch Management Plan will enable Gulf of Alaska communities to address some of the adverse community impacts associated with rationalizing fisheries.

How will a CFA strengthen GOA fishing communities under a catch share program?

1. CFAs effectively anchor quota to communities in perpetuity.

Anchoring quota to communities will provide a local management tool that should ensure long-term multiplier of benefits, especially fish dollars, to local communities. Anchoring quota to communities allows the community to leverage its quota to encourage fishermen to deliver to the community, remain in the community, use community services and infrastructure and treat crew equitably.

2. CFAs support new generations of fishermen, including crew and new entrants.

CFAs are often designed to help transition fishermen without adequate capital into a new fishery and they also can be used to acknowledge crew as real stakeholders. CFAs can include crew contracts and codes of conduct as a way to protect crew from reduced compensation because of lease rates for quota transferred within a catch share program.

3. Initial allocation of quota to CFAs amplifies community benefits.

Initial allocation of quota to communities is critical to buffering initial changes caused by catch shares. Initial allocation of fishing quota to communities via the CFA will advance community protections by years if not generations as the community works to build or rebuild strong local businesses and enable positive local impacts.

4. CFAs provide for community involvement and diversity within decision-making.

CFAs offer a way to include fishermen and community perspectives in the operation and decision-making processes which impact local communities and businesses. The inclusion of community perspectives in decision-making processes ensures that the variety of participants and stakeholders in local communities benefit from local fishery resources.

Summary

Healthy fishing communities depend on healthy ecosystems, but they also depend on fisheries access, second generation fishermen transitioning into the fishery and local participation. A CFA structure can strengthen the emerging GOA catch share program and help to ensure that the program benefits Gulf of Alaska coastal communities. Looking back on our experience over the past 20 years and identifying the negative impacts catch share programs have had on fishing communities elsewhere makes clear: Now is the time for Alaska catch share programs to include the CFA management tool.

For more information, contact:

Alaska Marine Conservation Council

Theresa Peterson
AMCC Kodiak Outreach Coordinator
theresa@akmarine.org
907.539.1927

Chuck McCallum
GOAC3 Executive Director
goaccc@alaska.net
907.561.7633

Community Fishing Associations

STRENGTHENING ALASKA'S FISHING COMMUNITIES AMIDST A GULF OF ALASKA CATCH SHARE PROGRAM

Presentation to the House Fisheries Committee
March 6, 2014

GOAC

Alaska Marine Conservation Council

Presentation Overview

1. Context: Gulf of Alaska Bycatch Management Program;
2. Lessons learned from past programs;
3. What is a CFA?
4. How a CFA can help protect Alaska's communities in a Gulf of Alaska catch share program;
5. Next steps.



Background: Gulf of Alaska Bycatch Management Program

The North Pacific Fishery Management Council (NPFMC) is in the process of designing a Gulf of Alaska bycatch management program:

- Declines in Chinook salmon, halibut and Tanner crab have made bycatch reduction imperative;
- Focus of the bycatch management program is giving the trawl fleet "tools" to reduce bycatch;
- Program development to date indicates this is likely to be a "catch share" or "rationalization" program.

Lessons Learned from Past Catch Share Programs

Alaska Marine Conservation Council

Impacts can include:

- absentee ownership of quota
- high leasing fees
- rapid vessel consolidation
- consolidation of quota ownership
- lower crew pay and job loss
- out-migration of fishing rights and wealth from rural communities



What is a CFA?

- Community Fishing Associations (CFAs) are a tool for protecting communities within catch share programs;
- Successful examples in Cape Cod, Morro Bay, developing nationwide;
- Direct allocations to fishing communities were authorized in the 2006 reauthorization of the Magnuson-Stevens Act;
- CFA Model: The CFA is allocated quota, then leases it to current participants and new entrants based on criteria developed by the CFA.

How a CFA Can Protect Communities in a GOA Catch Share Program

Alaska Marine Conservation Council

1. ***CFAs effectively anchor quota to communities in perpetuity.***

No other tool ensures that the quota itself remains in the community.



How a CFA Can Protect Communities in a GOA Catch Share Program

Alaska Marine Conservation Council

2. CFAs support new generations of fishermen, including crew and new entrants.



CFAs can provide fishermen with an opportunity to enter into the fishery, providing access for coastal Alaska communities.

How a CFA Can Protect Communities in a GOA Catch Share Program

Alaska Marine Conservation Council

3. Initial allocation of quota to CFAs amplifies community benefits.

Initial allocation of fishing quota to communities via the CFA will advance community protections as the community works to maintain and build strong, local businesses.

How a CFA Can Protect Communities in a GOA Catch Share Program

Alaska Marine Conservation Council

4. CFAs provide for community involvement and diversity within decision-making.



By providing ownership in the resource, CFAs ensure that community values are reflected in decision-making.

Next Steps

- April 2014: NPFMC developing options for analysis for Gulf of Alaska management program;
- CFAs are not part of the current set of options – the State of Alaska and the NPFMC need to hear that Alaskans want an allocation to CFAs to be included in the options for an analysis.

Conclusion

- A CFA presents an opportunity to ensure that coastal communities retain the ability to access the fisheries outside their front doors;

- This option needs to be included for analysis, and it should be supported by the State of Alaska: CFAs are good for Alaska and Alaskans.

03/11/14 Mari-culture Industry Overview

<TARGET><BILL></BILL><SUBJECT>03-11-14 Mariculture Industry Overview</SUBJECT><COMM>HFSH28</COMM></TARGET>

Louie Flora

Subject: FW: Questions for Tuesday's Hearing on Mariculture in House Fisheries

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From: Tempel, Esther (DNR) [mailto:esther.tempel@alaska.gov]
Sent: Monday, March 10, 2014 8:47 AM
To: Louie Flora
Subject: RE: Questions for Tuesday's Hearing on Mariculture in House Fisheries

Hi Louie,

We will be prepared to respond to these questions. Adam Smith, Leasing Section Manager for South Central Region of DMLW will be online to speak to the topic. However, Wyn Menefee, Chief Operations Officer of Division of Mining, Land and Water will be there in person as back-up.

Thanks!

Esther

From: Louie Flora [mailto:Louie.Flora@akleg.gov]
Sent: Saturday, March 08, 2014 4:12 PM
To: Tempel, Esther (DNR)
Subject: Questions for Tuesday's Hearing on Mariculture in House Fisheries

Hi Esther,

For Tuesday's hearing in House Fisheries we would like to discuss the agency permitting of mariculture operations in AK and ways that DNR might expand the industry.

Rep. Seaton would like the following topics discussed:

- The price differential between mariculture lease costs per acre compared to other land and water use i.e. grazing, mining, under water gold mining off Nome and Oil and gas acreage. 35,38.083 Appraised fair market value 1acre -450 +120/acre after Voluntary - appraisal at farmer expense
- Current lease mariculture extension provisions compared to other state land renewals and extension

- Do we need escalating lease terms to ensure that people are actively working their leases and not tying up space. Is there a timeline where we should be revoking or terminating leases if not put into use by year six or ten? planning & authorization
- Do we need prohibition on import of used mariculture gear unless certification of decontamination of hitchhiker invasives?

 public comm.

Department of Environmental Conservation
House Special Committee on Fisheries
Mariculture Overview: Regulatory Structure & Potential of Expansion of the Industry
March 11, 2014

Background

The Department regulates shellfish growing areas and requires a permit for certain harvesting, processing and shipping activities. Background information is provided below, along with data maintained by the Department. There are two main elements to shellfish regulation: 1) classified growing waters; and 2) operation permits.

A shellfish growing area may be either an aquatic farm as defined by AS 16.40.199 or a natural shellfish growing area. Alaska has approximately 27 classified growing areas. Some growing areas encompass large areas and may include more than one aquatic farm.

Shellfish & Water Quality

Oysters, clams, mussels, and scallops are filter feeders that pump large quantities of water through their bodies when actively feeding. During this process, molluscan shellfish can concentrate microorganisms, toxigenic micro-algae, and poisonous or deleterious substances when they are present in the growing waters. Concentrations in the shellfish may be as much as 100 times those found in the water. If human pathogens are concentrated to an infective dose, and if the shellfish are consumed raw or partially-cooked, human disease can result.

Growing Water Classification

The foundation of Alaska's shellfish sanitation program is ensuring that shellfish are harvested from areas free of contamination. The Food Safety and Sanitation (FSS) program establishes and classifies growing waters based on a sanitary survey. During the survey, FSS considers many factors, including:

- pollution sources that may contaminate the growing areas, including industrial or domestic wastewater discharges, seepage from water disposal sites, agricultural land, geochemical reactions, and presence of wildlife populations;
- meteorological facts that affect distribution to or delivery of pollutants to a growing area;
- hydrographic factors that affect distribution of pollutants throughout a growing area; and
- physical dilution factors.

Water samples are required to initially classify a growing area. Depending upon whether a pollution source has an impact on the water quality of a growing area, 15 to 20 samples are collected under various environmental conditions over a one year period. The growing area is then classified according to the information gathered in the survey. The classification determines how the shellstock from that area may be used (i.e., sold directly to the consumer ready-to-eat or required to go through a natural or artificial cleansing prior to sale to the consumer.)

After initial classification, two to five water quality samples must be collected annually from each area, depending on the classification and location of the growing area, and whether the area is affected by point or nonpoint sources of pollution. These samples are analyzed to ensure that water quality meets bacteriological standards for fecal coliform and may be analyzed for other potential sources of pollution, including pesticides and petroleum by-products, as established in the National Shellfish Sanitation Program Model Ordinance.

When feasible, the Department combines contiguous geoduck and oyster growing areas for sampling based upon the geography, hydrology and oceanography of each area, particularly if new farms are established. The annual fee for reclassification and sampling expenses will now be shared among wild harvesters and farmers in the entire area.

Permitting Categories

In addition to ensuring that shellfish are grown and harvested from safe growing waters, FSS has regulatory oversight of harvesting, processing, and shipping shellfish and issues shellfish permits for five different categories of activity:

1. **Harvester** *(a person who takes shellfish by any means from a shellfish growing area)*
2. **Re-shipper** *(a person who purchases shucked shellfish or shellstock from a dealer and sells the product without repacking or relabeling to another dealer, wholesaler, or retailer)*
3. **Shipper** *(a person who buys and repacks and then sells shellstock – also means a person who ships previously shucked shellfish)*
4. **Shucker-Packer** *(a person who shucks and packs shellfish)*
5. **Vessel** *(geoduck dive vessels)*

Although FSS does not utilize the term "farm" for permitting purposes, most "farms" receive permits as either a "Harvester" or a "Shipper." If a shellfish operation consists of two or more different types of activities occurring at the same location, the operation is not required to obtain a permit for each separate activity. The operation receives one type of permit that is based on the activity with the highest applicable permit fee.

Permit Counts, by Year

	Harvester	*Shipper*	*Shucker-Packer*	*Vessel*	*Re-shipper*	*Total*
2013	200	31	6	87	0	324
2012	180	28	7	78	1	294
2011	158	28	8	79	1	274
2010	141	25	7	63	1	237

ALASKA

NORTH TO OPPORTUNITY

Mariculture Industry Overview

DEPARTMENT OF COMMERCE, COMMUNITY, AND ECONOMIC DEVELOPMENT
DIVISION OF ECONOMIC DEVELOPMENT
03/11/2014













MARICULTURE INDUSTRY SUPPORT

- Mariculture Revolving Loan Fund
- Potential to use other DED loan funds for mariculture industry
- Industry assistance
- Research
- Investment outreach



Boats in harbor at Seward

MARICULTURE REVOLVING LOAN FUND

Loan Purpose: loans may be made for the planning, construction, and operation of a mariculture business.

Must be Alaska resident with experience or training in the mariculture industry.

Maximum loan amount is $100,000 per year with max balance of $300,000 per borrower.

Maximum loan term is 20 years.

Interest rate will be fixed at the the time of loan approval; payments may be deferred for the first six years of loan.

All loans must be adequately secured and include a priority lien.



FEES AND COSTS

- A $100 non-refundable application fee must accompany all applications
- A 1% origination fee is due at closing
- Borrower is responsible to pay all direct costs incurred in processing an application including title reports and title insurance, recording fees, appraisals, travel and other direct costs

DEVELOPMENT PROJECTS

- Mariculture prospectus follow up
- Hatchery audit
- Mariculture industry business plan
- Sets foundation for investment recruitment
- Part of broader maritime industry initiative













QUESTIONS?

Status of Aquatic Farming in Alaska

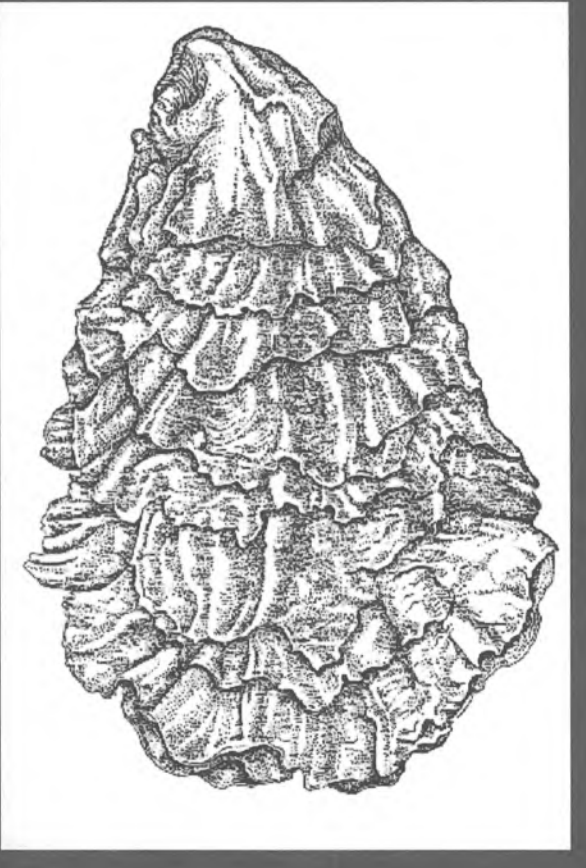


Jeff Regnart
Ron Josephson
Division of Commercial Fisheries
ADF&G

House Fisheries Committee
Juneau, AK
March 11, 2014

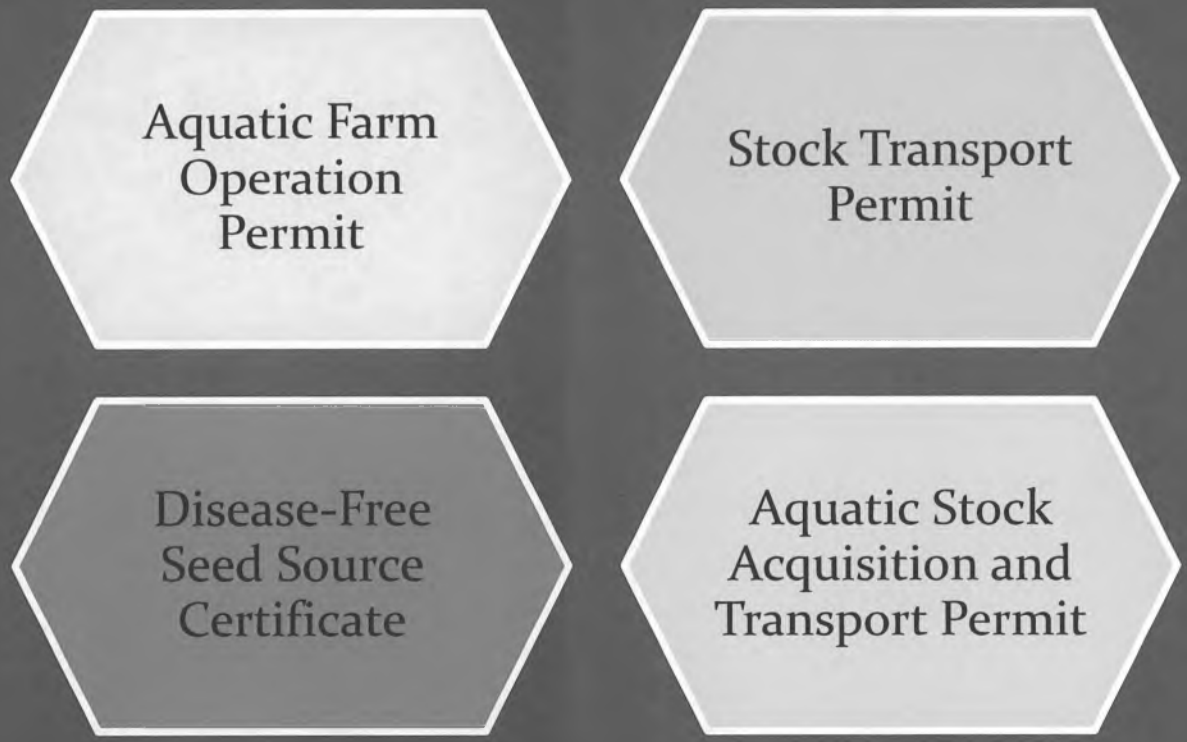
Overview

- Program Mission
- Permitting Process
- Geographic Farm Concentration
- Statewide Production
- Regional Production
- Acquired Seed
- State Program Streamlining Efforts

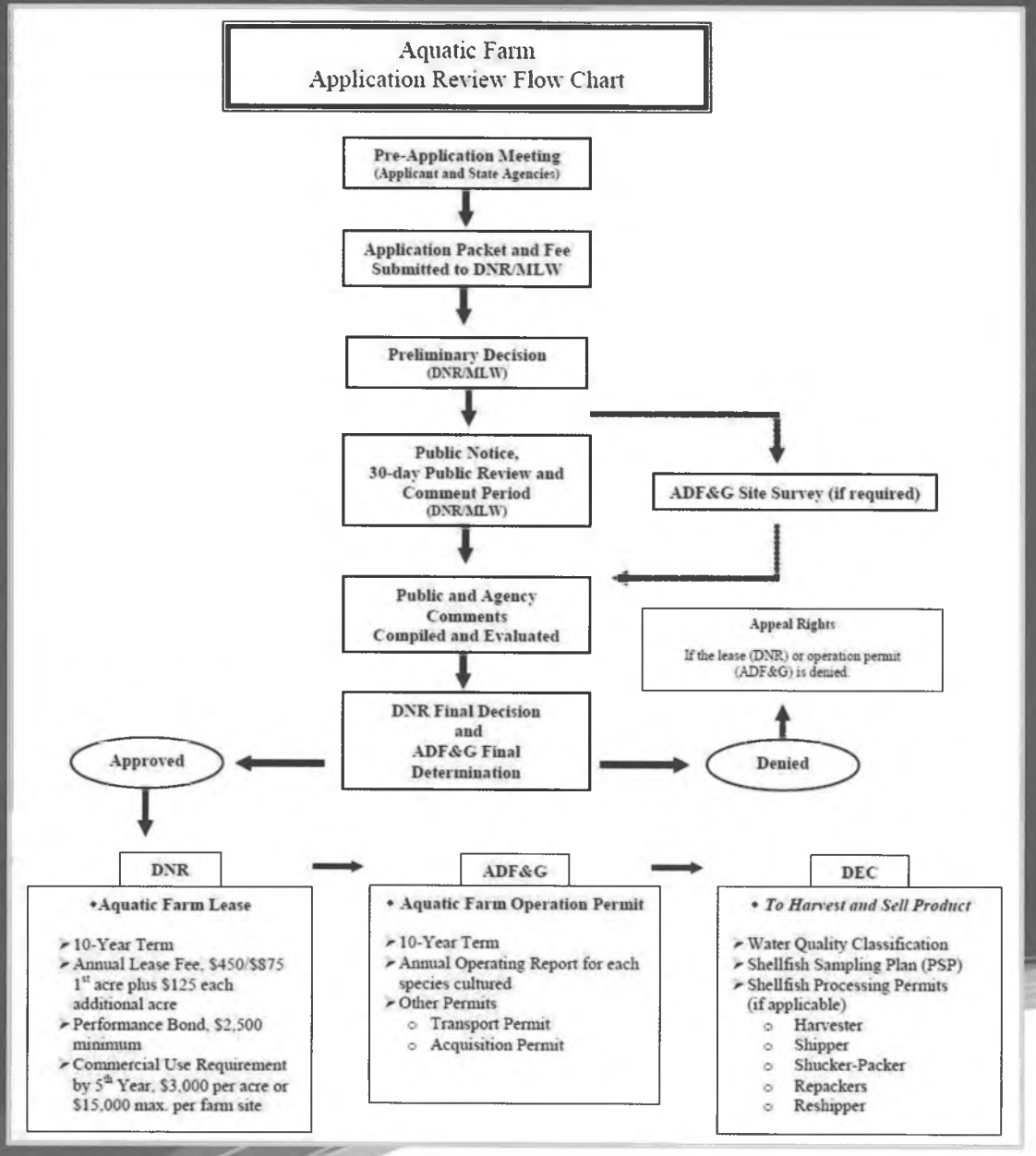


Program Mission

- To permit and regulate aquatic farming in the state in a manner that ensures the protection of the state's fish, game, and aquatic plant resources and improves the economy, health, and well-being of the people of the state



Permitting Process



Permitted Farms Geographic Concentration

Southcentral



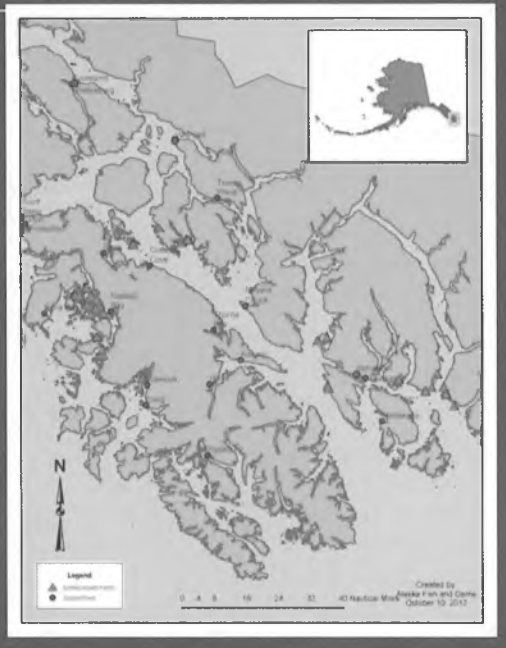
34%

Northern Southeast



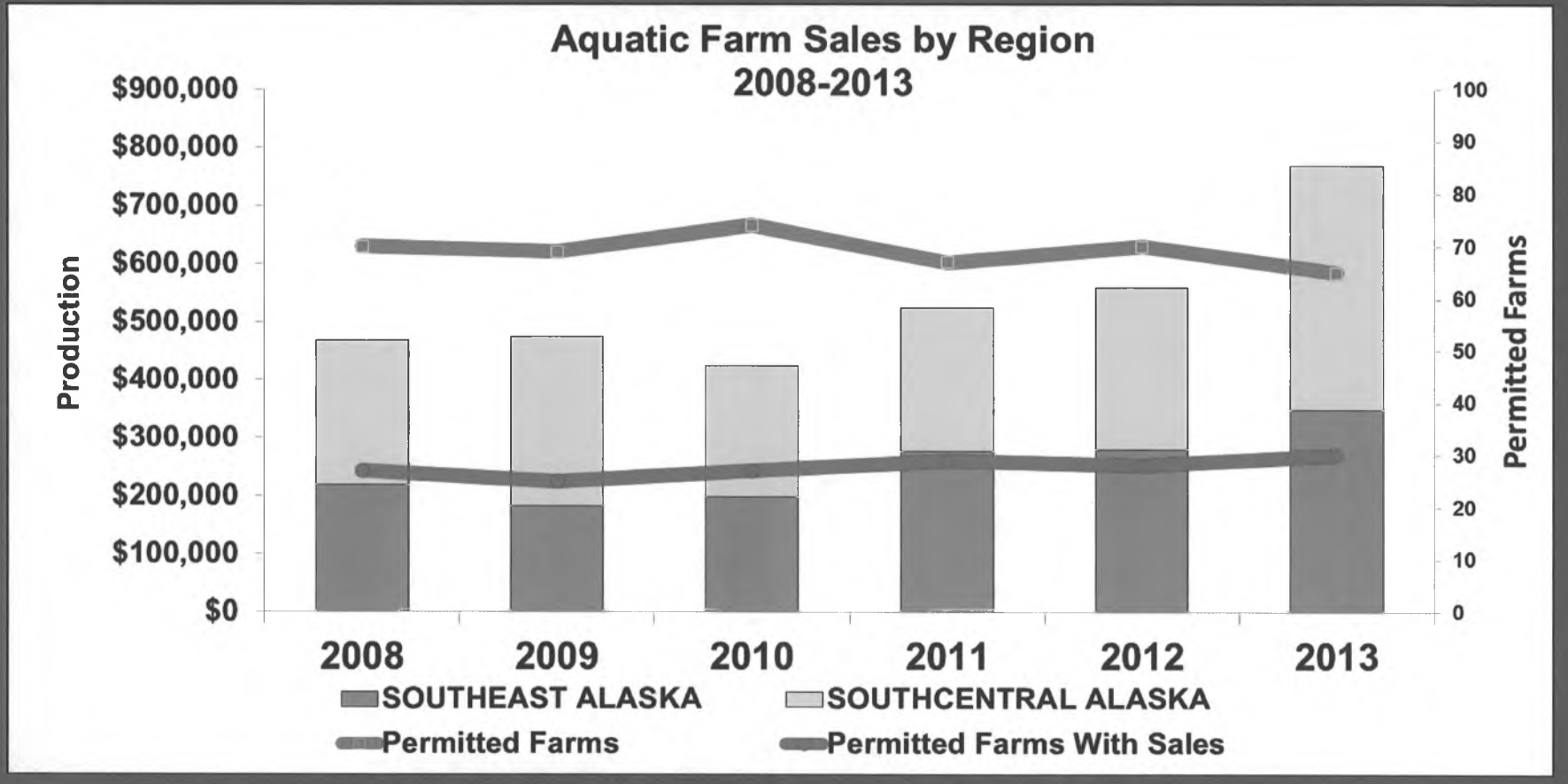
15%

Southern Southeast



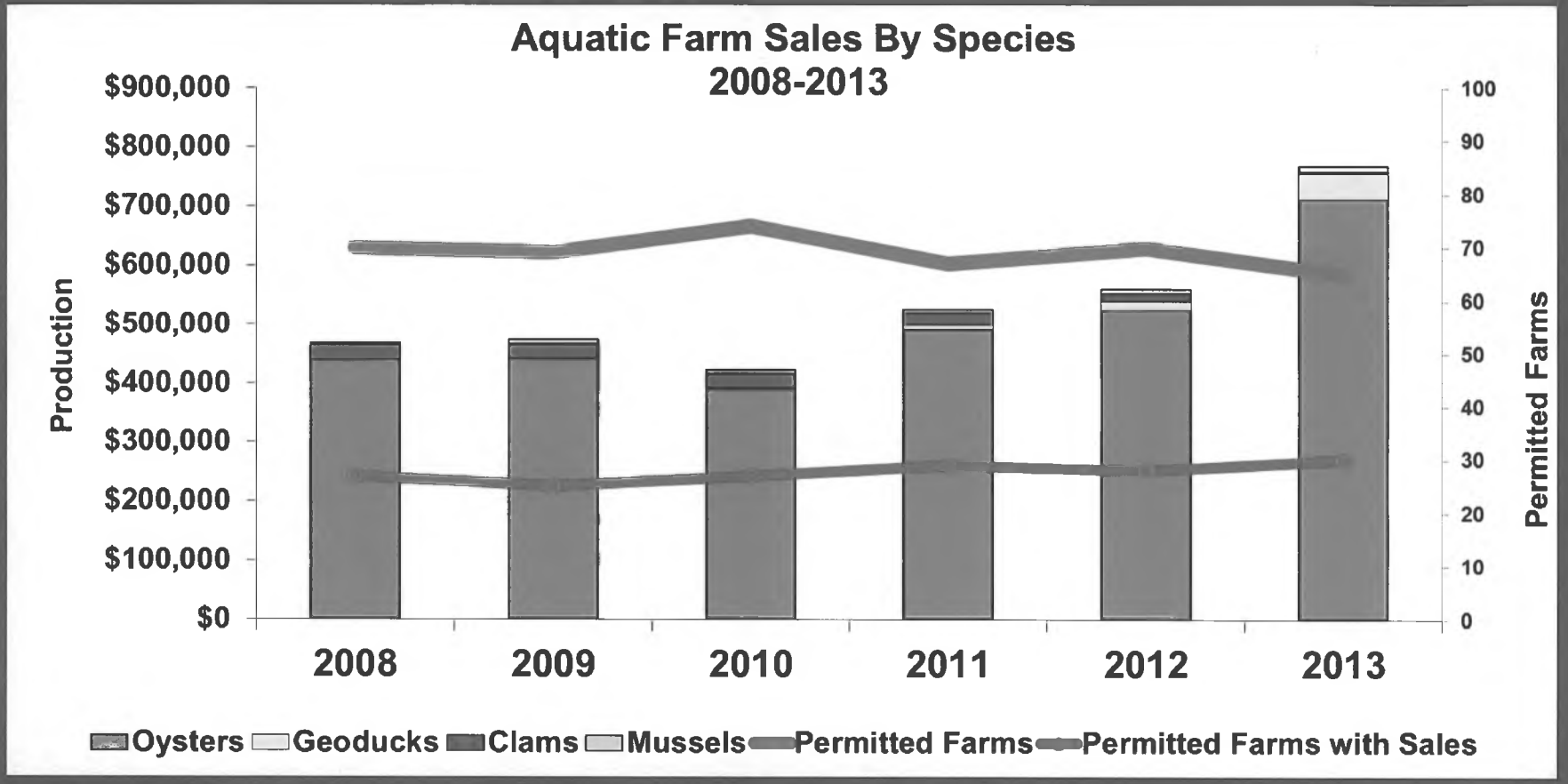
51%

Statewide Production By Region



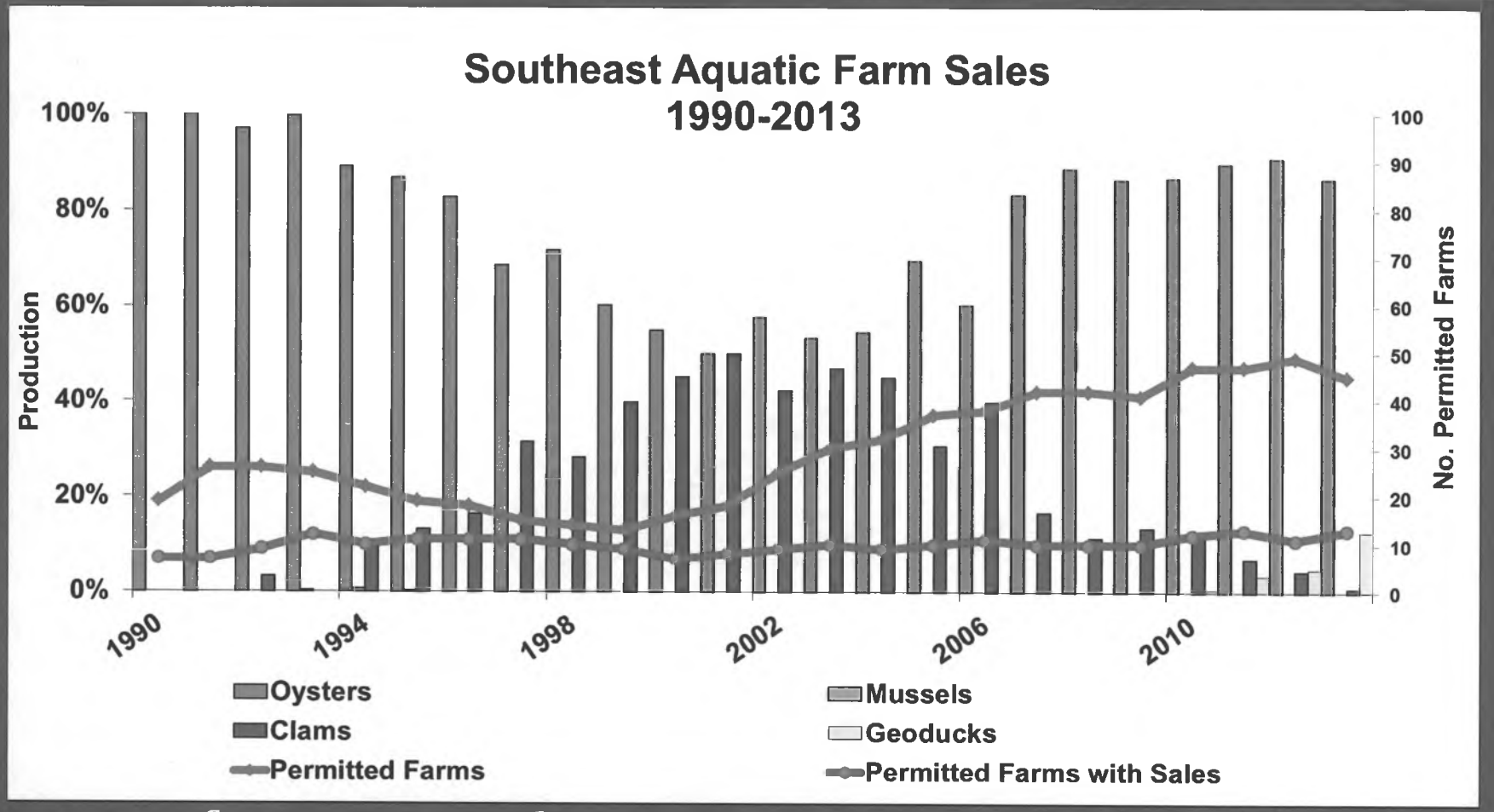
- 2013 total farm gate value total = $768,820
- 37% increased sales from 2012 to 2013

Statewide Production By Species



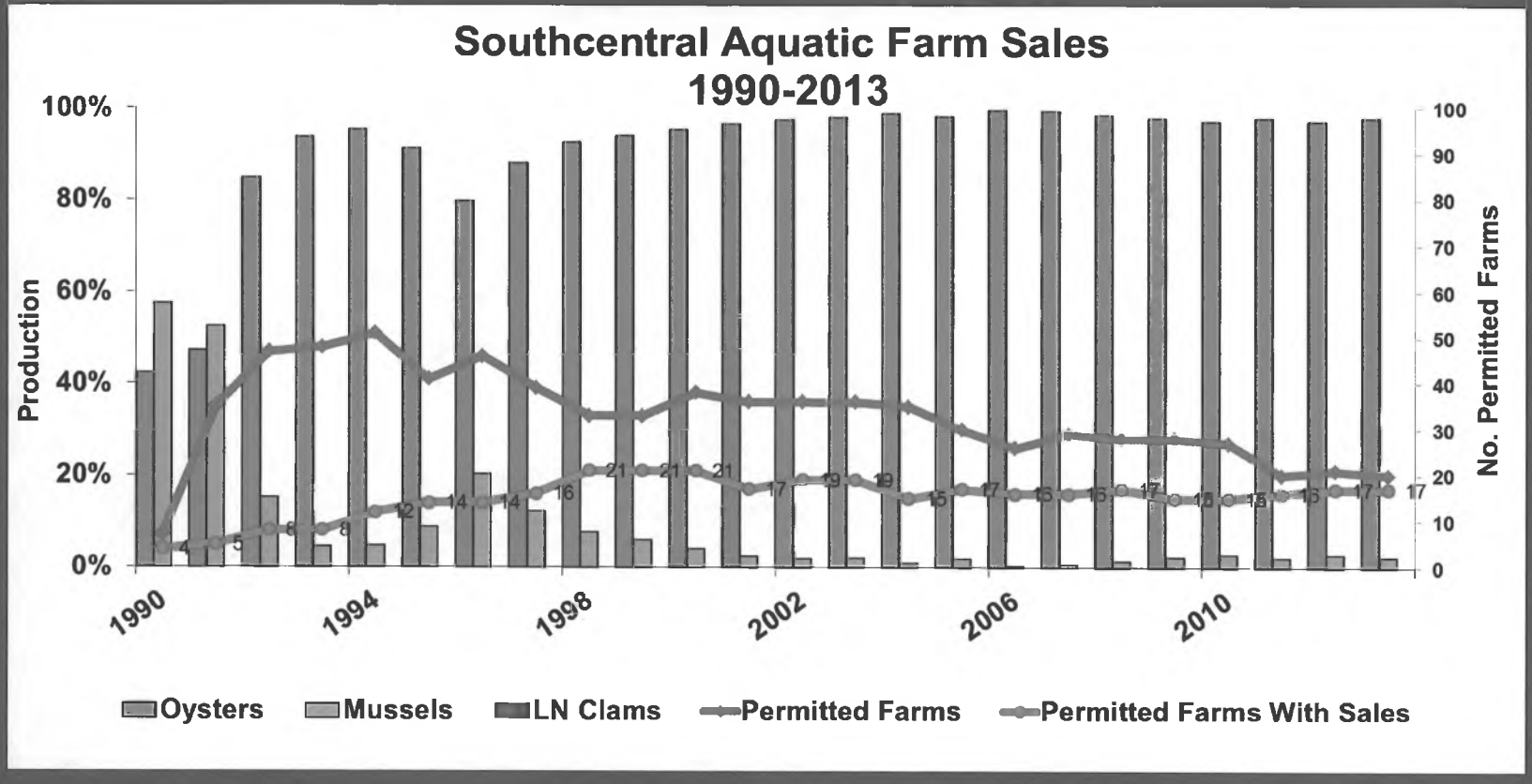
- Pacific Oysters = $712,345
- Littleneck Clams = $2,900
- Mussels = $9,512
- Geoducks = $44,064

SE Production Percent By Species



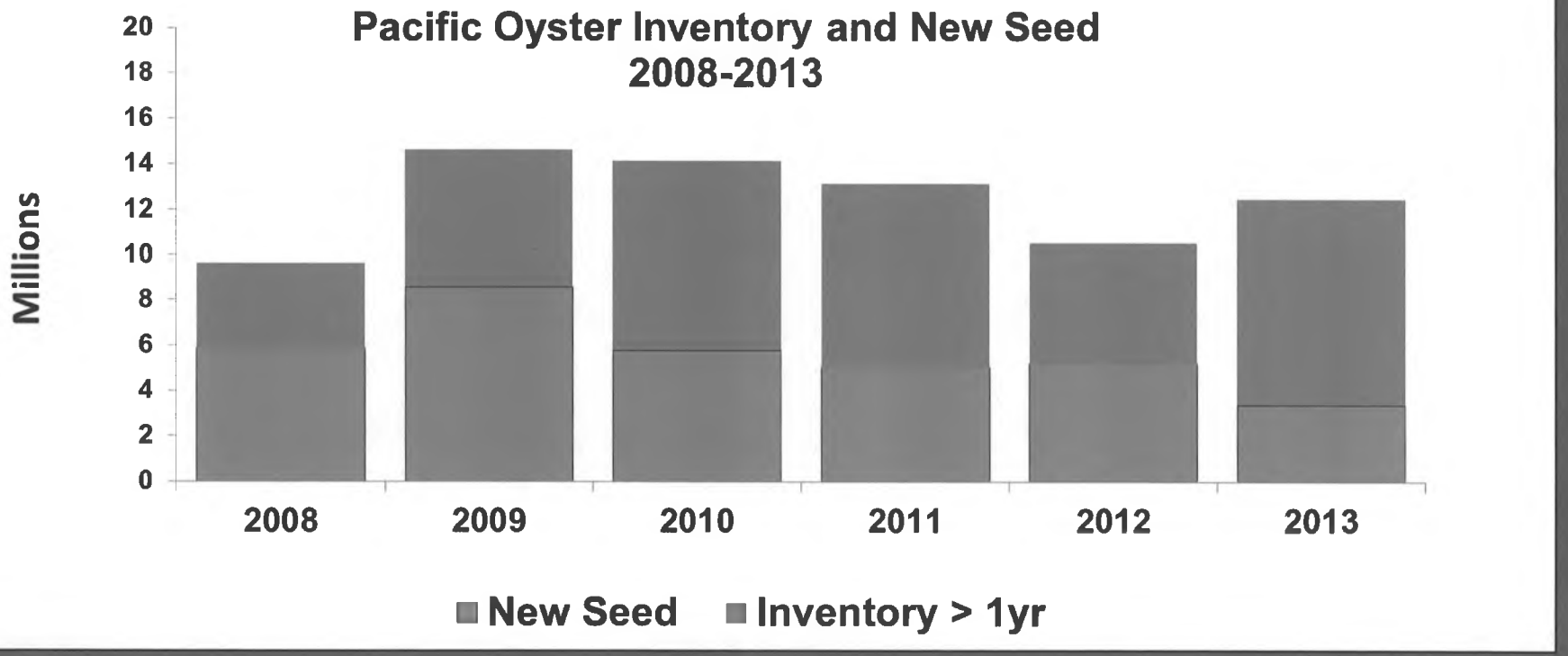
- Pacific oysters made up 87% of SE aquatic farm sales
- Trend shows an increase in the number SE aquatic farmers since 2001

SC Production Percent By Species



- Pacific oysters made up 98% of SC aquatic farm sales
- Blue mussel production was more prevalent in early years; numbers are expected to increase.

Acquired Seed



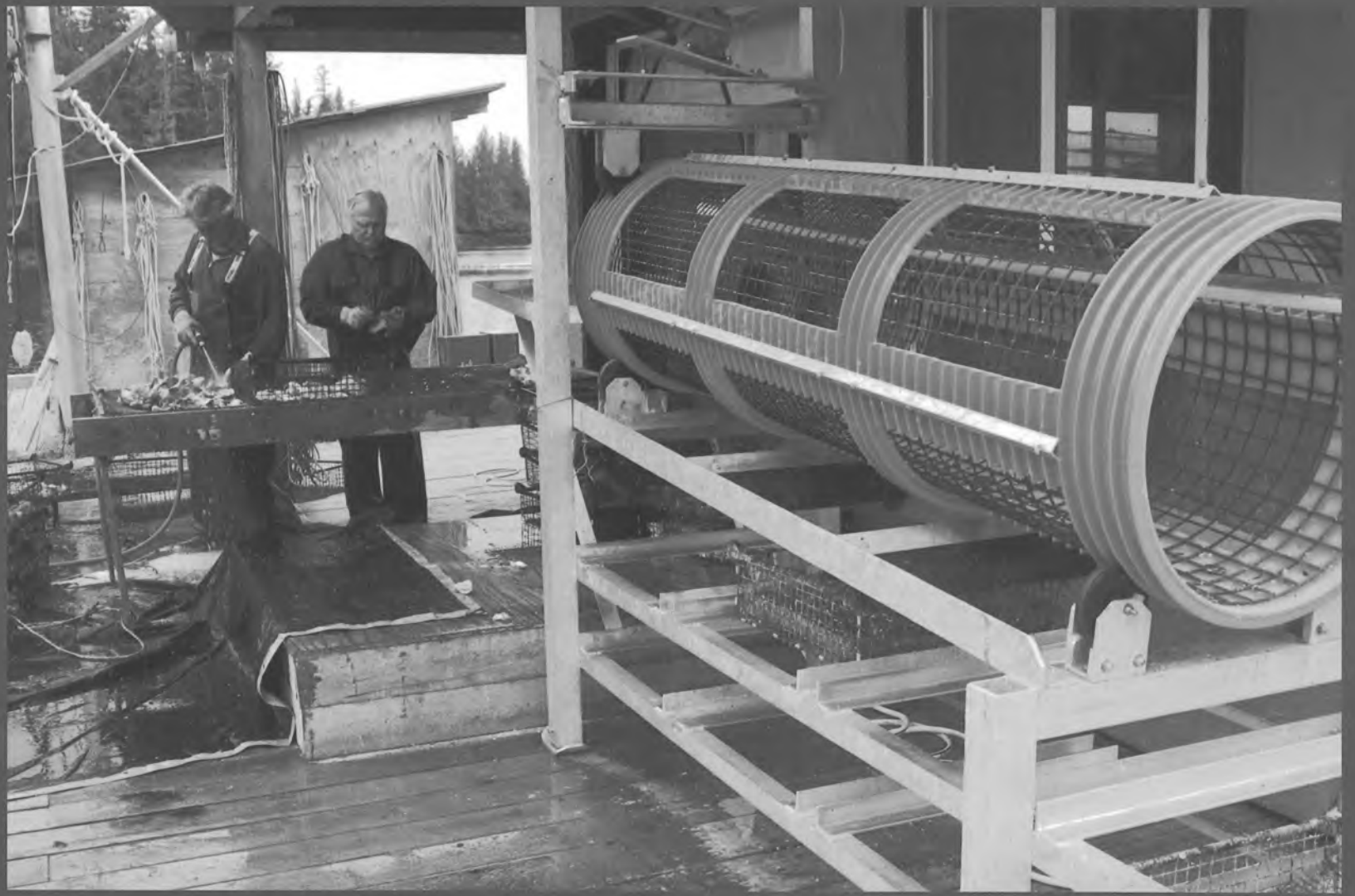
- New seed acquired decreased from 5.1 million in 2012 to 3.3 million in 2013 (35%).
- Decline in seed acquisition from 2009 to 2013.
- Proportion of new seed to inventory less in 2013 (27%) compared to 2012 (49%)

State Program Streamlining Efforts

Application and Annual Report Forms

- *Review and verify that what is being requested coincides with current statutory and regulatory requirements.*
- *Simplify application and annual report forms questions and formatting.*
- *Continue to make improvements, pending DNR regulation changes.*

Questions/Comments/Discussions?



M. Sheets Oyster Farm, SE Alaska, 2011

04/15/14 Presentation: Observations of Sea Star Wasting Syndrome in Alaska

<TARGET><BILL></BILL><SUBJECT>04-15-14 Presentation Observations of Sea Star Wasting Syndrome in Alaska</SUBJECT><COMM>HFSH28</COMM></TARGET>

Observations of Sea Star Wasting Syndrome in Alaska



Michelle Ridgway, Marine Ecologist
Alaska Deep Ocean Science Institute

OCEANUS ALASKA

NATIONAL PARK SERVICE

SITKA NATIONAL HISTORICAL PARK

What is Sea Star Wasting Syndrome or SSWD ?

- Describes a set of symptoms that are found in sea stars.
- Lesions appear in the ectoderm, followed by decay of tissue around lesions
- Body loses limbs, becomes fragmented and dies

Categorizing the Symptoms

Category 1

lesion(s) on 1 arm or body
Tissue degradation in some of these photos may be the result of multiple lesions merging, but it is restricted to a single arm, or single location on the oral disk.

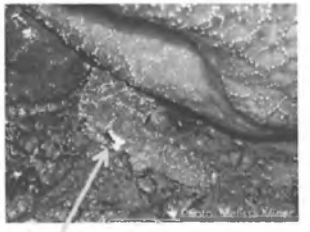






Category 2

lesions on 2 arms or 1 arm and body, deteriorating arm(s)



Arm starting to separate



Tissue deteriorating on 2 arms

More severe symptoms …

Category 3

lesions on most of body, 1-2 missing arms

Missing tips of 2 arms, lesion on 3rd



Missing 1 arm

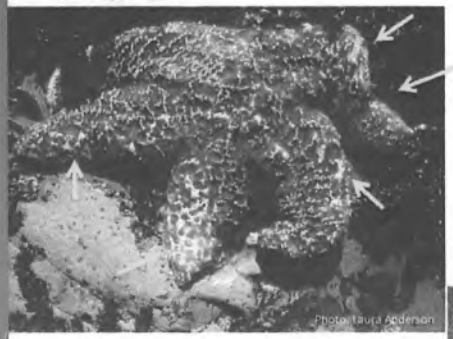
tissue deterioration on 2nd arm





Missing 1 arm

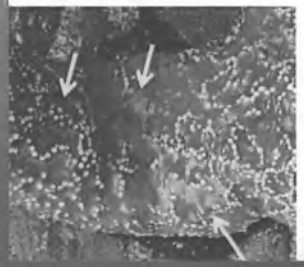
Category 4



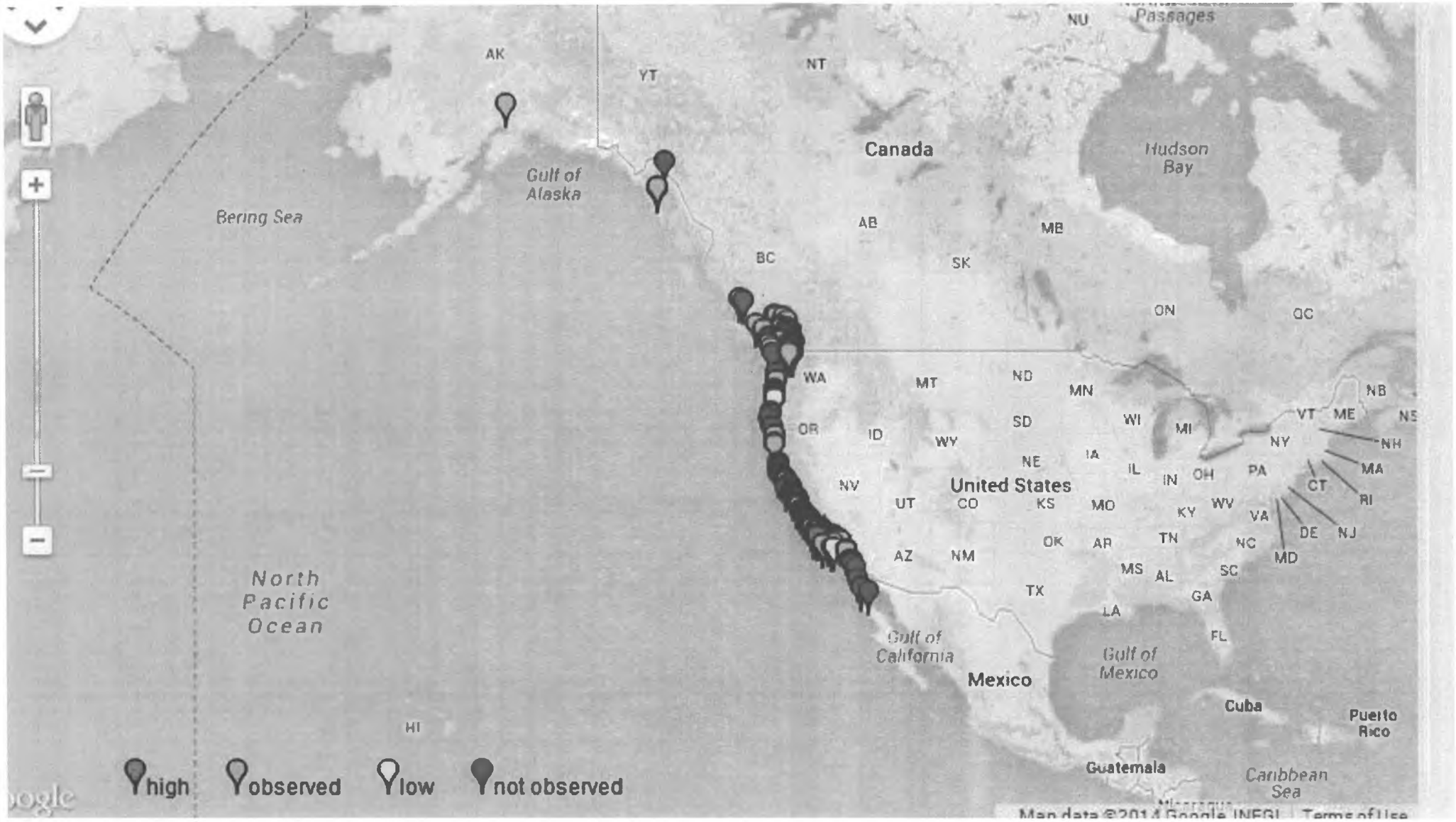
lesions throughout arms & body (white patches—some highlighted with arrows)

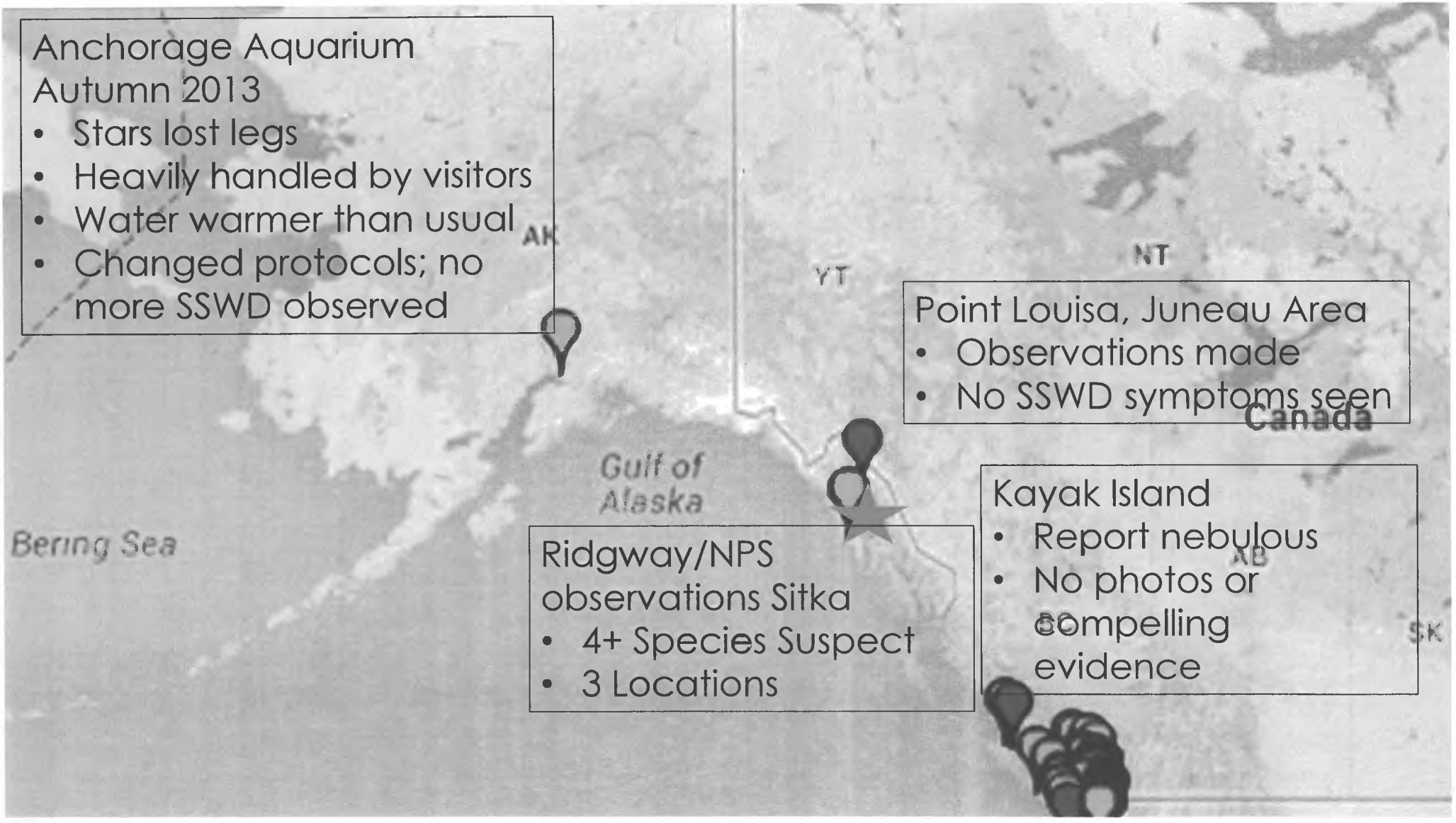
Missing 2 arms and tip of 3rd; multiple lesions on arms & body





Close-up of lesions


high
observed
low
not observed
Canada
United States
Mexico
Bering Sea
Gulf of Alaska
North Pacific Ocean
Gulf of California
Gulf of Mexico
Hudson Bay
Caribbean Sea
Cuba
Puerto Rico
Guatemala
AK
YT
NT
NU
AB
BC
SK
MB
ON
QC
NB
WA
OR
CA
ID
NV
MT
WY
UT
AZ
CO
NM
ND
SD
NE
KS
OK
TX
MN
IA
MO
AR
LA
WI
IL
MS
MI
IN
KY
TN
AL
OH
WV
GA
FL
SC
NC
VA
PA
NY
VT
ME
NH
MA
CT
RI
NJ
DE
MD
HI


Anchorage Aquarium
Autumn 2013
• Stars lost legs
• Heavily handled by visitors
• Water warmer than usual
• Changed protocols; no more SSWD observed
AK
YT
NT
Point Louisa, Juneau Area
• Observations made
• No SSWD symptoms seen
Canada
Gulf of Alaska
Bering Sea
Ridgway/NPS observations Sitka
• 4+ Species Suspect
• 3 Locations
Kayak Island
• Report nebulous
• No photos or compelling evidence
AB
SK

We have seen this before … but this time it is very different.

The geographic extent is vastly larger than we've seen before. But the unique and chilling aspect of this event is the number of species involved," (Dr. Drew Harvell, professor of ecology and evolutionary biology, Cornell University).

"There have been wasting disease events with sea stars before, but it's normally a single star species. This has involved up to 12 different species – virtually all of the major species have been affected along the entire West Coast."

Causes of Sea Star Wasting Syndrome

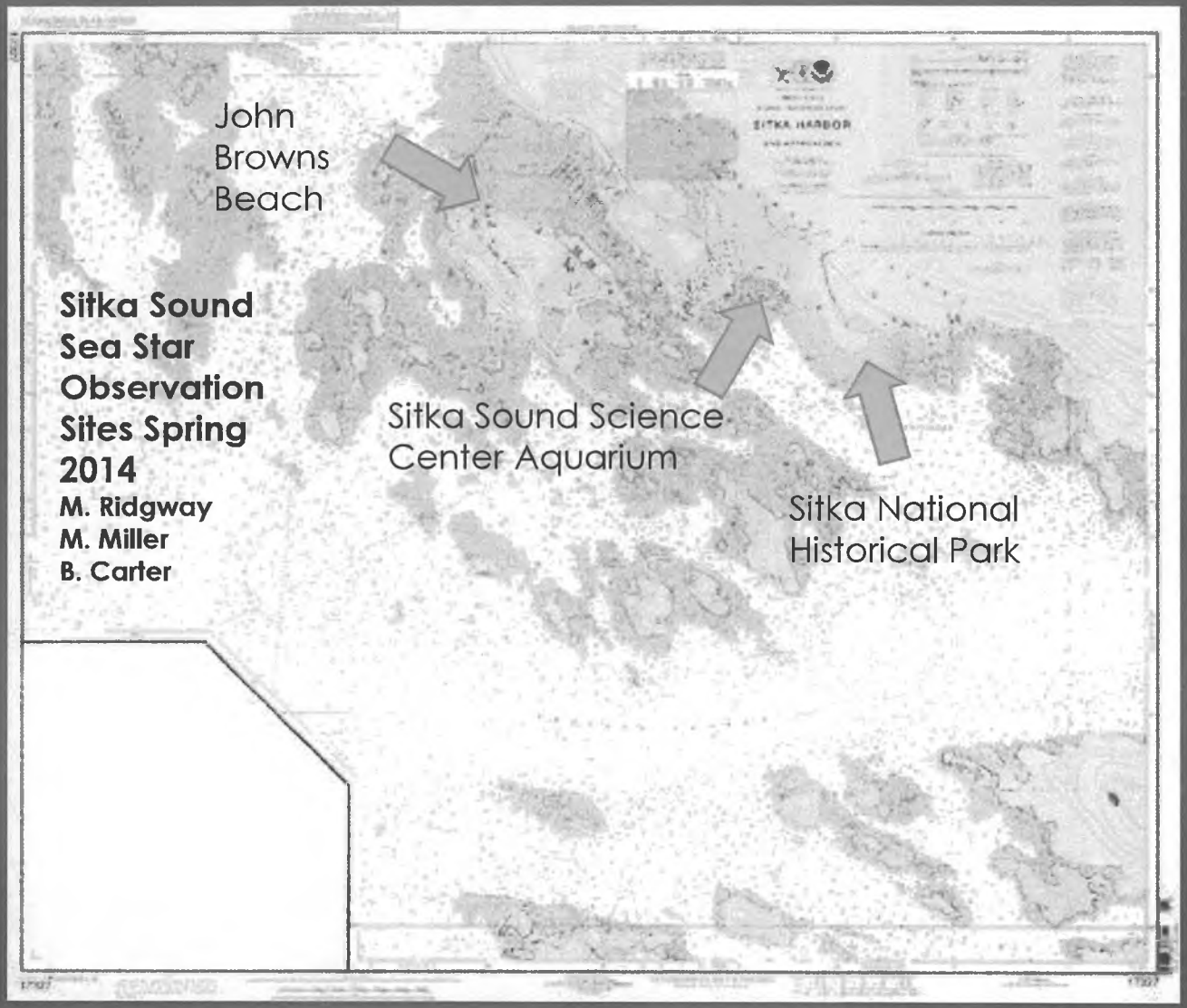
- When proximal cause examined, often a bacteria (vibrio) is found
- In 2013, Cornell also identified a virus unique to sickened sea stars.

WHY AN OUTBREAK SO EXTENSIVE … ANY CLUES?

- Warmer seawater temperatures have been associated with outbreaks in the past
- There has been NO link found to indicate that Fukushima is influencing SSWD

Reconnaissance in Sitka, Alaska
3 Sites Surveyed March 12-April 8, 2014

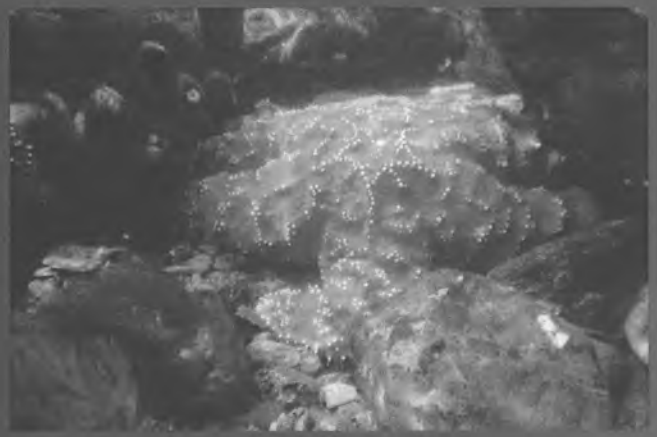



John
Browns
Beach
Sitka Sound
Sea Star
Observation
Sites Spring
2014
M. Ridgway
M. Miller
B. Carter
Sitka Sound Science
Center Aquarium
Sitka National
Historical Park
SITKA HARBOR

Pisaster ochraceus
Ochre Sea Star



- Affected broadly on Pacific coast
- Lethal



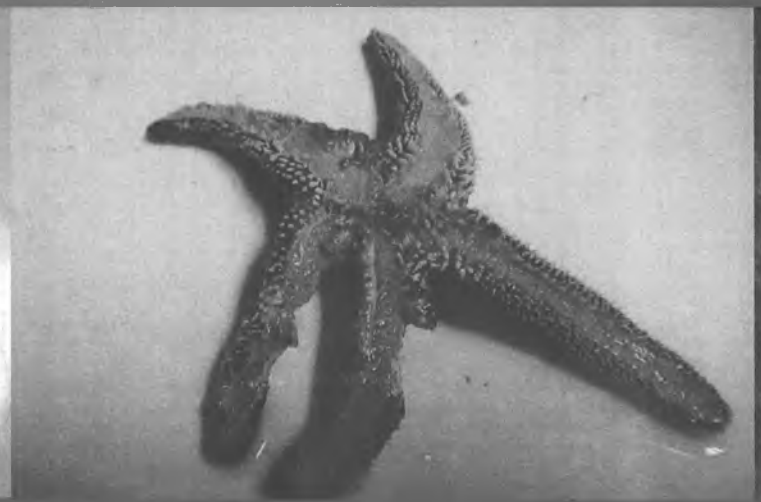


Variable affliction

Seemingly healthy …

Not so healthy …





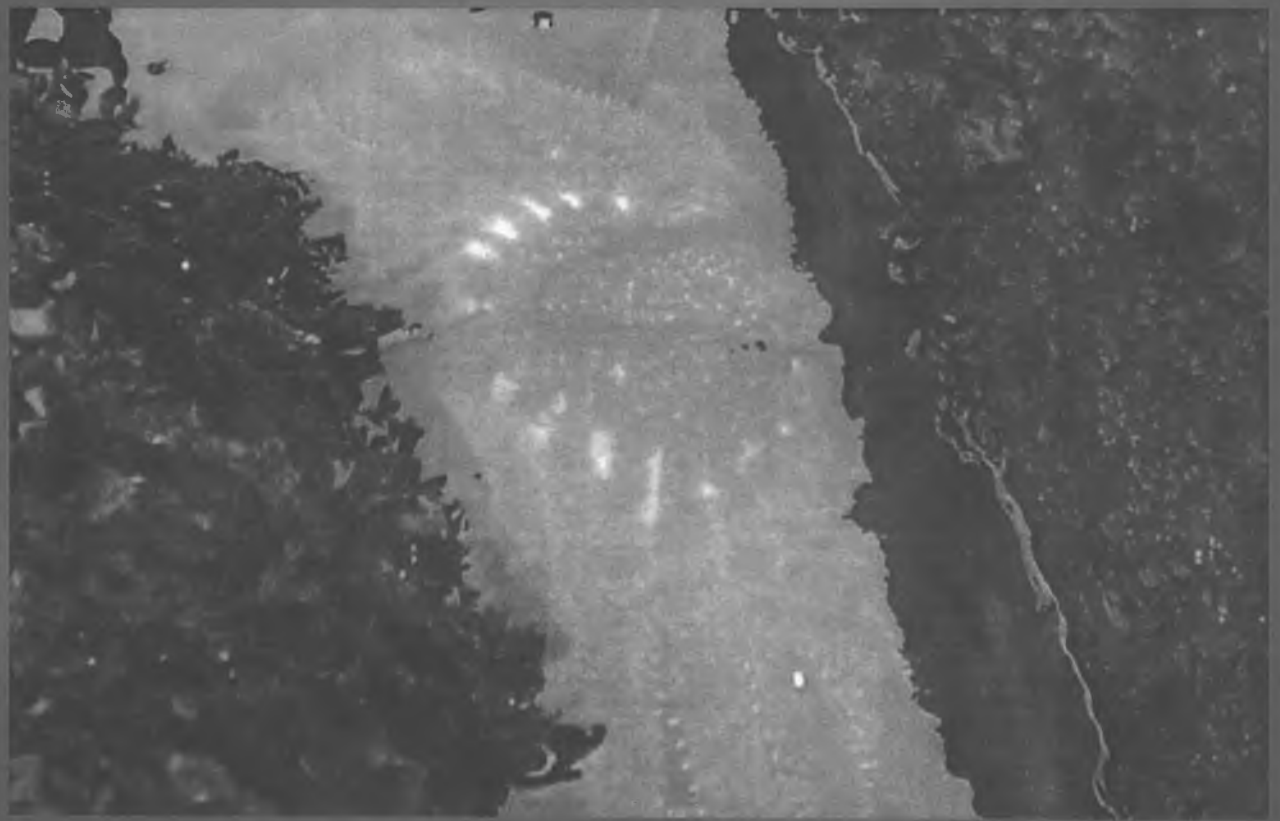


Dermasterias imbricata
Leather Star





Pycnopodia helianthoides
Giant Sunflower Star



Henricia leviuscula
Blood Star





- Pale central disc
- Weak, unattached
- Curled rays

Evasterias troschelli Mottled Sea Star

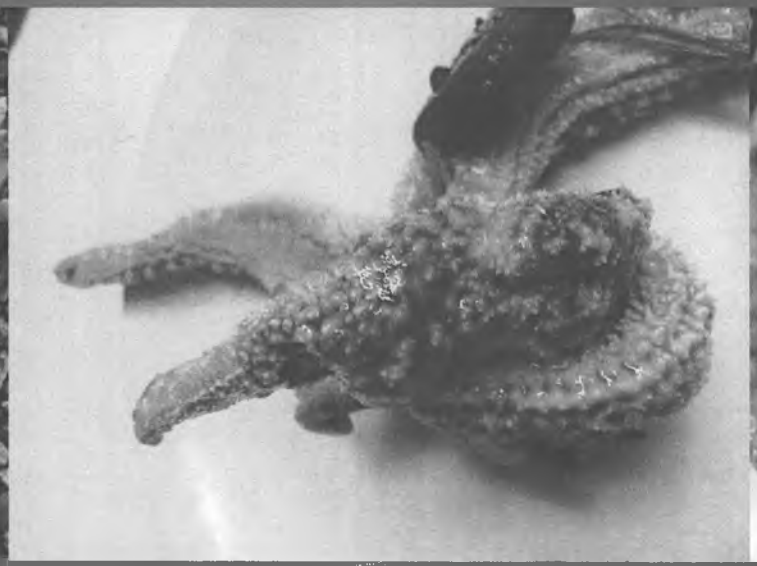


- High rate of affliction on Pacific Coast
- Lethal



- Limb loss
- Lesions, disfigurement
- Heavy parasitism

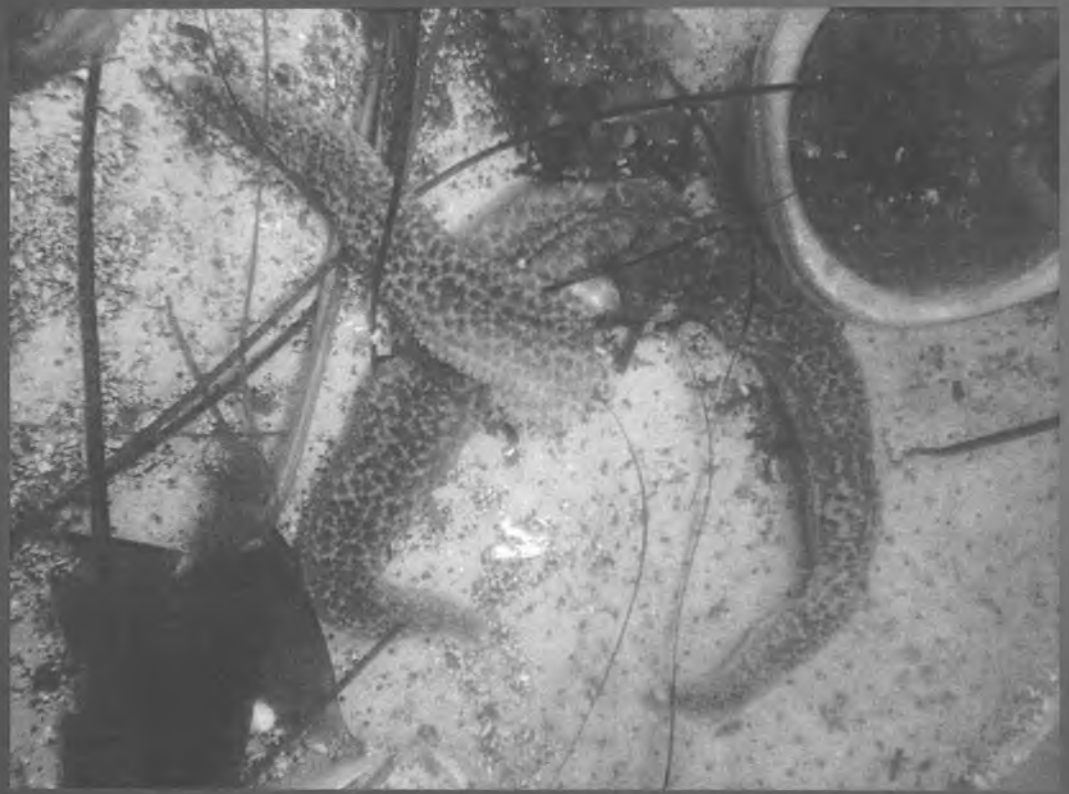






Evasterias troschelli
Severe SSWD or other cause?







Sitka Sound Science
Center Tank Specimen

Mediaster aequalis
Vermillion Star



Sitka Sound Science
Center Tank Specimen

Leptasterias epichlora
Six-rayed Sea Star



- Not reported affected elsewhere
- No symptoms observed in Sitka

Solaster cf *dawsonii*
Sun Star





- Lethargic, dull, detached
- Possible lesions

Summary of Observations in Sitka

Sea Star Species	Habitat	Present at Site?			Symptoms of SSWD?		
		SNHP	JBBeach	SSSC Aq	SNHP	JBBeach	SSSC Aq
Henricia cf leviuscula	Lo IT	X	X	X	NO	?	NO
Pisaster ochraceus	Lo IT/tidepool	X	X	X	YES	YES	NO
Mediaster aequalis	Mid IT	0	0	X	NA	NA	?
Dermasteria imbricata	Lo IT	X	X	X	NO	YES	NO
Pycnopodia helianthoides	Subtidal	X	X	0	NO	YES	NA
Evasterias trochelli	Tide Pool Channel	X	X	X	YES	NO	YES
Solaster cf dawsonii	Lo IT	0	X	X	NA	YES?	NO
Leptasterias epichlora	Lo IT/ under rx	X	X	X	NO	NO	NO

SNHP = Sitka National Historical Park

JBBeach = John Brown's Beach, Japonski Island, Sitka

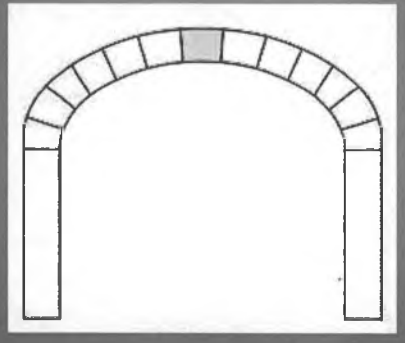
SSSC – Sitka Sound Science Center aquarium

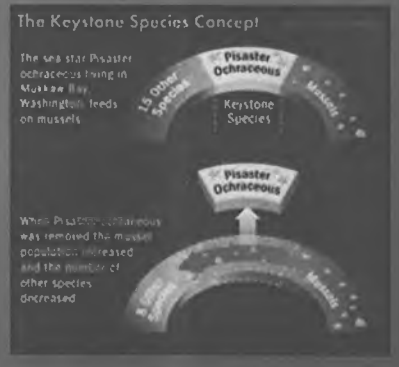
What's the problem (Is it a big deal)?

- Perplexing to have unexplained marine life illness in "pristine Alaska", considering our connections to the sea

- Some sea stars are "Key Stone Species" in our nearshore ecosystem that maintain balance among creatures

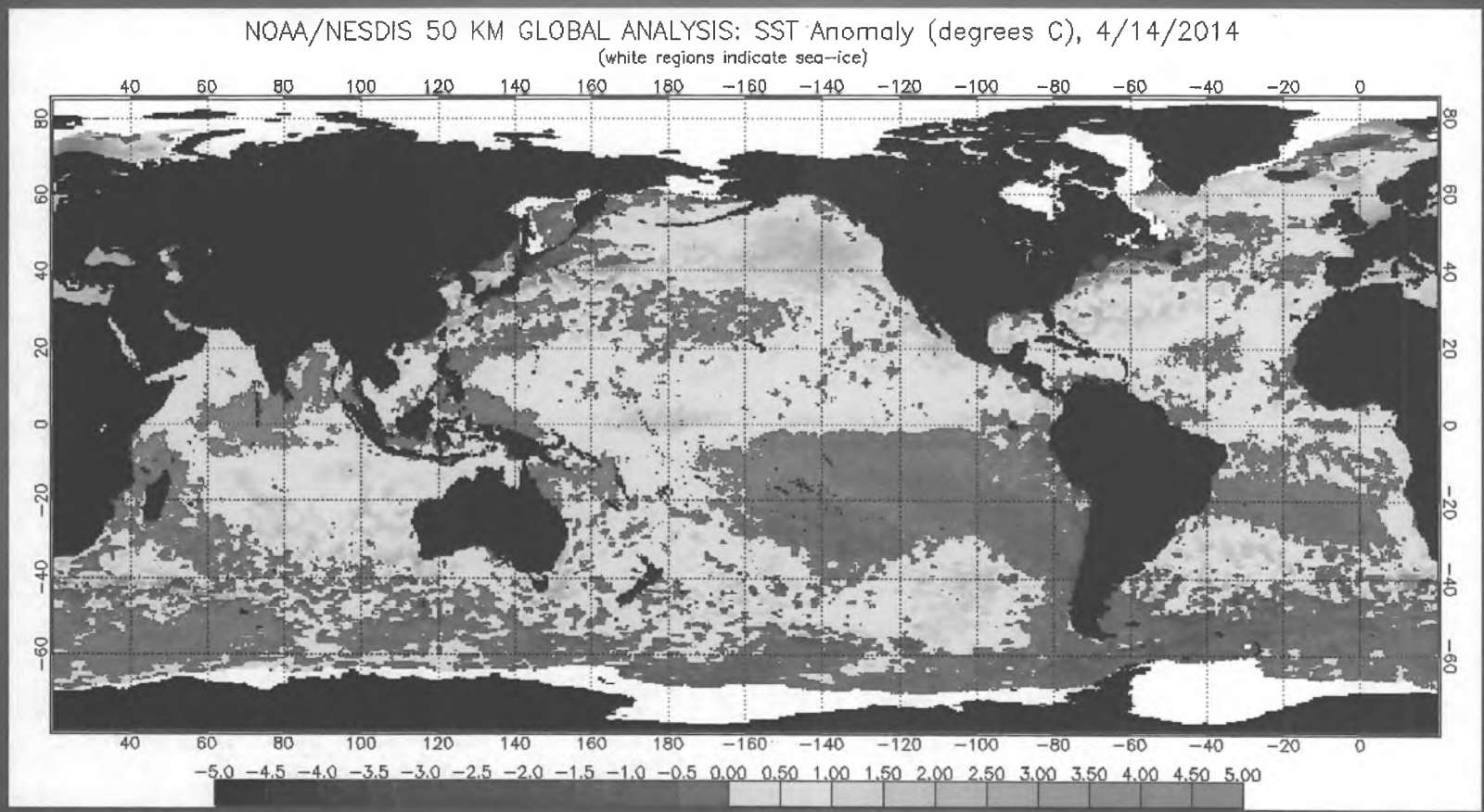






- Does sea star sickness signal a change in the ocean?

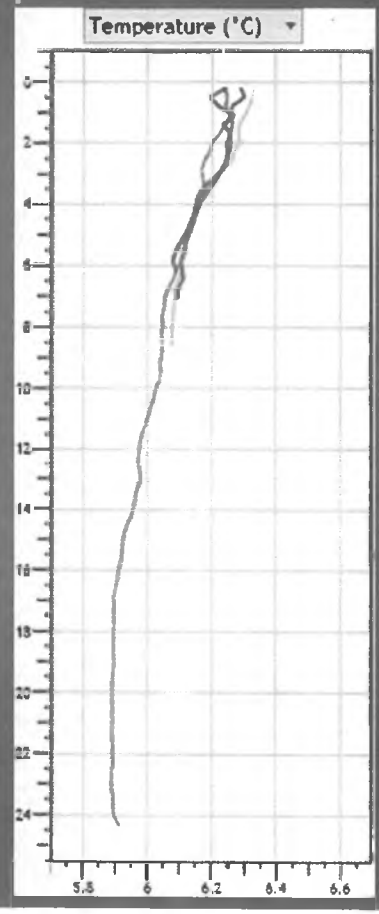
NOAA Issues Official El Nino Watch As Forecasters Predict Year Of Oceanic Warming

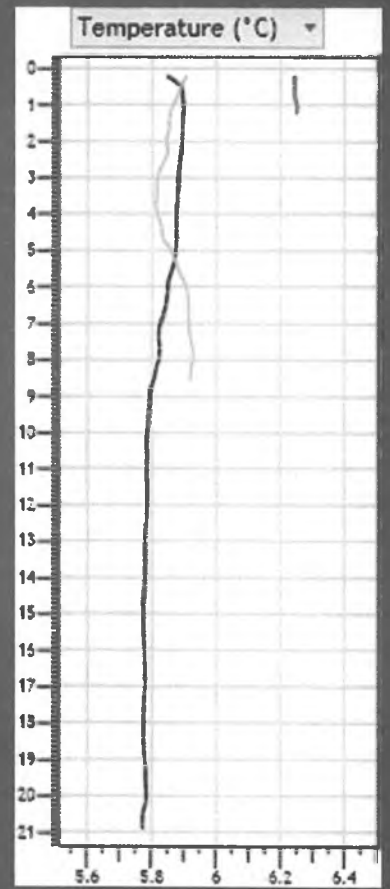


Is high temperature a cause? Are Alaska seawater temperatures warmer than usual ?



NOAA Buoy & Satellite SST
Hatchery Intake Temperature





Next Steps in SSWD studies…

- RCN actively used and updated to map and record observations plus nearshore ecosystem effects

http://www.eeb.ucsc.edu/pacificrockyintertidal/data-products/sea-star-wasting/index.html

Pacific Rocky Intertidal Monitoring: Trends and Synthesis



- Sitka National Historical Park continuing monitoring
- ADF&G observing during dive surveys w/ protocols
- Aquarists and others that are informed watching stars
- Cornell, UCSD, WWU, and others trying to diagnose

Should Alaska do more?



Inform the public that may encounter SSWD while out on local beaches (SeaWeek groups, clamdiggers, tourists)

- Clarify what is known about the syndrome
- Educate public on what to do with symptomatic seastars
- Provide guidance to public and researchers how to record and upload photos and information
- Participate in research on extent and effects
- Assess ecological implications to fisheries, coastlines & communities

Observations of Sea Star Wasting Syndrome in Alaska



Micheile Ridgway, Marine Ecologist
Alaska Deep Ocean Science Institute

SITKA NATIONAL HISTORICAL PARK

Confir-mations 2013

<TARGET><BILL></BILL><SUBJECT>Confirmations 2013</SUBJECT><COMM>HFSH28</COMM></TARGET>

Alaska State Legislature

House of Representatives

Office of the Chief Clerk

Official Business

State Capitol
Juneau, AK 99801-1182
Phone: (907) 465-3725
Fax: (907) 465-5334

MEMORANDUM

TO: Representative Seaton, Chair
House Special Committee on Fisheries

FROM: Suzi Lowell, Chief Clerk

DATE: February 8, 2013

SUBJECT: Governor's Appointment(s)

The Speaker referred the following Governor's appointment(s) to the House Special Committee on Fisheries:

Board of Fisheries
Reed Morisky – Fairbanks
Appointed: 2/6/2013 Term Expires: 6/30/2014

The Referral for Confirmation page(s), signature page(s), and resume(s) are attached for your use. The resume(s) and contact information will be sent electronically.

Attachments as noted

Alaska State Legislature

House of Representatives

Office of the Chief Clerk

State Capitol
Juneau, AK 99801-1182
Phone: (907) 465-3725
Fax: (907) 465-5334

Official Business

REFERRAL FOR CONFIRMATION

Date Referred: **February 8, 2013**

Committee: **House Special Committee on Fisheries**

Board of Fisheries
Reed Morisky – Fairbanks
Appointed: 2/6/2013 Term Expires: 6/30/2014

Action Date: 3/28/13
(Same date as on the accompanying signature page)

Note: Attach to a signature page and return to the Chief Clerk's office.

House Committee Report

CONFIRMATION

Action date: 3/28/13

The **House Special Committee on Fisheries** has reviewed the qualifications of the Governor's appointee(s) as shown on the attached Referral for Confirmation forms(s) and recommends that the name(s) be forwarded to a joint session for consideration:

This does not reflect intent by any of the members to vote for or against this individual during any further sessions for the purposes of confirmation.

Signature:	Printed Last Name
	Johnson
	HERRON
	Gattis
	Kreiss-Tomkins
	OLSON
Chair:	SEATON

Please attach appointee Referral for Confirmation form(s) and return to the Chief Clerk's Office.

Morisky, Reed
Board of Fisheries

STATE OF ALASKA
OFFICE OF THE GOVERNOR
P.O. Box 110001, Juneau, AK 99811-0001
Phone: (907) 465-3500 Fax: (907) 465-3532

BOARDS AND COMMISSIONS APPLICATION FORM

INSTRUCTIONS

A separate application is required for each position for which you apply. Complete and specific answers will aid in rapid and accurate processing of your resume. Please type or print legibly in ink. Forward to the above address. Be sure your answers are true. A willfully false answer may result in your disqualification or removal from office if you are appointed.

Board or Commission and seat for which I am applying: Board of Fisheries
(For example, Board of Agriculture, public seat)

Please list any other State Boards or Commissions on which you currently or previously have served:

None

Name: Reed J. Morisky

Mailing Address: [redacted]

Residence Address: [redacted]

City, State and Zip Code: Fairbanks, Alaska 99712

Home or Message Telephone: [redacted] Business Telephone: [redacted]

Fax Number: N/A Cell Phone: [redacted]

Email address: [redacted]

AS 39-05-100 requires that a person appointed to a state board or commission be a registered voter prior to the last general election:

Are you a registered voter: YES X NO _____ Voter Registration Number (Optional): _____

Social Security Number (Optional, required if appointed for travel, reimbursement etc.): [redacted]

Have you ever been convicted of a misdemeanor within the past five years or a felony within the past ten years?

YES _____ NO X if "YES", explain the circumstances on a separate sheet of paper and attach it to this application. A conviction is not necessarily grounds for disqualification. The number of convictions, nature, recentness, and relationship to the board position applied for, will be evaluated and a determination will be made after a review of all relevant facts.

CONFLICTS OF INTEREST: Certain boards and commissions require full disclosure of personal financial data under AS 39.50.010. If required for the board or commission for which you are applying, are you willing to do so?
YES X NO __

Could you or any member of your family be affected financially by decisions to be made by the board or commission for which you have applied? YES X NO _

If "YES", explain:
Possibly, to the extent that any Board of Fish actions that would affect a sport fish guide business that my wife and I own, located in interior Alaska.

TRAINING AND EXPERIENCE: (If resume attached, it is not necessary to complete items A-D)
Reference attached Resume

A. List any professional licenses, certifications, or registrations and dates obtained that may be used as qualifying criteria:
USCG Captains License for inland waters, current and valid until 2014. Holder since 1995.

B. List both formal and informal education and training experiences: (Use additional paper if necessary)

Have owned and operated a sport fishing guide service based in interior Alaska, since 1984.
Based out of Fairbanks and Nenana.

C. List any community service, municipal government, and state positions held, and any awards received. Include both compensated and uncompensated positions (such as president of a service organization or a mayor). Include length of time serviced.

Sport Fishing Guide Services Board Task Force- Interior Member. 2006-2009
Service Area Commissioner, Summit Drive Service Area, Fairbanks, Alaska. 2003 to present.
Steese Area Volunteer Fire Department, Board of Directors- President, Fairbanks, Alaska. 2005-2006.
Interior Youth Soccer, Coach. Winters of 1991-2001.

D. Employment work history – paid, unpaid or voluntary: (Use additional paper of necessary).
Reference attached Resume

The Office of the Governor and the State of Alaska have an Affirmative Action Equal Employment Opportunity Program. To assist in the program, you are asked to voluntarily answer the following questions to provide the information necessary for reporting purposes. Under State and Federal law, the information you provide will not be used to illegally discriminate against you.

[redacted]

CERTIFICATION: I swear the information I have entered on this form is true to the best of my knowledge. I understand that if I deliberately conceal or enter false information on the form my application may be rejected, I may be removed from the list of eligible candidates, or I may be removed from the position. I agree that the Office of the Governor may contact present or former employees or other persons who know me to obtain an additional information about my skills and abilities. I understand that the information on this application is public information and may be released through a legal request for such information.

Signature (in ink): _____ Date: 1-11-13

Please attach a current resume with your application.

STATE OF ALASKA
OFFICE OF THE GOVERNOR

BOARDS AND COMMISSIONS

Name: Reed Morisky Date: 6-24-09
(Submitting for one Board only: Board of Fisheries)

(Indicate top three boards/commissions of interest by number with #1 as your preference)

	Accounting Board
	Aerospace Development Corporation
	Aging Commission
	Agriculture & Conservation
	Alaska Juvenile Justice Advisory Committee
	Alaska Retirement Management Board
	Alaska Statehood Celebration Commission
	Alaska-Alberta Bilateral Council
	Alcohol/Drug Abuse
	Alcoholic Beverage Control
	Architects/Engineers / Land Surveyors
	Arts Council
	Assessment Review Board
	Aviation Advisory Board
	Bald Eagle Preserve
	Bar Association
	Barbers & Hairdressers
	Bering Sea Fishery Advisory Board
	Big Game Commercial Services
	Boating Safety Council
	Broadcasting Commission
	Children's Trust Board
	Chiropractic Examiners
	Clemency Advisory Committee
	Commemorative Coin Commission
	Commercial Fisheries Entry
	Commercial Fishing/Agriculture Bank
	Community Service Commission
	Denali Access System Advisory Committee
	Dental Examiners
	Disabilities/Special Education
	Domestic Violence/Sexual Assault
	Education & Early Development
	Education Commission/States
	Emergency Medical Services
	Emergency Response Commission
	Employment of People with Disabilities
	Exxon Valdez Oil Spill Trustee
	Faith-Based & Community Initiatives Council
	Fire Standards Council
X	Fisheries

	Fisherman's Fund Advisory & Appeals
	Forestry
	Game
	Health Council
	Historical Commission
	Historical Records Advisory
	Homeless Council
	Housing Finance Corporation
	Human Rights
	Humanities Forum
	Independent Living Council
	Industrial Development/Export Authority
	Interstate Oil & Gas Compact
	Judicial Conduct
	Judicial Council
	Knik Arm Bridge
	Labor Relations Agency
	Libraries Advisory
	Local Boundary Commission
	Marine Pilots
	Marine Transportation Advisory Board
	Marital & Family Therapy
	Medical Board
	Mental Health Board
	Mental Health Trust Authority
	Midwives
	Minerals Commission
	Municipal Bond Bank
	Natural Gas Authority
	Natural Gas Pipeline Corporation
	Natural Resources Conservation Dev
	North Pacific Anadromous Fish
	North Pacific Fisheries Management Council
	North Pacific Research Board
	Nursing
	Occupational Safety
	Oil & Gas Conservation Commission
	Optometry
	Pacific Marine Fisheries Commission
	Pacific Salmon Commission-Commissioners
	Pacific Salmon Commission- Northern Panel

	Pacific Salmon Commission-Transboundary Panel
	Parole Board
	Permanent Fund
	Pharmacy Board
	Physical/Occupational Therapy
	Pioneer's Home Advisory
	Police Standards Council
	Postsecondary Education
	Professional Counselors
	Professional Teaching Practices
	Psychologist/ Psychological assoc.
	Public Offices Commission
	PWS Oil Spill Recovery Institute
	Railroad Corporation
	Real Estate Appraisers
	Real Estate Commission
	Regents
	Regulatory Commission (RCA)
	Royalty Oil & Gas Development
	Safety Advisory Council
	Seafood Marketing Institute
	Seismic Hazards Safety Commission
	Social Work Examiners
	Student Loan Corporation
	Subsistence Resource Commissions
	Suicide Prevention Council
	Telecommunications
	Uniform State Laws
	Veterans Advisory Council
	Veterinary Examiners
	Violent Crimes Compensation
	Water and Wastewater Works
	Western Interstate Comm/Higher Educ
	Wood-Tikchik State Park
	Worker's compensation
	Worker's Compensation Appeals Commission
	Workforce Investment Board
	Yukon River Panel

If appointed, a press release will be issued announcing your appointment pending the completion of the appointment process with the Governor's office. Please supply our office with the following information that will be included in the press release.

(Name): **Reed Morisky**, (Age): [redacted] of (Hometown): **Fairbanks, Alaska**
is (Job title/Place of employment): **Owner and Operator of Wilderness Fishing, Inc, Fairbanks, Alaska, and Project Manager with UAF**.
(Name) holds (Listing of earned degrees like bachelor's, master's, ect.): **has been a sport fishing guide in interior Alaska since 1984 and holds a USCG Captains License.**
Past public service included membership on the Sport Fishing Guide Services Board Task Force- as an Interior Member. 2006-2009, the Steese Area Volunteer Fire Department, Board of Directors- President, Fairbanks, Alaska. 2005-2006, and Interior Youth Soccer, Coach. 1991-2001. Present service involves being a Service Area Commissioner, Summit Drive Service Area, Fairbanks, Alaska, 2003 to present. He also held interior subsistence fishing permits in 2010 and 2011.

_____. (Or list relevant experience to the position you are being appointed to)

Examples:

John A. Doe, 38 of Soldotna, is Director of T-Shirts & Co. Doe holds a bachelor's degree in business administration from X University and a master's degree in communications from X University.

John A. Doe, 38 of Palmer, is the owner and operator of Doe and Associates, Inc. Doe previously served as division manager at X, Inc. Doe is a certified personnel consultant.

January 11, 2013

Reed J. Morisky – State of Alaska- Board of Fisheries Candidate

BoF Bio

Reed Morisky has been in Alaska since 1981, a sport fishing guide since 1984. and has maintained an interest in Alaska fisheries issues, in particular, issues that affect the interior region.

Reed's initial interest in Alaska fisheries issues was in the late 80's when the Legislature considered licensing sport fishing guides. Since then, he has been a member of the Sport Fishing Guide Services Board Task Force, and has advocated for a responsible sport fishing industry to achieve sustainable fisheries. He has held a US Coast Guard Captains license since 1995.

Volunteer efforts include FNSB Service Area Commissioner; Steese Area Volunteer Fire Department, Board of Directors; and Fairbanks Youth Soccer Association Coach.

Permit holder for interior subsistence fishing in 2010 and 2011.

Memberships include the Fairbanks Convention and Visitors Bureau, Trout Unlimited, Alaska Outdoor Council and the National Rifle Association.

Reed and his wife Laura, who is also a licensed sport fishing guide, have lived in Fairbanks since 1981, raised two children here and enjoy all that Alaska has to offer.

Contact Info

Reed J. Morisky
[redacted]
Fairbanks, AK 99708-3707
[redacted]

Reed J. Morisky
[redacted]
Fairbanks, AK. 99712
[redacted]

Objective

Appointment to a Seat on the State of Alaska Board of Fisheries

Summary

- 28 years owner and operator of Wilderness Fishing, Inc
- Interior member of Sport Fish Guide Board Task Force
- Familiar with interior Alaska fisheries issues
- Holder of USCG Captains License since 1995

Education

UAF, 1989 to 2005, completed course work in arctic engineering, estimating, computer applications, technical writing and quality assurance for general construction, as well as core curriculum courses.

Benson Technical High School, Portland, Oregon. Bronze Scholarship Award.

Work History

University of Alaska Fairbanks, Division of Design and Construction
June 1992 to Present
Project Manager
Provide engineering and construction management to the University of Alaska Fairbanks, including remote campus sites. Manage and coordinate construction activity to insure the owner and user goals are achieved. Act as the University's agent with construction contractors, architectural and engineering firms, suppliers and user committees. Review and monitor schedules for compliance. Assure quality design and construction of facilities by coordinating multiple groups during both the design and construction phases. Prepare estimates, budgets, schedules, specifications and drawings, for bid and RFP packages. Monitor and inspect contractor's quality and materials for compliance with the contract documents. Research and respond to contractor bid and field questions and issues. Develop scope of work and RFP documents. Conduct weekly project progress meetings. Coordinate all project phases with University Operations and Maintenance divisions.

Osborne Construction Co.
October 1991 to June 1992
Assistant Project Manager
Performed field-engineering duties on the Ft. Wainwright Physical Fitness Facility project. Responsible for preparing and submitting project red-line as-built documents and estimating for closeout change orders.

MAPCO Alaska Petroleum, Inc.
March 1990 to June 1991
Field Construction Engineer
Administer projects from estimating and bid to final inspection and closeout phases. Responsible for overseeing construction projects at the North Pole Refinery site. Responsibilities included tracking budgets and schedules and assuring as-built document integrity. Developed scope of work, bidding and construction documents. Develop V.O.C. monitoring program in compliance with E.P.A. regulations. Serve as a liaison between the onsite contractor and Mapco's engineering department to resolve construction related field and document issues.

Watterson Construction Co.
January 1989 to February 1990
Quality Control Representative
Manage Contractor Quality Control (CQC) for dormitory and office renovation projects at Eielson Air Force Base. Responsible for the development and implementation of quality control program, documenting asbestos abatement, inspection of work performed, supervising and coordinating tests, and maintaining project records. Coordinate Network Analysis scheduling system. Monitor safety program for effectiveness.

A&A Roofing Co., Inc.
December 1987 to November 1988
Quality Control Manager
Manage Contractor Quality Control for hangar renovation project at Eielson Air Force Base. Contracting Agency: U.S. Army Corps of Engineers. Responsibilities same as indicated above, under Watterson Construction Co.

G.S.L. Oilfield Services
October 1987 to December 1987
Operations Support
Assist ARCO personnel by managing gas rehydration and retrofitting projects. Work involved installation of piping systems, welding and oil cooling systems inspection. Offshore experience with Shell Oil at Tern Island in the Beaufort Sea.

Johnson Company
June 1987 to September 1987
Quality Control Manager
Manage Contractor Quality Control for a new HVAC system in the AGE building. Responsibilities same as indicated above, under A&A Roofing Co.
G.S.L. Oilfield Services
September 1986 to May 1987
Operations Support
Assist ARCO personnel by managing installation of piping and dewatering systems.

Design Alaska
September 1982 to August 1986
Construction Administrator
Perform Construction Administration for construction projects ranging to $25 million. Responsible for tracking project scheduling and budgets. Review and process periodic pay estimates and change orders. Coordinate architects, consultants and contractors during all project phases.

Certifications/ Training

International Conference of Building Officials/ ICBO
- Mechanical Inspection II
- Design Plan Review I, Building Classification
- Design Plan Review II, Detailed Occupancies
- Design Plan Review III, Exiting
- Design Plan Review IV, Fire Protection
- Structural UBC Update
- Fundamentals of Building Inspection
- Fundamentals of Mechanical Inspection
- Fundamentals of Plumbing Inspection
- Means of Egress I and II
- Uniform Fire Code Update

International Fire Code Institute
- Uniform Fire Code Update

Roofing Industry Educational Institute
- Roof Inspection Diagnosis and Repair
- Roofing Technology
- Reroofing and Retrofit
- Rooftop Quality Assurance
- Preparing and Enforcing Roofing Specifications
- Roof Repair and Maintenance
- Protected Membrane Roofing Systems
- Roofing Safety
- Certified Roofing Technologist, May 1997

March 24, 2013

Representative Paul Seaton,

This letter is intended to serve as a recommendation for Reed Morisky as an appointee to the State of Alaska Board of Fisheries.

I first met Reed in Fairbanks, Alaska where I had the pleasure of working for him as a fishing guide on the Nenana River. We have been friends for 27 years. During the years that I have known Reed, he has consistently demonstrated a strong concern and keen interest in the resources of Alaska. He has always led by example, which makes him a relevant candidate for a position on the board.

Reed's understanding coupled with his experience and dedication will ensure that proper research and follow through is given to all issues facing the board. In addition, Reed is diligent in studying all facets of an issue. He is conscientious, and thorough. Reed's character will ensure that due diligence is given to all issues.

Well informed, care and concern for fellow Alaskans, and the respect of others in the guiding, as well as the commercial fisheries makes Reed an ideal candidate for the board.

I have commercial fished, including trolling, gillnetting, and crabbing for a number of years. These jobs have taken me from my boyhood home in Southeast Alaska, to "Area M," and the Bering Sea. I earned my bachelors degree in Fisheries Research from the University of Alaska in Fairbanks. Having been born and raised in Alaska, I believe that my personal experiences have exposed me to the obstacles that face our board of fish members, and afford me the ability to recommend Reed as a board member.

Reed is hardworking, experienced, articulate, and an effective communicator. He has my highest recommendation for an appointment to the board of fish. I am happy to provide additional information if you have any questions.

Respectfully,

Jeff Graham
Lifelong Alaskan
(907) 399-3333
Fullcurl64@yahoo.com

om: Rep. Paul Seaton
ubject: FW: Board of Fisheries Appointment - Reed Morisky

From: Mike Samson [mailto:ms@sei-ak.com]
Sent: Tuesday, March 19, 2013 11:59 AM
To: Sen. Cathy Giessel; Sen. Fred Dyson; Sen. Peter Micciche; Sen. Click Bishop; Sen. Lesil McGuire; Sen. Anna Fairclough; Sen. Hollis French; Rep. Eric Feige; Rep. Dan Saddler; Rep. Mike Hawker; Rep. Craig Johnson; Rep. Kurt Olson; Rep. Paul Seaton; Rep. Geran Tarr; Rep. Chris Tuck
Subject: Board of Fisheries Appointment - Reed Morisky

Dear Legislators,

I am writing in support of Reed Morisky's appointment to the Board of Fisheries. We have fished and enjoyed the Alaskan outdoors together for over 25 years and I consider him my closest friend. I don't make that statement lightly. That type of friendship comes from years of witnessing and understand a person's depth and convictions.

My love for Alaska, its people, land and wildlife is matched by few, but I think it pales in comparison to ed's. I've witnessed his respect and knowledge for our fisheries and the participants in those fisheries. He always takes a open minded approach to subjects, wishing always to understand the debated pros and cons. He's willing to listen to all sides before judgment and always respects the views of others.

I was thrilled when I heard that Governor Parnell had appointed Reed, not because of our friendship, but because of the man. I know he'll serve the best interests of Alaska on the Board of Fisheries and I urge you to confirm him.

Best regards,

Michael Samson,

Fairbanks,

907-452-3410

ms@sei-ak.com

om: Rep. Paul Seaton
ubject: FW: BoF Confirmation

From: Seth Church [mailto:seth@ccompany.us]
Sent: Monday, March 18, 2013 4:58 PM
To: Rep. Paul Seaton
Subject: BoF Confirmation

Dear Representative,

I have had the privilege of knowing Reed Morrisky for several years and can confidently recommend him for a position on the Board of Fish.

He is dedicated, fair, and a hard worker who will not take the position lightly. I am sure that he will provide a balanced and well reasoned approach to an often divisive board.

Please vote to confirm him to the Board of Fish.

Thank you,

Seth Church
Fairbanks Resident
1285 Great View Lane
Fairbanks, AK 99712
Cell: 701-500-7188
seth.church5@gmail.com

House Committee Report

CONFIRMATION

Action date: 4/2/13

The **House Special Committee on Fisheries** has reviewed the qualifications of the Governor's appointee(s) as shown on the attached Referral for Confirmation forms(s) and recommends that the name(s) be forwarded to a joint session for consideration:

This does not reflect intent by any of the members to vote for or against this individual during any further sessions for the purposes of confirmation.

Signature:	**Printed Last Name**
	HERRON
	FEIGE
	Gattis
	Kreiss-Tomkins
Chair: Paul Seaton	SEATON

Please attach appointee Referral for Confirmation form(s) and return to the Chief Clerk's Office.

Alaska State Legislature

House of Representatives

Office of the Chief Clerk

State Capitol
Juneau, AK 99801-1182
Phone: (907) 465-3725
Fax: (907) 465-5334

Official Business

REFERRAL FOR CONFIRMATION

Date Referred: **January 30, 2013**

Committee: **House Special Committee on Fisheries**

Fishermen's Fund Advisory and Appeals Council
Mark Saldi – Skagway
Appointed: 3/26/2008
Reappointed: 3/1/2013 Term Expires: 3/1/2018

Action Date: 4/2/13
(Same date as on the accompanying signature page)

Note: Attach to a signature page and return to the Chief Clerk's office.

Alaska State Legislature

House of Representatives

Office of the Chief Clerk

Official Business

State Capitol
Juneau, AK 99801-1182
Phone: (907) 465-3725
Fax: (907) 465-5334

REFERRAL FOR CONFIRMATION

Date Referred: **January 30, 2013**

Committee: **House Special Committee on Fisheries**

Fishermen's Fund Advisory and Appeals Council
Donald Stiles – Nome
Appointed: 8/12/2012 Term Expires: 3/1/2015

Action Date: 4/2/13
(Same date as on the accompanying signature page)

Note: Attach to a signature page and return to the Chief Clerk's office.

Southeast Alaska Fishermen's Alliance
9369 North Douglas Highway
Juneau, AK 99801
Phone: 907-586-6652 Email: seafa@gci.net
Fax: 907-523-1168 Website: http://www.seafa.org



January 30, 2013

Southeast Legislators,

RE: Fishermen's Fund Advisory Board Appointment

Southeast Alaska Fishermen's Alliance (SEAFA) is a multi-gear, multi-species non-profit association representing our membership involved in the salmon, crab, shrimp and longline fisheries mostly within Southeast Alaska.

SEAFA support Mark Saldi's reappointment to the Fishermen's Fund and Advisory and Appeals Council. Mark has served one term on the board and was thoughtful in his consideration of issues brought before the board. Mark is an active Southeast salmon gillnet, herring setnet sac roe, roe on kelp and halibut fisherman living in a small rural community. We believe he is a good southeast regional representative to serve on this board.

Thank you for your consideration of this appointment.

Sincerely,

Kathy Hansen
Executive Director

Saldi, Mark
Fishermen's Fund Advisory and Appeals Council

STATE OF ALASKA
OFFICE OF THE GOVERNOR
P.O. Box 110001, Juneau, AK 99811-0001
Phone: (907) 465-3500 Fax: (907) 465-3532

BOARDS AND COMMISSIONS APPLICATION FORM

INSTRUCTIONS

A separate application is required for each position for which you apply. Complete and specific answers will aid in rapid and accurate processing of your resume. Please type or print legibly in ink. Forward to the above address. Be sure your answers are true. A willfully false answer may result in your disqualification or removal from office if you are appointed.

Board or Commission and seat for which I am applying: FISHERMAN'S FUND ADVISORY & APPEALS
(For example, Board of Agriculture, public seat)

Please list any other State Boards or Commissions on which you currently or previously have served:
NONE

Name: MARK SALOI

Mailing Address: [redacted]

Residence Address: [redacted]

City, State and Zip Code: SKAGWAY AK 99840

Home or Message Telephone [redacted] Business Telephone: [redacted]

Fax Number: [redacted] Cell Phone: [redacted]

Email address: [redacted]

AS 39-05-100 requires that a person appointed to a state board or commission be a registered voter prior to the last general election:

Are you a registered voter: YES X NO _____ Voter Registration Number (Optional): [redacted]

Social Security Number (Optional, required if appointed for travel, reimbursement etc.): [redacted]

Have you ever been convicted of a misdemeanor within the past five years or a felony within the past ten years?

YES _____ NO X if "YES", explain the circumstances on a separate sheet of paper and attach it to this application. A conviction is not necessarily grounds for disqualification. The number of convictions, nature, recentness, and relationship to the board position applied for, will be evaluated and a determination will be made after a review of all relevant facts.

CONFLICTS OF INTEREST: Certain boards and commissions require full disclosure of personal financial data under AS 39.50.010. If required for the board or commission for which you are applying, are you willing to do so?
YES X NO _____

Could you or any member of your family be affected financially by decisions to be made by the board or commission for which you have applied? YES _____ NO X

If "YES", explain:

TRAINING AND EXPERIENCE: (If resume attached, it is not necessary to complete items A-D)

A. List any professional licenses, certifications, or registrations and dates obtained that may be used as qualifying criteria: 5 LIMITED ENTRY PERMITS
200 TON OCEAN MASTER LICENSE (USCG)

B. List both formal and informal education and training experiences: (Use additional paper if necessary).
1979 B.S. BUSINESS ADMINISTRATION FROM COLORADO STATE UNIV

C. List any community service, municipal government, and state positions held, and any awards received. Include both compensated and uncompensated positions (such as president of a service organization or a mayor). Include length of time serviced.
SKAGWAY ECONOMIC DEVELOPMENT COMMITTEE (1989-1981)
PORTS & HARBOR COMMITTEE - 3 TERMS, MOST CURRENT 11/09 → PRESENT
5 YEARS ON FISHERMANS FUND ADVISORY & APPEALS BOARD (2008 → 2012)

D. Employment work history – paid, unpaid or voluntary: (Use additional paper of necessary).
33 YEARS AS A COMMERCIAL FISHERMAN. WORKED MANY FISHERIES ALL OVER THE STATE

The Office of the Governor and the State of Alaska have an Affirmative Action Equal Employment Opportunity Program. To assist in the program, you are asked to voluntarily answer the following questions to provide the information necessary for reporting purposes. Under State and Federal law, the information you provide will not be used to illegally discriminate against you.

[redacted]

CERTIFICATION: I swear the information I have entered on this form is true to the best of my knowledge. I understand that if I deliberately conceal or enter false information on the form my application may be rejected, I may be removed from the list of eligible candidates, or I may be removed from the position. I agree that the Office of the Governor may contact present or former employees or other persons who know me to obtain an additional information about my skills and abilities. I understand that the information on this application is public information and may be released through a legal request for such information.

Signature (in ink): _____ Date: 10/12/12

Please attach a current resume with your application.

STATE OF ALASKA
OFFICE OF THE GOVERNOR

BOARDS AND COMMISSIONS

Name: MARK SALOI Date: 10/12/12

(Indicate top three boards/commissions of interest by number with #1 as your preference)

	Accounting Board
	Aerospace Development Corporation
	Aging Commission
	Agriculture & Conservation
	Alaska Juvenile Justice Advisory Committee
	Alaska Retirement Management Board
	Alaska Statehood Celebration Commission
	Alaska-Alberta Bilateral Council
	Alcohol/Drug Abuse
	Alcoholic Beverage Control
	Architects/Engineers/ Land Surveyors
	Arts Council
	Assessment Review Board
	Aviation Advisory Board
	Bald Eagle Preserve
	Bar Association
	Barbers & Hairdressers
	Bering Sea Fishery Advisory Board
	Big Game Commercial Services
	Boating Safety Council
	Broadcasting Commission
	Children's Trust Board
	Chiropractic Examiners
	Clemency Advisory Committee
	Commemorative Coin Commission
	Commercial Fisheries Entry
	Commercial Fishing/Agriculture Bank
	Community Service Commission
	Denali Access System Advisory Committee
	Dental Examiners
	Disabilities/Special Education
	Domestic Violence/Sexual Assault
	Education & Early Development
	Education Commission/States
	Emergency Medical Services
	Emergency Response Commission
	Employment of People with Disabilities
	Exxon Valdez Oil Spill Trustee
	Faith-Based & Community Initiatives Council
	Fire Standards Council
	Fisheries

X	Fisherman's Fund Advisory & Appeals
	Forestry
	Game
	Health Council
	Historical Commission
	Historical Records Advisory
	Homeless Council
	Housing Finance Corporation
	Human Rights
	Humanities Forum
	Independent Living Council
	Industrial Development/Export Authority
	Interstate Oil & Gas Compact
	Judicial Conduct
	Judicial Council
	Knik Arm Bridge
	Labor Relations Agency
	Libraries Advisory
	Local Boundary Commission
	Marine Pilots
	Marine Transportation Advisory Board
	Marital & Family Therapy
	Medical Board
	Mental Health Board
	Mental Health Trust Authority
	Midwives
	Minerals Commission
	Municipal Bond Bank
	Natural Gas Authority
	Natural Gas Pipeline Corporation
	Natural Resources Conservation Dev
	North Pacific Anadromous Fish
	North Pacific Fisheries Management Council
	North Pacific Research Board
	Nursing
	Occupational Safety
	Oil & Gas Conservation Commission
	Optometry
	Pacific Marine Fisheries Commission
	Pacific Salmon Commission-Commissioners
	Pacific Salmon Commission- Northern Panel

	Pacific Salmon Commission-Transboundary Panel
	Parole Board
	Permanent Fund
	Pharmacy Board
	Physical/Occupational Therapy
	Pioneer's Home Advisory
	Police Standards Council
	Postsecondary Education
	Professional Counselors
	Professional Teaching Practices
	Psychologist/ Psychological assoc.
	Public Offices Commission
	PWS Oil Spill Recovery Institute
	Railroad Corporation
	Real Estate Appraisers
	Real Estate Commission
	Regents
	Regulatory Commission (RCA)
	Royalty Oil & Gas Development
	Safety Advisory Council
	Seafood Marketing Institute
	Seismic Hazards Safety Commission
	Social Work Examiners
	Student Loan Corporation
	Subsistence Resource Commissions
	Suicide Prevention Council
	Telecommunications
	Uniform State Laws
	Veterans Advisory Council
	Veterinary Examiners
	Violent Crimes Compensation
	Water and Wastewater Works
	Western Interstate Comm/Higher Educ
	Wood-Tikchik State Park
	Worker's compensation
	Worker's Compensation Appeals Commission
	Workforce Investment Board
	Yukon River Panel

If appointed, a press release will be issued announcing your appointment pending the completion of the appointment process with the Governor's office. Please supply our office with the following information that will be included in the press release.

(Name): MARK SALOI, (Age): [redacted] of (Hometown): SKAGWAY AK
is (Job title/Place of employment): 33 YEARS SELF EMPLOYED COMMERCIAL FISHERMAN
(Name) holds (Listing of earned degrees like bachelor's, master's,
ect.): BACHELOR DEGREE IN BUSINESS ADMINISTRATION FROM COLORADO STATE UNIV
(Or list relevant experience to the position you are being appointed to) 1979

Examples:

John A. Doe, 38 of Soldotna, is Director of T-Shirts & Co. Doe holds a bachelor's degree in business administration from X University and a master's degree in communications from X University.

John A. Doe, 38 of Palmer, is the owner and operator of Doe and Associates, Inc. Doe previously served as division manager at X, Inc. Doe is a certified personnel consultant.

Stiles, Donald
Fishermen's Fund Advisory and Appeals Council

Donald L. Stiles
Nome, AK 99762-0575

Experience

The United States Marine Corps, 1980-1984, honorably discharged

Kawarek Incorporated Fisheries Department, Fisheries Specialist

Norton Sound Economic Development Corporation, Board of Directors, 1996-present

Siu Alaska Corporation, Chairman,

Education

Covenant High School, Unalakleet, Alaska 1980

Interests

- ***Mining***
- ***Big Game Guiding***
- ***Coaching High School Basketball***
- ***Built and welded aluminum boats***

Webster, Claude V.
Board of Fisheries

Fisheries, Board of	Claude Vincent Webster

General Information

Board/Commission and seat you are seeking:
Fisheries, Board of, Public Seat

Additional Boards/Commissions of interest:
1) Commercial Fisheries Entry Commission, Alaska
2) Game, Board of
3) North Pacific Fishery Management Council

State Boards/Commissions on which you have served
Board of Fisheries

First	*Middlename*	*Last Name*
Claude	**Vincent**	**Webster**
Mailing Address	*City*	*State & ZIP*
	King Salmon	**AK 99613**
Home/Message Phone	*Business Phone*	*Cell Phone*
Email Address	*Are you a registered voter?*	
	Yes	

Date of Birth *Gender* *Military Service*	*Ethnicity*

Conflict of Interest

Certain boards and commissions require full disclosure of personal financial data under AS 39.50.010. If required for the board or commission for which you are applying, are you willing to do so?
Yes

Could you or any member of your family be affected financially by decisions to be made by the board or commission for which you are applying?
Yes

Please explain the potential financial benefit
I own a Bristol Bay drift net salmon permit and a Bristol Bay set net salmon permit. My wife Sheryl owns a Bristol Bay set net salmon permit. My oldest son Nathan owns a Bristol Bay set net salmon permit. My youngest son Derek owns a Bristol Bay set net salmon permit.

Employment History

Employment work history including paid, unpaid or voluntary.
See resume below

Education, Training, Experience & Qualifications

List both formal and informal education and training experiences:
See resume below

List any professional licenses, certifications, or registrations and dates obtained that may be used as qualifying criteria:
See resume below

List any community service, municipal government, and state positions held, and any awards received.
See resume below

Conviction Record

Have you ever been convicted of a misdemeanor within the past five years or a felony within the past ten years?
No

Conviction Circumstances

Certification of Accuracy & Completeness

By submitting this online application, I swear the information I have entered on this form is true to the best of my knowledge. I understand that if I deliberately conceal or enter false information on the form my application may be rejected, I may be removed from the list of eligible candidates, or I may be removed from the position. I agree that the Office of the Governor may contact present or former employees or other persons who know me to obtain an additional information about my skills and abilities. I understand that the information on this application is public information and may be released through a legal request for such information.

Type "I certify"
"I certify"

Resumé Addendum
Claude Vincent Webster (Vince)

King Salmon, AK 99613

Background:
I was raised on a farm in Indiana. My life dream was to go to Alaska. I joined the Air Force to support my family and was rewarded by a transfer to King Salmon, Alaska in 1978. There I was introduced to the commercial fishing in Bristol Bay and the greatest Rainbow Trout fishing in the world. I was transferred to Elmendorf Air Force Base from 1979 to 1982 where I continued to enjoy the great outdoors. I was offered a job in the maritime ship yards, on the west coast from 1982-1988. I purchased my first Bristol Bay Setnet permit in 1984. My wife (Sheryl) and I moved our family (Troy and Derek) back to King Salmon in 1989 for a more intimate education. Our sons went on to graduate from Eastern Connecticut State and Yale University with honors. We continue to reside in King Salmon and enjoy sharing our fishing operation with our sons and grandchildren every summer.

Work Experience:

1984-Present..Set gillnet operator in the Naknek/Kvichak District of Bristol Bay.
2004-Present..Drift gillnet operator in the Naknek/Kvichak District of Bristol Bay.
2008-Present..Engineering Heavy Equipment & Barge Operator at Katmai National Park.
2000-2008..Facilities & Maintenance Director for Lake & Peninsula School District.
1997-2000..Maintenance & Construction for Katmai National Park.
1989-1990..Cannery Construction for BKR & Associates at Cordova, Kodiak, Petersburg and Naknek, Alaska.
1982-1988..Ship Repair Coordinator & Branch Manager for Donco Inc. in California and Washington.
1975-1982..US Air Force.
1978..Managed Air Force boat dock & operated an Air Force charter boat at King Salmon.

Other Fisheries Experience:
Togiak Herring, Cinder River Salmon, Chignik Salmon, Bristol Bay Halibut and numerous sport fisheries throughout the state.

Community Service & State Positions Held:
Presently serve on the Alaska Board of Fisheries.
Served on the Naknek/Kvichak Fish and Game Advisory Committee for over 15 years.
Set on numerous fish committees & task forces.

Education & Training:
Graduated Jennings County High School, Indiana 1974.
Versailles Vocational School, Indiana 1973.
Air Force Aircraft Weapons Release Systems Tech School 1976.
USCG Merchant Mariner Credential, 100 Ton Master

Press Release Wording

Claude Vincent Webster, of King Salmon, is a Commercial Fisherman in Bristol Bay. He served on the Naknek/Kvichak advisory committee for 15 years prior to serving on the Board of Fisheries.

Submitted: 01/22/13 at 5:50 pm from 10.48.236.45

Kluberton, Thomas
Board of Fisheries

Fisheries, Board of	Thomas Grim Kluberton

General Information

Board/Commission and seat you are seeking:
Fisheries, Board of, Seat

Additional Boards/Commissions of interest:
1) North Pacific Anadromous Fish Comm.
2) North Pacific Fishery Management Council

State Boards/Commissions on which you have served
Board of Fisheries

First	*Middlename*	*Last Name*
Thomas	Grim	Kluberton
Mailing Address [redacted]	*City* Talkeetna	*State & ZIP* AK 99676
Home/Message Phone [redacted]	*Business Phone*	*Cell Phone*
Email Address [redacted]	*Are you a registered voter?* Yes	

Date of Birth [redacted]
Gender [redacted]
Military Service
Ethnicity [redacted]

Conflict of Interest

Certain boards and commissions require full disclosure of personal financial data under AS 39.50.010. If required for the board or commission for which you are applying, are you willing to do so?
Yes

Could you or any member of your family be affected financially by decisions to be made by the board or commission for which you are applying?
No

Please explain the potential financial benefit

Employment History

Employment work history including paid, unpaid or voluntary.
Conoco 1973
Wilson Foods 1978
Crown Zellerbach1980
Alaska Dept of Administration 1984
Alaska DOT&PF 1987
Unisys 1990

Netsys Technologies Inc. 1994

Education, Training, Experience & Qualifications

List both formal and informal education and training experiences:
Bachelor of Business Administration 1973

List any professional licenses, certifications, or registrations and dates obtained that may be used as qualifying criteria:
Board of Fisheries - Current Position (approaching end of first term Seeking Re-appointment for another term which would begin in 2013)

List any community service, municipal government, and state positions held, and any awards received.
Alaska Board of Fisheries (Current), Mat-Su Borough Assembly, Mat-Su Borough Planning Commission, Governor's Council on Disabilities and Special Education, Y (Susitna) Community Council,

Conviction Record

Have you ever been convicted of a misdemeanor within the past five years or a felony within the past ten years?
No

Conviction Circumstances

Certification of Accuracy & Completeness

By submitting this online application, I swear the information I have entered on this form is true to the best of my knowledge. I understand that if I deliberately conceal or enter false information on the form my application may be rejected, I may be removed from the list of eligible candidates, or I may be removed from the position. I agree that the Office of the Governor may contact present or former employees or other persons who know me to obtain an additional information about my skills and abilities. I understand that the information on this application is public information and may be released through a legal request for such information.

Type "I certify"
"I Certify"

Resumé Addendum
Am Presently on Board of Fisheries approaching end of first term Seeking Re-appointment for another term which would begin in 2013. Thought it best to make my intentions known as I have been encouraged to continue and have been asked whether I was willing. Seemed the best thing to do was submit the form so it is apparent that I am willing to serve another term.

Press Release Wording

{Tom Kluberton}, [redacted] of {Talkeetna}, is an owner and operator of Fireweed Station Inn,} he served for the past three years on the Alaska Board of Fisheries prior to which he had served on the Matanuska-Susitna Borough Assembly.

Submitted: 12/14/12 at 5:33 pm from 216.137.237.224

April 3, 2013

RE: Support for Vince Webster, Tom Kluberton, and ADFG Scientific Data

Dear Honorable Representatives,

We would like to express our support for Alaska Board of Fisheries members Tom Kluberton and Vince Webster, and we encourage you to support their confirmation for another term on the board.

As families of the Kenai Peninsula and users of our salmon resource, we are thankful that Mr. Kluberton and Mr. Webster took the time last winter to do what few members of the BOF have – to come to the Kenai Peninsula and spend time meeting with both the scientists and the users, learning about our very diverse and healthy fishery. Thanks to all of the new scientific data produced by the hard working folks at ADFG, the UCI King Salmon Task Force was a truly educational experience for all. We felt that Mr. Kluberton and Mr. Webster were devoted to the public process, and did not allow pressure from special interest groups to outweigh the facts or the best interests of our resource.

We would also like to express our support for the BOF's unanimous decision to codify ADFG's newly established Sustainable Escapement Goal for Kenai River Late Run King Salmon of 15,000-30,000, while leaving the allocative issues regarding our fishery for the regularly scheduled 2014 Cook Inlet meeting.

ADFG data shows that this new goal takes into account both past errors in counting and newer and more dependable technology and methods of enumeration. The new goal also correlates with ADFG data that shows past escapements above 30,000 have contributed to diminished future yields. We agree with the Alaska Department of Fish and Game and the entirety of the members of the Alaska Board of Fisheries that this goal gives the best chance possible for high future yields and adequate fishing opportunity for all users.

The dedication and commitment of these two individuals to the Board of Fish and the public process it supports is exemplary. We encourage you to not only confirm their reappointment, but to thank them for a job well done.

Respectfully,

Todd L Smith

Megan M Smith

Sarah A Hudkins

Brian Ahlf

Travis Every

Amber Every

Amanda E. Johnston

Lisa J Gabriel

Sitka Tribe of Alaska
456 Katlian Street
Sitka, Alaska 99835

Main: 907-747-3207
Fax: 907-747-4915

Tribal Council Resolution 2013-015

Opposition to the Reappointment of Tom Kluberton and Vince Webster to the Board of Fisheries

WHEREAS, the Sitka Tribe of Alaska is the federally recognized tribal government for more than 4,500 enrolled tribal citizens in Sitka, Alaska organized under the Indian Reorganization Act of 1934 as amended; and

WHEREAS, the Sitka Tribe of Alaska is responsible for the health, safety, welfare and cultural preservation of its tribal citizens and their use of the Sitka Tribe's traditional territory; and

WHEREAS, the Sitka Tribe of Alaska's traditional territory reflects the lands and waters historically and presently the stewardship responsibility of the Sheet'ka Kwan and as such are composed of the western side of Chicagof Island and the greater reaches of Peril Strait, southwestern portions of Chicagof Island and the myriad islands as well as the waters between these locations; and

WHEREAS, Southeast Alaska is under represented on the Board of Fish since Bill Brown's resignation in January 2013; and

WHEREAS, neither Mr. Kluberton nor Mr. Webster have the knowledge of Southeast Alaska waters, resources or fisheries that is needed to adequately represent **ALL** user groups; and

WHEREAS, both Mr. Kluberton and Mr. Webster failed to fulfill their conservation duties as Board members by declining to add herring to the State's forage fish management plan; and

NOW THEREFORE BE IT RESOLVED, that the Sitka Tribal Council opposes the Reappointment of Tom Kluberton and Vince Webster to the Board of Fisheries; and

NOW THEREFORE BE IT FURTHER RESOLVED, that the Sitka Tribal Council requests that Governor Parnell and the Alaska Legislature fill one of the vacant Board of Fisheries seats with a Southeast resident to allow for adequate representation of the region.

CERTIFICATION

The foregoing Resolution was adopted at a duly called and convened meeting of the Tribal Council of the Sitka Tribe of Alaska held on April 3, 2013, at which a quorum was present by a vote of __ In Favor, __Opposed, __Abstain, __Absent

Signed:

Michael A. Baines

Michael Baines, Chairman

Attest:

Benjamen J. Miyasato

~~**Lillian Feldpausch, Secretary**~~

Benjamen Miyasato, Vice Chairman

Petersburg Vessel Owners Association

PO Box 232
Petersburg, AK 99833
Phone & Fax: 907.772.9323
pvoa@gci.net ● www.pvoaonline.org

March 30, 2013

Alaska State Legislature
House Fisheries Committee
Representative Paul Seaton, Chair
State Capitol
Juneau, AK 99811

SUBJECT: VINCE WEBSTER AND TOM KLUBERTON FOR CONTINUED APPOINTMENT TO THE ALASKA BOARD OF FISHERIES

Dear Chairman Seaton and Fisheries Committee Members,

Petersburg Vessel Owners (PVOA) is a diverse group of 100 commercial fishermen and businesses operating primarily in Southeast Alaska but who participate in a variety of fisheries statewide including cod, salmon, herring, crab, and shrimp. PVOA would like to express our support for Vince Webster and Tom Kluberton, continuing candidates for the Board of Fisheries.

Both Vince and Tom are knowledgeable and responsible Board members with the ability to comprehend large amounts of information in a short period of time. Based on our experiences, both of these gentlemen appear to be thoughtful and forthright participants who do their homework and show concern for the public process. Their service on the Board thus far has been commendable and demonstrates their dedication to the careful management of Alaska's fisheries. The reappointment of Vince and Tom will ensure continuity and benefit members of the public who participate in this process.

We feel that both of these gentlemen are experienced and talented Board members and will continue to be outstanding members of the Board of Fisheries.

If we can provide further information or answer any questions as you make this important decision, please feel free to contact us.

Sincerely,

Brian Lynch

Brian Lynch
Executive Director

I am writing in support of the confirmation of Tom Kluberton's reappointment to the Alaska Board of Fisheries. I will be unable to testify during next Thursday's House Fisheries Committee hearing , and ask that this email be considered by the Committee when deciding whether to move Mr. Kluberton's name to both houses for a confirmation vote.

I have worked with Mr. Kluberton for three years since his initial appointment. He is a very quick study, prepares well for meetings, is keenly aware of the challenges that are facing the Board and, always mindful of the Constitutional mandate to set policy that is supportive of sustained yield. He recognizes the importance of the input from Advisory Committees and the value that comes from listening to the public. While we may not agree from time to time, I respect his decisions because they are always supported by thoughtful reasoning.

He provides the continuing needed balance on the Board that always helps to establish a good record to support regulatory changes. Board members generally get better after one three year cycle. Mr. Kluberton has worked hard, made the type of sacrifices all members make from time to time doing what is , sometimes, a thankless job. The State is fortunate that he is willing to give it three more years. The governor made a good decision in reappointing Mr. Kluberton and I support his confirmation.

Thank you. Karl Johnstone

TO: The Fisheries committee
From: Ken Federico, Chair of the South Central Alaska Dipnetters association.

Dear Mr. Chairman and members,

I am writing to you to voice my concern on one of the two standing members looking to get re-appointed to the BOF.

Tom Klubertson has been pretty impartial on his first term on the BOF. Thank you Tom.

My concern is with Vince Webster. Vince has served 2,3 year terms on the board and I believe it is time for some fresh blood. My reasoning behind this is concerning RC 75 and RC88 from the most recent BOF meetings held here in Anchorage last month. Those RC's were in relation to the Kenai River return of King Salmon.

RC 75 went through the public hearing process concerning all parties sharing in either the pain or abundance of the returning King salmon to the Kenai. Only after public testimony ended did Mr Webster submit RC 88. I believe it was submitted on March 21 if I am not mistaken. What Mr. Webster submitted was cut out retention of King Salmon for dipnetters only, when the Fish and Game department estimated escapement at 30,000 kings. That is not retention, mind you but escapement. Historically, that is a pretty good escapement number for the second run of kings.

No other use group had to give up anything. I believe Mr. Webster abused his position by waiting until after public testimony to submit RC 88.

FYI, dipnetters on the Kenai take an average of 875 kings a year. Not much of a take if you ask me. I am the first to urge Fish and Game, in season, when the king run is low, like last year, to stop retention of Kings by dippers. All members of the public should do their part for the resource in times of need.

That is why myself and 98 percent of my membership,225 at last count, would like another member of the public to serve, instead of Mr. Webster.

Thank you for your time and consideration,

Ken Federico, SCADA

Submitted by the Alaska Department of Fish and Game at the request of board member Webster

March 20, 2013

Substitute regulatory language for Proposal 249

5 AAC 21.359 is amended by adding a new subsection to read:

5 AAC 21.359. Kenai River Late-Run King Salmon Management Plan. (a) The purposes of this management plan are to ensure an adequate escapement of late-run king salmon into the Kenai River system and to provide management guidelines to the department. The department shall manage the late-run Kenai River king salmon stocks primarily for sport and guided sport uses in order to provide the sport and guided sport fishermen with a reasonable opportunity to harvest these salmon resources over the entire run, as measured by the frequency or inriver restrictions.

(b) The department shall manage the late run of Kenai River king salmon to achieve a **sustainable** [BIOLOGICAL] escapement goal of **15,000–30,000** [17,800 - 35,700] king salmon, as follows:

(1) in the sport fishery,

(A) if the biological escapement goal is projected to be exceeded, the commissioner may, by emergency order, extend the sport fishing season up to seven days during the first week of August;

(B) from July 1 through July 31, a person may not use more than one single hook in the Kenai River downstream from Skilak Lake;

(2) in the sport fishery, that portion of the Kenai River downstream from Skilak Lake is open to unguided sport fishing from a non-motorized vessel on Mondays in July; for purposes of this section a non-motorized vessel is one that does not have a motor on board;

[(3) IF THE PROJECTED INRIVER RETURN IS LESS THAN 17,800 KING SALMON, THE DEPARTMENT SHALL]

[(A) CLOSE THE SPORT FISHERIES IN THE KENAI RIVER AND IN THE SALT WATERS OF COOK INLET NORTH OF THE LATITUDE OF BLUFF POINT TO THE TAKING OF KING SALMON;]

[(B) CLOSE THE COMMERCIAL DRIFT GILLNET FISHERY IN THE CENTRAL DISTRICT WITHIN ONE MILE OF THE KENAI PENINSULA SHORELINE NORTH OF THE KENAI RIVER AND WITHIN ONE AND ONE-HALF

MILES OF THE KENAI PENINSULA SHORELINE SOUTH OF THE KENAI RIVER; AND]

[(C) CLOSE THE COMMERCIAL SET GILLNET FISHERY IN THE UPPER SUBDISTRICT OF THE CENTRAL DISTRICT.]

[(c) FROM JULY 20 THROUGH JULY 31,]

(1) repealed 6/22/2002;

[(2) IF THE PROJECTED INRIVER RETURN OF LATE-RUN KING SALMON IS LESS THAN 40,000 FISH AND THE INRIVER SPORT FISHERY HARVEST IS PROJECTED TO RESULT IN AN ESCAPEMENT BELOW 17,800 KING SALMON, THE DEPARTMENT MAY RESTRICT THE INRIVER SPORT FISHERY;]

(i) In 2013, notwithstanding the other provisions of this section, the department shall manage the late run of Kenai River king salmon during July under management targets based on the average historical run timing variability of king salmon, as follows:

(1) from July 10 through July 20,

(A) if the projected escapement of king salmon is less than a management target of 13,500 fish, the department shall

(i) close the sport fisheries in the Kenai River drainage and in the salt waters of Cook Inlet north of the latitude of Bluff Point to the taking of king salmon;

(ii) prohibit the retention of king salmon in the personal use salmon fishery in the Kenai River drainage;

(iii) close the commercial set gillnet fishery in the Upper Subdistrict of the Central District;

(iv) close the commercial drift gillnet fishery in the Central District within one mile of the Kenai Peninsula shoreline north of the Kenai

River and within one and one-half miles of the Kenai Peninsula shoreline south of the Kenai River;

(B) if the projected escapement of king salmon is more than a management target of 13,500 fish, but less than 16,500 fish, the department shall

(i) either prohibit the use of bait for sport fishing in the Kenai River drainage and in the salt waters of Cook Inlet north of the latitude of Bluff Point, or prohibit the retention of king salmon; any king salmon caught must be immediately released and returned to the water unharmed;

(ii) prohibit the retention of king salmon in the personal use salmon fishery in the Kenai River drainage; any king salmon caught must be immediately released and returned to the water unharmed;

(iii) restrict fishing periods for the commercial set gillnet fishery in the Upper Subdistrict to no more than 36 hours of aggregate fishing time per week, with one 36-hour continuous closure as described in 5 AAC 21.360(c)(2)(C);

(2) from July 21 through July 31,

(A) if the projected escapement of king salmon is a management target of 15,000 fish or less, the department shall

(i) close the sport fisheries in the Kenai River drainage and in the salt waters of Cook Inlet north of the latitude of Bluff Point to the taking of king salmon;

(ii) close the commercial set gillnet fishery in the Upper Subdistrict;

(iii) prohibit the retention of king salmon in the personal use salmon fishery in the Kenai River drainage;

(iv) close the commercial drift gillnet fishery in the Central District within one mile of the Kenai Peninsula shoreline north of the Kenai River and within one and one-half miles of the Kenai Peninsula shoreline south of the Kenai River;

(B) if the projected escapement of king salmon is more than a management target of 15,000 fish, the department shall manage the fishery under the provisions of 5 AAC 21.360 and 5 AAC 57; the department may also restrict set gillnets to 29 meshes in depth, or restrict the limit of set gillnet gear to either two set gillnets that are not more than 70 fathoms in aggregate length or one set gillnet that is not more than 35 fathoms in length as deemed necessary by the department;

(4) if the inriver sport fishery is closed under (2) of this subsection, the commercial set gillnet fishery in the Upper Subdistrict shall be closed;

(5) repealed 6/11/2005.

(d) Repealed 6/22/2002.

(e) Consistent with the purposes of this management plan and 5 AAC 21.360, if the projected inriver return of king salmon is less than 40,000 fish, the department may not reduce the closed waters at the mouth of the Kenai River described in 5 AAC 21.350(b) .

(f) The provisions of the Kasilof River Salmon Management Plan (5 AAC 21.365) are exempt from the provisions of this section.

(g) The department will, to the extent practicable, conduct habitat assessments on a schedule that conforms to the Board of Fisheries (board) triennial meeting cycle. If the assessments demonstrate a net loss of riparian habitat caused by noncommercial fishermen, the department is requested to report those findings to the board and submit proposals to the board for appropriate modification of this plan.

(h) The commissioner may depart from the provisions of the management plan under this section as provided in 5 AAC 21.363(e) .

RC 88

Submitted by the Alaska Department of Fish and Game at the request of board member Webster

March 21, 2013

Substitute regulatory language for Proposal 249

5 AAC 21.359 is amended by adding a new subsection to read:

5 AAC 21.359. Kenai River Late-Run King Salmon Management Plan. (a) The purposes of this management plan are to ensure an adequate escapement of late-run king salmon into the Kenai River system and to provide management guidelines to the department. The department shall manage the late-run Kenai River king salmon stocks primarily for sport and guided sport uses in order to provide the sport and guided sport fishermen with a reasonable opportunity to harvest these salmon resources over the entire run, as measured by the frequency or inriver restrictions.

(b) The department shall manage the late run of Kenai River king salmon to achieve a **sustainable** [BIOLOGICAL] escapement goal of **15,000–30,000** [17,800 - 35,700] king salmon, as follows:

(1) in the sport fishery,

(A) if the **sustainable** [BIOLOGICAL] escapement goal is projected to be exceeded, the commissioner may, by emergency order, extend the sport fishing season up to seven days during the first week of August;

(B) from July 1 through July 31, a person may not use more than one single hook in the Kenai River downstream from Skilak Lake;

(2) in the sport fishery, that portion of the Kenai River downstream from Skilak Lake is open to unguided sport fishing from a non-motorized vessel on Mondays in July; for purposes of this section a non-motorized vessel is one that does not have a motor on board;

[(3) IF THE PROJECTED INRIVER RETURN IS LESS THAN 17,800 KING SALMON, THE DEPARTMENT SHALL]

[(A) CLOSE THE SPORT FISHERIES IN THE KENAI RIVER AND IN THE SALT WATERS OF COOK INLET NORTH OF THE LATITUDE OF BLUFF POINT TO THE TAKING OF KING SALMON;]

[(B) CLOSE THE COMMERCIAL DRIFT GILLNET FISHERY IN THE CENTRAL DISTRICT WITHIN ONE MILE OF THE KENAI PENINSULA SHORELINE NORTH OF THE KENAI RIVER AND WITHIN ONE AND ONE-HALF

MILES OF THE KENAI PENINSULA SHORELINE SOUTH OF THE KENAI RIVER; AND]

[(C) CLOSE THE COMMERCIAL SET GILLNET FISHERY IN THE UPPER SUBDISTRICT OF THE CENTRAL DISTRICT.]

[(c) FROM JULY 20 THROUGH JULY 31,]

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(i) In 2013, notwithstanding the other provisions of this section, the department shall manage the late run of Kenai River king salmon during July under management targets based on the average historical run timing variability of king salmon, as follows:

(1) from July 10 through July 20,

(A) if the projected escapement of king salmon is less than a management target of 15,000 fish, the department shall

(i) close the sport fisheries in the Kenai River drainage and in the salt waters of Cook Inlet north of the latitude of an ADF&G regulatory marker located two miles south of the Anchor River at 59° 45.94' N. lat. to the taking of king salmon;

(ii) prohibit the retention of king salmon in the personal use salmon fishery in the Kenai River drainage;

(iii) close the commercial set gillnet fishery in the Upper Subdistrict of the Central District;

(iv) close the commercial drift gillnet fishery in the Central District within one mile of the Kenai Peninsula shoreline north of the Kenai River and within one and one-half miles of the Kenai Peninsula shoreline south of the Kenai River;

(B) if the projected escapement of king salmon is more than a management target of 15,000 fish, but less than 16,500 fish, the department shall

(i) either prohibit the use of bait for sport fishing in the Kenai River drainage and in the salt waters of Cook Inlet north of the latitude of Bluff Point, or prohibit the retention of king salmon; any king salmon caught must be immediately released and returned to the water unharmed;

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(iii) restrict fishing periods for the commercial set gillnet fishery in the Upper Subdistrict to no more than 36 hours of aggregate fishing time per week, with one 36-hour continuous closure as described in 5 AAC 21.360(c)(2)(C);

(2) from July 21 through July 31,

(A) if the projected escapement of king salmon is a management target of 15,000 fish or less, the department shall

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marker located two miles south of the Anchor River at 59° 45.94' N. lat. to the taking of king salmon;

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(B) if the projected escapement of king salmon is a management target of at least 15,000 fish, but less than 16,500 fish the department shall manage the fishery under the provisions of 5 AAC 21.360 and 5 AAC 57; the department may also restrict the limit of set gillnet gear to either two set gillnets that are not more than 70 fathoms in aggregate length or one set gillnet that is not more than 35 fathoms in length as deemed necessary by the department;

(3) notwithstanding any provision in this subsection, if the forecast for the escapement of Kenai River king salmon is less than 30,000 fish, the department shall prohibit the retention of king salmon in the personal use salmon fishery in the Kenai River drainage; any king salmon caught must be immediately released and returned to the water unharmed;

(4) if the inriver sport fishery is closed under (2) of this subsection, the commercial set gillnet fishery in the Upper Subdistrict shall be closed;

(5) repealed 6/11/2005.

(d) Repealed 6/22/2002.

(e) Consistent with the purposes of this management plan and 5 AAC 21.360, if the projected inriver return of king salmon is less than 40,000 fish, the department may not reduce the closed waters at the mouth of the Kenai River described in 5 AAC 21.350(b) .

(f) The provisions of the Kasilof River Salmon Management Plan (5 AAC 21.365) are exempt from the provisions of this section.

(g) The department will, to the extent practicable, conduct habitat assessments on a schedule that conforms to the Board of Fisheries (board) triennial meeting cycle. If the assessments demonstrate a net loss of riparian habitat caused by noncommercial fishermen, the department is requested to report those findings to the board and submit proposals to the board for appropriate modification of this plan.

(h) The commissioner may depart from the provisions of the management plan under this section as provided in 5 AAC 21.363(e) .

Bristol **B**ay **E**conomic **D**evelopment **C**orporation
P.O. Box 1464 • Dillingham, Alaska 99576 • (907) 842-4370 • Fax (907) 842-4336 • 1-800-478-4370

BBEDC

April 2nd, 2013

Dear Legislative Staff:

It has been brought to our attention that a significant effort is being made to discredit the Governor's nomination of Vince Webster to retain his position on the Alaska Board of Fisheries. It would appear that this effort is being led by one general interest group.

We would like to again reaffirm our support of Mr. Vince Webster in behalf of the all the interest groups in our communities be it Sport, Commercial or Subsistence. Attached is our original letter that we sent to the Governor. If we can be of any additional assistance or provide the committee's with any additional information please don't hesitate to contact me.

Sincerely,

Norman Van Vactor
President / CEO

Bristol **B**ay **E**conomic **D**evelopment **C**orporation
P.O. Box 1464 • Dillingham, Alaska 99576 • (907) 842-4370 • Fax (907) 842-4336 • 1-800-478-4370

BBEDC

Governor Sean Parnell
Alaska State Capital
Juneau, AK 99801

18 March 2013

Dear Governor Parnell,

On behalf of the Board of Directors of the Bristol Bay Economic Development Corporation and the 17 communities of Southwest Alaska communities we represent, we urge your continued support of Vince Webster to a seat on the Alaska Board of Fisheries.

Thank you, sincerely,

Norman Van Vactor
President & CEO

Cordova District Fishermen United
PO Box 939 | 509 First Street | Cordova, AK 99574
phone. (907) 424 3447 | fax. (907) 424 3430
web. www.cdfu.org | email. cdfu@ak.net

April 1, 2013

Representative Paul Seaton
Special Committee on Fisheries
State Capitol, Room 102
Juneau, AK 99801-1182
Representative.Paul.Seaton@akleg.gov

Dear Chairman Seaton and Committee Members:

I am writing on behalf of the Cordova District Fishermen United Board of Directors, and our membership to offer support Tom Kluberton and Vince Webster for reappointment to the Alaska Board of Fisheries this year.

Cordova District Fishermen United represents over 300 commercial fishermen and their families in the Prince William Sound & Copper River Region and has a long history of constructive participation in the Board of Fisheries process.

CDFU believes both Mr. Kluberton and Mr. Webster have demonstrated their commitment to Alaska's fisheries resources and each exhibit the ability to make fair, unbiased decisions through effective deliberation and thoughtful consideration of the many statewide fisheries issues presented during their service on the Alaska Board of Fisheries.

Tom Kluberton and Vince Webster are both well-rounded candidates that will prove best fit for continued service on the Alaska Board of Fisheries. Thank you for the opportunity to comment.

Sincerely,

Alexis Cooper
Executive Director

[e-mail received 4/3/2013]

I'm Bruce Knowles and these are my own thoughts. Call me if you have questions this occurred over Mr. Websters appointment to the BOF .

Rep. Gattis

Vince Webster has been an obstructionist when it comes to solving problems in Cook Inlet and other funnel type salmon fisheries (salmon fisheries located at the upper of an inlet, long river system where mixed stocks travel together heading for their natal waters and salmon must face a long gauntlet of commercial fisheries).

He supports the expansion of the Northern District king salmon Commercial fishery even though there were numerous king salmon streams on the verge of stock of stock of concern status.

When Northern District king salmon numbers began to plummet he supported extra fishing periods Northern District commercial fishing
on already weak stocks. Now there are seven stocks of concern in
the Northern District of Cook Inlet six king salmon, and four others that are now qualify for the stock of concern status. These candidates should be brought before the Board of Fisheries process of being declared stock of concern.

Alaska Department of Fish and Game staff said that the little Susitna River coho stocks have missed its escapement goal for the fourth year
and that Jim Creek may also qualify as a stock of concern. During
the 2012 fishing season an Agenda Change request was made to the Board of Fisheries to restrict Central District commercial harvest due to weak coho Northern District. Mr. Webster was opposed this request.

He supported the lowering again Susitna River sockeye salmon escapement goal, Susitna River sockeye goal had been lower several time. On numerous occasions he opposed proposal that would have restricted commercial fisheries in the Central District to reduce the intercept of Northern District salmon stocks. The Susitna River sockeye have continued to miss its annual escapement goal again making it the sixth consecutive year since it was declared a stock of concern and a total of 11 years when you include the original five years of missed goals which qualified the Susitna River sockeye for stock of concern.

Northern District stocks are at the lowest point in more than 40 years. I believe the Alaska Department of Fish and Game and Mr.
Webster are guilty of not meeting the Constructional mandate to keep our renewable resources at a sustainable level.

Bruce Knowles

submitted on line by WSF on 4-4-2013 @ 8:25 am

Public Opinion Message

Please contact your local Legislative Information Office (LIO) with questions or problems.
A complete list of LIOs can be found at w3.legis.state.ak.us/misc/lios.php

This form must be completely filled out. You may phone, fax, or deliver your POM to any LIO.

From: *Please **PRINT** the information below. This form **must be signed** by the sender.*

Mr. / Ms. / Mrs.	First name	M.I.	Last name	Jr. / Sr. / III
Mr.	Robert	J.	Clark	

Group affiliation (if applicable)	Daytime telephone number
P.O. Box 130	907/842-5201
Mailing address	Zip code
Bristol Bay Area Health Corp. 6000 Kanakanak Rd	99576
Residence (street) address if different from mailing address	Zip code
	99576
Email address	Signature / Date
rclark@bbahc.org	Robert J. Clark 4/3/13

To: ***Put a √ in the appropriate box(es).***

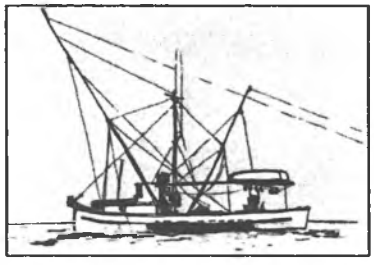
Committees (H or S)		House members		Senate members
	Community & Regional Affairs	✓ Austerman (aus)	✓ Keller (kee)	✓ Bishop (bis)
	Education (edc)	✓ Chenault (che)	✓ Kerttula (ker)	✓ Coghill (cgl)
	Finance (fin)	✓ Costello (cos)	✓ Kreiss-Tomkins (kre)	✓ Dunleavy (dnl)
	Health & Social Services (hss)	✓ Drummond (dru)	✓ LeDoux (leu)	✓ Dyson (dys)
	Judiciary (jud)	✓ Edgmon (edg)	✓ Lynn (lyn)	✓ Egan (ega)
	Labor & Commerce (l&c)	✓ Feige (fei)	✓ Millett (mil)	✓ Ellis (ell)
	Resources (res)	✓ Foster (fon)	✓ Munoz (mun)	✓ Fairclough (fai)
	Rules (rls)	✓ Gara (gar)	✓ Nageak (nag)	✓ French (fre)
	State Affairs (sta)	✓ Gattis (gat)	✓ Neuman (neu)	✓ Gardner (gan)
	Transportation (tra)	✓ Gruenberg (gru)	✓ Olson (oll)	✓ Giessel (gie)
	Other:	✓ Guttenberg (gtt)	✓ Pruitt (pru)	✓ Hoffman (hof)
		✓ Hawker (haw)	✓ Reinbold (rel)	✓ Huggins (hug)
		✓ Herron (heo)	✓ Saddler (sad)	✓ Kelly (kep)
	Special Committees	✓ Higgins (hig)	✓ Seaton (san)	✓ McGuire (mcg)
	Econ Dev., Trade & Tourism	✓ Holmes (hol)	✓ Stoltze (stz)	✓ Meyer (mey)
	House Energy	✓ Hughes (hus)	✓ Tarr (tar)	✓ Micciche (mhe)
✓	Fisheries	✓ Isaacson (isn)	✓ Thompson (thp)	✓ Olson (ols)
	Military & Veterans' Affairs	✓ Johnson (jhn)	✓ Tuck (tuc)	✓ Stedman (smn)
	Fiscal Policy	Josephson (jos)	✓ Wilson (wls)	✓ Stevens (stg)
	Senate World Trade	✓ Kawasaki (kaw)	✓ Wilson (wlt)	✓ Wielechowski (wie)

Subject: ***Fill out the boxes below OR enter a Subject.***

HB or SB	Bill number	*and check one:*			*enter a general Subject (LIO staff may modify):*
		✓	Support	**OR**	Reappoint Vince Webster to Fish Board
			Oppose		
			Amend		

Message: ***Your PRINTED message cannot exceed 50 words or contain any vulgar language.***

As	a	rural	resident	of
Dillingham + Bristol	Bay	I	urge	
support	for	Vince	Webster's	reappointment
to	the	Alaska	Board	of
Fisheries.	He	has	a	broad
knowledge	of	statewide	fisheries	issues
and	is	an	effective	spokesman
for	the	sustainability	of	Alaska's
commercial,	sport	and	subsistence	resources.



Alaska Trollers Association
130 Seward #205
Juneau, AK 99801
(907) 586-9400 phone
(907) 586-4473 fax
ata@gci.net

April 1, 2013

Representative Paul Seaton, Chairman
House Fisheries Committee
Alaska State Legislature
Juneau, AK 99811

Dear Representative Seaton and Committee Members:

The Alaska Trollers Association supports the re-appointment of Vince Webster and Tom Kluberton to the Alaska Board of Fisheries.

The members of our organization have had the opportunity to work with Vince Webster at two Southeast/Yakutat meetings and several statewide meetings and workshops. His gillnet and sportfishing experience has enabled him to readily understand many aspects of the fisheries in our region. While the complexities of the troll fishery appeared new to him, he has been studious on the issues and accessible to members of the public. These personal attributes, along with his years of experience as a Board member, lend a much needed constancy to the process in these challenging times.

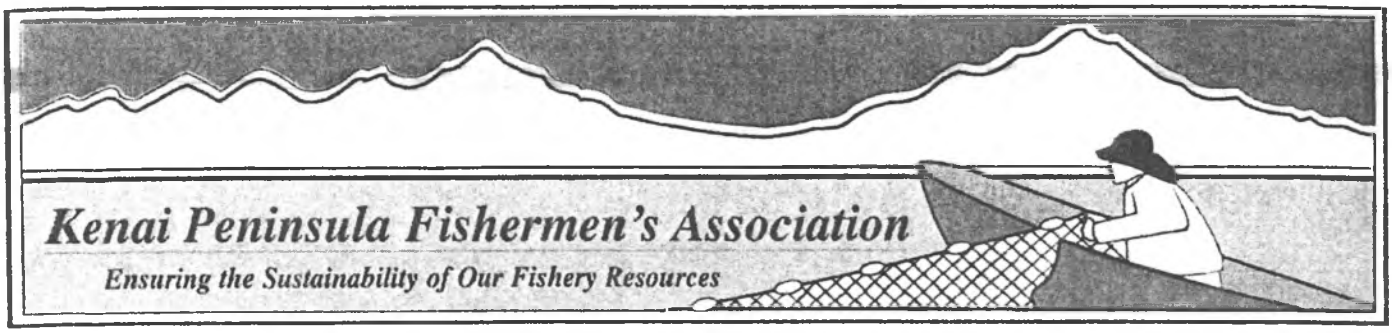
Mr. Kluberton has been an excellent addition to the Board of Fisheries. He is approachable and always seems well-prepared, despite the volumes of information Board members must digest prior to and during each meeting. His remarks are cogent and thoughtful during deliberations, and it is apparent that he has a strong commitment to Alaska's sustainable resource management principals.

ATA believes that both these men are fine candidates for the Board of Fisheries. They are precisely the type of individuals that the state should encourage to serve in this important forum. We urge you to support the re-appointment of Vince Webster and Tom Kluberton.

Best Regards,

Dale Kelley

Executive Director



43961 Kalifornsky Beach Road • Suite F • Soldotna, Alaska 99669-8276
(907) 262-2492 • Fax: (907) 262-2898 • E Mail: kpfa@alaska.net

State of Alaska
Representative Paul Seaton, Chair
House Special Committee on Fisheries
State Capitol, Room 102
Juneau, AK 99801-1182

Re: April 04, 2013 Testimony House Special Committee on Fisheries

Good morning Chairman Seaton, House Special Committee on Fisheries,

My name is Paul A. Shadura II; I am a resident of the Kenai Peninsula, today I am representing the Kenai Peninsula Fishermen's Association. Our organization has been representing commercial fishermen within the waters of Cook Inlet since 1954.

At present, our members represent primarily commercial setnet fisher families; although we also have members, who represent the processing industry, drift fisheries, supplies and the general public.

The KPFA Board of Directors voted unanimously on March 29, 2013 to support Governor Parnell's nominees for vacancies on the Alaska Board of Fisheries.

We have worked with Vince Webster, Tom Kluberton and Reed Morisky and find that all three are approachable, respectful and concerned about the sustainability of our State's fisheries resources, this objective happens to be KPFA's mission statement, *"Ensuring the Sustainability of Our Fishery Resources"*.

Individually they expend the extra effort; to listen to stakeholders; to understand complex science; to strive for a "balance" of opportunities for traditional harvesters. A feat that requires not only a concern for conservation, but also to maintain an abundant yield of fisheries stocks so that all citizens can appreciate our State's resources.

Thank you
Paul A. Shadura II
Paul A. Shadura II, Board Director
For the Board of Directors, KPFA

From: Rep. Paul Seaton
Subject: FW: BOF Confirmation, KRLR Escapement Goal
Attachments: 04.04.2013 Testimony House Special Committee on Fisheries BOF Appointments.pdf; 04.03.13 2013 UCITF CIFF Defending Escapement Goal.pdf

From: Paul A. Shadura II [mailto:sabaka@ptialaska.net]
Sent: Wednesday, April 03, 2013 6:40 PM
To: Rep. Paul Seaton
Subject: BOF Confirmation, KRLR Escapement Goal

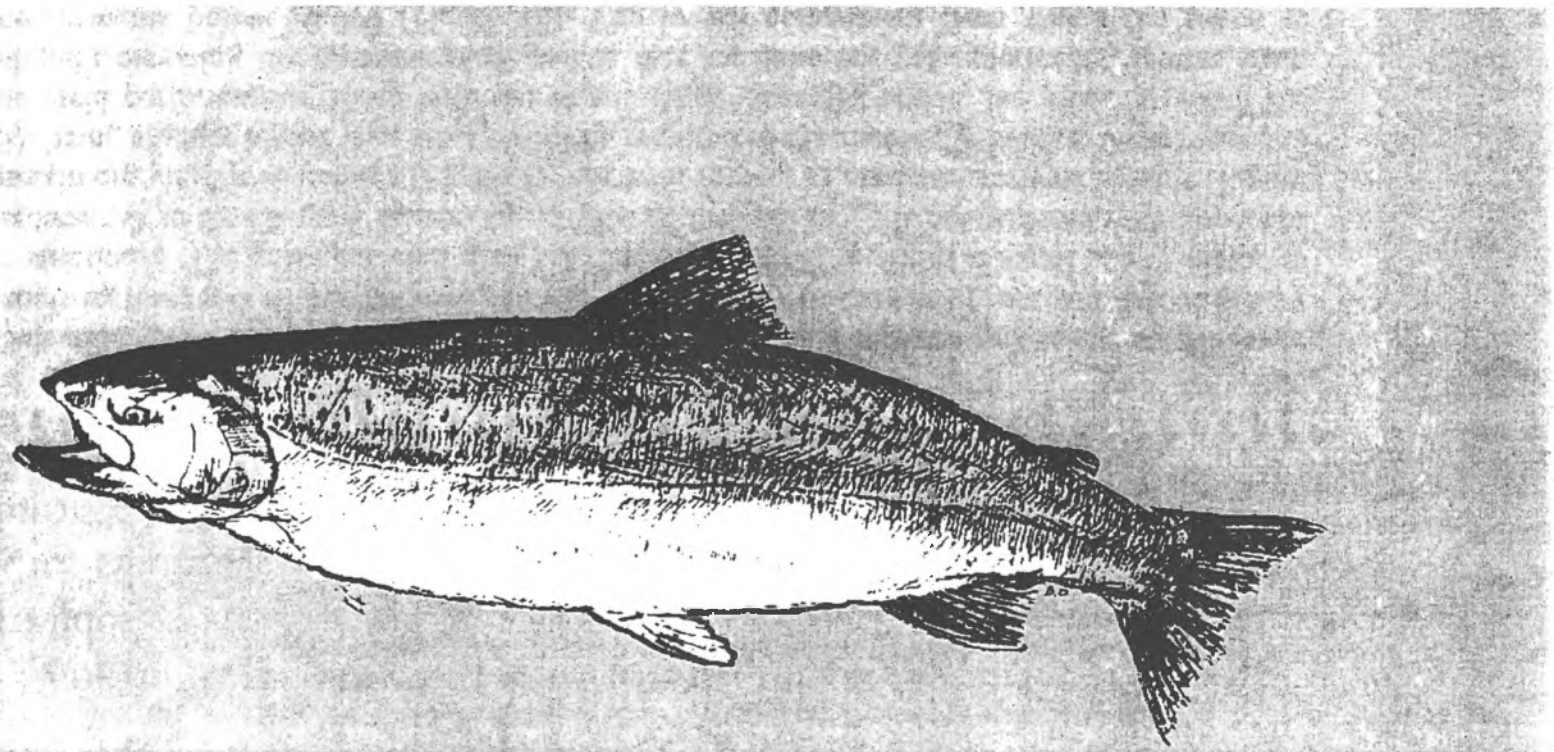
Representative Seaton

Please add this to the House Special Committee on Fisheries comments and information on the Alaska Board of Fisheries confirmation. We have supplied our testimony and support for all three appointees. Included is a brief power point submitted to the Cook Inlet Task Force on Kenai River Late Run King Salmon prepared by the Cook Inlet Fishermen's Fund group, their advisor is a retired fisheries biologist who has a unique insight on managing fisheries within Cook Inlet.

Thank you for your time,

Paul A. Shadura II
sabaka@ptialaska.net

DEFENDING 12,000



UNDERSTANDING ADF&G DATA

On Page 16 of the **Escapement Goal Report,** the recommended goal of 15,000 to 30,000 provides a "small safety factor" to reduce risk to the Chinook salmon stock. Without the "safety factor" the NEW SEG would be 12,000-28,000. (3,000 Chinook "safety factor")

Selection of an escapement goal always involves a tradeoff between risk to the stock (lower goals increase risk of overharvest) and risk to the fishery (higher goals increase risk of fishery restrictions). The recommended goal of 15,000 to 30,000 provides a small safety factor to reduce risk to the Chinook salmon stock. That is, the goal range is not centered with respect to maximum yield probabilities (Figure 8), nor with respect to expected sustained yields (Figure 9), being slightly higher than what would be required to symmetrically bracket these measures of yield performance. Along with the uncertainties discussed above, the primary reason for slightly elevating the recommended goal is that we have not yet experienced returns from escapements below 20,000 (Figure 12). The lowest escapement from which the return is complete was 23,830 (90% CI: 17,630-31,170) in 1997, which produced 59,000-88,370 (90% CI) returning adults (Table 4). Returns from the small 2009 escapement (22,320; 17,110-28,990) will commence as age-4 fish in 2013, and from the smaller 2010 escapement (16,320; 12,730-20,590) as age-4 fish in 2014 (Table 4).

This is a Yield Discussion

There is very little trade-off of yield between 22,000 escapement and 12,000.
This is **not** a biological risk.

DRAFT

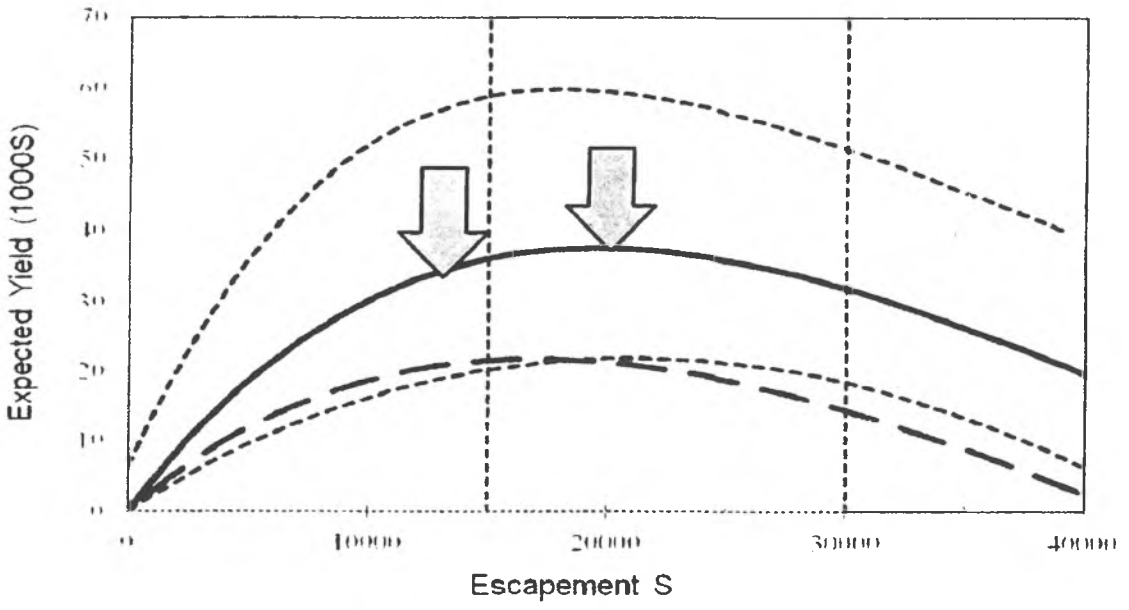


Figure 9.–Expected sustained yield (solid black line), and 80% interval (short dashed black lines) as a function of spawning escapement for late-run Kenai River Chinook salmon, assuming average productivity for brood years 1979–2008. Vertical lines bracket recommended escapement goal range. Expected sustained yield under recent, reduced productivity (brood years 2004–2008) is also shown (long dashed red lines).

This is a YIELD discussion

Escapement S	Return R	Sustained Yield SY
2000	10,720	8,480
4000	20,070	15,630
6000	28,070	21,560
8000	34,920	26,400
10000	40,890	30,220
12000	45,820	33,180
14000	49,940	35,320
16000	53,150	36,750
18000	55,790	37,470
20000	57,820	37,630
22000	59,240	37,260
24000	60,280	36,400
26000	60,930	35,190
28000	61,370	33,610
30000	61,210	31,760
32000	61,030	29,690
34000	60,600	27,380
36000	59,980	24,920
38000	59,220	22,290
40000	58,380	19,540
42000	57,490	16,690
44000	56,450	13,710
46000	55,210	10,650
48000	53,970	7,492
50000	52,660	4,236

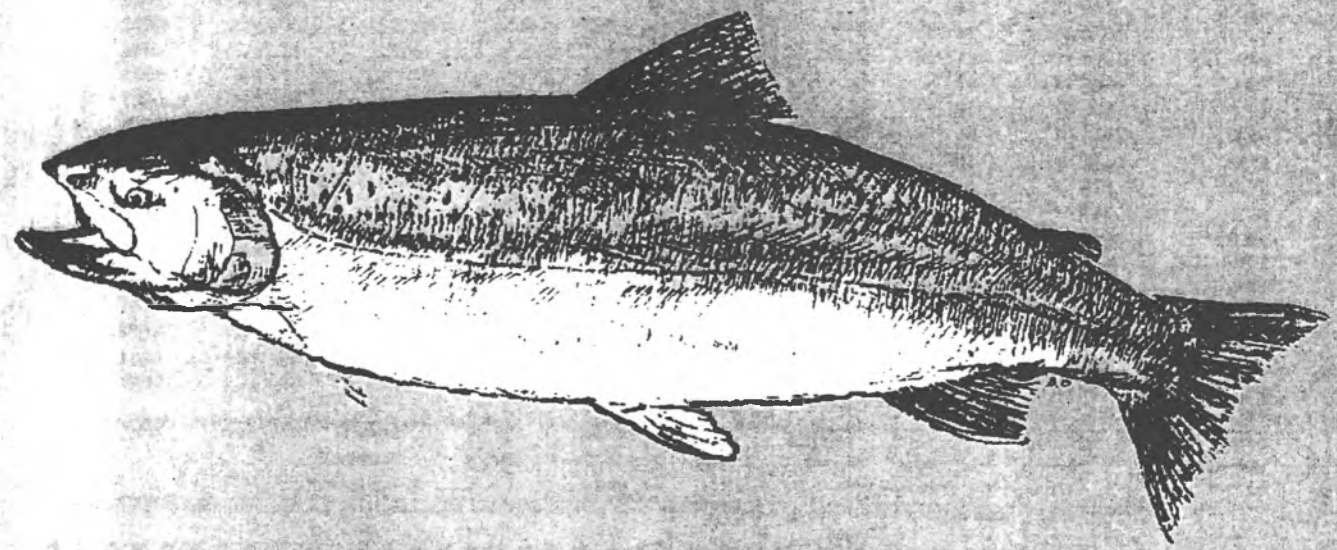
- **12,000** Escapement will produce a Return of 45,820 X 39% (Exp rate) =17,869 (Harvest)
  45,820(Return) - 17,869 (Harvest) = 27,951 (Escapement)
  27,951-12,000 =15,951 will <u>not</u> be harvested ***Why?***

- **22,000** Escapement will produce a Return of 59,240 x 39% (Exp rate) = 23,100 (Harvest)
  59,240(Run) - 23,100(Harvest) = 36,140 (Escapement)
  36,140-22,000 =14,140 will <u>not</u> be harvested ***Why?***

- 12,000 Escapement produces 33,180 Sustained Yield
  22,000 Escapement produces 37,260 Sustained Yield
  Difference in Sustained Yield of 4,080 Chinook that will <u>not</u> be harvested due to an exploitation rate of 39%.

  Why? There are limitations on **ALL** user groups which keeps the average exploitation rate at 39%. In order to increase exploitation rates to harvest excess fish, there would need to be an **increase** in bag limits, seasons and fisheries participation.

HARVEST RATES

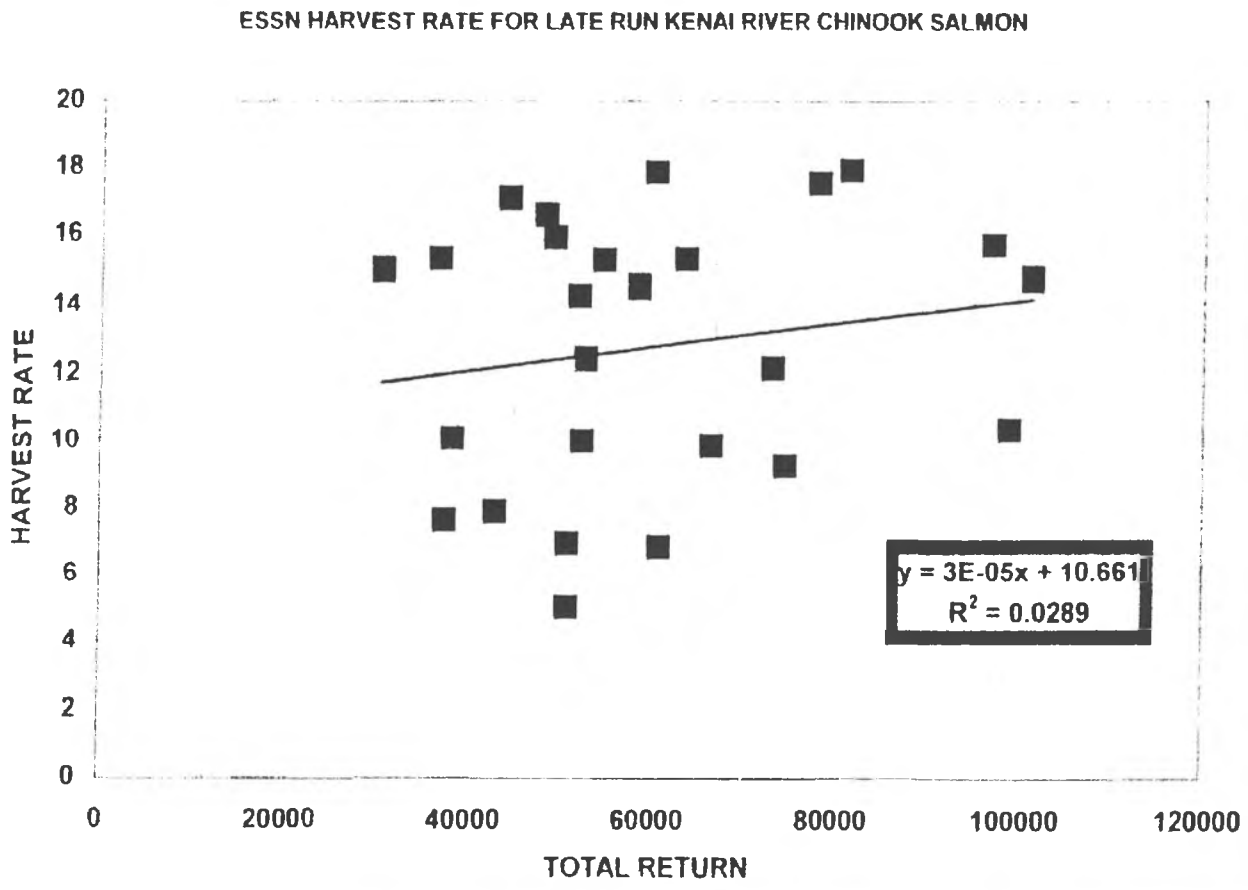


HARVEST RATES FOR ALL USER GROUPS

Kenai River late-run Chinook salmon total run, harvest by user group, and estimated exploitation rate, 1986-2012.

Year	Total Run	Deep Creek Marine Harvest	ESSN Kenai	Drift Gillnet Harvest	Pers Use	Ed. Fishery	Inriver Sport Harvest	Total Harvest	Exploitation Rate
1986	77,850	630	13,619	1,834			10,188	26,271	0.34
1987	81,300	1,218	14,536	4,561			13,223	33,539	0.41
1988	72,990	1,487	8,834	2,237			19,871	32,429	0.44
1989	44,020	1,368	7,498	0		22	9,779	18,668	0.42
1990	37,370	1,605	2,843	621	91	13	6,966	12,139	0.32
1991	42,820	1,705	3,161	246	130	288	7,919	13,649	0.32
1992	51,760	2,115	7,363	615	50	402	7,790	18,335	0.35
1993	63,420	2,834	9,672	765	129	27	18,253	31,680	0.50
1994	60,060	1,869	10,700	464	13	392	18,409	31,847	0.53
1995	54,450	2,069	8,291	594	36	646	13,081	24,717	0.45
1996	48,020	2,038	7,944	389	45	294	8,449	19,160	0.40
1997	48,960	2,931	7,780	627	339	26	13,325	25,028	0.51
1998	50,660	1,784	3,495	335	271	2	8,110	13,997	0.28
1999	52,520	1,004	6,501	575	488	4	14,277	22,849	0.44
2000	50,680	1,052	2,531	270	410	6	15,721	19,990	0.39
2001	60,780	920	4,128	619	638	8	17,305	23,618	0.39
2002	66,420	427	6,511	415	606	6	13,272	21,237	0.32
2003	98,870	200	10,174	1,240	1,016	11	18,746	31,388	0.32
2004	101,200	1,660	14,897	1,104	792	10	18,393	36,856	0.36
2005	96,880	1,040	15,183	1,958	775	11	19,481	38,449	0.40
2006	74,450	938	6,840	2,782	1,034	11	16,642	28,247	0.38
2007	58,360	797	8,445	912	1,509	6	12,111	23,780	0.41
2008	52,180	517	5,203	653	1,362	15	11,508	19,258	0.37
2009	38,190	256	3,839	859	1,189	4	9,662	15,809	0.41
2010	30,510	558	4,567	539	865	21	7,471	14,021	0.46
2011	36,650	880	5,596	593	1,243	5	7,831	16,148	0.44
2012	29,370	50	484	191	0	0	198	923	0.03
Mean	58,546	1,257	7,438	963	567	93	12,518	22,742	0.39
Average 1986-2011		2.1%	12.8%	1.5%	0.8%		21.8%		39%

HARVEST RATES FOR ESSN FISHERY

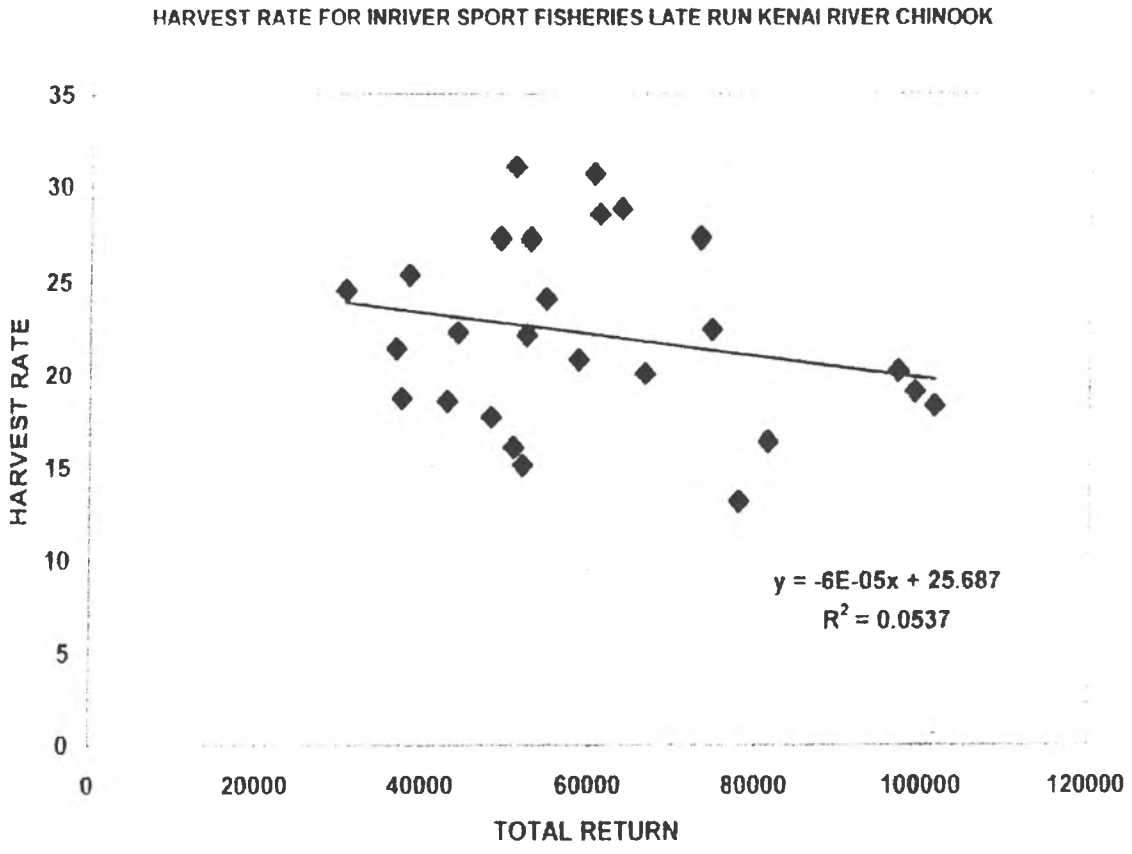


ESSN harvest rate is fairly constant.

You can see here over the years it ranges from 5% to 18% with an average of 13% regardless of total return.

ESSN do <u>not</u> harvest at higher rates on lower runs.

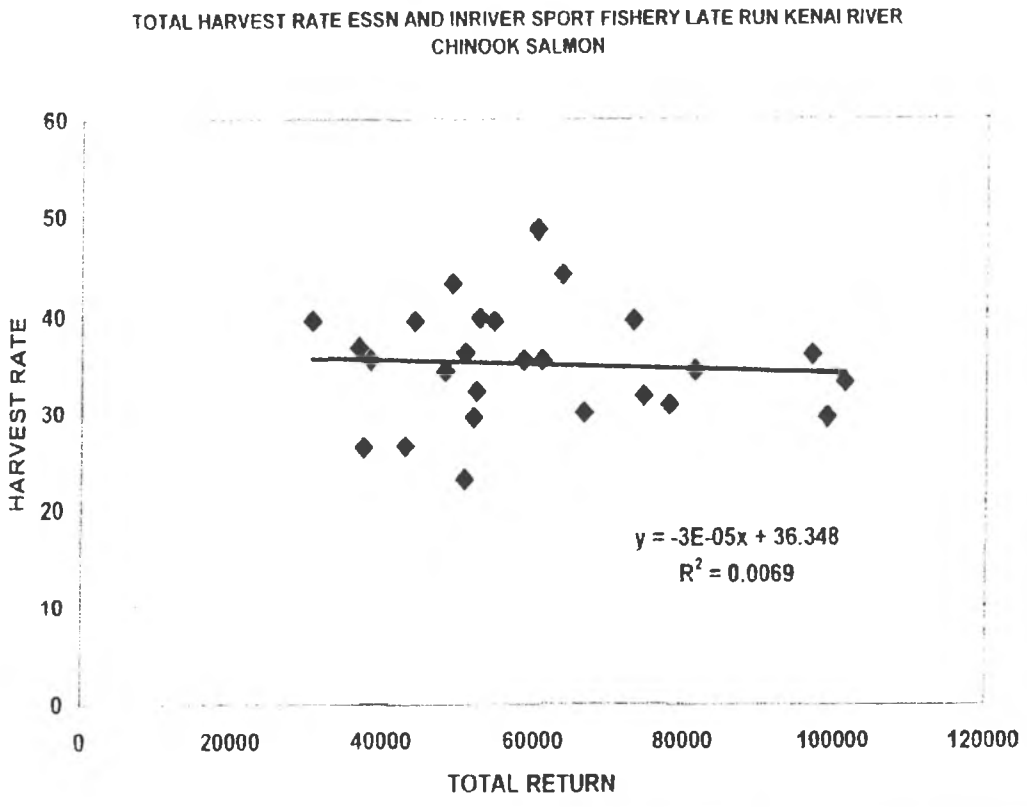
HARVEST RATES FOR IN RIVER SPORT FISHERY



In river sport harvest rate is also fairly constant.

You can see over the years it ranges from 13% to 31% with an average of 22%

HARVEST RATES FOR ESSN & INRIVER SPORT FISHERY

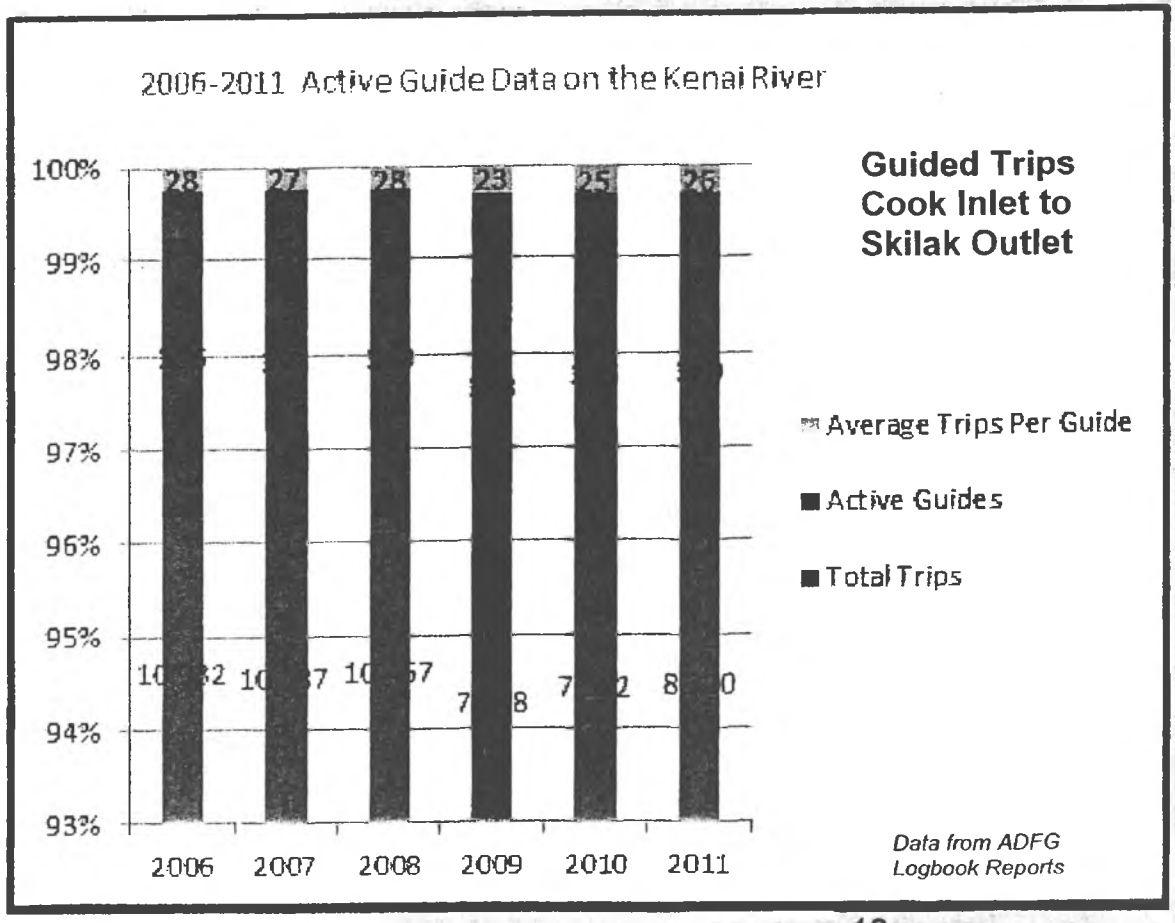


ESSN and In River Sport fisheries harvest at an average harvest rate of 35% and is constant across all total returns measured.

(39% with ALL user groups fishing)

A total return of **20,000** Chinook with ALL fisheries fishing regularly will produce a spawning escapement of **12,200.**

Guided Trips On The Kenai River



Average Trips per Guide ***does not*** decrease when chinook restrictions are in place.

Looking Ahead

Will we have a better *crystal ball* in 2013?

In 2012 ADF&G projected **14,000** but what really showed up in 2012 was **29,000.** That is **100% error** at a critical time in our fisheries. In 2012 with 29,000 total run **ALL** fisheries could have fished normally with a 39% harvest rate and we would have had a 17,690 spawning escapement.

New Sonar Location

New Escapement Goal



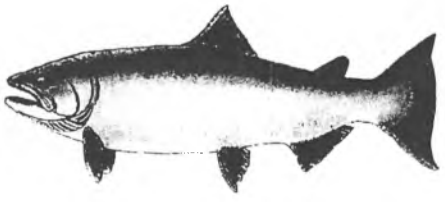
New Task Force Recommendations

New Run Timing Model

SALMON ARE RESILIENT

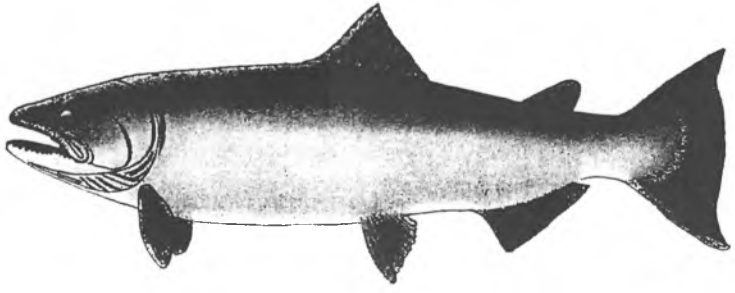
Total Return is made up of 3,4,5,6 year old fish

2011



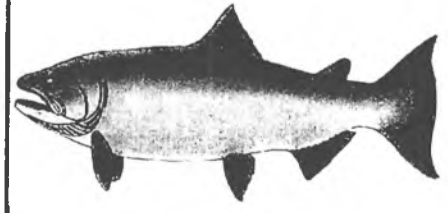
Spawning escapement of
20,290

2012



Spawning escapement of
28,440

2013



Spawning escapement of
17,690

2012 was a GREAT BUFFER for 2013

Subject: FW: Support for Vince Webster to Alaska Board of Fisheries

From: Fritz Johnson [mailto:osprey907@gmail.com]
Sent: Thursday, April 04, 2013 9:47 AM
To: Louie Flora
Subject: Support for Vince Webster to Alaska Board of Fisheries

House Fisheries Committee,

I want to add my name to those supporting Vince Webster's reappointment to the Alaska Board of Fisheries. As a long-time commercial fisherman in Bristol Bay and a frequent participant at Board of Fisheries proceedings, it's important to me that Bristol Bay have an effective voice in Board of Fisheries deliberations. I haven't always agreed with Mr. Webster's positions on Bristol Bay issues, but I do have confidence in his understanding of the Board's statewide mandate to manage commercial, sport and subsistence fisheries for sustainability, and his ability to provide a brroad understanding of Bristol Bay issues to the Board and public. I'd urge that the committee support his reappointment.

Thank you, sincerely,

Fritz Johnson
Dillingham

House Committee Report

CONFIRMATION

Action date: 4/4/13

The **House Special Committee on Fisheries** has reviewed the qualifications of the Governor's appointee(s) as shown on the attached Referral for Confirmation forms(s) and recommends that the name(s) be forwarded to a joint session for consideration:

This does not reflect intent by any of the members to vote for or against this individual during any further sessions for the purposes of confirmation.

Signature:	Printed Last Name
	HERRON
	Gattis
	OLSON
Chair: Paul Seaton	SEATON

Please attach appointee Referral for Confirmation form(s) and return to the Chief Clerk's Office.

Alaska State Legislature

House of Representatives

Office of the Chief Clerk

Official Business

State Capitol
Juneau, AK 99801-1182
Phone: (907) 465-3725
Fax: (907) 465-5334

REFERRAL FOR CONFIRMATION

Date Referred: **Monday 28, 2013**

Committee: **House Special Committee on Fisheries**

Board of Fisheries
Thomas Kluberton – Talkeetna
Appointed: 7/1/2010
Reappointed: 7/1/2013 Term Expires: 6/30/2016

Action Date: 4/4/13
(Same date as on the accompanying signature page)

Note: Attach to a signature page and return to the Chief Clerk's office.

Alaska State Legislature

House of Representatives

Office of the Chief Clerk

Official Business

State Capitol
Juneau, AK 99801-1182
Phone: (907) 465-3725
Fax: (907) 465-5334

REFERRAL FOR CONFIRMATION

Date Referred: **Monday 28, 2013**

Committee: **House Special Committee on Fisheries**

Board of Fisheries

Claude V. Webster - King Salmon
Appointed: 7/1/2007 Reappointed: 7/1/2010
Reappointed: 7/1/2013 Term Expires: 6/30/2016

Action Date: 4/4/13
(Same date as on the accompanying signature page)

Note: Attach to a signature page and return to the Chief Clerk's office.

HB

18

<TARGET><BILL>HB 18</BILL><SUBJECT>HB
18</SUBJECT><COMM>HFSH28</COMM></TARGET>

35,000

28-LS0129\A

HOUSE BILL NO. 18

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-EIGHTH LEGISLATURE - FIRST SESSION

BY REPRESENTATIVES STOLTZE, HUGHES, AND KELLER, Tuck, Thompson

Introduced: 1/16/13
Referred: House Special Committee on Fisheries, Resources

A BILL

FOR AN ACT ENTITLED

"An Act providing priority to personal use fisheries when fishing restrictions are implemented to achieve a management goal."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

*** Section 1.** AS 16.05.251 is amended by adding a new subsection to read:

(j) Except as provided in AS 16.05.258, when the harvest of a stock or species is limited to achieve a management goal, the Board of Fisheries shall place restrictions on all other fisheries before restricting personal use fisheries. In this subsection, "management goal" means the escapement or estimated population size of the exploited stock that provides the greatest potential for sustained yield as established by the board.

salmon

ALASKA STATE LEGISLATURE

Co-Chair:
House Finance Committee

Chair:
House Finance Subcommittees for;
Alaska Court System
Fish & Game

Member:
Legislative Council
Committee on Committees
Legislative Budget & Audit (alt)

BILL STOLTZE
STATE REPRESENTATIVE
Representative.Bill.Stoltze@akleg.gov

Session:
Alaska State Capitol, Rm 515
Juneau, AK 99801-1182
Phone: (907) 465-4958
Fax: (907) 465-4928

District:
600 E. Railroad Ave.
Wasilla, AK 99654
Phone: (907) 376-4958
Fax: (907) 376-4928

Toll Free: 1-866-465-4958

Sponsor Statement
For House Bill 18
by Representative Bill Stoltze

"*An Act providing priority to personal use fisheries when fishing restrictions are implemented to achieve a management goal.*"

Insuring that residents have access to Alaska's fisheries resources is vitally important as we continue to grow as a state. Right now, user groups are growing both in size and number, splitting the allocation of our resources into smaller percentages. However, one thing all Alaskans can agree on is that we should have a priority over people coming from elsewhere in the country and the world to utilize and harvest our fisheries resources.

Fisheries that are restricted to residents only are meant to enable Alaskans to access their fisheries resources for their personal use and consumption. Currently, there are many personal use fisheries throughout the state. Excluding the priority that is already contained within statute for subsistence, HB 18 directs the Board of Fisheries to place restrictions on sport and commercial fisheries before putting restrictions on personal use fisheries when the harvest of a stock or species is limited to achieve an escapement goal.

I ask for your consideration and support of HB 18 so Alaskans can be assured that they will continue to have access to their fisheries resources to the benefit of themselves and their families.

Rec. 16.05.251 - Regulations of the Board of Fisheries

(a) The Board of Fisheries may adopt regulations it considers advisable in accordance with AS 44.62 (Administrative Procedure Act) for

(1) setting apart fish reserve areas, refuges, and sanctuaries in the waters of the state over which it has jurisdiction, subject to the approval of the legislature;

(2) establishing open and closed seasons and areas for the taking of fish; if consistent with resource conservation and development goals, the board may adopt regulations establishing restricted seasons and areas necessary for

(A) persons 60 years of age and older to participate in sport, personal use, or subsistence fishing; or

(B) persons under 16 years of age to participate in sport fishing;

(3) setting quotas, bag limits, harvest levels, and sex and size limitations on the taking of fish;

(4) establishing the means and methods employed in the pursuit, capture, and transport of fish;

(5) establishing marking and identification requirements for means used in pursuit, capture, and transport of fish;

(6) classifying as commercial fish, sport fish, guided sport fish, personal use fish, subsistence fish, or predators or other categories essential for regulatory purposes;

(7) watershed and habitat improvement, and management, conservation, protection, use, disposal, propagation, and stocking of fish;

(8) investigating and determining the extent and effect of disease, predation, and competition among fish in the state, exercising control measures considered necessary to the resources of the state;

(9) prohibiting and regulating the live capture, possession, transport, or release of native or exotic fish or their eggs;

(10) establishing seasons, areas, quotas, and methods of harvest for aquatic plants;

(11) establishing the times and dates during which the issuance of fishing licenses, permits, and registrations and the transfer of permits and registrations between registration areas is allowed; however, this paragraph does not apply to permits issued or transferred under AS 16.43;

(12) regulating commercial, sport, guided sport, subsistence, and personal use fishing as needed for the conservation, development, and utilization of fisheries;

(13) requiring, in a fishery, observers on board fishing vessels, as defined in AS 16.05.475 (d), that are registered under the laws of the state, as defined in AS 16.05.475 (c), after making a written determination that an on-board observer program

(A) is the only practical data-gathering or enforcement mechanism for that fishery;

(B) will not unduly disrupt the fishery;

(C) can be conducted at a reasonable cost; and

(D) can be coordinated with observer programs of other agencies, including the National Marine Fisheries Service, North Pacific Fishery Management Council, and the International Pacific Halibut Commission;

(14) establishing nonexclusive, exclusive, and superexclusive registration and use areas for regulating commercial fishing;

(15) regulating resident or nonresident sport fishermen as needed for the conservation, development, and utilization of fishery resources;

(16) requiring unlicensed fishing vessels present in or transiting the waters of the state to report to the department the quantity, species, and origin of fish on board; in this paragraph, "unlicensed fishing vessel" means a fishing vessel that is not licensed under AS 16.05.490 - 16.05.530;

(17) promoting fishing and preserving the heritage of fishing in the state.

(b) [Repealed, Sec. 12 ch 52 SLA 1986].

(c) If the Board of Fisheries denies a petition or proposal to amend, adopt, or repeal a regulation, the board, upon receiving a written request from the sponsor of the petition or proposal, shall in addition to the

Rec. 16.05.251 - Regulations of the Board of Fisheries

requirements of AS 44.62.230 provide a written explanation for the denial to the sponsor not later than 30 days after the board has officially met and denied the sponsor's petition or proposal, or 30 days after receiving the request for an explanation, whichever is later.

(d) Regulations adopted under (a) of this section must, consistent with sustained yield and the provisions of AS 16.05.258 , provide a fair and reasonable opportunity for the taking of fishery resources by personal use, sport, and commercial fishermen.

(e) The Board of Fisheries may allocate fishery resources among personal use, sport, guided sport, and commercial fisheries. The board shall adopt criteria for the allocation of fishery resources and shall use the criteria as appropriate to particular allocation decisions. The criteria may include factors such as

(1) the history of each personal use, sport, guided sport, and commercial fishery;

(2) the number of residents and nonresidents who have participated in each fishery in the past and the number of residents and nonresidents who can reasonably be expected to participate in the future;

(3) the importance of each fishery for providing residents the opportunity to obtain fish for personal and family consumption;

(4) the availability of alternative fisheries resources;

(5) the importance of each fishery to the economy of the state;

(6) the importance of each fishery to the economy of the region and local area in which the fishery is located;

(7) the importance of each fishery in providing recreational opportunities for residents and nonresidents.

(f) Except as expressly provided in AS 16.40.120 (e) and 16.40.130, the Board of Fisheries may not adopt regulations or take action regarding the issuance, denial, or conditioning of a permit under AS 16.40.100 or 16.40.120, the construction or operation of a farm or hatchery required to have a permit under AS 16.40.100, or a harvest with a permit issued under AS 16.40.120.

(g) The Board of Fisheries shall consider a request of the commissioner for approval of a petition to the Alaska Commercial Fisheries Entry Commission to establish a moratorium on new entrants into a commercial fishery under AS 16.43.225 at the board's next regular or special meeting that follows the receipt by the board of the request for approval of the petition and that allows time for the notice required under this subsection. The board may consider the request of the commissioner for approval of the petition only after 15 days' public notice of the board's intention to consider approval of the petition. The board shall consider whether the commissioner, in support of the request for approval of the petition, has adequately shown that the fishery meets requirements for a moratorium on new entrants under AS 16.05.050 . The board by a majority vote of its members at the meeting when the petition must be considered shall approve or disapprove the petition.

(h) The Board of Fisheries shall adopt by regulation a policy for the management of mixed stock fisheries. The policy shall provide for the management of mixed stock fisheries in a manner that is consistent with sustained yield of wild fish stocks.

(i) Notwithstanding AS 16.43.140 (c)(5), the board may adopt, at a regularly scheduled meeting at which the board considers regulatory proposals for management of a specific salmon fishery, a regulation to allow a person who holds two entry permits for that salmon fishery an additional fishing opportunity appropriate for that particular fishery.

(j) Except as provided in AS 16.05.258, when the harvest of a stock or species is limited to achieve a management goal, the Board of Fisheries shall place restrictions on all other fisheries before restricting personal use fisheries. In this subsection, "management goal" means the escapement or estimated population size of the exploited stock that provides the greatest potential for sustained yield as established by the board.

Fiscal Note

State of Alaska
2013 Legislative Session

Bill Version: HB 18
Fiscal Note Number:
() Publish Date:

Identifier: HB018-DFG-CO-03-22-13
Title: PERSONAL USE FISHING PRIORITY
Sponsor: ** STOLTZE, HUGHES
Requester: House Special Committee on Fisheries

Department: Department of Fish and Game
Appropriation: Administration and Support
Allocation: Commissioner's Office
OMB Component Number: 2175

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2014 Appropriation Requested	Included in Governor's FY2014 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2014**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Fund Source (Operating Only)							
None							
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Positions							
Full-time							
Part-time							
Temporary							
Change in Revenues							

Estimated SUPPLEMENTAL (FY2013) cost: 0.0

Estimated CAPITAL (FY2014) cost: 0.0

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? No
If yes, by what date are the regulations to be adopted, amended or repealed?

Why this fiscal note differs from previous version:

Initial version.

Prepared By:	Ben Mulligan, Legislative Liaison	Phone:	(907)465-6137
Division	Commissioner's Office	Date:	03/22/2013 04:30 PM
Approved By:	Kevin Brooks, Deputy Commissioner	Date:	03/22/13
	Department of Fish and Game		

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2013 LEGISLATIVE SESSION

BILL NO. HB 18 \A

Analysis

House Bill 18 directs the Board of Fisheries to place restrictions on all other fisheries before restricting personal use fisheries when the harvest of a stock or species is limited to achieve a management goal. The priority for subsistence use and allocation of fish and game (AS 16.05.258) is exempted from the proposed prioritization laid out in HB 18.

It is assumed that any regulations that may need to be promulgated would occur during the Board of Fisheries normal board cycle and therefore would not have a fiscal impact upon any of the department's programs and/or operations.

Representative Paul Seaton, Chairman
House Special Committee on Fisheries
Alaska State Legislature
State Capitol, 120 Fourth Street
Juneau, AK 99801-1182
RE: HB 18 PERSONAL USE PRIORITIES, OPPOSE

Dear Chairman Seaton and Committee Members,

My name is Steve Merritt and I am a commercial fisherman living in Craig, Alaska. I oppose HB 18 which seeks to provide a priority for personal use fisheries second only to subsistence. I do not believe that such a priority is necessary or reflects the true nature of most personal use fisheries, nor does it allow for the orderly and sustainable management of our state's fisheries resources.

The most significant problem with HB 18 is that it ties the hands of the Alaska Board of Fisheries (BOF) and could confound sustainable fisheries management. Personal use fisheries are conducted in river and can have a significant impact on spawning stocks.

Subsistence fisheries have been granted highest priority in times of resource shortages, because they are intended to provide **the basic necessities of life** for rural residents. Personal use fisheries allow individuals to take finfish, shellfish, or aquatic plants, often at higher levels than sport fisheries, for use as food or bait by that individual or their immediate family.

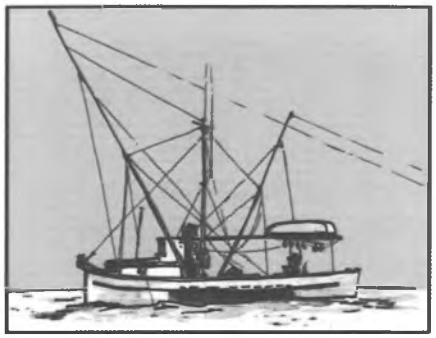
While the BOF intended that personal use fisheries not harm sport and commercial fisheries, they also provided ample opportunity for personal use fishermen when developing regulatory measures. This is revealed in harvest limits that far exceed what many Alaskans consider necessary for basic sustenance.

I question whether or not the current conduct of some of these fisheries actually meets the intended goal, which is to provide food and bait for individuals who need more than a basic sport license can provide. Unfortunately, what is obvious to many of us around the state is that despite extremely liberal management of personal use fisheries by the BOF, it's still not enough for some greedy personal use fishermen**?**

I do not deny that the personal use fishery is important to many Alaska residents, but giving personal use fisheries priority over other uses of the resource could negatively impact a great many more Alaskans than it will help. Sport and commercial fisheries, and the consumers served by the seafood industry, are part and parcel of the 'broader public interest'.
I oppose priority status for personal use fisheries and consider such a designation to be contrary to sound resource management.

Sincerely, Steve Merritt

Steve Merritt
Box 1138
Craig, Alaska 99921



Alaska Trollers Association
130 Seward #205
Juneau, AK 99801
(907)586-9400
ata@gci.net

February 1, 2013

Representative Paul Seaton, Chairman
House Special Committee on Fisheries
Alaska State Legislature
State Capitol
Juneau, AK 99801-1182

RE: Oppose HB 18 Personal Use Priority

Dear Representative Seaton and Committee Members:

The Alaska Trollers Association (ATA) opposes HB 18, which seeks to provide a priority for personal use fisheries second only to subsistence. Our members do not believe that such a priority is necessary or reflects the true nature of most personal use fisheries, nor does it allow for the orderly and sustainable management of our state's fisheries resources.

ATA represents the Southeast commercial troll fleet. Our members are professional hook and line salmon fishermen. The troll fleet is one of the largest salmon fleets in the state and is 85% resident. A large number of troll permit holders live in rural communities. Many of our members participate in other commercial, sport, personal use, and subsistence fisheries.

The most significant problem with HB 18 is that it ties the hands of the Alaska Board of Fisheries (BOF) and could confound sustainable fisheries management. Personal use fisheries are conducted inriver and can have a significant impact on spawning stocks. While personal use fishermen may harvest fewer fish compared to commercial, they still bear a responsibility to conserve the resource.

The BOF is the best forum to analyze with ADFG and the public the biological reasons for dips in salmon production, and then distribute the conservation burden proportionate to the impact of the fishery. From there, a system exists to allocate surplus production when stocks rebound. Allocation by the BOF is governed by a policy that has been in place since the early 90's.[1] The policy recognizes history of use and dependence by residents, and also allows for distinctions between guided and unguided harvesters, as approved by the legislature in 1992. This policy

[1] Board of Fisheries Allocation Criteria

provides ample opportunities for the BOF to protect important personal use needs for residents, while at the same time avoiding undue hardship on all other fisheries of importance to local communities. A full set of BOF policies can easily be found online.[2]

A troublesome aspect of the bill is that it would hold personal use fisheries above sport and commercial for regulatory and allocation purposes, no matter what the circumstance, which has never been the intent. No rationale has been provided by the makers of the bill through a public sponsor statement, so barring a persuasive argument we have not yet heard, ATA strongly opposes prioritizing personal use.

Subsistence fisheries have been granted highest priority in times of resource shortages, because they are intended to provide the basic necessities of **life** for rural residents.

Personal use fisheries allow individuals to take finfish, shellfish, or aquatic plants, often at higher levels than sport fisheries, for use as food or bait by that individual or their immediate family. Ostensibly, the higher bag and possession limits reflect the food and bait needs of residents who, for one reason or another, do not qualify for subsistence.

While our association supports the intent behind true personal use fisheries – to feed Alaskans - we question whether or not the current conduct of some of these fisheries actually meets the intended goal, which is to provide food and bait for individuals who need more than a basic sport license can provide. Sport and commercial fisheries also provide food for residents, are those needs not important?

Of the personal use permit holders, those who would appear to most need the liberal harvest limits are not necessarily the ones removing high volumes of fish. Let's look at the Chitina personal use fishery as an example.

The 2000 census counted 123 people, 52 households, and 30 families residing in the Chitina area. The Alaska Subsistence Fisheries 2003 Annual Report (ADFG, 2005), states that just 29 personal use permits were issued to Copper Basin residents. Of those, 19 fished, with a harvest of 232 fish and just 0.3% of the total Chitina personal use harvest (Table XII-5).

The vast majority of the fish caught in the Chitina personal use fishery were harvested by people traveling from the urban areas of Fairbanks (2,034 permits issued/ 28,949 fish caught) and Anchorage (1,475 permits issued/ 19,443 fish caught). Rounding out the top five communities harvesting in the Chitina personal use fishery were Delta Junction, Eagle River, and Eilsen Air Force Base (Table XII-5). Most of these communities can hardly be described as subsistence in nature, much less lacking significant opportunities to secure the basic **necessities of life. Yet that is essentially what granting a personal use priority would imply.**

What justifies granting personal use fishermen more protection than resident sport and commercial fishermen and their resident customers, who all rely on the same stocks?

[2] Board of Fisheries Findings and Policies

Most fishermen who travel to Chitina from urban communities are not low income. They often do so at great expense. Not only do they pay the cost of traveling a long distance to this remote community, they often secure the services of guides, water taxis, and custom process facilities. Those services are not cheap. This makes the need for personal use by such fishermen questionable to other Alaskans. There are personal use opportunities closer to Fairbanks and Anchorage, so the methods and means of harvest are neither efficient nor economic in terms of effort and cost. Obviously, these folks simply enjoy going to Chitina and bringing back lots of fish. Not a problem, but also not worthy of a higher priority than is granted to other fishermen.

The regulatory history of the Chitina dipnet fishery clearly shows that the Board of Fisheries considered it an area worthy of personal use designation, not special priority.

Over time, the BOF has established specific parameters around personal use fisheries, to delineate this use from subsistence and protect both the resource and other, longstanding fishing interests. When establishing the personal use category in 1981, the BOF made its intent quite clear with respect to personal use priority:

> 7. …It is the intent of the Board that subsistence, commercial, and sport users have a reasonable opportunity to take any surplus before a personal use fishery is allowed.

While the BOF intended that personal use fisheries would not harm sport and commercial fisheries, they also provided ample opportunity for personal use fishermen when developing regulatory measures. This is revealed in harvest limits that far exceed what many Alaskans consider necessary for basic sustenance. The Board's intention to be liberal in the application of personal use is also revealed in a memo to ADFG Commissioner Frank Rue dated March 21, 1996 from Assistant Attorney General Stephen Daugherty indicating that (*emphasis added*):

> …although *the proposal for creation of personal use fisheries presented to the Board of Fisheries was very restrictive, the board adopted a much less restrictive regulatory scheme for personal use fisheries*. As originally proposed, personal use fisheries could only be conducted where they would not negatively impact an existing resource use, and initial bag limits were proposed at very low levels. The board modified the proposed regulations to allow for the *provision of personal use fisheries if they were in the broad public interest*, and it also adopted bag limits based on amounts taken under subsistence regulations. *The board explicitly rejected some uses permissible under subsistence* regulations and provided that it was illegal to buy, sell, trade, or barter fish taken in a personal use fishery, but the board did not provide an explicit prohibition on sharing. See Board of Fisheries Proposal 107 (Apr. 1982); 5 AAC 77.010(b).

The legislature also took up personal use fisheries, as noted by Daugherty, and clearly stated that personal use fisheries were to be granted status equal to – not higher or lower than - other fisheries (*emphasis added*):

> *The record indicates that although personal use fisheries were not intended to have a priority over sport and commercial fisheries*, they were also not considered lower in

priority. The legislation treated personal use fisheries on the same basis as sport and commercial fisheries and subjected them to the same allocation criteria.

Unfortunately, what is obvious to many of us around the state is that despite extremely liberal management of personal use fisheries by the BOF, it's still not enough for some personal use fishermen from urban areas who seem more interested in putting their wants over the needs of the resource and fellow fishermen, Alaska consumers, and Alaska communities.

While we do not deny that the personal use fishery is important to many Alaska residents, including some that we represent, we note that giving personal use fisheries priority over other uses of the resource could negatively impact a great many more Alaskans than it will help. Sport and commercial fisheries and the consumers served by the seafood industry, are part and parcel of the 'broad public interest'. Our fisheries provide thousands of jobs and significant economic value to the state overall; for instance, through substantial general fund assessments on seafood landings. The impacts of initiatives like this, which chronically erode commercial fishing access, are felt by ALL of the state's citizens.

ATA opposes priority status for personal use fisheries and considers such a designation to be contrary to sound resource management; potentially harmful to other Alaskan residents; and, out of sync with the true intent that underpinned establishment of personal use fisheries.

Thank you for considering ATA's point of view. Please don't hesitate to contact me if I can provide additional information on this or other issues of concern to the commercial fishing industry.

Best regards,

Dale Kelley

Dale Kelley
Executive Director

Cordova District Fishermen United
PO Box 939 | 509 First Street | Cordova, AK 99574
phone. (907) 424 3447 | fax. (907) 424 3430
web. www.cdfu.org | email. cdfu@ak.net

January 31, 2013

Representative Paul Seaton
Special Committee on Fisheries
State Capitol, Room 102
Juneau, AK 99801-1182

Re: OPPOSE HB18 – Personal Use Fishing Priority

Dear Chairman Seaton and Committee Members:

I am writing on behalf of the Cordova District Fishermen United Board of Directors, our 300 members and their families to oppose HB18 – "Personal Use Fishing Priority".

The Alaska legislature has granted the Board of Fisheries the authority to manage Alaska's fisheries. The Board makeup includes a panel of representatives that are confirmed by legislature based on their ability to represent all fishery user groups using sound judgment. The Board of Fisheries has the authority and expertise to make decisions in the best interest of the State of Alaska to protect and preserve Alaska's fishery resources.

HB18 attempts to undermine and intrude on that authority.

CDFU respects the importance of Personal Use fisheries, however feels it is significant to point out why this special category was originally developed. In 1982, the Alaska legislature developed language to provide a special opportunity for Alaska residents to harvest salmon *when surplus fish stocks were available*. Since this time, Personal Use fisheries have evolved into an important part of the Alaskan lifestyle affording residents reasonable opportunity to supplement food they buy at the store with locally harvested seafood.

CDFU does not believe that Personal Use fisheries should be managed with any degree of priority over Alaska's long established and economically significant Commercial and Sport fisheries. Commercial, Personal Use & Sports fisheries need to share in the conservation burden to make sure our fisheries are sustainable into the future.

Just as overfishing is detrimental to salmon runs, overcrowding river systems with too large an escapement is equally damaging and it is important that managers have all the tools necessary to ensure a balanced system. Implementing HB18 only serves to take away one of the tools that

Cordova District Fishermen United
PO Box 939 | 509 First Street | Cordova, AK 99574
phone. (907) 424 3447 | fax. (907) 424 3430
web. www.cdfu.org | email. cdfu@ak.net

managers need to do their jobs: utilizing Commercial harvest data from early season fishery openers to assess run strength and timing.

There are more than 80 personal use fisheries across Alaska. Passage of this bill will force ADFG to revise management plans on an individualized basis for each of these fisheries. This will take time. This will cost money. Who is going to foot the bill?

No user group, with the exception of Subsistence, deserves a priority listing per the Alaska Constitution. Both Commercial and Sport fisheries are economically significant to Alaska. These fisheries create jobs. They stimulate Alaska's economy. They bring small communities to life, and support thousands of families across the State.

Legislative intervention is unnecessary and only serves to disrupt well-established and effective fishery management systems that are already in place.

Sincerely,

Alexis Cooper
Executive Director

UNITED FISHERMEN OF ALASKA

Mailing Address: PO Box 20229, Juneau AK 99802-0229
Physical Address: 410 Calhoun Ave Ste 101, Juneau AK 99801
Phone: (907)586-2820 **Fax:** (907) 463-2545
Email: ufa@ufa-fish.org **Website:** www.ufa-fish.org

February 1, 2013

Representative Paul Seaton, Chairman
House Special Committee on Fisheries
Alaska State Legislature
State Capitol, 120 Fourth Street
Juneau, AK 99801-1182

RE: HB 18 PERSONAL USE PRIORITY, OPPOSE

Dear Chairman Seaton and Committee Members,

United Fishermen of Alaska (UFA) represents 34 Alaska Commercial fishing organizations, and hundreds of individual fishermen and related businesses.

Fisheries management in Alaska is renowned throughout the world for its emphasis on sustainability. While most of the world long ago lost their historic runs of wild salmon, Alaska shows a remarkable history of restoring salmon runs throughout the state, after a long period of decline during the period before Alaska gained statehood.

Among the most important tools that have helped Alaska restore and retain healthy salmon populations are the Board of Fisheries process by which allocative actions are made on a case by case basis based on science and public input, and real time management by the Department of Fish and Game based on scientifically established escapement goal ranges.

Alaska's constitutional mandate to manage fisheries for the maximum benefit of its citizens requires careful consideration of the range of benefits that fisheries provide, including nutritional needs, history and usage by residents and non residents, importance to the economy of the state, region and local area, and recreational opportunity. These factors are considered for each regulatory proposal in the deliberative process of the Board of Fisheries, as well as management decisions of the Department of Fish and Game.

We strongly caution against creating a priority for personal use fisheries, because it will shift allocation and opportunity away from commercial fisheries that provide income to state and local governments, to fisheries that do not. It also would increase the perception of "entitlement" by Alaska residents to fisheries resources that are limited by nature. Commercial fishing provides the majority of the public with access to the resource.

Personal use fisheries are open to all Alaska residents, with only the requirement to hold a resident sport fishing license. As the population grows in one area of the state, the perceived entitlement to fisheries resources in other areas of the state that have established personal use fisheries pits one region against another.

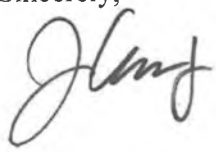
The intent by the Board of Fisheries in establishing Personal Use fisheries is clear in 5 AAC 77.001 (4) (b): "...allowed when that taking does not jeopardize the sustained yield of a resource and either does not negatively impact an existing resource use or is in the broad public interest." Since that time in 1981, we see extreme population growth primarily in one area of the state, and we can expect this to continue. We currently have 95 personal use fisheries that have been established throughout the state that are open to all residents. If HB 18 were to pass and establish a priority for the Personal Use fisheries over other uses (besides Subsistence), the growth of one region of the state will have detrimental impacts on other regions and historical patterns of use.

We are also concerned that such a priority would handcuff the Board of Fisheries and Department of Fish and Game in the ability to allocate and manage fisheries, and leave many allocative and management decisions open to lawsuit based on a perception of interference with a Personal Use fishery.

If Alaska is going to avoid the decline of salmon runs as has occurred elsewhere, we need to avoid the pattern of fighting over the fish, pitting one region or user group against another, while industrial development and population eliminate one stream or run at a time until the fish are gone.

We strongly urge this committee, and the Alaska State Legislature, to leave the prioritization of fishery allocations within the Board of Fisheries, and the management within the Department of Fish and Game.

Sincerely,



Julianne Curry
Executive Director

MEMBER ORGANIZATIONS
Alaska Bering Sea Crabbers • Alaska Independent Fishermen's Marketing Association
Alaska Independent Tendermen's Association • Alaska Longline Fishermen's Association • Alaska Scallop Association • Alaska Trollers Association
Alaska Whitefish Trawlers Association • Aleutian Pribilof Islands Community Development Association • Armstrong Keta • At-sea Processors Association
Bristol Bay Reserve • Cape Barnabas Inc. • Concerned Area "M" Fishermen • Cook Inlet Aquaculture Association • Cordova District Fishermen United
Douglas Island Pink and Chum • Groundfish Forum • Kenai Peninsula Fishermen's Association • Kodiak Regional Aquaculture Association •
North Pacific Fisheries Association • Northern Southeast Regional Aquaculture Association • Petersburg Vessel Owners Association
Prince William Sound Aquaculture Corporation • Purse Seine Vessel Owner Association • Seafood Producers Cooperative
Southeast Alaska Herring Conservation Alliance • Southeast Alaska Fisherman's Alliance • Southeast Alaska Regional Dive Fisheries Association
Southeast Alaska Seiners • Southern Southeast Regional Aquaculture Association • United Catcher Boats • United Cook Inlet Drift Association
United Southeast Alaska Gillnetters • Valdez Fisheries Development Association

Petersburg Vessel Owners Association

PO Box 232
Petersburg, AK 99833
Phone & Fax: 907.772.9323
pvoa@gci.net • www.pvoaonline.org

February 1, 2013

Alaska State Legislature
House Fisheries Committee
Representative Paul Seaton, Chair
State Capitol
Juneau, AK 99811

RE: Oppose HB 18

Dear Chairman Seaton and Fisheries Committee Members,

Petersburg Vessel Owners Association (PVOA) is a diverse group of over 100 commercial fishermen and businesses operating primarily in Southeast Alaska. Our members provide millions of meals to the public annually by participating in a variety of fisheries statewide including salmon, herring, halibut, cod, crab, black cod, shrimp, and dive fisheries. PVOA individual membership is made up of 94% Alaska residents who are also active sport, personal use, and subsistence fishermen who depend on sustainable and conservative management of Alaska's fishing resources to ensure healthy fisheries for the future. PVOA appreciates the opportunity to comment on HB 18.

PVOA has always supported the importance of personal use fisheries to the residents of the State of Alaska. However, **PVOA opposes HB 18**—*"An Act providing priority to personal use fisheries when fishing restrictions are implemented to achieve a management goal."* **Personal use fisheries need to be subject to limits and share in the burden of conservation along with commercial and sport fishermen.** HB 18, as written, mandates development of a personal use priority without any qualification. The subsistence priority statute, AS 16.05.258(f), clearly states the subsistence priority is to provide for a reasonable opportunity and AS 16.05.258(c) provides language that outlines the factors that must be considered to provide for a subsistence priority designation. **HB 18, as written provides no language on how and when a personal use designation will be implemented.** As the Alaska population continues to grow, the language as written will provide for a personal use priority that will ultimately close commercial and sport fisheries, regardless of the economic harm to the state or local communities, without any express concern over conservation.

This legislation, as written, conflicts with the allocation criteria between commercial, sport and personal use fisheries and severely restricts the Alaska Board of Fisheries from fulfilling their obligations delineated in AS 16.05.251. This legislation creates an elevated, and arguably exclusive right for personal use fishermen. As such, it could be used for legal challenges to any allocation decisions the Board of Fisheries makes that they feel makes any restrictions at all in personal use fisheries which is clearly in violation of the provisions of Article VIII of the Alaska State Constitution.

Thank you for the opportunity to comment on this legislation. If we can provide further information or answer any questions as you make this important decision, please feel free to contact us.

Sincerely,

Brian Lynch
Executive Director

Southeast Alaska Fishermen's Alliance

9369 North Douglas Highway
Juneau, AK 99801
Phone: 907-586-6652 Email: seafa@gci.net
Fax: 907-523-1168 Website: http://www.seafa.org



January 26, 2013

Alaska State Legislature
House Fisheries Committee
Representative Paul Seaton, Chair
State Capitol
Juneau, AK 99811

RE: Oppose HB 18

Representative Paul Seaton, Chair and Fisheries Committee Members,

Southeast Alaska Fishermen's Alliance (SEAFA) appreciates this opportunity to express our concerns regarding HB 18 which mandates a personal use priority after subsistence. Our association is comprised of 85% Alaskan residents, who participate in personal use and sport fisheries in addition to their commercial fishing livelihood. Southeast Alaska Fishermen's Alliance has always supported the importance of personal use fisheries to the residents of the State of Alaska as is evidenced by our testimonies to the Board of Fish. However, personal use fisheries also need to have limits and share in the burden of conservation along with commercial and sport fishermen.

This legislation as written is flawed. The subsistence priority statute AS 16.05.258 (f) clearly states that the subsistence priority is to provide for a reasonable opportunity. This legislative language mandates development of a personal use priority without any qualification. Further, it does not provide language, as the subsistence priority does, to share the resources with other users. As the Alaska population continues to grow, the language as written will ultimately close commercial and sport fisheries, regardless of the economic harm to the state or local communities, without any express concern over conservation in order to provide a personal use priority.

This legislation as written severely ties the hands of the Board of Fish preventing there ability to fulfill the obligations listed in AS 16.05.251. This legislation contradicts with the allocation criteria between commercial, sport and

personal use fisheries As written this legislation creates an elevated right for personal use fishermen, which can very easily be used in court to challenge any allocations that the Board of Fisheries makes in which they feel any restrictions at all during any part of the lifecycle. Clearly this violates fundamental precepts embedded in the Alaska Constitution, regarding Uniform Application, and Common Use.

Does this legislation even allow the Board of Fish to set limits or develop management plans that include the personal use fisheries?

At what point can management decisions affect the personal use fishermen and still allow commercial and sport fisheries to exist?

Would ADFG have to stand by and allow a system to fail to meet their management target because a commercial fishery had an opening so therefore the personal use fishery could not be restricted? In many fisheries it is not possible to allow a commercial fishery to wait until escapement is met and all personal use needs are met because by then the fish have swam past the point a commercial fishery can be conducted. Do we in these situations in order to provide for a personal use priority, forgo economic opportunity and close the commercial and sport fisheries? The current State of Alaska management system is considered superior to all other regions due to the public process through the board of fish and the end mandate for maximum sustained yield provided for in the State Constitution. Are we now going to ignore what has worked and take away the Board of Fish authority to allocate and ADFG flexibility to manage the resource in real time allowing for all users to share in the burden of conservation?

Commercial fishing is an important industry to the State of Alaska ranking third behind Oil & Gas and Federal Government in generating basic economic activity in **Alaska with a total economic contribution of $5.8 billion to Alaska's economic output and over 78,500 jobs. In addition, the raw fish taxes paid into the general fund and shared with the local coastal communities are critical to their economy.**

For many residents of coastal Alaska, their only access to our sustainable fishery resources to provide healthy protein to their diet is through the commercial fishery. Is it fair to take away their primary access?

There are allegedly businesses being built to supply, outfit and provide transportation for personal use fisheries. This seems to be in conflict with the original intent during development of the personal use fishery. We believe the original intent of the personal use fishery was to allow Alaskans access to fishery

resources in non-subsistence areas, or access to fisheries with negative C&T findings by providing differential bag limits than non-residents, because it was acknowledged that in many cases these Alaskans were using the resource to provide for their own family consumption.

Thank you for this opportunity to testify on this legislation. If you have any questions about our testimony or points raised in the testimony, please contact the office, we would be glad to provide additional information.

Sincerely,



Kathy Hansen
Executive Director

Sponsored by: Mayor DeVilbiss
Adopted: 02/19/13

MATANUSKA-SUSITNA BOROUGH
RESOLUTION SERIAL NO. 13-028

A RESOLUTION OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY SUPPORTING HOUSE BILL 18 TO PROVIDE PRIORITY TO PERSONAL USE FISHERIES.

WHEREAS, the Matanuska-Susitna Borough has a rich tradition of people living off the land from the original Matanuska colonists to the homesteaders who settled along the Susitna River Drainage; and

WHEREAS, personal use fishing is one of the means residents of the Matanuska-Susitna Borough depend on to provide food for their families; and

WHEREAS, Alaska's Constitution states that when occurring in their natural state, fish, wildlife and waters are reserved to the people for common use; and

WHEREAS, the Alaska Constitution states that fish belonging to the state shall be utilized, developed and maintained on the sustained yield principle, subject to preferences among beneficial uses such as personal use; and

WHEREAS, protecting personal use fisheries preference puts Alaskans first when Fish and Game makes management decisions.

NOW, THEREFORE, BE IT RESOLVED, that the Matanuska-Susitna Borough Assembly supports the adoption of House Bill 18.

ADOPTED by the Matanuska-Susitna Borough Assembly this 19 day of February, 2013.

LARRY DeVILBISS, Borough Mayor

ATTEST:

LONNIE R. McKECHNIE, CMC, Borough Clerk

(SEAL)

PASSED UNANIMOUSLY: Keogh, Woods, Arvin, Colligan, Salmon, Colver, and Halter

Rep Seaton,

This message is in support of HB 18.

Legislative action is requested to provide ordinary Alaskan residents with reasonable opportunities to efficiently fulfill their personal use fish needs.

Legislative action is needed because there is a strong, systemic, culture of bias within ADF+G and the Board of Fisheries that favors the commercial fishing industry. AS 16.05.251 d requires the board to provide fair and reasonable personal use fishing opportunities. Yet, they continually give the commercial fishing industry's interests priority over regular residents trying to fulfill their personal use fishing needs.

They provide very liberal personal use fishing opportunities for both resident and non-resident commercial fishermen. *5AAC 39.010 (a) allows any commercial fisherman to take unlimited amounts for personal use. Definitions - AS16.05.940 (5) and (25).*

However; they provide very limited or no reasonable personal use fishing opportunities for ordinary residents.

For example:

Commercial fishermen in SE are allowed an unlimited personal use take of king and coho salmon. However; 5AAC 77.682 c unfairly prohibits ordinary residents from any personal use fishing in SE for king and coho salmon. That's commercial fishermen unlimited fish, ordinary residents none.

If we have enough fish to allow commercial exploitation and unlimited personal use catch by commercial fishermen, we certainly have enough to allow ordinary residents an efficient opportunity to fulfill their personal use needs.

#1-The objective is to provide an efficient means for residents to fulfill their personal use needs.

#2- Resident and Non-Resident commercial fishermen are already allowed this opportunity. They are allowed unlimited PU take and routinely catch fish for their family and friends' "home pack".

#3 –Residents deserve the same opportunity to efficiently take personal use fish as afforded commercial fishermen.

Thanks,
Mike Fox
Juneau

From: Rep. Paul Seaton
Subject: FW: HB #18

From: Michael P McCarthy [mailto:silkair69@gmail.com]
Sent: Monday, March 25, 2013 10:48 AM
To: Rep. Paul Seaton
Subject: HB #18

Representative Seaton
I am opposed to HB # 18
Michael P. McCarthy

KENAI LEGISLATIVE INFORMATION OFFICE

Email: Kenai_LIO@akleg.gov

Phone: 907-283-2030 / Fax: 907-283-3075

WRITTEN TESTIMONY

NAME: Karen & Richard McGahan

REPRESENTING:

BILL # or SUBJECT: HB 18 Personal Use Fishing Priority

COMMITTEE: House Fisheries **DATE:** March 26, 2013

Regarding HB 18: Please defeat this bill.

HB 18 is a purely political move by a representative who does not live in the are impacted by the dip net fishery on the Kenai and Kasilof Rivers. Let the Fish and Game Department manage the fisheries.
It is hard enough for them to manage all the various fisheries with their biological data, without continually having to add in the political agendas of legislators.

Thank you,

Richard and Karen Mc Gahan

From: Rep. Paul Seaton
Subject: FW: OPPOSE HB18 Personal Use Fishing Priority

From: Lauren Padawer [mailto:lauren.padawer@gmail.com]
Sent: Monday, March 25, 2013 11:50 AM
To: Rep. Paul Seaton
Subject: Re: OPPOSE HB18 Personal Use Fishing Priority

Dear Chairman Seaton and Committee Members:

I am writing as a Cordova District Fishermen United member to oppose HB18 – "Personal Use Fishing Priority". I know that the Executive Director from CDFU, Alexis Cooper already submitted a letter on behalf of the 300+ members stating the following, but it was so well written, I'd like to echo what she said.

While the Alaska Constitution has granted the Alaska Legislature a right to affect fisheries management legislation, it is not the primary place to be making policy decisions. The legislature's role is only to serve as a check and balance on an *unbalanced* Board of Fisheries and should be considered a last line of defense to protect Alaskans interests. I believe the Governor has aptly appointed a panel of representatives on the current Board of Fisheries. These appointments are confirmed by legislature based on their ability to represent **all fishery user groups** using sound judgment. I believe the current Board of Fisheries has the authority and expertise to make decisions in the best interest of the State of Alaska to protect and preserve Alaska's fishery resources. I do not think the Alaska Legislature should be undermining BOF authority on decisions that have already been deliberated on. I consider it a waste of legislature's time and government spending.

HB18 attempts to undermine and intrude on BOF's authority.

As Alexis Copper pointed out,

"CDFU respects the importance of Personal Use fisheries, however feels it is significant to point out why this special category was originally developed. In 1982, the Alaska legislature developed language to provide a special opportunity for Alaska residents to harvest salmon when surplus fish stocks were available. Since this time, Personal Use fisheries have evolved into an important part of the Alaskan lifestyle affording residents reasonable opportunity to supplement food they buy at the store with locally harvested seafood. CDFU does not believe that Personal Use fisheries should be managed with any degree of priority over Alaska's long established and economically significant Commercial and Sport fisheries. Commercial, Personal Use & Sports fisheries need to share in the conservation burden to make sure our fisheries are sustainable into the future.

Just as overfishing is detrimental to salmon runs, overcrowding river systems with too large an escapement is equally damaging and it is important that managers have all the tools necessary to ensure a balanced system. Implementing HB18 only serves to take away one of the tools that managers need to do their jobs: utilizing Commercial harvest data from early season fishery openers to assess run strength and timing. There are more than 80 personal use fisheries across Alaska. Passage of this bill will force ADFG to revise management plans on an individualized basis for each

of these fisheries. This will take time. This will cost money. Who is going to foot the bill?

No user group, with the exception of Subsistence, deserves a priority listing per the Alaska Constitution. Both Commercial and Sport fisheries are economically significant to Alaska. These fisheries create jobs. They stimulate Alaska's economy. They bring small communities to life, and support thousands of families across the State. Legislative intervention is unnecessary and only serves to disrupt well-established and effective fishery management systems that are already in place."

As a CDFU member, commercial fisherman and Alaska resident, I couldn't agree more with these statements.

Sincerely,
Lauren Padawer
Area E Commercial Fisherman
F/V Canvasback

--
Lauren Padawer
office: PO Box 394, Cordova, AK 99574
phone/fax: 907.424.4695
cell: 314.853.8751
email: lauren.padawer@gmail.com

From: Rep. Paul Seaton
Subject: FW: Opposition to HB 18

From: Bill Bailey [mailto:fvshiloh@crsalaska.com]
Sent: Monday, March 25, 2013 1:38 PM
To: Rep. Paul Seaton
Subject: Opposition to HB 18

Dear Representative Paul Seaton, I am writing you this letter to show my opposition to HB 18. I don't believe that Personal Use fisheries should be managed with any preference over our Subsistence, Sport, or Commercial fisheries. When there is a shortage of fish, we all need to work to sustain the resource. Personal Use fisheries, unlike Sport and Commercial fisheries, do not bring economic benefit to the State of Alaska. The only priority access to the resource, should be Subsistence Fisheries, per the Alaska Constitution. I feel that we have a well-established management plan that is working now. I am a lifelong (67 years) resident, sport, personal use, commercial, and subsistence fisherman. I also am a Co-Owner of Copper River Seafoods, in Cordova Alaska. I would hope that you will speak out in opposition of HB 18.

Thank You Sir,

Bill Bailey

Bill Bailey III

Owner / Operations

Director of Value Added Products

300 Cannery Row

Cordova, AK 99574

Ph: 907-424-3721 Fax: 907-424-7435

Cell: 907-229-7923

bbailey@CopperRiverSeafood.com

www.CopperRiverSeafood.com

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From: Rep. Paul Seaton
Subject: FW: House Bill No. 18

From: dblakej40@aol.com [mailto:dblakej40@aol.com]
Sent: Monday, March 25, 2013 7:06 PM
To: Rep. Paul Seaton
Subject: House Bill No. 18

Chairman Sean and Committee Members:

I am e-mailing this to you with concer that this kind of legislation would disrupt a working system of managment that is in place and working for the good of all users. All users should be held accountable to conservation of any fisheries stock and share in that conservation.

All users share in the surplus when stocks are healthy and all users (with exception of susbistance users) should share in conservation when the stocks are in troubled times. Fisheries managers do a good job of sustaiability managment and need not have one more burden placed upon them in what is actually an allocation issue not a stock issue.

Sincerely
David Blake
Cordova AK

From: Rep. Paul Seaton
Subject: FW: HB 18

From: Bob Martinson [mailto:ramphoto99654@yahoo.com]
Sent: Tuesday, March 26, 2013 6:54 AM
To: Rep. Paul Seaton
Subject: HB 18

Dear Rep. Seaton please share this with those concerned,

HB 18 is a cheap way for a legislator to try and satisfy his constituency and does damage to the long-established Board of Fish authority to manage all fisheries. Management of all fisheries is absolutely necessary to sustain our salmon runs. The personal use fishery was established to offer fish to the Alaskan population ONLY in times of over-escapement into the river systems. It would be a disaster to allow the massive fleet of personal use fishermen to harvest salmon in a river system that is under concern of not making established escapement goals. This bill has been introduced for several years now, by Rep. Stolze to satisfy just a few people in his constituency with no concern for the sport or commercial fishermen who live in his district and across the state.

Thank you for your time and concern of this tremendously important resource.
Bob Martinson, lifelong fisherman, and former chair of CDFU's Gillnet division.

Bob Martinson
RAM Photography
(928)537-3953
ramphoto99654@yahoo.com
http://www.bobmartinson.photoshelter.com/

From: Rep. Paul Seaton
Subject: FW: HB 18

-----Original Message-----
From: William Lindow [mailto:williamlindow@gmail.com]
Sent: Monday, March 25, 2013 9:38 PM
To: Rep. Paul Seaton
Subject: HB 18

Representative Seaton

I want you to know I am opposed to HB 18 Personal Use Fishery Priority. I am a 35 year veteran commercial fisherman. I began fishing with my father in Cook Inlet in 1971, and on my own in Prince William Sound in 1978.
I see no valid justification for a priority for personal use. The category was created for residents to take advantage of times when surplus fish stocks were available. I believe that commercial, sport and personal use fisheries should share proportionally in the burden of fishery conservation.

I urge you to vote no on HB 18.

Respectfully,
William Lindow
P. O. Box 1612
Cordova, AK 99574

KENAI LEGISLATIVE INFORMATION OFFICE

Email: Kenai_LIO@akleg.gov

Phone: 907-283-2030 / Fax: 907-283-3075

WRITTEN TESTIMONY

NAME: Karen & Richard McGahan

REPRESENTING:

BILL # or SUBJECT: HB 18 Personal Use Fishing Priority

COMMITTEE: House Fisheries DATE: March 26, 2013

Regarding HB 18: Please defeat this bill.

HB 18 is a purely political move by a representative who does not live in the are impacted by the dip net fishery on the Kenai and Kasilof Rivers. Let the Fish and Game Department manage the fisheries.
It is hard enough for them to manage all the various fisheries with their biological data, without continually having to add in the political agendas of legislators.

Thank you,

Richard and Karen Mc Gahan

From: Rep. Paul Seaton
Subject: FW: OPPOSE HB18 Personal Use Fishing Priority

From: Lauren Padawer [mailto:lauren.padawer@gmail.com]
Sent: Monday, March 25, 2013 11:50 AM
To: Rep. Paul Seaton
Subject: Re: OPPOSE HB18 Personal Use Fishing Priority

Dear Chairman Seaton and Committee Members:

I am writing as a Cordova District Fishermen United member to oppose HB18 – "Personal Use Fishing Priority". I know that the Executive Director from CDFU, Alexis Cooper already submitted a letter on behalf of the 300+ members stating the following, but it was so well written, I'd like to echo what she said.

While the Alaska Constitution has granted the Alaska Legislature a right to affect fisheries management legislation, it is not the primary place to be making policy decisions. The legislature's role is only to serve as a check and balance on an *unbalanced* Board of Fisheries and should be considered a last line of defense to protect Alaskans interests. I believe the Governor has aptly appointed a panel of representatives on the current Board of Fisheries. These appointments are confirmed by legislature based on their ability to represent **all fishery user groups** using sound judgment. I believe the current Board of Fisheries has the authority and expertise to make decisions in the best interest of the State of Alaska to protect and preserve Alaska's fishery resources. I do not think the Alaska Legislature should be undermining BOF authority on decisions that have already been deliberated on. I consider it a waste of legislature's time and government spending.

HB18 attempts to undermine and intrude on BOF's authority.

As Alexis Copper pointed out,

"CDFU respects the importance of Personal Use fisheries, however feels it is significant to point out why this special category was originally developed. In 1982, the Alaska legislature developed language to provide a special opportunity for Alaska residents to harvest salmon when surplus fish stocks were available. Since this time, Personal Use fisheries have evolved into an important part of the Alaskan lifestyle affording residents reasonable opportunity to supplement food they buy at the store with locally harvested seafood. CDFU does not believe that Personal Use fisheries should be managed with any degree of priority over Alaska's long established and economically significant Commercial and Sport fisheries. Commercial, Personal Use & Sports fisheries need to share in the conservation burden to make sure our fisheries are sustainable into the future.

Just as overfishing is detrimental to salmon runs, overcrowding river systems with too large an escapement is equally damaging and it is important that managers have all the tools necessary to ensure a balanced system. Implementing HB18 only serves to take away one of the tools that managers need to do their jobs: utilizing Commercial harvest data from early season fishery openers to assess run strength and timing. There are more than 80 personal use fisheries across Alaska. Passage of this bill will force ADFG to revise management plans on an individualized basis for each

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As a CDFU member, commercial fisherman and Alaska resident, I couldn't agree more with these statements.

Sincerely,
Lauren Padawer
Area E Commercial Fisherman
F/V Canvasback

--

Lauren Padawer
office: PO Box 394, Cordova, AK 99574
phone/fax: 907.424.4695
cell: 314.853.8751
email: lauren.padawer@gmail.com

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Thank You Sir,

Bill Bailey

Bill Bailey III

Owner / Operations

Director of Value Added Products

300 Cannery Row

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Ph: 907-424-3721 Fax: 907-424-7435

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bbailey@CopperRiverSeafood.com

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From: Rep. Paul Seaton
Subject: FW: House Bill No. 18

From: dblakej40@aol.com [mailto:dblakej40@aol.com]
Sent: Monday, March 25, 2013 7:06 PM
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Sincerely
David Blake
Cordova AK

From: Rep. Paul Seaton
Subject: FW: HB 18

From: Bob Martinson [mailto:ramphoto99654@yahoo.com]
Sent: Tuesday, March 26, 2013 6:54 AM
To: Rep. Paul Seaton
Subject: HB 18

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Thank you for your time and concern of this tremendously important resource.
Bob Martinson, lifelong fisherman, and former chair of CDFU's Gillnet division.

Bob Martinson
RAM Photography
(928)537-3953
ramphoto99654@yahoo.com
http://www.bobmartinson.photoshelter.com/

From: Rep. Paul Seaton
Subject: FW: HB 18

-----Original Message-----
From: William Lindow [mailto:williamlindow@gmail.com]
Sent: Monday, March 25, 2013 9:38 PM
To: Rep. Paul Seaton
Subject: HB 18

Representative Seaton

I want you to know I am opposed to HB 18 Personal Use Fishery Priority. I am a 35 year veteran commercial fisherman. I began fishing with my father in Cook Inlet in 1971, and on my own in Prince William Sound in 1978.
I see no valid justification for a priority for personal use. The category was created for residents to take advantage of times when surplus fish stocks were available. I believe that commercial, sport and personal use fisheries should share proportionally in the burden of fishery conservation.

I urge you to vote no on HB 18.

Respectfully,
William Lindow
P. O. Box 1612
Cordova, AK 99574

Darrell Breese

From: RPC - Richard Person <rpc@gci.net>
Sent: Tuesday, March 18, 2014 10:05 AM
To: Rep. Bill Stoltze
Subject: HB 18

Mr. Stotlze, it may surprise you to know there are constituents in your area that oppose HB 18. The Board of Fisheries is the proper tool to manage the fisheries of Alaska, not politicians. You get to have your say in appointing members to the BOF, then let them do their job. Juneau needs to stay out of making fishery policy. Richard Person

Louie Flora New Correspondence From the Previous Hearing

From: highflytim@gmail.com on behalf of Robert Timmins <highflytimm@yahoo.com>
Sent: Monday, March 17, 2014 10:14 PM
Subject: Fwd: Fw: House Bill 18; RESPONSES MUST BE RECEIVED BY 8AM tomorrow!!

Follow Up Flag: Flag for follow up
Flag Status: Flagged

---------- Forwarded message ----------
From: **R T** <highflytimm@yahoo.com>
Date: Mon, Mar 17, 2014 at 10:07 PM
Subject: Fw: House Bill 18; RESPONSES MUST BE RECEIVED BY 8AM tomorrow!!
To: Robert Timmins <highflytim@gmail.com>

Greetings friends and neighbors,

For all you dip netters and fishermen, please take note and support our efforts to turn the tide of fishing in Southcental in our favor!!

Your effort and words WILL make a difference in this critical matter. Please take a moment to copy and past these comments on to Rep Stoltze or compose your own. It is that important to do. Your future fishing experience and success depends on it.

Thank you so much!
Robert Timmins
Eagle River

On Monday, March 17, 2014 7:51 PM, Bruce Morgan <sampson@acsalaska.net> wrote:
Please write a quick note to Rep Bill Stoltze;
Rep.Bill.Stoltze@akleg.gov

My letter is below, please do the same,
Something short and sweet works!!
Its all about numbers of responses receive.

COPY AND PASTE IT IF YOU WANT!!

From: Bruce Morgan [mailto:sampson@acsalaska.net]
Sent: Monday, March 17, 2014 7:45 PM
To: Subject: House Bill 18

HB 18, "An act providing priority to personal use fisheries when fish restrictions are implemented to achieve a management goal."

Representative Stolze,

My family of 5 believes it is in the best interest of the Alaskan Public to be provided "priority" in the PERSONAL USE fishery when fishing restrictions are implemented!
To be considered a participant in the Personal Use fishery, the person must be an ALASKAN resident!
NEED I SAY MORE?

Does our Political base understand that COMMERCIAL FISHING is only a TOOL to be used by the Department of Fish to STOP OVER-ESCAPEMENT of fish?
A Commercial fishing permit is not a RIGHT TO FISH.
The Commercial fishery is OWED NO FISH by owning a commercial permit.
The Commercial fishery IS JUST A TOOL available to the Dept of Fish to prevent over-escapement if needed.
THAT IS A FACT.

SO, why would we not have the personal use fishery open at ANY TIME a commercial fishery is open?

The personal use fishery should also be considered FIRST as a means of stopping over-escapement of sockeye or other species of salmon,
It should not be, commercial fishing….then personal use fishing
Anytime the personal use fishery is open, if this fishery cannot handle the abundance of fish and over-escapement is imminent,
THEN AND ONLY THEN should the commercial fleet be called on to fish!

Bruce R. Morgan and Family
Robin Childs, wife
Dependant Children; Cade, Colt, and Calie Morgan

6230 Petrified Tree Circle
Anchorage, Alaska 99507
907 346 4855

(I am also a member of the Anchorage Fish and Game Advisory Committee, these comments above are my own)

 This email is free from viruses and malware because avast! Antivirus protection is active.

--
"Our *Constitution* was made only for a *moral and religious people*. It is wholly inadequate to the government of any other." - *John Adams*

Louie Flora

From: Rep. Paul Seaton
Subject: FW: Support Alaskans and their Families HB 18

-----Original Message-----
From: paul holland [mailto:pcgholland@yahoo.com]
Sent: Monday, March 17, 2014 11:52 PM
To: Rep. Paul Seaton
Subject: Support Alaskans and their Families HB 18

Representative Seaton;

Please show support for Alaskans and their Families by supporting or at least allowing the progress of HB 18 out of your committee. As a Board Member of the Chitina Dipnetters I am all too aware of both the lack of Alaskans fishing commercially at Cordova and their priority over those Alaskans who dipnet at Chitina for themselves and their Families.

I ask you sir, do you favor out-state commercial fishery interests or Alaskans and their families? It is that simple. Your actions today in your committee will be answer enough for us all to hear.

Sincerely,

Paul Holland
Board Member Chitina Dipnetter
798 Capricorn
Fairbanks, Ak 99709
home 479-6624

Louie Flora

From: Rep. Paul Seaton
Subject: FW: HB 18

From: Lori Lee [mailto:leebrianandlori@gmail.com]
Sent: Wednesday, March 27, 2013 8:16 AM
To: Rep. Paul Seaton
Subject: HB 18

Representative Seaton
I would like to expess my opinion on House Bill 18. I am personally strongly against giving a favored status to personal use over commercial and sport fishing on the Copper river.
At a time when our economy is shaky at best why would we jepordize a strong and vibrant fishery like the Copper River. I have gillnetted on the Copper since 1985 and have been impressed with the degree of professionalism of our dept. of Fish and Game to manage the salmon fishery. I live in the Glacier View community where jobs are scarce and have depended on commercial fishing alone since 1972. In times of lower abundance I feel that ALL user groups should share the pain of cutbacks.

Thank you for allowing me to express my opinion on this matter.
Brian Lee

LIO Mat-Su

From: [redacted] <jepinak1959@yahoo.com>
Sent: Tuesday, March 18, 2014 8:17 AM
To: LIO Mat-Su
Subject: HB18

I should have the same chance at catching fish as anyone, as long as the commercial people are out there it's not possible. It takes a week after they are done for the fish to start showing up in the rivers, by then they're back in the lower 48 bragging about how they got all the fish and the personal use guys are standing on the banks with their hands in the air because the limits got cut!

Please give personal use fishermen a chance, pass HB18!

Gregory Prothero

MATSU LIO Fax 907-376-6180 Mar 17 2014 08:15pm P001

Hello my name is Patti Barber. Thank you for this opportunity to speak on HB 18 My husband and I live in the community known as Butte. Jim Creek is a popular fishing location and is close to the major population of this state. Families used to be able to fill their freezers or can their fish with a few trips to this destination. Not anymore. Fishing in Jim Creek during the past few years has been closed especially when it used to be the best time of the season to be there. I support HB 18 because, where in our State Constitution does it say we have to feed the rest of the world before we feed our Alaskan families? Thank you for your time on this important bill before you.

Patti Barber
17367 E Melin Rd
Palmer, Alaska 99645
(907) 745-4446

Alaska State Legislature

Please enter into the record my testimony to the Fisheries
Committee name

Committee on HB18 Bill/Subject, dated 3/18/14

HB18 clarifies constitutional intent to put Alaskans first. I support the bill and thank Rep. Stoltz and Rep. Gattis for sponsoring this bill.

Mat Su residents by the thousands depend on this fishery (both in Kenai and Chitna) for their own freezers.

Thanks Larry DeVilbiss

Signed: Larry DeVilbiss
Testifier

Representing (Optional)

Address

746-6593
Phone number

From: Rep. Paul Seaton
Subject: FW: HB #18

From: Michael P McCarthy [mailto:silkair69@gmail.com]
Sent: Monday, March 25, 2013 10:48 AM
To: Rep. Paul Seaton
Subject: HB #18

Representative Seaton
I am opposed to HB # 18
Michael P. McCarthy

Darrell Breese

From: Charlie Franz <charlie@xyz.net>
Sent: Monday, March 17, 2014 4:58 PM
To: Rep. Bill Stoltze
Subject: Personal Use Fisheries - HB 18

Honorable Representative Stoltze,

Thank you very much for standing up for the rights of the average Alaskan and not bowing down to the strong political influence of the commercial fishermen and commercial guides. For some reason, these two groups seem to think that the fish belong to them rather than being a resource to be shared by all Alaskans as our constitution provides.

I fully support allocating fish to the personal use sector in preference to the commercial users in times of shortage. If needed, personal use limits can be modified a bit to make sure that the needed number of fish are left in the rivers for spawning.

Respectfully,
Charlie Franz
Homer

Darrell Breese

From: Bob Howard <bobhoward@gci.net>
Sent: Monday, March 17, 2014 2:22 PM
To: Rep. Bill Stoltze
Subject: Dipnetting Legislation

Dip net fishing is extremely important to those of us who can participate in it. It is a food for my family. I support the legislation that puts it as a priority ahead of the other beneficial uses of the resource(HB18).
Robert Howard
629 Rangeview Ave.
Homer

Sent from my iPad

Darrell Breese

From: Tom Check <maximumak700@hotmail.com>
Sent: Tuesday, March 18, 2014 7:44 AM
To: Rep. Bill Stoltze
Subject: support for HB18

Dear Bill Stoltze, I am writing to express our family's strong support of your bill, HB18. Personal use salmon is a staple of our healthy Alaskan diet and dip netting for our food is an activity central to our Alaskan lifestyle. Thank you for your efforts on our behalf.

Sincerely yours,

Thomas and Donna Check
4380 East Crane Road
Wasilla, AK 99654
907-357-3862
3/18/2014

Darrell Breese

From: O'Connors <arleta@mtaonline.net>
Sent: Tuesday, March 18, 2014 7:37 AM
To: Rep. Bill Stoltze
Subject: HB18

Bill,
I support HB18 . We need fish in our freezer. Alaskans should come first.

Patrick O'Connor
Palmer

Darrell Breese

From: Kevin Sparrowgrove <brwng425@alaska.net>
Sent: Tuesday, March 18, 2014 7:17 AM
To: Rep. Bill Stoltze
Subject: House Bill #18

This is Kevin Sparrowgrove, Anchorage resident and Secretary of the Anchorage AC for fish and game.

I am writing in support of this bill for the personal use fishery and making it a priority when restrictions are need for escapement goals.

Kevin Sparrowgrove

4318 Mars Drive

Anchorage, AK 99507

344-7974

Darrell Breese

From: Neumann_Frank <Neumann_Frank@asdk12.org>
Sent: Tuesday, March 18, 2014 6:54 AM
To: Rep. Bill Stoltze
Subject: HB 18

Representative Stolze

Morning Bill, just letting you know that my family has been involved in the personal use fishery since the early 90's. I've witness this fishery growth over the years, and it's time that it have a priority over other fishery's.

Hope to see you support this House Bill 18.

Thanks for you Service.

Frank Neumann

P.O.Box 670683

Chugiak, Alaksa

99567

907-688-3953

Darrell Breese

From: Bruce Carter <brucec@mtaonline.net>
Sent: Tuesday, March 18, 2014 5:58 AM
To: Rep. Bill Stoltze
Subject: I support HB 18

Hello,
Just writing to let you know I support HB18. Personal use should have priority.
Thank you,
Bruce Carter
Sent from my iPhone

Darrell Breese

From: Don Dunavant <ddunavant@accg.biz>
Sent: Tuesday, March 18, 2014 5:58 AM
To: Rep. Bill Stoltze
Subject: Personal use fisheriy priority

Dear Rep Stoltze,

Please take the time to down to ground level in the knowledge of the management of the Alaska fish runs. As we all know, continuation of fishing be anyone is not a certainty, with survival of the runs as first priority.

However, if too many fish return, it is not good for the runs either. This is well documented.

The purpose of this email is to establish the thinking on how to keep the fish returns at a level healthy to the species.

As extra fish belong to the citizens for their personal consumption, the personal use fishery should be high priority in determining what groups get to harvest these extra fish. The Department of Fish and Game should be directed to conduct openings of both commercial fishing and personal use fishing with this in mind.

In a battle between commercial fisherman and personal use fisherman who actually own the fish, the priority should be clear.

Thank you very much for your attention to this matter.

Donald R. Dunavant

300 East 54th Ave.

Anchorage, Alaska 99518

Darrell Breese

From: Bert Thomas <thomasb@mosquitonet.com>
Sent: Tuesday, March 18, 2014 1:15 AM
To: Rep. Bill Stoltze
Subject: HB 18

HB 18 should be passed, it is a small step in the right direction to afford AK residents the opportunity to put fresh fish on their table with a little effort on their own part. The commercial fishery has been allowed to run rampant far too long and is no doubt why the King return has diminished to the level we see now. If something is not done soon the Reds and Silvers will be next.

Bert Thomas

FBKS, AK

Darrell Breese

From: Wendy S Nielsen <wendys.nielsen@gmail.com>
Sent: Monday, March 17, 2014 11:57 PM
To: Rep. Bill Stoltze
Subject: HB 18

Rep.Bill Stoltze,
One More e-mail backing your position on HB 18.
Thank You for your work!
Wendy S Nielsen
PO Box 81556
FBKS., AK 99708

WS

Darrell Breese

From: tparagi@alaska.net
Sent: Monday, March 17, 2014 11:47 PM
To: Rep. Bill Stoltze
Cc: Rep. David Guttenberg
Subject: support HB 18

Dear Representative Stoltz,

I engage in the personal use fishery for salmon and whitefish in the Tanana River and support HB 18. Thank you for sponsoring it.

Tom Paragi
1271 Lowbush Lane
Fairbanks, AK 99709
Goldstream Valley

Darrell Breese

From: David Alan <dhalan42@gmail.com>
Sent: Monday, March 17, 2014 11:26 PM
To: Rep. Bill Stoltze
Subject: support dipnetting rights

Representative Stoltze,

I am writing to thank you for your support already for dipnetting and registering my support as an Alaskan for your bill, HB 18. I'm embarrassed to admit it but this is the first time I've ever written a legislator in my life, but this issue goes to the heart of our freedom to partake in Alaska's fish and feed our families. We're watching from Fairbanks and we really support you on this!

Sincerely,
David Henry
1255 Wideview Road, Fairbanks, Alaska

Darrell Breese

From: Doug & Bruce <foam@mosquitonet.com>
Sent: Monday, March 17, 2014 10:56 PM
To: Rep. Bill Stoltze
Subject: HB 18

Representative Stoltze,

Thank you very much for your work on this bill concerning personal use fishing. It should be a priority for the elected representatives of the people to make sure common folks can obtain fish for their tables before the fish are allocated to sport and commercial interests. I think Representatives Kawasaki and Thompson know and agree with this and I hope you can convince the others how important it is. I've been utilizing the dipnet fishery for over 30 years and have many friends and relatives who have used it for as long and longer. This is definitely an issue to put the people before any special interests and voters are watching it closely and hoping for the best. Thank you again and good luck!

Respectfully,

Douglas Scott
P.O. Box 10220
Fairbanks, Ak 99710
907-388-2930

Darrell Breese

From: Ronald Kruckenberg <namu@alaska.net>
Sent: Monday, March 17, 2014 10:51 PM
To: Rep. Bill Stoltze
Subject: HB18

HB 18, "An act providing priority to personal use fisheries when fish restrictions are implemented to achieve a management goal."

Representative Stolze,
My family of 5 believes it is in the best interest of the Alaskan Public to be provided "priority" in the PERSONAL USE fishery when fishing restrictions are implemented!
To be considered a participant in the Personal Use fishery, the person must be an ALASKAN resident!
NEED I SAY MORE?

Does our Political base understand that COMMERCIAL FISHING is only a TOOL to be used by the Department of Fish to STOP OVER-ESCAPEMENT of fish?
A Commercial fishing permit is not a RIGHT TO FISH.
The Commercial fishery is OWED NO FISH by owning a commercial permit.
The Commercial fishery IS JUST A TOOL available to the Dept of Fish to prevent over-escapement if needed.
THAT IS A FACT.

SO, why would we not have the personal use fishery open at ANY TIME a commercial fishery is open?

The personal use fishery should also be considered FIRST as a means of stopping over-escapement of sockeye or other species of salmon,
It should not be, commercial fishing….then personal use fishing
Anytime the personal use fishery is open, if this fishery cannot handle the abundance of fish and over-escapement is imminent,
THEN AND ONLY THEN should the commercial fleet be called on to fish!

Zhenya Ogorodnikov
9130 Shady Bay Circle
Anchorage, Alaska 99507
907 244-4181

Darrell Breese

From: Ronald Kruckenberg <namu@alaska.net>
Sent: Monday, March 17, 2014 10:47 PM
To: Rep. Bill Stoltze
Subject: HB18

HB 18, "An act providing priority to personal use fisheries when fish restrictions are implemented to achieve a management goal."

Representative Stolze,
My family of 5 believes it is in the best interest of the Alaskan Public to be provided "priority" in the PERSONAL USE fishery when fishing restrictions are implemented!
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THEN AND ONLY THEN should the commercial fleet be called on to fish!

Ron Kruckenberg
9130 Shady Bay Circle
Anchorage, Alaska 99507
907-248-7931

Darrell Breese

From: Ronald Kruckenberg <namu@alaska.net>
Sent: Monday, March 17, 2014 10:12 PM
To: Rep. Bill Stoltze
Subject: Alaskan Dipnetting HB 18

To Whom it may concern,

In would like to recommend the passing of HB 18. This is exactly what Alaskan Residents should be receiving from our State Natural Resources.
I have dip netted since the begging for my family and life style as my parents have done before me. I would appreciate the First Choice we deserve from our fisheries.
I have been an Alaskan resident since 1973. This has been a food source and will always be a way of life.

Ron Kruckenberg
9130 Shady Bay Circle
Anchorage, Ak 99507

Darrell Breese

From: Kateryna Kruckenberg <katrina_74@mail.ru>
Sent: Monday, March 17, 2014 10:22 PM
To: Rep. Bill Stoltze
Subject: HB 18

My name is Kateryna Kruckenberg. I want to have the State pass this bill to give Alaskan Residents first rights to the dipnetting fishery. This is the natural food source in Alaska for Alaskans just like the Constitution says it should do. thank you.

Po Box 220591
Anch, Ak. 99517
907-248-7931

Darrell Breese

From: Ernie Viens <akpa12@hotmail.com>
Sent: Monday, March 17, 2014 10:20 PM
To: Rep. Bill Stoltze
Subject: Feeding my family

Sent from my iPhone
HB 18, "An act providing priority to personal use fisheries when fish restrictions are implemented to achieve a management goal."

Representative Stolze,
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To be considered a participant in the Personal Use fishery, the person must be an ALASKAN resident!
NEED I SAY MORE?
Thank You
Ernest Viens
Eagle River Alaska

Darrell Breese

From: R T <highflytimm@yahoo.com>
Sent: Monday, March 17, 2014 10:05 PM
To: Rep. Bill Stoltze
Subject: Language to prioritize personal use fishing/dipnetting HB 18

Hi Representative Stoltze,

The following is a letter Bruce Morgan (Anchorage F&G Advisory Committee) wrote and sent out. I really feel the way he does and cannot improve upon his wording and message, so I am putting my name to this letter in full support. Please add prioritizing Personal Use Fishing to Section 8 of the Alaska Constitution in plain language above all else. THANK YOU FOR ALL YOU DO in this area!!

HB 18, "An act providing priority to personal use fisheries when fish restrictions are implemented to achieve a management goal."

Representative Stolze,
My family of 5 believes it is in the best interest of the Alaskan Public to be provided "priority" in the PERSONAL USE fishery when fishing restrictions are implemented!
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NEED I SAY MORE?

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Anytime the personal use fishery is open, if this fishery cannot handle the abundance of fish and over-escapement is imminent,
THEN AND ONLY THEN should the commercial fleet be called on to fish!

Bruce Morgan
Anchorage
Robert Timmins
Eagle River, AK

Darrell Breese

From: Roger Penrod <pharmboy@gci.net>
Sent: Monday, March 17, 2014 10:01 PM
To: Rep. Bill Stoltze
Subject: Personal Use fisheries

Representative Stoltze,

You may want to consider the personal use fisheries as opposed to the commercial guys. State policies have favored the commercial use for way too long. The absolute demise of the Kenai River king fishery is a good example. Think about the residents of your state, not thye commercial interests.

Roger Penrod

10287 Halfhitch Circle

Anchorage, AK 99515

907-306-0546

Darrell Breese

From: John <sherlock@mtaonline.net>
Sent: Monday, March 17, 2014 9:45 PM
To: Rep. Bill Stoltze
Subject: HB18

This it to let you know the importance of HB18 to me and my family. Utilizing fish and game in this State is how I have fed my family for over thirty years. Prioritizing dip netting above commercial fishing allows my family and me to be assured of providing for our nutritional needs first. Having raised a child with special nutritional needs, with high medical costs, it would be reassuring that personal use fishing would allow the family budget to be supplemented through our personal gathering of fish, especially knowing that we aren't being shoved to the back of the line but instead recognized as the first user in times of lean as well as times of plenty Sent from my iPhone

Darrell Breese

From: peter linn <msp2ak@gci.net>
Sent: Monday, March 17, 2014 9:32 PM
To: Rep. Bill Stoltze
Subject: Personal use priority over commercial users

Rep Stoltze:
I would like to let you know that I would appreciate your support regarding a personal use priority over commercial interests. Those who Dipnetting for personal use generally do so to feed our families. Commercial take of this resource far outstrip the take of personal users and it is important that we recognize this and preserve personal access to our fish resources.
R/
Pete Linn
Eagle River, AK
907 854-7383

"Never ascribe to malice that which can be explained by incompetence, but don't rule out malice"
Robert Hanlon

Darrell Breese

From:	Mike Potter <pottermik@gmail.com>
Sent:	Monday, March 17, 2014 9:23 PM
To:	Rep. Bill Stoltze
Subject:	HB 18

1R

I just sent an email and forgot to include my address & phone.

Mike Potter
PO Box 80293
Fairbanks, AK 99708

907-479-3523

Darrell Breese

From: Mike Potter <pottermik@gmail.com>
Sent: Monday, March 17, 2014 9:19 PM
To: Rep. Bill Stoltze
Subject: HB 18

I support HB 18. I have lived in Alaska for 71 years and I fish at Chitina every summer. I think that Alaska residents should have priority over all of our resources. Thanks.

Mike Potter

Darrell Breese

From: brian bohman <bohmanbd@hotmail.com>
Sent: Monday, March 17, 2014 8:56 PM
To: Rep. Bill Stoltze
Subject: I Support HB18 Personal Use Fishery

brian bohman
8474 e new hope St
palmer ak 99645
9077459038

Darrell Breese

From: Paula & Robert Caywood <cmmgen@mtaonline.net>
Sent: Monday, March 17, 2014 8:52 PM
To: Rep. Bill Stoltze
Subject: HB18

Sounds like a great bill for Alaskans, if we can fix our access issues next that would be really great.

Robert Caywood

CMM General Contractors, LLC

907-317-0231

Darrell Breese

From: Kelly Gordon <sksgordon@icloud.com>
Sent: Monday, March 17, 2014 8:37 PM
To: Rep. Bill Stoltze
Subject: HB 18 support

Representative Stoltze,
Thank you for your support of HB 18, "An act providing priority to personal use fisheries when fish restrictions are implemented to achieve a management goal."
We are members of AOC and AOAA and are fully in support of the intent of the bill.
Thank you,
Kelly and Steve Gordon
1942 Commodore Drive
Anchorage, AK 99507
907-349-6625

Darrell Breese

From: Bartelli <bartelli@mtaonline.net>
Sent: Monday, March 17, 2014 8:36 PM
To: Rep. Bill Stoltze
Subject: HB 18

Bill,
I strongly support HB 18. Thanks for sticking up for the vast majority of the fish-harvesting state.
Regards,
Stephen Bartelli

Sent from my iPhone

Darrell Breese

From: Steve Gordon <sksgordon@icloud.com>
Sent: Monday, March 17, 2014 8:25 PM
To: Rep. Bill Stoltze
Subject: HB18

Sir,
I thank you and appreciate your support of HB 18; Alaskan residents to obtain a publicly owned wildfood resource (fish) over the harvest taken by the commercial fisheries industry in Alaska.
Thank you,
Stephen Gordon
1942 Commodore Drive
Anchorage, AK 99507
907-349-6625

Sent from my iPad

Darrell Breese

From: Paul <pacalaska@gci.net>
Sent: Monday, March 17, 2014 8:17 PM
To: Rep. Bill Stoltze
Subject: Memo:

Paul Carnicelli, 40 year resident of Anchorage Alaska..I rely on subsistence fish. Go Get Em Bill.

Darrell Breese

From: Sherry Corle <nanny.corle@gmail.com>
Sent: Monday, March 17, 2014 8:08 PM
To: Rep. Bill Stoltze
Subject: Bill HB18

I am a Chitina Dipnetter. Fish should be allocated first to dip netters for use. I use the salmon I harvest for feeding my family. Winter subsistence. With the cost of energy sky rocketing I must depend on these fish to survive. These fish are an Alaskan resource & are being used improperly for commercial and guided use in out of state interests. Thank you Gary L. Corle

Gary L. Corle
2614 Gordon Rd.
North Pole AK 99705

907-488-0819

nanny.corle@gmail.com

Darrell Breese

From: jake sprankle <jakesprankle@gmail.com>
Sent: Monday, March 17, 2014 9:58 AM
To: Rep. Bill Stoltze
Subject: HB18

Once again Bill, Thank you for looking out for Alaska residents and putting them above the commercial fishing industry. I fully appreciate and support your HB18. I wish we had more Representatives like you.

Best,
Jake Sprankle
2665 Monteverde RD
Fairbanks, AK 99709
907-590-3462

--

"*Malo periculosam, libertatem quam quietam servitutem.*" - *Thomas Jefferson*

Darrell Breese

From: paul holland <pcgholland@yahoo.com>
Sent: Monday, March 17, 2014 9:50 AM
To: Rep. Bill Stoltze
Subject: Thanks on HB 18!

Hi

Thank you for your work on HB 18! I know you've been working on this for some time. A few years ago I was at a hearing or first reading? where you had a bill introduced that would of made the Priority for harvest to be; Subsistence, Personal use, and then Commercial. Anything I can do to help with your Bill's progress please let me know.

I am a Board Member of Chitina Dipnetters and we strongly support the priority for Copper River Salmon to Alaskan's and their families before that of Commercial Fishers, many of who are not even Alaskan Residents.

Again thanks for your efforts,

Paul Holland

Board Member Chitina Dipnetters

Darrell Breese

From: Andrew Couch <fishing@fish4salmon.com>
Sent: Tuesday, March 18, 2014 8:19 AM
To: Rep. Bill Stoltze
Subject: Support for House Bill 18

Representative Stoltze,

I support passage of House Bill 18 which would allow all Alaskan residents a reasonable opportunity to harvest a limited amount of the the state's abundant salmon resource for personal consumption in personal use fisheries. Subsistence fishing for the same purpose
already has such a priority --- however, subsistence fisheries are
not always located in close proximity to where many Alaskans live.
Without a personal use priority we currently have fisheries where Alaskan residents have at times been excluded all opportunity for limited personal use harvest of specific salmon stocks in order to provide much larger commercial harvests --- some of which goes to
nonresident commercial fishers. Two examples of where this has
occurred are at Fish Creek (the only personal use fishery in the Mat- Su Valley) and the Chitna personal use fishery for king salmon. In times of resource shortage it only makes sense to provide for a limited harvest by all Alaskans before allowing larger commercial harvests -- a portion of which is by nonresidents.

Sincerely,

Andrew N. Couch
14660 E. Gunnysack Rd.
Palmer, AK 99645

9097-746-2199

Darrell Breese

From: Hull, Ben <Ben.Hull@va.gov>
Sent: Tuesday, March 18, 2014 8:23 AM
To: Rep. Bill Stoltze
Subject: Personal Use Fishery-HB 18

Dear Rep. Stoltz,

Please advocate for a priority for personal use fishermen and women over the commercial, guided sport, and sport fisheries. I support HB 18 and your efforts in this regard.

Ben Hull

Anchorage, AK 99504

Darrell Breese

From: Henry Springer <oksun@gci.net>
Sent: Tuesday, March 18, 2014 8:30 AM
To: Rep. Bill Stoltze
Subject: HB 18

Dear Representative Stoltze: My wife and I are longtime residents and have been longtime participants in the personal use fisheries, tipnetting for salmon. Just like subsistence preferences for native and rural residents, this should be the highest priority for this renewable resource for all Alaskan residents. As far as we are concerned this is one of the most important pieces of legislation in this session. We THANK YOU for your initiative and support. Heinrich and Oksun Springer, PO Box 232114, Anchorage, AK 99523, Tel. 346-2121

Darrell Breese

From: Whitehead, Richard G. <WhiteheadRG@ci.anchorage.ak.us>
Sent: Tuesday, March 18, 2014 8:49 AM
To: Rep. Bill Stoltze
Subject: HB 18, "An act providing priority to personal use fisheries when fish restrictions are implemented to achieve a management goal."

Representative Stolze,

RE: HB 18, "An act providing priority to personal use fisheries when fish restrictions are implemented to achieve a management goal."

My family and I have been dipnetting at the mouth of the Kenai for over 25 yrs. We rely on that resource heavily for filling our freezer.
Please consider this on behalf of myself and thousands of others like me who live here.
I have commercial fished in the past. I understand how the system works but many of the commercial fishermen now do not live in Alaska.
Personal use fisheries go directly to Alaskans. Please consider this when proceeding with HB18.
Thanks for your hard work in representing Alaskans in our Legislative process.
Richard G. Whitehead
Eagle River Alaska

Darrell Breese

From: tecraig <tecraig@acsalaska.net>
Sent: Tuesday, March 18, 2014 9:15 AM
To: Rep. Bill Stoltze
Subject: support for bill HB 18

Dear Representative Stoltze,

I am writing in support of HB18, which would "provide priority to personal use fisheries when fishing restrictions are implemented to achieve a management goal". Thousands of Alaskans, including our family, rely on these personal use fisheries for their food every year. Alaskan fisheries are a publicly owned wildlife resource in the state and I believe that Alaskan residents should be given precedence over the commercial fisheries industry in Alaska.

Thank you for considering my opinion.

Sincerely,

Erica Craig
Fairbanks, Alaska

Darrell Breese

From: Kyle.Wilson20@ch2m.com
Sent: Tuesday, March 18, 2014 9:11 AM
To: Rep. Bill Stoltze
Subject: FW: HB 18 Personal Use Fisheries Bill - Very important

Good Morning Representative Stoltze,

I am a married/father of three hard working Alaskan. I brought my family to this wonderful place because of the abundance of what Alaska has to offer. In short I am a personal use fisherman and hope to pass this along tradition down to my children for years to come. Hope to see your support for House Bill 18. Thanks for your service.

Kyle E Wilson
4651 S. Canter Circle
Wasilla, 99654
373-4850

Darrell Breese

From: John & Carolyn Miller <jcm@alaska.net>
Sent: Tuesday, March 18, 2014 9:45 AM
To: Rep. Bill Stoltze
Subject: HB18

50

Rep. Stoltze:

Thank you for advancing this proposal. It's about time!

The vast majority of the harvestable surplus of our Alaska fish are taken by commercial operators - a great many of whom are not even Alaska residents. It is simply not right that resident Alaskans are restricted in taking fish for personal and family consumption to enhance the profits of commercial fishers.

There should be a commercial fishery IF, AND ONLY IF the personal consumption needs of resident Alaskans are first satisfied!

John Miller
1260 March Dr.
Fairbanks 99709

Darrell Breese

From: Paul HARRELL <harrellp1@msn.com>
Sent: Tuesday, March 18, 2014 9:46 AM
To: Rep. Bill Stoltze
Subject: Support HB 18

Representative Stoltze,

Thank you for the work done on HB 18. As a member of the Chitina Dipnetter's Board, I, along with 7 others represent over 10,000 dipnetter's who feed their families, in part, with this form of fishing.

Thank you!

Paul Harrell
388-7227

Darrell Breese

From: Rick Hammond <akrhammond@gmail.com>
Sent: Monday, March 17, 2014 9:24 PM
To: Rep. Bill Stoltze

Representative Stolze,

My family of 5 believes it is in the best interest of the Alaskan Public to be provided "priority" in the PERSONAL USE fishery when fishing restrictions are implemented!

To be considered a participant in the Personal Use fishery, the person must be an ALASKAN resident!

NEED I SAY MORE?

Does our Political base understand that COMMERCIAL FISHING is only a TOOL to be used by the Department of Fish to STOP OVER-ESCAPEMENT of fish?

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It should not be, commercial fishing….then personal use fishing

Anytime the personal use fishery is open, if this fishery cannot handle the abundance of fish and over-escapement is imminent,

THEN AND ONLY THEN should the commercial fleet be called on to fish!

Rick and Julie Hammond
Dependent: Kraig Hammond
Daughters: Lindsey and Kaitlin Hammond
--
Rick Hammond

Darrell Breese

From: Neumann, Richard (Anchorage) <Richard.Neumann@WorleyParsons.com>
Sent: Tuesday, March 18, 2014 8:55 AM
To: Rep. Bill Stoltze
Subject: HB 18

Representative Stolze

Morning Bill,

Just letting you know, my family has been involved in the personal use fishery since the early 90's. It has become a traditional pastime in our family(working on the third generation) and a mainstay in our freezers. I've witnessed this fishery grow tremendously over the years and believe it's time that the personal use fishery has priority over other fishery's.

Hope to see your support for House Bill 18.

Thanks for your service.

Richard Neumann

4895 N.Edenfield Rd.

Wasilla, AK. 99623

907-229-2132

Richard Neumann
Electrical & Instrumentation Designer | NANA WorleyParsons LLC
Tel: +19073752538
3700 Centerpoint Drive | Anchorage | Alaska | 99503 | United States of America
Richard.Neumann@nanaworleyparsons.com | www.nanaworleyparsons.com

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Darrell Breese

From: Reed, William <William.Reed@CGG.com>
Sent: Tuesday, March 18, 2014 8:41 AM
To: Rep. Bill Stoltze
Subject: Support of HB18

Dear Representative Stoltze,

Yes! I want my voice heard and that of my family, and I support you in pushing forward HB18 giving a voice to those of us who rely on the personal use fisheries for the support of our families and our future.

Thank you!

———— ———— ————



Wm. "Randy" Reed

Permits & Regulatory Compliance

Alaska

CGG

2450 Cinnabar Loop

Anchorage, Alaska

99507

United States of America

UTC/GMT -9

T 907-346-5306

M 907-351-7144

F 907-276-6034

www.cgg.com

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it from your system. Any review, disclosure, copying, distribution, or use of the email by others is strictly prohibited.

Darrell Breese

From: Ken's Gmail <kmears5@gmail.com>
Sent: Monday, March 17, 2014 2:15 PM
To: Rep. Bill Stoltze
Subject: AS 16.05.251(personal Use)

Dear Sir. Please help this personal use fishery bill's passage! It's what our .constitution specifies for AK's permanent residents.
I've been in AK for 52 years & have seen fish traps replaced by outside guides & commercial fishermen that take nearly all our salmon. We need to have justice for Alaska's majority! Thank you very much. Ken Mears 1941 Wickersham Dr. Anchorage,AK 99507 tel: 907-563-7616 Sent from Ken's iPod

Darrell Breese

From: Rick Moore <auroralightsllc@yahoo.com>
Sent: Monday, March 17, 2014 2:06 PM
To: Rep. Bill Stoltze
Subject: hb18

Mr Bill My name is Rick Moore. I live at 36663 Marcia ln in Soldotna on the Kenai river. My phone number is 252-6282 I would request you to help push through Hb18. As a Alaska resident, The residents of Alaska should have priority to obtain fish in the river, Over the commercial fisheries. It is unfair that we can get shut down, but they can put in nets an take large amounts of fish, that we need to feed our families. Thank you for your time Rick Moore on the Kenai

Darrell Breese

From: bill hanson <billbonh@mtaonline.net>
Sent: Monday, March 17, 2014 2:03 PM
To: Rep. Bill Stoltze
Subject: Dip netting

I think it is very important for residents of Alaska to have a priority over commercial fisheries.
I support bill HB18
Thanks William Hanson

Darrell Breese

From: Ron Somerville <somerville@gci.net>
Sent: Monday, March 17, 2014 1:56 PM
To: Rep. Bill Stoltze
Subject: HB 18

Bill:

I wanted to let you know that I support the objectives of HB 18. There is some opposition from "sport, recreational and other fishermen. Saying that the taking of fish for personal or family food by Alaskan residents has a higher priority after subsistence uses, would solve that problem.

Thanks for your support.

Ron Somerville

Darrell Breese

From: Harry E. "Budd" Goodyear, MSM, MLA <bg@mtaonline.net>
Sent: Monday, March 17, 2014 12:26 PM
To: Membership; Rep. Lynn Gattis; Rep. Bill Stoltze; Rep. Wes Keller
Subject: Opinion HB 18

AOC quote:
If dip netters want to be elevated above **sport, guided sport**, and commercial fisheries...

I am opposed to elevating dip netters above sport and guided sport uses. But please DO put them ahead of commercial use.

Budd Goodyear
Wasilla Area
Registered Voter

Darrell Breese

From: lkunderwood13@gmail.com
Sent: Monday, March 17, 2014 11:31 AM
To: Rep. Bill Stoltze
Subject: HB 18

Sir,
I support HB 18 and believe that Alaskans should have priority over the commercial fisheries as well as guided sports fisherman Thanks, Lee Underwood

Sent from my iPhone

Darrell Breese

From: Randy Bjorgan <bjorgan@alaska.net>
Sent: Monday, March 17, 2014 10:53 AM
To: Rep. Bill Stoltze
Subject: HB 18

Representative Stoltze,

My wife and I support HB 18.

Until last year we never participated in the dip net fishery. Because of physical limitations, resulting from health issues limiting outdoor activities, I was invited by a couple of friends to utilize the dip net fishing method to obtain enough fish to fill the home freezer for this winter's meals. Without the dip netting activity we would have run out of fish before Christmas as the days of river fishing were few and the number of fish caught was even fewer. Normally my wife and I have been able to catch enough for the winter from the river on rod and reel, which we don't consider "Sports Fishing". We are out there to fill the freezer, not to kill fish for "sport" with catch and release activity.

We believe that if you catch a fish or shoot an animal, you eat it, not sell it.

As long as the commercial fisheries are allowed to rape Alaska resources and deprive Alaskans food for their table, measures need to be implemented to enable us to fill our freezer, and HB 18 is one of these measures.

Thank you for your efforts.

Bjorgan

Randy & Margaret Bjorgan

3038 Donington Drive

Anchorage AK 99504-3847

(907) 952-4353

Darrell Breese

From: Rome Gilman <rome@wsiak.com>
Sent: Monday, March 17, 2014 10:02 AM
To: Rep. Bill Stoltze
Cc: Rome Gilman
Subject: Dip netting is a priority.

Bill,

How are you doing? I wanted to add my support for priority of personnel use fishing over commercial use. I think we have long had the cart before the horse on this issue. I feel the list should be as follows:

Priority 1. Sport fishing which should have a different name like "most sustainable with the highest dollar return per pound of fish".

Priority 2. Personnel use fishing/dip netting. I think this should be the same as Priority 1 but that is not how we have chosen to word our rules and regulations. If they were one in the same it would be a much cleaner process.

Priority 3. Commercial fishing should be a harvest of all excess fish that are nor needed by the residents for sustenance.

This is my take on the issue's on fishing. The State Constitution sets a priority for Citizens first. We all own the resource and as such should have first opportunity to harvest the surplus.

Due to the nature of Salmon returns the commercial guys hit the fish first and so we simply need to control that a little better to preserve stocks. I was watching a show on salmon fishing last night and it was obvious to me that the drifters were hitting the Cook inlet Westside fishery pretty hard. This would most likely explain the low returns to the Susitna drainage. I know from years of living here that these fish travel the North west side of the inlet. Fish that side , catch those fish. I am not against commercial fishing and do not want to see this industry damaged as we need every bit of economy boosting activity that we can get here in Alaska. However I have come to realize from the years of living I have done that commercial fishing in Alaska has become a far higher boon to Southern States and Foreign countries than our own citizens. I would not be against a Local fisherman preference to keep some of the money in our state.

Thanks for the time

Orville "Rome" Gilman III

Darrell Breese

From: Vern Aiton <v8n@wildak.net>
Sent: Tuesday, March 18, 2014 10:43 AM
To: Rep. Bill Stoltze
Subject: HB-18

Representative Stoltze,

The members of Delta Sportsmens Assn feel very strongly that subsistance fisheries should have priority over commercial and sport fisheries.

Thank you

Vern Aiton
DSA, Director

Darrell Breese

From: Wayne Heimer <weheimer@alaska.net>
Sent: Tuesday, March 18, 2014 10:41 AM
To: Rep. Bill Stoltze
Cc: Rep. Tammie Wilson; Rep. Scott Kawasaki; Rep. David Guttenberg; Rep. Steve Thompson
Subject: HB 18

Rep. Stoltze,et al.

I support HB 18. The "personal use" classification has always been a way of prioritizing commercial interests in salmon above the use of Chitina red salmon for food by Alaskans. In any rational world, such use would be considered subsistence. I infer that's what HB 18 would do, and I"m for it.

Wayne Heimer
1098 Chena Pump Road
Fairbanks, Alaska 99709

Darrell Breese

From: Gene and Chris Kissee <gkissee@mtaonline.net>
Sent: Monday, March 17, 2014 7:28 PM
To: Rep. Bill Stoltze
Subject: HB 18

Dear Rep Stoltz. I want to go on record as being in favor of HB18 so that the fish resources of Alaska will be more fairly accessible to all Alaska residents instead of just commercial interests and want to encourage its passage. Thank you , Eugene Kissee 17916 tedrow drive Eagle River,99577 ,907-694-9719, gkissee@mtaonline.net

Darrell Breese

From: Thomas Wadzinski <twadzin@gmail.com>
Sent: Monday, March 17, 2014 7:26 PM
To: Rep. Bill Stoltze
Subject: Personal Fisheries

I believe Personal Fisheries should have priority over Commercial Fisheries.
Personal Fisheries do not decimate fish supplies as Commercial Fisheries tend to do. All over the world!

This is fish for Alaskans. Not fish for Seattle Fisherman. (I don't understand why Seattle has the bulk of the licenses to catch fish!)
The money from their fishing goes to Seattle, not Alaska.

It is in our interests to protect Alaska interests and resources.

Thanks for listening (Reading)

Tom Wadzinski
Anchorage

Darrell Breese

From: Dennis Hamann <66mustang@mtaonline.net>
Sent: Monday, March 17, 2014 6:16 PM
To: Rep. Bill Stoltze
Subject: HB 18

Hello Rep.Stoltze,
Just a quick note to say I support providing for Alaskans to fill their freezers before we give the rest to Commercial interests.
Thanks,
Denny Hamann

Darrell Breese

From: Terry Boyle <tcbhunter@gmail.com>
Sent: Monday, March 17, 2014 5:23 PM
To: Rep. Bill Stoltze
Subject: Dipnet Fisheries

Terry C Boyle

I think Alaskan residents need this personal use resource. We need to reel in the Commercial Fisheries , there's too much By Catch going on !

Darrell Breese

From: Larry Kappel <lkappel@mosquitonet.com>
Sent: Monday, March 17, 2014 5:23 PM
To: Rep. Bill Stoltze
Subject: Personal Use Fisheries

Most Honorable Representative Stoltze:
I have been dipnetting for Kings and Reds on the Copper River for over 19 years. Dipnetting for Salmon on the Copper River is a valuable source of food for my family. I have always believed that when the Copper River fishery was declared a Personal use fishery, we should have a higher priority for taking salmon than commercial fishing, sport fishing, and chartered sport fishing. I am really enthused and happy that you are representing us in such a great way.
Many thanks
Larry Kappel
2251 Peede Rd
North Pole, AK 99705
907-488-5861

Darrell Breese

From: Clemens M. Clooten <cmclooten@ci.fairbanks.ak.us>
Sent: Monday, March 17, 2014 4:50 PM
To: Rep. Bill Stoltze
Subject: HB 18

Rep. Bill Stoltze,

Thank you for your effort regarding HB 18. I support this bill! There should be a priority for personal use fisheries when fish restrictions are implemented to achieve a management goal

Thank you again,

Clem Clooten

Darrell Breese

From: linjim@mtaonline.net
Sent: Monday, March 17, 2014 4:44 PM
To: Rep. Bill Stoltze
Subject: Personal Use Fisheries Bill

Hi Rep. Stoltze,
I read a short note on HB 18 and I believe this is a bill that is needed for families to help with food during the winter. This is not a sport fishery. I do believe that the numbers of fish allowed could be reduced per family. And, more control over how many fish are actually being taken by people. The rules/laws need to be adhered to for numbers taken, fish marked and permit marked before leaving the fishing location.
Thank you,
Linda Page
P O Box 872912
Wasilla, AK 99687-2912
email: linjim@mtaonline.net

Darrell Breese

From: Dennis Wheeler <fishwheeler101@gmail.com>
Sent: Monday, March 17, 2014 4:31 PM
To: Rep. Bill Stoltze
Subject: HB 18

We support HB 18, Dennis and Dora Wheeler, 13001 E Norman Ave. Palmer, 99645, 745-4932

Darrell Breese

From: Bing <hap@gci.net>
Sent: Monday, March 17, 2014 4:11 PM
To: Rep. Bill Stoltze
Subject: SUPPORT US

PLEASE STAND UP FOR US THE DIPNETTERS, THIS HELP FEED FAMILYS

Darrell Breese

From: Burt Myers <ibbuffalo@gci.net>
Sent: Monday, March 17, 2014 4:11 PM
To: Rep. Bill Stoltze
Subject: HB 18

Dear Representative Stoltze,
I am not in favor of HB 18. While I am in favor of Alaskan residents to harvest fish with priority over commercial fisheries, I do not feel dipnetters should be elevated above sport and guided sport fisheries.

Thank you for your consideration,

Burt Myers

PO Box 671689
Chugiak, AK 99567

907-688-0737

lbbuffalo@gci.net

Darrell Breese

From: Carol & Norma Christiansen <ccnpchris@mtaonline.net>
Sent: Monday, March 17, 2014 4:10 PM
To: Rep. Bill Stoltze
Cc: Sarah Page
Subject: Ref HB18

Hi Rep. Bill Stoltze.;
We (me and my family) are definitely favor of HB 18, "An act providing priority to personal use fisheries when fish restrictions are implemented to achieve a management goal." .
We have used depnetting for as long as it has been available.
Carol Chrisrtiansen

Darrell Breese

From: Byron Haley <bwhaley4@gci.net>
Sent: Monday, March 17, 2014 4:07 PM
To: Sen. John Coghill; Rep. David Guttenberg; Rep. Scott Kawasaki; Mike Kelly; Rep. Bill Stoltze
Cc: BYRON W. HALEY 12 13
Subject: HB#18

THAT SHOULD BE HB #18 INSTEAD OF HB 16
BYRON W HALEY
1002 PIONEER RD
FAIRBANKS, AK. 99701-2818
CDA TREASURER

Darrell Breese

From: Mark Vallarino <mpvallarino@alaska.edu>
Sent: Monday, March 17, 2014 4:01 PM
To: Rep. Bill Stoltze
Subject: HB 18

Hello Bill
We need to make sure that dipnetters have a priority for personal use fishing.
Thanks
Mark

--
Mark Vallarino
Systems Analyst
School of Fish and Ocean Sciences
University of Alaska Fairbanks
905 Koyukuk, 239 O'Neill Bldg
Fairbanks, AK 99775-7220

Darrell Breese

From: Brian <kiwiak@ak.net>
Sent: Monday, March 17, 2014 3:36 PM
To: Rep. Bill Stoltze
Subject: Re HB 18 Personal Use Fisheries Bill - Very important

I have always found it interesting that big business had first call on making a profit over subsistence fisheries catching their staples.

Fish is a major staple in much of Alaska's diet. And we deserve the right to enjoy it without being starved out by the commercial interests.

Brian Kemp

7601 Pleasure View Cir

Anchorage AK 99507

In Alaska

Darrell Breese

From: Byron Haley <bwhaley4@gci.net>
Sent: Monday, March 17, 2014 3:35 PM
To: Sen. John Coghill; Rep. David Guttenberg
Cc: BYRON W. HALEY 12 13
Subject: HB 18

L am very much in support of HB#16 we have every right to feed are family.

Byron W Haley
1002 Pioneer Rd
Fairbanks, AK. 99701-2818
CDA Treasurer

Darrell Breese

From: Willy <fishtales@alaska.net>
Sent: Monday, March 17, 2014 3:33 PM
To: Rep. Bill Stoltze
Subject: HB18

This bill needs to be passed it is long overdue Wilfred Blais Delta Jct Alaska 1165 James road

Darrell Breese

From: John Macgirvin <jmacgirvin@gmail.com>
Sent: Monday, March 17, 2014 3:17 PM
To: Rep. Bill Stoltze
Subject: HB 18

Please allow person use fishing, dip netting, as a priority of commercial uses. My food supply relies upon it. I really need it to get by.

Warmest Regards,

John D Macgirvin
PO Box 436
2925 Pirates LN
Kenai, AK 99611-0436
907-717-9973.

Sent from my iPhone

Darrell Breese

From: Melvin Grove <mbgrove@mtaonline.net>
Sent: Monday, March 17, 2014 3:01 PM
To: Rep. Bill Stoltze
Subject: HB18

Representative Stoltze,

I strongly support HB18. It's long overdue that Alaskan residents have a priority over the commercial exploration of our food resources. Aside from subsistence, personnel use should have a higher priority over commercial use.

Thanks for fighting for Alaskans. After all, gathering our own personal food resources is one of the reasons most Alaskan's live in our great state.

Best Regards,

Mel Grove
907-440-9148/907-200-2202
2877 South Knollwood Drive, Big Lake, AK 99652

Darrell Breese

From: O'Regan & Kahlenbeck <orka@gci.net>
Sent: Monday, March 17, 2014 2:59 PM
To: Rep. Bill Stoltze
Subject: HB18

Rep. Stoltze-

Please support HB18. Personal use should be valued ahead of commercial use of Alaska's fish resources.

Ron Kahlenbeck
Anchorage, AK
907-333-1252

Darrell Breese

From: cderrickak@aim.com
Sent: Monday, March 17, 2014 2:47 PM
To: Rep. Bill Stoltze
Subject: HB 18 Support

I have participated in the Chitina Dipnet Fishery since the 1970's. During that time I have seen the bag limit reduced from 45 salmon plus 15 additional fish per household member to today's 15 salmon for a household of one and 30 salmon for a household of two or more with a couple of supplemental periods added each summer allowing for 10 extra fish. The dipnet season has gone from being open June 1 to September 1 to the current emergency openings based on unreliable sonar counts. The king salmon part of the bag limit has gone from 5 per permit down to 1 and since 2009 the retention of the 1 king has either been totally eliminated or limited to the first 2 weeks of the season. In 5AAC 77.591 (f) the Alaska Board of Fisheries even saw fit to put in language that if the Cordova Copper River Commercial fleet were not allowed to fish for 13 consecutive days, then the 100,000-150,000 salmon allocation to the Chitina Dipnet Fishery would be reduced to 50,000 for the remainder of the season. Over the years I have even seen several attempts by commercial fish interests to eliminate the dipnet fishery altogether.
Keep in mind that between 2003 and 2012 out of the average yearly total during that period of 1,549,548 sockeye and king salmon harvested by all users in the Copper River salmon fisheries (commercial, personal use, subsistence and sport) the Chitina Dipnet Fishery average annual harvest during that period was 115,210 sockeye and king salmon or **7%** of the total harvest of all users. During that same period the average annual commercial harvest of sockeye and king salmon was 1,304,272 or **84%** of the 1,549,548 total.
The Board of Fisheries is always heavily weighted with commercial fishing interests. This current Board I'm told has 5 of the 7 members holding commercial fishing licenses (permits). This makeup has made it nearly impossible to get proposals beneficial to the dipnet fishery passed. For this reason personal use dipnetters have turned to the legislature to correct this commercial bias and place Alaska residents feeding their families as the highest priority. Dipnetting, as born out by the sheer number of permit holders statewide, is the method by choice of Alaska residents to supply salmon to their families.

Chuck Derrick
President Chitina Dipnetters Assn.
1002 Pioneer Rd.
Fairbanks, Ak. 9970
Ph. 907-488-3093

Darrell Breese

From: Gary Stevens <garyatsls@cs.com>
Sent: Monday, March 17, 2014 2:44 PM
To: Rep. Bill Stoltze
Subject: HB18

Rep. Bill Stoltze,

As one of your constituents, I want to thank you for HB18. I support it because I believe that Alaskans putting food on their tables should have a higher priority than commercial fisheries. The bottom line is that letting more fish into our rivers increases opportunity for subsistence, personal use, and sport/recreational fisheries. Plus, it improves the health of the resources and helps ensure their sustainability. Please feel free to contact me if any questions or to discuss further.

Sincerely,
Gary A. Stevens
Chugiak
garyatsls@cs.com
907-229-4710

Darrell Breese

From: Kenneth Raby <salchapoacher@icloud.com>
Sent: Monday, March 17, 2014 2:27 PM
To: Rep. Bill Stoltze
Subject: HR 18

I strongly endorse this bill HB 18. It puts the people of Alaska first. This year I did not find a moose but limited out on salmon from dip netting, it would have been a rough winter without it. Many families I know depend on salmon for meat during these high heat fuel prices lately.

Thank you,

Kenneth Raby
Salcha, Ak

Sent from my iPhone

Darrell Breese

From: Bruce Morgan <sampson@acsalaska.net>
Sent: Monday, March 17, 2014 7:45 PM
To: Rep. Bill Stoltze
Subject: House Bill 18

HB 18, "An act providing priority to personal use fisheries when fish restrictions are implemented to achieve a management goal."

Representative Stolze,

My family of 5 believes it is in the best interest of the Alaskan Public to be provided "priority" in the PERSONAL USE fishery when fishing restrictions are implemented!

To be considered a participant in the Personal Use fishery, the person must be an ALASKAN resident!

NEED I SAY MORE?

Does our Political base understand that COMMERCIAL FISHING is only a TOOL to be used by the Department of Fish to STOP OVER-ESCAPEMENT of fish?

A Commercial fishing permit is not a RIGHT TO FISH.

The Commercial fishery is OWED NO FISH by owning a commercial permit.

The Commercial fishery IS JUST A TOOL available to the Dept of Fish to prevent over-escapement if needed.

THAT IS A FACT.

SO, why would we not have the personal use fishery open at ANY TIME a commercial fishery is open?

The personal use fishery should also be considered FIRST as a means of stopping over-escapement of sockeye or other species of salmon,

It should not be, commercial fishing….then personal use fishing

Anytime the personal use fishery is open, if this fishery cannot handle the abundance of fish and over-escapement is imminent,

THEN AND ONLY THEN should the commercial fleet be called on to fish!

Bruce R. Morgan and Family

Robin Childs, wife

Dependant Children; Cade, Colt, and Calie Morgan

6230 Petrified Tree Circle

Anchorage, Alaska 99507

907 346 4855

(I am also a member of the Anchorage Fish and Game Advisory Committee, these comments above are my own)

 This email is free from viruses and malware because avast! Antivirus protection is active.

Darrell Breese

From: Bob Howard <bobhoward@gci.net>
Sent: Monday, March 17, 2014 7:49 PM
To: Rep. Bill Stoltze
Subject: Re: Dipnetting Legislation

You understand as well as I that Paul doesn't mind taking food from my table so he can put food on his table. He makes his living in this business and his position is very self serving- as is mine but mine is keeping with the intent of our constitution.

Sent from my iPad

On Mar 17, 2014, at 7:38 PM, "Rep. Bill Stoltze" <Rep.Bill.Stoltze@akleg.gov> wrote:

> Thank you for your email supporting House Bill 18, Personal Use Fishing Priority. This legislation is important to me and is something that I have been working to make a reality for since 2007, but have been faced with strong opposition from commercial fishing interest and legislators who are sympatheticto the industry.
>
> Despite widespread support of people from all around Alaska, HB 18 which is designed to put Alaskan's first when it comes to having opportunities to catch fish to fill their freezers and feed their families, my efforts continue to meet with opposition.
>
> I hopeful, but not optimistic, that House Bill 18 will move out of the House Special Committee on Fisheries during the hearing in the morning. The committee chairman, Rep. Paul Seaton of Homer, is among the legislators who have not been supportive of our Alaska resident only personal use fisheries.
>
> No matter the outcome in tomorrow's committee hearing, I am committed to continuing to fight for the rights of Alaska's to benefit from Alaska's salmon over the interest of commercial fishing. I, and my family, are among the tens of thousands of Alaskans who fill our freezers or pantries (cans and jars) with wild Alaska salmon.
>
> Thanks again for your support and continued efforts toward the passage of this bill.
>
> Best Regards,

Bill Stoltze

State Representative

On Mar 17, 2014, at 2:21 PM, "Bob Howard" <bobhoward@gci.net> wrote:

> Dip net fishing is extremely important to those of us who can participate in it. It is a food for my family. I support the legislation that puts it as a priority ahead of the other beneficial uses of the resource(HB18).
> Robert Howard
> 629 Rangeview Ave.
> Homer
>
> Sent from my iPad

Darrell Breese

From: Susan Coyner <rc2ak@gci.net>
Sent: Monday, March 17, 2014 8:08 PM
To: Rep. Bill Stoltze
Subject: HB 18 Personal use fisheries

Mr. Stoltze,

I wanted to let you know that I appreciate your support of dipnetters. As a member of the Chitina Dipnetters ASSN and the Alaska Outdoor Council, this issue is very important to me and my family. Dipnetting is certainly the mainstay of my family's fish consumed throughout the year. Please contact me if there are any further public comments needed about support for your HB 18. Thanks.

V/r

Robert Coyner

19838 Driftwood Bay Drive

Eagle River, AK 99577

907-622-4476

Darrell Breese

From: James Roach <jroach@mtaonline.net>
Sent: Tuesday, March 18, 2014 10:14 AM
To: Rep. Bill Stoltze
Subject: Dipnetting & AS 16.05.251.(e)

>> Representative Stolze,
>>
>> Thank you for your support of elevating dip netting above sport,
>> guided sport, and commercial fisheries, AS 16.05.251.(e).
>
>> My family has been participating in the Chitna Dipnetting fisheries
>> for our annual food harvest since 1989.
>>
>> Thank you,
>>
>> James Roach
>>
>> Wasilla, Alaska
>>
>>
>>

Darrell Breese

From: dburfoot@aptalaska.net
Sent: Tuesday, March 18, 2014 10:00 AM
To: Rep. Bill Stoltze
Subject: HB 18

I support HB 18.
I am a subsistence fisherman who uses Copper River red salmon.

Dan L Burfoot
Tok, AK.

Darrell Breese

From: Mary Silvey <maryannsilvey@gmail.com>
Sent: Tuesday, March 18, 2014 9:53 AM
To: Rep. Bill Stoltze
Subject: Personal Use Fisheries HB 18

My family has been dipnetting in Chitina since I was a child. Salmon was a staple of our diet, as was the moose, caribou and birds and rabbits we hunted or the garden vegetables. I fully appreciate the value of the Copper River salmon to the fishing industry, but Alaskan residents who are willing to take the risks and spend the time required to dipnet salmon should not have to take the leftovers, if any, after every other group is provided an allotment. Dipnetting salmon is not a fishing vacation--it is hard work. We call it a"freezer haul." It is a vital part of our diet--frozen, canned and smoked. We always hope to get enough to last us to the next fishing season.

Even now, my family rarely buys fish we don't fish ourselves. When we don't get enough salmon to last the year, we do not buy it at the grocery store. Although out-of-state sales may rise, commercial fishermen are not going to increase their sales by selling to dipnetters who are not alloted enough fish to provide for their families. As someone who depends upon this diet staple, I am very concerned that it be well-managed and I realize that in some years no one is going to get everything they want. But a better priority needs to be considered for Alaskan residents who depend on this resource and I believe this bill will improve that allocation.

Mary W Silvey
PO Box 71350 Fairbanks AK 99707 479-0320

Darrell Breese

From: Carlos Gonzales <mayacadd@hotmail.com>
Sent: Tuesday, March 18, 2014 9:50 AM
To: Rep. Bill Stoltze
Subject: HB 18 Personal Use Fisheries Bill

Representative Stolze

Good morning Bill,

Just letting you know, my family has been involved in the personal use fishery since the 2005. It has become a traditional pastime in our family and an important support to our household. I've witnessed fishies grow tremendously over the years and believe it's time that the personal use fishery has priority over other fishery's.

Hope to see your support for House Bill 18.

Thanks for your service.

Regards,

Carlos F. Gonzales
Maya CADD Services
907-317-5604

Darrell Breese

From: Me <kickn@gci.net>
Sent: Tuesday, March 18, 2014 9:30 AM
To: Rep. Bill Stoltze
Subject: Dipnetter

Bill,

My family has lived in alaska 25+ years and really enjoy dipnetting as a family. It supplies us with not only fish for the year, but memories for a lifetime.

Please make us a priority when it comes to making the states fishery goals.

Thanks for your time in reading this email.

Craig Edmundson

Sent from my Alaska Communications Android

Darrell Breese

From: hoagie <hoagie@acsalaska.net>
Sent: Tuesday, March 18, 2014 9:29 AM
To: Rep. Bill Stoltze
Subject: dipnetting

Hello Bill H B 18 needs to be passed for us dipnetters . Thank You Kent Kendrick , Fox Alaska

HB

49

<TARGET><BILL>HB 49</BILL><SUBJECT>HB
49</SUBJECT><COMM>HFSH28</COMM></TARGET>

Representative Bob Herron

Rep.Bob.Herron@akleg.gov

State Capitol • Juneau, Alaska 99801-1182
Phone: (907) 465-4942 • Fax: (907) 465-4589

House District 37
Kuskokwim Bay • Western Bristol Bay • Alaska Peninsula
Aleutian Chain • Bering Sea Islands • Bethel

Adak
Akutan
Atka
Attu Station
Bethel
Chignik
Chignik Lagoon
Chignik Lake
Clark's Point
Cold Bay
Eek
Egegik
False Pass
Goodnews Bay
Ivanof Bay
King Cove
Mekoryuk
Nelson Lagoon
Nikolski
Perryville
Pilot Point
Platinum
Port Heiden
Portage Creek
Quinhagak
Sand Point
St. George
St. Paul
Togiak
Twin Hills
Ugashik
Unalaska

HB 49 – ALASKA CHINOOK SALMON RESEARCH AND RESTORATION ENDOWMENT FUND

SPONSOR STATEMENT

HB 49 creates an Alaska Chinook salmon research and restoration fund in the Dept. of Revenue. Grants from the fund would be issued to qualifying organizations. A 7-member board, including the Commissioner of Fish & Game and 6 public members from across the state, would administer the grants.

The state fish of Alaska, Chinook salmon, is an important staple food for Native villages of Alaska and is an economically important species for a number of commercial fisheries and a prized sport fishery resource. Nowhere else are Chinook salmon stocks more valued and essential to the basic way of life than in Alaska.

Chinook salmon populations in Alaska have undergone significant shifts in abundance during the past 40 years, yet little is known about the factors influencing these shifts. Eight of the 14 currently listed "stocks of concern" are Chinook salmon stocks, as defined by the Alaska Board of Fisheries in 5AAC 39.222.

Recent declines of salmon abundance have caused severe hardship in some areas and anxiety for the fishery-dependent communities of Alaska. Limited commercial fishing on Chinook salmon has occurred in recent years and earnings have dropped sharply. Poor Chinook salmon returns can exacerbate allocative tension and conflict between fishery user groups competing for a fully allocated fishery resource. This is being seen in a multitude of ways recently and it only divides user groups further. A statewide fund of this sort would provide a platform to unite user groups and provide them with a unified vision for the restoration of their prized fisheries.

Over the past twenty-five years, there has been considerable variability in Yukon Chinook salmon population dynamics. Available harvest data show a thirty-six year period of sustained abundance early on, with significant declines during the past fifteen years and there is no indication that the current declines are reversing anytime soon.

To restore Chinook salmon populations to a population level that meets the needs of Alaskans we must understand the trends and causes of variation in abundance of Chinook salmon. To do this we must gather information concerning population biology, freshwater ecology, marine ecology, and population dynamics. Knowledge gaps remain across the State of Alaska indicating that a multi-disciplinary research effort is needed to investigate the role of physical

habitat, climate-induced environmental variability, and biological response in Chinook salmon populations if we are to meet the needs of Alaskans that depend upon this resource.

This legislation would create a stable, long-term source of funding to support high quality interdisciplinary research such as the recent work of the Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative (AYK SSI). Research results and information from the AYK SSI is being utilized in a wide variety of ways to support sustainable salmon management. From escapement goal analyses to gaining an improved understanding of the dynamics of marine ecosystems, the AYK SSI is helping to provide fisheries managers with better forecasts and improved responses to changing environmental conditions.

The Alaska Chinook Salmon Research and Restoration Endowment Fund stakeholder board would, along with the Alaska Department of Fish and Game, direct research monies to priority areas and topics based on an adopted Chinook Salmon Action Plan. These funds may also be used to leverage additional funding by providing necessary matching funds.

With this legislation, Alaska can increase its understanding of Chinook salmon and learn how to best target remediation efforts in order to restore this vital resource.

Representative Bob Herron

Rep.Bob.Herron@akleg.gov

State Capitol • Juneau, Alaska 99801-1182
Phone: (907) 465-4942 • Fax: (907) 465-4589

House District 37
Kuskokwim Bay • Western Bristol Bay • Alaska Peninsula
Aleutian Chain • Bering Sea Islands • Bethel

Adak
Akutan
Atka
Attu Station
Bethel
Chignik
Chignik Lagoon
Chignik Lake
Clark's Point
Cold Bay
Eek
Egegik
False Pass
Goodnews Bay
Ivanof Bay
King Cove
Mekoryuk
Nelson Lagoon
Nikolski
Perryville
Pilot Point
Platinum
Port Heiden
Portage Creek
Quinhagak
Sand Point
St. George
St. Paul
Togiak
Twin Hills
Ugashik
Unalaska

SECTIONAL ANALYSIS

HB 49 version A – ALASKA CHINOOK SALMON RESEARCH AND RESTORATION ENDOWMENT FUND

Section 37.14.650 Establishes the Fund in the Dept. of Revenue. The Fund includes:

- appropriations to the Fund;
- donations to the Fund;
- income earned on investments of Fund assets.

The Commissioner of Revenue manages the Fund sustainably, with a goal of 5% real rate of return.

Section 37.14.655 Establishes the account as a grant account in the General Fund.

Section 37.14.660 After July 1 each year, the Commissioner of Revenue identifies as available for appropriation to the grant account the greater of:

- 5% of the Fund averaged over the 3 preceding years;
- ½ the Fund's earnings averaged over the 3 preceding years; or,
- if the Fund is valued at over $50,000,000, the total earnings of the Fund for that year.

The legislature may then appropriate to the Grant Account amounts from any of the 3 preceding calculations or from any other source.

Section 37.14.665 Appropriations to the Grant Account may be used for:

- grants for research and restoration projects for Alaska Chinook salmon stocks;
- reimbursement to the Dept. of Revenue for the costs of establishing or managing the Fund;
- reimbursement to DCCED for the costs of establishing and administering the Board and the grant program;
- matching funds for private and federal grants; and
- solicitation of contributions for purposes consistent with establishment of the Fund.
- The Board may also expend private donations for uses consistent with purposes of the Fund.

Section 37.14.670 Establishes the Fund Board in DCCED.

Section 37.14.675 Governor appoints the Fund Board Members to include:

- the Commissioner of Fish & Game;
- six public members, who are engaged in subsistence, personal, commercial, or sport use of Chinook salmon and reside in:
    - Southeast,
    - Southcentral,
    - Southwest,
    - Western,
    - Arctic, and
    - Interior.

Section 37.14.680 The Board shall:

- Within 90 days after the appointment of the last Board member, adopt bylaws governing its operation, and
- identify an organization incorporated in Alaska to support the Board in performing its duties, and
- monitor projects for compliance, and
- keep electronic recordings of each meeting, and
- adopt regulations creating a process for soliciting, awarding, and monitoring grants, and
    - consider the North Pacific Research Board while adopting these regulations.
- On February 1 of each year, the Board shall prepare a report for the Governor and Legislature that includes:
    - the number of applicants and types of grants awarded, and
    - dollar amount of grants awarded, and
    - projects funded and results of those projects, and
    - expense to administer the Fund, the grants, and the Board; and
    - how any private contributions were expended.

Section 37.14.685 When reviewing grant applications, the Board shall consider:

- whether the Chinook salmon targeted in the grant are significant to Alaskans, and
- whether the applicant has appropriate experience; and
- the recommendations of state agencies or organizations involved in Chinook salmon management.

The Board shall give priority to grants that:

- target Chinook salmon stocks that were, within the previous ten years:
    - listed by Dept. of Fish & Game as stocks of concern, or
    - subject to a state or federal fisheries disaster declaration, or
    - closed or significantly restricted, or
    - declined significantly from historic yields.

Section 37.14.695 Lists definitions.

Representative Bob Herron

Rep.Bob.Herron@akleg.gov
State Capitol • Juneau, Alaska 99801-1182
Phone: (907) 465-4942 • Fax: (907) 465-4589

House District 37
Kuskokwim Bay • Western Bristol Bay • Alaska Peninsula
Aleutian Chain • Bering Sea Islands • Bethel

Adak
Akutan
Atka
Attu Station
Bethel
Chignik
Chignik Lagoon
Chignik Lake
Clark's Point
Cold Bay
Eek
Egegik
False Pass
Goodnews Bay
Ivanof Bay
King Cove
Mekoryuk
Nelson Lagoon
Nikolski
Perryville
Pilot Point
Platinum
Port Heiden
Portage Creek
Quinhagak
Sand Point
St. George
St. Paul
Togiak
Twin Hills
Ugashik
Unalaska

HB 49: CHINOOK RESEARCH & RESTORATION ENDOWMENT – EXPLANATION OF CHANGES

Changes from Original Bill (Version A) to Version N

Page 1, line 2: INSERT "providing for an effective date"

Page 4, lines 7-20: Boundaries in (B) and (C) were redefined to move Kodiak and the entire Alaska Peninsula drainages that flow into Cook Inlet from the Southcentral region to the Southwest region.

Page 5, lines 10-15: adds language directing the Governor to appoint at least one Board member for each of the following Chinook salmon stock uses: subsistence, personal use, commercial harvest, and sport fishing.

Page 5, lines 16-18: adds language directing the Governor to take into consideration the recommendations of the fish advisory committees in which the board member resides.

Page 5, lines 21-23: Except when awarding grants when all six public members must act unanimously as already provided in 37.14.680(b)(5), the board acts on majority vote.

Page 7, line 27 thru Page 8 line 1: Provides for transition language so that grants can be awarded immediately rather than having to wait for the Fund to accrue a three year average, as is required in 37.14.660 (page 2 lines 16-23).

Page 8 line 2: Adds an effective date of July 1, 2013.

Fiscal Note

State of Alaska
2013 Legislative Session

Bill Version: HB 49
Fiscal Note Number:
() Publish Date:

Identifier: HB049-DOR-TRS-02-22-13
Title: CHINOOK RESEARCH & RESTORATION ENDOWMENT
Sponsor: HERRON
Requester: House Fisheries

Department: Department of Revenue
Appropriation: Taxation and Treasury
Allocation: Treasury Division
OMB Component Number: 121

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2014 Appropriation Requested	Included in Governor's FY2014 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2014**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**
Personal Services			85.0	85.0	85.0	85.0	85.0
Travel							
Services			8.0	8.0	9.0	9.0	9.0
Commodities							
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	**0.0**	**0.0**	**93.0**	**93.0**	**94.0**	**94.0**	**94.0**
Fund Source (Operating Only)							
1178 temp code			93.0	93.0	94.0	94.0	94.0
Total	**0.0**	**0.0**	**93.0**	**93.0**	**94.0**	**94.0**	**94.0**
Positions							
Full-time			1.0	1.0	1.0	1.0	1.0
Part-time							
Temporary							
Change in Revenues							

Estimated SUPPLEMENTAL (FY2013) cost: 0.0

Estimated CAPITAL (FY2014) cost: 0.0

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? No
If yes, by what date are the regulations to be adopted, amended or repealed?

Why this fiscal note differs from previous version:

Initial version.

Prepared By: Pamela Leary — Phone: (907)465-2350
Division: Treasury — Date: 02/22/2013 04:30 PM
Approved By: Angela Rodell — Date: 02/22/13
Deputy Commissioner, DOR

STATE OF ALASKA
2013 LEGISLATIVE SESSION

BILL NO. HB049

Analysis

This bill establishes a Chinook Salmon Fund as a separate fund. Appropriations of the fund will be moved to a grant account from which grants will be made for research and restoration projects. In order to prepare this fiscal note, we assumed that the fund would be created with an initial deposit of $25 million. It is anticipated that the fund will be managed with an asset allocation that includes fixed income, domestic equity and international equity in order to yield a real annual rate of return of 5%. Note that more aggressive asset allocations may result in principal loss and higher investment management fees . As written, the bill contemplates that Department of Revenue staff would maintain records for all donations and monitor the use of money by the board. The increase in Personal Services costs reflect this requirement.

This fiscal note represents only the incremental increases in costs of the Treasury Division, however additional fees may be allocated to the fund based on the Division's cost allocation plan.

28-LS0143\N
Bailey
3/15/13

Need to Adopt as conceptual amd

CS FOR HOUSE BILL NO. 49( )

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-EIGHTH LEGISLATURE - FIRST SESSION

BY

Offered:
Referred:

Sponsor(s): REPRESENTATIVES HERRON, Edgmon, Feige, Tuck, Foster, Kerttula, Kreiss-Tomkins, Tarr

A BILL

FOR AN ACT ENTITLED

"An Act establishing the Alaska Chinook salmon research and restoration endowment fund and relating to grants from the fund; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

*** Section 1.** AS 37.14 is amended by adding new sections to read:

Article 7A. Alaska Chinook Salmon Research and Restoration Endowment Fund.

Sec. 37.14.650. Fund established. (a) The Alaska Chinook salmon research and restoration endowment fund is established as a separate endowment trust fund of the state consisting of

(1) appropriations to the fund;

(2) donations to the fund; and

(3) income earned on investments of fund assets if that income is appropriated by the legislature to the fund.

(b) The commissioner of revenue shall manage the fund as an endowment, with the goal that the purchasing power of the fund will not diminish over time

without regard to additional contributions that may be made to the fund. The commissioner shall invest the assets of the fund in a manner likely to yield at least a five percent real rate of return over time. The commissioner may comingle the assets of the fund with other public funds for purposes of investment.

(c) In carrying out the investment duties for the fund, the commissioner of revenue has the powers and duties set out in AS 37.10.071. The commissioner shall

(1) provide annual reports to the board on the condition and investment performance of the fund;

(2) maintain records for all donations to the fund; the records must reflect, for each donation, the amount of the donation, the date of the donation, and the donor's intent, if any, with respect to how the donation is to be used; and

(3) monitor use of money by the board.

(d) Nothing in this section creates a dedicated fund.

Sec. 37.14.655. Grant account established. The Alaska Chinook salmon research and restoration grant account is established as an account in the general fund.

Sec. 37.14.660. Appropriations to the grant account. (a) As soon as practicable after July 1 of each year, the commissioner of revenue shall identify as available for appropriation to the Alaska Chinook salmon research and restoration grant account the greater of

(1) five percent of the average of the market values of the fund on June 30 for the immediately preceding three fiscal years;

(2) one-half of the earnings of the fund as averaged annually over the immediately preceding three fiscal years; and

(3) if the principal of the fund is valued at more than $50,000,000 based on the market value of the fund on June 30 for the immediately preceding fiscal year, the total earnings of the fund for that fiscal year.

(b) The legislature may appropriate amounts to the grant account

(1) as calculated under (a) of this section; or

(2) from any source in any amount.

Sec. 37.14.665. Use of the grant account. (a) Appropriations to the grant account established by AS 37.14.655 may be used for

(1) grants for research and restoration projects for Chinook salmon stocks located in the state, including block grants to Alaska organizations identifying and administering research and restoration projects for Chinook salmon stocks, if

(A) the project is consistent with a research and restoration plan adopted by the organization and the plan has been approved by the Department of Fish and Game; and

(B) the grant applicant provides matching funds in an amount equal to 25 percent of the grant amount;

(2) reimbursement of the Department of Revenue for the costs of establishing and managing the fund;

(3) reimbursement of the Department of Commerce, Community, and Economic Development for the costs of establishing, maintaining, and administering the board and the grant program;

(4) matching funds for private and federal grants; and

(5) solicitation of contributions for purposes consistent with establishment of the fund.

(b) The board may expend private donations for Chinook salmon research and restorations projects and other uses consistent with the purposes of the fund and in conformity with the donor's restrictions.

Sec. 37.14.670. Board established. The Alaska Chinook Salmon Research and Restoration Endowment Fund Board is established in the Department of Commerce, Community, and Economic Development.

Sec. 37.14.675. Board members. (a) The board consists of the following members appointed by the governor:

(1) the commissioner of fish and game or the commissioner's designee; and

(2) six public members, one of whom resides in each of the following regions and engages in subsistence, personal, commercial, or sport use of Chinook salmon stocks in that region:

(A) Southeast Alaska, consisting of all land and water between Cape Suckling and Dixon Entrance that are Gulf of Alaska or mainland

drainages; the Guyot Hills; islands in Stephens Passage and Lynn Canal; Coronation Island, Kuiu Island, Kupreanof Island, Mitkof Island, Zarembo Island, Kashevarof Island, Woronkofski Island, Etolin Island, Wrangell Island, Deer Island, Admiralty Island, Baranof Island, Chichagof Island, Yakobi Island, Inian Island, Lemesurier Island, Pleasant Island; and adjacent marine water and land within three miles of the coastline;

(B) Southcentral Alaska, consisting of all land and water in those drainages south and east of the Alaska Range that drain into the Gulf of Alaska, Cook Inlet, and Prince William Sound between Cape Suckling and Kennedy Entrance; the land and drainages between Redoubt Creek and Cape Douglas that flow into Cook Inlet; the Chitina drainage east to the Canadian border; the drainages into the Delta River upstream from Falls Creek and Black Rapids Glacier; and adjacent marine water and land within three miles of the coastline;

(C) Southwest Alaska, consisting of all land and water between Kennedy Entrance and Cape Newenham that drain into Bristol Bay and the Bering Sea; the Alaska Peninsula; Hagemeister Island, Walrus Island, High Island, Summit Island, Kodiak Archipelago, Barren Island, Pribilof Island, Unimak Island, and Aleutian Islands; and adjacent marine water and land within three miles of the coastline;

(D) Western Alaska, consisting of all land and water between Cape Newenham and the Pastolik River near Kotlik that drain into the Bering Sea from the Yukon River downstream from a straight line drawn between Lower Kalskag and Kotlik; the George River drainage; the Kuskokwim River drainage downstream from the George River drainage; the Holitna River drainage; the Hoholitna River drainage; and adjacent marine water and land within three miles of the coastline;

(E) Arctic Alaska, consisting of all land and water between the Pastolik River near Kotlik and Harrison Bay west of the Ilkillik River drainage that drain into the Arctic Ocean, the Chukchi Sea, Kotzebue Sound, or Norton Sound; Saint Lawrence Island and adjacent islands; and the adjacent marine

water and land within three miles of the coastline;

(F) Interior Alaska, consisting of all land and water of the Kuskokwim River drainage upstream from the George River drainage; all drainages into the east bank of the Robertson River; White River drainage to the Canadian border; Tozitna River drainage; Yukon River drainage upstream from the Tozitna River drainage; Hamlin Creek drainage; all drainages into the south bank of the Yukon River upstream from and including the Charley River drainage; the Ladue River drainage; Fortymile River drainage; Tanana River drainage north of the Alaska Range; and the Koyukuk River drainage.

(b) The public members appointed under (a)(2) of this section shall include at least one member who uses Chinook salmon stock primarily for each of the following:

(1) subsistence;

(2) personal use;

(3) commercial harvest; and

(4) sport fishing.

(c) When appointing public members of the board, the governor shall take into consideration recommendations of the fish advisory committees established under AS 16.05.260 for the region in which the prospective member resides.

(d) Members shall serve terms of five years and may be reappointed by the governor.

(e) Except as provided in AS 37.14.680(b)(5), the board shall act by a vote of a majority of the members of the board. Members may participate in board meetings telephonically and vote telephonically.

Sec. 37.14.680. Duties of the board. (a) The Alaska Chinook Salmon Research and Restoration Endowment Fund Board shall administer the grant program.

(b) The board shall

(1) within 90 days after the appointment of the seventh board member, adopt bylaws governing the board's operation and identify an organization incorporated in Alaska to provide clerical and administrative support to the board in performing its duties;

(2) monitor approved projects for compliance with specific grant

conditions;

(3) keep electronic recordings of each meeting of the board to be made available on request;

(4) adopt regulations creating a process for soliciting, awarding, and monitoring research and restoration grants and ensuring peer review for grant projects; the board shall consider the process and structure of the North Pacific Research Board in adopting its regulations;

(5) award grants upon affirmative vote of the six public members; and

(6) provide an opportunity for the public to comment on the merits, methods, and parameters of research, restoration projects, or other matters relating to the board and the fund.

(c) On February 1 of each year following the calendar year grants are first awarded, the board shall prepare and submit a report to the governor and make the report available to the legislature. The report must include, for the last calendar year,

(1) the number of applicants and the number and type of grants awarded;

(2) the dollar amount of grants awarded;

(3) the research and restoration projects funded and the results of those projects;

(4) the expense to administer the fund, the grants, and the board; and

(5) the amount of private contributions, if any, to the fund and how those contributions were used.

Sec. 37.14.685. Review of grants. (a) When reviewing grant applications, the board shall give weight to the following factors:

(1) whether the Chinook salmon stocks targeted in the grant application provide a significant commercial, subsistence, sport, or personal use fishery for Alaska residents;

(2) the importance of the Chinook salmon stocks targeted in the grant application and the fisheries those stocks support, taking into consideration the use of stocks by Alaska residents for nutritional, economic, social, and cultural well-being;

(3) whether the applicant has experience in administering research or

restoration projects for Chinook salmon;

(4) recommendations of state agencies or organizations involved in Chinook salmon management in the state.

(b) The board shall give priority to grant applications for research or restoration projects targeting Chinook salmon stocks that, within the preceding 10 years,

(1) were listed by the Department of Fish and Game as stocks of concern;

(2) were the subject of a state or federal fisheries disaster declaration;

(3) were closed or significantly restricted for commercial, sport, or personal use, or restricted for subsistence uses; or

(4) declined significantly from historic yield levels.

Sec. 37.14.695. Definitions. In AS 37.14.650 - 37.14.695,

(1) "board" means the Alaska Chinook Salmon Research and Restoration Endowment Fund Board established under AS 37.14.670;

(2) "Chinook salmon" means Alaska king salmon of the genus Oncorhynchus, species tshawytscha;

(3) "fund" means the Alaska Chinook salmon research and restoration endowment fund established under AS 37.14.650;

(4) "grant account" means the Alaska Chinook salmon research and restoration grant account established under AS 37.14.655.

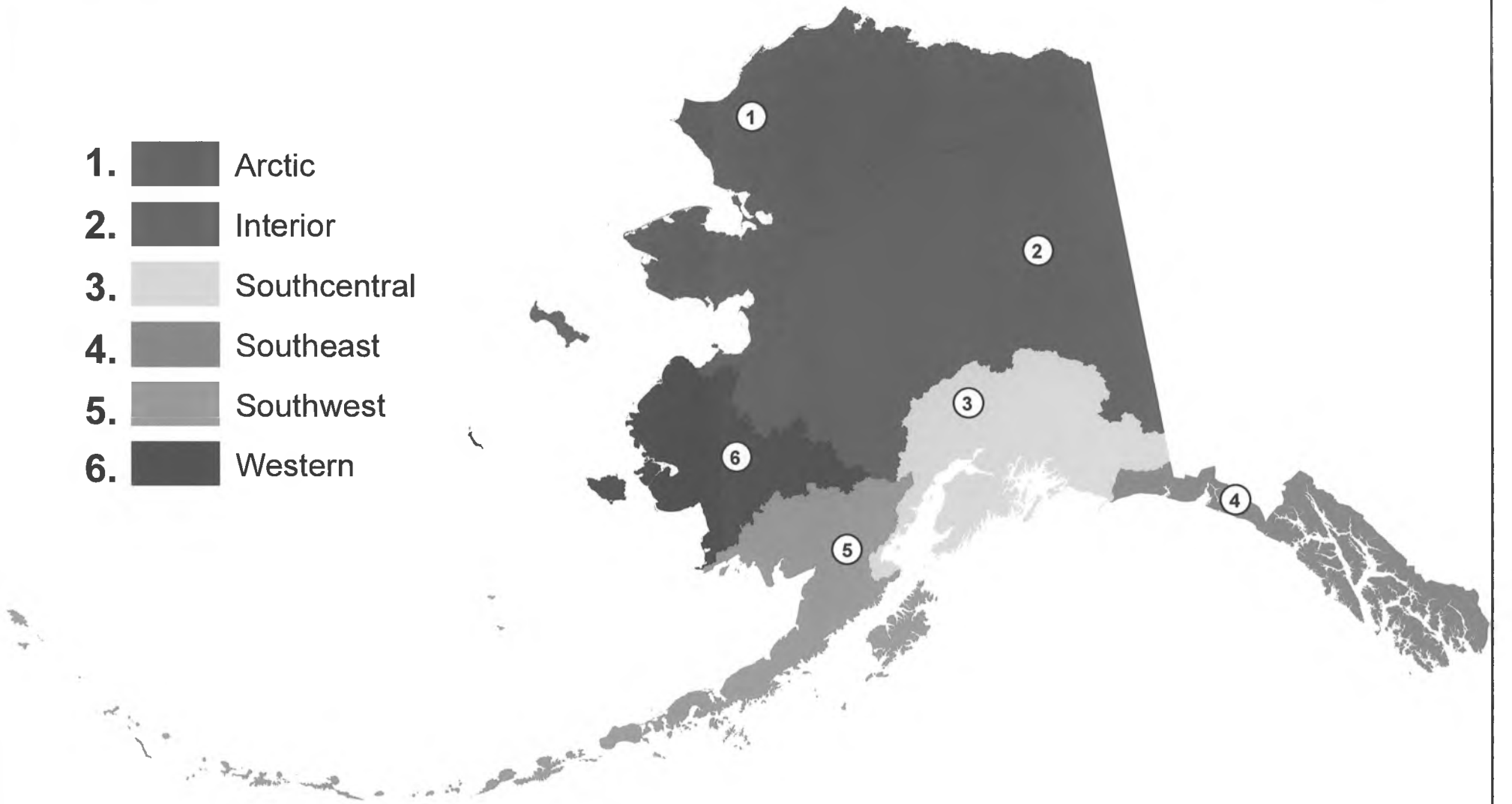
*** Sec. 2.** The uncodified law of the State of Alaska is amended by adding a new section to read:

TRANSITION. (a) The governor shall appoint three members under AS 37.14.675 to an initial term of three years and four members to an initial term of five years. After a member's initial term has expired, appointments shall comply with AS 37.14.675(b).

(b) Under AS 37.14.660, enacted by sec. 1 of this Act, for the first three fiscal years after the effective date of this Act, as soon as practicable after July 1 of each fiscal year, the commissioner of revenue shall identify as available for appropriation to the Alaska Chinook salmon research and restoration grant account established under AS 37.14.655, and the legislature may appropriate to the grant account, five percent of the market value of the

Alaska Chinook salmon research and restoration endowment fund.

*** Sec. 3.** This Act takes effect July 1, 2013.



HB 49 Workdraft "N" - Proposed Regions for the Public Members of the Alaska Chinook Salmon Research and Endowment Fund Board

HOUSE BILL NO. 49

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-EIGHTH LEGISLATURE - FIRST SESSION

BY REPRESENTATIVES HERRON, Edgmon, Feige, Tuck, Foster, Kerttula, Kreiss-Tomkins

Introduced: 1/16/13
Referred: House Special Committee on Fisheries, Finance

A BILL

FOR AN ACT ENTITLED

"An Act establishing the Alaska Chinook salmon research and restoration endowment fund and relating to grants from the fund."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

*** Section 1.** AS 37.14 is amended by adding new sections to read:

Article 7A. Alaska Chinook Salmon Research and Restoration Endowment Fund.

Sec. 37.14.650. Fund established. (a) The Alaska Chinook salmon research and restoration endowment fund is established as a separate endowment trust fund of the state consisting of

(1) appropriations to the fund;

(2) donations to the fund; and

(3) income earned on investments of fund assets if that income is appropriated by the legislature to the fund.

(b) The commissioner of revenue shall manage the fund as an endowment, with the goal that the purchasing power of the fund will not diminish over time

without regard to additional contributions that may be made to the fund. The commissioner shall invest the assets of the fund in a manner likely to yield at least a five percent real rate of return over time. The commissioner may comingle the assets of the fund with other public funds for purposes of investment.

(c) In carrying out the investment duties for the fund, the commissioner of revenue has the powers and duties set out in AS 37.10.071. The commissioner shall

(1) provide annual reports to the board on the condition and investment performance of the fund;

(2) maintain records for all donations to the fund; the records must reflect, for each donation, the amount of the donation, the date of the donation, and the donor's intent, if any, with respect to how the donation is to be used; and

(3) monitor use of money by the board.

(d) Nothing in this section creates a dedicated fund.

Sec. 37.14.655. Grant account established. The Alaska Chinook salmon research and restoration grant account is established as an account in the general fund.

Sec. 37.14.660. Appropriations to the grant account. (a) As soon as practicable after July 1 of each year, the commissioner of revenue shall identify as available for appropriation to the Alaska Chinook salmon research and restoration grant account the greater of

(1) five percent of the average of the market values of the fund on June 30 for the immediately preceding three fiscal years;

(2) one-half of the earnings of the fund as averaged annually over the immediately preceding three fiscal years; and

(3) if the principal of the fund is valued at more than $50,000,000 based on the market value of the fund on June 30 for the immediately preceding fiscal year, the total earnings of the fund for that fiscal year.

(b) The legislature may appropriate amounts to the grant account

(1) as calculated under (a) of this section; or

(2) from any source in any amount.

Sec. 37.14.665. Use of the grant account. (a) Appropriations to the grant account established by AS 37.14.655 may be used for

(1) grants for research and restoration projects for Chinook salmon stocks located in the state, including block grants to Alaska organizations identifying and administering research and restoration projects for Chinook salmon stocks, if

(A) the project is consistent with a research and restoration plan adopted by the organization and the plan has been approved by the Department of Fish and Game; and

(B) the grant applicant provides matching funds in an amount equal to 25 percent of the grant amount;

(2) reimbursement of the Department of Revenue for the costs of establishing and managing the fund;

(3) reimbursement of the Department of Commerce, Community, and Economic Development for the costs of establishing, maintaining, and administering the board and the grant program;

(4) matching funds for private and federal grants; and

(5) solicitation of contributions for purposes consistent with establishment of the fund.

(b) The board may expend private donations for Chinook salmon research and restorations projects and other uses consistent with the purposes of the fund and in conformity with the donor's restrictions.

Sec. 37.14.670. Board established. The Alaska Chinook Salmon Research and Restoration Endowment Fund Board is established in the Department of Commerce, Community, and Economic Development.

Sec. 37.14.675. Board members. (a) The board consists of the following members appointed by the governor:

(1) the commissioner of fish and game or the commissioner's designee; and

(2) six public members, one of whom resides in each of the following regions and engages in subsistence, personal, commercial, or sport use of Chinook salmon stocks in that region:

(A) Southeast Alaska, consisting of all land and water between Cape Suckling and Dixon Entrance that are Gulf of Alaska or mainland

drainages; the Guyot Hills; islands in Stephens Passage and Lynn Canal; Coronation Island, Kuiu Island, Kupreanof Island, Mitkof Island, Zarembo Island, Kashevarof Island, Woronkofski Island, Etolin Island, Wrangell Island, Deer Island, Admiralty Island, Baranof Island, Chichagof Island, Yakobi Island, Inian Island, Lemesurier Island, Pleasant Island; and adjacent marine water and land within three miles of the coastline;

(B) Southcentral Alaska, consisting of all land and water in those drainages south and east of the Alaska Range that drain into the Gulf of Alaska, Cook Inlet, and Prince William Sound between Cape Suckling and Cook Inlet; the drainage between Redoubt Creek and the northern boundary of Katmai National Preserve that flows into Shelikof Strait; the Chitina drainage east to the Canadian border; the drainages into the Delta River upstream from Falls Creek and Black Rapids Glacier; the Kodiak Archipelago and Barren Islands; the drainages on the Alaska Peninsula that flow into the Gulf of Alaska; and adjacent marine water and land within three miles of the coastline;

(C) Southwest Alaska, consisting of all land and water between Kennedy Entrance and Cape Newenham that drain into Bristol Bay and the Bering Sea; the drainages on the Alaska Peninsula that flow into the Bering Sea; Hagemeister Island, Walrus Island, Pribilof Island, Unimak Island, and Aleutian Islands; and adjacent marine water and land within three miles of the coastline;

(D) Western Alaska, consisting of all land and water between Cape Newenham and the Pastolik River near Kotlik that drain into the Bering Sea from the Yukon River downstream from a straight line drawn between Lower Kalskag and Kotlik; the George River drainage; the Kuskokwim River drainage downstream from the George River drainage; the Holitna River drainage; the Hoholitna River drainage; and adjacent marine water and land within three miles of the coastline;

(E) Arctic Alaska, consisting of all land and water between the Pastolik River near Kotlik and Harrison Bay west of the Ilkillik River drainage that drain into the Arctic Ocean, the Chukchi Sea, Kotzebue Sound, or Norton

Sound; Saint Lawrence Island and adjacent islands; and the adjacent marine water and land within three miles of the coastline;

(F) Interior Alaska, consisting of all land and water of the Kuskokwim River drainage upstream from the George River drainage; all drainages into the east bank of the Robertson River; White River drainage to the Canadian border; Tozitna River drainage; Yukon River drainage upstream from the Tozitna River drainage; Hamlin Creek drainage; all drainages into the south bank of the Yukon River upstream from and including the Charley River drainage; the Ladue River drainage; Fortymile River drainage; Tanana River drainage north of the Alaska Range; and the Koyukuk River drainage.

(b) Members shall serve terms of five years and may be reappointed by the governor.

Sec. 37.14.680. Duties of the board. (a) The Alaska Chinook Salmon Research and Restoration Endowment Fund Board shall administer the grant program.

(b) The board shall

(1) within 90 days after the appointment of the seventh board member, adopt bylaws governing the board's operation and identify an organization incorporated in Alaska to provide clerical and administrative support to the board in performing its duties;

(2) monitor approved projects for compliance with specific grant conditions;

(3) keep electronic recordings of each meeting of the board to be made available on request;

(4) adopt regulations creating a process for soliciting, awarding, and monitoring research and restoration grants and ensuring peer review for grant projects; the board shall consider the process and structure of the North Pacific Research Board in adopting its regulations;

(5) award grants upon affirmative vote of the six public members; and

(6) provide an opportunity for the public to comment on the merits, methods, and parameters of research, restoration projects, or other matters relating to the board and the fund.

(c) On February 1 of each year following the calendar year grants are first awarded, the board shall prepare and submit a report to the governor and make the report available to the legislature. The report must include, for the last calendar year,

(1) the number of applicants and the number and type of grants awarded;

(2) the dollar amount of grants awarded;

(3) the research and restoration projects funded and the results of those projects;

(4) the expense to administer the fund, the grants, and the board; and

(5) the amount of private contributions, if any, to the fund and how those contributions were used.

Sec. 37.14.685. Review of grants. (a) When reviewing grant applications, the board shall give weight to the following factors:

(1) whether the Chinook salmon stocks targeted in the grant application provide a significant commercial, subsistence, sport, or personal use fishery for Alaska residents;

(2) the importance of the Chinook salmon stocks targeted in the grant application and the fisheries those stocks support, taking into consideration the use of stocks by Alaska residents for nutritional, economic, social, and cultural well-being;

(3) whether the applicant has experience in administering research or restoration projects for Chinook salmon;

(4) recommendations of state agencies or organizations involved in Chinook salmon management in the state.

(b) The board shall give priority to grant applications for research or restoration projects targeting Chinook salmon stocks that, within the preceding 10 years,

(1) were listed by the Department of Fish and Game as stocks of concern;

(2) were the subject of a state or federal fisheries disaster declaration;

(3) were closed or significantly restricted for commercial, sport, or personal use, or restricted for subsistence uses; or

(4) declined significantly from historic yield levels.

Sec. 37.14.695. Definitions. In AS 37.14.650 - 37.14.695,

(1) "board" means the Alaska Chinook Salmon Research and Restoration Endowment Fund Board established under AS 37.14.670;

(2) "Chinook salmon" means Alaska king salmon of the genus Oncorhynchus, species tshawytscha;

(3) "fund" means the Alaska Chinook salmon research and restoration endowment fund established under AS 37.14.650;

(4) "grant account" means the Alaska Chinook salmon research and restoration grant account established under AS 37.14.655.

* **Sec. 2.** The uncodified law of the State of Alaska is amended by adding a new section to read:

TRANSITION. The governor shall appoint three members under AS 37.14.675 to an initial term of three years and four members to an initial term of five years. After a member's initial term has expired, appointments shall comply with AS 37.14.675(b).

28-LS0143\A.1
Bailey
2/25/13

#1

AMENDMENT

OFFERED IN THE HOUSE BY REPRESENTATIVE HERRON

TO: HB 49

Page 1, line 2, following "**fund**":

Insert "**; and providing for an effective date**"

Page 7, following line 15:

Insert new material to read:

"(b) Under AS 37.14.660, enacted by sec. 1 of this Act, for the first three fiscal years after the effective date of this Act, as soon as practicable after July 1 of each fiscal year, the commissioner of revenue shall identify as available for appropriation to the Alaska Chinook salmon research and restoration grant account established under AS 37.14.655, and the legislature may appropriate to the grant account, five percent of the market value of the Alaska Chinook salmon research and restoration endowment fund.

*** Sec. 3.** This Act takes effect July 1, 2013."

28-LS0143\A.2
Bailey
2/26/13

#2.

AMENDMENT

OFFERED IN THE HOUSE BY REPRESENTATIVE HERRON

TO: HB 49

Page 5, following line 12:

Insert a new subsection to read:

"(c) Except as provided in AS 37.14.680(b)(5), the board shall act by a vote of a majority of the members of the board."

Not in Packets

State of Alaska
Department of Revenue

Commissioner Bryan Butcher

SEAN PARNELL, GOVERNOR
333 Willoughby Avenue, 11th Floor
P.O. Box 110400
Juneau, Alaska 99811-0400
Phone: (907) 465-2300
Fax: (907) 465-2389

The Honorable Peter Micciche
Alaska State Senate
Juneau, AK 99801

March 15, 2013

Dear Senator Micciche:

This letter is in response to your question as to whether or not there are any inconsistencies in the investment provisions in SB 69 – an act establishing the Alaska Chinook salmon research and restoration endowment fund. In Sec 37.14.650(b) the Commissioner of Revenue is required to manage the fund so that purchasing power will not diminish over time. This provision can be interpreted as (i) generating enough income to cover inflation and (ii) preserving against any principal losses. The provision goes on to require that the Commissioner invest the assets in a manner likely to yield at least a five percent real rate of return. The Department of Revenue's current assumption of inflation is 2.50% so in order to achieve a 5% real rate of return, the fund will have to be invested to earn a 7.50% nominal rate of return. Under current market conditions the asset allocation would have to be heavily weighted in equities in order to achieve such rates.

In Sec 37.14.660(a) the Commissioner of Revenue shall identify the amount available for appropriation based on the greater of (i) 5% of the average market value for the preceding three fiscal years; (ii) one-half the earnings as averaged over the preceding three fiscal years; or (iii) if the principal is valued at more than $50,000,000 for the immediately preceding fiscal year, the total earnings. Given there is no transition provision for this section, the fund will need to immediately earn at least 5% in order to maintain the initial deposit. Once the fund matures three years the dollar cost averaging will help offset potential market losses and loss of purchasing power.

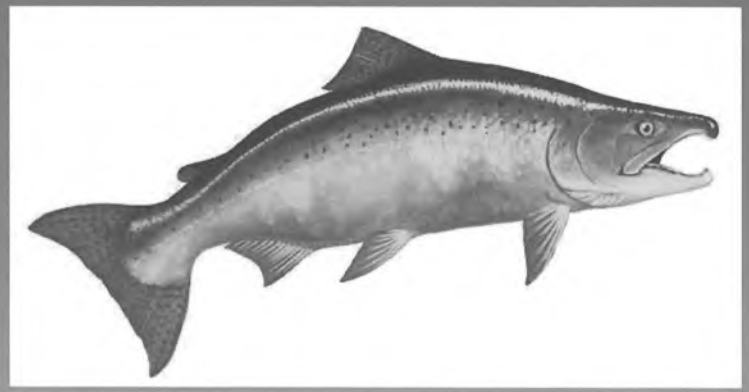
In conclusion, the legislation is somewhat inconsistent in that the current market will make it very difficult to achieve the level of earnings required without taking significant investment risk. It is also inconsistent in that it does not provide for any ramp up period to build the endowment but rather immediately requires appropriations to be made that will diminish the principal core of the endowment if earnings are insufficient.

Please contact me if you would like any additional information.

Sincerely,

Angela Rodell
Deputy Commissioner





House Bill 49 – Chinook Salmon Research and Restoration Endowment

Sponsored by Representative Bob Herron

House Fisheries Committee: Tuesday, February 26, 2013

HB 49 – Chinook Salmon Research & Restoration Endowment

- HB 49 establishes the Alaska Chinook salmon research and restoration fund (the Fund) in the Dept. of Revenue
- Commissioner of Revenue manages the Fund sustainably, with a goal of 5% real rate of return
- This bill does not create a dedicated fund



HB 49 – GRANT ACCOUNT

- The Bill also establishes a Grant Account in the general fund
- Each year, the Commissioner of Revenue identifies as available for appropriation to the Grant Account earnings from the Fund
- The legislature may then appropriate to the Grant Account from the Fund

HB 49 – GRANT ACCOUNT (cont.)

The Grant Account may be used for:

- Grants for research and restoration projects for Alaska Chinook salmon stocks
- Reimbursement to the Depts. of Revenue & DCCED for costs associated with the Fund
- Matching funds for private and federal grants

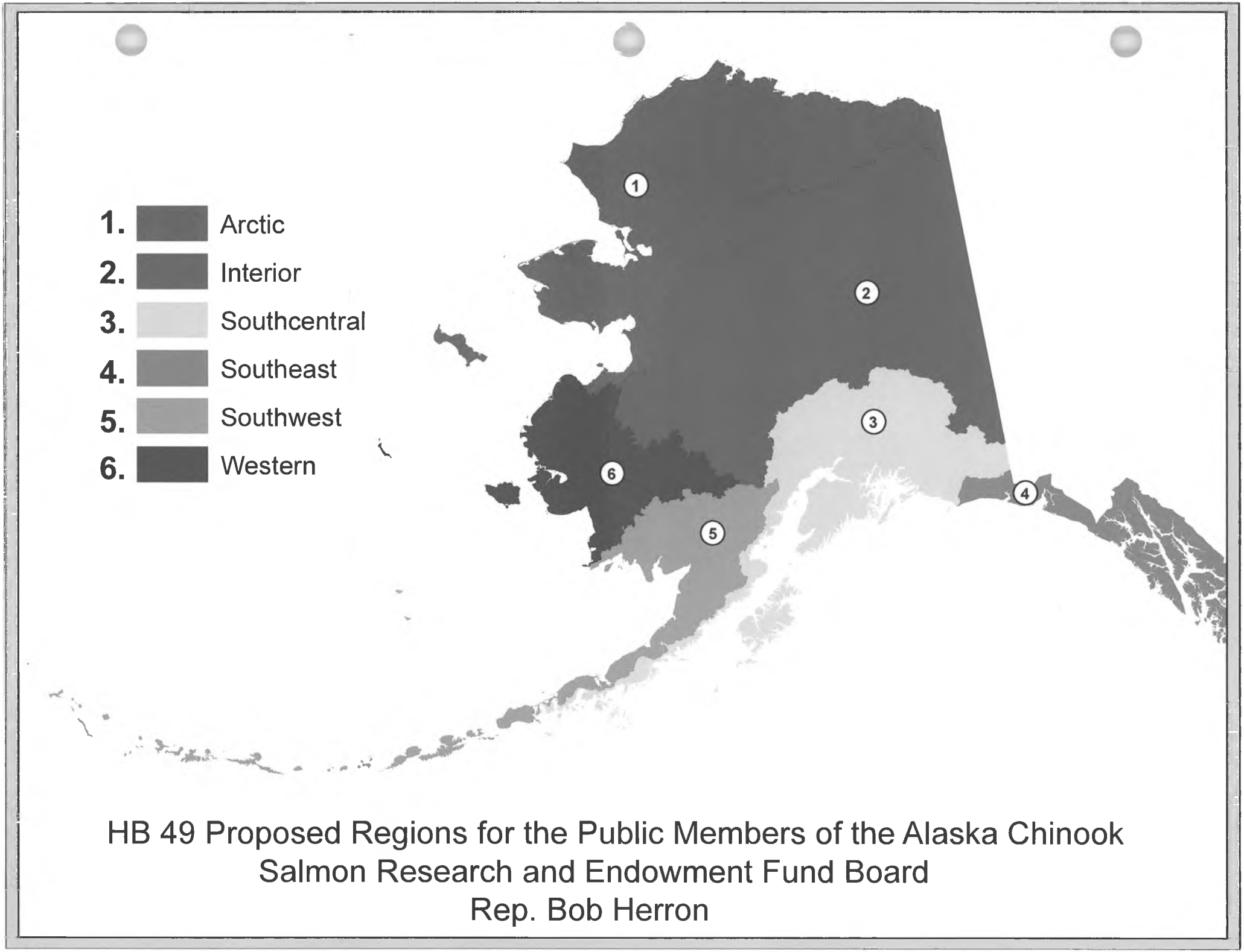
HB 49 – THE BOARD

- The Alaska Chinook Salmon Research and Restoration Endowment Fund Board is established in DCCED

- Board administers the Grant Program

- Members: the Commissioner of Fish & Game and one resident from each of six regions across Alaska, with experience harvesting Chinook

- Public members appointed by the Governor



HB 49 Proposed Regions for the Public Members of the Alaska Chinook Salmon Research and Endowment Fund Board
Rep. Bob Herron

HB 49 – BOARD DUTIES

The Board will:

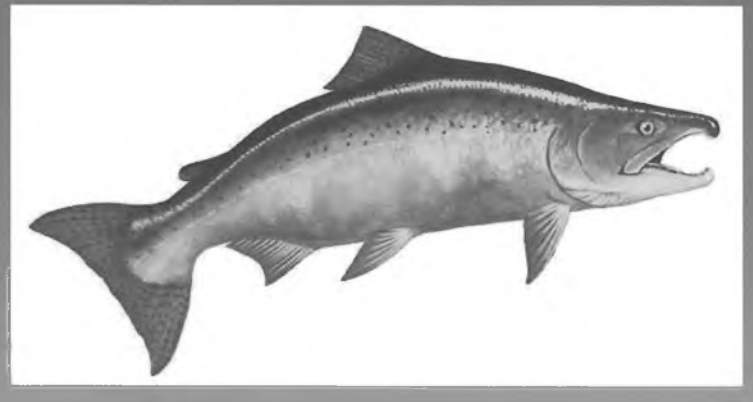
- Adopt bylaws governing its operation
- Identify an organization incorporated in Alaska to support the Board's duties
- Monitor projects for compliance
- Adopt regulations relating to the Grant Program

HB 49 – GRANT PRIORITIZATION

The Board shall give priority to grants that target Chinook salmon stocks that were:

- Listed as stocks of concern within the last 10 years
- Subject to a state or federal fisheries disaster declaration
- Closed or significantly restricted
- Declined significantly from historic yields





House Bill 49 – Chinook Salmon Research and Restoration Endowment

Sponsored by Representative Bob Herron

House Fisheries Committee: Tuesday, February 26, 2013

HB 49 – $$ INTO GRANT ACCOUNT

On July 1, Commissioner of Revenue identifies $$ to move from FUND to GRANT ACCOUNT

Total to transfer is equal to the greater of:

- 5% of the 3-year average value of the Fund
- ½ the 3-year average earnings of the Fund
- If Fund over $50M, the total earnings of the Fund

HB 49 – Amendment

Amendment provides transition language to allow for $$ into the GRANT ACCOUNT for first three years of the Fund:

- For the first 3 years of the Fund, 5% of the Fund goes into the GRANT ACCOUNT each year

BRISTOL BAY NATIVE ASSOCIATION
P.O. BOX 310
DILLINGHAM, ALASKA 99576
PHONE (907) 842-5257

Tribal Councils
Served by BBNA:

Aleknagik
Chignik Bay
Chignik Lagoon
Chignik Lake
Clarks Point
Curyung
Egegik
Ekuk
Ekwok
Igiugig
Iliamna
[illegible]f Bay
Kanatak
King Salmon
Kokhanok
Koliganek
Levelock
Manokotak
Naknek
New Stuyahok
Newhalen
Nondalton
Pedro Bay
Perryville
Pilot Point
Port Heiden
Portage Creek
South Naknek
Togiak
Twin Hills
[illegible]shik

February 20, 2013

RE: Letter of Support for **House Bill 49** that creates the ALASKA CHINOOK SALMON RESEARCH AND RESTORATION ENDOWMENT FUND

To Whom It May Concern:

On behalf of the Bristol Bay Native Association (BBNA), it is with great pleasure I provide a letter of support for the ALASKA CHINOOK SALMON RESEARCH AND RESTORATION ENDOWMENT FUND. BBNA is a Tribal consortium of 31 Bristol Bay Tribes. BBNA has much in common with its neighbors to the north and partners and supports its counterparts in the Arctic, Yukon, and Kuskokwim regions.

Chinook salmon is an important staple food for the Alaska Native people and others in the Western Alaska. They are also an economically important species for a number of commercial fisheries and a prized sport fishing resource. Chinook salmon stocks are highly valued and essential to the basic way of life in Western Alaska.

Chinook salmon populations have suffered significant fluctuations in abundance during the past 40 years, yet little is known about the factors influencing their populations. Eight of the 14 currently listed "stocks of concern" are Chinook salmon stocks and there are no forecasts suggesting this trend is reversing anytime soon.

A decline in Chinook salmon causes severe hardship and anxiety for the salmon-dependent people in Western Alaska. Limited commercial fishing on Chinook salmon has occurred in recent years and earnings have declined significantly. Poor Chinook salmon returns produce tension and conflict between fishery user groups competing for the same fishery resource.

The bill creates a stable, long-term source of funding for high quality interdisciplinary research such as the Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative (AYK SSI). AYK SSI Research results and information is being utilized in a wide variety of ways to support sustainable salmon management. It analyses escapement goals and helps to gain better an understanding of marine ecosystems. It helps to provide fisheries

managers with better forecasts and improved responses to changing environmental conditions.

BBNA fully endorses the Alaska Chinook Salmon Research and Restoration Endowment Fund. I respectfully request your support of the bill when it comes before your legislative body.

Sincerely,

Ralph Anderson
President & Chief Executive Officer
Bristol Bay Native Association

Statewide Chinook Salmon Research Initiative								
	Approx. Annual Costs Identified In the Research	Preliminary Cost Assessment[1]						
Research Plan Elements	Plan (Table 4)	FY13 Start-up	FY14	FY15	FY16	FY17	FY18	Total
Stock Specific Escapement/Inriver Run Assessments								
Adult Mark-Recapture with age, sex, size	3,000.0							
Unuk River		35.0	70.0	70.0	70.0	70.0	70.0	
Stikine River			-	-	-	-	-	
Taku River			-	-	-	-	-	
Chilkat River		30.0	70.0	70.0	70.0	70.0	70.0	
Copper River		75.0	400.0	225.0	225.0	225.0	225.0	
Susitna River		60.0	470.0	260.0	260.0	260.0	260.0	
Kenai River		50.0	280.0	160.0	160.0	160.0	160.0	
Karluk River		15.0	50.0	50.0	50.0	50.0	50.0	
Chignik River		-	-	-	-	-	-	
Nushagak River		50.0	400.0	225.0	225.0	225.0	225.0	
Kuskokwim River		-	500.0	300.0	300.0	300.0	300.0	
Yukon River		-	400.0	225.0	225.0	225.0	225.0	
Subtotal		315.0	2,640.0	1,585.0	1,585.0	1,585.0	1,585.0	9,295.0
Stock Specific Smolt Assessments								
Juvenile Coded wire tagging	2,500.0							
Unuk River		36.0	90.0	90.0	90.0	90.0	90.0	
Stikine River		71.0	65.0	65.0	65.0	65.0	65.0	
Taku River		97.0	65.0	65.0	65.0	65.0	65.0	
Chilkat River		29.0	135.0	135.0	135.0	135.0	135.0	
Copper River		75.0	300.0	150.0	150.0	150.0	150.0	
Susitna River		50.0	300.0	150.0	150.0	150.0	150.0	
Kenai River		50.0	300.0	150.0	150.0	150.0	150.0	
Karluk River		15.0	250.0	130.0	130.0	130.0	130.0	
Chignik River		-	200.0	100.0	100.0	100.0	100.0	
Nushagak River		50.0	300.0	150.0	150.0	150.0	150.0	
Kuskokwim River		-	220.0	150.0	150.0	150.0	150.0	
Yukon River		-	220.0	150.0	150.0	150.0	150.0	
Subtotal		473.0	2,445.0	1,485.0	1,485.0	1,485.0	1,485.0	8,858.0
Stock-Specific Harvest Assessments	1,800.0							
Southeast Genetics Mixed Stock Analysis and Sampling		-	280.0	280.0	280.0	280.0	280.0	
Copper River, PWS CWT and Genetics Work		10.0	60.0	110.0	110.0	110.0	110.0	
Cook Inlet CWT and Genetics Work		10.0	60.0	300.0	300.0	300.0	300.0	
Kodiak CWT and Genetics Work		10.0	60.0	75.0	75.0	75.0	75.0	
Chignik, Alaska Pen CWT and Genetics Work		10.0	60.0	75.0	75.0	75.0	75.0	
Bristol Bay CWT and Genetcs Work		-	-	150.0	150.0	150.0	150.0	
Kuskokwim CWT and Genetics Work		-	-	150.0	150.0	150.0	150.0	
Yukon CWT and Genetics Work			-	150.0	150.0	150.0	150.0	
Subtotal		40.0	520.0	1,290.0	1,290.0	1,290.0	1,290.0	5,720.0
Stock-Specific Local, Traditional Knowledge and Subsistence Harvest Assessments	500.0	160.0	500.0	500.0	-	-		1,160.0
Marine Surveys and Modeling[2]	1,600.0		-	-	-	-		
Offshore Fishery Sampling[3]	-	-	-	-	-	-		
Environmental and Ecological Process Studies[4]	700.0	-	620.0	620.0	620.0	620.0	620.0	3,100.0
Genetic Baseline and Marker Development	300.0	-	250.0	200.0	200.0	200.0	200.0	1,050.0
Programmatic Support	500.0							
CWT Lab Capacity		-	200.0	200.0	200.0	200.0	200.0	
Biometric and Other Support		30.0	95.0	95.0	95.0	95.0	95.0	
Subtotal		30.0	295.0	295.0	295.0	295.0	295.0	1,505.0
Total FY2014 Statewide Chinook Salmon Research Initiative		1,018.0	7,270.0	5,975.0	5,475.0	5,475.0	5,475.0	30,688.0

1 Costs herein are preliminary estimates that apply directly to funding provided under the Governor's Initiative. They are subject to change among years and projects pending initial project planning and implementation discussions with staff in February, 2012.

2 Marine Survey and Modeling costs are included in the research plan (Table 4) at $1.6M per year (for an anticipated 3-yr total of $4.8M) but are not included in the Governor's Initiative. To be funded with federal sources.

3 Offshore Sampling costs are not included in the research plan (Table 4) or the Governor's Initiative. Funding dependant on outside sources.

4 Process Studies costs are included in the research plan (Table 4) and the Governor's Initiative, and will be funded via RSA to the University.

Bering Sea Fishermen's Association
1130 W. 6th Avenue, Suite 110
Anchorage, Alaska 99501
(907) 279-6519 or (888) 927-2732
FAX (907) 258-6688

NEED FOR A DEDICATED CHINOOK SALMON RESEARCH FUND

The decline of Chinook salmon runs throughout the state is troubling from an economic, social and ecological perspective and deserves careful attention from both the science community and policy makers.

Despite considerable declines in various regions of Alaska, there is no dedicated research program prepared to further address the Chinook salmon variations or work toward developing better tools for managers.

ADF&G continues their in-river stock assessment work and in-season management efforts. However, on its own, ADF&G is not capable of understanding the causes of the decline, or able to reliably forecast or produce a range of possible actions for responding to these declines.

To understand the trends and causes of variation in abundance of Chinook salmon, information concerning population biology, freshwater ecology, marine ecology, and population dynamics are needed to understand the variables controlling population abundance and trends.

Knowledge gaps remain across the State of Alaska indicating that a multi-disciplinary research effort is needed to investigate the role of physical habitat, climate induced environmental variability, and biological response in Chinook salmon populations if we are to meet the needs of Alaskans.

Until we better understand the drivers of the decline:

- We don't know if the ADF&G management approach is making things better or worse.
- We don't know if escapement goals are adequate.
- We don't know if declines are being driven by human impacts or by large scale environmental shifts in ocean productivity.
- We cannot forecast or respond to these major shifts in salmon abundance.

Stable, long-term funding is needed for an integrated science-based program of research focused on Chinook salmon.

- We need a dedicated program to understand and address the causes of the declines of Chinook salmon throughout both the freshwater and marine environments,
- This research program must draw on the best available peer-reviewed science, synthesizing information from diverse fields including: population biology, freshwater and marine ecology, oceanography, genetics, modeling and statistics.
- It must facilitate coordinated efforts among diverse partners in Native organizations, state agencies, federal agencies, universities and private sector.

This legislation would create a stable, long-term source of funding to support high quality

interdisciplinary research to gain an improved understanding of, for example, the dynamics of marine ecosystems - essential to providing fisheries managers with better forecasts and improved responses to changing environmental conditions.

Eight of the 12 currently listed "stocks of concern" are Chinook salmon stocks, as defined by the Alaska Board of Fisheries in 5AAC 39.222. A stock of yield concern is defined as "a concern arising from a chronic inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above a stock's escapement needs; a yield concern is less severe than a management concern" (5 AAC 39.222(f)(42)).

Table 1. Current stocks of concern

Stock	Species	Concern Level	Year began
Norton Sound subdistrict 1 (Nome)	Chum	Yield	2000
Norton Sound subdistrict 2 (Golovin)	Chum	Yield	2000
Norton Sound subdistrict 3 (Moses Point)	Chum	Yield	2000
Norton Sound subdistrict 4 (Shaktoolik)	***Chinook***	***Yield***	***2004***
Norton Sound subdistrict 5 (Unalakleet)	***Chinook***	***Yield***	***2004***
Yukon River	***Chinook***	***Yield***	***2000***
Susitna River (Yentna)	Sockeye	Yield	2008
Chuitna River	***Chinook***	***Management***	***2011***
Theodore River	***Chinook***	***Management***	***2011***
Lewis River	***Chinook***	***Management***	***2011***
Willow and Goose Creeks	***Chinook***	***Yield***	***2011***
Alexander Creek	***Chinook***	***Management***	***2011***

In the Arctic- Yukon-Kuskokwim region and more recently Cook Inlet, poor runs of Chinook salmon, plus concurrent declines of chum salmon, have led state and federal agencies to declare fishery disasters in 1997, 1998, 2000, 2001, 2002, 2008, 2009, 2011 and 2012.

In total there have been 23 disaster declarations since 1997 (Table 2). This information alone requires that the State of Alaska elevate the need for sound science in order to establish a reversal of this trend of declines. Sixteen years have passed with few efforts on the part of the State of Alaska to address the problem which is now turned into a crisis.

Table 2. Fishery disasters across Alaska

Watershed	Year	Declaration Source	Declaration Type
Kuskokwim Region	1997	Federal	Commercial Fishery Failure
Kuskokwim River Watershed	1997	State of Alaska	Economic Fish Disaster
Yukon River Watershed	1997	State of Alaska	Economic Fish Disaster
Kuskokwim River Watershed	1998	State of Alaska	Economic Fish Disaster
Yukon River Watershed	1998	State of Alaska	Economic Fish Disaster
Yukon, Kuskokwim & Norton Sound	2000	Federal	Fisheries Disaster
Kuskokwim River Watershed	2000	State of Alaska	Economic Fish Disaster
Yukon River Watershed	2000	State of Alaska	Economic Fish Disaster
Norton Sound Watershed	2000	State of Alaska	Economic Fish Disaster
Kuskokwim River Watershed	2001	State of Alaska	Economic Fish Disaster

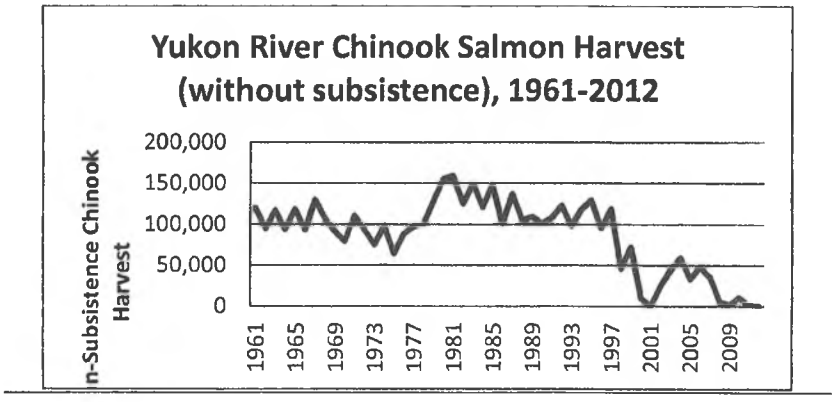
Yukon River Watershed	2001	State of Alaska	Economic Fish Disaster
Norton Sound Watershed	2001	State of Alaska	Economic Fish Disaster
Kuskokwim River Watershed	2002	State of Alaska	Economic Fish Disaster
Yukon River Watershed	2002	State of Alaska	Economic Fish Disaster
Norton Sound Watershed	2002	State of Alaska	Economic Fish Disaster
Yukon River Watershed	2008	Federal	Commercial Fishery Failure
Yukon River Watershed	2009	Federal	Commercial Fishery Failure
Yukon River Watershed	2010	Federal	Commercial Fishery Failure
Kuskokwim Region	2011	Federal	Commercial Fishery Failure
Yukon River Watershed	2011	Federal	Commercial Fishery Failure
Kuskokwim Region	2012	Federal	Commercial Fishery Failure
Yukon River Watershed	2012	Federal	Commercial Fishery Failure
Cook Inlet	2012	Federal	Commercial Fishery Failure

YUKON RIVER

Beginning in the late-1990's, the Yukon River Chinook salmon stocks entered a period of serious, steep decline, which appears to be worsening at this time. This sharp decline is evidenced by the following:

- Escapement goals to Canada, where approximately 50% of the total run spawns, were not met in 2007, 2008, or 2010.

- Commercial harvests of Chinook salmon has been largely or completely curtailed in four out of the last five years, and the same is expected for 2013. While overall commercial fishery earnings on the Yukon may be small when compared to other commercial salmon fisheries in the state, the income is quite significant to residents of the region where cash incomes are scarce. Chinook have historically represented approximately 65% of the commercial fishery revenue on the Yukon (1977-2011 average) however in the past 4 years, this has shrink to only 15% of the fishery value.



Despite having some of the highest subsistence dependence and lowest incomes in the state, state and federal managers have had to implement numerous subsistence harvest restrictions each year in an effort to reach minimum escapement targets. Due to these poor runs and fishery restrictions, **subsistence harvest of Chinook Salmon for the period 2008 to 2010 declined 22%** compared to the period 1982-1997 and for the years 2008, 2009 and 2010 the subsistence harvest of Chinook

salmon on the Yukon River has fallen below the amount necessary for subsistence (ANS) by the Alaska Board of Fisheries (ANS = 45,500-66-704 Chinook salmon, 5 AAC 01.236). The 2011 subsistence harvest estimates are not yet available, however it is highly likely that the harvest once again fell below the amount needed.

ADFG has documented a decrease in the proportion of large Chinook salmon returning and also decreasing trends in the proportion of returning 6- and 7-year old Chinook salmon.

Most significantly, the key measure of productivity shows that the Yukon Chinook salmon runs which spawned in the years 2002 – 2004, whose offspring have now returned to the river as adults—have a productivity around **one return per spawner**.

- This means that in the **absence of any fishing**, the population is just barely able replace itself, with each spawner producing, on average, one prodigy surviving to return to the spawning grounds. **With harvest, the population is below replacement.**

The Yukon River populations which sustained an average combined commercial and subsistence harvest of over 150,000 Chinook salmon from the 1960's to the 1990's, is now no longer able to consistently meet the Amounts Necessary for Subsistence nor have they met treaty obligations to Canada in 3 out of the last 5 years. Expected returns have not been realized since 2007 – even though restrictions have been implemented.

KUSKOKWIM RIVER

The Kuskokwim River hosts the largest subsistence fishery for Chinook salmon in the state (Fall, et. al., 2009). A similar pattern of steep decline has occurred for Kuskokwim River Chinook, as evidenced by the following:

- The 2010, 2011 & 2012 Chinook runs are the lowest recorded in 35 years.

- In 2010 and 2011, abundance was not sufficient to meet escapement goals in the region, despite some restrictions to the subsistence fishery.

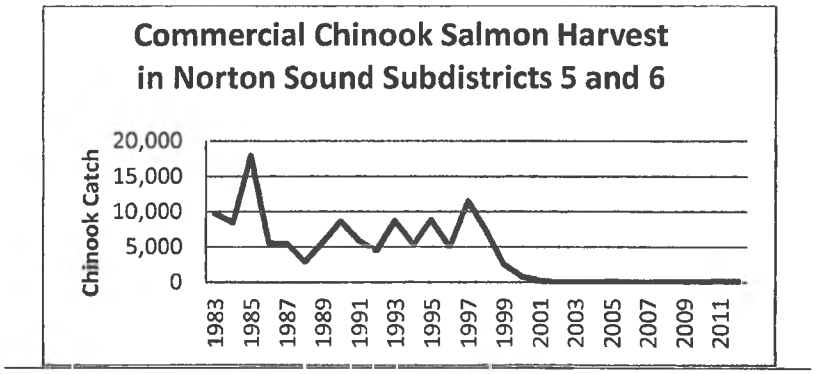
The recently completed ADFG Kuskokwim Chinook run reconstruction- funded by the AYK Sustainable Salmon Initiative – documents that the Kuskokwim stocks are in worse shape than the Yukon Chinook. This key measure of productivity shows that the Kuskokwim River Chinook salmon runs which spawned in the years 2004-2006, whose offspring are just now returning to the river as adults - have productivity well below one return per spawner.

- This means that in the **absence of any fishing**, the population is just barely able replace itself, with each spawner producing, on average, one prodigy surviving to return to the spawning grounds. **With harvest, the population is below replacement.**

Kuskokwim River Chinook salmon stocks are in a period of low productivity and abundance, insufficient to meet necessary escapement levels, and to provide subsistence users with the opportunity to harvest "amounts necessary for subsistence" as established by the Alaska Board of Fish. ANS =64,500-83,000 Chinook for the Kuskokwim River drainage (5 AAC 01.286 (b)(1)).

UNALAKLEET RIVER

The Unalakleet River produces the largest Chinook salmon run in Norton Sound, and continues to be in a period of sustained decline since 1999. There have been no directed commercial fisheries for Chinook salmon in eastern Norton Sound since 2000. Commercial harvests that averaged 7,118 Chinook salmon in the 1980's and 1990's averaged only 130 fish from 2000-2009. See Figure 3, below.

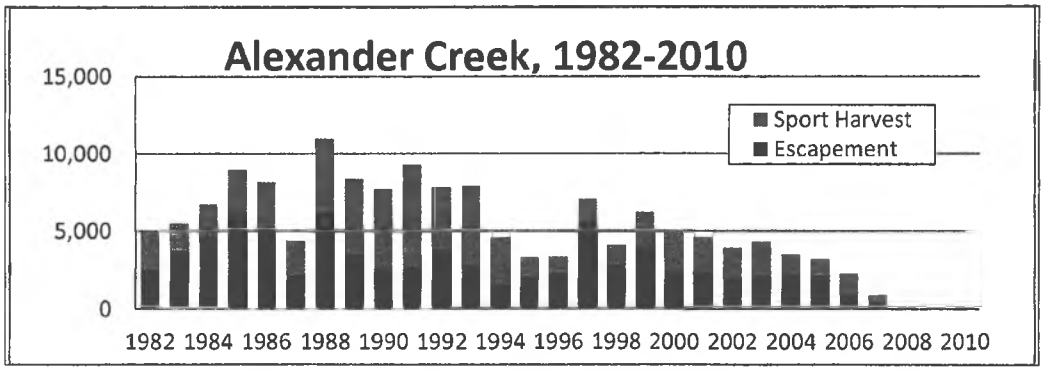


NUSHAGAK

The Nushagak River system is the fifth largest river in Alaska by volume of water discharged. The Nushagak River hosts the largest sport fishery for Chinook salmon in the United States, with the third-largest Chinook run in the country. In recent years the spawning escapement has reached the lower end of the escapement goal representing a lower than expected return. The commercial harvest of Chinook salmon has been 67% below the anticipated harvest, estimated based on an average exploitation rate of 35% in the Nushagak District commercial salmon fishery from 2003-2007. The commercial harvest in 2008 was one of the smallest harvests of Chinook salmon in the Nushagak District since 1966; only Chinook salmon harvests in 1999 (10,893), 2000 (12,055) and 2001 (11,568) have been smaller. The Nushagak River Chinook salmon run appears to have declined to a low point in 2010, where harvests were below average in all districts.

ALEXANDER CREEK, Upper Cook Inlet

Alexander Creek once hosted a thriving sport fishery for Chinook salmon on the lower westside of the Susitna River, but recent returns to this river have fallen to perilously low levels. It is believed that northern pike were illegally introduced to a lake in the Susitna River watershed and have spread throughout the drainage, including into Alexander Creek and are the likely cause for the Chinook salmon's decline. The sport fishery for Chinook salmon was closed by regulation in 2008. The decline and closure of the sport fishery on Alexander Creek has most likely resulted in increased fishing pressure on other area rivers that have Chinook salmon runs like Lake Creek, Deshka River and the Little Susitna River.



FISHERY VALUES AROUND THE STATE

Statewide, the commercial value of Chinook salmon is relatively small as a proportion of all salmon landings (6.17% of the 2002-2011 average exvessel value) but in some areas of the State, Chinook is very important to the commercial fisheries. Nowhere is this relative importance more apparent than on the Yukon River, where commercial fishing is one of the few sources of cash in one of the most economically depressed areas of the State. Chinook salmon represents 66% of the commercial fishery value (1977-2011 average) and as much as 86% in the 1990's…a time when troubled chum salmon runs frequently limited commercial fishing opportunity in the fall season. However, this number has dropped to only 15% as poor returns have severely limited or closed commercial Chinook salmon fishing.

In Prince William Sound, Chinook salmon are quite important to the drift gillnet fleet fishing on the Copper River flats. As a proportion of their total income, kings represent 13.75% of the drift gillnet fleet's overall exvessel earnings (1999-2008 average), and are an especially important part of their early-season income. Copper River Chinook salmon, along with the early sockeye salmon, command a world reputation as one of the first fish to arrive in the spring. Media reports anxiously await the arrival of these fish each May as the first fishery opener approaches and fishermen can sometimes fetch 8 to 9 dollars a pound for these early fish.

Chinook salmon are an incredibly important fishery resource to the commercial troll fleet in southeast Alaska. Since 1996, the troller's annual harvest has averaged 230,718 Chinook salmon. In 2011, Chinook salmon comprised 46% of the $28.3 million exvessel value of all salmon species caught by trollers. The winter troll fishery is also an important source of fishery income for during the slower times of year and these fresh fish often fetch upwards of $30/pound or more in Seattle.

SPORT FISHERY

The sport fishery of Chinook salmon to Alaska is immense. While estimates for the dollar value of Chinook salmon to sport fishing is not available, total sport fishing and related expenditures in Alaska are estimated at $1.4 billion, annually (Southwick Associates, 2008). Beside the dollar value, of course, is the recreational value to Alaskans and the immeasurable value of the allure of catching a world-record sized fish.

End of Document

KAWERAK , INC. ○ P.O. Box 948 ○ Nome, AK 99762
TEL: (907) 443-5231 • FAX: (907) 443-4452

SERVING THE VILLAGES OF:
BREVIG MISSION
COUNCIL
DIOMEDE
ELIM
GAMBELL
GOLOVIN
KING ISLAND
KOYUK
MARY'S IGLOO
NOME
SAVOONGA
SHAKTOOLIK
SHISHMAREF
SOLOMON
[illegible]BINS
ST. MICHAEL
TELLER
UNALAKLEET
WALES
WHITE MOUNTAIN

February 21, 2013

RE: Letter of Support for **House Bill 49** that creates the ALASKA CHINOOK SALMON RESEARCH AND RESTORATION ENDOWMENT FUND

To Whom It May Concern:

On behalf of Kawerak Inc., it is with great pleasure I provide a letter of support for the ALASKA CHINOOK SALMON RESEARCH AND RESTORATION ENDOWMENT FUND. Kawerak is the Tribal consortium in Bering Straits region in North Western Alaska where there are 20 federally recognized tribes.

Chinook salmon is an important staple food for Alaska Native people and others in Alaska. They are also an economically important species for a number of commercial fisheries and a prized sport fishing resource. Chinook salmon stocks are highly valued and essential to the basic way of life in Western Alaska.

Chinook salmon populations have suffered significant fluctuations in abundance during the past 40 years, yet little is known about the factors influencing their populations. Eight of the 14 currently listed "stocks of concern" are Chinook salmon stocks and there are no forecasts suggesting this trend is reversing anytime soon. A decline in Chinook salmon causes severe hardship for salmon-dependent people. Limited commercial fishing on Chinook salmon has occurred in recent years and earnings have declined significantly. Poor Chinook salmon returns produce tension and conflict between fishery user groups competing for the same fishery resource.

The bill creates a stable, long-term source of funding for high quality interdisciplinary research such as the Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative (AYK SSI). AYK SSI research results and information is being utilized in a wide variety of ways to support sustainable salmon management. It analyzes escapement goals and helps to gain better understanding of marine ecosystems. It helps to provide fisheries managers with better forecasts and improved responses to changing environmental conditions.

The State of Alaska assumed authority over fish; resources dedicated toward this effort, including research, are subject to the constantly shifting political climate. Establishing a dedicated fund is a prudent measure that will assure that some funding will be available regardless of politics. Kawerak fully endorses the Alaska Chinook Salmon Research and Restoration Endowment Fund. I respectfully request your support of the bill when it comes before your legislative body.

Sincerely,

KAWERAK, INC.

MBahnke

Melanie Bahnke, President

Raymond Watson, Chairperson
Myron P. Naneng Sr., President
Phone: (907) 543-7300
Fax: (907) 543-3369

AVCP

Association of Village Council Presidents
Administration
Pouch 219, Bethel, AK 99559

Akiachak
Akiak
Alakanuk
Andreafsky
Aniak
Atmautluak
Bethel
Bill Moore's Sl.
Chefornak
Chevak
Chuathbaluk
Chuloonawick
Crooked Creek
Eek
Emmonak
Georgetown
Goodnews Bay
Hamilton
Hooper Bay
Lower Kalskag
Upper Kalskag
Kasigluk
Kipnuk
Kongiganak
Kotlik
Kwethluk
Kw[illegible]ok
Lime [illegible]age
Marshall
Mekoryuk
Mtn. Village
Napaimiut
Napakiak
Napaskiak
Newtok
Nightmute
Nunakauyak
Nunam Iqua
Nunapitchuk
Ohogamiut
Oscarville
Paimiut
Pilot Station
Pitka's Point
Platinum
Quinhagak
Red Devil
Russian Mission
Scammon Bay
Sleetmute
St. Mary's
Stony River
Tuluksak
Tuntutuliak
Tununak
Umkumiut

February 21, 2013

RE: Letter of Support for **House Bill 49** that creates the ALASKA CHINOOK SALMON RESEARCH AND RESTORATION ENDOWMENT FUND

To Whom It May Concern:

On behalf of the Association of Village Council Presidents (AVCP), it is with great pleasure I provide a letter of support for the ALASKA CHINOOK SALMON RESEARCH AND RESTORATION ENDOWMENT FUND. AVCP is a Tribal consortium of 56 federally recognized tribes.

Chinook salmon is an important staple food for the Alaska Native people and others in Western Alaska. They are also an economically important species for a number of commercial fisheries and a prized sport fishing resource. Chinook salmon stocks are highly valued and essential to the basic way of life in Western Alaska.

Chinook salmon populations have suffered significant fluctuations in abundance during the past 40 years, yet little is known about the factors influencing their populations. Eight of the 14 currently listed "stocks of concern" are Chinook salmon stocks and there are no forecasts suggesting this trend is reversing anytime soon.

A decline in Chinook salmon causes severe hardship and anxiety for the salmon-dependent people in Western Alaska. Limited commercial fishing on Chinook salmon has occurred in recent years and earnings have declined significantly. Poor Chinook salmon returns produce tension and conflict between fishery user groups competing for the same fishery resource.

The bill creates a stable, long-term source of funding for high quality interdisciplinary research such as the Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative (AYK SSI). AYK SSI Research results and information is being utilized in a wide variety of ways to support sustainable salmon management. It analyses escapement goals and helps to gain better an understanding of marine ecosystems. It helps to provide fisheries managers with better forecasts and improved responses to changing environmental conditions.

AVCP fully endorses the Alaska Chinook Salmon Research and Restoration Endowment Fund. I respectfully request your support of the bill when it comes before your legislative body.

Sincerely,

Myron P. Naneng, Sr.
President

HB

89

<TARGET><BILL>HB 89</BILL><SUBJECT>HB
89</SUBJECT><COMM>HFSH28</COMM></TARGET>

Alaska State Legislature

State Capitol, Room 102
Juneau, AK 99801
Phone: 465-2689
Fax: 465-3472
Toll Free (800) 665-2689
Rep.Paul.Seaton@akleg.gov

270 W. Pioneer Avenue
Suite B
Homer, AK 99603
Phone: 235-2921
Fax: 235-4008

REPRESENTATIVE Paul Seaton

District 30

Sponsor Statement

HB 89

Didemnum vexillumis (Dvex), also known as Sea Vomit, is an aggressive tunicate invader that grows rapidly and has few known natural predators. It creates metabolic toxins that help it smother substrates and other organisms to create monoculture infestations from intertidal, subtidal to deep sea habitats. As demonstrated in a recent infestation in Whiting Harbor near Sitka, the rapid spread of Dvex is a threat to the mariculture industry, commercial fisheries and ecosystem integrity.

HB 89 provides the Alaska Department of Fish and Game (ADF&G) with the statutory authority, and a fund, to swiftly address outbreaks of aquatic invasive species such as Dvex.

HB 89 requires ADF&G, in coordination with the Department of Environmental Conservation, the Department of Natural Resources, and other applicable agencies, to establish and carry out a rapid response plan to an incipient aquatic invasive species.

HB 89 gives ADF&G the authority to use chemical, biological, mechanical, or physical methods to deal with the outbreak. It allows for expedited review of plans for dealing with invasive species, and directs ADF&G staff to prioritize eradication of the invasive species over other management issues for a specific area.

HB 89 specifies that affected private property owners shall be considered, but still allows responding agencies to be held harmless for damages caused by their invasive species treatment. Impacts to native species shall be minimized if possible.

Sea Vomit and other aquatic invasive species have the potential to seriously impact our lucrative commercial fishing, mariculture, and recreational fishing industries. HB 89 gives Alaska the tools to rapidly combat this threat.

HB 89: Rapid Response Aquatic Invasive Species

Important issue that is threatening our aquatic resources

- Elodea – Southcentral lakes/Fairbanks, overruns salmon habitat
- Pike – Southcentral, dramatically increases juvenile salmon mortality
- D.Vex – Whiting Harbor, smothers everything, may close herring
- Threats – European Green Crab, Quagga/Zebra Mussels

Invasive species cost the US $120 billion in damages per year – US F&W Service

$29 million on invasive management in Alaska for government and non-profit groups between 2007-2011 according to ISER

Once established, continual control is often the only option.

Currently no rapid response – takes years to even plan

- **Problem can get out of hand**
- **Increases costs massively**
- **Reduces effectiveness, may not be able to eliminate established populations**

HB 89: rapid response to INCIPIENT populations

- **Gives state agencies authority to act, prioritizes action**
- **Provides a Rapid Response fund**
- **Considers private property**
- **Protects subsistence, recreational, and commercial opportunities before it's too late**

- **HB 89 gives ADF&G and other state agencies the authority and the tools to rapidly respond to incipient outbreaks of aquatic invasive species, in both fresh water and salt water.**

- **HB 89 requires ADF&G, in coordination with the Department of Environmental Conservation and the Department of Natural Resources, to establish a plan of coordination and response to an aquatic invasive species outbreak.**

- **HB 89 gives ADF&G the authority to use chemical, biological, mechanical, or physical methods to deal with the outbreak. It allows for expedited review of plans for dealing with invasive species, and directs ADF&G staff to prioritize eradication of the invasive species over other management issues for a specific area.**

- **HB 89 specifies that state agencies shall consider impact to native fish species, and give due consideration to private property in taking action to eradicate aquatic invasive species.**

- **State agencies are held harmless agencies harmless for impacts to private property in the process of responding to an aquatic invasive species.**

- **Rapid Response Fund is Established**

28-LS0339\N.2
Bullard
3/13/13

AMENDMENT

OFFERED IN THE HOUSE BY REPRESENTATIVE SEATON

TO: CSHB 89(FSH)

Page 2, line 19, following "section":

Insert ", unless the act constitutes gross negligence or intentional misconduct"

28-LS0339\U.1
Kurtz\Bullard
2/11/13

AMENDMENT

OFFERED IN THE HOUSE BY REPRESENTATIVE SEATON

TO: HB 89

Page 2, line 18:

Delete "department"

Insert "state and the officers, employees, and agents of the state"

Louie Flora

Subject: FW: Follow Up on HB 89 Request

From: Mulligan, Ben (DFG) [mailto:ben.mulligan@alaska.gov]
Sent: Wednesday, February 06, 2013 10:34 AM
To: Louie Flora
Subject: Follow Up on HB 89 Request

Louie,

In yesterday's hearing on HB 89 Rep. Seaton asked Charlie Swanton, our Sport Fish Director, if the hold harmless language in AS 16.05.093(f) is adequate to protect the state and requested that he check with the Dept. of Law. After consulting with the Dept. of Law they suggest that the language found on page 2, line 18 "department" should be replaced with "State, its employees and agents" because the language is limiting in that it may not just be ADF&G who is doing the work under AS 16.05.093(b) to control and eradicate the invasive species.

If you have any additional questions, just let me know.

Thanks,

Ben Mulligan
Legislative Liaison
ADF&G
(907) 465-6137

Fiscal Note

State of Alaska
2013 Legislative Session

Bill Version: HB 89 (U)
Fiscal Note Number:
() Publish Date:

Identifier: HB 89-DFG-SFD-02-01-13
Title: AQUATIC INVASIVE SPECIES
Sponsor: SEATON
Requester: House Special Committee on Fisheries

Department: Department of Fish and Game
Appropriation: Sport Fisheries
Allocation: Sport Fisheries
OMB Component Number: 464

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2014 Appropriation Requested	Included in Governor's FY2014 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2014**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**
Personal Services	137.1		68.6	***	***	***	***
Travel	28.4		14.8				
Services	102.5		56.5				
Commodities	3.0		1.0				
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	**271.0**	**0.0**	**140.9**	***	***	***	***
Fund Source (Operating Only)							
1004 Gen Fund	271.0		140.9				
Total	**271.0**	**0.0**	**140.9**	***	***	***	***
Positions							
Full-time							
Part-time							
Temporary	3.0		3.0				
Change in Revenues							

Estimated SUPPLEMENTAL (FY2013) cost: 0.0

Estimated CAPITAL (FY2014) cost: 0.0

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? No
If yes, by what date are the regulations to be adopted, amended or repealed?

Why this fiscal note differs from previous version:

This is the initial fiscal note.

Prepared By:	Charles O. Swanton, Director	Phone:	(907)465-6184
Division	Sport Fish	Date:	02/01/2013 05:20 PM
Approved By:	Kevin Brooks, Deputy Commissioner	Date:	02/01/13
	Alaska Department of Fish and Game		

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2013 LEGISLATIVE SESSION

BILL NO. HB 89

Analysis

House Bill 89 would require:

1) Review and update the Alaska Aquatic Nuisance Species Management Plan.

2) Develop an Invasive Species Action Plan that outlines key agency contacts and communication trees; roles, responsibilities, and jurisdictional boundaries; species or habitats of concern and potential economic impacts; defines early detection methods; and will serve as the foundation from which response plans could be written focusing on specific species or pathways.

3) Develop rapid response plans for each of the 5 identified invasive species (northern pike, D.vexillum-tunicates, European green crab, spartina cordgrass, crayfish) that threaten aquatic ecosystems across the state. A template for a rapid response plan would be developed specific to each species which would include vectors of transmission, synthesis of background knowledge, documented or perceived distribution, and identified threat to specific areas or locations, as well as effective control or eradication methods.

Upon completion, a series of facilitated meetings would take place between identified state, federal, and municipal agencies, along with other stakeholder organizations to catalog authorities and available resources specific to rapid response. In addition, a series of facilitated public meetings would be held to receive and document public input and knowledge to be incorporated into a draft plan. Each hired staff member would be specifically assigned to a species and become the subject matter expert for that species for the purposes of preparing the response plan. The final task would be compiling all of the pertinent information and publishing a final rapid response plan to be implemented by all of the affected parties, on a case by case basis, as needed.

We anticipate that these three tasks will take 18 months to complete and the full year cost is shown in FY14 and a 1/2 year cost is shown in FY15. Because of the duration of the project, the division would utilize three non permanent staff: 1) Fishery Biologist III (18 months), 2) Fishery Biologist IV (9 months), 3) Education Associate II (9 months).

Each species would have a series of meetings which would be facilitated by an outside contractor who would also be required to provide input toward plan development following each meeting. We anticipate the facilitator to meet with staff in preparation, facilitation, and input for final response plans.

This fiscal note does not reflect the costs associated with implementing any of the plans this legislation directs ADF&G to develop. It would be extremely difficult to estimate those costs at this time resulting in an indeterminate cost for FY15 and beyond.

Fiscal Note

State of Alaska
2013 Legislative Session

Bill Version: HB 89 (U)
Fiscal Note Number:
() Publish Date:

Identifier: HB089-DNR-PMC-2-2-13
Title: AQUATIC INVASIVE SPECIES
Sponsor: SEATON
Requester: House Special Committee on Fisheries

Department: Department of Natural Resources
Appropriation: Agriculture
Allocation: North Latitude Plant Material Center
OMB Component Number: 2204

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2014 Appropriation Requested	Included in Governor's FY2014 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2014**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**
Personal Services	77.0		***	***	***	***	***
Travel	5.0						
Services	5.0						
Commodities	5.0						
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	**92.0**	**0.0**	***	***	***	***	***
Fund Source (Operating Only)							
1004 Gen Fund	92.0						
Total	**92.0**	**0.0**	***	***	***	***	***
Positions							
Full-time							
Part-time							
Temporary	1.0						
Change in Revenues							

Estimated SUPPLEMENTAL (FY2013) cost: 0.0

Estimated CAPITAL (FY2014) cost: 0.0

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? No
If yes, by what date are the regulations to be adopted, amended or repealed? N/A

Why this fiscal note differs from previous version:

Initial Version

Prepared By:	Franci Havemeister, Director	Phone:	(907)761-3867
Division	Division of Agriculture	Date:	02/01/2013 04:05 PM
Approved By:	Daniel S. Sullivan, Commissioner	Date:	02/02/13
	Department of Natural Resources		

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2013 LEGISLATIVE SESSION

BILL NO. HB089

Analysis

HB89 establishes a new section in AS 16.05 that directs the Department of Fish & Game (DF&G), the Department of Environmental Conservation (DEC), the Department of Natural Resources (DNR), and other state, federal, public and private entities to establish a rapid response and management plan for addressing incipient populations of aquatic invasive species.

This fiscal note covers the estimated costs associated with DNR's participation in developing a rapid response plan in FY2014.

It is anticipated that in order to help develop the plan, the Division of Agriculture will need a long-term, non-perm Natural Resource Specialist II, Range 16, plus funds to cover travel and computer equipment. It is estimated the development of the rapid response and management plan would take up to one year and that some travel would be required in order to coordinate with the other agencies and entities.

DNR, in a memorandum of understanding with both DF&G and DEC, is the management and coordinative authority for submersed and partially emerged freshwater invasive aquatic plants.

This fiscal note does not include costs for plan implementation, rapid response to and management of an aquatic invasive species and therefore results in an indeterminate cost for FY2015 and beyond.

Currently, there are some eradication efforts in planning stages for freshwater invasive aquatic plants in Alaska--specifically for Elodea. The removal of Elodea would be carried out in the following methods: manual removal by divers, suction dredging, or chemical application.

Examples of potential costs for eradication include estimates done in both Fairbanks and Anchorage areas for removal of Elodea. Eradication of freshwater aquatic invasive plants are multi-year processes. An initial estimate for removal of Elodea in Sand Lake in Anchorage was $210.0 over three years using herbicides. The Fairbanks Soil and Water Conservation District estimated that over a five-year period it would cost about $322.4 for mechanical control in Chena Slough.

Fiscal Note

State of Alaska
2013 Legislative Session

Bill Version: HB 89 (U)
Fiscal Note Number:
() Publish Date:

Identifier: HB089-DOR-TRS-2-1-13
Title: AQUATIC INVASIVE SPECIES
Sponsor: SEATON
Requester: Rep Seaton, Kerttula, Kreiss-Tomkins, Nageak

Department: Department of Revenue
Appropriation: Taxation and Treasury
Allocation: Treasury Division
OMB Component Number: 121

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2014 Appropriation Requested	Included in Governor's FY2014 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2014**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Fund Source (Operating Only)							
None							
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Positions							
Full-time							
Part-time							
Temporary							
Change in Revenues							

Estimated SUPPLEMENTAL (FY2013) cost: 0.0

Estimated CAPITAL (FY2014) cost: 0.0

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? No
If yes, by what date are the regulations to be adopted, amended or repealed?

Why this fiscal note differs from previous version:

Initial version.

Prepared By:	Pamela Leary, Comptroller	Phone:	(907)465-3751
Division	Treasury Division	Date:	02/01/2013 10:00 AM
Approved By:	Angela Rodell, Deputy Commissioner	Date:	02/02/13
	Department of Revenue		

FISCAL NOTE ANALYSIS

STATE OF ALASKA **BILL NO.** HB 89
2013 LEGISLATIVE SESSION

Analysis

This bill would create an Aquatic Invasive Species Response fund in the general fund . This fund would be one of many non-segregated fund that are invested alongside other funds in the GeFonsi and no additional costs would be incurred by Treasury.

Fiscal Note

State of Alaska
2013 Legislative Session

Bill Version: HB 89 (U)
Fiscal Note Number:
() Publish Date:

Identifier: HB089-DEC-SWM-01-30-13
Title: AQUATIC INVASIVE SPECIES
Sponsor: SEATON
Requester: House Fisheries Committee

Department: Department of Environmental Conservation
Appropriation: Environmental Health
Allocation: Solid Waste Management
OMB Component Number: 2344

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2014 Appropriation Requested	Included in Governor's FY2014 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2014**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Fund Source (Operating Only)							
None							
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Positions							
Full-time							
Part-time							
Temporary							
Change in Revenues							

Estimated SUPPLEMENTAL (FY2013) cost: 0.0

Estimated CAPITAL (FY2014) cost: 0.0

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? No
If yes, by what date are the regulations to be adopted, amended or repealed?

Why this fiscal note differs from previous version:

Not applicable, initial version.

Prepared By: Elaine Busse Floyd, Acting Director — Phone: (907)269-7645
Division: Environmental Health — Date: 01/30/2013 02:30 PM
Approved By: Lynn Kent, Deputy Commissioner — Date: 02/02/13
Department of Environmental Conservation

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2013 LEGISLATIVE SESSION

BILL NO. HB 89

Analysis

Analysis/Assumptions:

HB 89 has no fiscal impact to the Department of Environmental Conservation, Division of Environmental Health. If passed, additional work requirements that this bill may create would be handled by current division staff as part of our existing working relationship with ADF&G.

Fiscal Note

State of Alaska
2013 Legislative Session

Bill Version: HB 89 (U)
Fiscal Note Number:
() Publish Date:

Identifier: HB089-DEC-WQ-01-31-13
Title: AQUATIC INVASIVE SPECIES
Sponsor: SEATON
Requester: House Fisheries Committee

Department: Department of Environmental Conservation
Appropriation: Water
Allocation: Water Quality
OMB Component Number: 2062

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2014 Appropriation Requested	Included in Governor's FY2014 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2014**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Fund Source (Operating Only)							
None							
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Positions							
Full-time							
Part-time							
Temporary							
Change in Revenues							

Estimated SUPPLEMENTAL (FY2013) cost: 0.0

Estimated CAPITAL (FY2014) cost: 0.0

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? No
If yes, by what date are the regulations to be adopted, amended or repealed?

Why this fiscal note differs from previous version:

Not applicable, initial version.

Prepared By:	Michelle Bonnet Hale, Director	Phone:	(907)269-7599
Division	Water	Date:	01/31/2013 10:00 AM
Approved By:	Lynn Kent, Deputy Commissioner	Date:	02/02/13
	Department of Environmental Conservation		

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2013 LEGISLATIVE SESSION

BILL NO. HB 89

Analysis

Analysis/Assumptions:

HB 89 has no fiscal impact to the Department of Environmental Conservation. Current Division of Water staff could absorb the amount of time required to cooperate with the Department of Fish and Game in establishing the plan and responding to invasive species.

Memorandum of Understanding
between
The Alaska Department of Natural Resources,
Alaska Department of Fish and Game, and
Alaska Department of Environmental Conservation

With Regard to Invasive Freshwater Aquatic Plants

January 15, 2013

Memorandum of Understanding between the Alaska Department of Natural Resources (hereinafter "DNR"), the Alaska Department of Fish & Game (hereinafter "DF&G"), and the Alaska Department of Environmental Conservation (hereinafter "DEC") (jointly referred to herein as the "Parties");

WHEREAS, the Parties recognize that *Elodea spp.* is an aquatic plant that is a noxious weed in Alaska, which is degrading fish habitat and displacing native flora and fauna. *Elodea spp* alters freshwater habitats by decreasing the flow of water and increasing sedimentation;

WHEREAS, DNR oversees the Division of Agriculture ("DoA"), Soil and Water Conservation Districts ("SWCDs") and the Division of Mining, Land and Water ("DMLW"). The Invasive Weeds Program within the DoA manages invasive weeds and agricultural pests through its strategic plan that identifies the goals and action strategies needed to accomplish objectives that would be reviewed on an annual basis. The SWCDs are one of the cooperative entities that assist in invasive weeds and agricultural pest management, education, outreach, and removal. DMLW is the land manager who is responsible for permitting the use of mechanical methods of removal in state waters;

WHEREAS, the Division of Sport Fish within DF&G is tasked with managing the threat invasive species pose to the aquatic ecosystems of the state. In 2002 ADF&G developed a statewide management plan for aquatic species wherein it identified aquatic species considered to be the highest threat, pathways for introduction, and management actions;

WHEREAS, the Pesticide Control Program within DEC is responsible for protecting public health and the environment through regulation of pesticide use, sale and distribution in Alaska;

WHEREAS, there are different methods for eradication of invasive aquatic plants including manual or mechanical removal, herbicide application, and use of biological control organisms. Each method has its advantages and disadvantages with regard to efficacy, permitting, effect on surrounding ecosystem, and costs;

WHEREAS, the Parties wish to cooperate in the undertaking of eradicating *Elodea spp.* in Alaska;

NOW, THEREFORE, the Parties agree as follows:

1. Management and coordinative authority for submersed and partially emerged freshwater invasive aquatic plants, is the responsibility of DNR with assistance provided as needed by DF&G and DEC.
2. DNR will work with DF&G and DEC to conduct an examination of existing management methods for aquatic invasive plants and chart a strategic plan that prioritizes critical areas, provides permitting requirements, and addresses advantages and disadvantages of eradication methods.
3. The Parties will develop a coordinated and efficient permitting process for all methods of control by providing the end-users a list of permits required along with corresponding points of contact. This coordination may also include an examination of one or more general permits related to invasive aquatic plants in freshwater.
4. The Parties will provide each other with quarterly summary information on aquatic invasive plant issues so that each agency is fully aware and adequately informed.
5. The Parties will conduct a statewide dialogue with regard to permits needed to eradicate freshwater aquatic invasive plant species and expand public outreach and education programs on freshwater aquatic invasive plants and the need for and methods of eradication.
6. The Parties agree to develop a plan to better coordinate an effective interagency response, in the case of a detected invasive aquatic plant population that has not dispersed widely, to verify, delineate, contain, and when feasible, implement the plan to eradicate freshwater invasive aquatic plants.
7. The Parties will initiate efforts to examine the most effective and least costly method to eliminate further introduction of Elodea to the State, including education, outreach, and even prohibition of sales or distribution of Elodea in the State of Alaska.

The Parties have caused this Memorandum of Understanding to be executed as of the date of the last signature below.

Alaska Department of Natural Resources

By: _____

Name: Ed Fogels
Title: Deputy Commissioner

Alaska Department of Fish & Game

By: Cora Campbell

Name: Cora Campbell
Title: Commissioner

Alaska Department of Environmental Conservation

By: 1/16/13

Name: Larry Hartig
Title: Commissioner

Title 11 Natural Resources
Part 4 Agriculture
Chapter 34 Plant Health And Quarantine
Article 2 Pest Control

11 AAC 34.100. Expense of treatments

Any treatment which may be required under the provisions of this chapter shall be at the risk and at the expense of the owner or persons in charge or in possession thereof at the time of treatment unless otherwise provided.

Operator's findings. If the results of the State's tests conflict with the Operator's Environmental Site Assessment, the Operator and the State will negotiate in good faith to add to the Environmental Baseline.

3. If, after the Environmental Baseline for any portion of the Premises is established, it is discovered that the presence of Hazardous Substance identified in the Environmental Baseline was caused or Materially Contributed to by the Operator or its operations, the Environmental Baseline may be amended to delete that portion of the contamination that is attributed to the Operator or its operations. The State will have the burden of proof in establishing that the Operator caused or contributed to this contamination.

4. If Hazardous Substance not attributed to the Operator is discovered, or if it is discovered that Hazardous Substance identified in the Environmental Baseline is attributed to the Operator, the parties will agree upon a supplement to the Environmental Baseline within a reasonable time.

C. RELEASE OF OPERATOR

The State releases the Operator from liability to the State for contamination and the presence of Hazardous Substance identified by the Environmental Baseline.

D. ORDERED REMEDIATION

The State is under no obligation to remediate contamination identified in the Environmental Site Assessment(s); except, the State agrees to remediate, or have responsible parties remediate, the contamination identified in the Environmental Baseline if the Operator or State is ordered to remediate by an agency with such authority. In the event of such ordered remediation, the State will make a reasonable effort to coordinate the remediation with the Operator to minimize disruption of the Operator's operations and damage to the Operator's improvements and property. The Operator releases and holds the State harmless for all costs associated with the damage to, relocation and removal of, and the repair of Operator's improvements and property, and loss of income of the Operator or third parties that results from this remediation and the disruption of Operator's operations.

E. ACTION AGAINST POTENTIALLY RESPONSIBLE PARTIES

This article shall not restrict the State or the Operator from seeking and obtaining cleanup efforts, costs, or damages from potentially responsible parties for contamination identified in the Environmental Baseline.

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

ANCHORAGE INTERNATIONAL AIRPORT

MAINTENANCE AGREEMENT ADA-30469

January 27, 1995

thefreedictionary.com

in·cip·i·ent (ĭn-sĭp′ē-ənt)
adj.
Beginning to exist or appear: *detecting incipient tumors; an incipient personnel problem.*

[Latin incipiēns, incipient-, present participle of incipere, *to begin*; see **inception**.]

in·cip′i·en·cy, **in·cip′i·ence** *n.*

in·cip′i·ent·ly *adv.*

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incipient [ɪnˈsɪpɪənt]
adj
just starting to be or happen; beginning

[from Latin *incipiēns,* from *incipere* to begin, take in hand, from IN-[2] + *capere* to take]

incipience , **incipiency** *n*
incipiently *adv*

Collins English Dictionary – Complete and Unabridged © HarperCollins Publishers 1991, 1994, 1998, 2000, 2003

Thesaurus

Legend: Synonyms | Related Words | Antonyms

Adj. 1. incipient - only partly in existence; imperfectly formed; "incipient civil disorder"; "an incipient tumor"; "a vague inchoate idea"
inchoate
early - being or occurring at an early stage of development; "in an early stage"; "early forms of life"; "early man"; "an early computer"

Based on WordNet 3.0, Farlex clipart collection. © 2003-2012 Princeton University, Farlex Inc.

incipient
adjective beginning, starting, developing, originating, commencing, embryonic, nascent, inchoate, inceptive *There were signs of incipient panic.*

Collins Thesaurus of the English Language – Complete and Unabridged 2nd Edition. 2002 © HarperCollins Publishers 1995, 2002

Translations

Select a language: ----------

Copyright © 2013 Farlex, Inc.**Source URL:** http://www.thefreedictionary.com/incipient

The Cost of No Action

What would ***not doing anything*** about the infestation of an invasive aquatic plant in the Fairbanks area cost Alaska?

T. Wurtz and N. Lisuzzo, US Forest Service, Alaska Region, 1/27/2011



Brazilian elodea, a related species, in a lake in Oregon. Photo: OR Statesman Journal.

In late August 2010, a significant infestation of an invasive aquatic plant, *Elodea canadensis*, was discovered in the Fairbanks area. This is the first time an invasive aquatic plant has been found in Alaska.

Elodea canadensis has a long and well-documented history as an invasive species. It was originally introduced to Scotland and Great Britain more than a century ago, as an aquatic ornamental. Since then, it spread throughout the British Isles, much of Scandinavia and all the way across Russia to Lake Baikal, crossing two continental divides along the way. It grows aggressively in slow-moving waters and lakes. It grows well in cold climates, surviving the winters under lake and river ice. Once introduced to a new area, it spreads in two ways: by breaking up and re-rooting after it is washed downstream, or by being carried to new waterbodies inadvertently by people, e.g. caught in boat trailers or on float plane floats.

Elodea can "fill up" slow-moving waterways with dense growths of plant material. In other places around the world that it has invaded, *Elodea* has dramatically impeded the navigability of slow-moving waters and of lakes[1]. The dense plant material can make fishing problematic or impossible. Invasion by *Elodea* has been shown to negatively impact salmon spawning habitat[2]. When *Elodea* and other aquatic plants colonized a Chinook spawning area of a river in northern California, both water velocities and spawning activity declined rapidly and dramatically. It's likely that *Elodea* also degrades the habitat of other species of sport fish.

Elodea canadensis has dramatically impacted lakes in England. *"...Over here, an infestation can and does make fishing impossible. Rowing boats can't row, jet skis can get blocked and speed boats have problems as well."*
Mike Stretton, Aquatic Solutions UK



"...we can easily remove 20+ tons to the acre (of Elodea canadensis*) from the water."* - Mike Stretton, Aquatic Solutions UK

At present, the *Elodea* infestation in interior Alaska appears to be confined primarily to a slow-moving stream called Chena Slough. But individual plants and small patches were observed in the Chena River itself just prior to freeze-up in fall, 2010. Our best estimate is that this infestation is very recent; it likely has been developing for only five to seven years.



Float plane rudder with aquatic plants. Float planes are one way that *Elodea* may be spread to Alaskan lakes. Photo: D. Lassuy

If Alaskans don't respond to the *Elodea* infestation in Chena Slough, it will spread. It could spread via flowing water to any point downstream of the mouth of the slough. Fast-flowing river systems, or those carrying silt, are unlikely to be colonized, but will still serve to spread plant propagules. In time, it could colonize slow-moving reaches of the Chena, and sloughs and oxbows of the Tanana and Yukon drainages. If unchecked, it could colonize the mouths of slow-moving rivers that empty into the lower Yukon. It could be spread by float planes and boats to lakes all over the state, from Homer to the North Slope. Once *Elodea* becomes widely dispersed in Alaska, there will be nothing we can do about it.

What will this cost Alaska?

It is impossible to know precisely how much damage the unchecked spread of *Elodea* could cause in Alaska. But based on what it has done in other places around the world, two industries likely to be affected are sport fishing and commercial salmon harvest. Although it would be very difficult to estimate how much *Elodea canadensis* could cost our state, even a small change that affects either of these industries could result in a substantial economic loss:

Commercial salmon harvest:

The average annual value of Alaska's commercial salmon harvest is $230 million.[1]

If potential future habitat degradation from *Elodea* resulted in a reduction in salmon populations by 1/10th of 1%, then

0.001 * $230,000,000/yr = **$230,000/yr future loss in revenues in commercial salmon harvest**

Sport fishing:

The Alaskan sport fish industry is valued at $1.4 billion a year, 7% of which ($98 million) is from Interior Alaska.[2] *Elodea* could colonize the streams and freshwater lakes in some of the prime fishing areas of our state, damaging fish habitat and reducing angling opportunities.

If widespread *Elodea* infestation in Alaska resulted in a future reduction in sport fishing opportunities by 1/10th of 1%, then

0.001 * 1,400,000,000/yr = **$1,400,000/yr future loss in sport fish revenues**

0.001 * 98,000,000 = **$98,000/yr future loss in sport fish revenues in Interior Alaska alone**



A dense bed of *Elodea* growing in Chena Slough. In this area the plant material was several feet thick, extended from the slough bottom up to within a few inches of the water surface.

What can Alaskans do?

Projects to stop the spread of invasive aquatic plants are going on all over the country. Several successful examples began with situations similar to ours: an *Elodea* infestation in a river system. Alaskans need to mobilize: leadership, initiative, cooperation, funding and fast action are all needed. From the Governor's Office to boy scout troops, everyone's help is needed. Get involved today. Contact Darcy Etcheverry at the Fairbanks Soil and Water Conservation Distract at FCWMA.tech@gmail.com or visit http://www.fairbankssoilwater.org/resources_Chena_Slough_Invasive.html

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1 Simpson, D.A. 1984. A short history of the introduction and spread of *Elodea* Michx in the British Isles. Watsonia, 15:1-9

2 Merz, J.E., Smith, J.R., Workman, M.L., Setka J.D., and B. Mulchaey. 2008. Aquatic Macrophyte Encroachment in Chinook Salmon Spawning Beds: Lessons Learned from Gravel Enhancement Monitoring in the Lower Mokelumne River, California. North American Journal of Fisheries Management. 28: 1568-1577

3 ADF&G. 2005. Commercial fisheries of Alaska. Special Report 05-09.www.alaska.gov/adfg

4 ADF&G. 2007. Economic impacts and contributions of of sportfishing in Alaska. www.alaska.gov/adfg

Managing Invasive Species: How Much Do We Spend?

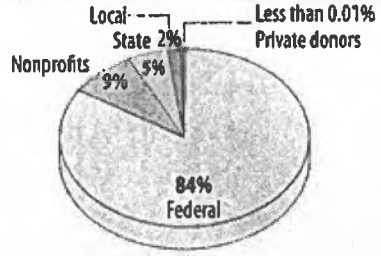
Tobias Schwoerer, ISER • Rebekka Federer and Howard Ferren, Alaska SeaLife Center

Institute of Social and Economic Research • University of Alaska Anchorage July 2012

Invasive species: they're along roadways and up mountain trails; they're in lakes and along the coast; chances are they're in your yard. You might not recognize them for what they are—plants or animals not native to Alaska, brought here accidentally or intentionally, crowding out local species. This problem is in the early stages here, compared with what has happened in other parts of the country. But a number of invasive species are already here, and scientists think more are on the way. These species can damage ecosystems and economies—so it's important to understand their potential economic and other effects now, when it's more feasible to remove or contain them.

Here we summarize our analysis of what public and private groups spent to manage invasive species in Alaska from 2007 through 2011. This publication is a joint product of ISER and the Alaska SeaLife Center, and it provides the first look at economic effects of invasive species here. Our findings are based on a broad survey of agencies and organizations that deal with invasive species.[1] The idea for the research came out of a working group formed to help minimize the effects of invasive species in Alaska.[2] Several federal and state agencies and organizations funded the work (see back page).

Figure 1. Who Pays to Manage Invasive Species in Alaska?
Total Spending, 2007-2011: $29 Million • Average Annual Spending: $5.8 Million



Source: ISER/Alaska Sealife Center survey, 2011-2012

Who Paid?

Governments, nonprofits, and private donors spent about $29 million to manage invasive species in Alaska from 2007 through 2011, with an annual average of $5.8 million. The federal government put up most of the money—84%. Nonprofits and state and local governments supplied almost all the rest (Figure 1).

Which Were the Costliest Species ?

The biggest expenses were $5 million for eradicating Norway rats on an Aleutian island where they had destroyed bird populations, and $2.8 million for killing Northern pike in Southcentral lakes; pike are voracious eaters of juvenile salmon and other fish. Nearly $1.5 million went for controlling a few damaging invasive plants. About $700,000 went for monitoring the European green crab, which is moving toward Southeast and threatening commercial fisheries (Figure 2).

Figure 2. What Were the Most Expensive Species to Manage, 2007 - 2011?
(In Millions of Dollars)



Source: ISER/Alaska Sealife Center survey, 2011-2012

What are Invasive Species?

Invasive species are non-native species that establish themselves, dominate habitats, and cause or are likely to cause economic loss, environmental damage, or harm to human health. These are primarily plants or animals that come from outside the state, but some—like Northern pike—are native in parts of the state but invasive when introduced elsewhere in Alaska.

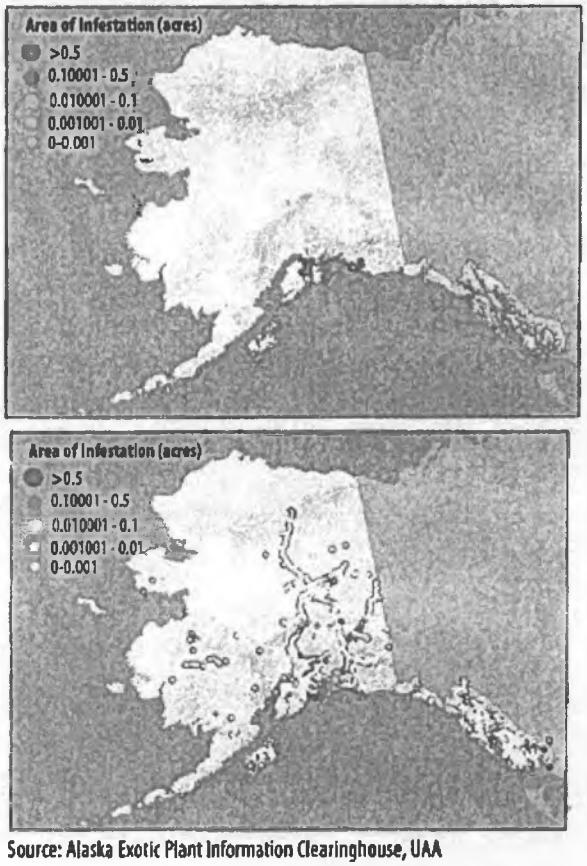
Some invasive species pose much bigger risks than others. Also, some non-native species aren't invasive and in fact benefit people. For example, non-native crops and livestock support the agricultural industry in Alaska and elsewhere.

In 2007, there were 283 known non-native plant species and 116 non-native animals species (fish, amphibians, birds, mammals, invertebrates, parasites, and pathogens) in Alaska. Between 1968 and 2007, the number of known non-native plant species in the state nearly doubled. That means more than 10% of Alaska's 2,100 known plant species are non-native.[3]

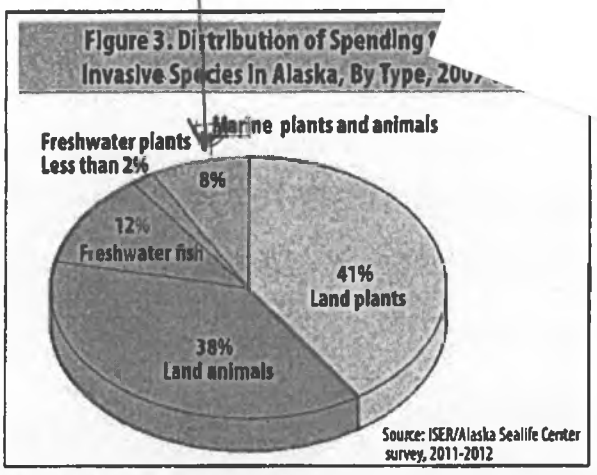
Invasive plants have just recently begun to take hold in much of Alaska. Maps from the Alaska Exotic Plant Information Clearinghouse at the University of Alaska Anchorage (below) show how invasive plants spread just from 2000 to 2011. In 2000, known invasive plants were mostly confined to limited areas of Southeast and Southcentral Alaska. Ten years later, invasive plants were far more widespread in those regions and had reached into Interior and Southwest Alaska.

But in recent years there's also been more funding available for those who study invasive plants, so part of the reason for the sharp increase may simply be that the extra funding has allowed more observations of plants in more places. It's certainly likely that invasive plants are also in more remote areas of the state where they have yet to be observed.

Spread of Invasive Plants, 2000 to 2011



Source: Alaska Exotic Plant Information Clearinghouse, UAA



Where Did the Money Go?

Figure 3 shows the distribution of spending for managing invasive species in Alaska, by type, from 2007 through 2011. More than 40% went for managing invasive land plants and another 38% for invasive land animals. As we discussed earlier, the biggest single expense for animals was for eradicating Norway rats.

Managing invasive freshwater fish accounted for another 12% of spending, but most was for eradicating a single species—Northern pike—in Southcentral Alaska, where it is invasive. In the Interior and the Arctic it is native.

Only about 8% of spending was for invasive marine life from 2007 through 2011. But big potential threats to Alaska's commercial fisheries have recently been identified, and spending to manage invasive marine plants and animals is likely to be up in the coming years. Those species include a dangerous marine animal called the glove leather tunicate (adjacent page) recently found in Sitka. It encrusts marine infrastucture and non-mobile marine animals like oysters and mussels, killing them. Another is the European green crab (adjacent page), which biologists fear could soon reach the Southeast coast of Alaska, threatening Dungeness and other native crabs.

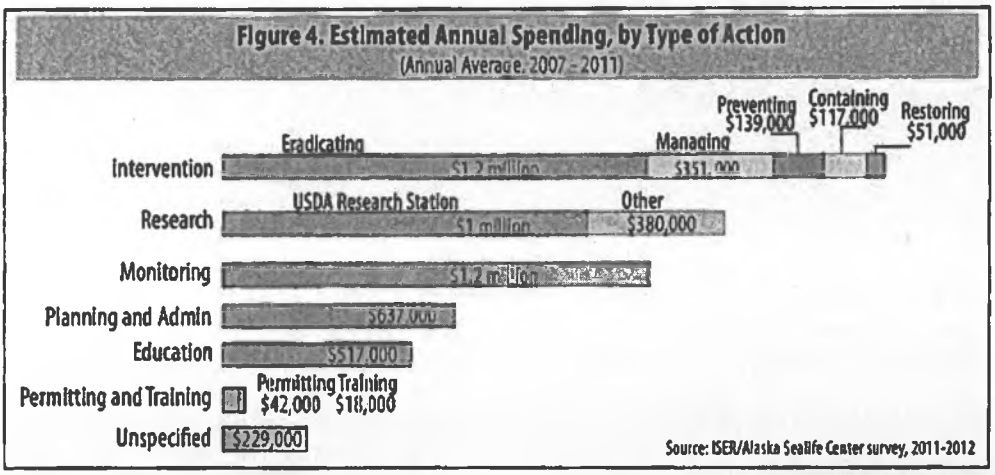


Northern pike (*Esox lucius*)
Photo courtesy of Alaska Department of Fish and Game

What Are the Management Actions?

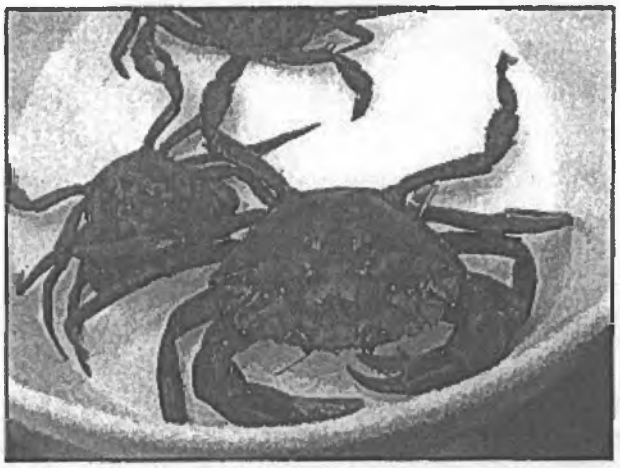
There are a number of possible management actions for government agencies and nonprofits dealing with invasive species in Alaska. Figure 4 shows average annual spending for various management actions from 2007 to 2011.

- **Intervention.** About $1.9 million went to intervention activities annually. That included *eradicating* species considered very dangerous; *managing* them



to keep established invasions from spreading; *preventing* them from reaching the state; *containing* new invasions when they reached Alaska; and *restoring* ecosystems to their original state, after invasive species were removed.

- **Research.** About $1.4 million went for research annually. The U.S. Department of Agriculture's Agricultural Research Station in Fairbanks accounted for most research spending from 2007 to 2011. The station studied effects of invasive species on ecosystems, and also advised government agencies about ways to control invasive plants. It will close in 2012, due to federal budget cuts.
- **Monitoring.** About $1.2 million went to monitoring invasive species every year. Monitoring mostly tracks worrisome invasive species —like the European green crab—that may be finding their way to Alaska. It also includes monitoring species thought to be eradicated in Alaska, to make sure they are entirely gone.
- **Education.** Roughly $500,000 of annual spending from 2007 to 2011 was to make Alaskans more aware of the dangers invasive species pose.
- **Other Spending.** Several other kinds of spending support management of invasive species. That includes spending for planning and administration; for getting required permits; and training volunteers. Together, spending for those expenses averaged close to $700,000 annually in recent years.



European green crab (*Carcinus maenas*)
Photo courtesy of National Oceanic and Atmospheric Administration



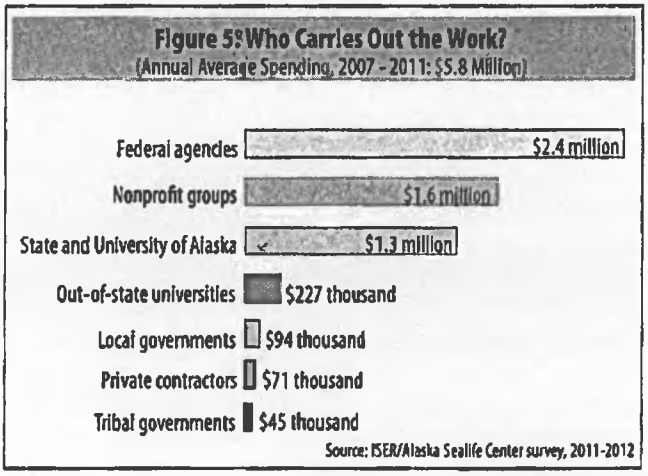
Glove leather tunicate (*Didemnum vexillum*)
Photo courtesy of Alaska Department of Fish and Game

Who Does the Work?

Figure 1 on the front page shows who pays for managing invasive species in Alaska. But the agencies and organizations that put up the money don't always do the management work. Figure 5 shows which entities actually carried out the work and their average annual spending from 2007 through 2011.

Federal agencies spent about $2.4 million on an annual average. Nonprofit groups were next at $1.6 million, followed by state entities (including the University of Alaska) at $1.3 million.

Others—out-of-state universities, local and tribal governments, and private contractors—spent much smaller amounts.



Jobs and Payroll

Managing invasive species in Alaska also generates jobs and payroll, as Figure 6 shows. During the study period, annual numbers ranged from 31 in 2007 to 73 in 2010. Payroll increased as job numbers went up, peaking at $3 million in 2010.

But job and payroll figures for 2010 and 2011 were boosted by one-time money from the federal American Recovery and Reinvestment Act, which Congress passed to help bring the U.S. economy out of recession. That money has now essentially been spent, so figures for 2012 are likely to be lower.

Volunteers have also become increasingly important in efforts to control invasive species, especially plants. For example, the Alaska Parks Foundation, Mat-Su Conservation Services, and other organizations coordinate volunteer efforts, and the National Park Service hires crews of students (at nominal pay). And it was a community-based monitoring program in Sitka—BioBlitz—that recently discovered one of the more dangerous invasive marine species, the glove leather tunicate (pictured on page 3).

Conclusions

We know that numbers of invasive species are increasing in Alaska, but that's a fairly recent phenomenon, and ways of dealing with the problem are still in their infancy. Because the problem is at an early stage—compared with other areas of the country—Alaska has opportunities to develop cost-effective solutions and create institutions to coordinate a multitude of stakeholders.

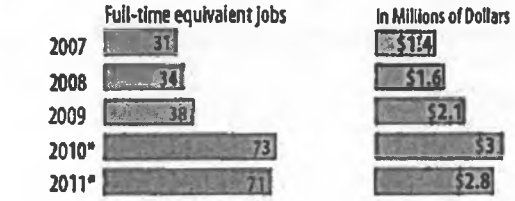
But the state government will need to take a bigger role in managing invasive species. We know that in recent years state funds made up only about 5% of spending, with the federal government supplying 84%. Federal spending cuts will close the Agricultural Research Station in 2012, and further cuts in federal money for managing invasive species seem likely.

Also, as the problem becomes increasingly important, coordinating limited resources will become more critical in the future. Yet several attempts in recent years—including proposed legislative action—have failed to establish a formal Alaska Invasive Species Council.

The bulk of funding so far has been targeted toward terrestrial plants and animals, although funds for marine organisms have increased slightly over the last few years. A shift toward more spending for marine plants and animals seems likely, as more species that pose threats to Alaska's commerical fisheries are being identified. Much of the spending to combat invasive species in recent years has been in Southcentral and Southwest Alaska, but spending in Southeast Alaska has steadily increased over the past 5 years, with the arrival of invasive marine species in Alaska waters.

Finally, our study found increased employment, payroll, and volunteer effort in dealing with invasive species—which may suggest that Alaskans are becoming more aware of this important problem.

Figure 6. Jobs and Payroll in Management of Invasive Species in Alaska



*The big jump in both jobs and payroll in these years is probably due largely to one-time money under the federal American Recovery and Reinvestment Act. Figures for 2012 will likely be lower.

Source: ISER/Alaska Sealife Center survey, 2011-2012

Endnotes

1. We e-mailed questionnaires (and followed up with phone calls) to 112 people at 64 organizations: 11 federal, 8 state, 20 nonprofit, 7 private, 6 tribal, 7 university, and 4 local government. We asked for budget information from 2007 to 2011 on spending related to invasive species—employment, personnel cost, hourly effort, expenditures on equipment and supplies, volunteer effort, source and recipient of funds spent, and targeted invasive species. We also asked respondents to provide detailed information by species, action taken, location, and aerial extent of the action. We collected information from 84 of the 112 people we contacted, for a response rate of 75%. We were especially careful to try to avoid double-counting spending in the complex web of agencies and organizations involved in managing invasive species.

2. In 2006, representatives of federal, state, university, and nonprofit organizations that deal with invasive species in Alaska created the Alaska Invasive Species Working Group, an informal organization with a number of goals, including coordinating resources and activities to improve management of invasive species and developing a statewide plan for managing invasive species. Group members hope to establish a formal council, but legislative action hasn't yet succeeded.

3. Carlson, M.L. and Shephard, M. 2007. "Is the Spread of Non-Native Plants in Alaska Accelerating?" In *Meeting the Challenge: Invasive Plants in Pacific Northwest Ecosystems*, General Technical Report GTR-694, U.S. Forest Service Pacific Northwest Research Station; and McClory J. and Gotthardt T. 2008. *Non-Native and Invasive Animals of Alaska: A Comprehensive List and Select Species Status Reports*, Final Report, Alaska Natural Heritage Program, UAA.



Reed canarygrass (*Phalaris arundinacea*)
Photo courtesy of Alaska Natural Heritage Program, UAA

Alaska SeaLife Center
windows to the sea

Acknowledgements

Funding for this research was provided by the Prince William Sound Regional Citizens Advisory Council, the U.S. Fish and Wildlife Service, Ocean Alaska Science and Learning Center, Alaska Legislative Council, and Bureau of Land Management. Special thanks to those who contributed data and expertise to this project. We are particularly indebted to Dr. Steve Colt for providing early comments and review of our work. We also thank the Alaska Natural Heritage Program, particularly Lindsey Flagstad, for providing mapping and other help.

About the Authors

Tobias Schwörer is an ecological economist at ISER, focusing on regional economic analysis, ecosystem services valuation, and energy economics. Rebekka Federer and Howard Ferren are with the Alaska SeaLife Center in Seward. Rebekka Federer manages the marine invasive species program and Howard Ferren is the director of conservation. The findings and conclusions of this report are those of the authors. For questions, contact Tobias Schwörer at tschwoerer@alaska.edu.

Editor: Linda Leask • Graphics: Clemencia Merrill

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LOCAL NEWS

Looking for solutions to Sitka's sea squirt invasion

by Robert Woolsey, KCAW
June 30, 2011 4:40 pm



SITKA, ALASKA

Dvex (Didemnum vexillum) was discovered last summer in Sitka during a citizen-science project called "Bioblitz," a collaboration between the University of Alaska, the Smithsonian Institution, ADF&G, USF&W, the Sitka Tribe, and the Sitka Sound Science Center. This summer, researchers have returned to Sitka to try and learn if Dvex has spread outside of Whiting.

Over the past several days, teams of Bioblitz volunteers placed over 200 test plates in intertidal areas along the road system.

Linda McCann, with the Smithsonian Environmental Research Center, heads the project. KCAW's Robert Woolsey caught up with her on the Samson barge dock. McCann, UAS biology professor Marnie Chapman, and US Fish & Wildlife invasive species specialist Kimberly Holzer, were patiently setting test plates amid the din of rock-loading operations for Sitka's airport expansion.

"So we're out here right now deploying some collecting devices. This is a really high-tech piece of scientific equipment. You can write about it – a piece of plastic attached to a brick. This was designed because we know Dvex and other invasive species commonly settle on artificial, or manmade, substrate. This will fit under a microscope quite easily, we can take it on and off. So it hangs like this at approximately a meter below the surface of the water, and we'll leave it out for three months. We're coming back in September and we'll hopefully find that it's not at any of these other sites. During the Bioblitz we had volunteers out surveying a lot of the sites that we're doing today, and they didn't find it. But, you can only see so far down from a dock. This will allow us to see what's subtidal."

KCAW – "What's the next step for an invasive like this? Is there a strategy for reducing it or eliminating it that anybody is even discussing at this point?"

McCann – "Absolutely. The first step, as we saw it, was to document where it already was, because we can't effectively manage or eradicate anything if we don't know the extent of the infestation. So we've been focused on that this year. And also drafting potential plans and options for any kind of management that we might pursue. The next step is to figure out what we can do to get rid of it. So this trip we initiated an experiment out in Whiting Harbor where we tested different kinds of eradication methods including acetic acid, or vinegar; bleach, or chlorine; low dissolved oxygen, basically starving the animal of oxygen; drying it out, or dessicating it; and fresh water. So a lot of these things have been tried in different parts of the world to varying degrees of success. We're trying to find out where the threshold is: Where is the line where you get 100-percent mortality of Dvex? A lot of the literature suggests that you can kill 80-percent of it, but we want to kill all of it. So we want to find where that line is."

 With over 200 test plates in the water at 11 locations around Sitka, the hanging bricks are not hard to find. Each is also marked with a large, yellow plastic plate identifying it as the property of the Smithsonian. If the test plates are disturbed, scientists could lose valuable information about the spread of Dvex.

Currently, there is no statutory authority for the state to close waters to prevent the spread of invasive marine organisms. The agencies attempting to contain the infestation are asking for the voluntary cooperation of the public to keep vessels out of Whiting Harbor. Dvex easily fragments, and can be spread easily on an anchor, boat hull, or the sole of a boot.

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VOLUME 46 | February/March 2013 | Number 4

Invasive Tunicate "Marine Vomit" in Drakes Estero Is Cause for Serious Concern

By Jude Stalker
(Reprinted with permission from Marin Audubon)

Recent observations in Drakes Estero of the behavior of the invasive tunicate *Didemnum vexillum* (aka marine vomit) along with the threat that it presents worldwide, are cause for serious concern for such an ecologically valuable, federally protected marine wilderness area.

Didemnum vexillum (Dvex) is a highly invasive non-native colonial tunicate (sea squirt) that has a texture of wet leather. Each colony of Dvex consists of thousands of tiny soft-bodied individuals called zooids embedded in a common membranous matrix. Dvex colonies are unpalatable to most other marine organisms or birds.

Dvex colonies grow subtidally in bays and coastal waters and readily attach to hard surfaces such as rocks, shell, gravel, boulders, and all sorts of artificial structures. Dvex can reproduce sexually, releasing its larvae into the water where it will attach to a hard substrate and form a new colony. New colonies can also be produced through fragmentation. Lobes from a colony can break off, drift to a new site, settle or become entangled in the bottom, and grow out over the substrate.

Because it rapidly overgrows hard surfaces, structures and shellfish, Dvex invasions across the country and the world have caused tremendous problems and concern over the past decade for both natural ecosystems and aquaculture operations. There are populations of Dvex on the East Coast that have infested huge areas of seabed, smothered large numbers of native marine plants and animals, and



Didemnum vexillum
Photo courtesy of Gerald Moore

To receive *Leaves* via email in PDF format just email your request to:
madroneaudubon@um.att.com
You will get your copy faster and help save paper.

GENERAL MEETINGS

First United Methodist Church
1551 Montgomery Drive, Santa Rosa

PLEASE NOTE: The February and March General Meetings will be held in the church sanctuary instead of the community room. Please remember to bring your own beverage cup (save paper!) to enjoy tea and coffee.

February Meeting
"Restoration of the Farallon Islands"
Monday February 18, 7:30 PM

Melissa Pitkin, Outreach and Education Group Director for PRBO Conservation Science will give us an update on activities related to the Farallones Islands restoration efforts by US Fish and Wildlife Service (USFWS). The Gulf of the Farallones National Marine Sanctuary hosts the largest breeding seabird colony in the contiguous US, but the islands' ecosystem is under threat from invasive species (particularly the house mouse). The USFWS plan to eradicate the mice over time will restore balance and protect the breeding sites of the Ashy Storm-petrel, a California Species of Special Concern. The project is controversial because this will affect the food supply for over-wintering Burrowing Owls (another Species of Special Concern) that prey on the mice and small seabirds. We will find out how the scientists are dealing with this delicate issue.

March Meeting
"West County Hawk Watch"
Monday March 18, 7:30 PM

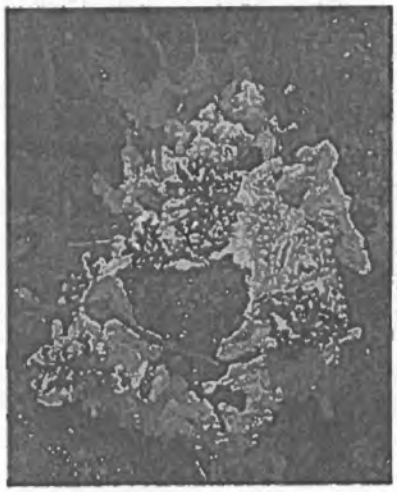
Sonoma County raptor specialist Larry Broderick will give us a look at our resident and migrating hawks, with tips on identifying birds of prey, where to look for them, and some of their interesting habits. Larry has studied raptors for two decades. He co-founded West County Hawk Watch in 1990 for documenting migration, and studying Ferruginous Hawks and the resurging population of Bald Eagles in our county. He currently gives tours and workshops on Sonoma Land Trust properties and throughout Sonoma County.

MARINE VOMIT

Continued from page 1

have drastically changed the species composition of the benthic community. It has been well documented that the most important factor in controlling an invasion of Dvex is through early detection and rapid response to the infestation, such as took place in Sitka, Alaska in 2010.

No one knows for sure how or when this invader arrived in Drakes Estero from its native Japan. Many of the Pacific oysters cultivated by the Drakes Bay Oyster Company (DBOC) were originally imported from Japan and Dvex may have arrived as a "hitch hiker" years ago on the imported oysters. It can also spread by ocean currents and settle in new places that have adequate substrate for it to establish.



Didemnum vexillum
Photo courtesy of Gerald Moore

Since its arrival, it has been persisting and reproducing on the cultivated oyster shells and bags in Drakes Estero. The harvesting activities of DBOC cause fragmentation of the Dvex and facilitate the colonization of other areas of the Estero. A limited amount of it was found growing on natural solid mud and sandstone substrates and rocks at Bull Point in 2007, but until very recently many believed that it would not spread to the floor of the Estero or become attached to the eelgrass plants.

In 2010 Dr. Ted Grosholz, a researcher from UC Davis, conducted surveys of fouling invertebrates on some of the oyster racks in Drakes Estero and found that Dvex was prominent among them. He observed large colonies of Dvex growing on the leaf shoots of some of the native eelgrass. Until Dr. Grosholz's surveys, it was thought to be very unlikely that Dvex would grow on eelgrass in Drakes Estero. His observations are of great ecological concern because eelgrass is one of the most highly productive habitats on the California Coast and plays a vital role in providing nursery habitat for many fish species and forage areas for Black Brant and other waterfowl. Research has shown that invasive colonial tunicates such as Dvex can have negative effects on eelgrass growth, survival, and light transmission.

Following this alarming discovery, we also observed large amounts of the tunicate while kayaking with the Dvex researchers in Drakes Estero this past August. It covered more than 50% of the cultivated oyster shells hanging from the Oyster Company's racks and we were shocked to see significant amounts of the Dvex colonizing the floor of the eelgrass beds below and adjacent to the oyster racks. To my knowledge, this occurrence had not been reported before and was believed by many to be impossible.

The National Park Service (NPS) has been notified of this observation. What action they will take is unknown but the NPS Management Policies require removal of impacts that would cause "impairment" or "unacceptable impacts" to any key park resource, such as eelgrass and the associated benthic community in this case. Additionally, because Drakes Estero is designated as a potential wilderness area, the park managers are also required to "seek to sustain the natural distribution, numbers, population composition, and interaction of indigenous species" and to intervene to "correct past mistakes, the impacts of human use, and influences originating outside of wilderness boundaries".

It is clear that to successfully manage this infestation all of the prime Dvex habitat that the DBOC infrastructure (racks, lines, shells, bags) provides should be removed.

I have been a biologist working with invasive species for many years and know too well the disastrous and costly ecological repercussions of delaying the removal of invasive species or not responding to them at all. I don't think this is a risk worth taking with the Dvex invasion in Drakes Estero.

• • • • • •

Announcements

Sonoma County Breeding Bird Atlas (BBA) - Year 3 - New Volunteer Orientation

We are entering our third and critical year of surveys for the 2nd edition of the Sonoma County BBA. There are still many available blocks. Volunteers are needed to help survey these blocks. Join us for this fun and rewarding Citizen Science project.

New Volunteer Orientation:
Saturday February 23, 10-2 PM
4300 Llano Road, Santa Rosa
Contact Veronica Bowers at vlbowers@gmail.com to sign up.
Calling all BBA volunteers. There are blocks that still need volunteers.

Native Songbird Care & Conservation - New Volunteer Orientation

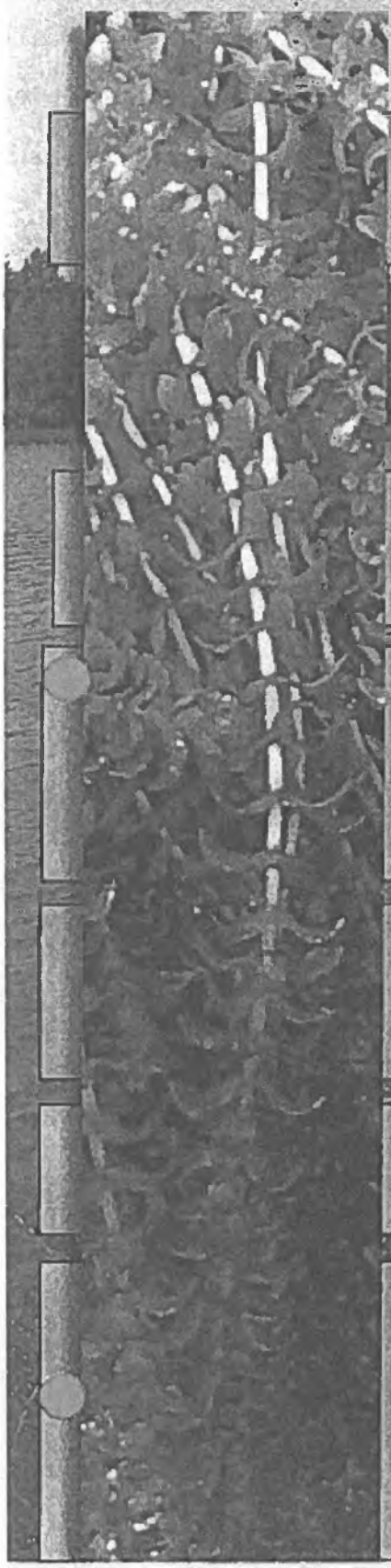
Located in Sebastopol, Native Songbird Care & Conservation specializes in the care of native songbirds, with an emphasis on migratory insectivores. We receive over 700 songbirds each year and release approximately 75% of them back to the wild. From May through August, volunteers are needed to help feed and care for baby birds, transport birds to the hospital, respond to calls from the public, and assist with administrative tasks.

Continued on page 3

ELODEA



spread the word, not the weed!



Elodea (also known as "oxygen weed" in pet stores) is a very invasive submerged aquatic plant.
It is not native to Alaska.



Thick beds of Elodea were found in Sand and Delong Lakes in Anchorage in July 2011. Elodea is also found in Fairbanks (Chena Lake & Slough) and Cordova (Eyak Lake). While these are the only known infestations of this weed in Alaska, it is easily transported to other locations by float planes, boat propellers, and trailers.

We don't want Elodea in Alaska

- Safety: fouls float plane rudders and boat propellers
- Nuisance: impedes boat launching and navigation
- Economic: reduces property values by fouling launch sites/nearshore habitats
- Ecological: alters the food webs and habitat in lakes, sloughs, and rivers and has been shown to degrade salmon spawning habitat

Help keep Alaska's waters valuable. Please:

- inspect and clean your aircraft before every flight ***(see back for details)***
- inspect and clean your boat and trailer before entering/exiting a lake
- support efforts to manage/eliminate *Elodea* in Alaska

For more Information:

Stop aquatic hitchhikers: http://www.protectyourwaters.net
You Tube "Sea Plane Inspection and Decontamination"

Report *Elodea* sightings:

U.S. Fish & Wildlife Service : 1-907-786-3510 or 3813
Fairbanks Cooperative Weed Management Area: 1-907-479-1213

Fairbanks Cooperative Weed Management Area

Anchorage CWMA

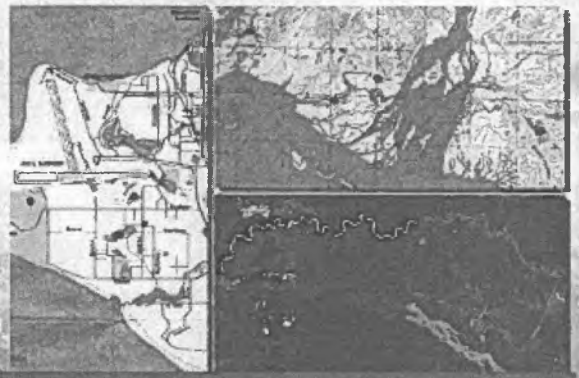
Elodea Threatens Alaska's Fisheries and Aquatic Resources

Cecil Rich, Katrina Mueller, and Denny Lassuy
U.S. Fish and Wildlife Service
1011 E. Tudor Rd
Anchorage, AK 99503

Background

Until recently, Alaska has been considered free of invasive submerged aquatic plants that greatly impact freshwater resources in other areas of the world where they are not native. The discovery of Elodea in Chena Slough in Fairbanks in 2010 drew attention to an established population in Eyak Lake and led to the discovery of Elodea in other waterbodies near population centers. Since then, it has been documented in several additional waterbodies in Fairbanks, Anchorage, and the Cordova region.

Known Alaska locations



Anchorage: Little Campbell, Delong, and Sand Lakes
Fairbanks: Chena Lake and Chena Slough
Cordova Area: Eyak, McKinley, and Martin Lakes; Alaganik Slough

What can be done?

- Containment to prevent further spread
- Eradication where feasible (e.g. herbicides)
- Strategic statewide outreach targeting potential vectors

Efforts to date

- Physical surveys
- Localized public outreach efforts
- Formation of Statewide Communication Plan working group in October 2011
- Pilot control projects in Fairbanks (mechanical, diver hand pulling/cutting); suction dredging planned for 2011

Elodea

- A genus of rooted aquatic macrophyte
- Not native to Alaska
- Cold tolerant, survives freezing
- Fragments and spreads easily
- Popular aquarium plant ("oxygen weed")



Next steps

- Response plan (prevention, control, eradication)
- Communication plan (development/implementation)
- Securing funding for eradication efforts

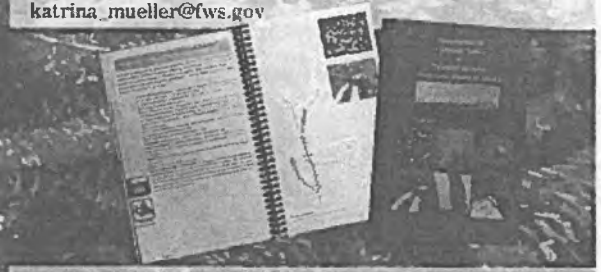
Potential Vectors

- Aquarists
- Float planes
- Boats/trailers
- Fragments



How you can help

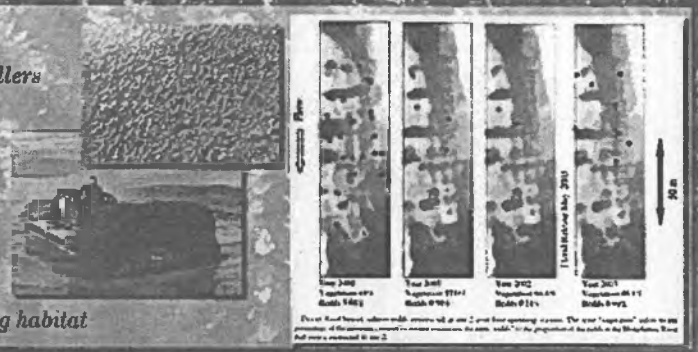
- Train field crews to identify and document Elodea
- Report sitings to USFWS: (907) 786-3519 or 3813
- Support prevention, control, and eradication efforts
- Assist response team efforts: denny_lassuy@fws.gov
- Assist statewide communication efforts: katrina_mueller@fws.gov



Impacts

- Safety: *fouls float plane rudders/boat propellers*
- Nuisance: *impedes launching/navigation*
- reduces property values
- Ecological

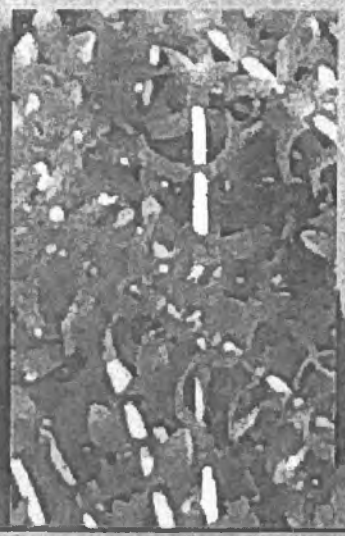
--decreases stream velocity
--increases rates of sedimentation
--simplifies aquatic habitat structure
--alters nutrient availability
--overgrows native aquatic submerged plants
--has been shown to degrade salmon spawning habitat



Acknowledgements

Darcy Etcheverry (Fairbanks SWCD)
Tricia Wurtz and Kate Mohatt (Forest Service

ELODEA



spread the word, not the weed!

Before entering the aircraft

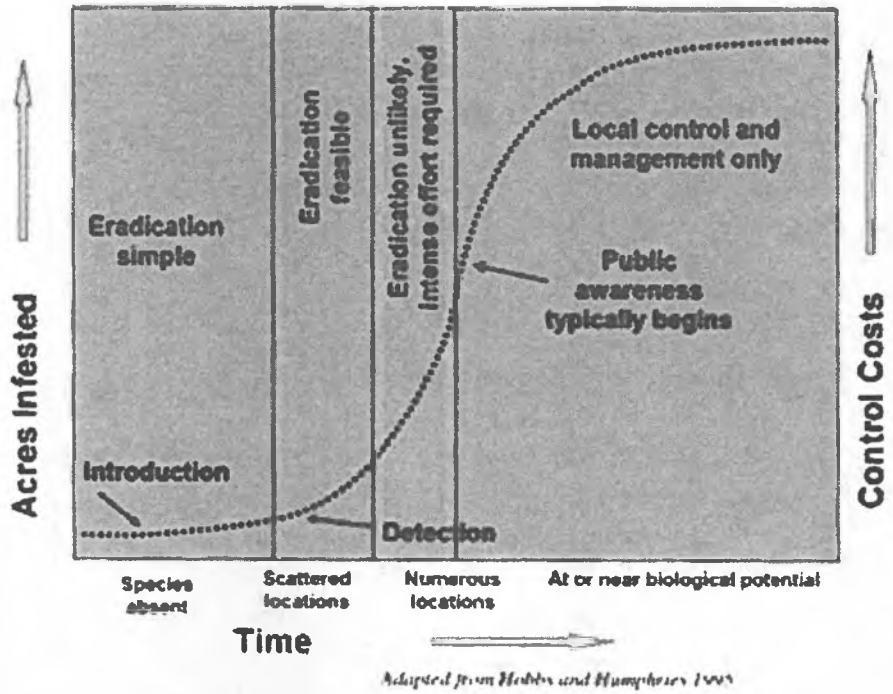
- Inspect/remove plants from floats, wires or cables, and water rudders.
- Check the transom, bottom, chine, wheel wells, and float step area.
- Pump water from floats.

Before takeoff

- Do not taxi through heavy aquatic plant growth prior to takeoff.
- Raise and lower water rudders to clear off plants, minimize cable stretch and improve steering effectiveness.

After takeoff

- Raise/lower water rudders several times to free aquatic plant fragments while over the waters you are leaving or over land.



Hobbs, R.J. and S.E. Humphries. 1995. An integrated approach to the ecology and management of plant invasions. Conservation Biology. 9(4):761-770.

U.S. Fish & Wildlife Service

The Cost of Invasive Species



Zebra mussels invaded U.S. waters and have caused millions of dollars of damage by occluding pipes in municipal and industrial raw-water systems

The negative consequences of invasive species are far-reaching, costing the United States billions of dollars in damages every year. Compounding the problem is that these harmful invaders spread at astonishing rates. Such infestations of invasive plants and animals can negatively affect property values, agricultural productivity, public utility operations, native fisheries, tourism, outdoor recreation, and the overall health of an ecosystem.

The most widely referenced paper (Pimental et al. 2005) on this issue reports that invasive species cost the United States more than $120 billion in damages every year.

In 2011 alone, the Department of the Interior will spend $100 million on invasive species prevention, early detection and rapid response, control and management, research, outreach, international cooperation and habitat restoration.

The Environmental Impacts

In Executive Order 13112, invasive species is defined as an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health. Invasive species typically harm native species through predation, habitat degradation and competition for shared resources.

Invasive species are a leading cause of population decline and extinction in animals. For example:

- **More than 400 of the over 1,300 species currently protected under the Endangered Species Act, and more than 180 candidate species for listing are considered to be at risk at least partly due to displacement by, competition with, and predation by invasive species.**
- **Invasive species are a leading factor in freshwater fish extinctions and endangerments.**
- **Brown tree snakes have been implicated in the precipitous decline in native forest birds and the modern extinction of at least 10 species in Guam.**

More Facts about the Cost of Invasives:

- If zebra and quagga mussels invade the Columbia River, they could cost hydroelectric facilities alone up to $250-300 million annually. This does not includ costs associated with environmental damages or increased operating expenses to hatcheries and water diversions.
- Annually, the Massachusetts Department of Conservation and Recreation spends $250,000 on staff, $30, 000 on equipment and $25,000 on publications related to zebra mussel prevention and control. The state will spend an additional $71,000 over 5 months to install new boat ramp monitors for zebra mussels.
- An aquatic invasive plant, Eurasian watermilfoil, reduced Vermont lakefront property values up to 16 percent and Wisconsin lakefront property values by 13 percent.
- From 2010 to 2020, an invasive forest pathogen (*Phytophthora ramorum*), called sudden oak death, is projected to cost $7.5 million in tree treatment, removal and replacement costs, corresponding to a $135 million loss in residential property values for California.
- Salt cedar (*Tamarisk* spp.), an invasive tree, costs the western states $450-2,800 annually per 2.5 acres (1 hectare) in water loss (municipal, agricultural and hydropower) as well as flood control losses. Eradication and re-vegetation projects are estimated to be $7,400 per 2.5 acres.
- Annually, black and Norway rats consume stored grains and destroy other property valued over $19 billion.
- Annually, nonnative species borne in the ballast or hulls of ships cost the Great Lakes Region $200 million to control.
- U.S. agriculture loses $13 billion annually in crops from invasive insects, such as vine mealybugs.

The Economic Impacts



Maryland Department of Natural Resources

Case Study: Nutria

Originally introduced for the fur trade, nutria destroy large areas of marshlands, causing significant landscape changes and erosion that threaten pollution and storm surge control, recreational and commercial fisheries, and habitats for native species. In 2005, the Service and its partners spent $2 million dollars working with 15 trappers to eradicate over 8,000 nutria from Maryland's Blackwater National Wildlife Refuge, thus helping to preserve local commercial fisheries and ecotourism valued at $15 million annually. However, other nutria populations remain in Maryland and other states. In Louisiana, for example, an estimated population of 20 to 30 million nutria continues to destroy thousands of acres of wetlands each year.



USFWS

Case Study: Asian Carp

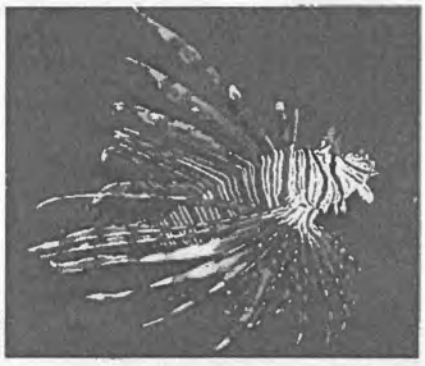
Asian carp, which we introduced through the aquaculture industry, are voracious eaters that threaten native fisheries, including the $7 billion Great Lakes fisheries. Large silver carp, leaping out of the water at the sound of boat engines, also collide with and injure boaters. Invasive species already have been implicated in adverse effects of up to 46 percent of the Great Lakes endangered species, and introduction of Asian carp to the region could cause further harm. In 2010 alone, the federal government committed $78.5 million in investments to prevent the introduction of Asian carp to the Great Lakes, where they would threaten Great Lakes fisheries and could negatively impact remaining populations of endangered or threatened aquatic species.



NPS/Roy Wood

Case Study: Burmese Pythons

Burmese pythons in Florida are known to eat wood storks and Key Largo woodrats, both federally endangered species. From 1999 to 2009, federal and state agencies spent $1.4 million on Key Largo woodrat recovery and $101.2 million on wood stork recovery. The introduction of a reproducing population of non-native pythons places additional pressure on these two species. Many large constrictor snakes can live in habitats and climates in our states and insular territories, and their introduction and spread could threaten other populations of endangered or threatened species.



USGS

Case Study: Lionfish

The Indo-Pacific lionfish, which likely was introduced to U.S. waters through the saltwater aquarium trade, has become widely established along the Southeast United States coast and Caribbean Sea in less than a decade. Lionfish have been found as far north as offshore of New York. Lionfish have established dense populations in the Gulf of Mexico and off the coast of South America. Recent estimates indicate that lionfish have surpassed some native marine fish in population numbers. Some reports estimate more than 1,000 lionfish per acre in some locations. These fish are voracious eaters and their spines are venomous to humans. Lionfish are already estimated to reduce native reef fish recruitment by 79 percent. This species has the potential to harm economically important fisheries (including snapper and grouper), coral reef conservation efforts and tourism.

Nonnative, invasive species provide a modern example of Benjamin Franklin's famous saying that "[a]n ounce of prevention is worth a pound of cure." Through the Lacey Act, the Service imposes restrictions on the importation and movement across state lines of any species listed as "injurious" under this Act. This is an important tool in preventing the potential damage that nonnative, invasive species can cause.

U.S. Fish & Wildlife Service
http://www.fws.gov
January 2012

Price tag on managing invasive species: $6 million a year

Wednesday, 15 August 2012

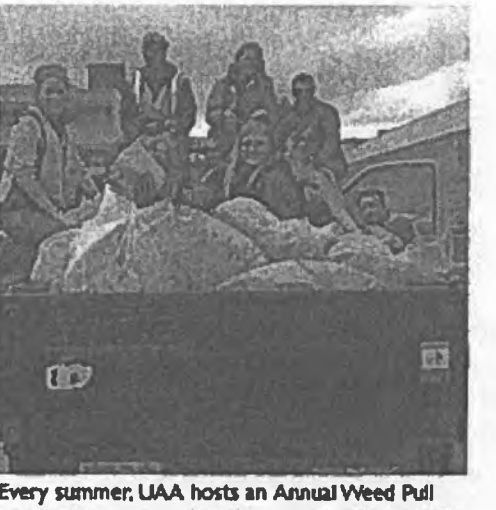


The first analysis of the economic effects of invasive species in Alaska finds that governments and nonprofit groups spent about $29 million from 2007 to 2011, or nearly $6 million a year, to manage those species. Tobias Schwörer of UAA's Institute of Social and Economic Research (ISER) and Rebekka Federer and Howard Ferren of the Alaska SeaLife Center did the analysis based on a survey of public and private organizations that deal with invasive species around the state. The research was funded by several federal and state agencies.

Invasive species are non-native plants and animals—introduced accidentally or intentionally—that crowd out local species, damaging the environment and causing economic losses. Scientists say the problem is at an early stage in Alaska, compared with what has happened in other places, but the number of invasive species is growing—and they are spreading into more areas.

The new analysis finds:

• The federal government put up most of the money—nearly 85 percent—for managing invasive species in the study period. Nonprofits contributed about 9 percent and the state government 5 percent.



Every summer, UAA hosts an Annual Weed Pull on campus to target invasive species. This year, 30 volunteers collected 50 bags of weeds for disposal.

• More than a quarter of the total spending from 2007 to 2011—$8M—was for eradicating Norway rats on an Aleutian Island and northern pike in lakes in Southcentral Alaska. Roughly $1.5M went for eradicating or containing several of the most invasive plants, including white sweetclover and knotweed. About $700,000 went for monitoring the European green crab, which is approaching the coast of Southeast Alaska and threatens the commercial fisheries.

• About a third of the annual spending—nearly $2M—was for eradicating and controlling species already here and preventing others from reaching Alaska. Another $1.2M annually went for monitoring species scientists fear are finding their way here, and $1.4M for research, primarily at the Agricultural Research Station in Fairbanks. About $500,000 a year went for educating Alaskans about the dangers invasive species pose.

Click here to see the full publication (PDF, 2.1MB), Managing Invasive Species in Alaska: How Much Do We Spend? If you have questions, get in touch with Tobias Schwörer at tschwoerer@alaska.edu.

Aquarium plant threatens Peninsula waterways

Posted: September 13, 2012 - 2:58pm | Updated: September 14, 2012 - 8:39am

Back | Next



Photo by E. Bella, Kenai National Wildlife Refuge How Elodea moves from lake to lake: we don't want to see this when our boats are trailered!

Advertisement

By Libby Bella

Kenai National Wildlife Refuge

Interagency biologists working on northern pike control last week in Captain Cook State Recreation Area noticed fragments of a bright green, whorled-leaf aquatic plant washed up on the shore near a boat launch. This unusual plant was identified as a species of Elodea, likely Elodea canadensis, the Canadian waterweed. Elodea is known from several locations in Alaska including Fairbanks, Anchorage, and Cordova...and now Stormy Lake on the Kenai Peninsula. This is the first aquatic freshwater invasive plant species that has been confirmed in Alaska.

This perennial plant is native to much of North America south of mid-BC, Canada, and has naturalized in many places in the British Isles, where it is a problem. Canadian waterweed is closely related to western waterweed (Elodea nuttallii), a native of both North America and Eurasia. In Europe, western waterweed is more common, as it is thought to compete better through faster nutrient uptake. The two hybridize and are virtually impossible to tell apart unless you can find a rare flowering stalk.

So what's the big deal? Effects of Elodea infestations are severe. Its growth can be thick enough to choke and damage boat motors and prevent any kind of recreational use. Forget swimming or paddling around an Elodea-clogged lake – unless you like the feel of the Creature from the Black Lagoon grabbing your legs. Ecological effects include lower water quality, increased sedimentation, native vegetation displacement, and most seriously – which gets the attention of many residents – degraded salmon spawning habitat.

How did Elodea get here? There are several theories, but the prevailing one is that because it's a common aquarium plant, all the Alaska populations are the result of single or multiple aquarium dumps into our water systems. Elodea is sold in most pet stores and aquarium supply shops in Alaska and across North America. It has also been used in science kits for high school science labs to study plant carbon dioxide use. The plant may be spread by migrating waterfowl, but this is mostly speculative.

Alaska and the Kenai Peninsula already have a number of non-native plant species found across the landscape – so why worry about yet another invasive plant? Elodea may be especially difficult to control and particularly damaging because of three factors: the way the plant reproduces, the way it can be spread around Alaska, and the plant's habitat preference.

Elodea reproduces asexually from plant parts. In the fall, leafy stalks detach from a parent plant, float away, root, and start new plants. Winter buds grow from stem tips that overwinter in the water body's bottom. The plant is brittle and breaks apart when agitated, making it very difficult to chop up and remove without causing a major influx of reproductive-ready vegetative parts into the already-infected system. Flowering is rare in all Elodea species, with reproduction by seed virtually nonexistent.

A huge concern is how easily fragments of Elodea can be picked up by float planes and boats. Boat motors can fragment and chop the plant into smaller pieces, making it spread and reproduce faster. Sand Lake is very close to Lake Hood, the major float plane base in Anchorage – close enough to visualize how fast plant parts could be spread all over the state from this single source. Boat motors and other gear also readily pick up fragments of the plant and can spread it to nearby rivers and lakes where the reproduction pattern starts all over again.

Elodea prefers a cold, slowly-flowing (less than one meter per second) water system, with clear water and silty or organic substrate to root in. It can stand freezing and temperatures up to around 80F. In other words, Elodea is ideally suited to thrive in most of the wetland, pond, and slow-moving rivers systems of the western Kenai Peninsula and other big chunks of the state.

While we don't know all the potential spread avenues, we do know that most Alaskan water systems will be losers in an Elodea invasion. Biologists around the state are alarmed enough that a subgroup of our statewide invasion group (CNIPM) teleconferences regularly to discuss updates and options concerning the Elodea invasions.

What can we do to stop the spread of Elodea and other aquatic invaders? There are a number of ways to sanitize gear between trips or between waterways to prevent introduction into uninfected waterways. Wash all gear carefully to remove any mud, plant parts, and debris before leaving the boat launch or fishing spot. Later, you can dry the gear, freeze gear solid, or wash in water over 130F. If these steps aren't possible, blast gear using a 2 percent bleach solution to kill anything living on it. The strongest tool in our invasion toolbox for aquatic invaders, however, is prevention – keeping Elodea out of our ponds and waterways before it becomes a problem.

Dr. Elizabeth ("Libby") Bella is an ecologist at Kenai National Wildlife Refuge. You can find more information about the Refuge at http://kenai.fws.gov or http://www.facebook.com/kenainationalwildliferefuge.

NewsBank inc. America's News

Invasive pike thriving on salmon, other species

Juneau Empire (AK) - Friday, January 25, 2013

Author: *Dan Joling*

ANCHORAGE — A federal and state study of two Alaska salmon streams indicates that nonnative northern pike can eat significant numbers of salmon smolt and will thrive on other species even when the salmon population declines.

The study by the U.S. Geological Survey and the Alaska Department of Fish and Game suggests that invasive pike and native salmon can co-exist in streams and rivers if their habitat does not overlap, but where they do, salmon recovery may depend on suppressing pike.

Northern pike were illegally introduced to southcentral Alaska in the 1950s. The study looked at two tributaries of the Susitna River: the Deshka River, which continues to have a sustainable salmon fishery, including chinook salmon, and Alexander Creek, where pike are believed to have caused the decline in chinook, chum, silver and sockeye salmon, plus rainbow trout and grayling, leading to fishing restrictions.

Salmon hatch and spend about a year in fresh water before migrating to the ocean. Juveniles in fresh water have no natural defense against toothy, voracious pike, which ambush fingerlings in slow-moving water.

Lead study author Adam Sepulveda of the USGS in Bozeman, Mont., said salmon were found to be the preferred prey for pike.

"We sampled 274 pike in a stream where salmon are still abundant, and we found over 600 salmon in the stomachs of these pike," he said in the announcement of the study. "Several of the pike had greater than 20 juvenile salmon in their stomachs."

The researchers found salmonids, including grayling, trout and whitefish, in 140 of the 274 pike stomachs sampled in the Deshka. Small pike ate more juvenile salmon than larger pike.

Salmon were pike's major prey in the Deshka and the lower reaches of Alexander Creek. In the middle and upper reaches of Alexander Creek, where salmon are rare, pike turned to slimy sculpins and Arctic lamprey, leading the authors to conclude that pike may push other species to low abundance or wipe them out.

Chinook salmon continue to meet or approach state return goals in the Deshka despite pike. That also happens in the Wood River Lake system flowing into Bristol Bay. Researchers attributed that to minimal habitat shared by juvenile salmon and pike. Chinook salmon rear in the middle and upper sections of the Deshka where the water is deep and relatively fast-moving. Spawning and rearing habitat for pike is primarily sloughs in the lower section.

Alexander Creek is the opposite with far more of the slow water that pike prefer.

"There's no place for those salmon to get away and avoid them," said state biologist Kristine Dunker, a co-author of the study.

Pike have long been suspected as the reason for low salmon numbers there, she said, and the department conducts an annual pike suppression effort in May during spawning. The authors said suppressing pike in systems where habitat is not limiting may be essential for salmon and other native fish to recover.

The authors acknowledge that pike suppression would be difficult for Susitna drainages. The Susitna Basin is remote and covers 20,077 square miles.

"Moreover, pike occur in the main stem of the Susitna River and reinvasion is likely," the study said. "Thus, managers must identify strategies to reduce the negative effects of pike on salmon populations."

The study was published in the January issue of Ecology of Freshwater Fish.

Section: *State*
Record Number: *3b56d4576328bc612b8ac95b4789c8f095573cc3*
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Ecology of Freshwater Fish 2013

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ECOLOGY OF FRESHWATER FISH

Introduced northern pike predation on salmonids in southcentral alaska

Adam J. Sepulveda[1], David S. Rutz[2], Sam S. Ivey[2], Kristine J. Dunker[3], Jackson A. Gross[1]
[1]US Geological Survey, Northern Rocky Mountain Science Center, 2327 University Way,Suite 2, Bozeman, MT 59715, USA
[2]Alaska Department of Fish & Game, Division of Sport Fish, Palmer, AK 99645, USA
[3]Alaska Department of Fish & Game, Division of Sport Fish, Anchorage, AK 99518, USA

Accepted for publication November 27, 2012

Abstract – Northern pike (*Esox lucius*) are opportunistic predators that can switch to alternative prey species after preferred prey have declined. This trophic adaptability allows invasive pike to have negative effects on aquatic food webs. In Southcentral Alaska, invasive pike are a substantial concern because they have spread to important spawning and rearing habitat for salmonids and are hypothesised to be responsible for recent salmonid declines. We described the relative importance of salmonids and other prey species to pike diets in the Deshka River and Alexander Creek in Southcentral Alaska. Salmonids were once abundant in both rivers, but they are now rare in Alexander Creek. In the Deshka River, we found that juvenile Chinook salmon (*Oncorhynchus tshawytscha*) and coho salmon (*O. kisutch*) dominated pike diets and that small pike consumed more of these salmonids than large pike. In Alexander Creek, pike diets reflected the distribution of spawning salmonids, which decrease with distance upstream. Although salmonids dominated pike diets in the lowest reach of the stream, Arctic lamprey (*Lampetra camtschatica*) and slimy sculpin (*Cottus cognatus*) dominated pike diets in the middle and upper reaches. In both rivers, pike density did not influence diet and pike consumed smaller prey items than predicted by their gape-width. Our data suggest that (1) juvenile salmonids are a dominant prey item for pike, (2) small pike are the primary consumers of juvenile salmonids and (3) pike consume other native fish species when juvenile salmonids are less abundant. Implications of this trophic adaptability are that invasive pike can continue to increase while driving multiple species to low abundance.

Key words: Alaska; diet; *Esox lucius*; Northern pike; prey-specific abundance; salmon; Susitna River

Introduction

The introduction and spread of nonnative species are altering aquatic and terrestrial communities worldwide. In particular, opportunistic predators that invade have had catastrophic effects on native biota (Ogutu-Ohwayo 1990), food web structure (Vander Zanden et al. 1999) and ecosystem function (Baxter et al. 2004) because alternative prey species can support the predator population after preferred prey have declined. Thus, predators can continue to increase and spread while eliminating native species (Ogutu-Ohwayo 1990; Albins & Hixon 2008).

Northern pike (*Esox lucius*) are opportunistic predators that have been introduced into freshwater systems across the globe and have been linked to the decline and elimination of multiple fish species (e.g., Patankar et al. 2006; Byström et al. 2007; Johnson et al. 2008). Pike are ambush predators that require slow-moving, shallow vegetated waters for spawning, rearing and foraging (Casselman & Lewis 1996). They prefer soft-rayed fish, but are trophically adaptable and will switch to spiny-rayed fish, invertebrates and cannibalism when preferred prey are at low densities (Eklöv & Hamrin 1989).

In the Susitna River basin of Southcentral Alaska, shallow vegetated lakes and sloughs are common features that serve as critical rearing habitats for numerous soft-rayed fish species, particularly salmonids. Pike were introduced into Southcentral Alaska in the 1950's and have since spread to >100 lakes and 70 drainages within the Susitna basin (Rutz 1999). The

Correspondence: Adam J. Sepulveda US Geological Survey, Northern Rocky Mountain Science Center, 2327 University Way, Suite 2, Bozeman, MT 59715, USA. E-mail: asepulveda@usgs.gov

doi: 10.1111/eff.12024

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expansion of pike is hypothesised to be a leading cause for the decline of multiple salmonid species in streams that once supported popular sport fisheries (Rutz 1999; Patankar et al. 2006). The economic and cultural costs of salmonid declines are considerable, as sport and commercial fisheries for salmon have been closed or restricted in systems where pike have established. Pike consumption of salmonids may also have severe ecological consequences because salmon are keystone species that provide food and nutrients to aquatic and terrestrial ecosystems (Cederholm et al. 1999).

We described the diet of pike in two tributaries of the Susitna River basin, the Deshka River and Alexander Creek. Our objectives were to (1) assess the relative importance of salmonids to the diet of pike, (2) assess how pike consumption of salmonids differ across space and time and (3) identify other native fish species that are vulnerable to pike predation. To make inferences about the importance of salmonids to the diet of pike, we sampled pike in the Deshka River because it has multiple salmonid populations that still meet Sustainable Escapement Goals (the number of spawning salmon required for sustaining fisheries). To make inferences about the impact of pike on other prey fish after salmonids have declined, we sampled pike in Alexander Creek because escapement estimates for the last decade have shown a downward trend in Chinook salmon (*Oncorhynchus tshawytscha*) abundance and a decline in sport harvest and catch trends for other salmonid species.

Methods

Study sites

The Susitna River basin originates from two major mountain ranges (Talkeetna and Alaska) and generally flows in a southerly direction before emptying into Upper Cook Inlet (Fig. 1). The basin has hundreds of shallow lakes and ponds, sloughs and side channels with large beds of aquatic vegetation, and thousands of square kilometres of adjacent interconnecting wetland areas that are ideal spawning and rearing habitats for pike. We sampled two streams in the Susitna River basin: the Deshka River and Alexander Creek (Fig. 1).

The Deshka River flows approximately 225 km from the headwaters just south of Denali National Park to the confluence with the Susitna River. Channel width varies from 91 m at the mouth to approximately 30 m upstream. The average discharge at the mouth is 25 $m^3 \cdot s^{-1}$. The lowest section of the Deshka has few slow-moving, sloughs and side channels, and the main channel provides little pike habitat because it is deeper, has high velocity and is dominated by mid-channel gravel bars and riffles. Pike were first recorded in 1983, but age analyses of these fish suggest that they were introduced into the Deshka River around 1970 (*unpublished data*, D. Rutz). Area anglers did not capture large numbers and multiple age classes of pike until the early 1990s (Whitmore & Sweet 1998). The Sustainable Escapement Goal for Chinook salmon is 13,000–28,000 fish and escapement counts have ranged between 7,533 and 37,725 since 2005 (Oslund & Ivey 2010). Given that salmonids remain abundant in the Deshka River, we sampled pike from this location to describe the contribution of salmonids to pike diets.

Alexander Creek flows 64 kilometres from Alexander Lake to the confluence with the Susitna River. The main stem is surrounded with numerous side-channel sloughs. A large portion of the mainstem and the sloughs are shallow (<1.5-m deep), low gradient and densely vegetated. Most of the creek flows through large, adjacent interconnecting wetland areas that remain flooded throughout most of the spring, which coincides with the pike spawning migration. Summer discharge is around 7.7 $m^3 \cdot s^{-1}$. Pike were introduced to Alexander Lake in the late 1960s, although there is no harvest record of pike prior to 1985 (Mills 1985). Today, pike are widespread throughout the system. Pike are hypothesised to be primary drivers of declines in multiple fish species beginning in the late 1990s including Chinook, coho (*O. kisutch*), chum (*O. keta*) and sockeye (*O. nerka*) salmon, rainbow trout (*O. mykiss*) and Arctic grayling (*Thymallus arcticus*) (Rutz 1999). For example, average escapements for Chinook salmon from 1979 through 1999 were 3500 fish while escapement from 2000 through 2008 was 1600 fish. In 2010, counts declined to 177 fish (Oslund & Ivey 2010). The rainbow trout and grayling fisheries were closed to harvest in 1996 and the Chinook salmon sport fishery was closed in 2008. As salmonid stocks are currently at such low levels in Alexander Creek, this location offered an opportunity to study the dietary patterns of pike on nonsalmonid taxa.

Fish capture & handling

In the Deshka River, we used gill nets (2.5-cm bar mesh) to capture pike in five side-channel sloughs. Pike >370 mm (fork length, FL) were captured by their teeth or entangled, and pike <350 mm were often gilled. We fished five gill nets per slough for three, 90–min sets. The same five sloughs were sampled in spring (May 17–21st), summer (June 26–30th) and early fall (August 26th–29th).

In Alexander Creek, Alaska Department of Fish & Game (ADFG) began a gill netting operation to remove pike in side-channel sloughs of the upper,

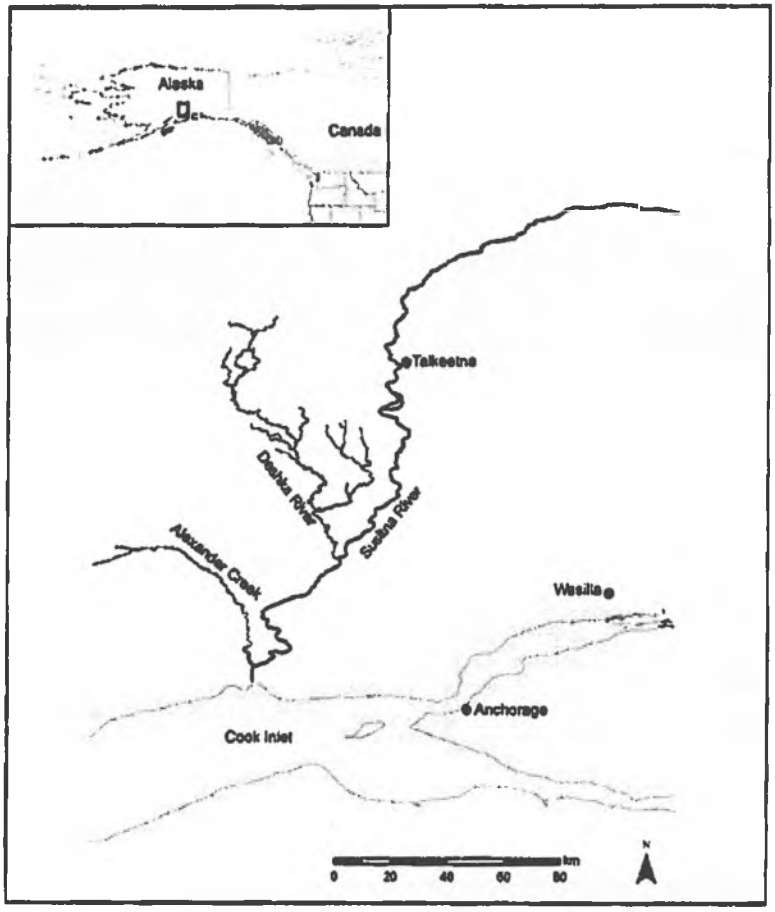


Fig. 1. Map of Alexander Creek and the Deshka River in the Susitna River basin.

middle and lower reaches in May 2011. Up to six experimental-mesh gill nets (six, 6-m panels of 1.9-cm, 2.5-cm, 3.2-cm, 3.8-cm, 4.4-cm, 5-cm bar mesh) were fished in each slough and checked every 24 h and all captured pike were euthanised. Sloughs were fished until an 85% reduction in pike catch was achieved. We sampled pike from five sloughs in each reach during the late spring (May 13–15th) and five sloughs in the upper reach in summer (June 20–24th). The remoteness of Alexander Creek, desiccation of sloughs and logistical difficulties prevented sampling in lower and middle reaches in June and all sites in August.

All fish were measured for length (FL; mm) and weight (g). We used gastric lavage to obtain stomach contents from pike captured in the Deshka River and we removed entire stomachs from fish that were captured in Alexander Creek. Five pike from each Deshka River slough were dissected to verify that gastric lavage removed all stomach contents. Stomachs and stomach contents were preserved in 95% ethanol until identification. To ensure that no fish was sampled >1 time per sampling period in the Deshka River, we inserted floy-tags into the base of the dorsal fin of pike before releasing them near the capture location.

Stomach contents were identified by trained technicians at Rhithron Associates, Inc. (Missoula, MT). Prey fish were identified to species when possible, and invertebrates were identified to the lowest practical taxonomic level. We excluded contents that could not be identified in analyses. All prey items were identified, enumerated and measured for length and weighed (blotted wet weight).

Data analysis

To compare pike diets across time and space, we conducted two analyses. First, we assessed the proportion of Pacific salmonids in pike diets relative to the other prey taxa. For this analysis, we grouped all taxa that belonged to the *Oncorhynchus* genus (coho, Chinook, and sockeye salmon and rainbow trout) into the Total *Oncorhynchus* category. Second, we

assessed the proportion of each individual *Oncorhynchus* species in pike diets. Many samples could not be identified beyond the genus *Oncorhynchus*, so we placed these samples into the prey category, 'unidentified *Oncorhynchus* spp'.

For each prey category, we calculated the per cent occurrence (*%O*), per cent by number (*%N*) and per cent by mass (*%M*) according to Chipps & Garvey (2007). We also calculated the prey-specific abundance (*PSA*) for each prey item (*i*) as follows:

$$PSA_i = 100 \times \frac{\sum S_i}{\sum S_{ii}}$$

where S_i equals the wet weight of prey i in stomachs, and S_{ii} equals the total wet mass of prey in predators that contain prey i.

We used multivariate analysis of covariance (MANCOVA) to test for an overall season effect (May vs. June vs. August) on diet composition in the Deshka River and for an overall reach effect in Alexander Creek (lower vs. middle vs. upper in May vs. upper in June). We used*%M* for each prey taxa as our response variable and pike length as our covariate. The interaction terms of season × pike length and reach × pike length were not significant, so only main effects are reported. The mass of prey items is a useful metric for predator–prey studies because it is measured in units that can be compared to other studies and can be used to compare the energetic importance of different prey types (Chipps & Garvey 2007). To test if the mass of consumed prey types varied among and within seasons in the Deshka River and among and within reaches in Alexander Creek, we used analysis of covariance (ANCOVA) with*%M* of each prey taxa as our response variable and pike length as our covariate. As these tests were *a posteri*, we set appropriate alpha levels using the Bonferroni inequality overall alpha divided by *n* (e.g., the number of seasons or reaches). We used the Tukey Honest Significance Difference (HSD) test as a post-hoc test to identify the prey items with the highest*%M*. To satisfy assumptions of normality, we arcsine-square root transformed*%M* when necessary. We report all means using the untransformed, least-square means (± 1 SE).

To explore patterns of relative prey importance, we constructed bivariate plots of *PSA* versus*%O*. Dominant prey items have high*%O* in the diets and high *PSA* values, while rare prey items have low *PSA* and low*%O* values. Opportunistic feeding is represented for prey items that have high *PSA* and low*%O* in the diets, and generalised feeding is characterised by prey items that have low *PSA* and high*%O*. When plotted in this fashion, graphical techniques can be used to evaluate relative prey dominance and the degree of homogeneity of the diet (Amundsen et al. 1996; Chipps & Garvey 2007).

Pike density can affect diet due to interactions among predators (e.g., kleptoparasitism and cannibalism; Nilsson & Brönmark 1999). Pike at high densities select different prey items and have decreased intake rates than pike at low densities (Nilsson 2001). To assess density effects on diet, we examined the relationships between pike relative abundance and the prey category with the greatest*%M* in each sampled slough in the Deshka River and Alexander Creek. In the Deshka River, we estimated pike relative abundance per slough as the total number of unique pike caught in all three gill net sets. In Alexander Creek, we used the total number of pike captured in each sampled slough to estimate relative abundance. We ran separate analyses for each stream because gill net capture effort differed. We also analysed the three Alexander Creek reaches separately because effort differed (i.e., each reach was sampled by a different field crew).

Pike diet can also be limited by gape size, which is a linear function of pike body length (Nilsson & Brönmark 2000). To test if pike diet is better predicted by prey size than by prey identity, we tested for correlations between the maximum length of prey items in each pike sample and pike length. All statistical analyses were performed in JMP 9.0.2 (SAS Institute, Carey, North Carolina, United States).

Results

Deshka River

Pike sample size and lengths are reported in Table 1. Pike length differed across our sampling dates (ANOVA: $F_{2,\ 216} = 13.26$, $P = <0.0001$). Pike sampled in May and August were of similar length and were larger than pike sampled in June (Tukey-HSD). Gastric lavage removed 96% (± 3%) of the total mass of stomach contents (n = 25). We observed 14 species of fish, 6 types of invertebrates, 1 anuran and 2 small mammal species in pike stomach samples (Table 2).

All prey

Pike stomach contents differed among months (MANCOVA: Wilk's lambda = 0.78, $F_{28,404} = 1.89$, $P = 0.004$) and by pike length (MANCOVA: $F_{14,202} = 4.72$, $P = < 0.0001$). Total *Oncorhynchus* were the dominant prey category by mass, the most frequently encountered prey item and the most numerous prey item in stomachs sampled in May, June and August (Table 2). We found up to 47, 14 and 8 Pacific salmonids/pike in May, June and August, respectively. The*%M* of Total *Oncorhynchus* did not differ among months (ANCOVA: $F_2 = 1.37$,

Table 1. Sample size for pike stomach contents and fork length (FL) of sampled pike in the Deshka River in May, June and August 2011.

Months	Pike sampled	Empty stomachs	Stomachs with unidentifiable contents	FL range (cm)	Mean FL (cm) ± 1 SE
May	97	18	4	25.0–67.7	40.9 ± 1.6
June	99	10	3	24.7–65.0	35.9 ± 1.0
August	78	19	1	28.5–70.5	45.0 ± 1.0

$P = 0.26$), but it did differ by pike length (ANCOVA: $F_1 = 5.40$, $P < 0.0001$). The *%M* of Total *Oncorhynchus* decreased with pike size ($r^2 = 0.16$, $P < 0.0001$).

A bivariate plot of prey-specific abundance versus *%O* indicated that Total *Oncorhynchus* was the dominant food category for pike in May, June and August (Fig. 2). *PSA* (33%–58%) and *O* (32%–45%) for total *Oncorhynchus* exceeded all other prey taxa. In May, pike fed opportunistically on longnose suckers (*PSA* = 18%, *O* = 6%) and generally on Arctic lamprey (*PSA* = 4%, *O* = 15%). In June, pike fed opportunistically on round whitefish (*PSA* = 25%, *O* = 7%) and generally on Arctic lamprey (*PSA* = 2%, *O* = 11%). In August, pike fed opportunistically on round whitefish (*PSA* = 22%, *O* = 7%) and voles (*PSA* = 17%, *O* = 6%) (Fig. 2). All other prey taxa occurred infrequently and contributed little to consumed mass.

The number of pike captured ranged from 1 to 111 individuals per slough. The correlation between *%M* of Total *Oncorhynchus* and pike relative abundance/slough was not statistically significant ($R = 0.30$, $P = 0.32$), but the correlation between maximum prey size and pike length was ($R = 0.58$, $P < 0.0001$). We found no difference in this latter correlation among seasons (ANCOVA: $F_2 = 1.14$, $P = 0.32$).

Pacific salmonids

Pike stomach samples of *Oncorhynchus* species differed among months (MANCOVA: Wilk's lambda = 0.80, $F_{10,422} = 5.06$, $P < 0.0001$) and by

Table 2. Diet composition for pike sampled in the Deshka River in May, June and August 2011. Prey taxa are quantified by per cent number (%N), mass (%M), and frequency of occurrence (%O). *Oncorhynchus* spp. are prey that could only be identified to genus. Total *Oncorhynchus* is the sum value across all prey within the *Oncorhynchus* genus.

		May			June			August		
Diet item	Scientific name	% N	% M	% O	% N	% M	% O	% N	% M	% O
Invertebrates										
Amphipods	Gammaridae	0	0	0	0	0	0	0	0	0
Aquatic beetles	Dytiscidae	0	0	0	0	0	0	0	0	0
Damselflies	Coenagrionidae	3	2	3	0	0	0	0	0	0
Dragonflies	Aeshnidae	1	1	2		2	2	5	3	5
Leeches	*Erpobdellidae spp.*	4	3	5	1	1	1	3	2	3
Mayflies	Siphlonuridae	0	0	0	0	0	0	0	0	0
Salmonid fish										
Arctic grayling	*Thymallus arcticus*	1	1	1	0	1	1	0	0	0
Coho salmon	*Oncorhynchus kisutch*	0	0	0	0	1	1	12	16	11
Chinook salmon	*O. tshawytscha*	24	30	20	41	42	36	20	18	20
Rainbow trout	*O. mykiss*	3	3	3	0	0	0	2	2	2
Round whitefish	*Prosopium cylindraceum*	2	4	2	6	10	7	10	11	10
Sockeye salmon	*O. nerka*	0	0	0	0	0	0	0	0	0
Oncorhynchus spp.		21	15	21	28	23	29	12	13	12
Total *Oncorhynchus*		48	48	45	70	67	65	46	48	43
Other fish										
Arctic lamprey	*Lampetra camtschatica*	12	8	13	8	7	9	2	2	2
Burbot	*Lota lota*	1	1	1	0	1	1	7	7	7
Eulachon	*Thaleichthys pacificus*	0	0	0	0	0	0	0	0	0
Longnose sucker	*Catostomus catostomus*	6	8	8	0	0	0	7	0	7
9-spine stickleback	*Pungitius pungitius*	0	0	0	0	0	0	0	0	0
Northern pike	*Esox lucius*	0	0	0	1	0	1	0	0	0
Slimy sculpin	*Cottus cognatus*	6	6	6	6	6	6	2	2	2
3-spine stickleback	*Gasterosteus aculeatus*	14	16	14	2	2	3	11	9	10
Other										
Red-backed voles	*Myodes rutilus*	0	0	0	3	3	3	9	9	9
Shrews	*Sorex spp.*	0	0	0	1	1	0	0	0	0
Wood frog	*Rana sylvatica*	0	2	1	0	0	0	0	0	0

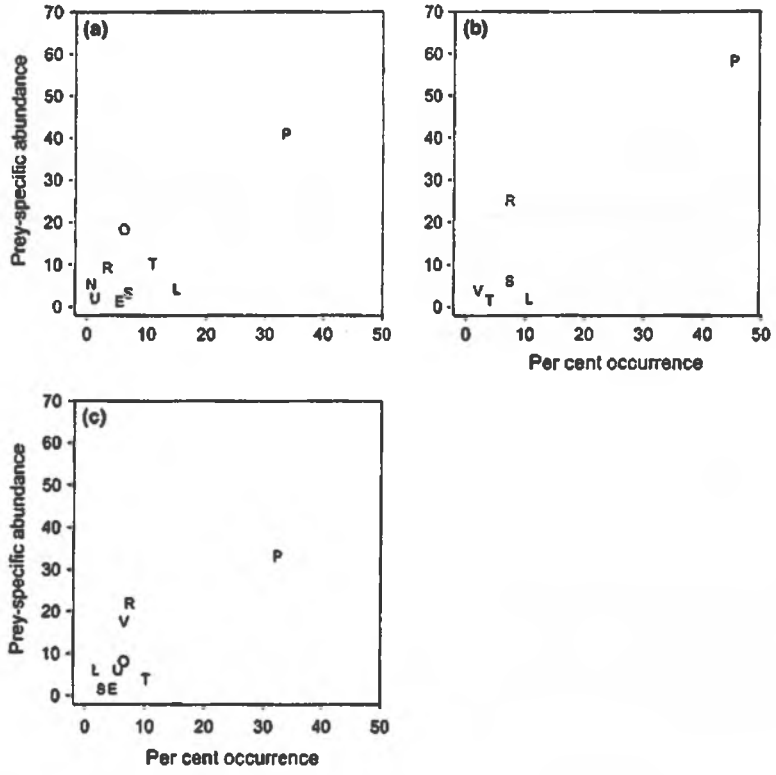


Fig. 2. Biplot representation of prey-specific abundance (per cent wet mass) versus per cent occurrence for all taxa in the Deshka River: Prey use by pike collected in (a) May, (b) June and (c) August. Letters correspond to individual prey taxa: E = Leech, L = Arctic lamprey, N = Northern pike, O = Longnose sucker, P = Pacific salmonids, R = Round whitefish, S = Slimy sculpin, T = Three-spine stickleback, U = Burbot and V = Vole. Prey that are not shown in the biplots had prey-specific abundance and occurrence values <5%.

pike length ($F_{5,211}$ = 13.37, P < 0.0001). In May, pike stomachs contained Chinook salmon, rainbow trout and unidentified *Oncorhynchus* spp., but%*M* varied among species (Table 2; ANCOVA: F_4 = 22.31, P < 0.0001). Chinook salmon represented the greatest proportion of the total diet mass, while rainbow trout represented the least (Tukey-HSD). We recorded a maximum of 33 Chinook salmon/pike and 1 rainbow trout/pike in May. In June and August, we observed Chinook salmon, rainbow trout, sockeye salmon and unidentified *Oncorhynchus* spp. in pike stomach samples (Table 2). The% *M* of these species varied in June (ANCOVA: F_4 = 49.25, *P < 0.0001)* and August (ANCOVA: F_4 = 7.00, P < 0.0001). In June, Chinook salmon represented the greatest proportion of the total mass (*M* = 42%) followed by unidentified *Oncorhynchus* spp. (*M* = 23%). We observed a maximum of 13 Chinook salmon/pike and 9 unidentified salmonids/ pike. Contributions of the remaining species were negligible. In August, Chinook salmon, coho salmon and unidentified *Oncorhynchus* spp. had similar *M* (13–18%), but *M* values for rainbow trout and sockeye salmon were <1% (Tukey-HSD). We observed a maximum of 5 Chinook salmon/pike and 5 coho salmon/pike.

There was no correlation between pike length and %*M* of coho salmon (r^2 = 0.00, P = 0.79) or sockeye salmon (r^2 = 0.00, P = 0.89). Pike length explained little of the variation in the%*M* of Chinook salmon, unidentified *Oncorhynchus* spp. and rainbow trout (r^2 = 0.15, P < 0.0001; r^2 = 0.03, P = 0.02; and r^2 = 0.08, P < 0.0001, respectively).

The bivariate plot of *PSA* versus%*O* indicated that Chinook salmon were the relatively dominant food item in May, June and August (PSA = 13–44%, *O* = 21–33%; Fig. 3). Coho salmon did not occur in pike stomach samples in May, were rare in June and had similar importance to Chinook salmon in August (*PSA* = 11%, *O* = 14%; Fig. 3). Pike fed opportunistically on rainbow trout in May (*PSA* = 15%, *O* = 2%) and rarely in August (Fig. 3). Rainbow trout were absent from stomach samples in June.

Alexander Creek

Pike sample size and lengths are reported in Table 3. Mean length of pike did not differ among reaches in

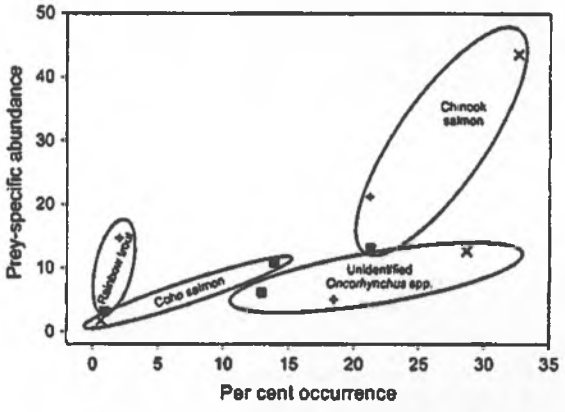


Fig. 3. Biplot representation of prey-specific abundance (per cent wet mass) versus per cent occurrence for Pacific salmonid species in the Deshka River. Symbols indicate the month in 2011 when pike diets were sampled: (+) = May, (×) = June and (■) = August. The ellipses surround specific prey categories.

May, but pike in the upper reach in June were significantly smaller than pike sampled in May (ANOVA: $F_{3,165} = 35.13$, $P < 0.0001$). Pike stomach samples had 11 species of fish, 6 types of invertebrates, 1 anuran and 2 small mammal species (Table 3).

All prey

Pike stomach contents differed among reaches (MANCOVA: Wilk's lambda = 0.31, $F_{42,449} = 5.11$, $P < 0.0001$), but contents were not related to pike length (MANCOVA: $F = 0.14$, $P = 0.27$). Total *Oncorhynchus* was the relatively dominant prey category by mass (31%) in the lower reach of Alexander Creek (Table 4; ANCOVA: $F_{13} = 6.54$, $P < 0.0001$). We observed a maximum of two Pacific salmonids/pike in the lower reach.

In contrast, Total *Oncorhynchus* only occasionally occurred in pike diets in the middle reach, and it did not occur in diets in the upper reach in May or June. Rather, Arctic lamprey were the dominant prey item by mass (34%) in the middle reach (Table 4; ANCOVA: $F_{13} = 8.20$, $P < 0.0001$), and slimy sculpin were the dominant prey item by mass in the upper reach in May (72%) and June (68%; ANCOVA: $F_{13} = 28.85$, $P < 0.0001$ and $F_{13} = 80.32$, $P < 0.0001$ respectively). In May, we observed a maximum of 24 Arctic lamprey/pike in the middle reach and 14 slimy sculpin/pike. In June, we observed up to eight slimy sculpin/pike. Slimy sculpin*%M* in the upper reach did not differ between May and June (Tukey HSD). Pike length was not associated with the dominant prey items by mass in any reach (ANCOVA: $F_1 < 2.48$, $P > 0.12$). Other prey taxa that contributed to pike diet mass include Arctic grayling in the lower reach, Arctic grayling and Total *Oncorhynchus* in the middle reach, leeches in the upper reach in May and amphipods in the upper reach in June (Table 4).

A bivariate plot of *PSA* versus*%O* suggested that Total *Oncorhynchus* was a relatively dominant food category found in pike stomachs in the lower reach in May (*PSA* = 28%, *O* = 27%; Fig. 4). Arctic grayling (*PSA* = 36%, *O* = 11%) and round whitefish (*PSA* = 28%, *O* = 2%) were important opportunistic prey. Pike fed generally on Arctic lamprey (*PSA* = 2%, *O* = 21%). In the middle reach, there was no dominant prey category (Fig. 4). Pike fed opportunistically on Arctic grayling (*PSA* = 52%, *O* = 12%) and generally on Arctic lamprey (*PSA* = 7%, *O* = 35%). In the upper reach in May, pike fed dominantly on slimy sculpin (*PSA* = 55%, *O* = 63%) and opportunistically on Arctic grayling (*PSA* = 35%, *O* = 6%). In the upper reach in June, pike fed dominantly on slimy sculpin (*PSA* = 45%, *O* = 39%), opportunistically on voles (*PSA* = 49%, *O* = 7%) and generally on amphipods (*PSA* = 1%, *O* = 42%). Contributions of the remaining species were negligible.

In May, there was some evidence that prey size increased with pike length, but this relationship differed among reaches (ANCOVA: $F_{1,2} = 8.31$, $P = 0.0004$). The relationship was weak in the lower reach ($R = 0.31$, $P = 0.04$), and correlation coefficients were somewhat greater in the middle and upper reaches (middle: $R = 0.58$, $P < 0.0001$; upper: $R = 0.50$, $P = 0.01$). In June, the correlation between prey size and pike length was not statistically significant in any reach ($R = 0.25$, $P = 0.06$).

Gill nets captured 24–277 pike/slough in the lower reach, 14–105 pike/slough in the middle reach and 39–163 pike/slough in the upper reach. In addition, we captured 7–16 pike in five sloughs in the upper reach in June. However, the correlations between

Table 3. Sample size for pike stomach contents and fork length (FL) of sampled pike in Alexander Creek in May and June 2011.

Month	Reach	Pike sampled	Empty stomachs	Stomachs with unidentifiable contents	FL range (cm)	Mean FL (cm) ± 1 SE
May	Lower	79	21	15	25.0–70.1	48.4 ± 1.4
	Middle	60	12	6	31.2–100.0	47.2 ± 1.8
	Upper	53	24	3	24.5–61.6	42.5 ± 2.1
June	Upper	63	7	7	24.2–53.9	31.7 ± 8.6

Table 4. Diet composition for pike sampled from the lower, middle and upper reaches of Alexander Creek in May and June 2011. Prey taxa are quantified by per cent number (%N), mass (%M), and frequency of occurrence (%O). *Oncorhynchus* spp. are prey that could only be identified to genus. Total *Oncorhynchus* is the sum value across all prey within the *Oncorhynchus* genus.

	Lower			Middle			Upper_May			Upper_June		
Diet item	% N	% M	% O	% N	% M	% O	% N	% M	% O	% N	% M	% O
Invertebrates												
Amphipods	0	0	0	0	0	0	0	0	0	23	10	20
Aquatic beetles	7	7	7	1	1	3	2	0	3	2	2	3
Damselflies	2	0	2	5	5	3	0	0	0	0	0	0
Dragonflies	10	0	9	0	0	0	4	4	3	3	3	4
Leeches	6	6	5	2	1	5	9	8	13	4	4	8
Mayflies	0	0	0	0	0	0	0	0	0	1	1	2
Salmonid fish												
Arctic grayling	11	12	11	11	15	12	5	7	6	2	2	1
Coho salmon	0	0	0	0	0	0	0	0	0	0	0	0
Chinook salmon	2	2	2	2	2	1	0	0	0	0	0	0
Rainbow trout	6	6	5	2	3	3	0	0	0	0	0	0
Round whitefish	2	2	2	0	0	0	0	0	0	0	0	0
Sockeye salmon	0	0	0	0	0	0	0	0	0	0	0	0
Oncorhynchus spp.	20	22	20	7	8	8	0	0	0	0	0	0
Total *Oncorhynchus*	28	31	27	11	14	12	0	0	0	0	0	0
Other fish												
Arctic lamprey	19	17	21	45	34	35	1	0	3	0	0	0
Burbot	0	0	0	8	11	9	1	1	3	0	0	0
Eulachon	0	0	0	0	1	1	0	0	0	0	0	0
Longnose sucker	0	0	0	1	2	1	4	4	3	0	0	0
9-spine stickleback	1	3	4	0	0	0	4	4	3	0	0	0
Northern pike	0	0	0	0	0	0	0	0	0	0	0	0
Slimy sculpin	8	9	9	8	8	12	71	72	68	60	71	60
3-spine stickleback	0	0	0	7	8	6	0	0	0	0	0	0
Other												
Red-backed voles	0	0	0	0	0	0	0	0	0	5	7	5
Shrews	0	0	0	0	0	0	0	0	0	0	0	1
Wood frog	5	5	4	0	1	1	0	0	0	0	0	0

pike abundance and*%M* of any of the dominant prey taxa for these reaches were not statistically significant: Total *Oncorhynchus* in the lower reach ($R = -0.20$, $P = 0.70$), Arctic lamprey in the middle reach ($R = 0.73$, $P = 0.06$) and slimy sculpin in May and in June in the upper reach (May: $R = 0.40$, $P = 0.51$; June: $R = -0.31$, $P = 0.55$).

Pacific salmonids

The proportion of *Oncorhynchus* species occurring in pike stomachs differed among reaches (MANCOVA: Wilk's lambda = 0.83, $F_{9,394} = 3.58$, $P = 0.0003$), but not by pike length ($F_{3,162} = 1.48$, $P = 0.22$). Chinook salmon, rainbow trout and unidentified *Oncorhynchus* spp. were the only *Oncorhynchus* species that we found in stomach samples and we did not find any of these species in stomachs sampled from the upper reach in May or June (Table 4). The*%M* for each of these species did not differ among reaches (ANCOVA: $F_3 = 0.16$, $P = 0.92$ and $F_3 = 1.10$, $P = 0.35$) and*%M* was not related to pike length in any reach (ANCOVA: $F_1 < 2.05$, $P > 0.15$). The*%M* for unidentified *Oncorhynchus* spp. differed among reaches (ANCOVA: $F_3 = 9.08$, $P < 0.0001$)–*%M* in the lower reach was greater than the middle reach and the middle reach did not differ from the upper reach in May or June. We also found that*%M* for unidentified *Oncorhynchus* spp. was not related to pike length (ANCOVA: $F_1 = 2.45$, $P = 0.12$).

A bivariate plot of *PSA* versus*%O* indicated that pike fed opportunistically on rainbow trout in the lower reach (*PSA* = 21%, *O* = 5%) and the contribution of Chinook salmon was negligible in the lower and middle reaches (Fig. 5). Pike fed generally on unidentified *Oncorhynchus* spp. in the lower reach (*PSA* = 6%, *O* = 20%), but the contribution of this prey item was negligible in the middle reach (Fig. 5).

Discussion

We found that salmonids constitute the major prey items for pike in the Deshka River and in the lower reach of Alexander Creek throughout the summer. In the Deshka River, salmonids were dominant prey

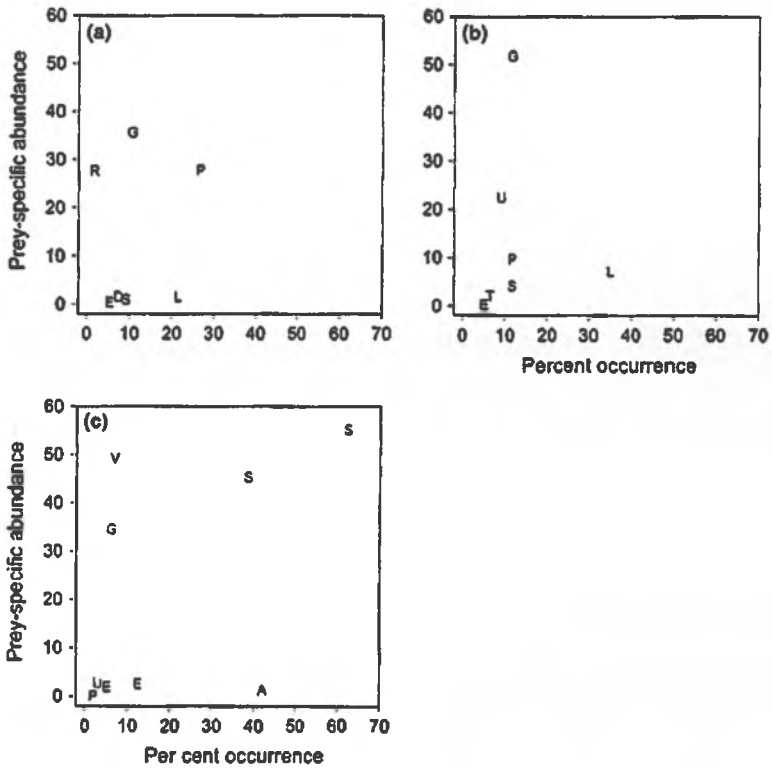


Fig. 4. Biplot representation of prey-specific abundance (per cent wet mass) versus per cent occurrence in Alexander Creek: Prey use by pike collected in (a) the lower reach in May, (b) the middle reach in May and (c) the upper reach in May (red letters) and June (black letters). Letters correspond to individual prey taxa: A = Amphipod, B = Aquatic beetle, D = Dragon fly, E = Leech, G = Arctic grayling, L = Arctic lamprey, P = Pacific salmonids, R = Round whitefish, S = Slimy sculpin, T = Three-spine stickleback, U = Burbot and V = Voles. Prey that are not shown in the biplots had prey-specific abundance and occurrence values <5%.

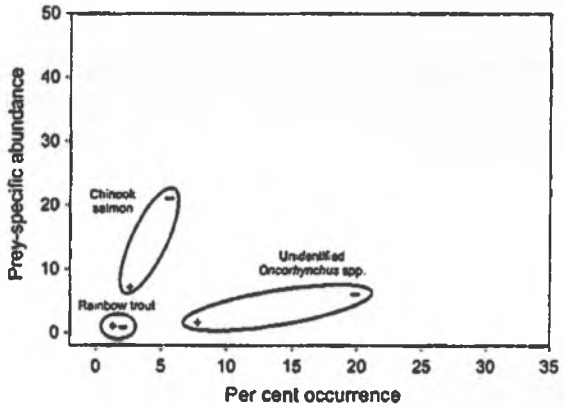


Fig. 5. Biplot representation of prey-specific abundance (per cent wet mass) versus per cent occurrence for Pacific salmonid species in Alexander Creek. Symbols indicate the reach in 2011 where pike diets were sampled: (–) = lower and (+) = middle. The ellipses surround specific prey categories.

items for pike and diet was not related to pike density. In Alexander Creek, salmonids were also frequently consumed by pike, even though salmonid abundance was low. We also found that the effects of pike invasions may extend beyond salmonids because pike shifted to consumption of other native fish, like slimy sculpin and Arctic lamprey, when salmonids were rare. Implications of this trophic adaptability are that invasive pike can drive multiple species to low abundance and possible extirpation (Byström et al. 2007; Haught & von Hippel 2011).

We observed Pacific salmonids in 140 of the 274 pike stomachs sampled in the Deshka River and found that they were the dominant prey. Pike consumed >600 Pacific salmonids, the majority of which were Chinook salmon juveniles (<100 mm) in May and June and coho salmon juveniles (<100 mm) in August. Rainbow trout were rare in pike diets, but their PSA was high relative to their%*O* because larger rainbow trout (>150 mm) were consumed. If our snapshots of pike stomach contents are indicative of daily consumption patterns, then extrapolation of our data suggests that pike consume a large proportion of recruiting salmonids. This extrapolation is supported by other studies — Kekäläinen et al. (2008) found that pike ate 29% of stocked Atlantic salmon (*Salmo salar*) smolts and Jepsen et al. (1998) estimated that

pike were responsible for 56% of Atlantic salmon smolt mortality during a 3 week period. The ability for salmon to coexist with invasive pike comes into question when consumption and predation levels are this high.

In fact, Spens & Ball (2008) found that pike and salmon coexistence is rare in Swedish boreal lakes and that self-sustaining salmon populations were only possible if pike were removed. However, their 'pike-salmonid noncoexistence rule' does not seem to apply to the Deshka River, where species like Chinook salmon have remained near Sustainable Escapement goals in the Deshka River despite the intensity of pike predation on salmonids that we observed. Understanding the mechanisms that allow for this incongruity may help managers with limited resources to prioritise habitats for pike suppression.

One aspect that may facilitate coexistence is spatial refugia. In other Alaskan systems where pike are native and are found with nondeclining salmon populations, such as the Wood River Lake system that flows into Bristol Bay, there is evidence of habitat segregation. Sockeye salmon in the Wood River Lake system are largely pelagic foragers and spend little time near the vegetated banks where pike are found (Chihuly 1976). Similarly, Chinook salmon spawn and rear in the middle and upper sections of the Deshka River, where there are large cobbles, deep water and riffles. Spawning and rearing habitat for pike is primarily found in sloughs in the lower section of the Deshka River, so there is minimal habitat overlap. Pike predation on juvenile salmon may be limited to these lower reaches for much of the year and to short, temporal windows when salmon smolts from upper reaches move downstream. The Alexander Creek drainage is the opposite; it has thousands of square kilometres of pike spawning and rearing habitat, and habitat that is restricted to Chinook salmon is rare. These observations suggest that the effects of predation by introduced pike on juvenile salmonids are strongly mediated by the physical template of habitat (Warren & Liss 1980).

We could not test the hypothesis that pike are responsible for Pacific salmonid declines in Alexander Creek. However, we did find that Pacific salmonids were a relatively dominant prey item in the lower and middle reaches and that they were absent from stomach samples in the upper reach. This absence contrasts with historical spawning survey data in Alexander Creek, which found that ≈ 3600 Chinook salmon adults returned annually and most of these fish spawned in the upper reaches (Yanusz & Rutz 2009). More recent survey data show the opposite pattern and align with our stomach content data; there were 110 returning adults and spawning frequency declined with proximity to Alexander Lake where there are estimated to be >13,000 pike (36 fish/hectare; Oslund & Ivey 2010; Rutz 1999; Yanusz & Rutz 2009). In comparison, estimated pike densities are 1.78 fish/ha (Roach 1996) and 1.39 fish/ha (Dye 2002) in other Alaskan waters where pike are native and occur with salmon. Pike populations downstream of the lake are also abundant; ADFG removed >4000 pike from 60 side-sloughs of Alexander Creek in May and June 2011 (ADFG, unpublished data). Pike can achieve high abundance and densities in Alexander Creek because there is ample spawning and nursery habitat. When pike are abundant, our data suggest that they can have negative effects on salmon: individual pike consumed >40 salmonids per sampling event, >73% of individuals had nonempty stomachs and diet was independent of pike density.

Pike prefer salmonid prey in the Susitna River basin (Rutz 1999) and once salmonids decline, pike predation pressure shifts to other taxa (Haught & von Hippel 2011). In general, diet plasticity allows predator population size to be independent of the abundance of their preferred prey. As a result, predator encounter rates with preferred prey can remain high, even after preferred prey have declined (Fagan et al. 2002; Symondson et al. 2002). Not surprisingly, diet plasticity is a characteristic of many invasive predators that have been implicated in native species extinctions (e.g., Ogutu-Ohwayo 1993; Caut et al. 2008). Pike in Alexander Creek fit this theory. First, we found that pike have catholic diets. They fed on >20 different taxa and nonsalmonid prey dominated their stomach contents in reaches were spawning salmon are now rare. Specifically, pike stomach contents were dominated by slimy sculpin in the upper reach and Arctic lamprey in the middle reach. Second, pike abundance in Alexander Lake and Alexander Creek is high even though salmonids have declined. Third, we found salmonids in pike stomach contents in the middle and lower reaches despite the low abundance of salmonids. We did not link pike to any native species extinctions, but pike have been associated with the local extinction of multiple fish species in other systems (e.g., Patankar et al. 2006; Byström et al. 2007; Spens & Ball 2008).

Future directions

Suppressing pike in systems where habitat is not limiting, like Alexander Creek, may be essential for salmonids and other native fish to recover to desired escapement goals. Indeed, pike eradication was required for self-sustaining salmon populations in Sweden (Spens & Ball 2008). However, complete

removal of pike in tributaries to the Susitna River basin will be difficult because this basin is extensive (52,000 km^2) and remote. Moreover, pike occur in the main stem of the Susitna River and reinvasion is likely. Thus, managers must identify strategies to reduce the negative effects of pike on salmon populations.

Our diet data in the Deshka River suggest that removal of pike <400 mm could help reduce predation on Pacific salmonids. We found that small pike consumed more Chinook and coho salmon biomass than large pike in the Deshka River. Most of these salmonids were <100 mm. The weak correlation between prey length and pike size indicates that large pike also consumed small prey, like Arctic lamprey and insects, but small salmonids were rare in their diet. ADFG managers have been aware that small pike consume a disproportionate number of juvenile salmonids (Rutz 1999). In 1998, they implemented slot limits in Alexander Lake that allowed for unlimited take of pike <558 mm and limited the take of pike $\geq$ 558 mm. The rationale was that large pike can limit the abundance of small pike through cannibalism and that most anglers will only travel to fish for pike if they can keep large fish (Yanusz & Rutz 2009). Angling pressure was minimal in this remote drainage, so slot limits had little effect on small pike abundance (Yanusz & Rutz 2009). We also found that pike cannibalism was rare in Alexander Creek. Additional tools that are effective at suppressing small pike, as well as larger pike, in remote areas are needed in Southcentral Alaska.

Our stomach content data confirm that juvenile salmonids are the major prey item for invasive pike in systems where salmonids are still abundant, but that pike will feed on alternative prey after salmonids have declined. Thus, invasive pike are a threat to the ecosystem structure and function of many streams in Southcentral Alaska, especially in systems where pike spawning and rearing habitat are not limited. We believe that actions that limit the spread of pike to new drainages and that suppress pike populations in invaded drainages will benefit salmonids and other native species.

Acknowledgements

This study was funded by the Alaska Sustainable Salmon Fund (Project # 44609). We thank Alaska Department Fish & Game's Division of Commercial Fisheries (Soldotna, AK) and Division of Sport Fisheries (Palmer, AK) and Bob Pence (Alaska Pike Hunters) for providing logistical and technical support in the field. We thank Joshua Bishoff, Adrian Baer, Kasaan Brandel, Kiche Brandel, Eric Hollerback, Don Reeves and Matt Wurnke for help in the field. We also thank Erik Schoen and Bob Gresswell for helpful comments on the manuscript. Any use of trade, product or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

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Cordova District Fishermen United
PO Box 939 | 509 First Street | Cordova, AK 99574
phone. (907) 424 3447 | fax. (907) 424 3430
web. www.cdfu.org | email. cdfu@ak.net

February 8, 2013

Rep. Paul Seaton
House Fisheries Committee
State Capitol Room 102
Juneau, AK 99801
f. 465.3472

RE: HB 89 "Aquatic Invasive Species"

Dear Chairman Seaton and Committee Members:

I am writing on behalf of the Cordova District Fishermen United Board of Directors and our membership to express our support of the intent of House Bill 89, as it would be a valuable addition to the Department's arsenal for the management of Aquatic Nuisance Species.

As was evidenced in the Pacific NW, marine debris associated with the 2011 Japanese tsunami poses increased opportunity for the introduction and transmission of invasive species into Alaskan waters. The outside beaches in the Gulf of Alaska and the PWS area, where the majority of debris washes ashore, are remote, uninhabited and yet hold some of our most productive salmon streams. Having a rapid response system in place gives the Department the tools to quickly implement eradication efforts and prevent the spread of ANS.

I would also like to acknowledge the concerns expressed by the Alaska Shellfish Growers Association, although in our region we currently don't have the same ANS complications, we can recognize their concern and request for amended language.

Thank you for your thorough consideration of HB 89.

Sincerely,

Alexis Cooper
Executive Director

Alaskan Shellfish Growers Association

February 4, 2013

Representative Paul Seaton
State Capitol
Juneau, AK 99801

Re: HB 89

Dear Rep. Seaton:

While ASGA supports the intent of HB 89, we are uneasy that it could potentially allow a state agency to be held harmless when unilaterally deciding to destroy private property.

Specifically, 16.05.093(f) holds the State of Alaska harmless if the Alaska Department of Fish and Game (ADFG) unilaterally decides it is necessary to destroy a crop of shellfish, shellfish production equipment or other floating infrastructure to eradicate an invasive species at a shellfish farm.

You attempted to respond to our concerns with 16.05.093(h) which states in part: "the department shall consider the potential effects of its response measures on private property while selecting the most effective methods to eradicate or control the aquatic invasive species."

Frankly, the language is not as strong as we had hoped. Some background might help.

While an invasive species such as the "sea vomit" infecting Whiting Harbor is a serious concern, oyster farmers can completely eradicate the organism from their crops, gear and floating infrastructure utilizing a variety of strategies. While these tunicates are very hard to eradicate from submerged reefs and rocks, there are many treatments an oyster farmer can employ to safely kill the organism without harming the crop of oysters, culture gear, vessels and infrastructure.

Despite the legitimate concerns about the spread of the tunicates in the marine environment and resulting impacts to habitat and wild organisms, there is no threat to human health from consuming oysters that had been covered by the "marine vomit."

ADFG should work closely with the operators of infected farms to ensure invasive organisms are fully eradicated before ordering destruction of shellfish stocks and other private property. This seems like a common sense response and a course the agency is likely to follow, but we worry about the lack of recourse should ADFG personnel make a quick decision without consultation and interaction with the permit-holder.

We understand the need for a quick response to a situation such as Whiting Harbor and support your intent, but the "hold harmless" clause troubling, particularly when coupled with the soft language in AS 16.05.093(h): "…the department shall consider the potential effects of its response measures on private property while selecting the most effective methods to eradicate or control the aquatic invasive species."

We'd be pleased to work with you and the House Special Committee on Fisheries to resolve this dilemma.

Sincerely,

Rodger Painter
ASGA President

c.c. House Special Committee on Fisheries
Cora Campbell, ADFG
Ron Josephson, ADFG
Cynthia Pring-Ham, ADFG

Alaska Committee for Noxious and Invasive Plant Management

January 10, 2013

Representative Paul Seaton
345 W. Sterling Hwy. Suite 102B
Homer AK, 99603
907-235-2921
Representative_Paul_Seaton@legis.state.ak.us

RE: HB365 An Act relating to the rapid response to, and control of, aquatic invasive species

The Alaska Committee for Noxious and Invasive Plant Management (CNIPM) is the professional society for the study and management of invasive species in Alaska. Invasive species cause hundreds of billions of dollars in management costs, crop losses, loss of property value, damage to infrastructure, and cause a host of environmental problems across the USA each year. In Alaska we are lucky that many of the most harmful invasive species have not arrived yet and those that are already here have not yet overrun Alaska's relatively pristine natural resources. We appreciate the introduction of HB 365 last session by the House Resources Committee, and understand that it is your intention to submit a similar bill during the 2013 legislative session. Our board offers for your consideration comments and context on the content of the bill and recommendations for additional legislative needs.

The CNIPM board feels that this legislation is an excellent step toward developing rapid response capabilities for priority invasive species in Alaska. As currently written, HB 365 would direct the Alaska Department of Fish and Game to increase the priority of rapid response to identified aquatic invasive species, specifically with rapid response planning. Effective response to new invasions requires all resource management and permitting agencies to recognize the urgency and elevate the priority for swift management.

The CNIPM board appreciates your request to provide comments to the text outlined in HB 365. Our comments on this legislation include:

1. Page 1 line 1 should be amended to include "prevention of' in the title
    - An important component of invasive species management is preventing introductions of new species into an area. Adding prevention to the rapid response planning will help make state management actions more effective in limiting the impacts of invasive species.
2. We suggest including a definition of "rapid response", for example: "initiation of eradication efforts or critical interim measures to achieve containment while a longer term eradication or suppression strategy is formulated".
3. The bill should continue to deal with rapid response to both marine and freshwater invasive species.
    - A bill for rapid response of aquatic invasive species is an excellent first step towards managing those species that pose the greatest threat to Alaska's resources and economy. Limiting the scope to marine environments would be short sighted and not address the aquatic ecosystem as a whole. Certain resources, such as anadromous salmon, could be negatively impacted by aquatic invasive species in both marine and freshwater habitats.

4. Terminology in the legislation should direct rapid response to incipient infestations that have the highest capacity to negatively affect valuable resources while being sufficiently limited in scope that control is feasible, whether it is found over a limited or broader geographic area.
    - In the best practices of invasive species management, rapid response is tied to early detection – with the understanding that management is most effective when managers are directing effort at small, isolated, incipient populations. Please see the attached "Invasion Curve" for reference. While the scope of new infestations must be limited in order to allow for effective "rapid response," the terminology of 'limited' geographic area created confusion in 2012 committee hearings. Thus, we recommend removing "limited geographic area" and replacing with "incipient populations that are limited in scope." After speaking with bill sponsors, we understand the intent of this wording, but it may cause conflicts for those that read the bill and view this as a directive to only manage invasive species that have not spread from one introduction point. With the challenges of detecting dangerous new invasive species in our huge state, a harmful new invader may have arrived multiple times and be present in far apart locations by the time it is noticed. For example, while Elodea has been found in several communities throughout the state, its range is still extremely limited compared to the amount of Alaska's uninfested waters and the likelihood for effective rapid response actions is high.
    - In order to effectively plan for and implement rapid response, a quantitative risk and decision methodology should be developed determining the risks, benefits, and costs of a set of management choices, including no action and delayed action. In the delayed action case, the benefits of collecting more information to make a more informed decision outweigh the costs of the delay. This methodology takes into account future consequences of all management alternatives. Such an effort directs resources to the highest priority infestations, applies the most cost effective management effort, and minimizes the highest potential losses for the economy and environment of the state.
5. The proposed amendment submitted by the house finance committee should read 'The Department of Natural Resources and the department shall include in leases and permits a provision that the department shall be held harmless for an act under (b) of this section that affect private property of the lessee or permittee.'
    - Though we are not lawyers and are uncertain of the particular language that is constitutionally required or which language is appropriate for statute versus regulations, the State of Alaska has a public trust duty to act to protect the publicly owned resources of the State. It is common practice for State leases and permits to include a hold harmless agreement for anticipated or required State actions.
    - The Dept of Natural Resources' plant health and quarantine regulations state that the director of the Division of Agriculture can establish quarantines to protect the state's agriculture industry from pests. 11 AAC 34.100 sets forth that any treatment required under the quarantine will be at the owner's expense. We see the hold harmless clause preferable to the Division of Agriculture's regulations because the lease or permit holder would not be required to pay for the determined method of control. Rapid response to invasive species is an

emergency situation, where decisive control actions will protect Alaska's critical natural resources.

6. Include a provision for the establishment of a rapid response fund.
    - To adequately address the threat of aquatic invasive species and create the capacity for effective response, we recommend a rapid response fund be established within the Department of Fish and Game or Department of Natural Resources. This fund could be accessed for containment, eradication, and monitoring activities to deal with the highest priority aquatic invasive species. Rapid response funds would result in actual management as opposed to just more planning. In addition, if state funds for implementation were made available they could be used to match federal funds to address new issues efficiently. This need is underscored by a recent study by UAA's Institute for Social and Economic Research, which found that the federal government pays for about 84% of the invasive species management taking place in Alaska, while the State pays for only about 5%.
    - We suggest that dispersal of funds be done in cooperation with appropriate agencies, university professionals, and user groups, as opposed to unilateral control by one department or division.

Though this legislation will be a significant step forward for invasive species management in Alaska, an Invasive Species Council will be necessary in the future as we move towards effective management of invasive species on a statewide scale. This panel of experts from various agencies and stakeholder groups would work together to determine State priorities for invasive species management and the best projects to strategically control the most harmful invasive species with limited funds. Other states utilize councils to accomplish their goals, and there are many models that could be adapted to fit Alaska's needs.

If we can be of any additional assistance on invasive species issues, please do not hesitate to contact us. CNIPM is a volunteer organization composed of concerned citizens, scientists, and land managers that volunteer or work for non-profit, tribal, local, state, and federal agencies across Alaska. The goals of CNIPM are to heighten the awareness of problems associated with non-native invasive plant species and to bring about greater statewide coordination, cooperation, and action to halt the introduction and spread of these undesirable plants. To learn more about the mission and goals of CNIPM, please visit www.uaf.edu/ces/cnipm.

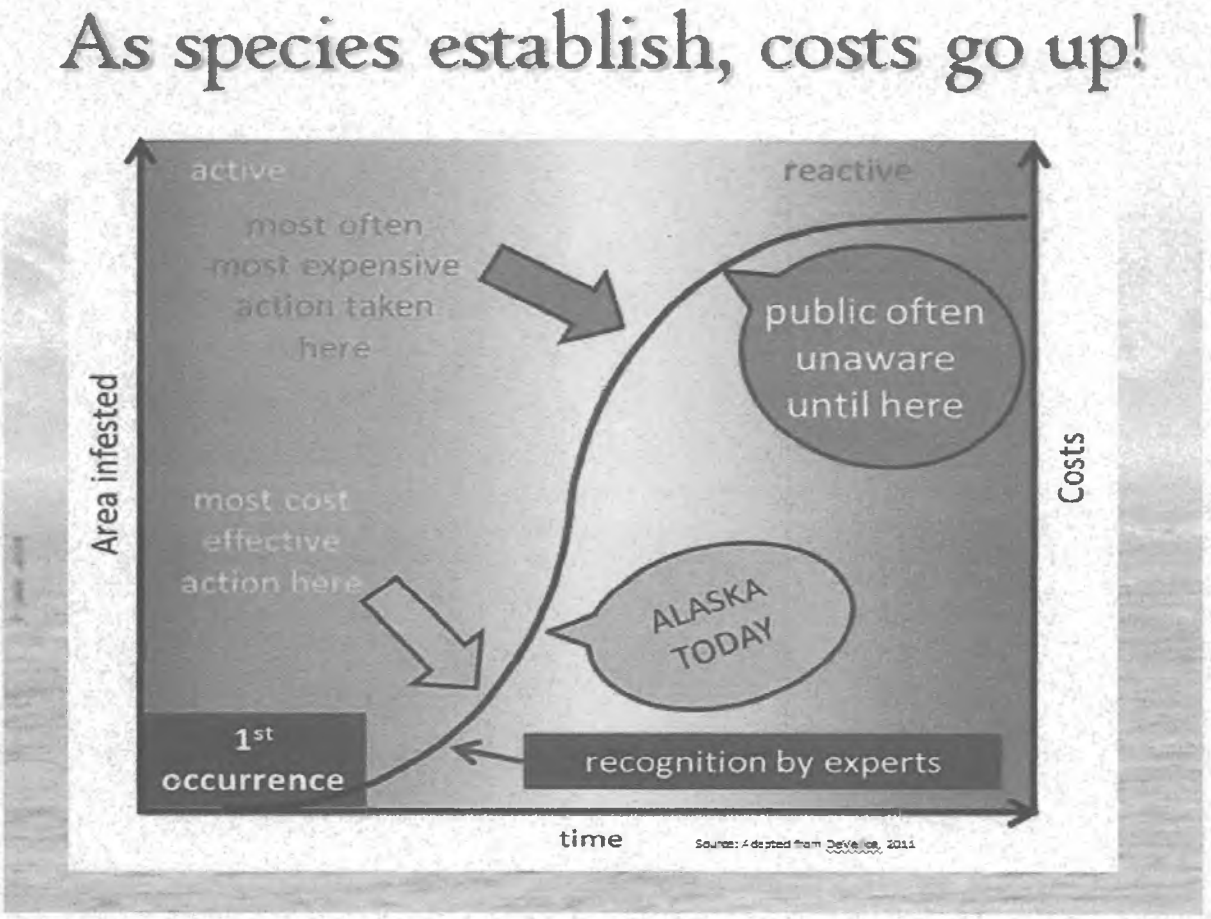
Sincerely,

TWStallard

Tim Stallard, Chair
Alaska Committee for Noxious & Invasive Plant Management
Phone: (907) 347-2214
Weeds.free.ak@gmail.com

Alaska Committee for Noxious and Invasive Plant Management

Invasion Curve:





ANCHORAGE SOIL & WATER CONSERVATION DISTRICT

FY2012 Annual Report

The ASWCD Mission:

Supporting self-governance and private property rights, to assist landowners and managers with conservation and development through technical, financial and educational programs

Board of Supervisors & Team

Bret Burroughs, Chair
Jon Nauman, Vice-Chair
Linda Boggs, Treasurer/Secretary
Fred Wolfley, Supervisor
Denise Chythlook, Supervisor











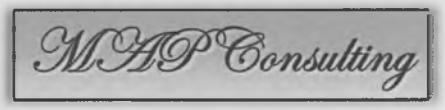




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The ASWCD's boundaries are the same boundaries as the Municipality of Anchorage: from Portage to the Knik River, including the communities of Portage, Girdwood, the Turnagain Arm, Anchorage, Eagle River, Chugiak, and Eklutna

Letter From The Chair

To look back on fiscal year 2012 brings a list of accomplishments to be proud of for the team of the Anchorage Soil and Water Conservation District. The ASWCD is truly making a difference in the community with our assistance in many areas, including agency and non-agency issues, on-the-ground assistance to property owners and developers. the District is showing that our qualified and confidential support and back-to-basics business plan works. We treat our business like you treat your business; that is why we accomplish projects and assistance directly to the community with limited overhead, and why the District operates through the utilization and support of the private sector rather than having employees and building a bureaucracy.

Our recipe for success creates a winning formula in our community that produces results. We fill needs property owners require, confidential on-the-ground assistance, with limited funds requires a dedicated volunteer board, and dedicated contractors. Holding overhead and administration costs under 10% (standard is between 20-50%) is critical. We are accountable for every dollar spent, and integrity, transparency, protection of private property rights, and respect are the tenets we live by.

The upcoming year is already setting up to be exciting. This is your District and we're here to help, but if you're expecting a bureaucracy, you're not going to find it here. Your Anchorage Conservation District is here to help our neighbors develop and take care of the natural resources in their control.

Bret M. Burroughs



Anchorage Woodlot, Biomass Utilization & Composting

In 2012, the ASWCD's Anchorage Woodlot began its fifth season under a self-sustaining business model that was implemented in the 2008 season.

The ASWCD has been involved with the Anchorage Woodlot since its inception in 2000, transitioning from the Anchorage Fire Department to ASWCD management beginning in 2005. In 2008 we completed our transition from being supported with federal funds to this self-sustaining model that secures the woodlot's operations as long as the community needs it.

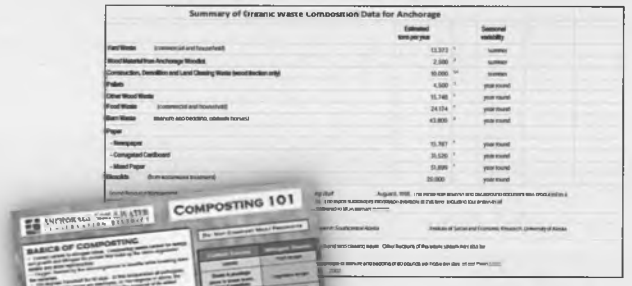
With property owners being supported in their active management of their property and being wildfire-aware and active stewards of their land, the woodlot has become a cornerstone program of the community.

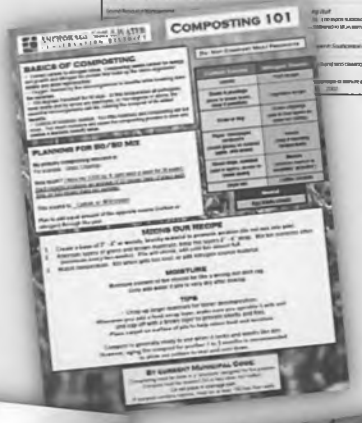
The ASWCD Anchorage Woodlot processes all brush, limbs, and other material dropped off, into a ground material (more than 2,500 tons a season), that is available to the community free of charge. All firewood and firewood-suitable logs are also picked up by the members of the community at no charge.

This year's Anchorage Woodlot was made possible in partnership with Alaska Land Clearing, LLC and Mayor Sullivan's Administration, who allowed us to use a temporary site as our regular location, a Municipal snow disposal site was full of snow thanks to a record snow year. Thank you from the ASWCD and the community we serve!

Whether it be firewood and groundcover from the woodlot, composting, biomass to energy or heat, or biomass to value added product, the District has been supporting utilization in any form. Anchorage has tremendous biomass and compost feedstock resources, that are greatly untapped.

The ASWCD has assisted several potential start-ups with business plans, providing technical expertise, supplying data, and/or support through their respective processes, testing, permitting, or exploration of the possibilities. The ASWCD also teaches composting classes and is providing support to the community in their, and our, quest to become more self-sufficient and less wasteful of our resources.


Summary of Organic Waste Composition Data for Anchorage







Active Property management & Conservation Planning

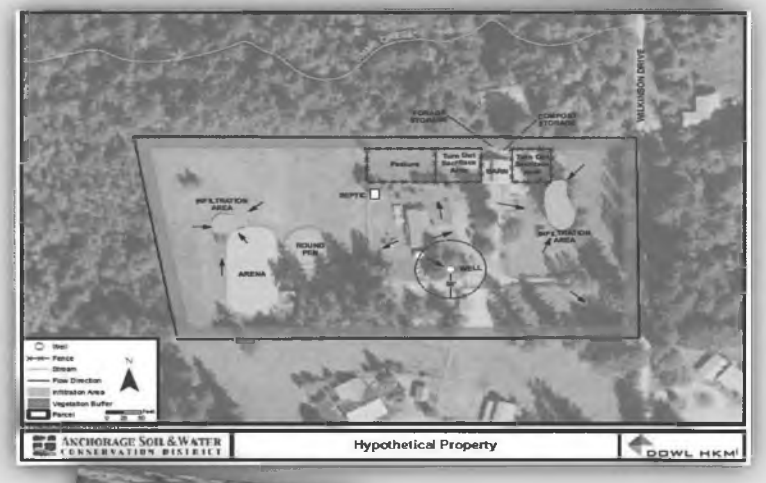
The District is always available to the residents of our District to assist in become active managers and stewards of the natural resources in their control. Whether it be a Conservation Plan for an agricultural or non-agricultural facility or property, assistance with permitting, or technical support, we are helping property owners use and develop their land.

Conservation Plans provide several benefits for property owners, including making properties more chore-friendly and easier to manage, bringing them into compliance with Municipal Code, particularly the provisions of 'The Large Animal Ordinance," and helping to provide protection under State law for agricultural properties within the Municipality.

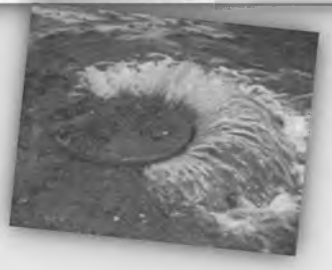
The District team works one-on-one with property owners, in the strictest of confidentiality, to design and implement site-specific Best Management Practices as wanted by the property owner, such as creating vegetation and buffering strategy, manure and mud management plans, and to address drainage, erosion, or other natural resource concerns, as well as assist property owners in many other aspects.

Highlights during FY12 include: the District began working to address a serious drainage issue off of Homestead Trail Road; began working to address a flooding issue for a property owner in Valdez; began the planning for upgrades and maintenance to the trails and facilities of Ruth Arcand Park and the William Chamberlin Equestrian Center; our support for a project to protect the water resources of Potter Marsh continued; and the ASWCD assisted several property owners in issues with agencies, acting in an advocacy and/or mediation capacity.









Assistance to Consortium of Chugiak-Eagle River Community Councils, AMC 21.10

The rewriting of Title 21, the Municipality's Land Use Code, has taken more than a decade, but is now in its final process and will be adopted by the end of FY13. Recognizing the need to preserve community values in Land Use Code, the property owners, residents, and business owners in the Chugiak-Eagle River (C-ER) area requested, and the Assembly granted, a separate chapter specific to the C-ER area. This allows the Chugiak-Eagle River community to write its own chapter -- the absolute essence of self-governance and self-determination. By Statute the District is charged with assisting in the settling of land, so how could the District say no when the Consortium asked for assistance.



Separate Title 21 chapter applauded by local residents

PNZ decision earns positive response

BY MIKE NESPER

Alaska Star

Those in favor of creating a separate chapter for Chugiak-Eagle River to Title 21, which regulates municipal land use, had reason to celebrate Monday night.

The Anchorage Planning and Zoning Commission passed a motion requiring Chapter 21.10 be on the same level of review as the provisionally adopted chapters of the Title 21 rewrite by its Oct. 3 meeting. A round of applause followed the unanimous decision by the nearly 30 in attendance at Gruening Middle School.

The Consortium has worked more than five years in research, community input, and hundreds upon hundreds of hours in the collection and documentation of input and in the preparation of their separate chapter by the ASWCD.

Wildlife Natural Resources: Anchorage and Rural Alaska Working Together

The District continued its support of programs and projects that benefit both Alaska's wildlife and Alaska's people. In supporting the Wood Bison Reintroduction project, which will bring back a species that used to help sustain Alaskans and has only been extinct in Alaska for less than 100 years, and the programs of the Alaska Moose Federation which support better management of our moose natural resources.

In the reintroduction of Wood Bison, many people have worked together to make this happen for rural Alaska: The AWCC, Alaska Department of Fish and Game, ASWCD, Canada's National Recovery Team for Wood Bison, the Canadian Wildlife Service, Environment Canada, International Union for the Conservation of Nature/Species Survival Commission- Bison Specialist Group, Alaska Outdoor Council, Safari Club International, the Wildlife Conservation Society, Tanana Chiefs Conference, Eastern Regional Subsistence Advisory Council, and Fish and Game Advisory Committees representing the three regions being considered for wood bison restoration. For more information see www.alaskawildlife.org.

ALASKA WILDLIFE AWCC CONSERVATION CENTER

The ASWCD has also been a supporter of the Alaska Moose Federation (AMF) since the beginning. The AMF is working to improve our management of moose resources, a resource that in the past has been taken for granted, or sometimes just plain wasted. Supporters of this effort include the ASWCD, Sampson Steel, Pruhs Corporation, NC Machinery, Alaska Mill and Feed, Native Village of Eyak, Tyonek Native Corporation, Sportsman's Warehouse, Surveyor's Exchange, Wendy's of Alaska, Great Northern Engineering, Granite Construction, Alaska Air Taxi, Alaska Highway Safety Office, Evert's Air Service, all of their outstanding volunteers, and many others. For more information go to www.growmoremoose.org.

Peters Creek Flooding & Erosion Control

The District continues its monitoring of our constructed portion of Peters Creek, in addition to looking at a couple additional sections of possible concern.

The continued monitoring of the section of creek that we altered has shown an end to the massive flooding that plagued that section for many decades, including the catastrophic flooding in 2006 when the District was asked to help. The District stopped the flooding and prevented the local access bridge from demolition, then followed with construction the following year.



Non-Native Plants

The ASWCD has continued its work with policy issues regarding the continued expansion of the Non-Native Plants Industry (an ASWCD term). Awareness and education regarding the need to contain this movement to species of actual harm or impact to our lands, species which can be reasonably addressed, species that have the possibility of being controlled/eradicated versus those species that are so widespread control or eradication is impossible, and the ASWCD continues to support open discussions with affected industries and a rational approach.



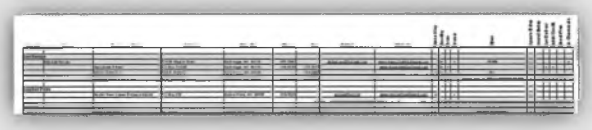
Canada Thistle: justified listing - a species clearly causing harm, and spread is such that it can be eradicated, is on the SOA Prohibited List, eradication efforts are effective



Timothy Grass: should not be listed - arguably the most common livestock forage, crucial to agricultural interests, no harm to wildlife or habitat has been shown; however, benefits to wildlife and habitat *have* been shown

Buy Local: Forage Directory

The District continues its publication and distribution of its Forage Directory, a statewide comprehensive list of forage producers, with detailed production data, to aid in the linking of producers and buyers, promoting the use of locally grown product. The Forage Directory is an invaluable source for its users and many of the producers listed have commented that their business has significantly increased since their listing in the directory, some selling out. Some have also commented that the Forage Directory has also been a catalyst for an improvement in quality through better management of the crop.



Assistance

The ASWCD was asked to assist in several issues to assist/represent property owners in interactions with agencies and other issues, including:

- The ASWCD assisted the Kodiak District in selling raffle tickets to support Future Farmers of America;
- Assisted a property owner with a serious soil erosion and permitting issue;
- Assisted a property owner with a flooding issue on Campbell Creek, in coordination with the Municipality and other agencies;
- Assisted a property owners with impacts from an adjacent road construction project and mediated the situation to a favorable outcome for the property owner and the project.

2012 Annual Poster Contest

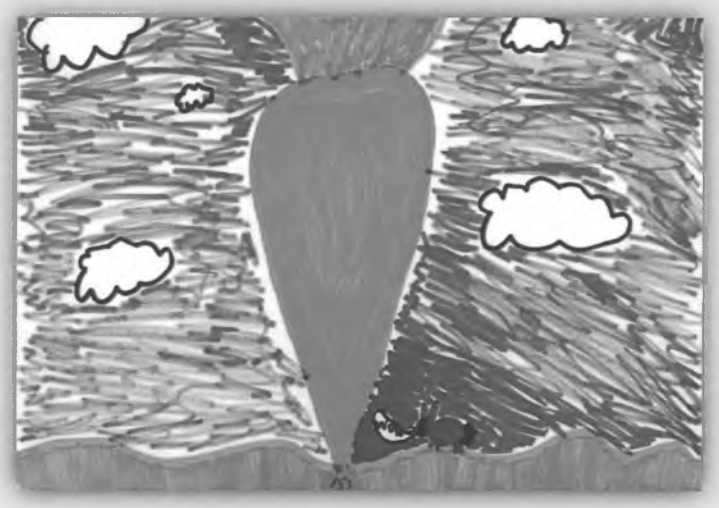
The ASWCD's annual poster contest concluded in June. This year's contest asked entrants to draw what they would grow in their garden - big enough to feed a community, a garden to feed your family year-round, or an herb garden on a window sill. What would your garden grow?





This year's grand prize winner was Tabitha Silver (above left), 13 years old in the 8th grade at Central Middle School. Tabitha also placed first in her grade category, 6th to 8th grade. The grand prize runner-up and first place in the 2nd to 5th grade category was Gwendolyn Mueller (above right). Gwendolyn is 10 years old and in the 5th grade at Chugiak Elementary.

The other first place winners were Norah Fredenhagen in the Preschool to 1st grade category, 7 years old and 1st grade at Northern Lights ABC (below left); and in the 9th to 12th grade category, Rachel Blakeman, 17 years old in the 11th grade at West High (below right).





What They're Saying This Year

I wanted to thank you for the work you do, and especially for the advice and support offered to me by Ryan Stencel, your Operations Manager.

In the spring of 2011, I began the process of learning how to complete erosion control around my new home, located on a steep (and beautiful) lot way up in Bear Valley. I was required by the Municipality to do this, I wanted to ensure that my home remained safely where it was built, and I wanted to be a good neighbor. I called around trying to figure out how best - and cheapest, of course - to accomplish this. After many calls where I was given another number to call, I finally connected with Ryan. Talking with Ryan, I finally began to make progress with my education and to accumulate something more than a list of phone numbers of people who were nice but unable to help.

Ryan immediately offered to come out and look at the site. She arrived with Brad Melocik, a DOWL HKM Engineer, and the two of them were very honest and helpful. First, they told me that the plan to hydroseed my steep slopes might work for one year, but would likely all slough away soon thereafter. (Certainly not what I was hoping to hear.) They suggested I needed to explore more intense erosion control options with a better chance of long-term success. Ryan gave me the names of some people who would offer better options for my site.

Once I had determined what to do, she communicated with the Municipality on my behalf to explain what was planned.

Under the guidance of [the erosion control company I chose], last year (2011) we put in composting blankets/bags, netting and mulch. Once again, Ryan was so helpful in getting the mulch we needed - and a lot of it - from the wood lot to cover all the slopes. This year, we are repairing a few spots that did not make it through the winter and have planted 750 willow stakes so they can root and hold the slopes in place. We also needed more mulch, which of course, we got from you.

I realize this is probably more information than you need, but I wanted you to know that Ryan was so helpful on so many levels:

- Without the visit by Ryan and Brad, the suggestions they offered, and the contact info for [contractors], I would likely have gone through with the hydroseeding and be facing the same problems again right now - with my money down the drain. I would never have found a good erosion control person on my own.

- While I might have gotten Municipality approval without her help in explaining what was planned, I doubt that it would have gone as smoothly or as timely had I been trying to explain the project myself to them.

- Without the mulch your organization offers from the wood lot, I would probably not have been able to afford to complete this project.

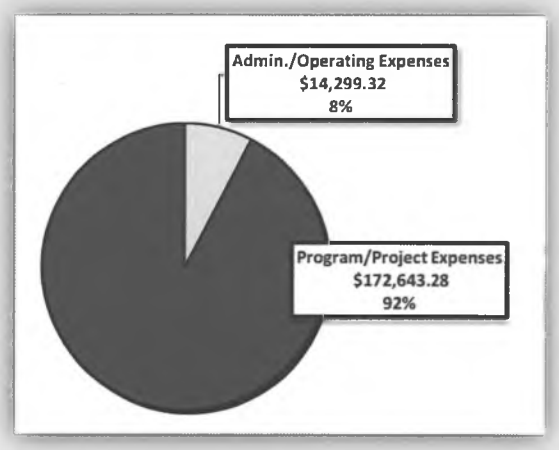


I understand that you are a volunteer Board and I want to thank you very much for your work and to let you know how much I appreciate the benefits I have enjoyed because of the work you do, and your great representative, Ryan Stencel. Hopefully, this reminds you that your work is having a positive impact on our community.

S.W.

ANCHORAGE SOIL & WATER CONSERVATION DISTRICT
FISCAL YEAR 2012 FINANCIAL REPORT

Program / Project / Funding Source	Admin. / Operating Expense	Program or Project Expense	Total FY2012 Expenses	FY2012 Revenue & Proceeds
Admin	$ (12.50)	$ 12.50	$ -	$ -
Anchorage Woodlot, 2011 Season	$ 21.40	$ 21,344.78	$ 21,366.18	$ 13,799.45
Anchorage Woodlot, 2012 Season	$ 14.00	$ 20,227.76	$ 20,241.76	$ 29,558.65
Biomass Utilization, MOA Solid Waste Services Grant	$ -	$ 963.75	$ 963.75	$ -
Composting, MOA Partnership	$ -	$ 2,607.50	$ 2,607.50	$ 720.00
Consortium of Chugiak-Eagle River Community Councils	$ -	$ 34,738.29	$ 34,738.29	$ 19,937.99
DNR / SOA Annual Cooperative Agreement	$ 200.00	$ 775.00	$ 975.00	$ 2,500.00
Homestead Trail Drainage, SOA	$ -	$ 2,778.07	$ 2,778.07	$ 15,000.00
Operating Account	$ 14,076.42	$ 84,594.29	$ 98,670.71	$ 54,541.50
Peters Creek Completion, FY11 SOA	$ -	$ -	$ -	$ 2,619.92
Peters Creek, FY12 SOA	$ -	$ 2,640.06	$ 2,640.06	$ 25,000.00
Potter Marsh Project	$ -	$ 225.00	$ 225.00	$ -
Ruth Arcand Park Trails, FY13 SOA	$ -	$ 967.41	$ 967.41	$ -
SOA / AACD FY11 Operating Grant	$ -	$ -	$ -	$ 8,777.64
Valdez Flooding Project, SOA	$ -	$ 768.87	$ 768.87	$ 25,000.00
TOTALS	**$ 14,299.32**	**$ 172,643.28**	**$ 186,942.60**	**$ 197,455.15**



Anchorage Soil and Water Conservation District

P.O. Box 110309 - Anchorage, AK 99511-0309
Phone: 907.677.SOIL (7645)
E-Mail: aswcd@aswcd.org
www.ASWCD.org



HB

98

<TARGET><BILL>HB 98</BILL><SUBJECT>HB
98</SUBJECT><COMM>HFSH28</COMM></TARGET>

ALASKA STATE LEGISLATURE

Member:
House Finance Committee

Chair:
House Budget Sub Committees on:
- Department of Health & Social Services
- Department of Transportation & Public Facilities

Session:
Alaska State Capitol
Juneau, AK 99801-1182
Phone: (907) 465-2679
Fax: (907) 465-4822
Toll Free (800) 505-2678

Interim:
600 E. Railroad Ave
Wasilla, AK 99654
Phone: (907) 376-2679
Fax: (907) 373-4745

Representative Mark Neuman

Rep.Mark.Neuman@akleg.gov

Sponsor Statement HB 98

"An Act relating to escapement thresholds and escapement goals for certain salmon stocks"

Salmon stocks are critically important to all Alaskans. So much so that we have adopted an escapement based approach to management of this resource. Since statehood we've stipulated these spawning escapements goals are a primary management target to ensure sustainable yields into the future.

Escapement goals are important as they can precipitate actions that greatly curtail, even cease the harvesting of stocks during times of low productivity or likewise increase harvest during abundance.

This legislation addresses an area of concern in the use of and the setting of these goals. Currently salmon manage policies do not require an increase in the lower end of "sustainable escapement goal (SEG) or the biological escapement goal (BEG) to enhance the rapid replenishment of a stock of concern.

In managing a stock of concern, reducing the time to rehabilitate that stock would be a valuable tool for Alaska's Department of Fish & Game.

HB 98 directs the Board of Fisheries to adopt in regulation specific management objective for a salmon stock that has been identified as a stock of concern. The department, in consultation with the board, would set the management objective for that stock. The objective must include a sustained escapement threshold (SET) and optimal escapement goal (OEG).

I would appreciate your support

5 AAC 39.222. Policy for the management of sustainable salmon fisheries

(a) The Board of Fisheries (board) and Department of Fish and Game (department) recognize that

(1) while, in the aggregate, Alaska's salmon fisheries are healthy and sustainable largely because of abundant pristine habitat and the application of sound, precautionary, conservation management practices, there is a need for a comprehensive policy for the regulation and management of sustainable salmon fisheries;

(2) in formulating fishery management plans designed to achieve maximum or optimum salmon production, the board and department must consider factors including environmental change, habitat loss or degradation, data uncertainty, limited funding for research and management programs, existing harvest patterns, and new fisheries or expanding fisheries;

(3) to effectively assure sustained yield and habitat protection for wild salmon stocks, fishery management plans and programs require specific guiding principles and criteria, and the framework for their application contained in this policy.

(b) The goal of the policy under this section is to ensure conservation of salmon and salmon's required marine and aquatic habitats, protection of customary and traditional subsistence uses and other uses, and the sustained economic health of Alaska's fishing communities.

(c) Management of salmon fisheries by the state should be based on the following principles and criteria:

(1) wild salmon stocks and the salmon's habitats should be maintained at levels of resource productivity that assure sustained yields as follows:

(A) salmon spawning, rearing, and migratory habitats should be protected as follows:

(i) salmon habitats should not be perturbed beyond natural boundaries of variation;

(ii) scientific assessments of possible adverse ecological effects of proposed habitat alterations and the impacts of the alterations on salmon populations should be conducted before approval of a proposal;

(iii) adverse environmental impacts on wild salmon stocks and the salmon's habitats should be assessed;

(iv) all essential salmon habitat in marine, estuarine, and freshwater ecosystems and access of salmon to these habitats should be protected; essential habitats include spawning and incubation areas, freshwater rearing areas, estuarine and nearshore rearing areas, offshore rearing areas, and migratory pathways;

(v) salmon habitat in fresh water should be protected on a watershed basis, including appropriate management of riparian zones, water quality, and water quantity;

(B) salmon stocks should be protected within spawning, incubating, rearing, and migratory habitats;

(C) degraded salmon productivity resulting from habitat loss should be assessed, considered, and controlled by affected user groups, regulatory agencies, and boards when making conservation and allocation decisions;

(D) effects and interactions of introduced or enhanced salmon stocks on wild salmon stocks should be assessed; wild salmon stocks and fisheries on those stocks should be protected from adverse impacts from artificial propagation and enhancement efforts;

(E) degraded salmon spawning, incubating, rearing, and migratory habitats should be restored to natural levels of productivity where known and desirable;

(F) ongoing monitoring should be conducted to determine the current status of habitat and the effectiveness of restoration activities;

(G) depleted salmon stocks should be allowed to recover or, where appropriate, should be actively restored; diversity should be maintained to the maximum extent possible, at the genetic, population, species, and ecosystem levels;

(2) salmon fisheries shall be managed to allow escapements within ranges necessary to conserve and sustain potential salmon production and maintain normal ecosystem functioning as follows:

(A) salmon spawning escapements should be assessed both temporally and geographically; escapement monitoring programs should be appropriate to the scale, intensity, and importance of each salmon stock's use;

(B) salmon escapement goals, whether sustainable escapement goals, biological escapement goals, optimal escapement goals, or inriver run goals, should be established in a manner consistent with sustained yield; unless otherwise directed, the department will manage Alaska's salmon fisheries, to the extent possible, for maximum sustained yield;

(C) salmon escapement goal ranges should allow for uncertainty associated with measurement techniques, observed variability in the salmon stock measured, changes in climatic and oceanographic conditions, and varying abundance within related populations of the salmon stock measured;

(D) salmon escapement should be managed in a manner to maintain genetic and phenotypic characteristics of the stock by assuring appropriate geographic and temporal distribution of spawners as well as consideration of size range, sex ratio, and other population attributes;

(E) impacts of fishing, including incidental mortality and other human-induced mortality, should be assessed and considered in harvest management decisions;

(F) salmon escapement and harvest management decisions should be made in a manner that protects non-target salmon stocks or species;

(G) the role of salmon in ecosystem functioning should be evaluated and considered in harvest management decisions and setting of salmon escapement goals;

(H) salmon abundance trends should be monitored and considered in harvest management decisions;

(3) effective management systems should be established and applied to regulate human activities that affect salmon as follows:

(A) salmon management objectives should be appropriate to the scale and intensity of various uses and the biological capacities of target salmon stocks;

(B) management objectives should be established in harvest management plans, strategies, guiding principles, and policies, such as for mixed stock fishery harvests, fish disease, genetics, and hatchery production, that are subject to periodic review;

(C) when wild salmon stocks are fully allocated, new fisheries or expanding fisheries should be restricted, unless provided for by management plans or by application of the board's allocation criteria;

(D) management agencies should have clear authority in statute and regulation to

(i) control all sources of fishing mortality on salmon;

(ii) protect salmon habitats and control non-fishing sources of mortality;

(E) management programs should be effective in

(i) controlling human-induced sources of fishing mortality and should incorporate procedures to assure effective monitoring, compliance, control, and enforcement;

(ii) protecting salmon habitats and controlling collateral mortality and should incorporate procedures to assure effective monitoring, compliance, control, and enforcement;

(F) fisheries management implementation and outcomes should be consistent with regulations, regulations should be consistent with statutes, and effectively carry out the purpose of this section;

(G) the board will recommend to the commissioner the development of effective joint research, assessment, and management arrangements with appropriate management agencies and bodies

for salmon stocks that cross state, federal, or international jurisdictional boundaries; the board will recommend the coordination of appropriate procedures for effective monitoring, compliance, control, and enforcement with those of other agencies, states, or nations;

(H) the board will work, within the limits of its authority, to assure that

(i) management activities are accomplished in a timely and responsive manner to implement objectives, based on the best available scientific information;

(ii) effective mechanisms for the collection and dissemination of information and data necessary to carry out management activities are developed, maintained, and utilized;

(iii) management programs and decision-making procedures are able to clearly distinguish, and effectively deal with, biological and allocation issues;

(I) the board will recommend to the commissioner and legislature that adequate staff and budget for research, management, and enforcement activities be available to fully implement sustainable salmon fisheries principles;

(J) proposals for salmon fisheries development or expansion and artificial propagation and enhancement should include assessments required for sustainable management of existing salmon fisheries and wild salmon stocks;

(K) plans and proposals for development or expansion of salmon fisheries and enhancement programs should effectively document resource assessments, potential impacts, and other information needed to assure sustainable management of wild salmon stocks;

(L) the board will work with the commissioner and other agencies to develop effective processes for controlling excess fishing capacity;

(M) procedures should be implemented to regularly evaluate the effectiveness of fishery management and habitat protection actions in sustaining salmon populations, fisheries, and habitat, and to resolve associated problems or deficiencies;

(N) conservation and management decisions for salmon fisheries should take into account the best available information on biological, environmental, economic, social, and resource use factors;

(O) research and data collection should be undertaken to improve scientific and technical knowledge of salmon fisheries, including ecosystem interactions, status of salmon populations, and the condition of salmon habitats;

(P) the best available scientific information on the status of salmon populations and the condition of the salmon's habitats should be routinely updated and subject to peer review;

(4) public support and involvement for sustained use and protection of salmon resources should be sought and encouraged as follows:

(A) effective mechanisms for dispute resolution should be developed and used;

(B) pertinent information and decisions should be effectively disseminated to all interested parties in a timely manner;

(C) the board's regulatory management and allocation decisions will be made in an open process with public involvement;

(D) an understanding of the proportion of mortality inflicted on each salmon stock by each user group, should be promoted, and the burden of conservation should be allocated across user groups in a manner consistent with applicable state and federal statutes, including AS 16.05.251 (e) and AS 16.05.258 ; in the absence of a regulatory management plan that otherwise allocates or restricts harvests, and when it is necessary to restrict fisheries on salmon stocks where there are known conservation problems, the burden of conservation shall be shared among all fisheries in close proportion to each fisheries' respective use, consistent with state and federal law;

(E) the board will work with the commissioner and other agencies as necessary to assure that adequately funded public information and education programs provide timely materials on salmon conservation, including habitat requirements, threats to salmon habitat, the value of salmon and habitat to the public and ecosystem (fish and wildlife), natural variability and population dynamics, the status of salmon stocks and fisheries, and the regulatory process;

(5) in the face of uncertainty, salmon stocks, fisheries, artificial propagation, and essential habitats shall be managed conservatively as follows:

(A) a precautionary approach, involving the application of prudent foresight that takes into account the uncertainties in salmon fisheries and habitat management, the biological, social, cultural, and economic risks, and the need to take action with incomplete knowledge, should be applied to the regulation and control of harvest and other human-induced sources of salmon mortality; a precautionary approach requires

(i) consideration of the needs of future generations and avoidance of potentially irreversible changes;

(ii) prior identification of undesirable outcomes and of measures that will avoid undesirable outcomes or correct them promptly;

(iii) initiation of any necessary corrective measure without delay and prompt achievement of the measure's purpose, on a time scale not exceeding five years, which is approximately the generation time of most salmon species;

(iv) that where the impact of resource use is uncertain, but likely presents a measurable risk to sustained yield, priority should be given to conserving the productive capacity of the resource;

(v) appropriate placement of the burden of proof, of adherence to the requirements of this subparagraph, on those plans or ongoing activities that pose a risk or hazard to salmon habitat or production;

(B) a precautionary approach should be applied to the regulation of activities that affect essential salmon habitat.

(d) The principles and criteria for sustainable salmon fisheries shall be applied, by the department and the board using the best available information, as follows:

(1) at regular meetings of the board, the department will, to the extent practicable, provide the board with reports on the status of salmon stocks and salmon fisheries under consideration for regulatory changes, which should include

(A) a stock-by-stock assessment of the extent to which the management of salmon stocks and fisheries is consistent with the principles and criteria contained in the policy under this section;

(B) descriptions of habitat status and any habitat concerns;

(C) identification of healthy salmon stocks and sustainable salmon fisheries;

(D) identification of any existing salmon escapement goals, or management actions needed to achieve these goals, that may have allocative consequences such as the

(i) identification of a new fishery or expanding fishery;

(ii) identification of any salmon stocks, or populations within stocks, that present a concern related to yield, management, or conservation; and

(iii) description of management and research options to address salmon stock or habitat concerns;

(2) in response to the department's salmon stock status reports, reports from other resource agencies, and public input, the board will review the management plan, or consider developing a management plan, for each affected salmon fishery or stock; management plans will be based on the principles and criteria contained in this policy and will

(A) contain goals and measurable and implementable objectives that are reviewed on a regular basis and utilize the best available scientific information;

(B) minimize the adverse effects on salmon habitat caused by fishing;

(C) protect, restore, and promote the long-term health and sustainability of the salmon fishery and habitat;

(D) prevent overfishing; and

(E) provide conservation and management measures that are necessary and appropriate to promote maximum or optimum sustained yield of the fishery resource;

(3) in the course of review of the salmon stock status reports and management plans described in (1) and (2) of this subsection, the board, in consultation with the department, will determine if any new fisheries or expanding fisheries, stock yield concerns, stock management concerns, or stock conservation concerns exist; if so, the board will, as appropriate, amend or develop salmon fishery management plans to address these concerns; the extent of regulatory action, if any, should be commensurate with the level of concerns and range from milder to stronger as concerns range from new and expanding salmon fisheries through yield concerns, management concerns, and conservation concerns;

(4) in association with the appropriate management plan, the department and the board will, as appropriate, collaborate in the development and periodic review of an action plan for any new or expanding salmon fisheries, or stocks of concern; action plans should contain goals, measurable and implementable objectives, and provisions, including

(A) measures required to restore and protect salmon habitat, including necessary coordination with other agencies and organizations;

(B) identification of salmon stock or population rebuilding goals and objectives;

(C) fishery management actions needed to achieve rebuilding goals and objectives, in proportion to each fishery's use of, and hazards posed to, a salmon stock;

(D) descriptions of new or expanding salmon fisheries, management concern, yield concern, or conservation concern; and

(E) performance measures appropriate for monitoring and gauging the effectiveness of the action plan that are derived from the principles and criteria contained in this policy;

(5) each action plan will include a research plan as necessary to provide information to address concerns; research needs and priorities will be evaluated periodically, based on the effectiveness of the monitoring described in (4) of this subsection;

(6) where actions needed to regulate human activities that affect salmon and salmon's habitat that are outside the authority of the department or the board, the department or board shall correspond with the relevant authority, including the governor, relevant boards and commissions, commissioners, and chairs of appropriate legislative committees, to describe the issue and recommend appropriate action.

(e) Nothing in the policy under this section is intended to expand, reduce, or be inconsistent with, the statutory regulatory authority of the board, the department, or other state agencies with regulatory authority that impacts the fishery resources of the state.

(f) In this section, and in implementing this policy,

(1) "allocation" means the granting of specific harvest privileges, usually by regulation, among or between various user groups; "allocation" includes quotas, time periods, area restrictions, percentage sharing of stocks, and other management measures providing or limiting harvest opportunity;

(2) "allocation criteria" means the factors set out in AS 16.05.251 (e) considered by the board as appropriate to particular allocation decisions under 5 AAC 39.205, 5 AAC 75.017, and 5 AAC 77.007;

(3) "biological escapement goal" or "(BEG)" means the escapement that provides the greatest potential for maximum sustained yield; BEG will be the primary management objective for the escapement unless an optimal escapement or inriver run goal has been adopted; BEG will be developed from the best available biological information, and should be scientifically defensible on the basis of available biological information; BEG will be determined by the department and will be expressed as a range based on factors such as salmon stock productivity and data uncertainty; the department will seek to maintain evenly distributed salmon escapements within the bounds of a BEG;

(4) "burden of conservation" means the restrictions imposed by the board or department upon various users in order to achieve escapement, rebuild, or in some other way conserve a specific salmon stock or group of stocks; this burden, in the absence of a salmon fishery management plan, will be generally applied to users in close proportion to the users' respective harvest of the salmon stock;

(5) "chronic inability" means the continuing or anticipated inability to meet escapement thresholds over a four to five year period, which is approximately the generation time of most salmon species;

(6) "conservation concern" means concern arising from a chronic inability, despite the use of specific management measures, to maintain escapements for a stock above a sustained escapement threshold (SET); a conservation concern is more severe than a management concern;

(7) "depleted salmon stock" means a salmon stock for which there is a conservation concern;

(8) "diversity", in a biological context, means the range of variation exhibited within any level of organization, such as among genotypes within a salmon population, among populations within a salmon stock, among salmon stocks within a species, among salmon species within a community, or among communities within an ecosystem;

(9) "enhanced salmon stock" means a stock of salmon that is undergoing specific manipulation, such as hatchery augmentation or lake fertilization, to enhance its productivity above the level that would naturally occur; "enhanced salmon stock" includes an introduced stock, where no wild salmon stock had occurred before, or a wild salmon stock undergoing manipulation, but does not include a salmon stock undergoing rehabilitation, which is intended to restore a salmon stock's productivity to a higher natural level;

(10) "escapement" means the annual estimated size of the spawning salmon stock; quality of the escapement may be determined not only by numbers of spawners, but also by factors such as sex ratio, age composition, temporal entry into the system, and spatial distribution within the salmon spawning habitat;

(11) "expanding fishery" means a salmon fishery in which effective harvesting effort has recently increased significantly beyond historical levels and where the increase has not resulted from natural fluctuations in salmon abundance;

(12) "expected yields" mean levels at or near the lower range of recent historic harvests if they are deemed sustainable;

(13) "genetic" means those characteristics (genotypic) of an individual or group of salmon that are expressed genetically, such as allele frequencies or other genetic markers;

(14) "habitat concern" means the degradation of salmon habitat that results in, or can be anticipated to result in, impacts leading to yield, management, or conservation concerns;

(15) "harvestable surplus" means the number of salmon from a stock's annual run that is surplus to escapement needs and can reasonably be made available for harvest;

(16) "healthy salmon stock" means a stock of salmon that has annual runs typically of a size to meet escapement goals and a potential harvestable surplus to support optimum or maximum sustained yield;

(17) "incidental harvest" means the harvest of fish, or other species, that is captured in addition to the target species of a fishery;

(18) "incidental mortality" means the mortality imposed on a salmon stock outside of directed fishing, and mortality caused by incidental harvests, interaction with fishing gear, habitat degradation, and other human-related activities;

(19) "inriver run goal" means a specific management objective for salmon stocks that are subject to harvest upstream of the point where escapement is estimated; the inriver run goal will be set in regulation by the board and is comprised of the SEG, BEG, or OEG, plus specific allocations to inriver fisheries;

(20) "introduced stock" means a stock of salmon that has been introduced to an area, or portion of an area, where that stock had not previously occurred; an "introduced salmon stock" includes a salmon stock undergoing continued enhancement, or a salmon stock that is left to sustain itself with no additional manipulation;

(21) "management concern" means a concern arising from a chronic inability, despite use of specific management measures, to maintain escapements for a salmon stock within the bounds of the SEG, BEG, OEG, or other specified management objectives for the fishery; a management concern is not as severe as a conservation concern;

(22) "maximum sustained yield" or "(MSY)" means the greatest average annual yield from a salmon stock; in practice, MSY is achieved when a level of escapement is maintained within a specific range on an annual basis, regardless of annual run strength; the achievement of MSY requires a high degree of management precision and scientific information regarding the relationship between salmon escapement and subsequent return; the concept of MSY should be interpreted in a broad ecosystem context to take into account species interactions, environmental changes, an array of ecosystem goods and services, and scientific uncertainty;

(23) "mixed stock fishery" means a fishery that harvests fish from a mixture of stocks;

(24) "new fishery" means a fishery that new units of effort or expansion of existing effort toward new species, areas, or time periods, results in harvest patterns substantially different from those in previous years, and the difference is not exclusively the result of natural fluctuations in fish abundance;

(25) "optimal escapement goal" or "(OEG)" means a specific management objective for salmon escapement that considers biological and allocative factors and may differ from the SEG or BEG; an OEG will be sustainable and may be expressed as a range with the lower bound above the level of SET, and will be adopted as a regulation by the board; the department will seek to maintain evenly distributed escapements within the bounds of the OEG;

(26) "optimum sustained yield" or "(OSY)" means an average annual yield from a salmon stock considered to be optimal in achieving a specific management objective other than maximum yield, such as achievement of a consistent level of sustained yield, protection of a less abundant or less productive salmon stock or species, enhancement of catch per unit effort in sport fishery, facilitation of a non-consumptive use, facilitation of a subsistence use, or achievement of a specific allocation;

(27) "overfishing" means a level of fishing on a salmon stock that results in a conservation or management concern;

(28) "phenotypic characteristics" means those characteristics of an individual or group of salmon that are expressed physically, such as body size and length at age;

(29) "rehabilitation" means efforts applied to a salmon stock to restore it to an otherwise natural level of productivity; "rehabilitation" does not include an enhancement, which is intended to augment production above otherwise natural levels;

(30) "return" means the total number of salmon in a stock from a single brood (spawning) year surviving to adulthood; because the ages of adult salmon (except pink salmon) returning to spawn varies, the total return from a brood year will occur over several calendar years; the total return generally includes those mature salmon from a single brood year that are harvested in fisheries plus those that compose the salmon stock's spawning escapement; "return" does not include a run, which is the number of mature salmon in a stock during a single calendar year;

(31) "run" means the total number of salmon in a stock surviving to adulthood and returning to the vicinity of the natal stream in any calendar year, composed of both the harvest of adult salmon plus the escapement; the annual run in any calendar year, except for pink salmon, is composed of several age classes of mature fish from the stock, derived from the spawning of a number of previous brood years;

(32) "salmon" means the five wild anadromous semelparous Pacific salmon species *Oncorhynchus sp.*, except steelhead and cutthroat trout, native to Alaska as follows:

(A) chinook or king salmon (*O. tschawytscha*);

(B) sockeye or red salmon (*O. nerka*);

(C) coho or silver salmon (*O. kisutch*);

(D) pink or humpback salmon (*O. gorbuscha*); and

(E) chum or dog salmon (*O. keta*);

(33) "salmon population" means a locally interbreeding group of salmon that is distinguished by a distinct combination of genetic, phenotypic, life history, and habitat characteristics, comprised of an entire stock or a component portion of a stock; the smallest uniquely identifiable spawning aggregation of genetically similar salmon used for monitoring purposes;

(34) "salmon stock" means a locally interbreeding group of salmon that is distinguished by a distinct combination of genetic, phenotypic, life history, and habitat characteristics or an aggregation of two or more interbreeding groups which occur within the same geographic area and is managed as a unit;

(35) "stock of concern" means a stock of salmon for which there is a yield, management, or conservation concern;

(36) "sustainable escapement goal" or "(SEG)" means a level of escapement, indicated by an index or an escapement estimate, that is known to provide for sustained yield over a 5 to 10 year period, used in situations where a BEG cannot be estimated or managed for; the SEG is the primary management objective for the escapement, unless an optimal escapement or inriver run goal has been adopted by the board; the SEG will be developed from the best available biological information; and should be scientifically defensible on the basis of that information; the SEG will be determined by the department and will take into account data uncertainty and be stated as either a "SEG range" or "lower bound SEG"; the department will seek to maintain escapements within the bounds of the SEG range or above the level of a lower bound SEG;

(37) "sustainable salmon fishery" means a salmon fishery that persists and obtains yields on a continuing basis; characterized by fishing activities and habitat alteration, if any, that do not cause or lead to undesirable changes in biological productivity, biological diversity, or ecosystem structure and function, from one human generation to the next;

(38) "sustained yield" means an average annual yield that results from a level of salmon escapement that can be maintained on a continuing basis; a wide range of average annual yield levels is sustainable; a wide range of annual escapement levels can produce sustained yields;

(39) "sustained escapement threshold" or "(SET)" means a threshold level of escapement, below which the ability of the salmon stock to sustain itself is jeopardized; in practice, SET can be estimated based on lower ranges of historical escapement levels, for which the salmon stock has consistently demonstrated the ability to sustain itself; the SET is lower than the lower bound of the BEG and lower than the lower bound of the SEG; the SET is established by the department in consultation with the board, as needed, for salmon stocks of management or conservation concern;

(40) "target species" or "target salmon stocks" means the main, or several major, salmon species of interest toward which a fishery directs its harvest;

(41) "yield" means the number or weight of salmon harvested in a particular year or season from a stock;

(42) "yield concern" means a concern arising from a chronic inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above a stock's escapement needs; a yield concern is less severe than a management concern, which is less severe than a conservation concern;

(43) "wild salmon stock" means a stock of salmon that originates in a specific location under natural conditions; "wild salmon stock" may include an enhanced or rehabilitated stock if its productivity is augmented by supplemental means, such as lake fertilization or rehabilitative stocking; "wild salmon stock" does not include an introduced stock, except that some introduced salmon stocks may come to be considered "wild" if the stock is self-sustaining for a long period of time;

(44) "action point" means a threshold value for some quantitative indicator of stock run strength at which an explicit management action will be taken to achieve an optimal escapement goal.

History: Eff. 9/30/2000, Register 155; am 11/16/2000, Register 156; am 6/22/2001, Register 158; am 6/10/2010, Register 194

Petersburg Vessel Owners Association

PO Box 232
Petersburg, AK 99833
Phone & Fax: 907.772.9323
pvoa@gci.net • www.pvoaonline.org

March 29, 2013

Alaska State Legislature
House Fisheries Committee
Representative Paul Seaton, Chair
State Capitol
Juneau, AK 99811

RE: Oppose HB 98

Dear Chairman Seaton and Fisheries Committee Members,

Petersburg Vessel Owners Association (PVOA) is a diverse group of over 100 commercial fishermen and businesses operating primarily in Southeast Alaska. Our members provide millions of meals to the public annually by participating in a variety of fisheries statewide including salmon, herring, halibut, cod, crab, black cod, shrimp, and dive fisheries. PVOA appreciates the opportunity to comment on HB 98.

PVOA is opposed to HB 98. While PVOA would likely be opposed to this legislation, as currently written, were it to be presented as a proposal to the Alaska Board of Fisheries, our main disagreement with this bill is because this issue should be taken up by the Alaska Board of Fisheries, not the Alaska State Legislature.

The Board of Fisheries was established for the purpose of the conservation and development of the fishery resources of the state and, as such, is the regulatory body best qualified to consider the merits of establishing technical definitions, procedures and protocols for determining sustainable salmon escapement goals. The Alaska Board of Fisheries process is uniquely designed for thoroughly vetting the technical aspects of proposals affecting the State's fisheries resources, specifically by having Alaska Department of Fish and Game biologists and other technical experts present at all meetings to address those technical aspects. Unless the Legislature is going to dedicate the same amount of time and effort to duplicate or replace the duties of the Board of Fisheries we respectively request that you do not move HB 98 out of the Fisheries Committee and allow this issue to be addressed and acted upon by the Board of Fisheries.

Thank you for the opportunity to comment on this legislation. If we can provide further information or answer any questions, please feel free to contact us.

Sincerely,

Brian Lynch

Brian Lynch
Executive Director

UNITED FISHERMEN OF ALASKA

Mailing Address: PO Box 20229, Juneau AK 99802-0229
Physical Address: 410 Calhoun Ave Ste 101, Juneau AK 99801
Phone: (907)586-2820 **Fax:** (907) 463-2545
Email: ufa@ufa-fish.org **Website:** www.ufa-fish.org

April 1, 2013

Representative Paul Seaton, Chairman
House Special Committee on Fisheries
Alaska State Legislature
State Capitol, 120 Fourth Street
Juneau, AK 99801-1182
Email: Rep.Paul.Seaton@akleg.gov

RE: OPPOSITION TO HB 98 – Escapement Goals

Dear Chairman Seaton and Committee Members,

United Fishermen of Alaska (UFA) represents 36 Alaska Commercial fishing organizations from fisheries throughout Alaska and its offshore federal waters.

We appreciate the intention behind HB 98 - to protect the sustainability of Alaska's salmon resources.

However, we have long supported the Alaska Board of Fisheries and its deliberative process as the appropriate forum for fisheries regulations and policies, and for this reason we oppose HB 98 as a matter to be addressed in the Legislature.

Thank you for your attention on this matter.

Sincerely,

Julianne Curry
Executive Director

MEMBER ORGANIZATIONS

Alaska Bering Sea Crabbers • Alaska Independent Fishermen's Marketing Association
Alaska Independent Tendermen's Association • Alaska Longline Fishermen's Association • Alaska Scallop Association • Alaska Trollers Association
Alaska Whitefish Trawlers Association • Aleutian Pribilof Islands Community Development Association • Armstrong Keta • At-sea Processors Association
Bristol Bay Reserve • Cape Barnabas Inc. • Concerned Area "M" Fishermen • Cook Inlet Aquaculture Association • Cordova District Fishermen United
Douglas Island Pink and Chum • Groundfish Forum • Kenai Peninsula Fishermen's Association • Kodiak Regional Aquaculture Association •
North Pacific Fisheries Association • Northern Southeast Regional Aquaculture Association • Petersburg Vessel Owners Association
Prince William Sound Aquaculture Corporation • Purse Seine Vessel Owner Association • Seafood Producers Cooperative
Southeast Alaska Herring Conservation Alliance • Southeast Alaska Fisherman's Alliance • Southeast Alaska Regional Dive Fisheries Association
Southeast Alaska Seiners • Southern Southeast Regional Aquaculture Association • United Catcher Boats • United Cook Inlet Drift Association
United Southeast Alaska Gillnetters • Valdez Fisheries Development Association

Where Have all the Salmon Gone?



Anchorage Daily News

U.S. House

Parnell aims to restore

Deshka kings go missing

King salmon returns on the Deshka River

Upper Cook Inlet Fisheries

by MSB Fish and Wildlife Commission

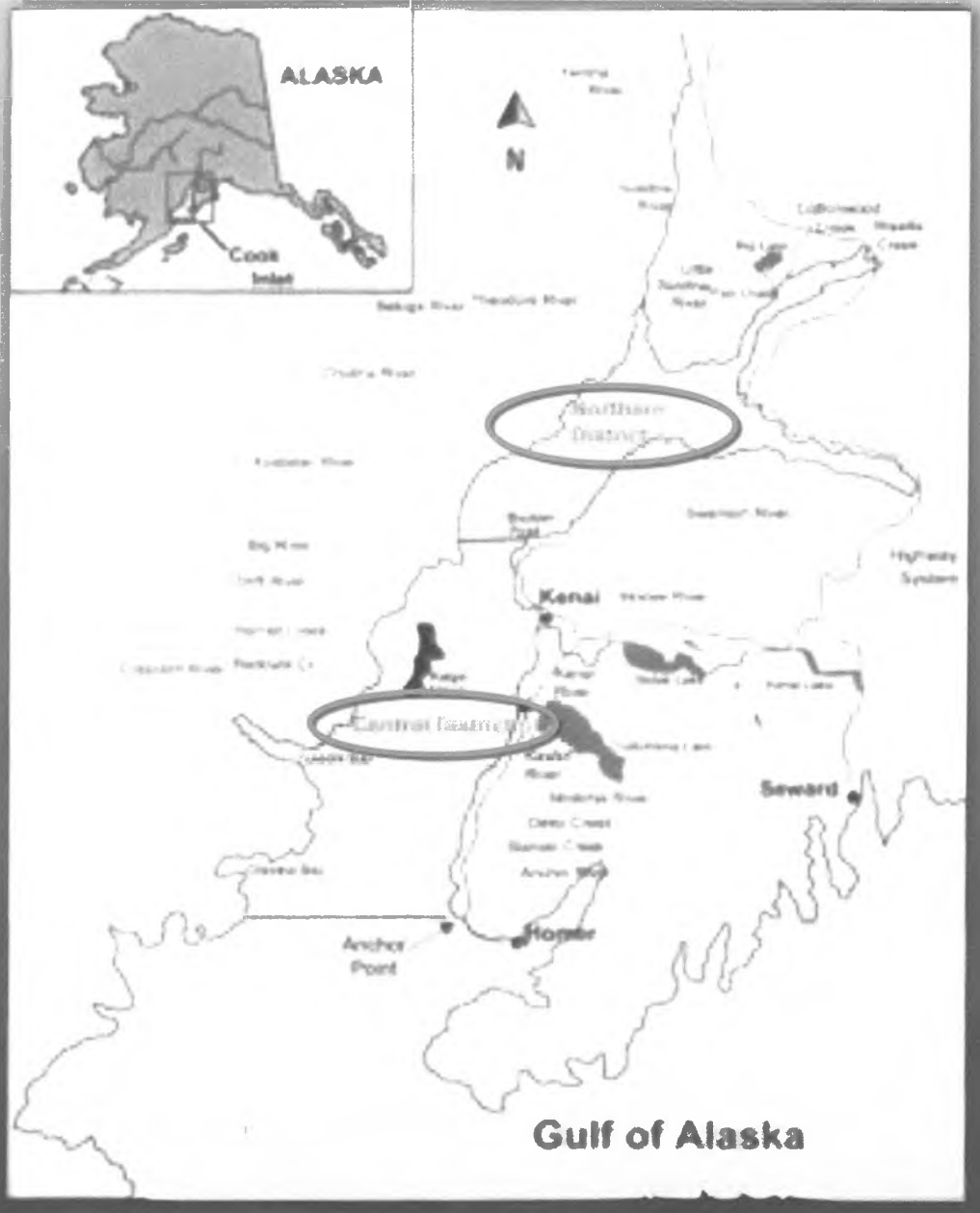
February 21, 2013

UPPER COOK INLET FISHERIES

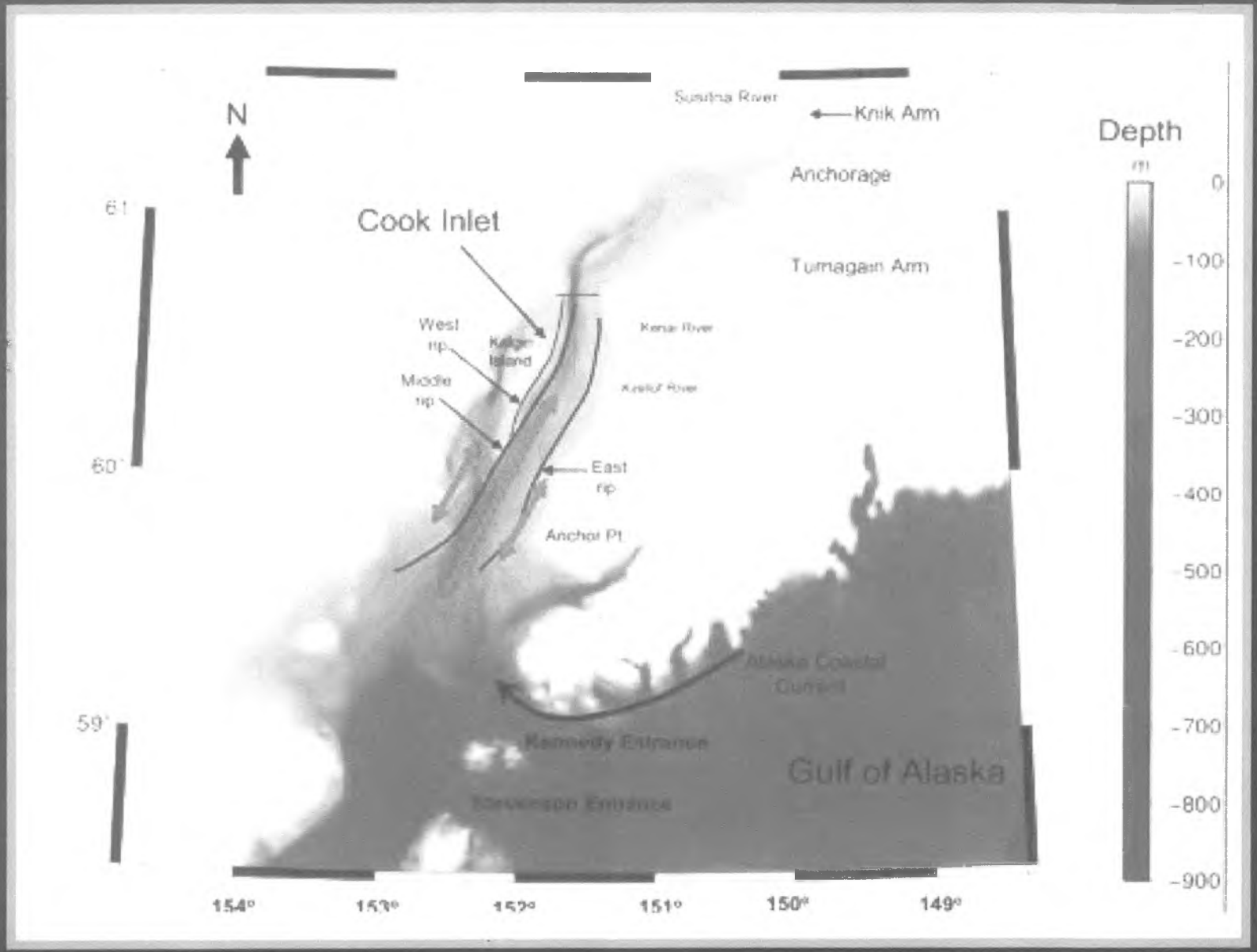
Salmon are **essential** to the character, lifestyle and economy of the Mat-Su Borough



UCI Commercial Fishery Districts

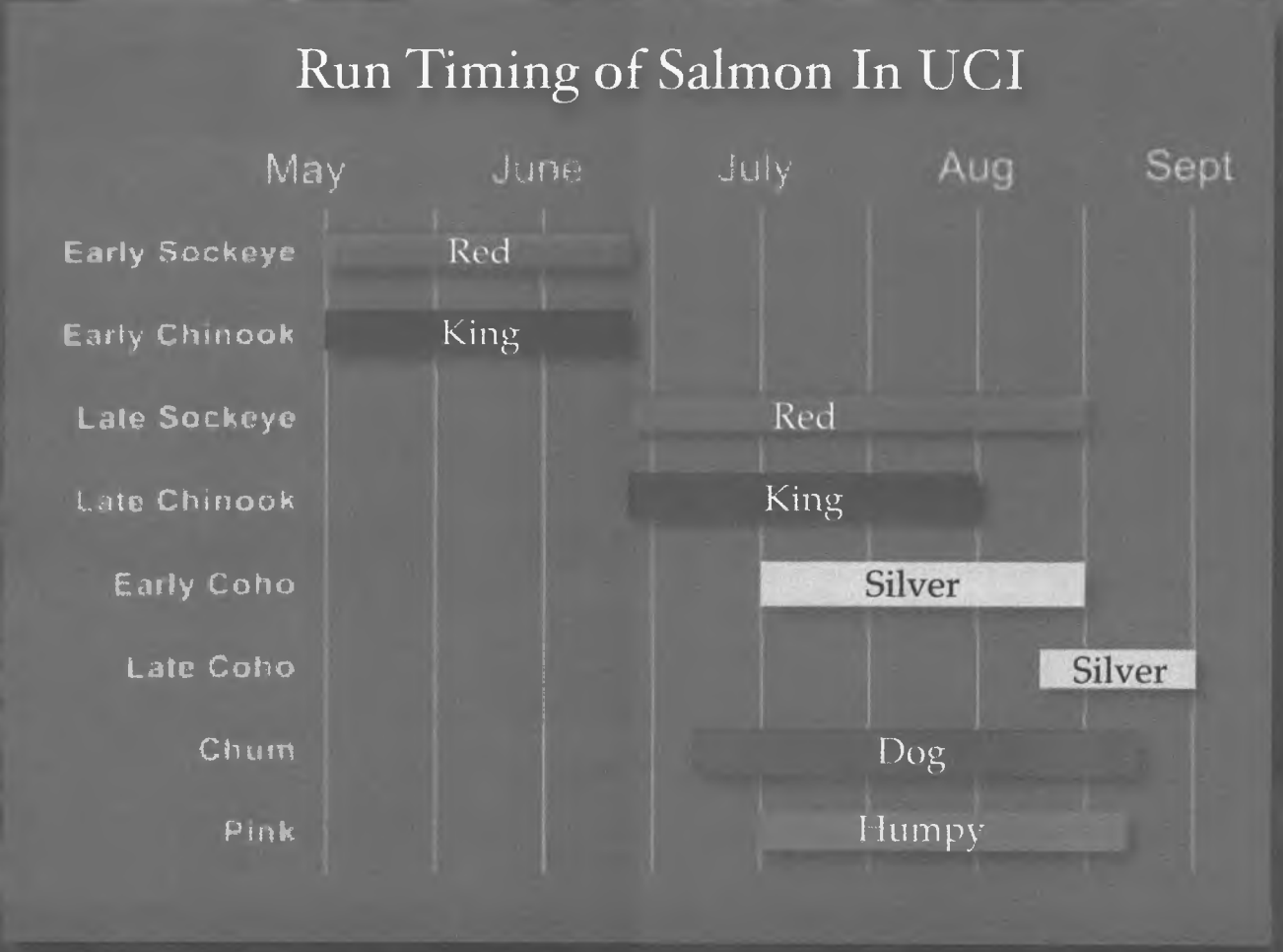


Fish Migration Patterns



Upper Cook Inlet

a complex, mixed-stock fishery



UCI Salmon Production

UCI SALMON RUNS EXCEED 15 MILLION



LARGEST HARVEST TOP 10 MILLION



AVERAGE HARVEST 4 MILLION

MAT SU DRAINAGES PRODUCE MOST

King salmon
Coho salmon
Pink salmon
Chum salmon

KENAI DRAINAGES PRODUCE MOST SOCKEYE SALMON



UCI COMMERCIAL Fishery

About 570 Commercial Drift and 750 Set Net Permits fish UCI

Both gear types fish Central District with 70% of set netters on east side



Only set nets permitted in Northern District

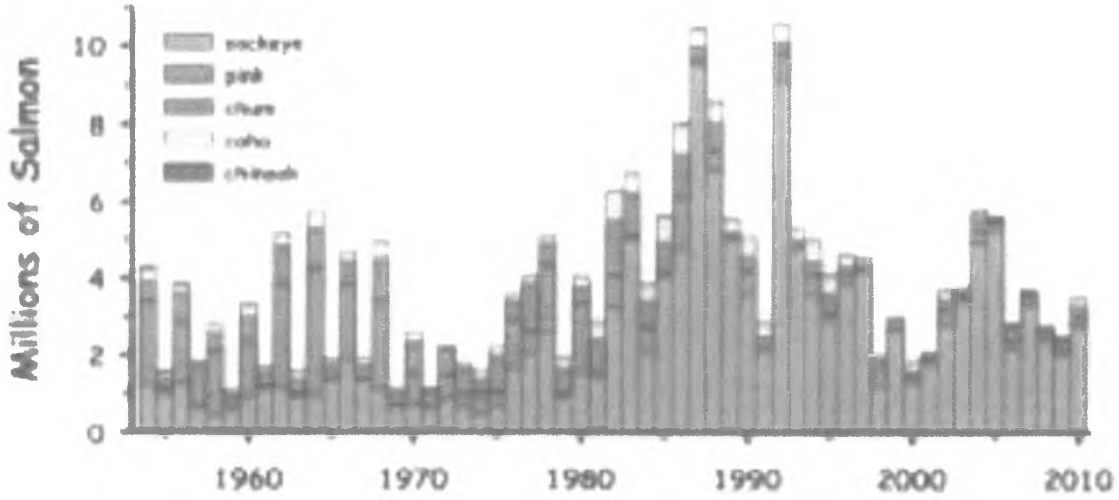
Small subsistence set net fishery near Tyonek

99% of UCI harvest occurs in Central District
with sockeye normally 85% of catch

UCI Commercial Harvest

1950-2010

1959 Alaska becomes State and takes over fisheries management from the federal government.



Trends in UCI Commercial Harvest by Species

UCI Sport Fishery

Population - Nearly 2/3s of AK's residents reside along shores of UCI

250,000 people sport fish annually
160,000 are salmon fishermen
30,000 households fish for personal use

About 1 out of 3 Alaskans sport fish

highest rate in the nation





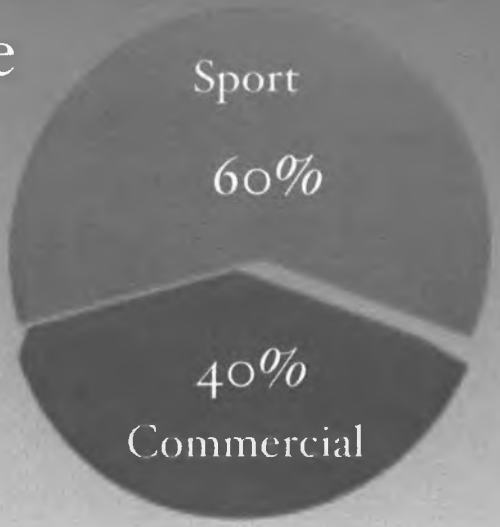
Upper Cook Inlet Harvest Shares



UCI Sockeye
3 million/year



UCI Coho
400,000/year



Kenai Chinook
30,000/year



All UCI Salmon
4 million/year

*sport includes personal use fisheries

The Economic Value of Sport Fishing

The value of commercial fisheries has always been widely known, yet the economic significance of sport fishing has only recently gained recognition



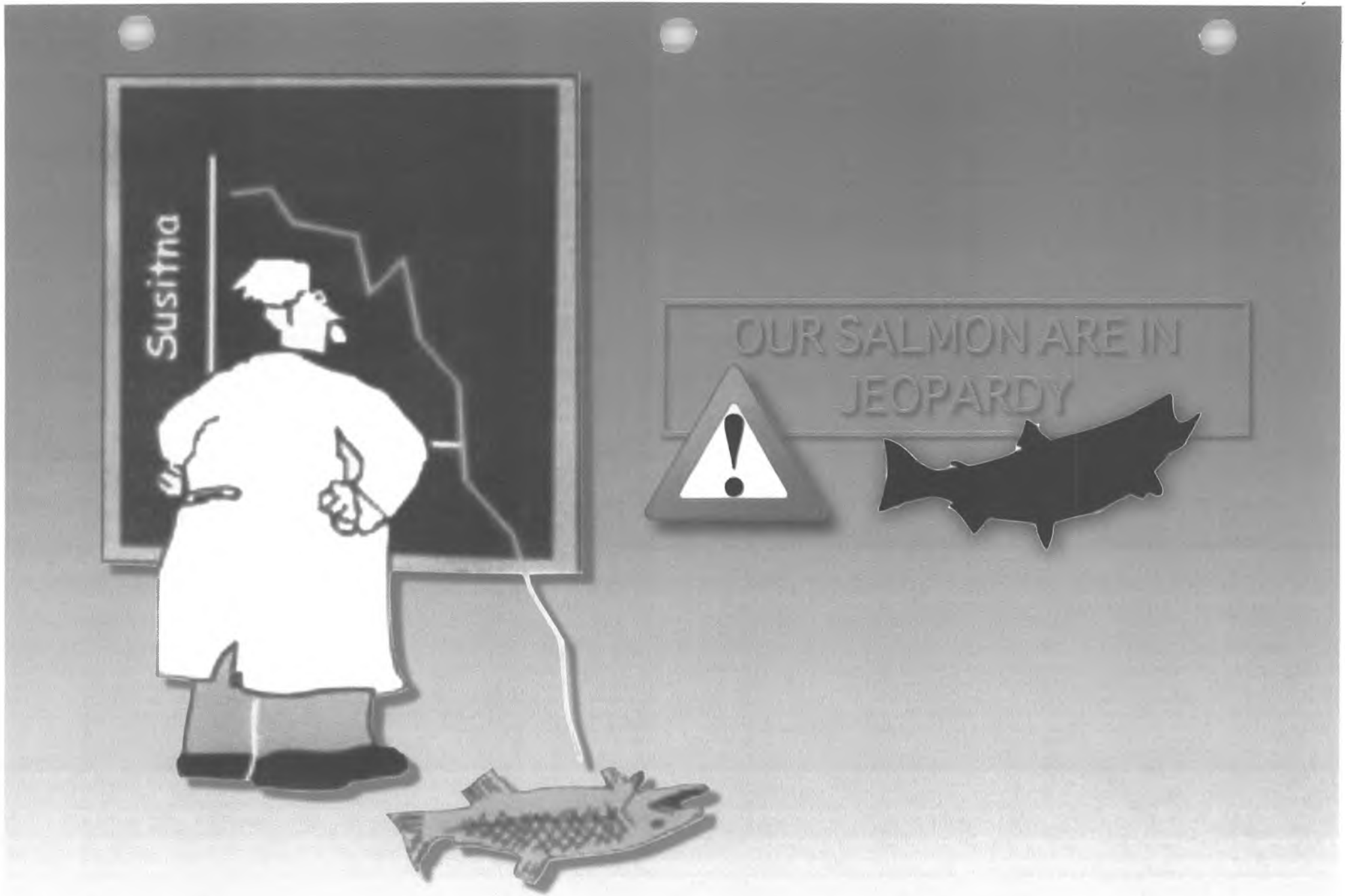
Statewide $1.4 billion spent sport fishing 2007

Cook Inlet, half of all sport fishing in AK occurs here, Anglers spent $733 million in 2007, which supported 8,056 jobs and generated $55 million in state and local taxes

Mat-Su, anglers fished nearly 300,000 days in 2007 spent $118 million and generated $31 M to $64 M to local economy



Commercial fishing, in 2007, wholesale value of salmon harvest in Cook Inlet, $ 77 million


Susitna
OUR SALMON ARE IN
JEOPARDY

MAT-SU SALMON STOCKS OF CONCERN



7 out of 11 Stocks of Concern in Alaska are in North Cook Inlet

Susitna sockeye declared Stock of Concern in 2008

Six king stocks declared Stock of Concern in 2011

Minimum king salmon escapement missed for 6 consecutive years

Low king salmon returns throughout Mat-Su

12 of 17 goals missed in 2011

13 of 17 goals missed in 2012

Little Susitna River Coho escapement missed for four consecutive years



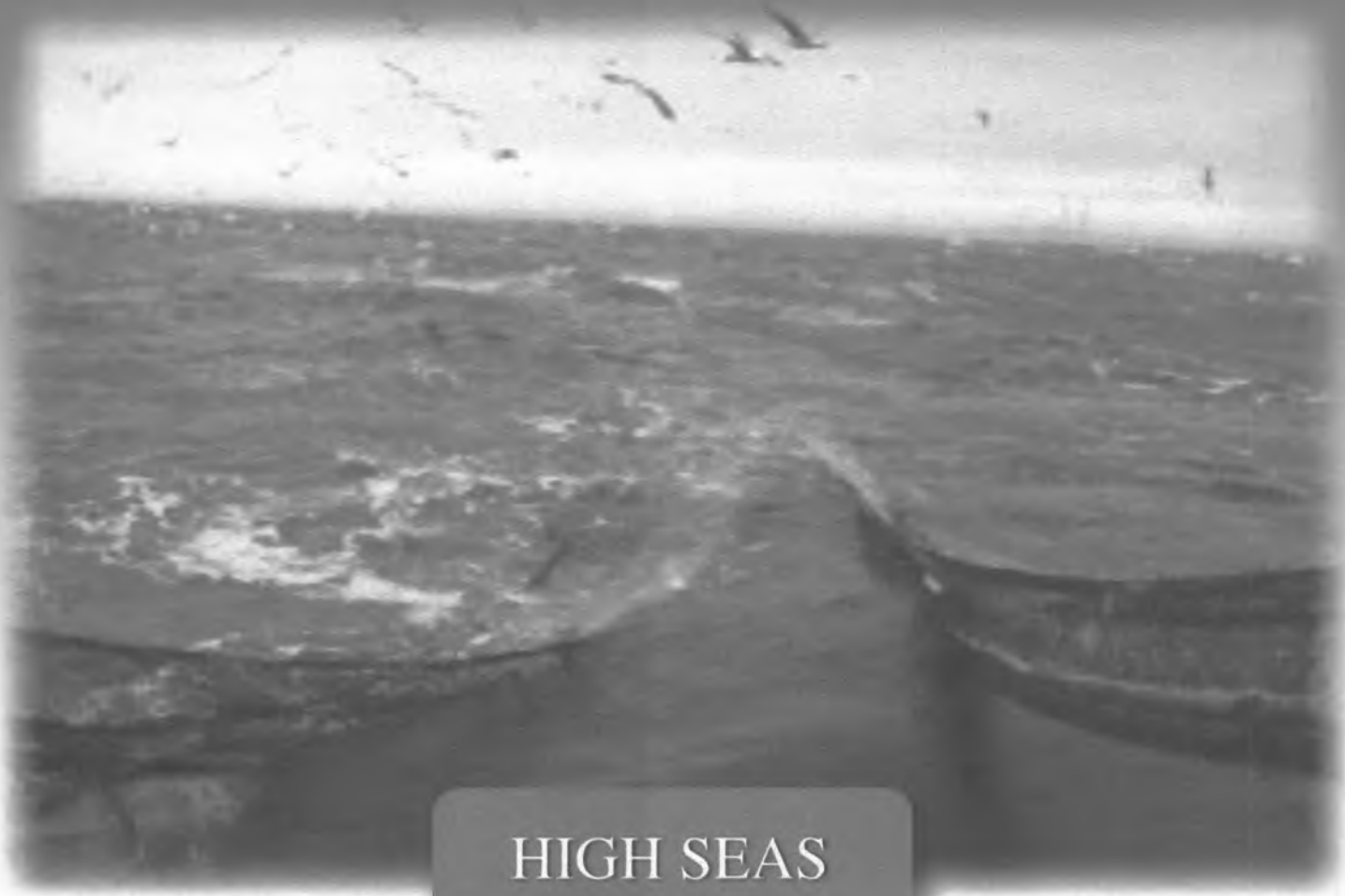
Sport fishing Is Plummeting in Mat-Su



Closures and restrictions to the recreational fishery have caused participation, as defined by angler-days, to crash.

In 2011, participation fell to the lowest level in 35 years (2012 was likely even lower)

Causes For Low Salmon Abundance



Environmental Changes (cold water) and/or bycatch

Causes For Low Salmon Abundance



Running the UCI gauntlet

UCI MARINE: OVER EXPLOITATION IN GILL NET FISHERY
TARGETING KENAI SOCKEYE

Causes For Low Salmon Abundance



FRESHWATER: ECOLOGICAL FACTORS SUCH AS CHANGES IN HABITAT

THIS FALL'S CATASTROPHIC FLOOD WILL LIKELY SEVERELY IMPACT ALREADY WEAK MAT SU RUNS



CAUSES OF SALMON DECLINE

UCI Northern District salmon are not getting through commercial fishing gauntlet in sufficient numbers.

ADF&G lacks in-season management tools for mixed stock fishery

Lack of **genetic identification** of salmon species other than sockeye

UCI Fisheries management is **focused on Kenai sockeye**



UCI DRIFT FISHERY MANAGEMENT PLAN

Purpose



"to insure adequate escapement into Northern District drainages"



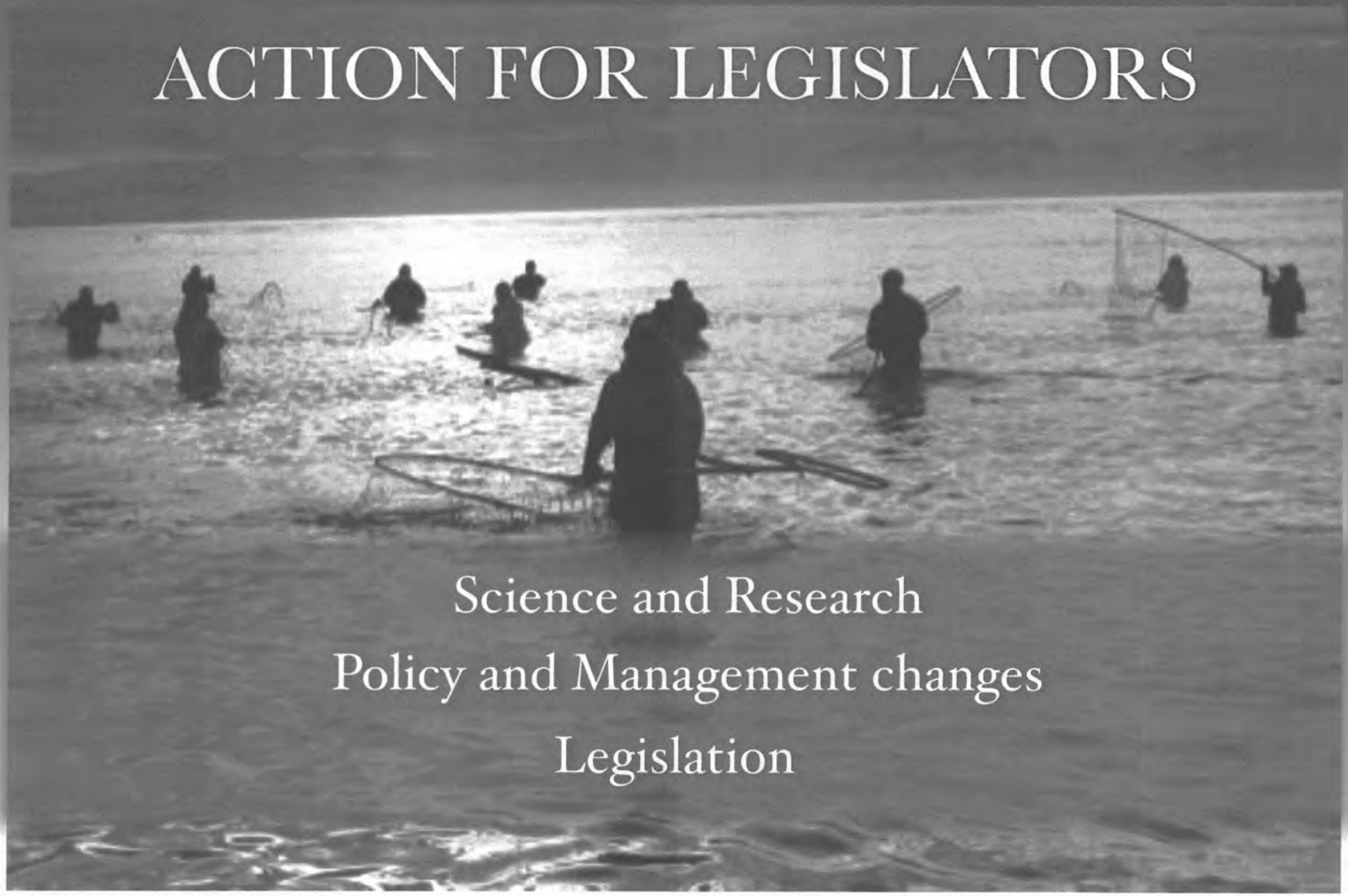
Conservation elements based solely on abundance of Kenai sockeye not northern stocks

1. Less than 2.3 M sockeye.... most conservation for northern stocks!
2. 2.3 to 4.6 M sockeye... some conservation for northern stocks
3. Over 4.6 M sockeye.... No conservation for northern stocks?



More than 4.6M sockeye past two years

ACTION FOR LEGISLATORS



Science and Research

Policy and Management changes

Legislation

Funding for ADF&G

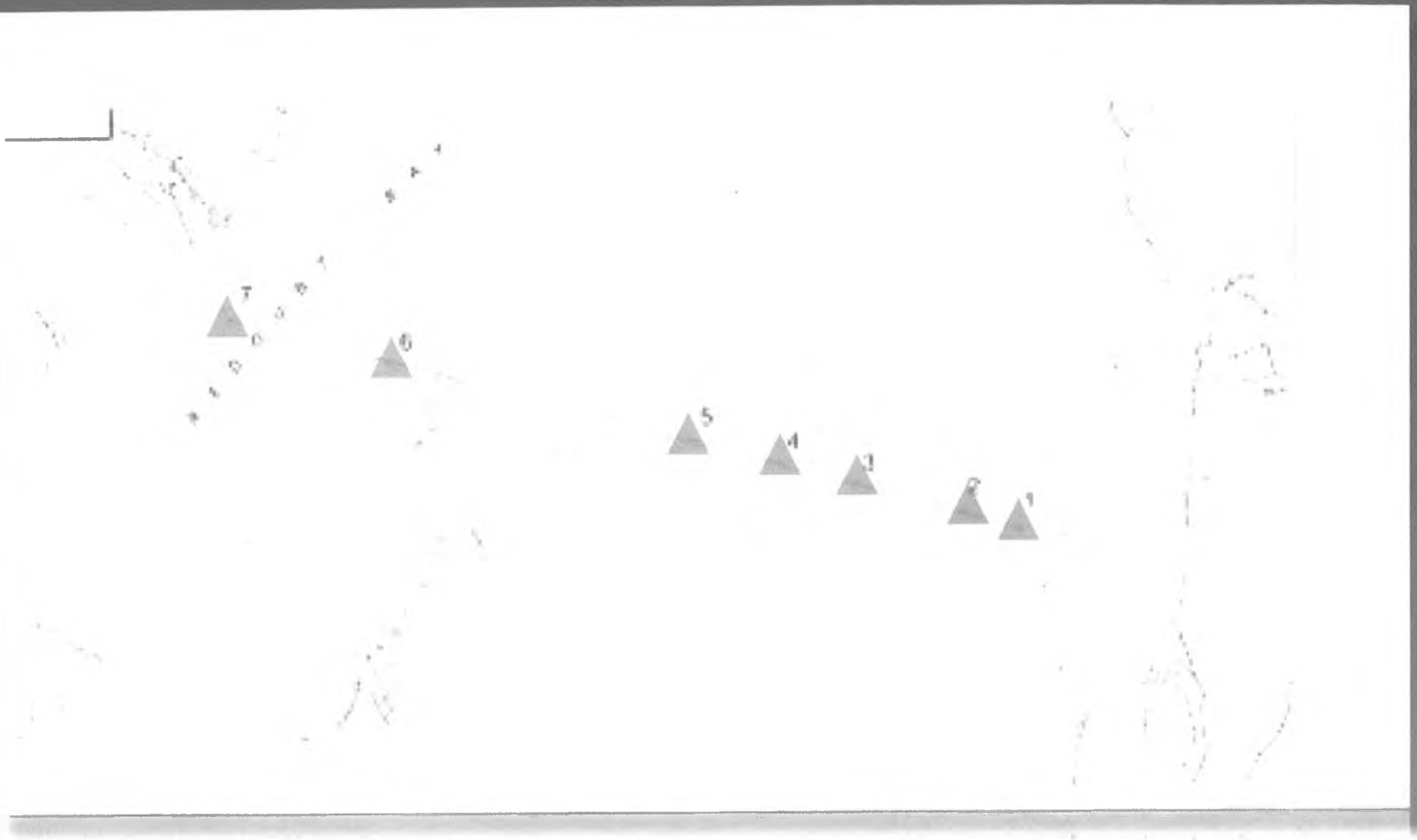
1) Genetic Stock Studies
- ADF&G biological studies for all salmon species

2) Joint Legislative Salmon Task Force (2007-2008)
- funding to complete task force report

3) Economic Expertise for BOF
- professional economic analysts for BOF

4) Sport fishing economics
- update 2007 ADF&G study

(New) Off-Shore Test Fishery



For genetic stock identification

Policy and Management Changes



1) UCI Conservation Corridor

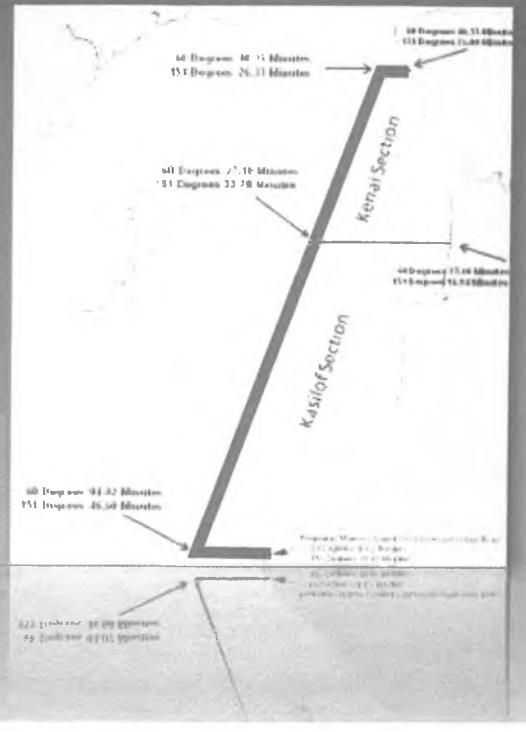
Retain conservation corridor established by BOF in 2011

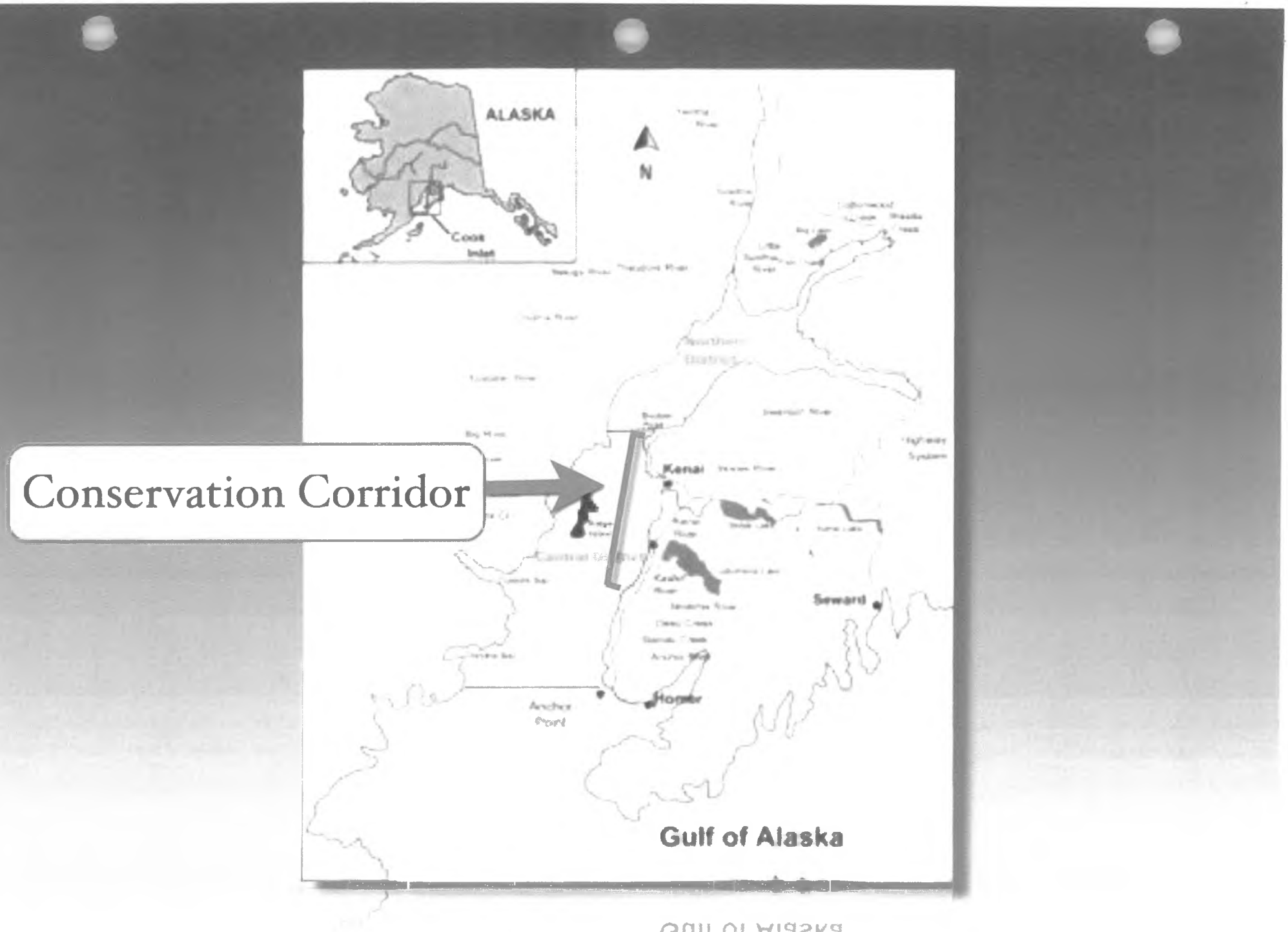
2) Revision of Cook Inlet Management Plans

Revise and improve management plans to insure sustained yield for UCI northern district salmon

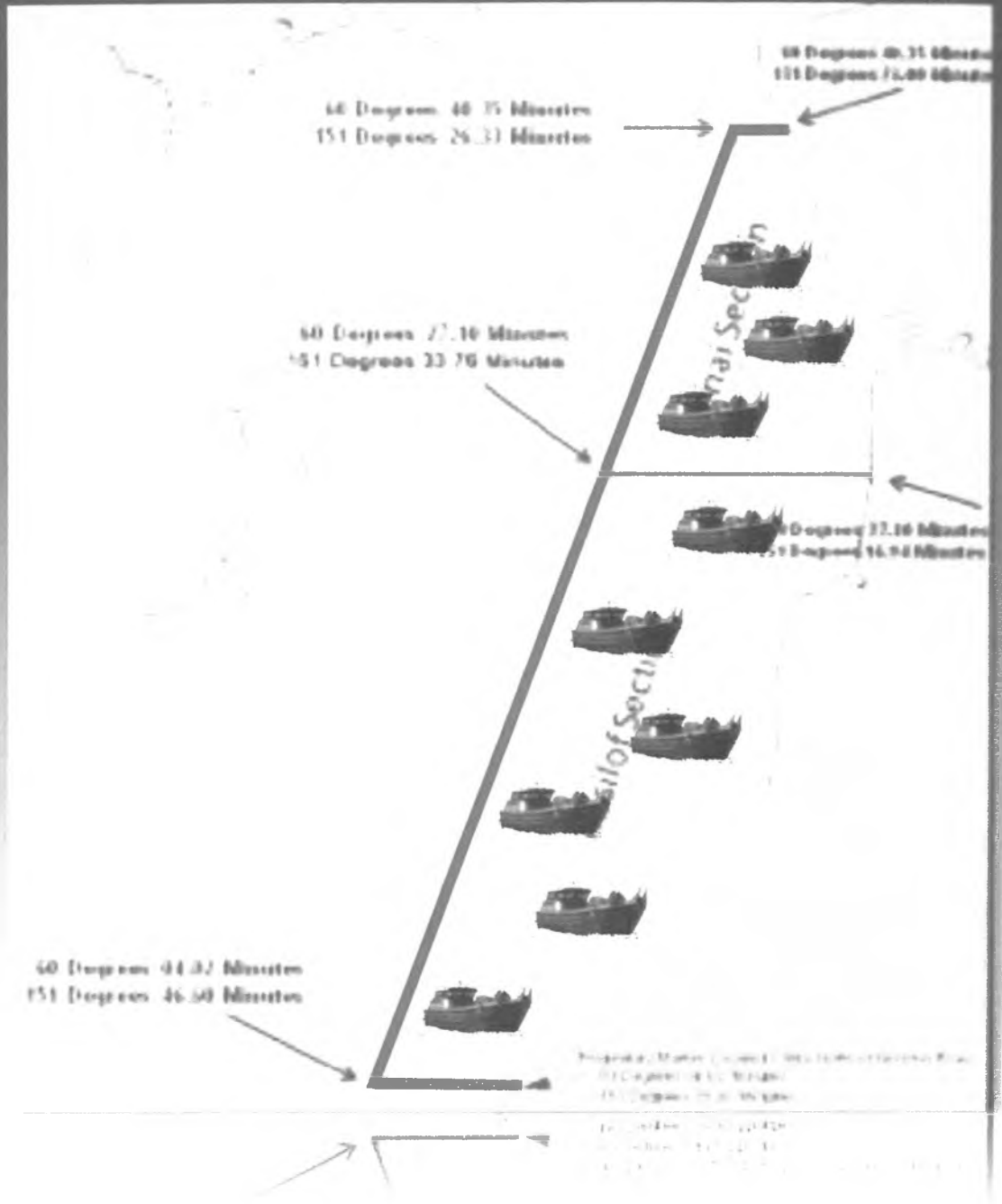
3) Allocation Criteria

Update fishery resources allocation to reflect current biological and economic conditions




ALASKA
Cook Inlet
N
Conservation Corridor
Kenai
Seward
Homer
Anchor Point
Gulf of Alaska

Conservation Corridor



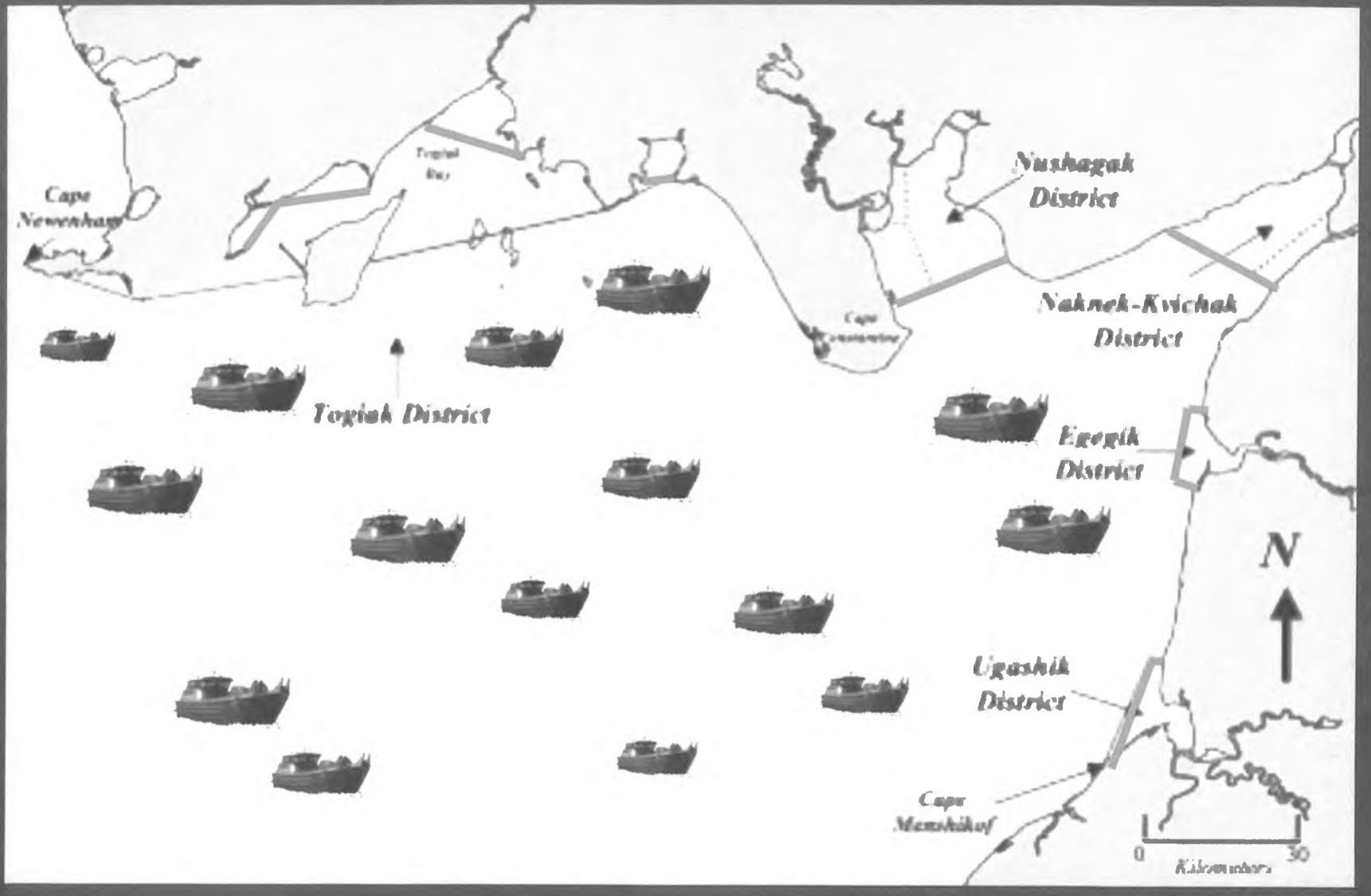
SOLUTIONS

Restructure UCI commercial fishery to be more similar to Bristol Bay commercial fishery
(most successful salmon fishery in the world)



Bristol Bay Fisheries

Commercial fishery subdistricts



Discreet stock harvest zones

Legislation

1.HB 98 Salmon Escapement Goals

Require establishment of salmon escapement goals for all salmon stocks identified as stocks of concern

1.HB 18 Personal Use Fisheries Preference

Put personal use fisheries preference first in ADF&G management actions



MSB Capital Funding Requested

Science and Research

Genetic Sampling of all Cook Inlet salmon species to supplement research being done by ADF&G to better inform management of mixed stock fishery

Economic Importance of Sportfishing in Mat-Su Borough - update of study conducted by the institute for Social Economic Research (UAA)

Fish Passage

6 projects to restore access for 12.2 miles of salmon habitat. Funds matched by grant and borough funds for culvert replacements

MAT-SU BOROUGH
FISH & WILDLIFE COMMISSION

- 2007 Established as Mayor's Blue Ribbon Sportsmen's Committee, 7 members appointed by Mayor and Assembly
- 2011 Adopted into Borough code as Fish & Wildlife Commission
- Purpose: to represent the interests of the Borough in the conservation and allocation of fish, wildlife, and habitat



FISH & WILDLIFE COMMISSION ACCOMPLISHMENTS

- ☑ In-Season Management — Returned the coho weir on Little Su River to original location, saved Deshka weir from being closed down

- ☑ Conservation Corridor — Made compelling case for Board of Fish to allow the creation of an expanded conservation corridor in Cook Inlet to allow passage of northern bound salmon, by limiting the commercial drift net fleet during restricted July openings

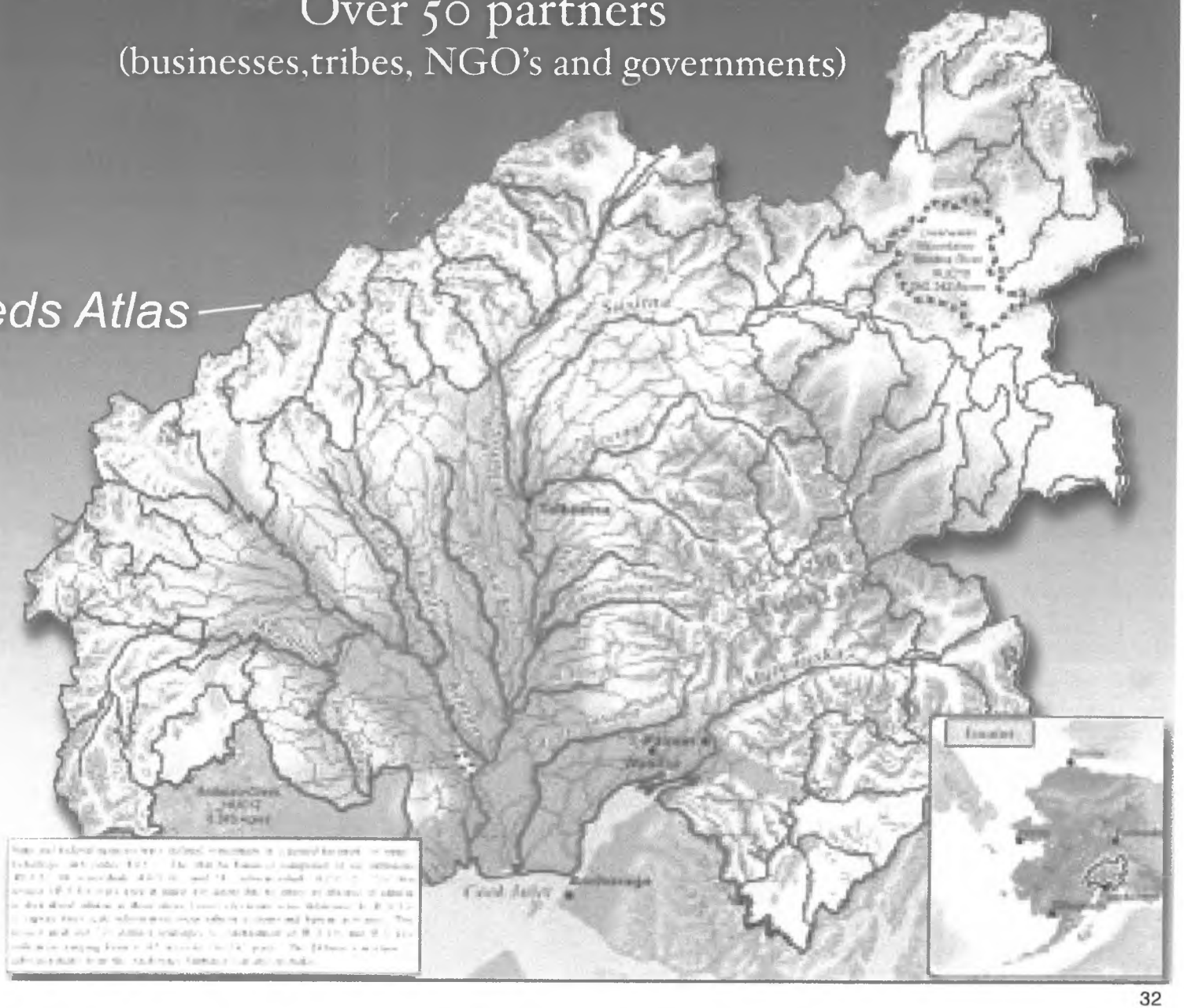
- ☑ Test Fishery— Proposed new location for improved stock identification. Legislature funded $650K to establish a new test fishery

Mat-Su salmon PARTNERSHIP

Partners in Action - Science

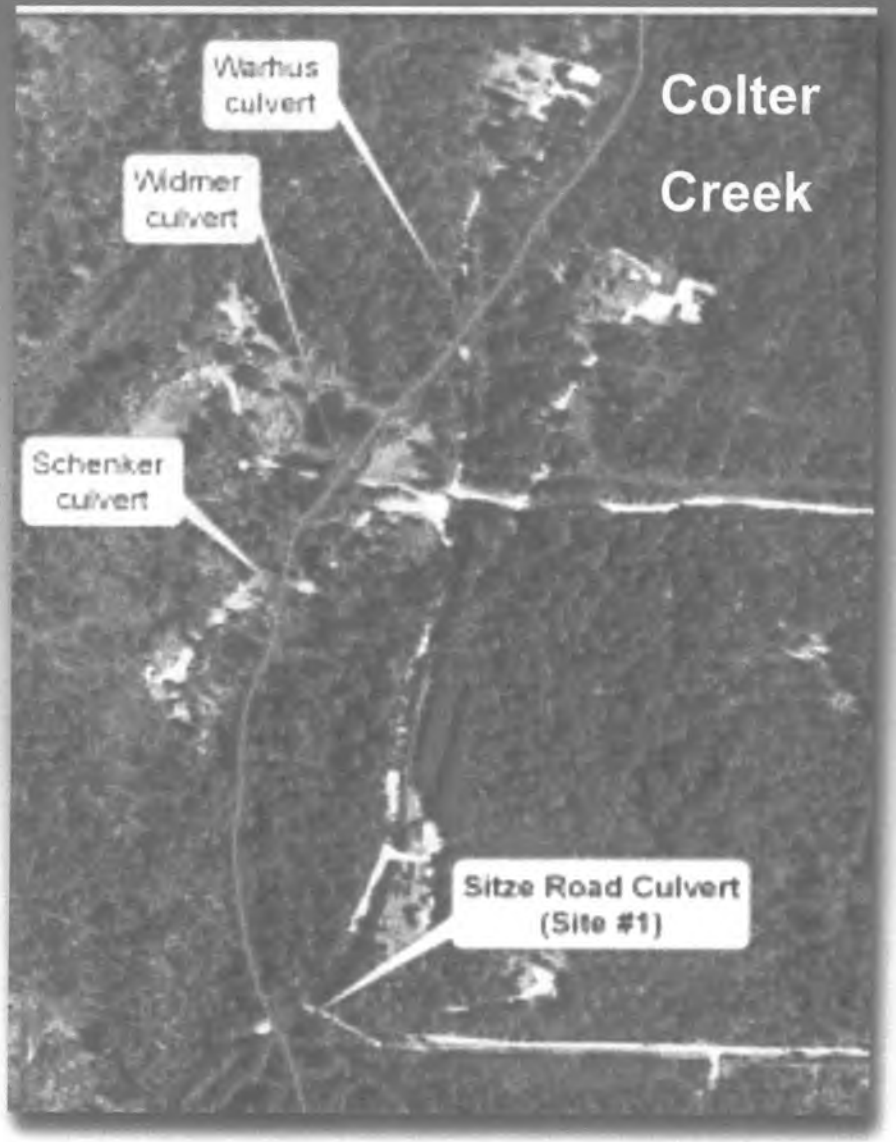
Over 50 partners
(businesses,tribes, NGO's and governments)

Salmon Watersheds Atlas



Mat-Su salmon PARTNERSHIP

Partners in Action - Fish Passage







Contacts

MSB Fish and Wildlife Commission

Bruce Knowles, Chair
Jim Colver, Vice Chair
Ben Allen
Andy Couch
Howard Delo
Jehnifer Ehmann
Larry Engel
Frankie Barker, MSB Staff
(frankie.barker@matsugov.us)

Mat-Su Salmon Habitat Partnership

Laura Allen
Frankie Barker
Jeff Davis
Corrine Smith
Bill Rice
Sue Rodman
Kim Sollien
Eric Rothwell
Jessica Winnestaffer
Jessica Speed, Coordinator
(MatSuSalmon@TNC.ORG)

Matanuska-Susitna Borough
350 E. Dahlia Avenue
Palmer, AK 99645
(907)745-4801



THANK YOU

QUESTIONS?

Economic Importance of Sportfishing in the Matanuska-Susitna Borough

Prepared for:

Matanuska-Susitna Borough
Economic Development Department

Prepared by:

Steve Colt and Tobias Schwoerer
Institute of Social and Economic Research
University of Alaska Anchorage
www.iser.uaa.alaska.edu



31 August 2009

contact:
steve.colt@uaa.alaska.edu
tobias.schwoerer@uaa.alaska.edu

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Acknowledgments

The authors thank Kathrin Sundet and Bill Romberg of the Alaska Department of Fish and Game, Sport Fish Division, for providing data on fishing effort within the Mat-Su Borough.

Summary

We estimated the economic importance of sport fishing in the Matanuska-Susitna (Mat-Su) Borough. We based our estimates on year 2007 data. These data come from a recent major study conducted by the Alaska Department of Fish and Game (ADF&G).[1] We allocated a portion of the economic effects for the Southcentral region to the Mat-Su Borough based on relative numbers of Southcentral angler days that occurred within the Borough boundary. Our estimates include a range of results because it is not possible to say with certainty how much of the total reported spending on things like boats, cabins, or food is due exclusively to sport fishing. Also, angler spending patterns in the Borough may be different from overall Southcentral patterns.

Overall, our estimates show that:

- In 2007, resident and nonresident anglers fished almost 300,000 days in the Matanuska-Susitna (Mat-Su) Borough.
- Anglers spent anywhere between $63 million and $163 million in the Borough on goods and services primarily used for sport fishing. Alaska residents spent an average of between $126 and $517 per angler day, while nonresidents spent an average of between $344 and $602.
- After accounting for multiplier effects, this spending generated between 900 and 1,900 jobs and between $31 million and $64 million of personal income for people who work in the Borough.
- Mat-Su sport fishing activity also generated between $6 million and $15 million in state and local taxes.

Table 1
Economic importance of sport fishing in the Mat-Su Borough

(estimates based on Southcentral modeling results allocated using angler days)

	Low	Medium	High
Mat-Su angler days	295,981	295,981	295,981
as % of Southcentral	16.5%	16.5%	16.5%
Direct spending ($)	62,766,103	118,185,916	162,841,500
Average spending $ per angler day	212	399	550
Economic contribution			
Employment (average annual)	904	1,180	1,900
Income ($)	31,406,254	40,118,532	63,660,732
Local & state taxes ($)	6,085,357	7,721,572	14,957,085

[1] Southwick Associates and Alaska Department of Fish and Game, 2008. Economic Impacts and Contributions of Sportfishing in Alaska, 2007.
Available at: http://www.sf.adfg.state.ak.us/Statewide/economics/

Introduction

We have estimated the economic benefits of sport fishing activity occurring within the Matanuska-Susitna (Mat-Su) Borough, using data from year 2007. Our estimates are based on the recent study entitled, *Economic Impacts and Contributions of Sportfishing in Alaska, 2007.*[2] It contains estimates of angler spending patterns within three regions: Southcentral, Interior, and Southeast. We also used year 2007 data from the ADFG annual Statewide Harvest Survey (SWHS).[3] These data allow us to allocate economic benefits to the Mat-Su Borough.

Methods

Step 1. Determine number of angler days spent fishing in Mat-Su Borough

ADF&G provided us with a data extract from their raw survey data on fishing effort in year 2007. The extract included all fishing sub-areas within the Mat-Su Borough. The estimated total number of angler days is 295,981.[4] Since there is no separate data on Alaska resident vs. nonresident split, we have assumed that the nonresident fraction is the same as it is for Southcentral – 39.6% nonresident. Thus, we estimate that Mat-Su angler days account for 16.5% of total Southcentral angler days.

Table 2. Angler days spent fishing in Mat-Su Borough

	Alaska Resident	Res. %	Nonresident	Nonres. %	Total
Mat-Su Borough angler days	178,886	60.4%	117,095	39.6%	295,981
% of Southcentral	16.5%		16.5%		16.5%

Step 2. Determine appropriate values for spending per angler day

The ADF&G economic survey measured direct angler spending by the location of the expenditure, not by the location of the fishing that generated that expenditure. This approach makes good sense, but it means that some caution must be used when

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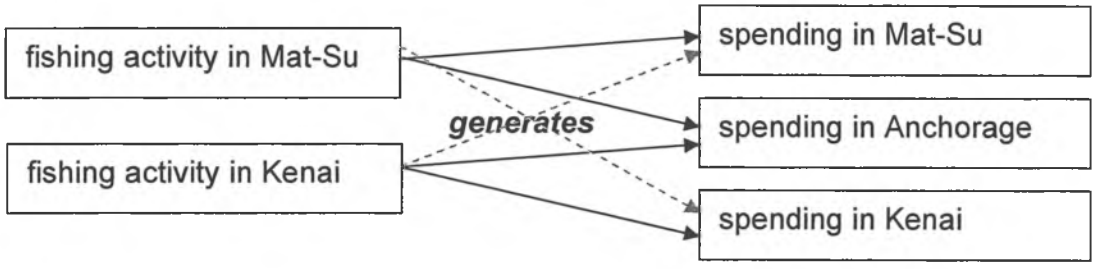
[2] Southwick Associates and Alaska Department of Fish and Game, 2008. Economic Impacts and Contributions of Sportfishing in Alaska, 2007.
Available at: http://www.sf.adfg.state.ak.us/Statewide/economics/

[3] These year 2007 SWHS data have not been formally published as of August 2009. Statewide and regional numbers are reported in the economic impacts study and numbers for areas within the Mat-Su Borough were provided by ADF&G.

[4] About 8% of these angler days were generated at locations with less than 12 respondents to the ADF&G angler survey. While ADF&G recommends not using these data points because of the sampling error involved, we have included them because we are aggregating over all of the 118 locations that have this problem.

interpreting the spending data. Figure 1 shows how fishing in one area can cause angler spending in another area. For example, a German tourist who fishes on the Little Susitna River might spend significant amounts of money in Anchorage. Clearly, Anchorage is the major recipient of this type of spending that relates to fishing outside of Anchorage. The lighter, dotted lines in the figure reflect the idea that fishing in Mat-Su causes very little spending in Kenai, and vice versa.

Figure 1. Relationship between location of fishingand location of spending



Because the data on angler days and the data on spending within each region were collected in two separate surveys, we must use caution when speaking of "spending per angler day." Specifically, we need to remember that a simple calculation of spending in a region per angler day of fishing in that same region is a mixture of two different quantities that were measured in two separate surveys.

Each of the five regions that ADF&G uses in its economic significance reporting are large enough that this problem is unimportant as a practical matter. Clearly Southcentral and Southeast are distinct economic regions. Even the Cook Inlet subregion includes Anchorage plus the major fishing locations close to it.

With this caveat in mind, we calculated numbers for "spending per angler day" in various regions based on the total spending numbers reported by the Southwick/ADF&G study. Table 3 shows these ratios. We looked carefully at these regional ratios to determine whether an allocation of total Southcentral *spending* to Mat-Su and non-Mat-Su subregions could be done based on the relative numbers of angler days. We wanted to consider whether some adjustment was needed to capture the possibility that money associated with Mat-Su fishing is spent outside the Borough. Using the ratios for the Cook Inlet subregion would be inappropriate, because Anchorage weighs too heavily in those numbers. We concluded that the best approach was to use the Southcentral region numbers for average spending per angler day as the basis for determining economic activity within the Mat-Su Borough.[5]

[5] We also looked at regional patterns of spending on fuel, guides, groceries, and lodging to verify that no adjustment was needed based on this spending.

Table 3. High case regional spending per in-region angler day, by region using total spending amounts reported by Southwick/ADFG
(dollars spent in the region per angler day of fishing in the region)

Statewide	Resident	Nonresident	Total
Licenses & stamps	5	15	9
Trip	151	321	223
Package	-	127	54
Equipment	297	38	187
Real Estate	50	102	72
Total	502	604	546

Southcentral	Resident	Nonresident	Total
Licenses & stamps			
Trip	167	332	233
Package	-	127	50
Equipment	302	41	199
Real Estate	47	102	69
Total	517	602	550

Cook Inlet	Resident	Nonresident	Total
Licenses & stamps			
Trip	162	327	226
Package	-	49	19
Equipment	383	46	252
Real Estate	56	149	92
Total	602	571	590

Other Southcentral	Resident	Nonresident	Total
Licenses & stamps			
Trip	180	343	248
Package	-	290	120
Equipment	112	31	79
Real Estate	25	3	15
Total	317	666	462

Interior	Resident	Nonresident	Total
Licenses & stamps			
Trip	100	443	182
Package	-	155	37
Equipment	317	31	249
Real Estate	18	61	28
Total	435	691	496

Step 3. Determine total Mat-Su spending, jobs, and income based on Southcentral spending per angler day

We multiplied the average spending per angler day in Southcentral by the number of Mat-Su angler days to determine total spending in Mat-Su from sportfishing activity that occurs in Mat-Su. We then applied the economic multiplier values for the Southcentral region from the Southwick/ADF&G analysis to these spending numbers. For the High case, our final results for direct spending, jobs, and income occuring in Mat-Su are simply equal to 16.5% of the ADF&G values for all of Southcentral.[6] The 16.5% number is the Mat-Su share of Southcentral angler days, as determined above in step 1. The 16.5% share is assumed to be the same for resident and non-resident angler days because we have no direct data to indicate otherwise.

Step 4. Develop Low, Medium, and High cases to better reflect the uncertainty about spending patterns

As a final step we considered the fact that much of the spending on equipment, real estate, and even on trips may not be attributable solely to sport fishing. ADF&G attempted to address this issue by asking survey respondents to say what percentage of their equpment and real estate spending was attributable to sport fishing. They used those percentages when determining the total spending and average spending per angler day. However, we believe these numbers represent a high case estimate of spending that relates directly to fishing. There are three reasons for this belief. First, as we have already mentioned, some of the spending associated with Mat-Su fishing may occur in Anchorage. Second, some of the spending on a trip whose "primary purpose" is fishing might well have occurred anyway, albeit in a different pattern. Third, the ADFG numbers reflect the total, or overall, economic effects of all existing sportfishing. However, if one is interested in how a *change* in fishing opportunities might translate into a *change* in spending, the resulting numbers are lower. That's because many expenditures are fixed costs. People who fish 10% more days are not going to buy 10% more hip waders or 10% more cabins.

We developed Low and Medium cases by assuming lower expenditures in some categories – especially equipment and real estate. The Low case uses 75% of the reported numbers for trip-related and package categories and none of the equipment and real estate category spending. For the medium case we include 100% of the trip-related and package expenditures, 50% of the reported equipment spending, and 25% of the reported real estate spending. The High case includes 100% of all spending reported to ADF&G for all categories – trip-related, package, equipment, and real estate. The following table summarizes these assumptions.

[6] ADF&G did not develop Low, Medium and High cases. They only reported one set of estimates. These correspond to our High case estimates.

Table 4. Difference in spending pattern assumptions between low, medium, and High cases

(Fraction of total reported spending that is included in each case, by category)

	Low	Medium	High
Licenses & stamps			
Tri-related	75%	100%	100%
Package	75%	100%	100%
Equipment	0%	50%	100%
Real Estate	0%	25%	100%

Results

Overall, our estimates show that:

- In 2007, resident and nonresident anglers fished almost 300,000 days in the Matanuska-Susitna (Mat-Su) Borough.
- Anglers spent anywhere between $63 million and $163 million in the Borough on goods and services primarily used for sport fishing. Alaska residents spent an average of between $126 and $517 per angler day, while nonresidents spent an average of between $344 and $602.
- After accounting for multiplier effects, this spending generated between 900 and 1,900 jobs and between $31 million and $64 million of personal income for people who work in the Borough.
- Mat-Su sport fishing activity also generated between $6 million and $15 million in state and local taxes.

Table 5
Economic importance of sport fishing in the Mat-Su Borough

(estimates based on Southcentral modeling results allocated using angler days)

	Low	Medium	High
Mat-Su angler days	295,981	295,981	295,981
as % of Southcentral	16.5%	16.5%	16.5%
Direct spending ($)	62,766,103	118,185,916	162,841,500
Average spending			
$ per angler day	212	399	550
Economic contribution			
Employment (average annual)	904	1,180	1,900
Income ($)	31,406,254	40,118,532	63,660,732
Local & state taxes ($)	6,085,357	7,721,572	14,957,085

High Case. We first present results for the High case, because they correspond most directly to the previously published spending numbers.

Table 6 shows estimated direct spending from Mat-Su sportfishing. More than $163 million was spent, of which more than $70 million came from people who came from outside Alaska. Residents spent heavily on equipment, while nonresidents spent heavily on trips and packages.

Table 6. Direct spending from Mat-Su sportfishing – High case

	Alaska Resident	Nonresident	Total
Licenses & stamps	-	-	-
Trip	29,961,901	38,879,365	68,841,266
Package	-	14,846,871	14,846,871
Equipment	54,058,396	4,779,358	58,837,754
Real Estate	8,383,744	11,931,864	20,315,609
Total	92,404,041	70,437,459	162,841,500
Average spending $ per angler day	517	602	550

Table 7 shows our High case estimates of the economic importance of Mat-Su sport fishing. Under the High case assumptions, the direct spending by anglers immediately generates 1,300 jobs and almost $40 million of income. After multiplier effects are included, Mat-Su sport fishing generates 1,900 jobs and $63.7 million of personal income for people working in the Borough.

Table 7. Economic importance of Mat-Su sportfishing – High case

HIGH case	Alaska Resident	Nonresident	Total
Mat-Su angler days	178,886	117,095	295,981
as % of Southcentral	16.5%	16.5%	
Direct effects			
Spending			
Income	17,957,673	21,536,960	39,494,633
Employment	588	713	1,301
Multiplier effects			
Income	10,841,421	13,324,678	24,166,099
Employment	264	335	599
Total effects			
Income	28,799,095	34,861,638	63,660,732
Employment	852	1,048	1,900
Tax revenues	14,259,233	15,433,546	29,692,779
Local and state	7,513,582	7,443,503	14,957,085
Federal	6,745,651	7,990,043	14,735,694

Spending on fishing also generates significant amounts of tax revenues. As the original ADFG study authors stress, these numbers must be interpreted with special caution, since they reflect average, overall ratios of economic activity to tax collections.[7] However, it is clear that much of the spending, especially by nonresidents, does contribute incremental revenues through taxes on lodging, meals, rental cars, and sales.

[7] Southwick/ADFG study, p. 56.

Low and Medium Cases. The following tables show the results for spending, income, and jobs for the Low and Medium cases.

Table 8. Direct spending from Mat-Su sportfishing – Low and Medium cases

LOW case	Alaska Resident	Nonresident	Total
Licenses & stamps	-	-	-
Trip	22,471,426	29,159,524	51,630,950
Package	-	11,135,153	11,135,153
Equipment	-	-	-
Real Estate	-	-	-
Total	22,471,426	40,294,677	62,766,103

MEDIUM case	Alaska Resident	Nonresident	Total
Licenses & stamps	-	-	-
Trip	29,961,901	38,879,365	68,841,266
Package	-	14,846,871	14,846,871
Equipment	27,029,198	2,389,679	29,418,877
Real Estate	2,095,936	2,982,966	5,078,902
Total	59,087,035	59,098,881	118,185,916

Table 9. Economic importance of Mat-Su sportfishing – Low case

LOW case	Alaska Resident	Nonresident	Total
Mat-Su angler days	178,886	117,095	295,981
as % of Southcentral	16.5%	16.5%	
Direct spending ($)	22,471,426	40,294,677	62,766,103
Average spending $ per angler day	126	344	212
Economic contribution			
Employment (average annual)	351	553	904
Income ($)	11,192,675	20,213,579	31,406,254
Local & state taxes ($)	1,827,203	4,258,154	6,085,357

Table 10. Economic importance of Mat-Su sportfishing – Medium case

MEDIUM case	Alaska Resident	Nonresident	Total
Mat-Su angler days	178,886	117,095	295,981
as % of Southcentral	16.5%	16.5%	
Direct spending ($)	59,087,035	59,098,881	118,185,916
Average spending $ per angler day	330	505	399
Economic contribution			
Employment (average annual)	468	712	1,180
Income ($)	14,923,567	25,194,965	40,118,532
Local & state taxes ($)	2,436,270	5,285,302	7,721,572

References

Alaska Department of Fish and Game 2008. Economic Impacts and Contributions of Sportfishing in Alaska, 2007. Available at: http://www.sf.adfg.state.ak.us/Statewide/economics/

Gmail by Google

Paul Seaton< pkseaton@gmail.com>

data request

1 message

Shields, Patrick A (DFG) < pat.shields@alaska.gov> Thu, Apr 4, 2013 at 9:21 AM
To: "pkseaton@gmail.com" <pkseaton@gmail.com>
Cc: "Baker, Tim (DFG)" <tim.baker@alaska.gov>, "Lingnau, Tracy L (DFG)" <tracy.lingnau@alaska.gov>

Representative Seaton: please find attached an Excel file that shows drift gillnet pink salmon harvest from 1970 through 1998. It shows even year harvests only because pink salmon are even year dominant in Cook Inlet. Basically, what the data show is that drift catches of pink salmon tend to peak in the last two weeks of July. Recent catches compared to historical averages are down primarily for a couple of reasons. 1. Management plan changes by the board of fisheries to afford protection to sockeye and coho salmon - the board reduced the amount of time that drifters can fish in the open waters of the Central District in order to reduce harvest rates on sockeye and coho salmon swimming to northern Cook Inlet drainages. 2. For a number of years in the 1990s and 2000s drifters actually avoided harvesting pink salmon as much as they could due to very low prices for this stock.

You also asked about what is occurring at Shell Lake regarding sockeye salmon. A few years ago (I believe 2006) an adult enumeration project at Shell Lake showed nearly 70,000 sockeye salmon escaping into the lake. Since then, escapements have plummeted and smolt estimates conducted by Cook Inlet Aquaculture Association also showed very few smolt emigrating the lake. There are a number of issues occurring at Shell Lake that are likely contributing to the decline in sockeye salmon production in this system. 1. Pike are present in this lake; 2. CIAA has documented numerous beaver dam blockages of Shell Creek in recent years; 3. In 2012, samples from adult sockeye salmon that had perished but failed to spawn revealed the presence of ***Loma salmonae*** - a parasite of Pacific salmon. As a result of the significant declines in sockeye salmon adult escapement and smolt production, ADFG authorized (through the RPT process) CIAA to take approximately 100,000 eggs from sockeye salmon at Shell Lake in the fall of 2012. The progeny from these eggs will be released back into Shell Lake as smolt.

Because you needed this information as quickly as possible, my response was not as thorough as it could have been. Hopefully this helped answer your questions.

Pat Shields

Upper Cook Inlet

Commercial Fisheries Division

907.260.2941

HB 110

<TARGET><BILL>HB 110</BILL><SUBJECT>HB 110</SUBJECT><COMM>HFSH28</COMM></TARGET>

Alaska State Legislature

State Capitol Room 102
Juneau, Alaska 99801-1182
(907) 465-2689
Fax: (907) 465-3472
1-800-665-2689

270 W Pioneer Ave. Suite B
Homer, Alaska 99603
(907) 235-2921
Fax: (907) 235-4008
1-800-665-2689

Representative Paul Seaton
House District 30

Sponsor Statement

HB 110

Recently, many runs of Chinook salmon have experienced poor returns. Fishery Disaster Declarations have been made for the Yukon, Kuskokwim, and Cook Inlet regions. People who depend on these king salmon for their economic, recreational, and cultural livelihood are experiencing great hardship due to this low abundance.

Sustainability is critically important and measures should be adopted that help protect Chinook salmon and similar vulnerable species while still maintaining fishing opportunities. One of the best ways to do this is to utilize fishing gear that reduces the mortality to species of concern while still allowing the utilization of healthy stocks.

The use of barbless hooks is proven to reduce the mortality of released fish. Studies by the Pacific Salmon Commission Technical Committee concluded that barbless hook usage reduced mortality by 3.5% in mature fish. A barbless hook is faster to remove and results in less trauma to the fish. This reduces handling and increases the chance a fish will survive to reproduce.

Some fly fishermen currently file the barbs off their hooks to allow a less damaging release of fish. Additionally, Washington and Oregon prohibit the use of barbed hooks while Chinook fishing because wild stock fish must be released while hatchery fish can be retained.

HB 110 would prohibit the use of barbed hooks for freshwater stocks of fish where retention is prohibited, that is in a catch and release fishery.

LEGAL SERVICES

DIVISION OF LEGAL AND RESEARCH SERVICES
LEGISLATIVE AFFAIRS AGENCY
STATE OF ALASKA

(907) 465-3867 or 465-2450
FAX (907) 465-2029
Mail Stop 3101

State Capitol
Juneau, Alaska 99801-1182
Deliveries to: 129 6th St., Rm. 329

MEMORANDUM March 11, 2013

SUBJECT: Location in statute of proposed bill
(CSHB 110( ) (Work Order No. 28-LS0360\N))

TO: Representative Paul Seaton
Attn: Louie Flora

FROM: Alpheus Bullard
Legislative Counsel

This memorandum accompanies the committee substitute Louie requested.

This committee substitute moves the statutory prohibition on the use of barbed hooks from AS 16.10 (Fisheries and Fishing Regulations) to AS 16.05 (Fish and Game Code and Definitions).

Louie asked that the penalties for a violation of the section's prohibition on the use of barbed hooks track those provided for the use of more than one hook in waters designated as single-hook waters (see 5 AAC 75.023). The prohibition against the use of more than one hook in single-hook waters is a regulation adopted by the Board of Fisheries under AS 16.05.251. To ensure that the same statutory sanctions that apply to violations of the single-hook regulation adopted by the board apply to this bill's barbed hook prohibition, I moved the bill's contents to AS 16.05.[1]

The related amendments you requested will be forthcoming, and will be drafted to the version of the bill that is enclosed.

If you have questions, please do not hesitate to contact me.

TLAB:ljw
13-155.ljw

Enclosure

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[1] *See* AS 16.05.410 (Revocation of license) and AS 16.05.925 (Penalty for violations).

Herron Moves

28-LS0360\N
Bullard
3/11/13

CS FOR HOUSE BILL NO. 110( )

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-EIGHTH LEGISLATURE - FIRST SESSION

BY

Offered:
Referred:

Sponsor(s): REPRESENTATIVES SEATON, Gara

A BILL

FOR AN ACT ENTITLED

"An Act prohibiting the use of barbed hooks in certain freshwater areas."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

*** Section 1.** AS 16.05 is amended by adding a new section to read:

Sec. 16.05.422. Prohibition on the use of barbed hooks. (a) A person may not use a barbed hook when participating in a freshwater fishery for a species that may not be retained under a regulation adopted by the Board of Fisheries.

(b) A person may not use a barbed hook when participating in a freshwater fishery in which more than one species is present if there is a significant probability of catching a species that may not be retained under a regulation adopted by the Board of Fisheries.

(c) Whether there is a significant probability of catching a species that may not be retained may be determined by the Board of Fisheries or by emergency order issued by the commissioner under AS 16.05.060.

AMENDMENT #1 Adpt

OFFERED IN THE HOUSE BY REPRESENTATIVE SEATON

TO: CSHB 110( ), Draft Version "N"

Page 1, following line 13:

Insert a new subsection to read:

"(d) In this section, "barbed hook" means a hook with at least one subsidiary point facing in the opposite direction of the main point of the hook; "barbed hook" does not include a hook from which all barbs have been pinched down, filed off, or otherwise removed."

AMENDMENT #2 Adptd

OFFERED IN THE HOUSE BY REPRESENTATIVE SEATON

TO: CSHB 110( ), Draft Version "N"

Page 1, following line 13:

Insert a new subsection to read:

"(d) In this section,

(1) "freshwater" means all inland water;

(2) "inland water" means water separated from salt water at the mouths of creeks and streams and rivers at a line between the extremities of a river's banks at a mean low tide or at a point to be determined and adequately marked by the department."

HB 110 would also prohibit the use of barbed hooks when there is a significant probability that there will be bycatch of stocks whose retention is prohibited.

This would allow mixed runs to continue to be fished recreationally while helping maintain the continued sustainability of stocks. The use of barbless hooks will help protect our fisheries resources in times of low abundance while avoiding complete fishery closures.

Barbless Hooks:

Fishery disaster declarations

- Yukon River
- Kuskokwim River
- Cook Inlet

Significant concern

- Kenai, saved only by the late run
- Copper River, increased restrictions

Facing further threats in stream

- Invasive pike, Alexander Creek
- Impaired waters

Resulted in user group hardship

- Subsistence, hurts culture and economy
- Commercial, hurts livelihood and economy
- Sport/Personal, hurts wellbeing and economy
- Failed Pacific Salmon treaty obligations

Tool to bridge gap while research is done

- 2.6% to 3.5 % reduction in post release mortality according to Pacific Salmon Joint Chinook Technical Committee
- Reduces handling of fish

Helps maintain fishing opportunities and reduce mortality

- Even with only a 2% reduction in mortality, this means hundreds of fish will survive to spawn
- Help avoid complete closures

Existing Precedent

- Washington and Oregon have already done this
- ADF&G already recommends for catch and release

Barbless Hook Overview

On the pacific coast of the United States many salmon runs are threatened relative to the runs we have here in Alaska. As a result, Washington, Oregon, and California have implemented measures to protect them. In addition to reducing fishing opportunities and bag limits, they have also undertaken efforts to reduce catch and release mortality in their remaining fisheries. A major part of this is gear restrictions. One aspect of this is mandating the use of barbless hooks for many marine and freshwater salmon fisheries. According to three scientific studies given to me by the Washington Department of Fish and Wildlife, the mortality reduction from barbless hook usage appears to average 3-4%.

- All of Washington's marine salmon fisheries use barbless hooks.
- Many of Washington's river salmon fisheries use barbless hooks, especially during the summer.
- The large Columbia River salmon fishery requires barbless hooks in both Washington and Oregon.
- Many salmon fisheries in northwest Oregon, both freshwater and marine, require barbless hooks.
- Even where it is not required, Oregon advises barbless hooks in any fishery where catch and release is expected.
- The vast majority of California's marine salmon fisheries require barbless hooks.
- Most of California's freshwater salmonid fisheries require barbless hooks.
- In Washington, Oregon, and California, a major contributor to the usage of barbless hooks is the requirement for hatchery fish to be released.

When I talked to WDFW, they considered barbless hooks to be a relatively insignificant part of their mortality reduction measures. They considered the use of artificial lures instead of bait to be significantly more important. This is supported by the information in the studies they gave us. Hooking location has much more to do with mortality regardless of the hook type used. To help further reduce the possibility of deep and more lethal hooking locations, California has mandated circle hooks in some marine salmon fisheries as they are more likely to pull up and catch in the jaw area of the fish.

Rapid landing, knotless nets, and gentle handling also play very significant roles in post release mortality levels.

Fiscal Note

State of Alaska
2013 Legislative Session

Bill Version: HB 110
Fiscal Note Number:
() Publish Date:

Identifier: HB110-DFG-BAC-02-15-13
Title: BARBED HOOKS
Sponsor: SEATON
Requester: House Special Committee on Fisheries

Department: Department of Fish and Game
Appropriation: Administration and Support
Allocation: Fish and Game Boards and Advisory Committees
OMB Component Number: 2825

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2014 Appropriation Requested	Included in Governor's FY2014 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2014**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Fund Source (Operating Only)							
None							
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Positions							
Full-time							
Part-time							
Temporary							
Change in Revenues							

Estimated SUPPLEMENTAL (FY2013) cost: 0.0

Estimated CAPITAL (FY2014) cost: 0.0

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? No
If yes, by what date are the regulations to be adopted, amended or repealed?

Why this fiscal note differs from previous version:

This is the initial version.

Prepared By: Monical Wellard, Executive Director — Phone: (907)465-6095
Division: Boards Support Secion — Date: 02/15/2013 02:30 PM
Approved By: Kevin Brooks, Deputy Commissioner — Date: 02/15/13
Alaska Department of Fish and Game

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2013 LEGISLATIVE SESSION

BILL NO. HB 110 \U

Analysis

HB 110 prohibits the use of barbed hooks in freshwater fisheries when participating in a fishery for a species that may not be retained or when participating in a fishery in which more than one species is present if there is a significant probability of catching a species that may not be retained. It is anticipated that the Board of Fisheries would address any regulations needed by the passage of this bill during the established meeting cycle in place.

Rule 43.2. Fish and Game Bail Forfeiture Schedule.

Pursuant to AS 16.05.165(b), the following fish and game offenses are appropriate for disposition without court appearance upon payment and forfeiture of the bail amounts listed and forfeiture of all seized items listed on the citation. If a person charged with one of these offenses appears in court and is found guilty, the fine imposed for the offense may not exceed the bail amount for that offense listed below. In addition, fish, game, or equipment may be forfeited under AS 16.05.190 or AS 16.05.195. An offense for which a bail forfeiture amount has been established shall be charged on a citation which meets the requirements of District Court Criminal Rule 8(c) and shall not be filed, numbered, or processed as a criminal case.

Statute or Regulation	Description of Offense	Bail
AS 16.05.330(a)(1)	Sport fishing without license in possession	$200
AS 16.05.330(a)(2)	Hunting without license in possession	250
AS16.05.340(a)(17)(A)	Taking waterfowl without state duck stamp	75
AS 16.05.340(a)(23)	King salmon stamp required for residents	100
AS 16.05.340(a)(24)	King salmon stamp required for non-residents	200
AS 16.05.420	False statement on license application	300
AS 16.05.480(a)	Crewmember fishing license required	250
AS 16.05.490(a)	Vessel license required	200
AS 16.05.520(a)	Vessel number plate	100
AS 16.05.680(1)	Employ unlicensed crew member	250
5 AAC 01.010(h)	Identification of subsistence finfish fishing gear	100
5 AAC 01.010(i)	Escape mechanism requirements for subsistence fishing gear	100
5 AAC 01.011(i)	Failure to record subsistence catch on proxy form	100
5 AAC 01.015(b)(5)	Failure to record daily catch on subsistence permit (finfish Statewide)	100
5 AAC 01.240(c)	Marking of subsistence taken king salmon (lower Yukon River)	100
5 AAC 01.630(e)(8)	Failure to record salmon on subsistence permit (Glennallen Subdistrict)	100
5 AAC 01.640	Failure to mark subsistence taken salmon (Copper River Districts)	100
5 AAC 01.750	Subsistence fishing from a vessel with greater than 35 HP motor (Klawock Inlet, Southeast Alaska)	150
5 AAC 02.010(e)(1-2)	Identification of subsistence shellfish gear	100
5 AAC 02.010(f)	Escape mechanism requirements for subsistence shellfish pots	100
5 AAC 02.015(a)(5)	Failure to record daily catch on subsistence permit (shellfish Statewide)	100
5 AAC 02.307	Unlawful tanner crab subsistence fishing gear (Cook Inlet)	100
5 AAC 02.310(b)(2)	Subsistence – bag, possession and size limits for littleneck and butter clams (Cook Inlet)	100 plus 1 per illegally taken clam
5 AAC 02.325	Subsistence – tanner crab season, bag, possession and size limits—permit required—recording required (Cook Inlet)	100 plus 20 per illegally taken crab
5 AAC 02.415(a)	Take overlimit/undersized or female Dungeness crab (Kodiak)	100 plus 20 per illegally taken crab
5 AAC 02.506	Take king or tanner crab without subsistence permit, failure to record catch immediately (AK Peninsula and Aleutian Islands)	100
5 AAC 02.515	Take overlimit/undersized or female Dungeness crab (AK Peninsula and Aleutian Islands)	100 plus 20 per illegally taken crab
5 AAC 02.520	Take overlimit/undersized or female king crab, unattended pots to be secured open (AK Peninsula and Aleutian Islands)	100 plus 50 per illegally taken crab
5 AAC 02.525	Take overlimit/undersized or female Tanner crab (AK Peninsula and Aleutian Islands)	100 plus 20 per illegally taken crab
5 AAC 05.334(a)	ID requirements for commercial salmon drift gillnets (Yukon River)	200
5 AAC 05.334(b)	ID requirements for commercial salmon stationary gear (Yukon River)	200
5 AAC 05.340	Failure to display vessel identification (Yukon River)	200
5 AAC 06.331(q)	Unlit set/drift net (Bristol Bay)	250
5 AAC 06.334(c)	Set gillnet buoy and marking requirements (Bristol Bay)	250
5 AAC 07.334(a)	ID requirements for commercial salmon drift gillnets (Kuskokwim River)	200
5 AAC 07.334(b)	ID requirements for commercial salmon stationary gear (Kuskokwim River)	200
5 AAC 07.340	Vessel Identification (Kuskokwim River)	200
5 AAC 28.135(a)(1-4)	Vessel Identification – D and M	200

Statute or Regulation	Description of Offense	Bail
5 AAC 29.125	Vessel Identification – HT	200
5 AAC 30.334	Identification of set gillnet (Yakutat)	200
5 AAC 39.119(a)(1-4)	Vessel Identification – 12 inch numbers	200
5 AAC 47.020	Sport fishing – general seasons, bag, possession, annual and size limits (salt water, Southeast Alaska)	100 plus 150 per king salmon illegally taken, 50 per halibut or lingcod, 20 per other fish, 20 per crab, and 2 per razor clam
5 AAC 47.021	Sport fishing – special provisions, seasons, bag, possession, and size limits (salt water, Southeast Alaska)	100 plus 150 per king salmon illegally taken, 50 per halibut or lingcod, 20 per other fish, 20 per crab, and 2 per razor clam
5 AAC 47.022	Sport fishing – general seasons, bag, possession, annual and size limits (freshwater, Southeast Alaska)	100 plus 150 per king salmon illegally taken, 20 per other fish
5 AAC 47.023	Sport fishing – special provisions, seasons, bag, possession, and size limits (freshwater, Southeast Alaska)	100 plus 150 per king salmon illegally taken, 20 per other fish
5 AAC 47.024(a)(3)	Failure to record king salmon landing (Southeast Alaska)	100
5 AAC 47.024(c)(3)	Failure to record steelhead landing (Southeast Alaska)	100
5 AAC 47.030(g)	Maximum number of fishing lines from a charter vessel (Southeast Alaska)	300
5 AAC 47.030(i)	Use of bait in freshwater (Southeast Alaska)	100
5 AAC 52.022	Sport fishing – general seasons, bag, possession, annual and size limits (Upper Copper River and Upper Susitna River)	100 plus 150 per king salmon illegally taken, 20 per other fish
5 AAC 52.023	Sport fishing – special provisions, seasons, bag, possession, and size limits (Upper Copper River and Upper Susitna River)	100 plus 150 per king salmon illegally taken, 20 per other fish
5 AAC 52.024(b)	Failure to record king salmon landing (Upper Copper River and Upper Susitna River)	100
5 AAC 55.022	Sport fishing – general seasons, bag, possession, and size limits (Prince William Sound)	100 plus 150 per king salmon illegally taken, 50 per halibut or lingcod, and 20 per other fish
5 AAC 55.023	Sport fishing – special provisions, seasons, bag, possession, and size limits (Prince William Sound)	100 plus 150 per king salmon illegally taken, 50 per halibut or lingcod, and 20 per other fish
5 AAC 56.120	Sport fishing – general seasons, bag, possession, and size limits (freshwaters, Kenai Peninsula Area, excluding Kenai River Drainage Area)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 56.122	Sport fishing – special provisions, seasons, bag, possession, and size limits (freshwaters, Kenai Peninsula Area, excluding Kenai River Drainage Area)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 56.124(a)(2)	Failure to record king salmon landing (freshwaters, Kenai Peninsula Area, excluding Kenai River Drainage Area)	100
5 AAC 56.124(b)(2)	Failure to record rainbow/steelhead trout landing (freshwaters, Kenai Peninsula Area, excluding Kenai River Drainage Area)	100
5 AAC 57.120	Sport fishing – general seasons, bag, possession, and size limits (freshwaters, Kenai River Drainage Area)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 57.121	Sport fishing – special provisions, seasons, bag,	100 plus 150 per

Statute or Regulation	Description of Offense	Bail
	possession, and size limits (freshwaters, Kenai River Drainage Area Lower Section)	king salmon illegally taken and 20 per other fish
5 AAC 57.122	Sport fishing – special provisions, seasons, bag, possession, and size limits (freshwaters, Kenai River Drainage Area Middle Section)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 57.123	Sport fishing – special provisions, seasons, bag, possession, and size limits (freshwaters, Kenai River Drainage Area Upper Section)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 57.124(a)(2)	Failure to record king salmon landing (freshwaters, Kenai River Drainage Area)	100
5 AAC 57.124(b)(2)	Failure to record rainbow/steelhead trout landing (freshwaters, Kenai River Drainage Area)	100
5 AAC 57.180(c-d)	Sport fishing – Riparian habitat bank closures (freshwaters, Kenai River Drainage Area)	75
5 AAC 58.022	Sport fishing – waters, seasons, bag, possession, size limits, and special provisions (Cook Inlet – Resurrection Bay saltwater)	100 plus 150 per king salmon illegally taken, 50 per halibut or lingcod, 20 per other fish, 20 per crab, 2 per razor clam, and 1 per littleneck or butter clam
5 AAC 58.024(a)(2)	Failure to record king salmon landing (Cook Inlet – Resurrection Bay saltwater)	100
5 AAC 58.026(a)	Failure to record crab on harvest record (Cook Inlet – Resurrection Bay saltwater)	100
5 AAC 58.030(c)	Snagging or attempting to snag where prohibited (Cook Inlet north of a line extending west from Anchor Point)	125
5 AAC 58.030(d)	Snagging or attempting to snag where prohibited (saltwater of the Homer Spit, fishery enhancement lagoon)	125
5 AAC 58.035(b-g)	Shellfish methods and means (Cook Inlet – Resurrection Bay saltwater)	100
5 AAC 59.120	Sport fishing – general seasons, bag, possession, and size limits (freshwaters, Anchorage Bowl Drainages Area)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 59.122	Sport fishing – special provisions, seasons, bag, possession, and size limits (freshwaters, Anchorage Bowl Drainages Area)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 59.124(a)(2)	Failure to record king salmon landing (freshwaters, Anchorage Bowl Drainages area)	100
5 AAC 59.124(b)(2)	Failure to record rainbow/steelhead trout landing (freshwaters, Anchorage Bowl Drainages Area)	100
5 AAC 60.120	Sport fishing – general seasons, bag, possession, and size limits (freshwaters, Knik Arm Drainages Area)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 60.122	Sport fishing – special provisions, seasons, bag, possession, and size limits (freshwaters, Knik Arm Drainages Area)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 60.124(a)(2)	Failure to record king salmon landing (freshwaters, Knik Arm Drainages Area)	100
5 AAC 60.124(b)(2)	Failure to record rainbow/steelhead trout landing (freshwaters, Knik Arm Drainages Area)	100
5 AAC 61.110	Sport fishing – general seasons, bag, possession, and size limits (freshwaters, Susitna River Drainage Area)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 61.112	Sport fishing – special provisions, seasons, bag, possession, and size limits (freshwaters, Susitna River Drainage Area Unit 1)	100 plus 150 per king salmon illegally taken and 20 per other fish

Statute or Regulation	Description of Offense	Bail
5 AAC 61.114	Sport fishing – special provisions, seasons, bag, possession, and size limits (freshwaters, Susitna River Drainage Area Unit 2)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 61.116	Sport fishing – special provisions, seasons, bag, possession, and size limits (freshwaters, Susitna River Drainage Area Unit 3)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 61.118	Sport fishing – special provisions, seasons, bag, possession, and size limits (freshwaters, Susitna River Drainage Area Unit 4)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 61.120	Sport fishing – special provisions, seasons, bag, possession, and size limits (freshwaters, Susitna River Drainage Area Unit 5)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 61.122	Sport fishing – special provisions, seasons, bag, possession, and size limits (freshwaters, Susitna River Drainage Area Unit 6)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 61.123	Sport fishing – restrictions on fishing after taking king salmon (freshwaters, Susitna River Drainage Area)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 61.124(a)(2)	Failure to record king salmon landing (freshwaters, Susitna River Drainage Area)	100
5 AAC 61.124(b)(2)	Failure to record rainbow/steelhead trout landing (freshwaters, Susitna River Drainage Area)	100
5 AAC 62.120	Sport fishing – general seasons, bag, possession, and size limits (freshwaters, West Cook Inlet Area)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 62.122	Sport fishing – special provisions, bag, possession, and size limits (freshwaters, West Cook Inlet Area)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 62.124(a)(2)	Failure to record king salmon landing (freshwaters, West Cook Inlet Area)	100
5 AAC 62.124(b)(2)	Failure to record rainbow/steelhead trout landing (freshwaters, West Cook Inlet Area)	100
5 AAC 64.022	Sport fishing – waters, seasons, bag, possession, size limits, and special provisions (Kodiak)	100 plus 150 per king salmon illegally taken, 50 per halibut or lingcod, 20 per other fish, and 20 per crab
5 AAC 64.025(a)(2)	Failure to record king salmon landing (Kodiak fresh water)	100
5 AAC 64.025(c)(2)	Failure to record rainbow/steelhead trout landing (Kodiak)	100
5 AAC 65.010	Sport fishing – seasons (AK Peninsula and Aleutian Islands)	100 plus 150 per illegally taken king salmon, 50 per halibut or lingcod, and 20 per crab
5 AAC 65.020	Sport fishing – bag, possession, and size limits (AK Peninsula and Aleutian Islands)	100 plus 150 per illegally taken king salmon, 50 per halibut or lingcod, 20 per other fish, and 20 per crab
5 AAC 65.022	Sport fishing – special provisions for methods and means (AK Peninsula and Aleutian Islands)	100 plus 150 per illegally taken king salmon, and 20 per other fish
5 AAC 65.024(b)(2)	Failure to log king salmon or Rainbow/steelhead landing (AK Peninsula and Aleutian Islands)	100

Statute or Regulation	Description of Offense	Bail
5 AAC 67.020	Sport fishing – bag, possession, and size limits (Bristol Bay)	100 plus 150 per king salmon illegally taken, 50 per halibut or lingcod, 20 per other fish, and 20 per crab
5 AAC 67.022	Sport fishing – special provisions for seasons, bag, possession, size limits, and methods and means (Bristol Bay)	100 plus 150 per king salmon illegally taken
5 AAC 67.024(b)(2)	Failure to record king salmon landing (Bristol Bay)	100
5 AAC 69.110	Sport fishing – seasons, bag, possession, and size limits (North Slope)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 70.011	Sport fishing – seasons, bag, possession, and size limits (Northwestern)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 70.024(b)(2)	Failure to record king salmon landing (Unalakleet River)	100
5 AAC 71.010	Sport fishing – seasons, bag, possession, and size limits (Kuskokwin-Goodnews)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 71.024(a)(2)	Failure to record king salmon landing (Aniak River)	100
5 AAC 71.024(b)(2)	Failure to record rainbow trout landing (Kisaralik, Kwethluk, Kasigluk, and Arolik Rivers)	100
5 AAC 73.010	Sport fishing – seasons, bag, possession, and size limits (Yukon River)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 74.010	Sport fishing – seasons, bag, possession, and size limits (Tanana River)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 75.006(a)(2)	Failure to record finfish landing established by regulation or emergency order (statewide)	100
5 AAC 75.011(i)	Failure to record sport fishing catch on proxy form	100
5 AAC 75.012(b)(4)	Fail to record shark landing	100
5 AAC 75.020	Sport fishing with more than one line	100
5 AAC 75.021	More than 2 lines, hooks, or lures while ice fishing	50
5 AAC 75.022(a)(1)	Using fixed or weighted hook – freshwater	100
5 AAC 75.022(a)(2)	Multiple hook with gap larger than ½" – freshwater	100
5 AAC 75.022(a)(3-4)	Unauthorized use of spear or arrow – sport fishing in fresh water	100
5 AAC 75.022(c)	Attempt to snag or fail to release snagged fish – freshwater	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 75.023(a-b)	Illegal gear in single-hook waters	50
5 AAC 75.035(1)	ID requirements for shellfish sport fishing gear	100
5 AAC 75.035(2)	Escape mechanism requirements for shellfish sport fishing gear	100
5 AAC 75.050(a-b)	Sport fishing in closed waters	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 75.070(b)	Filleting or disfiguring halibut to prevent determination of number of fish caught or possessed	200
5 AAC 75.075(c)	Failure to have required licenses and documents in possession (sport fish guiding Statewide)	200
5 AAC 75.076(c)	Failure to complete log book as required (sport fish guiding Statewide)	200
5 AAC 75.076(e)	Failure to submit logbook (sport fish guiding Statewide)	200
5 AAC 75.077(b)	Failure to display guide boat decals or annual stickers (sport fish guiding State-wide)	100
5 AAC 77.010(a)	Sport fish license required for personal use fishing	200

Statute or Regulation	Description of Offense	Bail
5 AAC 77.010(d)	ID requirements for personal use fishing gear	100
5 AAC 77.010(f)	Marking of personal use fish	75
5 AAC 77.010(m)	Escape mechanism requirements for personal use fishing	100
5 AAC 77.015(c)	Personal use permits and report requirements	200
5 AAC 77.016(i)	Failure to record personal use catch on proxy form	100
5 AAC 77.507	Shellfish pot permit required – recording required (Cook Inlet)	100
5 AAC 77.509(a-d)	Illegal gear for shellfish (Cook Inlet)	100
5 AAC 77.516	Tanner crab – seasons, bag, possession, and size limits (Cook Inlet)	100 plus 20 per illegally taken crab
5 AAC 77.518(2)(A)	Over limit of razor clams (From the terminus of the Kenai River to southernmost tip of Homer Spit)	100 plus 2 per clam illegally taken
5 AAC 77.518(2)(B-C)	Bag, possession, and size limits for littleneck and butter clams (Cook Inlet)	100 plus 1 per clam illegally taken
5 AAC 77.525(c)	Take overlimit salmon (Cook Inlet)	100 plus 150 per king salmon illegally taken and 20 per other fish
5 AAC 77.527(2)(A-B)	Take smelt during a closed period (Cook Inlet)	100
5 AAC 77.540(a)	Personal use permit required (Upper Cook Inlet)	200
5 AAC 77.540(a)(2)	Failure to record salmon on personal use permit (Upper Cook Inlet)	100
5 AAC77.540(c)(1)(A)	Take salmon during closed period (Kenai River)	100 plus $5 per minute early or late up to $300 total
5 AAC 77.540(c)(1)(C)	Take salmon from a boat powered by a two stroke motor (Kenai River)	100
5 AAC 77.591(d)	Failure to record salmon on personal use permit (Chitina Subdistrict dipnet)	100
5 AAC 77.612(2-3)	Personal use – taking overlimit, female, or undersize Dungeness crab (Yakutat)	100 plus 20 per crab illegally taken
5 AAC 77.614(2)	Personal use – taking overlimit or female king crab (Yakutat)	100 plus 50 per crab illegally taken
5 AAC 77.616(2)	Personal use – taking overlimit or female Tanner crab (Yakutat)	100 plus 20 per crab illegally taken
5 AAC 77.662(2-3)	Personal use – taking overlimit, female or undersize Dungeness crab (Southeast)	100 plus 20 per crab illegally taken
5 AAC 77.662(5)	Failure to use escape rings in Dungeness pots (Southeast)	100
5 AAC 77.664(a-c)	Personal use – king crab provisions (Southeast)	100 plus 50 per crab illegally taken and 50 per pot over limit
5 AAC 77.664(f)	Failure to use escape rings in king crab pots (Southeast)	100
5 AAC 77.666(2)	Personal use – taking overlimit or female Tanner crab (Southeast)	100 plus 20 per crab illegally taken
5 AAC 77.670(2-3)	Personal use – taking overlimit or undersize abalone (Southeast)	100 plus 10 per abalone illegally taken
5 AAC 85.020(a)(1&3)	Failure to obtain registration permit – brown bear (Units 1 and 4)	150
5 AAC 92.010	Harvest ticket not in possession; failure to validate	150
5 AAC 92.012(a)	Taking waterfowl without federal duck stamp	75
5 AAC 92.012(a)	Unsigned federal duck stamp	25
5 AAC 92.018	Unsigned state duck stamp	25
5 AAC 92.029(a)	Possess, import, release or export live game animal without permit (statewide)	250
5 AAC 92.050(a)(7)	Failure to cancel permit after killing big game	150
5 AAC 92.050(a)(8)	Failure to submit permit hunt report	100
5 AAC 92.062(d)	False information on application for Tier II permit	200
5 AAC 92.080(1)	Unlawfully taking game by shooting from, on or across highway	300
5 AAC 92.100(a)(1-6)	Taking migratory birds by illegal methods	100
5 AAC 92.100(b)	Transportation of migratory bird without fully feathered wing or head attached	50
5 AAC 92.100(c)	Taking migratory birds before or after legal shooting hours	50 plus $2 per minute early or late up to $200 total
5 AAC 92.150(a)	Possess mountain sheep without both horns	100
5 AAC 92.150(b)	No evidence of sex attached – big game	150

Statute or Regulation	Description of Offense	Bail
5 AAC 92.150(d)	No evidence of sex attached – bear	150
5 AAC 92.165(a-e)	Failure to seal bear or possess unsealed bear skin or skull	100
5 AAC 92.170	Failure to seal wolf, wolverine, lynx, marten, beaver, and otter	100
5 AAC 92.200(d)	Failure to submit required report	75
5 AAC 92.230(a)(1)	Feeding game	300
5 AAC 92.410(b)(2-3)	Failure to submit required report	75
5 AAC 93.060 (except (f))	Failure to pay fee (Little Susitna Public Use Facility) (This does not include commercial violations under subparagraph (f))	50
5 AAC 95.505(1)	Vehicle use off road (Palmer Hay Flats State Game Refuge)	300
5 AAC 95.515(1)	Vehicle use off authorized roads without permit (Susitna Flats State Game Refuge)	300
5 AAC 95.515(4)(A)	Refuse and waste (Little Susitna Public Use Facility)	100
5 AAC 95.515(4)(B)	Damage/deface state property or sign (Little Susitna Public Use Facility)	200
5 AAC 95.515(4)(C)	Damage/deface natural object (trees, etc.) (Little Susitna Public Use Facility)	200
5 AAC 95.515(4)(D)	Failure to use leash/control pets (Little Susitna Public Use Facility)	50
5 AAC 95.515(4)(E)	Assembly of more than 20 people without permit (Little Susitna Public Use Facility)	50
5 AAC 95.515(4)(F)	Fires not in campstove or authorized structure (Little Susitna Public Use Facility)	50
5 AAC 95.515(4)(G)	Use or discharge a weapon (Little Susitna Public Use Facility)	100
5 AAC 95.515(4)(H)	Limit on number of persons/vehicles (Little Susitna Public Use Facility)	50
5 AAC 95.515(4)(I)	Camping in designated areas (Little Susitna Public Use Facility)	50
5 AAC 95.515(4)(J)	Unattended campsite/vehicle (Little Susitna Public Use Facility)	50
5 AAC 95.515(4)(K)	Camping over 15 days or authorized limit (Little Susitna Public Use Facility)	50
5 AAC 95.515(4)(L)	Unauthorized concessions (Little Susitna Public Use Facility)	100
5 AAC 95.515(4)(M)	Traffic violations (Little Susitna Public Use Facility)	50
5 AAC 95.515(4)(N)	Violation of campground rules (Little Susitna Public Use Facility)	50

(Adopted by SCO 778 effective January 1, 1987; amended by SCO 892 effective April 1, 1988; by SCO 1000 effective October 1, 1989; by SCO 1033 effective July 6, 1990; by SCO 1076 effective July 1, 1991; by SCO 1077 effective nunc pro tunc July 21, 1991; by SCO 1101 effective July 9, 1992; by SCO 1143 effective August 9, 1993; by SCO 1170 effective May 1, 1994; by SCO 1218 effective May 15, 1995; by SCO 1256 effective September 15, 1996; by SCO 1327 effective July 1, 1998; by SCO 1346 effective August 13, 1998; by SCO 1387 effective January 1, 2000; by SCO 1484 effective December 1, 2002; by SCO 1523 effective August 15, 2003; by SCO 1577 effective June 1, 2005; by SCO 1615 effective June 1, 2006; by SCO 1632 effective nunc pro tunc to October 1, 2006; by SCO 1673 effective May 5, 2008; and by SCO 1734 effective July 20, 2010)

North American Journal of Fisheries Management 8:346–355, 1988

Hooking Mortality of Chinook Salmon Released by Commercial Trollers

ALEX WERTHEIMER

National Marine Fisheries Service, Northwest and Alaska Fisheries Center, Auke Bay Laboratory Post Office Box 210155, Auke Bay, Alaska 99821 USA

Abstract.—Immediate and short-term (1–5-d) hooking mortality associated with the incidental catch of chinook salmon *Oncorhynchus tshawytscha* was assessed during periods when troll fishing for that species (only) was prohibited. Two chartered power trollers fished their normal complements of gear directed at coho salmon *O. kisutch* in Hawk Inlet, southeastern Alaska. Wound location, fork length, and lure type were the factors principally associated with mortality of incidentally caught chinook salmon. Severity of the hooking wound was also related to mortality. Maximum-likelihood estimates (with 95% confidence intervals in parentheses) of total mortality were 24.5% (20.1–29.0%) for sublegal-sized (<66 cm fork length) chinook salmon and 20.5% (9.0–31.9%) for legal-sized chinook salmon. The delayed-mortality rates were used to recalculate hooking mortality estimates from previous tagging experiments in which it was assumed that no delayed mortality occurred for certain locations and severities of wounds. The recalculated estimate of total hooking mortality for sublegal fish, based on wound location, was 25.7%. The recalculated estimate of total hooking mortality for legal and sublegal fish, based on wound severity, was 23.5%.

Minimum-size restrictions to protect young age-classes are common for hook-and-line fishing directed at chinook salmon *Oncorhynchus tshawytscha*. In the commercial troll fishery in southeastern Alaska, for example, chinook salmon less than 71 cm long (sublegal fish) must be released. Some mortality is associated with the hooking and release of sublegal fish in these fisheries. Recently, there has been an increase in the number of closures of the chinook salmon (only) troll fishery. During such periods, trolling is directed primarily at coho salmon *O. kisutch*, and incidentally captured chinook salmon must be released. Fisheries managers require mortality estimates for released fish to assess the effectiveness of these closures for protecting chinook salmon.

Estimates of hooking mortality for chinook salmon vary widely. Immediate-mortality estimates range from 2.5% (Van Hyning 1951) to 10.6% (Davis et al. 1986), whereas estimates that include both immediate and delayed mortality range from 11.8% (Butler and Loeffel 1972) to 71% (Parker and Black 1959). Reviewers of published and unpublished data on hooking mortality of chinook salmon have proposed estimates of 30% (Wright 1970), 38% (Horton and Wilson-Jacobs 1985), and 50% (Ricker 1976).

The wide variations in the estimates may be due to biases associated with different experimental approaches, but this cannot be quantified because of the lack of experimental controls. The lowest hooking-mortality estimates (11.8–12.0%) are from tagging studies in which fish with certain superficial injuries were assumed to suffer no delayed mortality; investigators used tag recovery rates of these fish to calculate delayed mortality for all injury categories (Wright 1970; Butler and Loeffel 1972). Estimates like these are negatively biased if fish with superficial injuries suffer delayed mortality.

Mortality estimates based on the investigator's judgement of whether or not a fish has been mortally wounded are higher than those calculated from immediate mortality (12–31%; Wright 1970), but these, too, may be biased. Chinook salmon with severe wounds have been subsequently recovered in tagging experiments (Wright 1970; Butler and Loeffel 1972), and fish with superficially minor injuries may suffer delayed mortality. Mortality rates up to 71% have been reported for fish with apparently minor injuries when the fish were held for several hours in live tanks aboard a fishing vessel (Parker and Black 1959). These deaths were attributed to lactic acid accumulation caused by hyperactivity while the fish fought the troll gear (Parker et al. 1959). Ellis (1964), however, concluded that just holding fish for extended periods may stress the fish, causing lactic acid buildup and high mortality.

Previous estimates of hooking mortality of chinook salmon included sublegal fish only or all fish sizes together. The limited information on mortality rates of chinook salmon relative to size indicates that larger fish are not as severely affected by hooking as smaller fish (Parker and Kirkness 1956; Loeffel 1961; Davis et al. 1986). However,

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Fry and Hughes (1951) found no size-related differences in recoveries of tagged chinook salmon.

The main objective of this study was to determine immediate and short-term (1–5-d) mortality rates of chinook salmon hooked and released from commercial trolling gear typical of the gear used in coho salmon fishing. Secondary objectives were to examine the association of mortality with wound location and to make a qualitative assessment of wound severity so that observed rates of delayed mortality could be used to refine mortality estimates from previous tagging studies.

Methods

Gear.—Two power trollers were chartered to fish for two 5-d periods, 11–20 August 1986, at Hawk Inlet in southeastern Alaska. This site was chosen because of its accessibility, the availability of mooring sites for a large net-pen, and the high catch rates of chinook salmon during previous trolling research in the area. Vessel 1 was a 13.7-m troller rigged with bow poles to separate the forward and aft trolling lines, and vessel 2 was a 14.3-m troller rigged with float bags to separate the lines. Four wire lines with 8–10 individual lures per line were used. To simulate fishing during chinook salmon closures, the operators fished their normal complement of coho salmon gear, including hootchies (imitation squid) with flashers, spoons, and plugs; the selection of colors and relative proportions of the lures deployed was varied by the operators. Hook size was limited to 6/0 barbed, single hooks. Operators were instructed to operate the gear in their normal manner. Typically, all lines were checked if a strike was detected on one or more lines, or when a complete circuit of the fishing area had been made.

Processing the catch.—Techniques for boating fish differed between vessels because of differences in vessel design. When a chinook salmon was caught, it was placed in an electrically charged basket (Orsi and Short 1987) to stun the fish. On vessel 1, fish were lifted from the water by the leader before being placed in the electric basket. On vessel 2, they were led to the electric basket, which was in the water, and simultaneously lifted and stunned. Operators removed the hook in their normal manner by inserting a gaff into the curve of the lure hook and turning the gaff so that the weight of the fish pulled it free of the lure. An observer noted the lure type, depth fished, and location of the wound, and rated the severity of the wound by the Alaska Department of Fish and Game troll observer criteria (Davis et al. 1986). Condition 1 denotes a minor injury, including hooking injuries near the outer portion of the mouth and little or no bleeding. Condition 2 denotes a serious injury, including hooking injuries in or near the gills or eyes and severe bleeding. Condition 3 denotes a dead fish. Fork lengths of fish were measured to the nearest centimeter. On the basis of conversions given by Van Hyning (1951), a fork length of 66 cm was considered equivalent to a total length of 71 cm, the legal size limit. Fish were marked with numbered Floy anchor tags. Average processing time was less than 45 s.

Each fish was placed in a 175-L covered live tank with flowing seawater until it was transferred with a large dip net (6-mm knotless webbing) to a similar tank in a skiff. Typically, only one or two fish were held at a time in each live tank. Live fish were transferred from the skiff to a net-pen; this was accomplished by pouring the contents of the live tank into the pen. Transfer time from capture until placement in the net-pen varied from 7 to 60 min and averaged 22 min. Transfer times tended to be longer in poor weather, but this was compensated for by keeping the trollers closer to the net-pen.

The net-pen, constructed of 2.5-cm knotless nylon mesh suspended from a float frame, had a total volume of 1,700 m^3, a depth of 12 m, and an area of 142 m^2 defined by eight sides that were alternately 9.1 and 2.2 m long. This design eliminated the blind tunnels that can form in the corners of square or rectangular net-pens. The pen was checked by divers at the end of each fishing day; dead fish were removed and their tag numbers were recorded. At the end of five fishing days, all fish in the pen were released.

Temperature and salinity profiles in the holding net were determined five times over the course of the experiment with a conductivity–temperature probe. A temperature and salinity profile also was determined on the fishing grounds with a single bathymetric cast of a recording conductivity–temperature instrument.

To test the hypothesis that "stunned" fish are frequently killed by predators, some chinook salmon dead at landing were returned to the water after being tied to a 30-m-long, 6-mm diameter line attached to a buoy. The line used was alternately either yellow polypropylene with slight positive bouyancy or brown nylon with slight negative bouyancy. The buoy was retrieved by a skiff operator, when convenient, after a minimum of 20 min.

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Statistical analysis.—The BMDPLR stepwise logistic regression program (Dixon et al. 1983) was used to identify the independent variables significantly related to mortality (the binary response variable). For the logistic regression model, the probability of mortality is

$$e^u/(1 + e^u); \quad (1)$$

u is a linear function of the independent variables. The variables considered in the regression model were injury location, fork length, vessel, lure depth, lure type, and transfer time. An independent variable could be included in the regression model if the improvement chi-square test, computed from the $\log_e$ of the ratio of the likelihood function without the variable to the likelihood function with the variable was significant ($P < 0.05$). At each step of the regression, the BMDPLR program computed goodness-of-fit tests. Two stepwise regression analyses were performed, based on when mortality occurred. In the first, all deaths were included; in the second, fish dead at landing were excluded from the model. Lure type was not recorded for 45 chinook salmon. Observations with missing values were excluded from the stepwise regression analysis.

The G-test for independence (Sokal and Rohlf 1981) was used to examine the relationship between severity of the hooking wound and subsequent mortality between vessel and number caught by size category, and among vessel, lure type, and mortality.

Mortality rates were determined for each of six time periods: immediate (fish dead at landing or at the time of transfer to the pen) and at the end of fishing days 1–5. The BMDP3R nonlinear regression program (Dixon et al. 1983) was used to generate maximum-likelihood estimates and asymptotic standard deviations for each time period, as well as the correlation matrix for the estimates. The maximum-likelihood estimates usually are distributed about the true value of the parameter, which is close to the mean for large samples (Mood and Graybill 1963). The total mortality is the sum of mortality estimates for individual time periods. The variance of this estimate is the sum of the variances for individual time periods plus the off-diagonal sum of the variance–covariance matrix (Mood and Graybill 1963):

$$V\left(\sum_{i=1}^{6} \hat{P}_i\right) = \sum_{i=1}^{6} V\hat{p}_i + 2 \sum_{i} \sum_{j} \text{cov}(\hat{p}_i; \hat{p}_j);$$

$\hat{p}_i$ is the estimated mortality rate for the ith period and j denotes a period after i. The variance calculations derived from BMDP3R were confirmed by calculating the variance–covariance matrix with a separate program.

To recalibrate the estimates of delayed mortality based on the tag recovery data reported by Wright (1970) and Butler and Loeffel (1972), who assumed there was no delayed mortality for the groups with the highest tag recovery rates, I applied mortality rates from the present study. The earlier investigators calculated a recapture coefficient (r) for fish with the lowest wound severity (Wright 1970) or for fish hooked in the maxillary (Butler and Loeffel 1972):

$$r = n/N'; \quad (2)$$

n is the number of recaptures, and N' is the number of tagged fish released. In using this equation, one assumes delayed mortality is 0. To calculate r when delayed mortality is some other value, the equation is

$$r = n/(N' - D); \quad (3)$$

D is N' times the delayed mortality rate. Once r has been recalculated, the number of deaths due to delayed mortality in a particular category can be determined by

$$D_k = N_k' - (n_k/r); \quad (4)$$

k is a particular condition or wound location. Delayed mortality for category k is then D_k divided by N_k'. (Delayed mortality expressed as the proportion of the fish landed would be D divided by N; $N = N' + I$, and I is the number of immediate deaths.)

Wright's (1970) calculations are equivalent to equations (2) and (4), although his terminology is not identical. However, Butler and Loeffel (1972) calculated the number of delayed deaths by

$$D_k = r(N_k - I_k) - n_k. \quad (5)$$

This equation is incorrect; the number computed was actually the number of fish that would have been expected to be recovered from the fish that died, $r \cdot D_k$. Thus, it was necessary to recalculate the original values for delayed mortality given in Butler and Loeffel (1972).

Results

Altogether, 108 legal and 398 sublegal chinook salmon were caught and landed. The catch of legal chinook salmon was similar between boats: 52 for vessel 1 and 56 for vessel 2. Vessel 2 caught 239 sublegal chinook salmon, 36% more than the 159

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caught by vessel 1; however, this difference was not statistically significant (chi-square; $P > 0.10$).

Ninety-six percent of the legal and 93% of the sublegal fish were caught at depths greater than 12 m. Only 6% of the legal and 3% of the sublegal fish were caught at depths greater than 35 m. Once in the holding pen, fish in good condition primarily used the lower half of the pen, whereas severely injured fish swam slowly at the surface or along the pen margins, or lay quiescently on the bottom.

Temperature decreased and salinity increased with depth in both the net-pen and fishing area. Temperatures in the net-pen were 10.3°C at 5 m and 9.0°C at 12 m, the depths where most of the fish remained. Temperatures where most fish were caught in the fishing area decreased from 9.3°C at 12 m to 6.5°C at 35 m. Salinity increased from 29.3‰ at 5 m to 30.7‰ at 12 m in the net, and from 29.8‰ at 12 m to 31.1‰ at 35 m in the fishing area.

Effect of Predation

Of the 506 chinook salmon captured, one had a fresh predator wound, probably received while hooked. Twenty-six dead fish were tethered to a buoy and allowed to drift or sink for an average of 31 min. None of these fish were damaged or removed by predators even though Stellar's sea lions *Eumetopias jubatus*, harbor seals *Phoca vitulina*, bald eagles *Haliaetus leucocephalus*, and glaucous-winged gulls *Larus glaucescens* were frequently observed in the fishing area.

Variables Affecting Mortality

Three variables—length, injury location, and lure type—were significantly associated with mortality both when all observed mortality was included in the analysis and when immediate mortality was excluded (Table 1). These variables were also significantly associated with mortality in both analyses when no other variables were in the logistic regression model (Table 1). Vessel did not enter the regression model in either analysis but was significantly related to delayed mortality if other variables were excluded. Transfer time entered the model when it was considered a variable but was not significant when other variables were excluded (Table 1).

The relationship between fork length and mortality was obvious when the fish were grouped by legal and sublegal categories. Ninety-four (23.6%) of the 398 sublegal fish died over the course of the study, and only 14 (13.0%) of the 108 legal fish died.

TABLE 1.—Summary of stepwise logistic regression analyses of chinook salmon mortality after fish were hooked. Analysis 1 included all observations of mortality in the model; analysis 2 excluded observations of immediate mortality from the regression model and included transfer time as an independent variable. Asterisks denote $P \leq 0.05$* or $P \leq 0.01$**.

Variable	Approximate F, no other variables in model	Improvement chi-square
Analysis 1		
Fork length	18.30**	18.91**
Injury location	16.55**	106.43**
Lure type	12.01**	31.87**
Vessel	2.21	
Lure depth	1.53	
Analysis 2		
Fork length	15.53**	18.13**
Injury location	11.92**	82.56**
Lure type	14.26**	26.91**
Time	1.52	4.88*
Vessel	6.47*	
Lure depth	0.95	

In both size categories, fish hooked in the gills had the highest total mortality (Table 2). Further comparisons were not meaningful for legal fish because of the small sample size. Among sublegal fish, the total mortality rates, based on hooking location (exclusive of tongue and "other," for which there were few observations) were lowest for snout, maxillary, corner of the mouth, and cheek; intermediate for lower jaw, isthmus, and eye area; and highest for gills (Table 2). Postmortem examinations of 18 fish (total number dead at landing or removed from the net-pen during 2 d of the study) revealed that these fish incurred some gill injury although not all were so classified by the on-board observer. The original assessments were wounds to gills (8), eye (5), lower jaw (4), and isthmus (1).

The predominant lure types that caught both size-classes of fish were hootchies on vessel 1 and spoons on vessel 2 (Table 3). The numbers of fish captured by lure type were significantly different ($P < 0.05$) between vessels for both legal and sublegal fish. This difference between vessels was probably due to differences in the proportions of lure types fished, which were not measured. Because of the low expected values for fish caught on plugs, differences in mortality between vessels and lure type were tested only for sublegal fish caught on hootchies or spoons. Mortality significantly differed between these lure types ($P < 0.05$) but not between the vessels.

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TABLE 2.—Total catch and subsequent mortality by hooking location and size-class of chinook salmon. I = immediate mortality; numbers 1–5 indicate number of days in pen. Delayed mortality shown is total number of deaths minus immediate deaths, divided by total number captured; it is not weighted for smaller sample size associated with longer holding periods. Sublegal fish were smaller than 66 cm fork length.

Hooking location	Total catch	Number of deaths by day in net-pen						Mortality (%)		
		I	1	2	3	4	5	Immediate	Delayed	Total
Sublegal fish										
Snout	22	1	0	0	0	0	0	4.5	0.0	4.5
Maxillary	34	0	2	0	0	0	0	0.0	5.9	5.9
Corner of mouth	52	2	2	0	0	0	0	3.8	3.8	7.6
Cheek	53	3	3	0	0	0	0	5.7	5.7	11.4
Lower jaw	90	6	12	1	1	1	0	6.7	16.7	23.4
Tongue	4	0	1	0	0	0	0	0.0	25.0	25.0
Isthmus	35	5	4	0	0	0	0	14.3	11.4	25.7
Eye, orbit of eye	73	8	10	1	0	0	0	11.0	15.1	26.1
Gills	33	15	15	0	0	0	0	45.4	45.4	90.8
Other	2	0	1	0	0	0	0	0.0	50.0	50.0
Legal fish										
Snout	2	0	1	0	0	0	0	0.0	50.0	50.0
Maxillary	10	0	0	0	0	0	0	0.0	0.0	0.0
Corner of mouth	13	0	1	0	0	0	0	0.0	7.7	7.7
Cheek	13	0	0	0	0	0	0	0.0	0.0	0.0
Lower jaw	20	0	1	0	0	0	0	0.0	5.0	5.0
Tongue	0									
Isthmus	3	0	0	0	0	0	0	0.0	0.0	0.0
Eye, orbit of eye	38	1	2	1	0	0	2	2.6	13.2	15.8
Gills	9	3	1	0	0	1	0	33.3	22.2	55.5

Wound Severity and Mortality

For vessels and size-classes, substantially more severely wounded fish died than slightly wounded fish (Table 4). Size-classes had to be combined to statistically compare mortality between wound-severity classifications. For both vessels, severely wounded fish had significantly higher mortality ($P < 0.05$). There also was a significant difference between vessels in the proportion of fish assigned to the wound-severity categories: 66% of the fish were graded slightly wounded on vessel 2 versus 31% on vessel 1 (Table 4). The observer on vessel 1 made a more detailed survey of the fish, noting wound severity as he measured and tagged the fish and taking into consideration the amount of bleeding in the live tank. The observer on vessel 2 made his assessment as each fish was removed from the hook. The observations from vessel 2 were more consistent with the observations of wound severity at release made by troll observers during chinook salmon closures in the Alaska troll fishery (Davis et al. 1986).

TABLE 3.—Chinook salmon catch and mortality by vessel, lure type, and size-class (sublegal fish were smaller than 66 cm fork length).

Vessel	Lure type	Number of fish caught	Landings (%)	Mortality (%)
		Sublegal fish		
1	Hootchie	108	78.3	13.0
	Spoon	25	18.1	36.0
	Plug	5	3.6	20.0
2	Hootchie	97	42.2	13.1
	Spoon	125	54.3	36.8
	Plug	8	3.5	25.0
		Legal fish		
1	Hootchie	30	69.8	13.3
	Spoon	5	11.6	20.0
	Plug	8	18.6	25.0
2	Hootchie	20	40.0	5.0
	Spoon	28	56.0	3.6
	Plug	2	4.0	50.0

TABLE 4.—Total catch and mortality weighted by days held of chinook salmon by size-class, vessel, and condition. Conditions 1 and 2 are minor injuries and serious injuries, respectively. Sublegal fish were smaller than 66 cm fork length.

Condition	Vessel 1		Vessel 2	
	Catch (number)	Mortality (%)	Catch (number)	Mortality (%)
		Sublegal fish		
1	12	0.0	33	3.3
2	38	28.2	23	32.9
		Legal fish		
1	54	0.0	162	15.3
2	94	21.9	69	47.2

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If only the observations for vessel 2 were considered, mortality still was significantly different between wound-severity classifications ($P < 0.05$). Again, sample sizes required pooling the size-classes to compare the classifications. These pooled values are 13.3% mortality for slightly wounded and 43.6% mortality for severely wounded fish.

Total Hooking Mortality

When maximum-likelihood estimates of immediate and daily mortality rates were summed, the estimated total mortality was 24.5% for sublegal and 20.5% for legal fish (Table 5). The cumulative mortality over a 5-d period differed distinctly between size-classes. The rate for sublegal fish appeared to be approaching an asymptote, whereas mortality increased on days 4 and 5 for legal fish. This increase in mortality for legal fish was based on the deaths of only three fish that were weighted heavily because of small sample size (Table 5); this weighting also caused the estimate of total mortality to be considerably higher than the 13% of the legal catch that died during the study. The 95% confidence intervals for total mortality were 9.0–31.9% for legal fish and 20.1–29.0% for sublegal fish. The wide confidence interval for legal fish was due to the small sample size and variability of mortality for fish held 4–5 d.

Recalculation of Previous Mortality Estimates

To recalculate the mortality estimates of Butler and Loeffel (1972) for sublegal chinook salmon, a positive estimate of delayed mortality was used instead of the 0% delayed mortality assumed by those authors for maxillary-hooked fish. Few (34) fish were hooked in the maxillary (Table 2); therefore, fish with hooking injuries that resulted in low delayed mortalities (maxillary, snout, corner of the mouth, and cheek wounds) were pooled to derive a delayed-mortality rate applicable to maxillary-hooked fish. Of the 161 fish in these categories, 7 fish died (Table 2); the estimated delayed mortality was 4.3%, and the binomial 95% confidence interval was 1.2–7.5%. Pooling these fish seemed reasonable because (1) in the study by Butler and Loeffel (1972), tagged fish injured in locations other than the maxillary were recovered at lower rates than maxillary-hooked fish; (2) the confidence range of the pooled estimate included the delayed-mortality rate (5.9%) for the 34 fish hooked in the maxillary; and (3) no fish in the low-mortality category died after the day of capture (Table 2), indicating that delayed mortality due to hooking had been completely expressed for this group of fish.

TABLE 5.—Total numbers of chinook salmon caught and held for various time periods, numbers dying, and maximum-likelihood estimates of mortality. Sublegal fish are smaller than 66 cm fork length.

Time period	Number of days in sample	Number of fish		Maximum-likelihood estimate	
		Caught	Died	Mortality (%)	SD
Sublegal fish					
Immediate	10	398	40	10.0	1.51
Day 1	10	398	48	12.0	1.63
Day 2	8	323	4	1.2	0.61
Day 3	6	201	1	0.5	0.49
Day 4	4	131	1	0.8	0.77
Day 5	2	54	0	0.0	0.00
Sum			94	24.5	2.29
Legal fish					
Immediate	10	108	4	3.7	1.81
Day 1	10	108	5	4.6	2.01
Day 2	8	93	2	2.1	1.50
Day 3	6	65	0	0.0	0.00
Day 4	4	48	1	2.2	2.12
Day 5	2	30	2	7.9	4.82
Sum			14	20.5	5.85

Equation (4) was used to estimate the numbers of delayed deaths for each injury location, based on the tag recovery data reported in Table 5 of Butler and Loeffel (1972). When the correct equation was used, overall delayed mortality, expressed as a percentage of fish landed, increased from Butler and Loeffel's 5.1% to 14.1%, still with an assumed 0% delayed mortality for maxillary-hooked fish (Table 6). With incorporation of 4.3% delayed mortality for these fish, estimated delayed mortality for all groups rose further to 17.7% (Table 6). To complete the recalculation of Butler and Loeffel's (1972) data, their observation of 8.0% immediate mortality for 1,066 sublegal chinook salmon caught on barbed hooks was added to the delayed mortality estimate to arrive at an estimated total mortality of 25.7%.

Recalculation of the data reported by Wright (1970) for tag recovery by condition category for chinook salmon was carried out in a similar manner. In this case, the delayed-mortality rate of 9.9% observed for slightly wounded legal and sublegal fish caught by both vessels (Table 4) was used to replace the zero mortality for "good" fish assumed by Wright (1970). The resulting estimate was a total delayed mortality of 16.8%, based on the number of fish released. When an 8% immediate mortality was assumed, delayed mortality was

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TABLE 6.—Total catch and delayed mortality rates of sublegal chinook salmon (<66 cm fork length) by hooking location, based on tag recovery data reported by Butler and Loeffel (1972). Shown are the original rates reported by these researchers with the assumption that delayed mortality for maxillary-hooked fish was 0, the correct calculation of these values, and the recalculated rates incorporating 4.3% delayed mortality of maxillary-hooked fish.

		Delayed mortality					
		Original		Corrected		Recalculated	
Hooking location	Total caught	Number	%	Number	%	Number	%
Snout	234	6	2.6	17	7.3	26	11.1
Corner of mouth	444	27	6.1	75	16.9	90	20.3
Maxillary	280	0		0		12	4.3
Eye	158	33	20.9	91	57.6	94	59.5
Gills	55	7	12.7	21	38.2	22	40.0
Tongue	23	1	4.3	2	8.7	3	13.0
Cheek	442	11	2.5	31	7.0	48	10.6
Lower jaw	324	11	3.4	30	9.3	43	13.3
Isthmus	119	9	7.6	26	21.8	29	24.4
Combined	2,079	105	5.1	293	14.1	367	17.7

15.5%, based on the number of fish landed, and total mortality was 23.5%.

Discussion

Potential Sources of Bias

Are the mortality rates observed in this study representative of the mortality that actually occurs during a commercial troll fishery? Certain factors inherent in the study may have biased the observed rates. As in previous studies on hooking mortality, it was not possible to maintain a control group. Therefore, it is necessary to examine the degree and direction of the potential sources of bias.

During this study, each fish was landed and then stunned in an electronarcosis basket prior to removal of the hook. In an actual troll fishery, the hook is removed while the fish is either partially or completely out of the water. On one study vessel, the fish was lifted out of the water to the boat by the leader; on the other vessel, it was lifted out in the basket. These two techniques represent the extremes in the way a fish is normally handled when it is being released by a commercial fishing operator: some operators remove the hook without lifting the fish from the water, but others must first lift the fish out by the leader. However, there was no difference in mortality between vessels for a given lure type, suggesting that differences in release methodology are not important factors influencing mortality.

If released fish are likely to be attacked by predators before they recover from the shock of hooking, then holding the fish during this study reduced mortality and biased the results. None of our dead fish tethered to simulate stunned fish were damaged or removed by predators, however. A hooked fish is probably more at risk of predator attack than one that is floating or sinking because it is among an array of lures that may attract a predator, and its struggling against the hook and line gives visual and vibrational cues for a potential predator. Only one (0.2%) chinook salmon caught during this study was bitten by a predator. From 1978 to 1981, troll fishermen in southeastern Alaska reported that 0.6–1.9% of their catch of coho salmon and chinook salmon was mutilated by predators (Krygier 1982). Fishermen who encounter high predation, which is typically a localized problem, minimize it by moving to another area (Krygier 1981). These observations do not mean that dying or severely damaged fish are not more susceptible to predation than uninjured fish. They do suggest that fish with minor injuries are not normally exposed to immediate predation mortality that we avoided by holding the fish.

Electronarcosis, tagging, transfer, and holding may stress the fish enough to increase mortality. However, evidence indicates that electronarcosis, tagging, and holding the fish in net-pens do not cause mortality. No deaths occurred among 50 pen-reared chinook salmon that were hooked on sportfishing gear, landed in the electronarcosis basket, tagged, and held for 19 d in a large net-pen (J. A. Orsi, Auke Bay Laboratory, personal communication). Chinook salmon are routinely cultured in net-pens, indicating the pens provide an adequate environment for these animals. Although it is arguable whether comparisons between cultured fish and wild animals are appro-

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priate, no chinook salmon hooked in the snout, maxillary, corner of the mouth, or cheek died after the first day of this study. Milne and Ball (1956) reported 89% survival for coho salmon that were held for 35 d in a pen of an undisclosed size after being caught on troll gear and held in live tanks on a troller for 1–6 h.

There is evidence that holding fish in small live tanks increases mortality for troll-caught chinook salmon. Fry and Hughes (1951) found a tenfold decrease in tag recovery rates when chinook salmon were held in live tanks overnight rather than being tagged and immediately released. Parker and Black (1959) reported 71% mortality for tagged chinook salmon caught on commercial troll gear and held up to 11 h. They included only fish with superficially minor injuries in their study. In contrast, with holding times of up to 5 d, less than 25% mortality was observed in the present study for all fish, including those severely injured and dead at landing. These results support the conclusion of Ellis (1964) that holding fish in live tanks for extended periods caused stress that contributed to the mortality observed by Parker and Black (1959). In the present study, a significant, albeit weak, relationship existed between mortality and time in the live tanks, even though time in the live tanks never exceeded 1 h. Therefore, it must be assumed that holding the fish in the live tanks caused some unquantified, positive bias to the observed mortality.

Another possible bias is that all mortality due to hooking injuries may not have occurred by the end of the holding period. Parker et al. (1959) reviewed experiments in which troll-caught fish were held in live tanks, and concluded that mortality due to hooking occurred within 6 h. Their findings were based primarily on fish with superficially minor injuries. In the present study, 10–12 fish, all of which had an eye torn out or destroyed by hooking, were observed swimming sluggishly at the surface at the end of both 5-d holding periods. It is unlikely that a high proportion of immature fish with this type of injury would survive. From 1984 to 1986, 2,954 adult chinook salmon returning to the National Marine Fisheries Service experimental hatchery at Little Port Walter were examined for hooking scars; 170 scars were attributed to hooking, but no fish were observed with only one functioning eye (F. P. Thrower, Auke Bay Laboratory, personal communication). The eye is not necessarily destroyed on all fish hooked through the orbit. In the present study, an observer on one of the trollers examined a small sample (17) of eye-hooked fish and noted that the eye in 65% of these fish had been destroyed (burst or torn out). The observed mortality rates for eye-hooked fish in this study were 26% for sublegal fish and 16% for legal fish (Table 3); weighted for days held, these rates were 26.5% and 25.4%, respectively. Additional mortality of fish in this wound category would likely occur subsequent to the end of the study.

Comparison with Recalculated Estimates

The general agreement between the estimates generated in this study and the recalculated estimates from previous studies is strong evidence that the estimates are good representations of the actual mortality rate, and that the biases previously identified for the current estimates are either small or compensatory. The mortality rates for sublegal chinook salmon are similar to those recalculated from tagging data from Butler and Loeffel (1972). As would also be expected if the rates were representative, the estimated rates for the two size-classes of fish in the present study were intermediate between these recalculated from tagging data of Wright (1970). This consistency between the two types of studies supports the conclusions of Wright (1970) that estimates of hooking mortality above 30% are probably excessive because they are based on experiments in which seriously injured fish were included among total mortalities or based on experiments in which stress caused by holding fish in tanks may have contributed to observed losses.

The recalculated tagging data of Butler and Loeffel (1972) may represent the best estimate of hooking mortality of sublegal fish. Tag recovery data are not biased by continued delayed mortality after an experiment ends, because they represent fish that survived to be caught or recovered during spawning runs. To estimate hooking-related mortality from such data, it need only be assumed that the effects of handling are similar across all wound categories. Substitution of observed mortality rates for fish with minor injuries in this study for the zero delayed mortality of maxillary-hooked fish assumed by Butler and Loeffel (1972) eliminated a source of bias in the original estimates derived from the tagging data. The recalculations give conservative estimates of mortality, because they incorporate any positive bias due to experimental handling of the fish. The gear used by Butler and Loeffel (1972) included a wider range of hook sizes (5/0 to 7/0) than used in this study (6/0), so the 26% rate calculated from the tagging data may

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apply to the incidental catch of sublegal chinook salmon during directed commercial trolling for chinook salmon, as well as to fish caught incidentally during chinook salmon closures.

The observed mortality of legal fish was lower than that of sublegal fish. Previous studies (e.g., Parker and Kirkness 1956; Loeffel 1961; Davis et al. 1986) concluded that large fish were less severely affected by hooking than smaller fish, based on the lower incidence of dead and seriously injured legal fish. In contrast, the incidence of dead and seriously injured fish in this study was actually higher for legal than sublegal fish. However, the relationship between size and mortality and the lower estimate of total mortality do indicate a lower mortality for larger fish. The mortality rate for legal fish observed in this study has a wide (9–31%) confidence interval because of the small sample size, and the mean size of the legal fish was only 73 cm fork length (77 cm total length). More research is needed on the relative mortality of legal and sublegal chinook salmon to accurately define the differences. At this time, the 20% mortality estimate from this study is a reasonable figure to use for legal chinook salmon incidentally hooked during closures because (1) mortality of legal chinook salmon appears to be lower than that of sublegal chinook salmon, and (2) the estimate of mortality for sublegal chinook salmon from this study is similar to the estimate calculated from tag recovery data.

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Acknowledgments

I thank the following individuals who assisted in the field work for this study: the Hawk Inlet "regulars"—Joe Orsi, Adrian Celewycz, Herb Jaenicke, and Karen Hanson; and the "short-timers"—Roy Martin, Doug Mecum, Don Mortensen, and Joyce Landingham. I appreciate the efforts of Jim Whistler, skipper of the R/V *Murre II*, in transporting the pen to a remote area and providing a support platform for skiff operation and diving. I gratefully acknowledge the guidance and assistance with the statistical analysis provided by Steve Ignell and Jerry Pella. Not least, I thank the fishermen who caught the fish; the cooperative attitudes and fishing abilities of Bob and Jenny Earl, F/V *Northern Diver*, and of Jim and Carol Goddard, F/V *Lila C*, were essential to the success of this study.

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Fisheries Research, 15 (1993) 339–356
Elsevier Science Publishers B.V., Amsterdam

Mortality of coho salmon caught and released using sport tackle in the Little Susitna River, Alaska

Doug Vincent-Lang, Marianna Alexandersdottir and Doug McBride
Alaska Department of Fish and Game, Sport Fish Division, 333 Raspberry Road, Anchorage, AL 99518, USA

(Accepted 21 May 1992)

ABSTRACT

Vincent-Lang, D., Alexandersdottir, M. and McBride, D., 1993. Mortality of coho salmon caught and released with sport tackle in the Little Susitna River, Alaska. *Fish. Res.*, 15: 339–356.

Coho salmon (*Oncorhynchus kisutch*) were caught with sport gear in the estuary of the Little Susitna River, southcentral Alaska. Fish were double marked and released. All coho salmon observed migrating through a weir above the estuary and a portion caught in a sport fishery below the weir were examined for marks. A second group of coho salmon were caught using similar sport gear above the estuary. These fish were handled and marked identically as the fish captured in the estuary, except that they were held in a holding pen at the weir with an equal number of coho salmon dip netted at the weir. Coho salmon which were caught and released in the estuary suffered a significantly higher rate of mortality (69%) than did either the coho salmon caught and held above the estuary (12%) or those which were dip netted and held at the weir (1%). Factors that could influence rates of hook-induced mortality were measured at the time of hooking. Hook location, hook removal, and bleeding significantly affected the measured mortality rate.

INTRODUCTION

In many sport fisheries, anglers are asked to release all or a portion of the fish they catch. This management strategy is commonly called 'catch-and-release' (Pettit, 1977). Catch-and-release is a generally accepted and widely applied management tool in sport fisheries across North America (Reingold, 1975; Pettit, 1977; Johnson and Bjorn, 1978; Hunt, 1981; Anderson, 1982; Jones, 1982; Anderson and Nehring, 1984). It is a tool which enables managers to continue maximizing the opportunity to participate in recreational fisheries while reducing mortality to what can be termed 'catch-and-release

Correspondence to: D. Vincent-Lang, Alaska Department of Fish and Game, Sport Fish Division, 333 Raspberry Road, Anchorage, AL 99518, USA.

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mortality'. In this way, the economic value of recreational fishing is not jeopardized as the opportunity to participate is not reduced (Clawson, 1965; Gordon et al., 1973). The mortality associated with a catch-and-release fishery is a cost that must be considered when developing a management strategy for specific sport fisheries (Cutter, 1974; Anderson, 1975; Wydoski, 1977).

In contrast to resident fish populations (Klein, 1965; Hunsaker et al., 1970; Wydoski et al., 1976; Dotson, 1982; Schill et al., 1986), little quantitative information is available describing catch-and-release mortality in sport fisheries for Pacific salmon (*Oncorhynchus* sp.) (Warner, 1976, 1978; Warner and Johnson, 1978; Warner, 1979). Many salmon sport fisheries are conducted with bait, a practice which has been shown to result in high mortality rates for resident fish (Hunsaker et al., 1970; Wydoski, 1977; Warner and Johnson, 1978).

The Little Susitna River supports the second largest freshwater sport fishery for coho salmon (*Oncorhynchus kisutch*) in Alaska (Mills, 1988). Fishing effort has tripled and harvests of coho salmon have doubled since 1981. Most of the fishing effort and harvest of coho salmon is concentrated in the estuary of the river (Bartlett and Conrad, 1988). Anglers predominantly fish with bait in the estuary (Bentz, 1987) and release about 13% of the coho salmon caught in the estuary (Bentz, 1987; Bartlett and Conrad, 1988). Managers have raised concern that these released fish suffer high mortality rates (Bentz, 1987).

The objectives of this study were to estimate the short-term (5 day) rate of mortality of coho salmon caught and released in and above the estuary of the Little Susitna River and estimate the effects that several hooking factors have on observed rates of hook-induced mortality.

STUDY AREA

The Little Susitna River is a clearwater tributary to Upper Cook Inlet, Alaska (Fig. 1). The river is approximately 180 km in length and has a drainage area of approximately 1000 km^2. The river has an average stream flow of approximately 6 $m^3 s^{-1}$, with winter flows typically less than 2 $m^3 s^{-1}$ and peak summer flows near 30 $m^3 s^{-1}$. During the study, stream flows ranged from 10 to 20 $m^3 s^{-1}$. In the study area, the river has a channel gradient of approximately 1.0 m km^{-1} and channel widths of approximately 25–30 m. Depths in the study area range from less than 1 to 2 m, depending upon stream flow.

METHODS

Three hundred and eighty-four coho salmon were caught in the estuary using sport gear from 20 July through 18 August 1988. All coho salmon were

hook-induced mortality. However, if true, then our estimate of hook-induced mortality from the estuary fishery is conservative, as recoveries from the sport fishery are assumed to be survivors in this analysis.

Mortality rates

The measured rate of hook-induced mortality for coho salmon caught by anglers using bait in the estuary of the Little Susitna River (69%) is higher than mortality rates reported in the literature for bait-caught fish while the measured mortality rate for coho salmon caught above the estuary of the Little Susitna River (12%) was lower than rates reported in the literature. Warner and Johnson (1978) found that landlocked Atlantic salmon *Salmo salar* caught with bait suffered a mortality rate of 35%. Wertheimer (1988) estimated hooking mortality for troll-caught chinook salmon *Oncorhynchus tshawytscha* to be 20.5–24.5%. Bendock and Alexandersdoitter (1991) found that the mortality of chinook salmon caught in the estuary of the Kenai River using baited sport tackle was less than 10%. Rates of hook-induced mortality for brown *Salmo trutta* and brook *Salvelinus fontinalis* trout (Shetter and Allision, 1958), cutthroat trout *Salmo clarki* (Hunsaker et al., 1970), and rainbow trout *Oncorhynchus mykiss* (Shetter and Allision, 1958; Stringer, 1967; Klein, unpublished data, 1974) caught with bait ranged from 20 to 48%. In combination, these data suggest that release mortality of coho salmon caught with bait in estuarine waters is higher than for other species of salmon and trout.

Factors influencing hook-induced mortality

The factors which influenced observed rates of hook-induced mortality during this study were hook location, hook removal, and bleeding. Hook location has been reported in the literature to influence hook-induced mortality. Rainbow trout (Stringer, 1967), brook trout (Shetter and Allision, 1958), and landlocked Atlantic salmon (Warner, 1979) hooked in the gullet or gills suffered higher rates of mortality than when hooked in other locations. Wertheimer (1988) reported that wound location was associated with mortality in troll-caught chinook salmon. Wertheimer (1988) also reported that wound severity was related to mortality. Warner and Johnson (1978) observed that 86% percent of the landlocked Atlantic salmon that were bleeding later died, and that there was a probable relationship between hooking location and bleeding. Mason and Hunt (1967) and Hulbert and Engstrom-Heg (1980) showed that removal of hooks from deeply hooked rainbow and brown trout resulted in higher mortality than when the hook was left in place. Nearly 95% of the rainbow trout and 60% of the brown trout died when the hook was removed in comparison with just over 30% and 20%, respectively, when the

hook was not removed. Although increased play and handling time (Marnell and Hunsaker, 1970; Wedemeyer, 1972; Hattingh and van Pletzen, 1974); and scale loss (Black, 1957, 1958) have all resulted in increased rates of mortality, these factors did not significantly influence rates of hook-induced mortality in our study.

The degree of mortality suffered by coho salmon in the Little Susitna River appeared to be related to the location of catch in the river. Fish that were caught and released in the estuary suffered significantly higher rates of mortality (69%) than did fish caught and released above the estuary (12%). This appears in part to be due to the higher incidence of gill or gullet hookings in the estuary than above the estuary. Identical gear was used to catch fish in both areas, suggesting that coho salmon are more likely to become hooked in a lethal location in the estuary than above the estuary. We could not find any explanations for this in the literature. One possible explanation, however, may be that coho salmon in the estuary are still actively feeding and as a result, strike more aggressively at the bait, than do fish which are above the estuary and are off the feed. Although not specifically measured in this study, participants reported an increased aggressive behavior of salmon in the estuary compared with those above the estuary.

Other hooking factors also appeared to contribute to the high rate of hook-induced mortality for coho salmon caught in the estuary of the Little Susitna River. For instance, our data showed that estuary-caught fish hooked in a non-lethal location were more likely to survive and reach the weir if their hook was removed. Because we did not remove deeply embedded hooks from the coho salmon we caught in the estuary, this practice likely contributed to the high measured mortality for estuary-caught fish. We also observed that a large number of coho salmon handled in the estuary easily lost their scales, while those at the weir did not lose their scales as readily when handled. In the estuarine experiment, scale loss was not significant, but high scale loss has been observed to be a contributing factor to increased mortality in other studies. Black (1957, 1958) found that scale loss and abrasion of the mucus coat were major factors contributing to observed rates of mortality.

Various environmental factors can influence rates of hook and release mortality of sport-caught fish, one of which is temperature. Increased temperature at time of hooking and play has been shown to increase the mortality rate of sport-released fish (Dotson, 1982). In this study, water temperatures were relatively constant (only a 3 °C variation) between areas of the river sampled. Given this, we believe that temperature probably did not influence the differences in mortality rates of coho salmon hooked and released in different areas of the river during this study. Also, the observed temperatures recorded during this study were relatively cool (10–13°C) in comparison with other studies, suggesting that the mortality rates observed in this study may be minimum rather than maximum rates.

MANAGEMENT IMPLICATIONS

The rates of hook-induced mortality observed in this study for coho salmon show that the mortality of released coho salmon in intertidal sport fisheries is high. This is especially important in intertidal fisheries which have a large catch-and-release component. In such fisheries, catch-and-release may not be a viable management option.

ACKNOWLEDGEMENTS

The authors wish to thank Larry Bartlett for his overview of the field data collection aspects of this project. The authors also wish to thank Bob Conrad for his help in designing the study. Lastly, the authors wish to thank Kelly Helper and Andrew Hoffmann for their help with data analysis.

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SPECIAL REGULATIONS FOR INDIVIDUAL DRAINAGES

Unless listed below, seasons, bag, and possession limits are shown under GENERAL REGULATIONS on page 22.

CHITINA RIVER DRAINAGE

King salmon: Open season July 1–August 10

Chokosna River

Closed to king salmon fishing

Lakina River and all flowing waters within ¼-mile radius of its confluence with the Chitina River:

Closed to king salmon fishing

Gilahina River and all flowing waters within ¼-mile radius of its confluence with the Chitina River:

Closed to king salmon fishing

COPPER RIVER DRAINAGE—*downstream of the upstream bank of the Klutina River*

King salmon:

- Open season July 1–August 10
- See specific regulations for Klutina and Tonsina rivers on pages 25 and 26.

COPPER RIVER—*mainstem only*

- Bait and artificial lures permitted, including treble hooks.

COPPER RIVER—*mainstem and flowing waters* of east bank Copper River tributaries, and in flowing waters of west bank Copper River tributaries downstream of the Richardson Highway and Glenn Highway (Tok Cutoff), *excluding* the Gulkana River:

- Burbot may be taken in the mainstem Copper River with more than one line and hook, as specified on page 22 under "Setlines—for burbot."

FISH CREEK (tributary to Mentasta Lake)

Closed to salmon fishing

If you fish in catch-and-release waters or intend to release your fish, **please use barbless hooks or crimp the barbs on your barbed hooks.**



GAKONA RIVER—clearwater tributaries, including all flowing waters within ¼-mile radius of their confluence with the Gakona River

Closed to king salmon fishing

GULKANA RIVER DRAINAGE—*The following regulations apply to all waters of the Gulkana River drainage, unless specified otherwise in the Gulkana River Drainage Specific Waters Regulations.*

- Entire year: Only unbaited, single-hook, artificial lures may be used.

Rainbow/steelhead trout:

- Catch-and-release only for the entire year. All rainbow/steelhead trout caught must be released immediately.

Arctic grayling:

- 5 per day, 5 in possession. **Only one 14" or longer** may be possessed or retained as part of the daily bag and possession limit. See special regulations for waters upstream of Paxson Lake (waters of Paxson Lake within a 100 yd radius of the mouth of the East Fork, waters of the East Fork Gulkana River, Summit Lake, and Gunn Creek drainage).

GULKANA RIVER DRAINAGE SPECIFIC WATERS REGULATIONS:

See maps on pages 28-29.

Gulkana River mainstem—downstream of the downstream edge of the Richardson Highway Bridge to an ADF&G marker about 500 yd downstream of its confluence with the Copper River:

- June 1–July 31: Only unbaited, single-hook, artificial flies allowed, with gap between point and shank that does not exceed ¾ inch. Additional weight may only be used 18 inches or more ahead of fly. A bead fished on the line above a bare hook or a single bare hook is not an artificial fly.
- August 1–May 31: Only unbaited, single-hook, artificial lures may be used.

Gulkana River mainstem—upstream of the upstream edge of the Richardson Highway Bridge to an ADF&G marker 7½ miles upstream of the West Fork confluence:

- June 1–July 19: Bait and artificial lures are permitted, including treble hooks.
- July 20–May 31: Only unbaited, single-hook, artificial lures may be used.

West Fork Gulkana River—flowing waters upstream from an ADF&G marker ½ mile upstream of the confluence of the West Fork and mainstem Gulkana:

- August 1-December 31: The bag and possession limit for sockeye salmon is 6 per day, 6 in possession. The bag and possession limit for the remainder of the year is 3 (three) sockeye salmon.

Crosswind Lake:

- April 16–October 31: Only unbaited, single-hook, artificial lures may be used.
- November 1–April 15: Single hooks only, bait may be used.

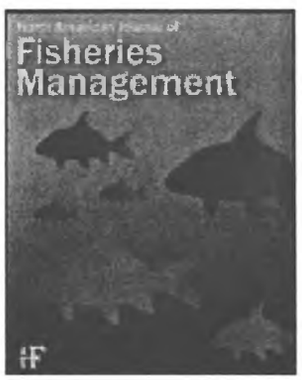
New as of 2012

Lake trout:

- Entire year, 1 per day, 1 in possession, **no size limit.**

Upper Copper-Upper Susitna drainages

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North American Journal of Fisheries Management

Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/ujfm20

Hooking Mortality of Chinook Salmon Released in the Kenai River, Alaska

Terry Bendock [a] & Marianna Alexandersdottir [b]

[a] Alaska Department of Fish and Game, Sport Fish Division, 34828 Kalifornsky Beach Road, Suite B, Soldotna, Alaska, 99669, USA

[b] Washington Department of Fisheries, 115 Government Administration Building, AX-11, Olympia, Washington, 98504, USA

Version of record first published: 08 Jan 2011.

To cite this article: Terry Bendock & Marianna Alexandersdottir (1993): Hooking Mortality of Chinook Salmon Released in the Kenai River, Alaska, North American Journal of Fisheries Management, 13:3, 540-549

To link to this article: http://dx.doi.org/10.1577/1548-8675(1993)013<0540:HMOCSR>2.3.CO;2

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North American Journal of Fisheries Management 13:540–549, 1993
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Hooking Mortality of Chinook Salmon Released in the Kenai River, Alaska

TERRY BENDOCK

Alaska Department of Fish and Game, Sport Fish Division
34828 Kalifornsky Beach Road, Suite B, Soldotna, Alaska 99669, USA

MARIANNA ALEXANDERSDOTTIR

Washington Department of Fisheries
115 Government Administration Building, AX-11, Olympia, Washington 98504, USA

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Abstract.—Short-term (5-d) mortality of chinook salmon *Oncorhynchus tshawytscha* caught and released in the Kenai River was assessed with radiotelemetry. From 1989 to 1991, 446 adult chinook salmon were tagged with radio transmitters in four experiments. Overall hooking mortality averaged 7.6% and ranged from 10.6% in 1989 to 4.1% in 1991. Mortality was highest for small males (<750 mm mid-eye length) compared with large males and all females. Wound location and bleeding were the factors principally associated with mortality. Survival of chinook salmon that were hooked in the gills or were bleeding was significantly reduced; however, the frequency of these injuries was small in all experiments. Most mortalities occurred within 72 h of release. These results support the use of hook-and-release regulations in similar freshwater chinook salmon fisheries to reduce sportfishing mortality effectively and achieve spawning escapement goals.

A widespread and successful strategy for managing commercial fisheries for Pacific salmon *Oncorhynchus* spp. is to achieve a desired spawning escapement by manipulating fishing mortality (Minard and Meacham 1987). Implicit in this management strategy is an ability to estimate the in-river abundance of fish. This strategy was recently adopted for the Kenai River, which sustains the largest recreational fishery for chinook salmon *Oncorhynchus tshawytscha* in Alaska. The Kenai River supports two runs of chinook salmon (Burger et al. 1985). Separate escapement goals have been developed for the early run (May–June) and the late run (July–August). Hydroacoustic assessment (sonar) is used to estimate the in-river abundance of chinook salmon, and fishing mortality is estimated from a creel survey. The difference between these two estimates equals the spawning escapement. Management options for the recreational fishery, such as mandatory catch-and-release fishing, restrictions on the use of bait, and total fishery closures, are used to regulate the harvest of chinook salmon to achieve escapement goals for each run.

The Kenai River enjoys a wide reputation for abundant catches of large chinook salmon. As the fishery expanded during the 1980s and bag limits were reduced, voluntary catch-and-release fishing emerged as a popular method to selectively harvest trophy-sized fish. By 1988, the Alaska Department of Fish and Game estimated that the released component of the early-run catch was equivalent to 73% of the spawning escapement. The rapid growth of catch-and-release fishing and the likelihood of using it to achieve spawning escapement goals raised concerns among anglers and fishery managers over the mortality of released fish. Few studies are available on hooking mortality of salmon in freshwater (Wydoski 1980; Mongillo 1984). Estimates of hooking mortality for chinook salmon in marine fisheries vary widely, ranging from 20.5% (Wertheimer 1988) to 71% (Parker and Black 1959). If hooking mortality were high in the Kenai River, the spawning escapement could be seriously underestimated.

The objective of our study was to estimate the short-term (5-d) mortality rate for chinook salmon that were hooked and released in the Kenai River recreational fishery. In this study, we used radiotelemetry to monitor the daily locations of chinook salmon and a matrix of criteria based on telemetry signals and movement behavior to estimate the fates of tagged fish. Associations between mortality and biological and fishery variables were also examined. Based on our results, we discuss the appropriateness of catch-and-release angling as a management option for Kenai River chinook salmon.

Study Site

The Kenai River (Figure 1) is a glacial stream that flows west 136 km across the Kenai Peninsula lowlands before reaching Cook Inlet in south-central Alaska. The river drains an area of approxi-

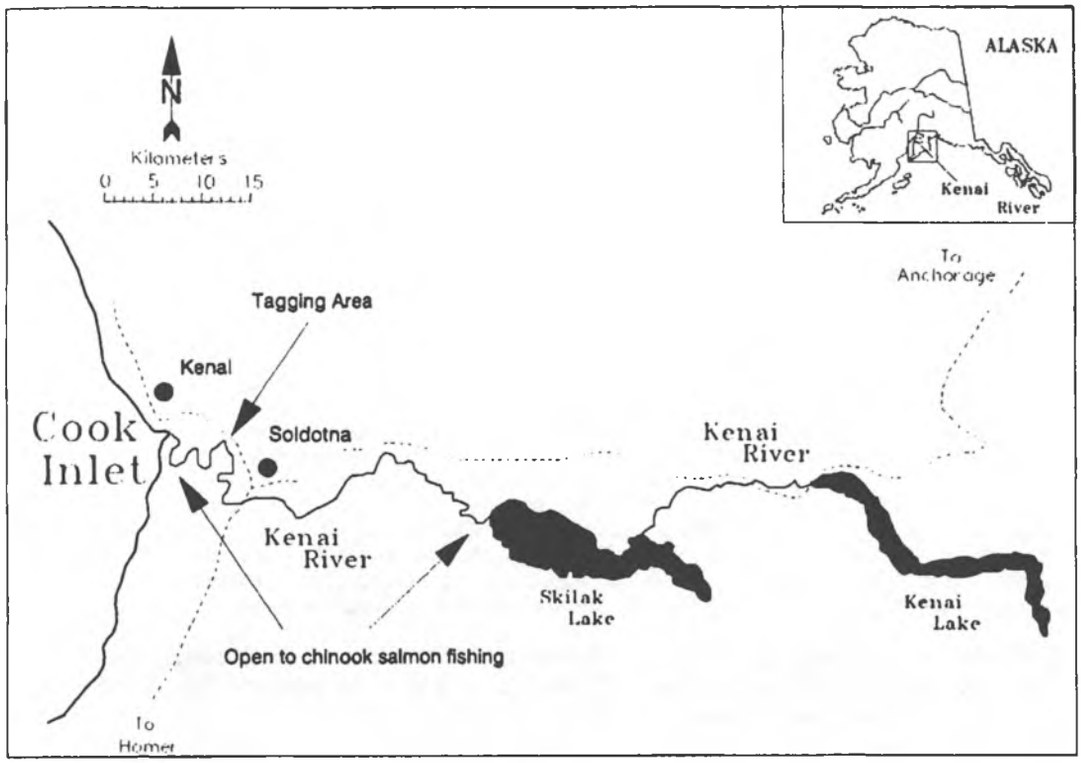


FIGURE 1.—Map of the Kenai River drainage in south-central Alaska.

mately 5,700 km^2 and has a mean annual flow of 160 m^3/s (Scott 1982). Flows are highest in summer due to glacial meltwater; however, peak discharges from glacier-dammed lakes may occur throughout the year. Changes in stream temperature and discharge are moderated by the presence of two large lakes that are intersected by the mainstem Kenai River.

In recent years, up to 26% of the total statewide fishing effort has occurred in the Kenai River drainage. Much of that effort (annual mean, 473,320 angler-hours) is directed at chinook salmon, resulting in a mean annual harvest of 17,223 fish since 1985. Most chinook salmon are caught by anglers fishing from small outboard-powered boats. Fishing takes place throughout the lower 80 km of the main stem; however, 82% of the chinook salmon fishing effort and 88% of the harvest occurs in a 19-km reach of the lower river where our study was conducted.

Methods

Experimental design and assumptions.—The turbidity of the Kenai River prevents direct observation of study animals. The absence of weirs or similar structures and the remoteness of many spawning areas makes the recovery of marked-and-released fish problematic. We used radiotelemetry to identify and locate individual fish, and determine their fates following release. Thus, the mortality we estimate includes effects of handling and tagging. Although radiotelemetry has been used to study chinook salmon spawning and migratory behavior (Liscom et al. 1978; Gray and Haynes 1979; Burger et al. 1985; Eiler 1990), we are not aware of other studies that have used radiotelemetry to estimate hook-and-release mortality.

Radiotelemetry provided a means of estimating the mortality of fish that were released back into the river after hooking, unlike most hooking mortality studies, in which the study population is confined. Daily records of fish locations and status allowed determination of survival of tagged fish, and methods of survival and analysis (Cox and Oates 1984) accounted for removal of animals from the study (tagged fish could be retaken in the fishery or removed from the population of tagged fish if tag failure or emigration occurred). We estimated mortality during the 5 d following hook and release because up to 95% of salmonid hooking

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mortality has occurred within 48 h of capture in previous studies (Warner 1979; Mongillo 1984).

Attenuation of radio signals is high in salt water (Stasko and Pincock 1977) and there is some evidence that hooking mortality of salmon is higher in salt water than in freshwater (Parker et al. 1959). Consequently, we limited our tagging to a 4.8-km reach of the lower Kenai River that corresponded to the upper limit of tidal influence but was 5–6 km above salt water. We assumed that all fish had a similar opportunity to acclimate to freshwater before entering the study.

Tagging was carried out in four experiments; two replicates for each run of Kenai River chinook salmon provided four separate estimates of survival and an estimate of annual variability. Separate mortality experiments were conducted during the early runs in 1990 and 1991, and the late runs in 1989 and 1990. We attempted to tag 100 fish in each experiment and to deploy the tags in equal weekly proportions throughout each run.

Major assumptions of this study were (1) there was no tagging or natural mortality, (2) fish did not loose their tags, and (3) tags that were detached for reasons other than hook-and-release mortality or that we failed to locate were a random subset of the total sample.

Radiotelemetry.—We used low-frequency transmitters (48–50 MHz; Advanced Telemetry Systems, Inc., Isanti, Minnesota) that had unique radio frequencies separated by 10 kHz. Transmitters measured approximately 20 × 70 mm and had a 350-mm external wire antenna and a battery life of 85 d. Transmitters operated in one of three modes based on pulse rates: (1) normal, indicated by 1 pulse/s and maintained by intermittent movement of the tag; (2) mortality, indicated by 2 pulses/s and triggered when the tag was motionless for 6 h; or (3) active, indicated by the addition of pulses in the normal mode that resulted from exaggerated or rapid movement of the tag (Eiler 1990).

Transmitters were mounted on the right side of each fish beneath the anterior half of the dorsal fin. Nickle pins (7.6 mm), epoxied to each end of the tags, were inserted through the fish's musculature and securely tied against 2.5-cm plastic Petersen discs.

We located tagged fish daily from a Piper Super Cub (PA-18) aircraft that had a directional loop antenna mounted to the left wing jury strut. Aerial tracking was conducted at approximately 105 km/h and 300 m above the water surface. A programmable receiver scanned for frequencies at 2-s intervals, and the location of each fish was estimated to be under the point of maximum acoustic signal strength. Fish activity was recorded as either normal, active, or nil, depending upon transmitter pulse rates. We continued to locate tagged fish for up to 60 d or until a final fate for each fish could be estimated.

Fish acquisition and processing.—Fish used in our study were caught by recreational anglers. We did not attempt to influence the methods or terminal gears used to capture fish; however, a single-hook artificial lure requirement was in place during the 1990 and 1991 early-run fisheries. Our tagging crew, working from a small boat, started a stopwatch when a fish strike was observed. We subsequently inquired if the angler intended to release the fish and, if so, whether we could equip the fish with a radio transmitter. Fish that were obtained in this manner were played to the angler's boat and placed in a landing net. The leader was cut, and the fish and net were passed to the tagging boat without being removed from the water. Our crew started a second stopwatch to record the handling time, removed the fishing tackle, noted the location(s) of hook wound(s), and transferred the fish to a tagging cradle. Fish were not anesthetized, nor were they removed from the water during capture, transfer, or handling. All fish obtained in this manner were tagged and released regardless of the apparent severity of hooking injuries. Biological and fishery variables were recorded for each angling event (Table 1). When tagging and processing were concluded, the cradle was opened and fish were allowed to swim away.

Determining fates of tagged fish.—Each fish was assigned a 5-d and a final fate (Table 2). Tag recoveries from sport, commercial, and subsistence fisheries, interpretations of daily movements, and radio transmission modes were used to estimate fates. Five-day fates could not be established in some cases until later in the experiment due to the tendency of some fish to mill for extended periods in the lower river. The following three classifications defined fates at the end of 5 d.

(1) Survived—fish that sustained upstream movement, transmitted radio signals in either active or normal modes, or were harvested after the 5-d period.

(2) Died—fish that failed to move upstream from the intertidal area at river kilometer (rkm) 19.3, transmitted radio signals in the mortality mode, or were recovered dead (still tagged) within 5 d of release.

(3) Censored—fish removed from the study due

TABLE 1.—Summary of values for biological and fishery variables recorded during each hook-and-release event in the Kenai River, Alaska, 1989–1991.

Variable	1989 Late run (N = 100)	1990 Early run (N = 125)	1990 Late run (N = 120)	1991 Early run (N = 101)	All runs (N = 446)
Sex					
Male	56	69	89	53	267
Female	44	56	31	48	179
Mean mid-eye length (mm)					
Males	854	904	704	836	819
Females	1,003	936	957	911	948
Guided angler					
Yes		96	66	72	234
No		29	54	29	112
Angling method					
Back-troll	8	125	26	101	260
Drift	92	0	91	0	183
Back-bounce	0	0	3	0	3
Terminal gear					
Bait	0	0	0	0	0
Artificial lure	15	125	23	101	264
Bait and lure	85	0	97	0	182
Hook type					
Single	94	122	106	87	409
Treble	6	3	14	14	37
Number of hooks					
One	1	119	9	81	210
Two	99	6	111	20	236
Hooking location					
Gill, eye, tongue	9	8	1	6	24
Jaw, snag	91	117	119	95	422
Hooks removed					
Yes	97	112	112	93	414
No	3	13	8	8	32
Bleeding					
Yes	11	26	15	18	70
No	89	99	105	83	376
Sea lice					
Yes	79	93	101	84	357
No	21	32	19	17	89
Condition					
Vigorous	91	120	116	100	427
Lethargic	9	5	4	1	19
Mean handling time (min)	17.0	14.8	14.8	14.7	15.3

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to factors other than hook-and-release mortality, such as harvest in the recreational fishery, commercial fishery, or two in-river gill-net fisheries; fish that returned to salt water and were not subsequently located; and fish that were never located following release.

The most difficult determination of fate was estimating mortality. Because radio transmitters occasionally provided ambiguous evidence of fish death, we developed the following series of decision rules to help determine fate 2.

(2a) If a carcass was recovered within 5 d, the fish was allocated to hook-and-release mortality.

(2b) If a fish consistently moved upstream at any time during and after the first 5 d, it was considered a survivor (regardless of signal mode).

(2c) If a fish remained immobile, transmitted a mortality signal within 5 d, and continued to transmit in the mortality mode thereafter, the fish was considered a hook-and-release casualty regardless of river kilometer of location.

(2d) If a fish remained immobile in the intertidal area below rkm 19.3 within 5 d of release and remained immobile or moved slowly downstream, the fish was considered a hook-and-release casualty regardless of signal mode.

The first two rules (2a and 2b) are unambiguous; tracking a fish farther and farther upstream was

TABLE 2.—Fates of radio-tracked chinook salmon caught and released in the Kenai River, Alaska, 1989–1991. Small males were less than 750 mm (mid-eye length), and large males were 750 mm or longer.

Fate	Late run 1989			Early run 1990			Late run 1990			Early run 1991			
	Small males	Large males	Females	Small males	Large males	Females	Small males	Large males	Females	Small males	Large males	Females	Total
First 5 d													
Died[a]	4	3	2	3	2	6	6		1	2		2	31
Survived	17	24	22	14	49	49	55	23	28	12	37	45	375
Gill-net harvest	4	2	8		1		2			1	1	1	20
Sport harvest		2	11			1	1	1	1				17
Dropout[b]							1	1					2
Unknown[c]			1										1
Total	25	31	44	17	52	56	65	25	30	15	38	48	446
End of season													
Died[d]	4	3	2	4	2	9	6		1	3		3	37
Spawner	11	14	15	12	43	39	34	15	22	8	33	36	282
Gill-net harvest	4	4	10		2		7	4	1	2	1	1	36
Sport harvest	2	8	12		3	6	6	3	3	1	3	1	48
Tag failure							1				1	1	3
Dropout[b]	4	1	2	1	1	1	6	3	1			3	23
Upstream, lost[e]		1	2		1	1	5		2	1		3	16
Unknown			1										1
Total	25	31	44	17	52	56	65	25	30	15	38	48	446

[a] Fish that died within 5 d are classified as hook-and-release mortalities.
[b] Fish that returned to salt water and were not subsequently located.
[c] Tagged fish that we never relocated.
[d] Some fish were classified as dead that died after 5 d but prior to spawning.
[e] Fish that moved upstream and subsequently stopped transmitting a signal.

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considered proof of survival. Rules 2c and 2d are necessary because transmitter mortality signals did not provide a clear indication of death. We observed mortality signals even in instances when fish were consistently located farther and farther upstream. Transmitters could also transmit several days of mortality signals while the fish remained immobile, then suddenly resume a normal signal while the fish moved upstream. Transmitters on stationary fish could transmit a mixture of mortality and normal signals. Assumptions that we made in rules 2c and 2d were (1) fish that disappeared from the Kenai River were alive, because a dead fish could not float out to sea; (2) because no spawning occurs in the intertidal area below rkm 19.3, fish observed to be stationary or slowly moving downstream in this area were dead regardless of signal; and (3) fish above rkm 19.3 that were immobile but transmitted normal signals were survivors.

Thus, location became crucial in our decision process. The most important assumption was that there was no spawning below rkm 19.3 (Burger et al. 1985), and a fish that did not migrate upstream of this point was dead.

Survival estimation.—Chinook salmon survival was estimated with the nonparametric Kaplan–Meier procedure (Cox and Oates 1984; Pollock et al. 1989). This procedure computed the percentage of fish dying on each day of the experiment from all fish at risk at the beginning of that day, and it allowed for fish that were lost (censored) due to transmitter failure, harvest, or emigration (Pollock et al. 1989). The variance for the survivor function was estimated with Greenwood's formula (Cox and Oates 1984). The Kaplan–Meier estimator was stratified and a chi-square statistic was computed by the log-rank method (Kalbfleisch and Prentice 1980) to test the hypothesis that the survivor functions did not differ among strata. The influence of biological and fishing variables on hook-and-release mortality was estimated with Cox's proportional hazards regression model (Cox and Oates 1984); the Kaplan–Meier estimator was used as a base hazard.

An assumption of survival analysis is that censorship is a random process. We compared the size distributions of tagged fish that were censored with the distribution of the total released sample by using the Kolmogorov–Smirnov statistic (Conover 1980). The hypothesis of no association between the distribution of explanatory variables and

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censorship was tested with chi-square statistics (Snedecor and Cochran 1967). A chi-square test of independence was also used to compare the distributions of fates by 2-week periods. All statistical tests were conducted at the 95% significance level.

Results

Retention of chinook salmon in the recreational fishery was prohibited during most of the 1990 and 1991 early runs. In order to achieve optimum early-run escapement goals during these runs, the use of bait was prohibited and terminal gear was limited to single-hook artificial lures only. Consequently, a catch-and-release fishery was in place during these periods of the study. Fishery variables recorded during the study (Table 1) reflect these regulatory changes and account for the disparity in fishing methods and gears between the early- and late-run fisheries.

In total, 446 chinook salmon were caught, tagged, and released during 1989–1991 (Table 2). Tagging each fish required from 2 to 10 min and averaged 4.3 min (SD, 1.5 min). Angling times ranged from 20 s to 1 h and averaged 6.5 min (SD, 6.5 min). We tagged 100 fish during the late run in 1989, 125 fish during the early run in 1990, 120 fish during the late run in 1990, and 101 fish during the early run in 1991. Most (375) of these fish survived for 5 d after release, 31 fish died, and 40 were censored (Table 2).

Only 3 chinook salmon defined as hook-and-release casualties were recovered dead within 5 d of release. The remaining 28 casualties were fish that did not move above the intertidal area (rkm 19.3). About half of the tags on these fish transmitted consistently in the mortality mode; the remainder transmitted intermittent mortality signals.

The majority (282 fish; 63%) of our tagged fish were assigned final fates as spawners, and 84 fish (19%) were ultimately harvested. Thirty-nine fish (9%) either returned to salt water or were lost at some point upstream. One fish's (0.2%) final fate was unknown, three fish (0.7%) had tag failures, and an additional six fish (1.3%) died following the 5-d period but before spawning (Table 2).

Mortality of hooked-and-released fish during our four sampling events ranged from 10.6% during the 1989 late run to 4.1% during the 1991 early run. The average mortality for all experiments was 7.6%. The stratified Kaplan–Meier estimates of survival for these four experiments were not significantly different ($\chi^2 = 4.8$, df = 3, $P = 0.19$). However, the size and sex distributions of fish and censoring patterns differed significantly among the four experiments.

The size distribution of tagged chinook salmon varied among experiments. Females ranged from 590 mm to 1,155 mm (mid-eye length) and averaged 948 mm. Males ranged from 405 mm to 1,210 mm and averaged 819 mm. Few (2%) tagged females were under 750 mm in length because most females mature after spending at least 3 years in the ocean, by which time they are larger than 750 mm. However, the age composition of mature males encompasses younger fish, and 125 (47%) of our tagged males were under 750 mm. The relative proportion of small males varied, constituting up to 54% of the late-run experimental population in 1990.

The rate of censoring was different for the late run in 1989 compared with the other experiments. In 1989, 28 fish (28%) were censored within 5 d of release. Thirteen fish were harvested in the sport fishery and 14 fish were harvested in gill-net fisheries. Most (20) of the censored fish were females, and 11 of these were taken in the sport fishery. This high rate of censoring was not repeated in the 1990 or 1991 experiments, in which only 12 fish were censored (Table 2). To meet the assumption that censoring was random, we stratified our results for the survival analysis by experiment (1989 versus 1990–1991) and by size–sex groups: small males (<750 mm), large males (≥750 mm), and females.

Survival Following Hook-and-Release

Small males had the lowest survival in all experiments. In 1989, females had the highest survival, followed by large males, whereas in 1990–1991, large males consistently had higher survival rates than females. Survival curves (Figure 2) were much steeper for small males, reflecting the higher mortality rates for this group.

The overall survival estimate for 1989 was 0.894 (SE = 0.033). Estimated survival was 0.825 (SE = 0.081) for small males, 0.901 (SE = 0.054) for large males, and 0.935 (SE = 0.044) for females. Survival estimates for the three size–sex groups during 1989 were not significantly different ($P = 0.48$), but the proportion censored was significantly different among the three groups.

The overall survival estimate for the combined 1990–1991 experiments was 0.936 (SE = 0.013). Estimated survival was 0.885 (SE = 0.033) for small males, 0.982 (SE = 0.013) for large males, and 0.932 (SE = 0.022) for females. These esti-

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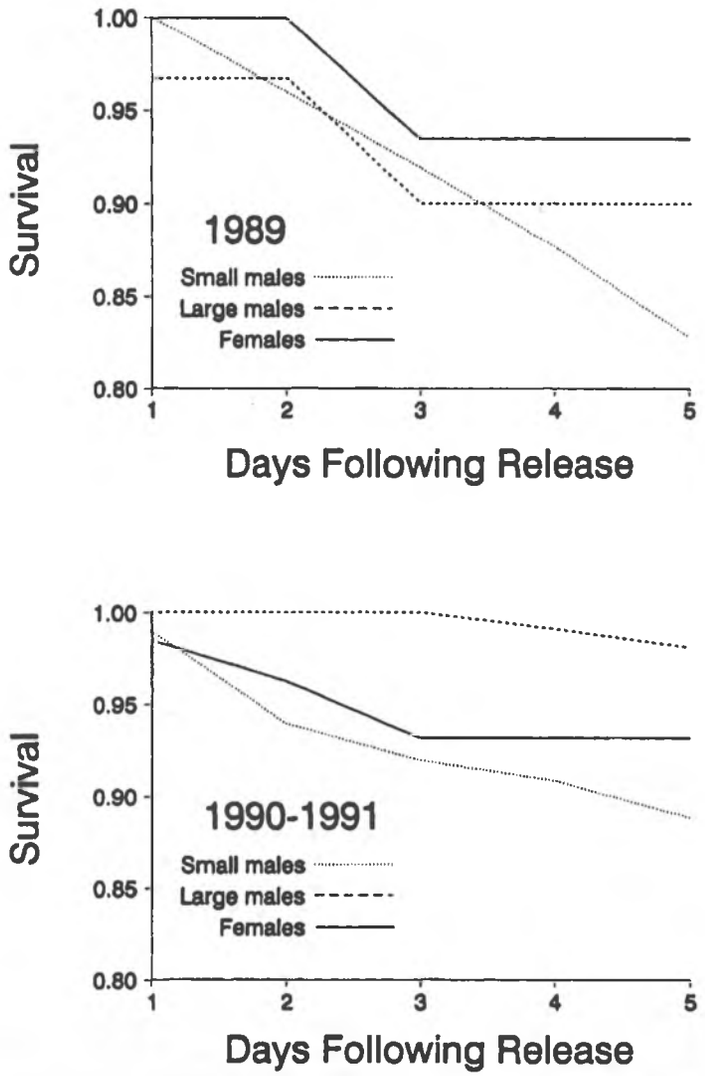


FIGURE 2.—The Kaplan–Meier survival function for chinook salmon by experiment and size–sex group, 1989–1991.

mates of survival by size–sex groups were significantly different. There was little censoring during 1990–1991 and no difference in censoring among size–sex groups.

Thirty-one hook-and-release casualties were detected during the four experiments. Of these, 24 (80%) died on or before the third day following release (Table 3). Hook-and-release mortality was independent of date of release for all of the experiments, and there was no significant association between the rate of censoring and fishery variables. Although two chinook salmon runs enter the Kenai River, and these are managed separately, there was no difference between these runs in their overall rate of hook-and-release mortality.

Variables Affecting Mortality

Hooking location was the most significant factor affecting the survival of released fish. Two proportional hazard models were fit to the data stratified by size–sex groups, one to the 1989 data and the second to the 1990–1991 data. Hooking location was the only explanatory variable that was identified as a significant covariate. Data were stratified by size–sex groups of released fish, and hooking locations were combinated into two

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TABLE 3.—Daily numbers of hook-and-release fish at risk[a] and survival estimates for radio-tracked chinook salmon in the Kenai River, Alaska, 1989–1991. Small males were less than 750 mm (mid-eye length), and large males were 750 mm or longer.

Day[b]	Small males		Large males		Females	
	At risk	Survival	At risk	Survival	At risk	Survival
			1989			
1	25	1.000	31	0.968	44	1.000
2	24	0.958	30	0.968	37	1.000
3	23	0.917	29	0.901	31	0.935
4	21	0.873	24	0.901	27	0.935
5	18	0.825	24	0.901	23	0.935
			1990-1991			
1	97	0.990	115	1.000	134	0.985
2	96	0.938	115	1.000	131	0.963
3	90	0.917	112	1.000	128	0.932
4	86	0.907	112	0.991	122	0.932
5	84	0.885	109	0.982	122	0.932

[a] Numbers of fish at risk declined because of both death and data censorship (see Table 2). Fish censored during the first 5 d did not count against survival.

[b] Represents day after release. After day 5, all surviving salmon were censored from the experiment.

groups: vital areas including gills, tongue, or eye; and jaw or snag locations (Table 4). Over the entire 3 years, 24 fish were hooked in vital areas and 11 (46%) of these died (Table 4). The remaining 422 fish were hooked in the jaw or snagged, and of these only 20 (4.7%) died (Table 4). During 1990–1991, bleeding was also found to be significant. In total, 70 fish were bleeding when released and 15 (21.4%) of these died, whereas 16 of 376 fish not bleeding (4.3%) died (Table 4).

The effects of hooking location and bleeding were most pronounced on small males and females (Table 4). The predicted survival for each value of the covariate was estimated, all other covariates being held at their mean values. In the model fit to the 1990–1991 data, a small male hooked in a vital area was predicted to have only a 56.3% chance of survival and a female a 64.2% chance; a large male would still have a 91.6% chance of surviving upon release (Table 5). The predicted values for the model fit to 1989 data were more extreme, but

TABLE 4.—Distribution of explanatory variables by size–sex class and 5-d fates of radio-tracked chinook salmon during 1989–1991. Small males were less than 750 mm (mid-eye length), and large males were 750 mm or longer.

Size–sex group and variable	Numbers of fish (%) by 5-d fate		
	Censored	Died	Survived
	Hooking location		
Small males			
Vital area[a]	1 (11)	4 (44)	4 (44)
Jaw or snag	8 (7)	11 (10)	94 (83)
Large males			
Vital area[a]		1 (20)	4 (80)
Jaw or snag	8 (6)	4 (3)	129 (91)
Females			
Vital area[a]		6 (60)	4 (40)
Jaw or snag	23 (14)	5 (3)	140 (83)
	Bleeding		
Small males			
Not bleeding	9 (9)	8 (8)	83 (83)
Bleeding		7 (32)	15 (68)
Large males			
Not bleeding	7 (5)	3 (2)	119 (92)
Bleeding	1 (6)	2 (12)	14 (82)
Females			
Not bleeding	23 (16)	5 (3)	119 (81)
Bleeding		6 (19)	25 (81)

[a] Vital area includes gills, tongue, and eye.

TABLE 5.—Comparison of observed 5-d survival probabilities to those predicted with Cox's proportional hazard model (Cox and Oates 1984). Small males were less than 750 mm (mid-eye length), and large males were 750 mm or longer.

Year and fish status	Probability of survival		
	Small males	Large males	Females
Observed			
1989	0.825	0.901	0.935
1990–1991	0.885	0.982	0.932
Predicted			
1989			
Hooked in jaw or snagged	0.876	0.920	0.970
Hooked in gills, eye, or tongue	0.005	0.034	0.316
1990–1991			
Hooked in jaw or snagged	0.931	0.989	0.946
Hooked in gills, eye, or tongue	0.563	0.916	0.642
Not bleeding	0.942	0.991	0.955
Bleeding	0.794	0.966	0.837

sample sizes were much smaller (N = 101) compared with the 1990–1991 combined data set (N = 346).

Discussion

Assumptions of the Study

We assumed that fish did not loose their tags in our study. Only three transmitters were not relocated daily during the first 5 d after release. No fish were found in any fishery with tagging scars, and there were no loose tags reported or turned in. We also assumed that there was no mortality resulting from the tagging procedure. We felt that tagging mortality was unlikely due to the brief handling time and low overall mortality estimates. Our data were stratified in order to satisfy the assumption that censorship was a random process. There were no indications that removal in any fishery or movement out of the river within the first 5 d was associated with any of the variables we measured or the time of tagging.

Estimates of Mortality

Our estimates of mortality for chinook salmon that were caught and released in the Kenai River are low, ranging from 4.1 to 10.6% and averaging 7.6% over four experiments. It is likely that these estimates are conservative, because they include effects from handling and radio-tagging. Also, 66 radio-tagged fish were caught again in the recreational fishery, and some of these fish were released again. Thus it is possible that tagged fish were subject to additional hook-and-release events not reported to us. Our estimates are lower than mortality rates in sport fisheries for many other species caught with bait (Wydoski 1980; Mongillo 1984), and they are considerably lower than estimates for troll-caught chinook salmon in marine fisheries. Parker and Black (1959) estimated a mortality rate of 71% (all sizes of chinook salmon) and Wertheimer (1988) estimated rates of 24.5% for small chinook salmon and 20.5% for large chinook salmon that were caught in marine troll fisheries.

Although our four experiments differed in several aspects, including the size and sex distributions of tagged fish, the rate and pattern of censoring, and the distribution of fishery variables, the final conclusion on the survival of fish that were hooked and released is the same for all experiments. Fish length, hooking locations, and bleeding were the only variables that affected mortality in our study. There were consistent differences in mortality among size–sex groups for all four experiments. Hooking mortality was highest for small males and ranged from 9.2 to 17.6%. For large males, estimates ranged from 0 to 9.7%; for females the range was 3.3–10.7%. The observed relationship between size and mortality was consistent with findings in previous studies of chinook salmon (Wertheimer 1988) and lake trout *Salvelinus namaycush* (Loftus et al. 1988).

Effects of Fishery Variables

Numerous studies have focused on the relationship between anatomical hook locations and subsequent mortality (Wydoski 1980; Mongillo 1984). Bleeding has also been associated with decreased survival of hooked fish (Warner and Johnson 1978; Nuhfer and Alexander 1992). A Kenai River chinook salmon that was hooked in a vital location (gills, eye, or tongue) had a significantly reduced chance of surviving compared with one that was snagged or hooked in the jaw. Fish that were bleeding also suffered increased mortality. However, the frequency of chinook salmon that were hooked in vital areas (5.4%) or bleeding (18.6%) was small in our study. Hence, the overall effect of these factors was minimal. We found no significant difference in mortality rate between fish caught with bait or with artificial lures, even though all of our early-run fish were caught on lures and most (83%) late-run fish were caught on baited hooks. Thus, chinook salmon caught in the Kenai River by backtrolling or drifting in small boats are apparently hooked superficially regardless of the terminal tackle that is used.

Most (80%) of the hooking-related deaths in our study occurred on or before the third day following release, suggesting that mortally wounded chinook salmon succumb quickly. We found no evidence for delayed mortality of our tagged fish. Most of our tagged fish could be accounted for in a fishery or on the spawning grounds up to 45 d following release.

Management Implications

Our findings suggest that fishing mortality for Kenai River chinook salmon can be reduced by over 90% by implementing catch-and-release regulations. However, the findings also suggest that these low mortality rates depend upon the characteristics of the fishery and to some extent on the large size of Kenai River chinook salmon. Nearly all chinook salmon fishing in the Kenai River is conducted from boats, and regulations prohibit an angler from removing a fish from the water if it is intended to be released. These factors must be

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considered before our results are applied to other stocks of salmon in freshwater fisheries.

Increased pressures on declining stocks have resulted in catch-and-release regulations for selected fisheries in most states and provinces across North America (Barnhart 1989). Catch-and-release regulations for the Kenai River have been successfully used to achieve escapement goals by reducing fishing mortality without restricting angling opportunity. Nevertheless, angler participation on the Kenai River declined precipitously in 1990 and 1991 following the implementation of catch-and-release regulations for the early-run fishery. Strong chinook salmon returns in adjacent Cook Inlet drainages contributed to the decline in Kenai River effort, but it is more likely that anglers who fish for food have been slow to embrace catch-and-release regulations for salmon fisheries.

Acknowledgments

We thank Jeffery A. Breakfield, who tagged the fish used in this study. Additional field assistance was provided by Dominique Collett, Richard Simpson, Trennis Stanley, and Nicky Szarzi. We are grateful to the numerous Kenai River sport anglers and charter boat operators who cooperated in this study. Funding for this project was provided through Federal Aid in Sport Fish Restoration.

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UNITED FISHERMEN OF ALASKA

Mailing Address: PO Box 20229, Juneau AK 99802-0229
Physical Address: 410 Calhoun Ave Ste 101, Juneau AK 99801
Phone: (907)586-2820 **Fax:** (907) 463-2545
Email: ufa@ufa-fish.org **Website:** www.ufa-fish.org

March 11, 2013

Representative Paul Seaton, Chairman
House Special Committee on Fisheries
Alaska State Legislature
State Capitol, 120 Fourth Street
Juneau, AK 99801-1182
Email: Rep.Paul.Seaton@akleg.gov

RE: OPPOSITION TO HB 110 – BARBLESS HOOKS

Dear Chairman Seaton and Committee Members,

United Fishermen of Alaska (UFA) represents 36 Alaska Commercial fishing organizations from fisheries throughout Alaska and its offshore federal waters.

We appreciate the intention behind HB 110 - to protect the sustainability of Alaska's fisheries resources by reducing catch and release mortality of fish that are required by regulation to be released in non-retention freshwater fisheries. Studies have shown that barbless hooks, when combined with minimal handling and attention to having the fish remain in the water, have resulted in the lowest catch and release mortality.

However, we have long supported the Alaska Board of Fisheries and its deliberative process as the appropriate forum for promulgating fisheries regulations, particularly regarding methods and means. Adaptive management is the hallmark of the State's fisheries management and this requires careful and selective implementation of methods that are applicable to a specific set of conditions.

For this reason we oppose HB 110 as a matter to be addressed in the Legislature.

Thank you for your attention on this matter.

Sincerely,

Julianne Curry
Executive Director

Louie Flora

From: Rep. Paul Seaton
Subject: FW: House Bill 110

From: Duane Mathes [mailto:duanemathes@gmail.com]
Sent: Wednesday, February 20, 2013 4:01 PM
To: Rep. Paul Seaton
Cc: Rep. Eric Feige; Rep. Lynn Gattis; Rep. Bob Herron; Rep. Craig Johnson; Rep. Kurt Olson; Rep. Jonathan Kreiss-Tomkins
Subject: House Bill 110

Please be advised I oppose HB 110, let's do something that's meaningful and quit acting like our DC representatives.

Representative Seaton,

The Alaska Outdoor Council strongly opposes House Bill 110, prohibiting the use of barbed hooks in certain freshwater fisheries.

The Alaska Outdoor Council, incorporated in the Territory of Alaska in 1955, is the voice of over 10,000 Alaskans who belong to 51 member clubs throughout the state. Many of our members (as well as many other Alaskans who are not AOC members) harvest wild food as part of their traditional lifestyle, including fishing for salmon for their personal use. Unfortunately, they are currently placed at a distinct disadvantage in doing so, because they are limited to using hook and line instead of nets. HB 110 puts these users at even more of a disadvantage.

On the Kenai Peninsula, the Kenai River dipnet fishery provides a reasonable opportunity for Alaskans to catch - with a dipnet - personal use salmon. In the Copper River drainage, the Chitina River dipnet fishery provides a reasonable opportunity for Alaskans to catch - with a dipnet - personal use salmon. In other parts of the state Alaskans can use gill nets to catch personal use and subsistence salmon. However, in the drainage nearest to the largest population of Alaskans, the Susitna River and its tributaries, residents are limited to using hook and line to catch their personal use fish. The reason is that Susitna drainage fisheries are classified by the Board of Fisheries as "sport" fisheries, even though the end use of these fish is exactly the same as other Alaskans who are able to use nets - it is eaten fresh, or dried, smoked or frozen for use at a later date to feed themselves and their families.

While it is true that some residents (and non-residents) engage in "catch-and-release" fishing for sport, where a fish is caught with a hook, then unhooked and released, this is a small group. According to the Alaska Department of Fish and Game, commercial users take 98.3% of the fish and game in Alaska, subsistence and personal use takes 1.1% and sport takes 0.6%. If there is a problem your legislation is attempting to solve, which I haven't seen evidence of, it's hard to believe that six-tenths of users are the source. HB 110 is scheduled to be heard on February 21. Before it is heard again, and certainly before it moves from the Fisheries Committee, you owe the thousands of Alaskans who live in the Upper Cook Inlet area - both long-term residents who have practiced personal use fishing for multiple generations, and short-term residents, many of whom have recently relocated from rural villages - a hard look at the effect this legislation will have on their ability to harvest Alaska salmon, especially in light of the disadvantages they already face.

As the executive director of the AOC I have attended every Board of Fisheries meeting for the past several years. I am also at many of the local fish and game advisory committee meetings where ADF&G biologists and personnel present information. Further, I attend the various outdoors shows, meetings, conferences all over the state. I will not say that barbed hooks are not causing a problem, but I will say that not one time has anyone from ADF&G or anyone else with a deep knowledge of freshwater fisheries told me they are a problem, nor have I read anything from ADF&G which stated they are a problem. You chair the Fisheries Committee and with that position come certain privileges, such as hearing bills of your choosing, like HB 110. I will grant you that, but urge you to use your time on topics that make a difference to more Alaskans.

--

Duane Mathes
Associate Broker, GRI, ABR
2012 REALTOR of the Year, Valley Board of REALTORS
RE/MAX Dynamic of the Valley
892 E. USA Circle, Suite 100
Wasilla, AK 99654
907-715-7505 cell
www.duanemathes.net
www.duanemathes.com
www.susitnashores.com

Louie Flora

From: Rep. Paul Seaton
Subject: FW: HB110 - barbed hooks

From: Bill Iverson - AOC [mailto:bill@alaskaoutdoorcouncil.com]
Sent: Wednesday, February 20, 2013 11:48 AM
To: Rep. Paul Seaton
Cc: Rep. Eric Feige; Rep. Lynn Gattis; Rep. Bob Herron; Rep. Craig Johnson; Rep. Kurt Olson; Rep. Jonathan Kreiss-Tomkins
Subject: HB110 - barbed hooks

Representative Seaton,

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On the Kenai Peninsula, the Kenai River dipnet fishery provides a reasonable opportunity for Alaskans to catch - with a dipnet - personal use salmon. In the Copper River drainage, the Chitina River dipnet fishery provides a reasonable opportunity for Alaskans to catch - with a dipnet - personal use salmon. In other parts of the state Alaskans can use gill nets to catch personal use and subsistence salmon. However, in the drainage nearest to the largest population of Alaskans, the Susitna River and its tributaries, residents are limited to using hook and line to catch their personal use fish. The reason is that Susitna drainage fisheries are classified by the Board of Fisheries as "sport" fisheries, even though the end use of these fish is exactly the same as other Alaskans who are able to use nets - it is eaten fresh, or dried, smoked or frozen for use at a later date to feed themselves and their families.

While it is true that some residents (and non-residents) engage in "catch-and-release" fishing for sport, where a fish is caught with a hook, then unhooked and released, this is a small group. According to the Alaska Department of Fish and Game, commercial users take 98.3% of the fish and game in Alaska, subsistence and personal use takes 1.1% and sport takes 0.6%. If there is a problem your legislation is attempting to solve, which I haven't seen evidence of, it's hard to believe that six-tenths of users are the source. HB 110 is scheduled

to be heard on February 21. Before it is heard again, and certainly before it moves from the Fisheries Committee, you owe the thousands of Alaskans who live in the Upper Cook Inlet area - both long-term residents who have practiced personal use fishing for multiple generations, and short-term residents, many of whom have recently relocated from rural villages - a hard look at the effect this legislation will have on their ability to harvest Alaska salmon, especially in light of the disadvantages they already face.

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Sincerely,

Rod Arno, Executive Director

Alaska Outdoor Council

Email:

rep.paul.seaton@akleg.gov

then cc:

rep.eric.feige@akleg.gov

rep.lynn.gattis@akleg.gov

rep.bob.herron@akleg.gov

rep.craig.johnson@akleg.gov

rep.kurt.olson@akleg.gov

Rep.Jonathan.Kreiss-Tomkins@akleg.gov

Thank You,

Bill Iverson

President

Alaska Outdoor Council

"Protecting your Hunting, Trapping, Fishing and Access Rights"

310 K Street, Suite 200

Anchorage, Alaska 99501

Phone: (907) 264-6645

Fax: (888) 932-3353

*note new email address (.com instead of .org)

Email: president@alaskaoutdoorcouncil.com

Web site: www.alaskaoutdoorcouncil.org



Louie Flora

From: Alaska Outdoor Council <alaskaoutdoorcouncil@gmail.com>
Sent: Tuesday, February 19, 2013 8:50 AM
To: Rep. Paul Seaton
Cc: Rep. Eric Feige; Rep. Lynn Gattis; Rep. Bob Herron; Rep. Craig Johnson; Rep. Kurt Olson; Rep. Jonathan Kreiss-Tomkins
Subject: HB110 - Bared hooks

Categories: Opened

February 19, 2013

RE: House Bill 110

Representative Seaton,

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On the Kenai Peninsula, the Kenai River dipnet fishery provides a reasonable opportunity for Alaskans to catch - with a dipnet - personal use salmon. In the Copper River drainage, the Chitina River dipnet fishery provides a reasonable opportunity for Alaskans to catch - with a dipnet - personal use salmon. In other parts of the state Alaskans can use gill nets to catch personal use and subsistence salmon. However, in the drainage nearest to the largest population of Alaskans, the Susitna River and its tributaries, residents are limited to using hook and line to catch their personal use fish. The reason is that Susitna drainage fisheries are classified by the Board of Fisheries as "sport" fisheries, even though the end use of these fish is exactly the same as other Alaskans who are able to use nets - it is eaten fresh, or dried, smoked or frozen for use at a later date to feed themselves and their families.

While it is true that some residents (and non-residents) engage in "catch-and-release" fishing for sport, where a fish is caught with a hook, then unhooked and released, this is a small group. According to the Alaska Department of Fish and Game, commercial users take 98.3% of the fish and game in Alaska, subsistence and personal use takes 1.1% and sport takes 0.6%. If there is a problem your legislation is attempting to solve, which I haven't seen evidence of, it's hard to believe that users who harvest less than 1% of all fish and game are the source. HB 110 is scheduled to be heard on February 21. Before it is heard again, and certainly before it moves from the Fisheries Committee, you owe the thousands of Alaskans who live in the Upper Cook Inlet area - both long-term residents who have practiced personal use fishing for multiple generations, and short-term residents, many of whom have recently relocated from rural villages - a hard look at the effect this legislation will have on their ability to harvest Alaska salmon, especially in light of the disadvantages they already face.

As the executive director of the AOC I have attended every Board of Fisheries meeting for the past several years. I am also at many of the local F & G Advisory Committee meetings where ADF&G biologists and personnel present information. Further, I attend the various outdoors shows, meetings, conferences all over the state. I will not say that barbed hooks are not causing a problem, but I will say that not one time has anyone from ADF&G or anyone else with a deep knowledge of freshwater fisheries told me they are a problem, nor have I read anything from ADF&G which stated they are a problem. You chair the Fisheries Committee and with that position come certain privileges, such as hearing bills of your choosing, like HB 110. I will grant you that, but urge you to use your time on topics that make a difference to more Alaskans.

Sincerely,

--
Rod Arno
Alaska Outdoor Council
310 K Street, Suite 200
Anchorage, Alaska 99501
Phone: 907-841-6849

Louie Flora

From: Rep. Paul Seaton
Subject: FW: Barbed hooks.

-----Original Message-----
From: Greg Svendsen [mailto:gsvendsen@gci.net]
Sent: Tuesday, February 26, 2013 5:20 PM
To: Rep. Paul Seaton
Subject: Re: Barbed hooks.

Yes, I would appreciate that. I have been flying, hunting and fishing my whole life and if my experiences would help anyone I would come and testify if it would help.

One other thing that would help is if lodges were held accountable for their fisherman just as the hunting lodges are. There would be far fewer infractions and you would have a built in free enforcement system. I have had a cabin at Lake Creek for 33 years,which is on the Yetna river,part of upper Susitna drainage and because there are so few fish game enforcement officers there are many infractions we see. We do our best to police it ourselves, but because no one holds the lodges responsible, it is very difficult, especially when fisherman, take home over their allowed limits and some of the lodges turn a blind eye afraid they will lose future bookings. This especially prevalent with out of the country fisherman.

Thanks,

Greg Svendsen

On 2/25/13 5:01 PM, "Rep. Paul Seaton" <Rep.Paul.Seaton@akleg.gov> wrote:

> Hi Greg,
>
> Would you like your e-mail included as a part of the committee packet?
>
> Louie Flora
> House Fisheries Committee Aide,
> Representative Paul Seaton, Chair
> House Fisheries Committee
>
> -----Original Message-----
> From: Greg Svendsen [mailto:gsvendsen@gci.net]
> Sent: Monday, February 25, 2013 11:02 AM
> To: Rep. Paul Seaton
> Subject: Barbed hooks.
>
> I was born and raised in Anchorage and am 65 years old. We already,as
> of last years use single hooks in the Susitna drainage, which I have no problem with.
> How about doing something about all of Cook Inlet being managed, as is
> stated in ADFG manage plan for Cook Inlet, during the month of July
> for the Kenai red run. This is done to the detriment of many of the

> northern Cook Inlet streams as this a mixed stock fishery and they
> catch many fish going north into these streams causing them to miss their escapement goal.
>
> This would seem to me to be much more important than a barb-less hook
> when we only use single hooks as it is.
>
> Greg Svendsen
>
> 3590 E. Klatt Rd. Anch. AK.
>
> 907-345-1461.
>
>

Louie Flora

Subject: FW: HB 110 I oppose it.
Attachments: Barbless hook post Yahoo .doc; problems with regulations for brown trout.doc

From: Rep. Paul Seaton
Sent: Friday, March 08, 2013 11:46 AM
To: Louie Flora (Louie_Flora@legis.state.ak.us)
Subject: FW: HB 110 I oppose it.

From: Dan Dunaway [mailto:dlgdunaway@gmail.com]
Sent: Friday, March 08, 2013 1:45 AM
To: Rep. Paul Seaton; Rep. Bryce Edgmon; Sen. Gary Stevens
Cc: Rep. Kurt Olson; Rep. Bob Herron; Rep. Eric Feige; Rep. Craig Johnson; Rep. Beth Kerttula; Rep. Jonathan Kreiss-Tomkins; Rep. Lynn Gattis
Subject: HB 110 I oppose it.

Dear Rep. Seaton and House Fisheries Committee.

I am disappointed to become aware of HB110.

My first objection to this bill is based on process.

The authority to set fishing regulations in Alaska lies with the Alaska Board of Fisheries and it should stay there.

To move HB110 forward is a mistake, threatens the authority of the BOF and would set a very poor precedent.

Since you are from Homer I'm sure you are well aware of the BOF process and I urge you to respect it , its citizens' involvement process, and withdraw this bill.

I just returned from the BOF meeting in Anchorage addressing AK Peninsula and Aleutians fisheries.

While its an imperfect process and I'm not totally happy with the results, I support the process and object to any legislative interference.

Second, I object to the bill on the basis of science.

Current best science does not support this bill.

Note that several lower 48 states are in the process of removing such regulations as science has shown them to be of minimal value or even detrimental.

I believe Idaho is in this situation right now.

Today, I talked to biologist Dan Schill of Idaho Fish and Game who has investigated the effects of barbless hooks. He still believes there are minimal benefits vs significant social costs to such measures.

Further I believe he said he recently worked with individuals in Montana to discourage virtually the same law you propose here.

There have been some new scientific studies conducted on this question since Schill and Scarpella (1997) conducted their meta-analysis on the use of barbless hooks.

But I don't believe any of the newer work shows any significant change to the conclusion of minimal to non-existant biological benefit for significant social costs in the form of alienating new or inexperience anglers.

There are new studies that show increased injuries from barbed hooks in some cases, but in my experience, there are a huge amount of studies out there and studies can be found to justify about any conclusion one might want to support.

Much depends on the study design, gear used, species involved and numerous other parameters.

Schill and Scarpella 1997 may still be the most far reaching in that it accumulates the results of many studies to reach its conclusions.

Finally, as I live in Dillingham and have considerable experience in the smaller remote villages, where catch and release is often very unpopular, I think imposing barbless hooks on such residents would cause additional animosity.

In parts of Alaska hook and line fishing is recognized as a legal subsistence method; where it is not, villagers still often employ the gear for subsistence, but under sport regulations.

In all of these cases, the folks go to the lake or river with the plan to catch something to eat. If they are required to use barbless hooks and lose fish that are not of the species protected, there will be much frustration.

If such villagers are cited for improper hooks there will be additional frustration - for no useful biological gain. In many places there is vigorous opposition to single hook regulations or to being required to cut prongs off their treble hooks.

Local biologists and law enforcement staff will bear the brunt of that frustration when they are working hard to cultivate amiable relations.

Further many rural people who are often well aware of the Board of Fish Process will wonder how such regulations came to be without the local input.

That is too high of a price to pay.

In the process of composing this note I did one more Google search on this topic and found the following blog. I have no idea who the person is but he summarizes better than I what I believe to be the best science today.

I have captured it in an attachment with links to the original.

Further, I have attached another abstract that has an important thought I have underlined for your consideration. Also in this same piece is mention of problems with barbless hook regs in Wisconsin where often a high percentage of anglers were found to be using barbless hooks in waters where they were prohibited. If the included link is followed there are a number of articles that discuss various aspects of regulations, problems with them etc.

thank you for your consideration.

Dan Dunaway
Dillingham Alaska.

apparently posted by someone in British Columbia. As I am not a member of Yahoo I could not fully explore this posting. I do not know the author.
Dan Dunaway

copied from the following site on 3-8-2013:

http://groups.yahoo.com/group/okbcwf/message/4986

Barbless hooks: Do They Really Make a Difference?

<http://skinnymoose.com/fishgeek/2007/06/10/barbless-hooks-do-they-really-make-a\
-difference/>

I encountered an interesting scientific article recently regarding the difference in mortality between barbed and barbless hooks used in recreational fisheries. Dan Schill an R. L. Scarpella (1997) conducted a literature review and meta-analysis on all studies comparing the use of these two hook types, and came up with some very interesting results.

In the first study comparing barbed vs. barbless, Westerman (1932) concluded that barbed hooks caused higher mortality than barbless hooks, however, he did not use any statistical analysis to test these results. Since then, a number of different studies have taken place. Taylor and White (1992) summarized datasets from these studies using meta-analysis, and concluded that barbed hooks caused higher mortality than barbless as well.

Upon reviewing the Taylor and White review, Schill and Scarpella noticed that some previous studies were NOT included in the the analysis, and furthermore, the approach of statistical analysis in the review was questionable. They therefore decided to use a more common approach to the meta-analysis, and use all the existing available data up to 1997.

Using a more thorough data set and better methods of statistical analysis, Schill and Scarpella determined in 1997 that barbless hooks showed NO EVIDENCE OF REDUCING FISH MORTALITY IN COMPARISON TO BARBED
HOOKS. Some studies did show higher mortality rates using barbed hooks, and others showed the opposite. However, the differences were so small (usually just a couple of percentage points) that they did not overcome the difference that could have been caused simply by random error.

Since the Schill and Scarpella paper in 1997, a number of other studies

have examined the difference between barbed and barbless hooks. The results of all the studies I could track down are as follows:

Dubois & Dubielzig (2004) - showed no biological advantage in using barbless hooks

Dubois & Dubielzig (2004, different study) - no difference between barbed and barbless, except when fish deeply swallowed the hooks, in which case barbless were better.

Schaeffer & Hoffman (2002) - no significant difference in mortality between barbed and barbless. Barbed hooks landed 22% more fish. Quicker hook release time with barbless.

Meka (2004) - higher injury rates with barbed hooks, however she did not compare mortality, so results are not applicable.

Clearly, there has been no demonstrated evidence that barbless hooks cause lower mortality rates than barbed hooks. However, barbless hooks are becoming a more and more popular regulation in recreational fisheries. Why is it that these regulations persist? Even in Idaho, where Schill and Scarpella demonstrated the facts, barbless restrictions exist in many waters. I believe that the barbless regulation is simply a feel-good regulation. People are still convinced that barbless hooks "must" be better than barbed, despite what the science says.

Simply put, a mouth hooked fish, handled properly, has a very miniscule chance of dying whether or not the hook used is barbed or barbless. Mortality issues arise when the hook is swallowed and significant bleeding and tearing occur, as well as when a fish is improperly handled and held out of the water for too long. Therefore, we should quit worrying about the little barb that helps anglers land more fish, and start thinking about ways to improve other facets of angling mortality, particularly how we handle the fish once caught.

One final note: Schill and Scarpella quote the annual estimated NATURAL mortality of trout in streams to be between 30% - 65%. With such an incredibly high mortality rate already occuring, most fishing mortality is probably compensatory (the fish would have died naturally by the end of the year, whether or not you killed it). Therefore, how can we be justified in griping about a 0.3% mortality difference between barbed and barbless hooks?

http://files.dnr.state.mn.us/publications/fisheries/misc_pubs/trout_angler.pdf#page=91
I found thins looking for another article but i think it has some bearing on the issue. I'll attach the whole file but the abstract caught my eye.

Successful Restrictive Regulations for Brown Trout: Why Are They Rare?

William C. Thorn1, Charles S. Anderson2, and Deserae L. Hendrickson3

Abstract -

Many special or experimental regulations that restrict harvest of stream trout were implemented for social reasons. This is unfortunate because it may fuel the tendency of many anglers to overestimate the potential biological benefits from proposed regulations. Because predicting biological results is uncertain, regulations need to be treated as experiments, and the results need to be effectively explained to anglers. We will explain what we have learned from experimental regulations for brown trout Salmo trutta in southeast Minnesota, what variables we now quantify, and make suggestions to improve the success rate of regulations. Equally important to improving success of regulations is for anglers to better understand the factors limiting trout populations and the potential for conflicts among angler groups.

Petersburg Vessel Owners Association

PO Box 232
Petersburg, AK 99833
Phone & Fax: 907.772.9323
pvoa@gci.net • www.pvoaonline.org

February 25, 2013

Alaska State Legislature
House Fisheries Committee
Representative Paul Seaton, Chair
State Capitol
Juneau, AK 99811

RE: Oppose HB 110

Dear Chairman Seaton and Fisheries Committee Members,

Petersburg Vessel Owners Association (PVOA) is a diverse group of over 100 commercial fishermen and businesses operating primarily in Southeast Alaska. Our members provide millions of meals to the public annually by participating in a variety of fisheries statewide including salmon, herring, halibut, cod, crab, black cod, shrimp, and dive fisheries. PVOA appreciates the opportunity to comment on HB 110..

PVOA is in opposition to HB 110. Our opposition is not so much on the merits of the effectiveness of barbless hooks to reduce freshwater catch and release injury and mortality, but we are opposed to HB 110 because this issue should be taken up the Alaska Board of Fisheries (BOF), not the Alaska State Legislature. The BOF was established for the purpose of the conservation and development of the fishery resources of the state and, as such, is the regulatory body best qualified to consider the merits of fishing methods and means. **AS 16.05.251. REGULATIONS OF THE BOARD OF FISHERIES** sets out the regulations that the BOF may adopt and section (a)(4) specifically identifies establishing the means and methods employed in the pursuit, capture, and transport of fish. For the abovementioned reasons, we respectively request that you do not move HB 110 out of the Fisheries Committee and allow this issue to be addressed and acted upon by the BOF.

Thank you for the opportunity to comment on this legislation. If we can provide further information or answer any questions, please feel free to contact us.

Sincerely,

Brian Lynch
Executive Director

HB

143

<TARGET><BILL>HB 143</BILL><SUBJECT>HB
143</SUBJECT><COMM>HFSH28</COMM></TARGET>

Alaska State Legislature

State Capitol Room 102
Juneau, Alaska 99801-1182
(907) 465-2689
Fax: (907) 465-3472
1-800-665-2689

270 W Pioneer Ave. Suite B
Homer, Alaska 99603
(907) 235-2921
Fax: (907) 235-4008
1-800-665-2689

Representative Paul Seaton
House District 30

Sponsor Statement

HB 143

HB 143 increases the cost for a 7-day commercial fishing crewmember license by $30, establishing the cost at $60. This increase in license cost addresses the growing problem of multiple consecutive short-term license purchases. The 7-day license was created by the Legislature as a way for tourists to experience commercial fishing in Alaska. These short-term crew licenses (also known as dude licenses) have been successful in their original intent, but there is concern that fishing crew members who would otherwise purchase an annual license are instead purchasing numerous consecutive short-term licenses.

As a trend, this decreases license receipt revenue to the state and impacts the Fishermen's Fund (a fund administered by the Department of Labor and Workforce Development to assist with the medical costs of accidents incurred during commercial fishing operations). As a group, those purchasing short-term licenses may be less experienced on a commercial vessel, and thus more likely to get injured, placing a burden on the Fishermen's Fund without helping to adequately pay for the program.

www.housemajority.org/seaton
Rep.Paul.Seaton@akleg.gov

adpt. #1

28-LS0520\A.1
Bullard
3/11/13

AMENDMENT

OFFERED IN THE HOUSE BY REPRESENTATIVE SEATON

TO: HB 143

Page 1, line 1, following "licenses":

Insert "; **and providing for an effective date**"

Page 1, following line 10:

Insert a new bill section to read:

"*** Sec. 2.** This Act takes effect January 1, 2014."

28-LS0520\A.2
Bullard
3/18/13

AMENDMENT #2 As Amended Adopted

OFFERED IN THE HOUSE BY REPRESENTATIVE SEATON

TO: HB 143

Page 1, line 10:

Delete "**$60** [$30]"

Rounded to the nearest dollar

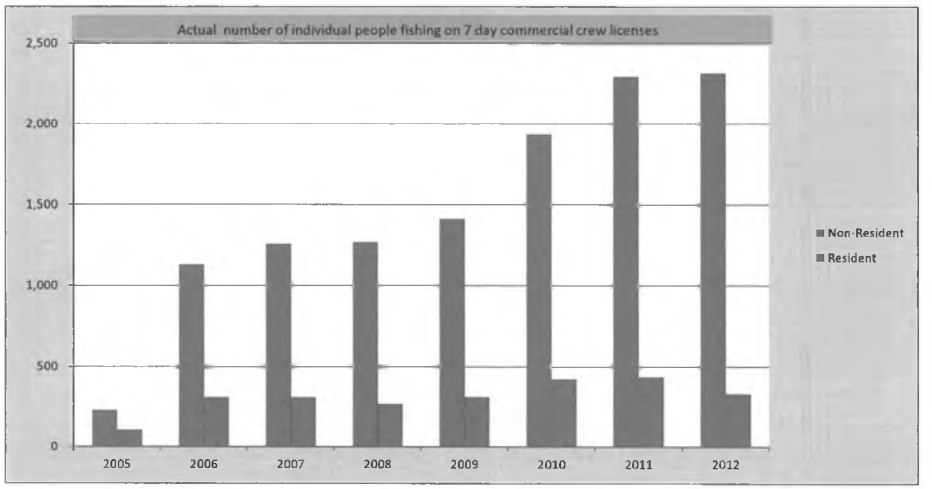
Insert "$30 plus one-third the amount that, in addition to the base fee of $60, the department charges under AS 16.05.480(h) for a nonresident engaged in commercial fishing who is 11 years of age or older and who does not hold an entry permit or an interim-use permit to obtain an annual crewmember fishing license"

STATE OF ALASKA DEPARTMENT OF FISH & GAME
7 DAY COMMERCIAL CREWMEMBER LICENSES REPORTED SOLD

Division of Administrative Services, License Accounting
Prepared February 2013

NON-RESIDENT	2005	2006	2007	2008	2009	2010	2011	2012
Buys one license	177	588	687	749	712	848	991	973
Buys more than one license	47	541	568	517	704	1,085	1,305	1,344
NR individuals fishing	**224**	**1,129**	**1,255**	**1,266**	**1,416**	**1,933**	**2,296**	**2,317**

RESIDENT	2005	2006	2007	2008	2009	2010	2011	2012
Buys one license	98	296	290	247	294	399	417	307
Buys more than one license	2	7	13	15	10	17	14	17
Res individuals fishing	**100**	**303**	**303**	**262**	**304**	**416**	**431**	**324**



License Revenue Activity

	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
					PERMITS & LICENSES SOLD						
Resident	9,777	9,497	9,577	9,620	9,335	9,930	9,732	9,393	10,207	12,201	12,662
Non-Resident	9,155	8,649	8,077	7,499	7,192	8,164	7,726	7,061	9,111	9,884	10,217
Duplicate	655	676	589	562	525	670	632	571	727	844	96
Child	350	351	346	398	370	296	331	349	381	413	822
Non-Res Child	39	25	25	55	35	26	29	48	5	0	394
7-Day Res Crewmember License	334	283	351	375	202	1	0	0	0	0	0
7-Day Non-Res Crewmember License	1,466	1,267	1,305	1,201	310	0	0	0	0	0	0
Total Licenses	**21,776**	**20,748**	**20,270**	**19,710**	**17,969**	**19,087**	**18,450**	**17,422**	**20,431**	**23,342**	**24,191**
Resident CFEC Permit	8,898	8,622	9,090	9,170	9,140	9,802	9,952	9,892	9,257	9,884	10,294
Nonresident CFEC Permit	3,290	3,333	3,358	3,374	3,627	3,184	3,486	3,486	3,316	3,584	3,655
Resident CFEC Permit - Reduced	0	0	0	0	0	0	0	0	354	438	561
Nonresident CFEC Permit - Reduced	0	0	0	0	0	0	0	0	13	28	35
Total Permits	**12,188**	**11,955**	**12,448**	**12,544**	**12,767**	**12,986**	**13,438**	**13,378**	**12,940**	**13,934**	**14,545**
Grand Total	**33,964**	**32,703**	**32,718**	**32,254**	**30,736**	**32,073**	**31,888**	**30,800**	**33,371**	**37,276**	**38,736**
					CONTRIBUTIONS DUE FISHERMEN'S FUND						
Resident	$ 228,781.80	$ 222,229.80	$ 224,101.80	$ 225,108.00	$ 218,439.00	$ 232,362.00	$ 227,728.80	$ 219,796.20	$ 238,843.80	$ 285,503.40	$ 296,290.80
Non-Resident	$ 457,750.00	$ 432,450.00	$ 403,850.00	$ 374,950.00	$ 359,600.00	$ 408,200.00	$ 386,300.00	$ 353,050.00	$ 455,550.00	$ 494,200.00	$ 510,850.00
Duplicate	$ 1,277.25	$ 1,318.20	$ 1,148.55	$ 1,095.90	$ 1,023.75	$ 1,306.50	$ 1,232.40	$ 1,113.45	$ 1,417.65	$ 1,645.80	$ 187.20
Child	$ 682.50	$ 684.45	$ 674.70	$ 776.10	$ 721.50	$ 577.20	$ 645.45	$ 680.55	$ 742.95	$ 805.35	$ 1,602.90
Non-Res Child	$ 1,901.25	$ 1,218.75	$ 1,218.75	$ 2,681.25	$ 1,706.25	$ 1,267.50	$ 1,413.75	$ 2,340.00	$ 243.75	$ -	$ 19,207.50
7-Day Res Crewmember License	$ 3,907.80	$ 3,311.10	$ 4,106.70	$ 4,387.50	$ 2,363.40	$ 11.70	$ -	$ -	$ -	$ -	$ -
7-Day Non-Res Crewmember License	$ 17,152.20	$ 14,823.90	$ 15,268.50	$ 14,051.70	$ 3,627.00	$ -	$ -	$ -	$ -	$ -	$ -
Total Licenses	**$ 711,452.80**	**$ 676,036.20**	**$ 650,369.00**	**$ 623,050.45**	**$ 587,480.90**	**$ 643,713.20**	**$ 617,320.40**	**$ 576,980.20**	**$ 696,798.15**	**$ 782,154.55**	**$ 828,138.40**
Resident CFEC Permit	$ 208,213.20	$ 201,754.80	$ 212,706.00	$ 214,578.00	$ 213,876.00	$ 229,366.80	$ 232,876.80	$ 231,472.80	$ 216,613.80	$ 231,285.60	$ 185,292.00
Nonresident CFEC Permit	$ 164,500.00	$ 166,650.00	$ 167,900.00	$ 168,700.00	$ 181,350.00	$ 159,200.00	$ 174,300.00	$ 174,300.00	$ 161,655.00	$ 174,720.00	$ 197,370.00
Resident CFEC Permit - Reduced	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,310.00	$ 6,570.00	$ 8,415.00
Nonresident CFEC Permit - Reduced	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 585.00	$ 1,260.00	$ 1,575.00
Total Permits	**$ 372,713.20**	**$ 368,404.80**	**$ 380,606.00**	**$ 383,278.00**	**$ 395,226.00**	**$ 388,566.80**	**$ 407,176.80**	**$ 405,772.80**	**$ 384,163.80**	**$ 413,835.60**	**$ 392,652.00**
Grand Total	**$ 1,084,166.00**	**$ 1,044,441.00**	**$ 1,030,975.00**	**$ 1,006,328.45**	**$ 982,706.90**	**$ 1,032,280.00**	**$ 1,024,497.20**	**$ 982,753.00**	**$ 1,080,961.95**	**$ 1,195,990.15**	**$ 1,220,790.40**

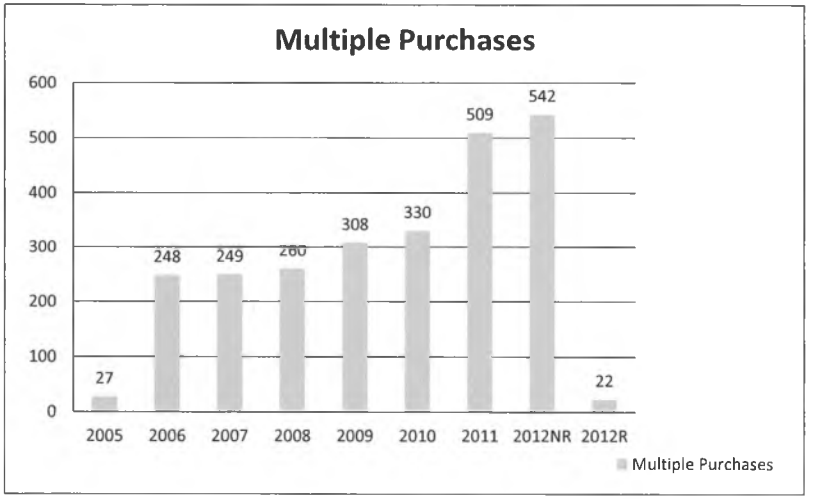
Prepared by the Department of Labor and Workforce Development
April 6, 2012

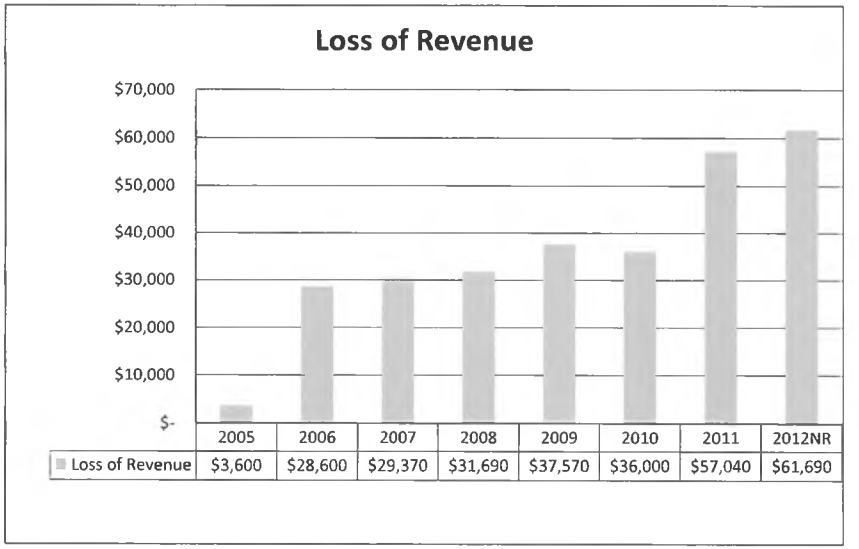
Fish and Game
Commercial Crew 7 day license

$200 NonRes annual
$30 NonRes 7day

	2005	Lost in 2005	2006	Lost in 2006	2007	Lost in 2007	2008	Lost in 2008	2009	Lost in 2009	2010	Lost in 2010	2011	Lost in 2011	2012NR	Lost in 2012NR	2012R
Purchased 2 Licenses	22	$ 3,080	117	$ 16,380	140	$ 19,600	149	$ 20,860	187	$ 26,180	179	$ 25,060	246	$ 34,440	272	$ 38,080	20
Purchased 3 Licenses	4	$ 440	69	$ 7,590	52	$ 5,720	70	$ 7,700	70	$ 7,700	24	$ 2,640	112	$ 12,320	134	$ 14,740	2
Purchased 4 Licenses	1	$ 80	51	$ 4,080	41	$ 3,280	37	$ 2,960	40	$ 3,200	75	$ 6,000	101	$ 8,080	86	$ 6,880	0
Purchased 5 Licenses	0	$ -	11	$ 550	15	$ 750	3	$ 150	9	$ 450	42	$ 2,100	40	$ 2,000	33	$ 1,650	0
Purchased 6 Licenses	0	$ -	0	$ -	1	$ 20	1	$ 20	2	$ 40	10	$ 200	10	$ 200	17	$ 340	0
Total	27	$ 3,600	248	$ 28,600	249	$ 29,370	260	$ 31,690	308	$ 37,570	330	$ 36,000	509	$ 57,040	542	$ 61,690	22
	2005	Lost in 2005	2006	Lost in 2006	2007	Lost in 2007	2008	Lost in 2008	2009	Lost in 2009	2010	Lost in 2010	2011	Lost in 2011	2012NR	Lost in 2012NR	2012R

Total Revenue lost over 8 years $ 285,560





Fiscal Note

State of Alaska
2013 Legislative Session

Bill Version: HB 143
Fiscal Note Number:
() Publish Date:

Identifier: HB143-DFG-DAS-03-08-13
Title: COMMERCIAL FISHING CREWMEMBER LICENSES
Sponsor: SEATON
Requester: House Special Committee on Fisheries

Department: Department of Fish and Game
Appropriation: Administration and Support
Allocation: Administrative Services
OMB Component Number: 479

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2014 Appropriation Requested	Included in Governor's FY2014 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2014**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**
Personal Services							
Travel							
Services	11.0		11.0	11.0	11.0	11.0	11.0
Commodities							
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	**11.0**	**0.0**	**11.0**	**11.0**	**11.0**	**11.0**	**11.0**
Fund Source (Operating Only)							
1005 GF/Prgm	11.0		11.0	11.0	11.0	11.0	11.0
Total	**11.0**	**0.0**	**11.0**	**11.0**	**11.0**	**11.0**	**11.0**
Positions							
Full-time							
Part-time							
Temporary							
Change in Revenues	73.4		73.4	73.4	73.4	73.4	73.4

Estimated SUPPLEMENTAL (FY2013) cost: 0.0

Estimated CAPITAL (FY2014) cost: 0.0

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? No
If yes, by what date are the regulations to be adopted, amended or repealed?

Why this fiscal note differs from previous version:

Initial version

Prepared By:	Carol Petraborg, Deputy Director	Phone:	(907)465-5999
Division	Division of Administrative Services	Date:	03/08/2013 03:30 PM
Approved By:	Kevin Brooks, Deputy Commissioner	Date:	03/08/13
	Department of Fish and Game		

FISCAL NOTE ANALYSIS

STATE OF ALASKA **BILL NO.** HB 143 \A
2013 LEGISLATIVE SESSION

Analysis

This analysis is based on actual 2012 commercial crewmember license sales. In 2012, 24,090 crewmember licenses were sold. 443 were resident 7-day crew licenses and 2,317 were non resident 7-day crew licenses.

For residents, increasing the 7-day crew license to $60, which is the same price as the resident annual license, will likely make the resident 7-day license obsolete. Residents will be more inclined to purchase an annual license that costs the same as a 7-day license. Thus we moved 443 resident 7-day licenses to annual license sales.

In 2012, 136 non resident fishermen purchased four or more 7-day licenses. The 136 fisherman purchasing mulitple 7-day licenses totaled 611 licenses (86 @4 licenses, 33 @ 5 licenses, and 17 @ 6 licenses). At the new price of $60, to purchase four 7-day licenses will cost $240. Therefore, we assume fisherman who purchased 4 or more licenses in 2012 would be inclined to purchase an annual license at $200.

Contractual expenditures reflect vendor compensation assessed at 15%.

2012 Actual Sales	# Sold	Cost	Gross Sales
Annual Resident Crewmember	10,777	$60.00	$646,620
Annual NR Crewmember	10,158	$200	$2,031,600
Resident Child Crewmember	378	$5.00	$1,890
NR Child Crewmember	17	$145.00	$2,465
Resident 7-day Crewmember	443	$30.00	$13,290
NR 7-day Crewmember	2,317	$30.00	$69,510
Total	**24,090**		**$2,765,375**

Projected Sales With Fee Increase			
Annual Resident Crewmember	11,220	$60.00	$673,200
Annual NR Crewmember	10,294	$200	$2,058,800
Resident Child Crewmember	378	$5.00	$1,890
NR Child Crewmember	17	$145.00	$2,465
Resident 7-day Crewmember	0	$60.00	$0
NR 7-day Crewmember	1,706	$60.00	$102,360
Total	**23,615**		**$2,838,715**

Difference/Profit	
Annual Resident Crewmember	$26,580
Annual NR Crewmember	$27,200
Resident 7-day Crewmember	-$13,290
NR 7-day Crewmember	$32,850
Total	**$73,340**

Fiscal Note

State of Alaska
2013 Legislative Session

Bill Version: HB 143
Fiscal Note Number:
() Publish Date:

Identifier: HB143-DOLWD-FF-3-8-13
Title: COMMERCIAL FISHING CREWMEMBER LICENSES
Sponsor: SEATON
Requester: House Fisheries

Department: Department of Labor and Workforce Development
Appropriation: Workers' Compensation
Allocation: Fishermen's Fund
OMB Component Number: 343

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2014 Appropriation Requested	Included in Governor's FY2014 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2014**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Fund Source (Operating Only)							
None							
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Positions							
Full-time							
Part-time							
Temporary							
Change in Revenues	24.8		24.8	24.8	24.8	24.8	24.8

Estimated SUPPLEMENTAL (FY2013) cost: 0.0

Estimated CAPITAL (FY2014) cost: 0.0

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? No
If yes, by what date are the regulations to be adopted, amended or repealed?

Why this fiscal note differs from previous version:

Not applicable, initial version.

Prepared By: Michael Monagle, Director — Phone: (907)465-6059
Division: Workers' Compensation — Date: 03/08/2013 02:00 PM
Approved By: Dianne Blumer, Commissioner — Date: 03/08/13
Department of Labor and Workforce Development

STATE OF ALASKA
2013 LEGISLATIVE SESSION

BILL NO. HB143

Analysis

The proposed legislation increases the fee for a seven-day crewmember fishing license from $30 to $60.

The Fishermen's Fund component within the Department of Labor and Workforce Development is funded by a percentage of revenue received from each resident and nonresident commercial fishermen's license and permit fee.

The Fishermen's Fund receives 39 percent of the revenue collected for each crewmember fishing license sold. Based on revenue projections provided by the Alaska Department of Fish and Game, annual revenue to the Fishermen's Fund would increase by $24.8 per year.

Life long commercial fisherman invites tourists along for the ride

Juneau fisherman says, 'If adventure be in your soul, sign on!'

Posted: June 18, 2011 - 9:23pm



Klas Stolpe / Juneau Empire
F/V Tia Lynn captain Andy Massey gaffs aboard a halibut as deckhand, and step-son, David Hamilton cleans fish and client Richard Mattson watches during Massey's newest business venture. Massey is giving tourists an exciting and unique Alaskan experience by signing them on as crew on day outings while he harvests his commercial quota.

By Klas Stolpe

JUNEAU EMPIRE

It was probably a good thing three of captain Andy Massey's crew did not show up as he cast lines away and the F/V Tia Lynn moved out of Harris Harbor. Like any lifelong commercial fishing captain, and like time and tide, Massey waits for no man and would give them an ear-full of "salty language" if he did.

"I learned early on that if you ask a girl out twice and she comes up with a phony excuse then she doesn't want to go," Massey said. "When I started fishing, if you were late you missed the boat, then you lost your job and the paycheck."

Of course Massey said this all with humor. Not the humor of a 54-year-old man who has been commercial fishing since 1975 at age 17 and been through "hell and high water," but the man who was using his wisdom of the sea to insure he had a retirement life on the horizon.

Raised in the Norwegian settled fishing town of Petersburg, Massey discovered at an early age his calling was on the deck of a commercial long

liner. Old Norwegian Ernest Enge on the F/V Martina gave him his start and he crewed his way along.

The federal government decided that an Individual Fishing Quota (IFQ) was needed to allow an individual to harvest a percentage of the Total Allowable Catch (TAC) of halibut and black cod (sablefish). It implemented the IFQ/ITQ program in 1995 to qualifying fishermen, mostly skippers.

A quota was issued to owners or leaseholders of vessels that sold halibut and black cod at any time in 1988-1990. Shares were calculated by the best five years of catches from 1985-90 for cod and 1984-90 for halibut.

Captains banded together to fish, and crew lost jobs. A high of 3,450 distinct vessels landed halibut in 1994 and that shrunk to 1,156 by 2008 (1,404 to 362 for sablefish).

Massey through the years has stayed on a reliable boat, the F/V Westerly, and crews halibut and black cod in the Spring and Fall.

In 1998, for roughly $300,000, he added to his crew income by buying 23,000 pounds of halibut IFQ and the right to fish it. The plan was for it to become a retirement fishing nest egg to sleepily harvest with a cup of coffee in hand.

"Uncle Sam must have thought I didn't need to relax," Massey laughed. "Don't get me started on the feds in state waters."

The International Pacific Halibut Commission, which had been shaving off a pound here and a pound there over the years, cut the 2011 halibut quota nearly in half, bankrupting many who bought in to the fishing business in 2005.

"Their story is fish stocks are so depressed that you can only justify 2.3 million for the commercial fleet," Massey roars. "When it used to be 10.5 peaked out. When I go out there I don't see any difference. I go through all my logbooks and I get the same catch rate I always had. I think they are full of... well, anyway."

Massey's initial investment of 23,000 pounds has dieted off to 4,900. To help offset his investment costs Massey has started the next reality Alaskan adventure: crewing on board a working Alaskan Halibut fishing vessel.

"I needed to do something," Massey said. "I had to spread that poundage out to make it a viable interest, or just get out of it. I have to fish my pounds anyway; I may as well try to make some money at it. I just had to build a better mouse trap."

An Alaska Legislative House Bill that passed in 2005 allowed the purchase of 7-day crew licenses to allow visitors an affordable way to engage in a sort of extreme tourism adventure by actually participating in the fishery as a crewmember. The bill also forbids a wage, thus combating illegal or unethical hiring practices.

By Alaska statute a resident or non-resident can purchase a multiple-day commercial crew license, however, they cannot sport fish from the vessel, nor can commercial vessels allow sport fishing on board.

Massey is marketing a six- to eight-hour day. He will license clients at the boat. Clients sign on as crew and learn to bait, set and haul gear and "experience what it's like fishing with 200 hooks instead of just one."

"I am not letting them grab a gaff or use a knife," Massey said. "I might let them bait a hook or two. If they look like they are dangerous I will relieve them of duty. They will need to understand right off the bat that I am the skipper. The idea is just to give them a little taste of my slice of heaven."

As the Tia Lynn began passing the large docked "sardine cans" full of tourists, Massey was conducting the dude-fishing crew's safety meeting. Crew were educated about survival suits, life rafts, and most, importantly, the VHF, "for when you give me a heart attack," Massey said to laughs.

Massey distributes "oilskins" and the gear baiting begins. This trip would be all watchers, yet Massey explained the ins and outs of the work with patience.

"We are using salmon and squid," Massey said, placing a hook into a piece of salmon his deckhand, and stepson, David Hamilton had cut. "We will be fishing in heavy flea bottom so we don't want the gear to soak too long."

With gear baited and the F/V Tia Lynn reaching a secret fishing spot Massey's fingers traveled over a chart book.

"I have caught fish here, and here, and here," Massey said. "Here I caught a cold."

The crew enjoys the banter of a real, live Alaskan born fisherman.

Four skates, or tubs, of gear, each 150 fathoms (900 feet) long with 50 baited hooks, are set over with buoys and anchors at each end — roughly two-thirds of a mile of fishing on the bottom.

"I set across the tide to catch the fish washing back and forth with the tide," Massey says. "It's easier to set with the tide but I like things difficult."

Massey's logbook is imprinted with the latitude and longitude of each end, the depth, hook size and spacing, gear type, target species, date and time, crew, and his IFQ number.

"Federal regulations in state water," Massey mumbles. Halibut, black cod, and various ocean crab in the Bering Sea are federally regulated while herring, salmon, and crab are state burdens. "Don't get me started."

With gear fishing the Tia Lynn motors towards whale country. Crew eyes are pressed to the galley windows as they snack on salmon and tanner crab spreads purchased locally.

Killer whales provide a show and move on as a crewmember photographs from the bow sprite. If the gillnet fleet were fishing the crew would watch the action, and if humpbacks were about the skipper would lower an underwater microphone and listen to whale chatter.

Massey drops the anchor near shore and lowers a deepwater camera. The camera's LED lights provide a 15-foot underwater view of crab and various critters below and shows it live on a TV in the galley.

When gear is hauled and halibut cleaned and iced the Tia Lynn heads to port. Salable by-catch like pacific cod or red snapper, after being weighed and logged, will be given to the Glory Hole.

Massey has to deliver fish in accordance to existing commercial laws. If a crewman wants to buy a specific fish it is marked during icing. When the fish are delivered at the dock the marked fish is taken to Jerry's Meats for processing, freezing and shipping. Any fish not sold to crew is sold off the dock or to a processor.

With the lines tied fast at dock, hands shaken and crew departed, Massey leans back into his captain's chair.

"Another thing," Massey says. "I am getting to the age now where it is tough to do the brutal stuff anymore. You go out there and make a 50,000-pound halibut trip like we did last fall, you just don't bounce back like you used to. This is an experience cruise, an Alaskan adventure, something they can't get anywhere else. And it's not a cattle car operation, its small and homey."

To reach Massey, call 500-2316 or visit www.alaskalongliner.com.

Alaska Department of Fish and Game

License Prices

Resident Fishing & Hunting Licenses		
		PRICES
Resident Annual Sport Fishing License**		$24.00
Resident Annual Sport Fishing License for the Blind**		$0.25
Resident Annual Hunting and Sport Fishing License**		$48.00
Resident Annual Hunting and Sport Fishing and Trapping License**		$62.00
Resident Annual Low Income Hunting and Sport Fishing and Trapping License**		$5.00
Resident Annual Hunting		$25.00
Resident Annual Trapping		$15.00
Resident Annual Class 5A (Low Income, must fill out affidavit on back of license)		$5.00
Resident Class 5A Duplicate (replacement)		$2.00
Resident Annual Hunting License for the Blind		$25.00
Resident Duplicate (replacement) License		$5.00
Resident Duplicate (replacement) Low Income License		$2.00
Resident King Salmon & Duck Stamps:		
Resident Annual King Salmon Stamp		$10.00
Resident Duplicate (replacement) King Salmon Stamp		$5.00
Resident Annual State Waterfowl Stamp		$5.00
Nonresident Fishing & Hunting Licenses:		
Nonresident 1 Day Sport Fishing License**		$20.00
Nonresident 3 Day Sport Fishing License**		$35.00
Nonresident 7 Day Sport Fishing License**		$55.00
Nonresident 14 Day Sport Fishing License**		$80.00
Nonresident Annual Sport Fishing License**		$145.00
Nonresident Annual Hunting and Sport Fishing License**		$230.00
Nonresident Annual Hunting and 1 Day Sport Fishing License**		$105.00
Nonresident Annual Hunting and 3 Day Sport Fishing License**		$120.00
Nonresident Annual Hunting and 7 Day Sport Fishing License**		$140.00

Nonresident Annual Hunting and 14 Day Sport Fishing License**		$165.00
Nonresident Annual Hunting		$85.00
Nonresident Annual Hunting and Trapping		$250.00
Nonresident Annual Hunting – Small Game only		$20.00
Nonresident Duplicate (replacement) License		$5.00
Nonresident King Salmon & Duck Stamps:		
Nonresident 1 Day King Salmon Stamp		$10.00
Nonresident 3 Day King Salmon Stamp		$20.00
Nonresident 7 Day King Salmon Stamp		$30.00
Nonresident 14 Day King Salmon Stamp		$50.00
Nonresident Annual King Salmon Stamp		$100.00
Nonresident Duplicate (replacement) King Salmon Stamp		$5.00
Nonresident Annual State Waterfowl Stamp		$5.00
Nonresident Military Fishing & Hunting Licenses: (must be on active duty and stationed in Alaska)		
Nonresident 1 Day Sport Fishing License**		$20.00
Nonresident 3 Day Sport Fishing License**		$35.00
Nonresident 7 Day Sport Fishing License**		$55.00
Nonresident 14 Day Sport Fishing License**		$80.00
Nonresident Military Annual Sport Fishing License**		$24.00
Nonresident Annual Military Hunting and Sport Fishing License**		$48.00
Nonresident Annual Military Hunting		$25.00
Nonresident Hunting and Trapping		$250.00
Nonresident Military Duplicate (replacement) License		$5.00
Nonresident Military King Salmon & Duck Stamps: (must be on active duty and stationed in Alaska)		
Nonresident Military Annual King Salmon Stamp		$20.00
Nonresident Military Duplicate (replacement) King Salmon Stamp		$5.00
Nonresident Annual State Waterfowl Stamp		$5.00
Nonresident Fishing & Hunting Licenses (Foreign/Alien):		
Nonresident 1 Day Sport Fishing License**		$20.00
Nonresident 3 Day Sport Fishing License**		$35.00

Nonresident 7 Day Sport Fishing License**		$55.00
Nonresident 14 Day Sport Fishing License**		$80.00
Nonresident Annual Sport Fishing License**		$145.00
Nonresident Annual Yukon Territory Reciprocal Sport Fishing License**		$24.00
Nonresident Alien Annual Hunting		$300.00
Nonresident Duplicate (replacement) License		$5.00
Nonresident Military King Salmon & Duck Stamps (Foreign/Alien): (must be on active duty and stationed in Alaska)		
Nonresident 1 Day King Salmon Stamp		$10.00
Nonresident 3 Day King Salmon Stamp		$20.00
Nonresident 7 Day King Salmon Stamp		$30.00
Nonresident 14 Day King Salmon Stamp		$50.00
Nonresident Annual King Salmon Stamp		$100.00
Nonresident Annual Yukon Territory Reciprocal King Salmon Stamp		$10.00
Nonresident Annual State Waterfowl Stamp		$5.00

**Sport fishing license fees increased in 2006 to provide for sport fishing facilities.
See Facility surcharge AS 16.05.340 (*PDF 14 kB*) for further information.

COMMERCIAL CREWMEMBER LICENSE				
	Resident		Nonresident	
Crewmember Annual License		$60.00		$200.00
Child Crewmember Annual License (10 or less years old)		$5.00		$145.00
Crewmember 7 Day License		$30.00		$30.00
Crewmember Duplicate (replacement) License		$5.00		$5.00

BIG GAME TAGS:

The following state tags must be purchased for each animal in addition to acquiring the proper hunting license before hunting big game. Tag holder must carry metal locking tag and big game tag record with them in the field. The tag shall be affixed and sealed to the antlers or cape in such a manner that it cannot be removed or reused. Nonresident Military FREE tag (*PDF 29 kB*).

Resident Tags:		
Resident Brown/Grizzly Bear (some locations - check hunting regulations)		$25.00
Resident Muskox – Bull		$500.00
Resident Muskox – Cow		$25.00

Resident Duplicate (replacement) Tag (For any above species)		$5.00

Nonresident Tags:	Do I need a guide?	Nonresident	Qualified Nonresident Military *(PDF 29 kB)*	Do I need a guide?	Nonresident Alien
Nonresident Brown/Grizzly Bear	Yes	$500.00	$25.00	Yes	$650.00
Nonresident Black Bear	--	$225.00	$0.00	Yes	$300.00
Nonresident Bison	--	$450.00	$0.00	Yes	$650.00
Nonresident Caribou	--	$325.00	$0.00	Yes	$425.00
Nonresident Deer	--	$150.00	$0.00	Yes	$200.00
Nonresident Elk	--	$300.00	$0.00	Yes	$400.00
Nonresident Goat	Yes	$300.00	FREE tag*	Yes	$400.00
Nonresident Moose	--	$400.00	$0.00	Yes	$500.00
Nonresident Muskox - Bull	--	$1,100.00	$500.00	Yes	$1,500.00
Nonresident Muskox – Cow	--	Not Allowed	$25.00	--	Not Allowed
Nonresident Sheep	Yes	$425.00	FREE tag*	Yes	$550.00
Nonresident Wolf	--	$30.00	$0.00	Yes	$50.00
Nonresident Wolverine	--	$175.00	$0.00	Yes	$250.00
Nonresident Duplicate (replacement) Tag (For any above species)	--	$5.00	$5.00	Yes	$5.00

HB 177

<TARGET><BILL>HB 177</BILL><SUBJECT>HB 177</SUBJECT><COMM>HFSH28</COMM></TARGET>

28-LS0607\O
Bullard
3/26/13

CS FOR HOUSE BILL NO. 177( )

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-EIGHTH LEGISLATURE - FIRST SESSION

BY

Offered:
Referred:

Sponsor(s): REPRESENTATIVE EDGMON

A BILL

FOR AN ACT ENTITLED

"An Act relating to interest rates on loans from the commercial fishing revolving loan fund and the community quota entity revolving loan fund; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

*** Section 1.** AS 16.10.320(a) is amended to read:

(a) Except as permitted in (h), [AND] (*l*), **and (n)** of this section, a loan under AS 16.10.300 - 16.10.370

(1) may not exceed a term of 15 years, except for extensions under AS 16.10.310(a)(4);

(2) may not bear interest **at a rate**

(A) exceeding the prime rate, as defined by AS 44.88.599, plus two percentage points;

(B) [AT A RATE] of more than 10 1/2 percent a year; or

(C) [AT A RATE] that is less than **three percent a year** [THE

COST OF FUNDS TO THE STATE];

(3) must be secured by a first priority lien and appropriate security agreement;

(4) may not exceed 80 percent of the appraised value of the collateral used to secure the loan; and

(5) may not be made to a person who has a past due child support obligation established by court order or by the child support services agency under AS 25.27.160 - 25.27.220 at the time of application.

*** Sec. 2.** AS 16.10.320(j) is amended to read:

(j) All principal and interest payments, and any money chargeable to principal or interest that is collected through liquidation by foreclosure or other process, on loans made under AS 16.10.300 - 16.10.370, except loans made under AS 16.10.310(a)(1)(E) after June 30, 2012, shall be paid into the commercial fishing revolving loan fund. [ALL PRINCIPAL AND INTEREST PAYMENTS, AND ANY MONEY CHARGEABLE TO PRINCIPAL OR INTEREST THAT IS COLLECTED THROUGH LIQUIDATION BY FORECLOSURE OR OTHER PROCESS, ON LOANS MADE UNDER AS 16.10.310(a)(1)(E) AFTER JUNE 30, 2012, SHALL BE PAID INTO THE COMMUNITY QUOTA ENTITY REVOLVING LOAN FUND.]

*** Sec. 3.** AS 16.10.320(*l*) is amended to read:

(*l*) Until a community quota entity has used loans under this subsection to purchase fishing quota shares cumulatively authorizing a total take of 50,000 pounds, a loan or a portion of a loan made to that community quota entity under AS 16.10.310(a)(1)(E) may not exceed 95 percent of the appraised value of the collateral used to secure the loan or a portion of the loan. A loan to a community quota entity under AS 16.10.310(a)(1)(E)

(1) may not exceed a term of 25 years, except for extensions under AS 16.10.310(a)(4);

(2) may not bear interest

(A) at a rate exceeding

(i) the prime rate, as defined by AS 44.88.599, plus two percentage points; or

(ii) 10 1/2 percent a year;

(B) at a rate that is less than

(i) the cost of funds to the state; or

(ii) three percent a year;

(3) [(2)] may not, alone or in combination with other loans to the community quota entity under AS 16.10.310(a)(4), exceed $1,000,000 in loans to one community quota entity;

(4) [(3)] may have terms that allow for a community quota entity to defer interest payments for up to two years; and

(5) [(4)] is not eligible for refinancing by the department.

*** Sec. 4.** AS 16.10.320(m) is amended to read:

(m) In **AS 16.10.320(*l*)** [THIS SECTION], "cost of funds" means the true interest cost expressed as a rate based on the prime rate plus one percentage point plus an additional percentage determined by the department to represent risk of loss, term of credit facility, the allocable expense of operation, cost of issuance, and loan servicing costs.

*** Sec. 5.** AS 16.10.320 is amended by adding a new subsection to read:

(n) A loan made under AS 16.10.310(a)(1)(A)(ii), 16.10.310(a)(1)(A)(iii), or 16.10.310(a)(1)(B) to upgrade an existing vessel and gear for the purpose of improving the quality of Alaska seafood products or for propulsion engine or generator engine replacement on an existing vessel for the purpose of improving fuel efficiency may not bear interest exceeding the prime rate, as defined by AS 44.88.599, minus two percentage points, or at a rate exceeding 10 1/2 percent, and may not bear interest at a rate of less than three percent.

*** Sec. 6.** AS 16.10.345 is amended by adding new subsections to read:

(c) The community quota entity revolving loan fund consists of the following:

(1) money appropriated to, transferred to, or received by gift, grant, devise, bequest, or donation to the fund;

(2) principal and interest payments or other income earned on loans or investments of the fund; and

(3) money chargeable to principal or interest that is collected through

liquidation by foreclosure or other process on loans made under AS 16.10.310(a)(1)(E) and 16.10.345.

(d) Money in the fund may be used by the legislature to make appropriations for costs of administering AS 16.10.310(a)(1)(E) and 16.10.345.

* Sec. 7. This Act takes effect immediately under AS 01.10.070(c).

28-LS0607\O.2
Bullard
1/30/14

AMENDMENT

OFFERED IN THE HOUSE

TO: CSHB 177( ), Draft Version "O"

Page 1, line 13, through page 2, line 1:

Delete all material and insert:

"(B) [AT A RATE] of more than 10 1/2 percent a year; [OR]

(C) **that is less than the prime rate, as defined in AS 44.88.599, minus three percentage points; or**

(D) [AT A RATE] that is less than **three percent a year** [THE COST OF FUNDS TO THE STATE];"

28-LS0607\C

HOUSE BILL NO. 177

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-EIGHTH LEGISLATURE - FIRST SESSION

BY REPRESENTATIVE EDGMON

Introduced: 3/20/13
Referred:

A BILL

FOR AN ACT ENTITLED

"An Act relating to interest rates on loans from the commercial fishing revolving loan fund and the community quota entity revolving loan fund; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

*** Section 1.** AS 16.10.320(a) is amended to read:

(a) Except as permitted in (h), [AND] (*l*), **and (n)** of this section, a loan under AS 16.10.300 - 16.10.370

(1) may not exceed a term of 15 years, except for extensions under AS 16.10.310(a)(4);

(2) may not bear interest **at a rate**

(A) exceeding the prime rate, as defined by AS 44.88.599, plus two percentage points;

(B) [AT A RATE] of more than 10 1/2 percent a year; or

(C) [AT A RATE] that is less than **three percent a year** [THE

COST OF FUNDS TO THE STATE];

(3) must be secured by a first priority lien and appropriate security agreement;

(4) may not exceed 80 percent of the appraised value of the collateral used to secure the loan; and

(5) may not be made to a person who has a past due child support obligation established by court order or by the child support services agency under AS 25.27.160 - 25.27.220 at the time of application.

*** Sec. 2.** AS 16.10.320(j) is amended to read:

(j) All principal and interest payments, and any money chargeable to principal or interest that is collected through liquidation by foreclosure or other process, on loans made under AS 16.10.300 - 16.10.370, except loans made under AS 16.10.310(a)(1)(E) after June 30, 2012, shall be paid into the commercial fishing revolving loan fund. [ALL PRINCIPAL AND INTEREST PAYMENTS, AND ANY MONEY CHARGEABLE TO PRINCIPAL OR INTEREST THAT IS COLLECTED THROUGH LIQUIDATION BY FORECLOSURE OR OTHER PROCESS, ON LOANS MADE UNDER AS 16.10.310(a)(1)(E) AFTER JUNE 30, 2012, SHALL BE PAID INTO THE COMMUNITY QUOTA ENTITY REVOLVING LOAN FUND.]

*** Sec. 3.** AS 16.10.320(*l*) is amended to read:

(*l*) Until a community quota entity has used loans under this subsection to purchase fishing quota shares cumulatively authorizing a total take of 50,000 pounds, a loan or a portion of a loan made to that community quota entity under AS 16.10.310(a)(1)(E) may not exceed 95 percent of the appraised value of the collateral used to secure the loan or a portion of the loan. A loan to a community quota entity under AS 16.10.310(a)(1)(E)

(1) may not exceed a term of 25 years, except for extensions under AS 16.10.310(a)(4);

(2) may not bear interest

(A) at a rate exceeding

(i) the prime rate, as defined by AS 44.88.599, plus two percentage points; or

(ii) 10 1/2 percent a year;

(B) at a rate that is less than

(i) the cost of funds to the state; or

(ii) three percent a year;

(3) [(2)] may not, alone or in combination with other loans to the community quota entity under AS 16.10.310(a)(4), exceed $1,000,000 in loans to one community quota entity;

(4) [(3)] may have terms that allow for a community quota entity to defer interest payments for up to two years; and

(5) [(4)] is not eligible for refinancing by the department.

*** Sec. 4.** AS 16.10.320(m) is amended to read:

(m) In **AS 16.10.320*(l)*** [THIS SECTION], "cost of funds" means the true interest cost expressed as a rate based on the prime rate plus one percentage point plus an additional percentage determined by the department to represent risk of loss, term of credit facility, the allocable expense of operation, cost of issuance, and loan servicing costs.

*** Sec. 5.** AS 16.10.320 is amended by adding a new subsection to read:

(n) A loan made under AS 16.10.310(a)(1)(A)(ii), 16.10.310(a)(1)(A)(iii), or 16.10.310(a)(1)(B) for propulsion engine or generator engine replacements on existing vessels for the purpose of improving fuel efficiency may not bear interest exceeding the prime rate, as defined by AS 44.88.599, minus two percentage points, or at a rate exceeding 10 1/2 percent, and may not bear interest at a rate of less than three percent.

*** Sec. 6.** AS 16.10.345 is amended by adding new subsections to read:

(c) The community quota entity revolving loan fund consists of the following:

(1) money appropriated to, transferred to, or received by gift, grant, devise, bequest, or donation to the fund;

(2) principal and interest payments or other income earned on loans or investments of the fund; and

(3) money chargeable to principal or interest that is collected through liquidation by foreclosure or other process on loans made under AS 16.10.310(a)(1)(E) and 16.10.345.

(d) Money in the fund may be used by the legislature to make appropriations for costs of administering AS 16.10.310(a)(1)(E) and 16.10.345.

*** Sec. 7.** This Act takes effect immediately under AS 01.10.070(c).

Division of Economic Development
Department of Commerce, Community, and Economic Development

Commercial Fishing Revolving Loan Fund (CFRLF)
Historical Information

Monies Transferred From the CFRLF to Fund the Alaska Department of Fish & Game Operating Budget (ADF&G):

FY2004	$ 800,000.00
FY2005	$ 1,976,300.00
FY2006	$ 1,976,300.00
FY2007	$ 1,326,300.00
FY2008	$ 1,326,300.00
FY2009	$ 1,326,300.00
FY2010	$ 1,326,300.00
FY2011	-
FY2012	-
	$ 10,057,800.00

Over the life of the CFRLF program, almost $58 million was transferred out of the CFRLF to fund other government operations. From FY2004 through FY2010, over $10 million was used to fund ADF&G operating budget. In FY2011 and FY2012 there were no transfers from the CFRLF to ADF&G.

GeFONSI Earnings on CFRLF Cash Balances:

Fiscal Year	Interest Earnings	Interest Rate
FY2007	$ 2,054,419.72	5.51%
FY2008	$ 2,348,491.02	5.85%
FY2009	$ 1,331,665.63	2.68%
FY2010	$ 1,343,210.11	3.38%
FY2011	$ 543,848.66	1.61%
FY2012	$ 431,438.00	1.43%

CFRLF cash is managed by the Department of Revenue and is invested in a pool of funds referred to the GeFONSI (General Fund and Other Non-Segregated Investments). These earnings are retained by the General Fund.

Division of Economic Development, Financing Section Staff Positions Dedicated to CFRLF Funding:

FY2012	40

THE STATE
of ALASKA
GOVERNOR SEAN PARNELL

Department of Commerce, Community, and Economic Development

OFFICE OF THE COMMISSIONER

P.O. Box 110800
Juneau, Alaska 99811-0800
Main: 907.465.2500
TDD: 907.465.5437
Fax: 907.465.5442

MEMORANDUM

TO: Representative Craig Johnson

DATE: Monday, February 03, 2014

FROM: Commissioner Susan Bell

RE: Questions on House Bill 177

Thank you for your memorandum dated January 31, 2014 with questions concerning House Bill 177. Division Director Joe Jacobson assisted me with the responses below. He will be present at the committee meeting on February 4 to answer any further questions.

1) **This bill allows the interest rate for Commercial Fishing Revolving Loan Fund (hereafter CFRLF) loans to be set as low as three percent – regardless of current market rates. Does DCCED have any objection to a variable floor coupled to the prime rate?**

DCCED does not have any objection to a variable floor coupled to the prime rate. While the bill does not set a variable floor coupled to the prime rate in statute, CFRLF interest rates for the Product Quality Improvement (PQI) and Engine Fuel Efficiency Programs are clearly set in regulation. For example, 3 AAC 80.055 (k) (1) dictates:

(1) The interest rate is based on the cost of funds to the state as defined in AS 16.10.320 (m) for loans made
   (a) to upgrade existing vessels and gear for the purpose of improving the quality of Alaska seafood products; or
   (b) for engine efficiency upgrades.

AS 16.10.320 (m) further specifies the cost of funds is prime plus one plus additional costs to represent risk of loss and other costs.

2) **Low interest rates are likely to lead to increased funds being loaned out of the fund balance. With lower interest rates, loan repayments will be lower, leading to slower fund replenishment. What safeguards are in place to ensure the funds' health is not put at risk?**

The PQI and EFE Programs within the CFRLF represent less than six percent of the total assets in the CFRLF and are relatively inexpensive to administer in comparison to other loans. Historically,

interest rates for these two programs were three percent from inception (1992) until 2012, when rates were changed to current rates as defined under AS 16.10.320(m). During this period, the CFRLF never experienced poor fund replenishment. In fact, between 1994 and 2012, the total equity of the CFRLF increased from $92,414,000 to $104,420,000. Based on this experience, which spanned multiple financial crises and a collapse in the salmon market, there is nothing to indicate that this change would have a negative impact on the fund.

3) **It was mentioned in the January 28th House Resources Committee that staff and administrative costs for the Commercial Fishing Revolving Loan and the Community Quota Entity Revolving Loan Programs are paid out of the funds' balances. What safeguards are in place to ensure that administrative costs, when combined with increased draws on the funds and decreased repayments, do not reduce the funds' balances to unhealthy levels?**

All loan funds administered by the Division of Economic Development (DED) are subject to a large amount of scrutiny and regulation. The loan funds are subject to complex and comprehensive annual audits where the fund's financial statements are analyzed to ensure the loan funds are managed prudently, in compliance with statutes and regulations, and that standard Governmental Accounting Procedures are being adhered to. Annual reports and the audit findings are furnished to the legislature.

4) **How is the interest rate for these loans determined, and by whom? What factors are considered when making this determination?**

Determining the interest rates for all loans in the CFRLF is done through a process set out in Statute (AS 16.10.320) and Administrative Code (3 AAC 80.055(k). The prime rate is taken from the Wall Street Journal and then interest points are added or subtracted as required by statute or administrative code. The process is generally carried out by the Division's Operation Manager.

5) **What oversight structure is in place to ensure that the determined interest rate serves to preserve the health of the fund, and serves the State's interests?**

DED submits annual reports to the legislature indicating the fund's performance and undergoes regular audits. Additionally, the total administrative cost of new loans made under PQI and EFE funds in FY 13 was $14,800. Under current interest rate (4.25%), the total value of these funds ($2,100,000) would accrue $89,250 per year. In a scenario with the interest rate at 3%, the funds would accrue $63,000 per year. Under both scenarios, the interest accrued far outpaces costs.

6) **The proposed bill would allow DCCED to give lower-cost financing to fishermen to improve their vessels and sell higher-quality fish. What would be a reasonable estimate of the favorable impacts of this to the state in terms of economic growth or job growth?**

Between 2002 and 2012, the average ex-vessel price/lb. for Alaska salmon increased 350% from $0.26 to $0.91, halibut increased 254% from $1.65 to $4.19, and black cod increased 173% from $2.04 to $3.53. During this same period, Alaska resident crew employment increased 28% from 8,520 to 10,923 while seafood processing employment rose 24.5% from 20,162 to 25,112. While it is impossible to attribute this growth to product quality alone, it is a critical driver of these increases. Given that the industry still has significant room for product quality improvement—in Bristol Bay, only 60% of the drift boat catch is chilled—it would not be unreasonable for similar gains to occur over the next decade.

In addition to product quality, the EFE loans allow fishermen to take home more money and minimize the impact of the fishery on the environment. New engines typically improve efficiency between 20-30%. With the price of gasoline exceeding $7/gallon in prominent fishing communities like Dillingham, these savings add up over the course of a season.

7) **Has the CFRLF ever required recapitalization through a legislative appropriation? If so, please explain the circumstances leading to the recapitalization(s) and any corrective actions taken by the Department to prevent the CFRLF from requiring recapitalization in the future.**

The last infusion of general funds into the CFRLF occurred in 1985 in response to the growing demand for loans as the fishing industry developed under the relatively new Limited Entry System. Of the state's $60 million investment in the fund, it has repaid $120 million over its lifetime and generates sufficient cash flow to cover loan demand and operations.

Commercial Fishing Loan Fund

Loan Program Goal and Objectives

To provide long-term, low interest loans to promote the development of predominantly resident fisheries, and continued maintenance of commercial fishing vessels and gear for the purpose of improving the quality of Alaska seafood products.

General Requirements

- Alaska resident for the past 2 years.
- Child support payments must not be past due.
- Provide a copy of each applicant's valid government issued identification at or before loan closing.

Definition of Resident

- Living in Alaska with the intent to remain indefinitely.
- Primary and permanent home in Alaska.
- Present in Alaska except for brief intervals (generally less than 90 days) except for military service, education or good cause.

Program Requirements

- Purchases - Loans are available for limited entry permits, quota shares, vessels, or gear purchased less than 12 months prior to the date your application is received.
- Refinancing - Vessels or gear loans made by other lenders more than one year prior to receipt of your application are eligible for financing.
- Collateral - The item being financed (limited entry permit, vessel, etc.) will be the collateral for the loan and, and generally, a priority lien must be obtained.

Terms and Conditions

- Interest rate will be fixed at the time of loan approval. Current interest rates can be found at http://commerce.alaska.gov/ded/fin/interest_rates.cfm.
- Maximum loan term is 15 years.
- Borrower is responsible to pay all direct costs incurred in processing an application including surveys, inspections, appraisals, title insurance, etc.

Information and Applications

- Engine Fuel Efficiency Upgrade
- Extension
- Limited Entry Permit Purchase
- Loan Assumption
- Product Quality Improvement
- Purchase of Quota Shares
- Refinance
- Refinance of Vessel or Gear
- Tax Obligation
- Tender Vessel Product Quality Improvement
- Vessel Purchase
- Vessel Upgrade or Gear Purchase/Upgrade

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Quick Links...

- Alaska Capstone Avionics Loan Program
- Commercial Fishing
- Small Business Economic Development
- Rural Development Initiative Fund
- Fisheries Enhancement

Of Interest...

- Interest Rates
- IFQs for Sale
- Permits for Sale
- Real Estate for Sale
- Vessels for Sale
- Auto Pay Program
- 'TEL' Payment Program
- Comments
- Related Sites

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Commercial Fishing Loan Fund

Engine Fuel Efficiency Upgrade

Select either Section A or B
Purpose of the upgrade must be to improve the fuel efficiency of the propulsion engine or generator engine replacement on an existing vessel.

Section A

Eligibility

- Held limited entry permit, commercial fishing or crew member license and 2 other years out of the past 5 years;

and

- Fished in Alaskan waters during qualifying years.

If you receive a loan under Section A, you will not be eligible for future loans under Section B unless the loan requested under Section A was for engine fuel efficiency or the purchase of a limited entry permit.

Lending Limit

- The total outstanding balances on all loans made under Section A of the Commercial Fishing Loan Program may not exceed $300,000.
- Total Balance outstanding on all Section A and Section B loans may not exceed $400,000.

Section B

Eligibility

- At least 25% of applicant's total gross income for past 2 years was from commercial fishing;

or

- Applicant lacks training or economic opportunities in area of residence other than commercial fishing;

and

- Applicant does not have other sources of financing available.

Section B applicants may not have received a prior loan under Section A unless the loan requested under Section A was for engine fuel efficiency or the purchase of a limited entry permit.

Lending Limit

- The total outstanding balances on all permit loans made under Section B of the Commercial Fishing Loan Program may not exceed $200,000. All other loans made under Section B of the Commercial Fishing Loan Program may not exceed $100,000.

Sections A & B

Collateral Requirements

- Generally, the maximum loan amount for a loan secured by a documented vessel is 75% of the survey value (65% for AK vessels).
- The maximum loan amount may be increased by offering additional collateral.

Fees

- A $100 application fee must accompany all applications.
- An origination fee of 1% of the loan amount will be deducted from your loan proceeds at closing.

Quick Links...

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- 'TEL' Payment Program
- Comments
- Related Sites

Commercial Fishing Loan Fund

Product Quality Improvement

Select either Section A or B
Purpose of the upgrade must be to improve the quality of the seafood.

Section A

Eligibility

- Held limited entry permit, commercial fishing or crew member license for the year preceding date of application and 2 other years out of the past 5 years,

and

- Fished in Alaskan waters during qualifying years

If you receive a loan under Section A, you will not be eligible for future loans under section B unless the loan requested under Section A was for engine fuel efficiency or the purchase of a limited entry permit.

Lending Limit

- The total balances outstanding on all permit loans made under Section A of the Commercial Fishing Loan program may not exceed $300,000.
- The total balances outstanding on all loans made under the program may not exceed $400,000.

Section B

Eligibility

- At least 25% of applicant's total gross income for past 2 years was from commercial fishing;

or

- Applicant lacks training or employment opportunities in area of residence other than commercial fishing;

and

- Applicant is not eligible for financing from a recognized commercial lender.

Section B applicants may not have received a prior loan under Section A unless the loan requested under Section A was for engine fuel efficiency or the purchase of a limited entry permit.

Lending Limit

- The total balance outstandings on all permit loans made under Section B of the Commercial Fishing Loan program may not exceed $200,000. All other loans made under Section B of the Commercial Fishing Loan Program may not exceed $100,000.
- The total balances outstanding on all loans made under the program may not exceed $400,000.

Sections A & B

Collateral Requirements

- Generally, the maximum loan amount for a loan secured by a documented vessel is 75% of the survey value (85% for AK vessels)
- The maximum loan amount may be increased by offering additional collateral.

Terms and Conditions

- Interest rate will be fixed at the time of loan approval. Current interest rates can be found at http://commerce.alaska.gov/ded/fin/interest_rates.cfm
- Maximum loan term is 15 years.
- Borrower is responsible for all direct costs incurred in processing an application.

Fees

- A $100 application fee must accompany all applications.
- An origination fee of 1% of the loan amount will be deducted from your loan proceeds at closing.

Quick Links...

- Alaska Capstone Avionics Loan Program
- Commercial Fishing
- Small Business Economic Development
- Rural Development Initiative Fund
- Fisheries Enhancement

Of Interest...

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- Related Sites

Commercial Fishing Loan Fund

Limited Entry Permit

Select either Section A or B

Section A

Eligibility

- Held limited entry permit, commercial fishing or crew member license for the year preceding the date of application and any other 2 of the past 5 years;

and

- Fished in Alaskan waters during qualifying years.

If you receive a loan under Section A, you will not be eligible for future loans under Section B unless the loan requested under Section A was for engine fuel efficiency or the purchase of a limited entry permit.

Lending Limit

- The total balances outstanding on all loans made under Section A of the Commercial Fishing Loan Program may not exceed $300,000.
- The total biances outstanding on all loans made under the Program may not exceed $400,000.

Section B

Eligibility

- At least 25% of applicant's total gross income for past 2 years was from commercial fishing;

or

- Applicant lacks training or employment opportunities in area of residence other than commercial fishing;

and

- Applicant is not eligible for financing from a recognized commercial lender.

Section B applicants may not have received a prior loan under Section A unless the loan requested under Section A was for engine fuel efficiency or the purchase of a limited entry permit.

Lending Limit

- The total balances outstanding on all permit loans made under Section B of the Commercial Fishing Loan Program may not exceed $200,000. All other loans made under Section B of the Commercial Fishing Loan Program may not exceed $100,000
- The total balances outstanding on all loans made under the Program may not exceed $400,000.

Sections A & B

Collateral Requirements

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- Fisheries Enh

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- Interest Rate
- IFQs for Sale
- Permits for S
- Real Estate f
- Vessels for S
- Auto Pay Pro
- 'TEL' Paymer
- Comments
- Related Sites

- Generally, the maximum loan amount for a loan secured by a limited entry permit is 80% of either the market value (as valued by the Commercial Fisheries Entery Commission) or the purchase price, whichever is less.
- The maximum loan amount may be increased by offering additional collateral.

Terms and Conditions

- Interest rate will be fixed at the time of loan approval. Current interest rates can be found at http://commerce.alaska.gov/ded/fin/interest_rates.cfml
- Maximum loan term is 15 years.
- Borrower is responsible for all direct costs incurred in processing an application.

Fees

- A $100 application fee must accompany all applications.
- Prequalification Fee - $200.00. If you have not located a limited entry permit to purchase, you may want to obtain conditional approval by submitting a prequalification application.

  The following are some advantages to prequalification:
  - You know your loan limit
  - Seller is assured of a qualified buyer
  - Faster loan processing after finding the permit
  - Loan funds are committed
  - Approval is valid for 60 days

- An origination fee of 1% of the loan amount will be deducted from your loan proceeds at closing.

Limited Entry Permit Loan Application Package

There are different pages 1 and 2 for each different type of loan (limited entry permit, vessel purchase, etc.). If you are applying for more than one type of loan, complete pages 1 and 2 for each type of loan, then complete one set of pages 3 through 13. A separate application fee is required for each type of loan.

The following Commercial Fishing Limited Entry Permit Application pages are in PDF format. You will need the Adobe Reader in order to view/print them. Acrobat Reader is distributed freely and available for download from Adobe®.

Loan Application

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Sectional Summary

HB 177
Commercial Fishing Loans

HB 177 restores the division of Economic Development's ability to offer incentivizing interest rates for important loan programs within the Commercial Fishing Revolving Loan Fund (CFRLF). The legislation also provides technical fixes for the Community Quota Entity (CQE) Revolving Loan Fund.

Section 1 amends AS 16.20.320(a) to allow the department to make loans from the Commercial Fishing Revolving Loan Fund at interest rates not exceeding the prime rate plus two percentage points and also not exceeding 10 ½ percent. New language in this section also stipulates that the department cannot make loans that bear interest at less than 3 percent.

Section 2 deletes language from AS 16.10.320(j) that pertains to the revolving status of the Community Quota Entity Revolving Loan Fund. This language is no longer necessary because the bill introduces more complete language addressing the CQE Fund's revolving status in Section 6.

Section 3 amends AS 16.10.320(l) to specify certain terms for Community Quota Entity program loans. Loans may not bear interest exceeding the prime rate plus two percentage points and also not exceeding 10 ½ percent. Also, this section states that loans may not bear interest at a rate that is less than the costs of funds to the state or at a rate that is less than three percent.

Section 4 amends AS 16.10.320(m) to make this subsection apply only to AS 16.10.320(l), which refers to the Community Quota Entity loan program. Subsection (m) defines "cost of funds," which plays a part in loan terms in the CQE loan program.

Section 5 amends AS 16.10.320 to add a new subsection that sets allowable interest rates for Section A and Section B loans for Product Quality Improvement and Engine Fuel Efficiency. Interest rates for these loans cannot exceed the prime rate minus two percent. However, they cannot be lower than three percent. Nor can the rates exceed 10 ½ percent.

Section 6 adds a new subsection to AS 16.10.345 that describes what the Community Quota Entity Revolving Loan Fund consists of and also ensures that it is a fully revolving fund. In particular, this language establishes that income earned on investments of the fund roll back into the fund—a feature that is absent in current statute. This section also allows monies in the fund to be used for administering the CQE loan program (in the same way that CFRLF earnings can be used to pay for its programs' administrative costs).

Section 7 gives the legislation an immediate effective date.

Prepared by the office of Representative Bryce Edgmon.

Commercial Fishing Revolving Loan Fund

Sections A through F
Programs and Interest Rates

CFRLF Declaration of Policy (AS 16.10.300):

"It is the policy of the state, under AS16.10.300—16.10.370 to promote the rehabilitation of the state's fisheries, the development of a predominantly resident fishery, and the continued maintenance of commercial fishing gear and vessels throughout the state by means of long-term low interest loans."

Provides Loans For:

- **Section A**—up to $300,000 for the purchase of entry permits, or for existing vessel or gear upgrades for improving seafood quality, or for main or generator engine replacement for improving energy efficiency.

- **Section B**—up to $200,000 for the purchase of Entry Permits, or up to $100,000 for vessel and gear upgrades (including engine energy efficiency upgrades), vessel and gear purchases, and vessel construction—with various eligibility criteria, including that the applicant must not be eligible to obtain financing from a commercial bank or the Commercial Fishing and Agriculture Bank (CFAB).

- **Section C**—up to $300,000 for the purchase of quota shares—with eligibility requirements similar to Section B applicants.

- **Section D**—up to $35,000 to satisfy past due federal tax obligations.

- **Section E**—up to $1 million for each eligible community for the purchase of quota shares by a Community Quota Entity (CQE). NOTE: The CQE Revolving Loan Fund is separate from the Commercial Fishing Revolving Loan Fund and was established in 2012.

- **Section F**—up to $300,000 for existing Tender Vessel and Gear upgrades to improve product quality.

Interest Rates

PROGRAM	CURRENT INTEREST RATE	RATE UNDER HB 177
Entry Permits, Vessel and Gear Purchase and other Section A, B, C, D & F Loans	5.25%	5.25%
Community Quota Entity Loans—Section E	5.25%	5.25%
Engine Fuel Efficiency Upgrade Loans—Section A & B	4.25%	3%
Product Quality Improvement Loans—Section A	4.25%	3%

Prepared by the Office of Representative Bryce Edgmon.

Changes Between HB 177 and CSHB177(FSH)

In Section 5 of the original bill, language was left out to specify that loans for vessel or gear upgrades to improve seafood product quality under Section B of the Commercial Fishing Revolving Loan Fund are to be available for two percent below prime, with a floor of three percent, and not to exceed 10 ½ percent.

In Section 5, Page 3, Line 19, the following language was inserted:

"to upgrade an existing vessel and gear for the purpose of improving the quality of Alaska seafood products or"

Prepared by the office of Rep. Bryce Edgmon.

Division of Economic Development
Department of Commerce, Community and Economic Development

Product Quality Improvement Loans as of January 15, 2014

	Section A		*Section B*		
	Number of Loans	Amount of New Loans	Number of Loans	Amount of New Loans	FY TOTALS
FY 2014	5	190,700.00	4	204,436.00	395,136.00
FY 2013	3	192,000.00	4	127,500.00	319,500.00
FY 2012	18	1,347,060.00	3	97,302.00	1,444,362.00
FY 2011	21	1,755,700.00	9	369,270.00	2,124,970.00
FY 2010	11	504,255.00	9	265,196.99	769,451.99
FY 2009	19	1,367,470.00	11	375,449.00	1,742,919.00
FY 2008	9	514,400.00	5	218,000.00	732,400.00
FY 2007	15	1,059,728.00	3	165,000.00	1,224,728.00
FY 2006	17	671,699.00	5	287,774.00	959,473.00
FY 2005	8	412,258.00	4	194,750.00	607,008.00
FY 2004	19	881,302.00	3	48,285.00	929,587.00
FY 2003	13	904,971.00	5	132,802.61	1,037,773.61
FY 2002	7	266,600.00	9	195,138.00	461,738.00
FY 2001	8	370,430.00	2	113,700.00	484,130.00
FY 2000	6	690,420.00	8	181,403.00	871,823.00
FY 1999	7	343,212.00	1	13,200.00	356,412.00
TOTALS	186	11,472,205.00	85	2,989,206.60	14,461,411.60
AVERAGES	***12***	***717,012.81***	***5***	***186,825.41***	***903,838.23***

Engine Efficiency Upgrade Loans as of January 15, 2014

	Section A		*Section B*		
	Number of Loans	Amount of New Loans	Number of Loans	Amount of New Loans	FY TOTALS
FY 2014	18	1,383,444.00	0	0.00	1,383,444.00
FY 2013	33	1,822,387.00	1	34,994.00	1,857,381.00
FY 2012	34	2,012,234.00	1	47,000.00	2,059,234.00
FY 2011	35	2,191,420.00	2	94,790.00	2,286,210.00
FY 2010	0	0.00	18	718,691.00	718,691.00
FY 2009	0	0.00	30	1,516,213.00	1,516,213.00
TOTALS	102	6,026,041.00	52	2,411,688.00	8,437,729.00
AVERAGES	***20***	***1,234,914.17***	***9***	***401,948.00***	***1,636,862.17***

Prepared by Division of Economic Development
1/21/2014

UNITED FISHERMEN OF ALASKA

Mailing Address: PO Box 20229, Juneau AK 99802-0229
Physical Address: 410 Calhoun Ave Ste 101, Juneau AK 99801
Phone: (907)586-2820 **Fax:** (907) 463-2545
Email: ufa@ufa-fish.org **Website:** www.ufa-fish.org

April 1, 2013

Representative Paul Seaton, Chairman
House Special Committee on Fisheries
Alaska State Legislature
State Capitol, 120 Fourth Street
Juneau, AK 99801-1182
Email: Rep.Paul.Seaton@akleg.gov

RE: SUPPORT FOR HB 177 – Commercial Fishing Revolving Loan Fund

Dear Chairman Seaton and Committee Members,

United Fishermen of Alaska (UFA) represents 36 Alaska Commercial fishing organizations from fisheries throughout Alaska and its offshore federal waters.

UFA has long supported the State's Commercial Fishing Revolving Loan Fund program (CFRLF), and we support HB 177. UFA supports the provisions of HB 177 that defines the lower threshold for interest rates in the CFRLF program to be not be less than three percent per year, while also restoring the Division of Economic Development's ability to offer incentives by differing interest rates for important loan programs to commercial fishermen for improving efficiency and product quality.

HB 177 also defines interest rates for Engine Fuel Efficiency and Product Quality Improvement loans. These are among the fund's most successful programs for making Alaskan fishing operations more efficient, profitable, and competitive. UFA supports making such financing available at two percentage points below the prime rate, with a three-percent floor in place. We appreciate the clarity that would be brought by HB 177 and consider 3% a reasonable lower threshold.

HB 177 clarifies and simplifies the Community Quota Entity Revolving Loan fund by making providing its own section of legislation separate from but consistent with provisions of the CFRLF.

Thank you for your attention on this matter.

Sincerely,

Julianne Curry
Executive Director

Southeast Alaska Fishermen's Alliance
9369 North Douglas Highway
Juneau, AK 99801
Phone: 907-586-6652 Email: seafa@gci.net
Fax: 907-523-1168 Website: http://www.seafa.org



February 4, 2014

Alaska State Legislature
House Fisheries Committee
Representative Paul Seaton, Chair
State Capitol
Juneau, AK 99811

RE: Support HB 177

Representative Paul Seaton, Chair and Fisheries Committee Members,

Southeast Alaska Fishermen's Alliance (SEAFA) is a multi-gear/multi-species membership based commercial fishing association. We represent our membership mainly involved in the salmon, crab, shrimp and longline fisheries of Southeast Alaska/Yakutat.

SEAFA supports HB 177 that clarifies and fixes issues that arose from legislation passed last year. The sponsor statement quite correctly identifies the importance of the Commercial Fishery Revolving Loan Fund (CFRLF) program to the commercial fishing industry. This legislation allows the Division of Investments to have the flexibility to provide incentivizing interest rates for the Product Quality Improvement and Engine Fuel Efficiency loan program. Both programs provide commercial fishermen great advantages by allowing fuel savings and better quality products both which improve the bottom line for a fisherman.

HB 177 also makes technical fixes to the Community Quota Entity Revolving Loan program that will clarify and make the program operation consistent with the commercial revolving loan fund program.

Sincerely,

Kathy Hansen
Executive Director

New

Division of Economic Development
Department of Commerce, Community and Economic Development

Product Quality Improvement Loans as of January 15, 2014

	Section A		*Section B*		
	Number of Loans	Amount of New Loans	Number of Loans	Amount of New Loans	FY TOTALS
FY 2014	5	190,700.00	4	204,436.00	395,136.00
FY 2013	3	192,000.00	4	127,500.00	319,500.00
FY 2012	18	1,347,060.00	3	97,302.00	1,444,362.00
FY 2011	21	1,755,700.00	9	369,270.00	2,124,970.00
FY 2010	11	504,255.00	9	265,196.99	769,451.99
FY 2009	19	1,367,470.00	11	375,449.00	1,742,919.00
FY 2008	9	514,400.00	5	218,000.00	732,400.00
FY 2007	15	1,059,728.00	3	165,000.00	1,224,728.00
FY 2006	17	671,699.00	5	287,774.00	959,473.00
FY 2005	8	412,258.00	4	194,750.00	607,008.00
FY 2004	19	881,302.00	3	48,285.00	929,587.00
FY 2003	13	904,971.00	5	132,802.61	1,037,773.61
FY 2002	7	266,600.00	9	195,138.00	461,738.00
FY 2001	8	370,430.00	2	113,700.00	484,130.00
FY 2000	6	690,420.00	8	181,403.00	871,823.00
FY 1999	7	343,212.00	1	13,200.00	356,412.00
TOTALS	186	11,472,205.00	85	2,989,206.60	14,461,411.60
AVERAGES	***12***	***717,012.81***	***5***	***186,825.41***	***903,838.23***

Engine Efficiency Upgrade Loans as of January 15, 2014

	Section A		*Section B*		
	Number of Loans	Amount of New Loans	Number of Loans	Amount of New Loans	FY TOTALS
FY 2014	18	1,383,444.00	0	0.00	1,383,444.00
FY 2013	33	1,822,387.00	1	34,994.00	1,857,381.00
FY 2012	34	2,012,234.00	1	47,000.00	2,059,234.00
FY 2011	35	2,191,420.00	2	94,790.00	2,286,210.00
FY 2010	0	0.00	18	718,691.00	718,691.00
FY 2009	0	0.00	30	1,516,213.00	1,516,213.00
TOTALS	102	6,026,041.00	52	2,411,688.00	8,437,729.00
AVERAGES	***20***	***1,234,914.17***	***9***	***401,948.00***	***1,636,862.17***

Prepared by Division of Economic Development
1/21/2014

Division of Economic Development
Department of Commerce, Community, and Economic Development

Commercial Fishing Revolving Loan Fund (CFRLF)
Historical Information

Monies Transferred From the CFRLF to Fund the Alaska Department of Fish & Game Operating Budget (ADF&G):

funded what division

FY2004	$ 800,000.00
FY2005	$ 1,976,300.00
FY2006	$ 1,976,300.00
FY2007	$ 1,326,300.00
FY2008	$ 1,326,300.00
FY2009	$ 1,326,300.00
FY2010	$ 1,326,300.00
FY2011	-
FY2012	-
	$ 10,057,800.00

Over the life of the CFRLF program, almost $58 million was transferred out of the CFRLF to fund other government operations. From FY2004 through FY2010, over $10 million was used to fund ADF&G operating budget. In FY2011 and FY2012 there were no transfers from the CFRLF to ADF&G.

GeFONSI Earnings on CFRLF Cash Balances:

Fiscal Year	Interest Earnings	Interest Rate
FY2007	$ 2,054,419.72	5.51%
FY2008	$ 2,348,491.02	5.85%
FY2009	$ 1,331,665.63	2.68%
FY2010	$ 1,343,210.11	3.38%
FY2011	$ 543,848.66	1.61%
FY2012	$ 431,438.00	1.43%

CFRLF cash is managed by the Department of Revenue and is invested in a pool of funds referred to the GeFONSI (General Fund and Other Non-Segregated Investments). These earnings are retained by the General Fund.

Division of Economic Development, Financing Section Staff Positions Dedicated to CFRLF Funding:

FY2012	40

HB 177
COMMERCIAL FISHING
LOANS

The Bill

HB 177 restores the Division of Economic Development's ability to offer **incentivizing interest rates** for important loan programs within the Commercial Fishing Revolving Loan Fund (CFRLF).

- **Product Quality Improvement and Engine Fuel Efficiency** loans **boost the competitiveness** of Alaskan-owned fishing operations.
  - Upgrading vessels and gear to **enhance product quality** can dramatically increase the value of one's catch.
  - Repowering a vessel with **fuel efficient propulsion and generator engines** can save a business tens of thousands of dollars each year.
- HB 177 will once again allow the department to offer such loans at **two percent below the prime rate—with a floor of three percent**—in order to encourage more Alaskans to improve the **efficiency and profitability** of their businesses.
- HB 177 also makes technical fixes to ensure that income earned on investments of the Community Quota Entity Revolving Loan Fund **revolves back into the fund.**

The Commercial Fishing Revolving Loan Fund (CFRLF)

- There are six programs within the CFRLF:
  - Section A
    - Loans up to $300K for
      - Limited Entry Permits
      - **Product Quality Improvement**
      - **Engine Fuel Efficiency**
  - Section B
      - Loans up to $200K for Entry Permits
      - Loans up to $100K for
        - New Vessel Purchase
        - Vessel and Gear Upgrades—including **Product Quality Improvement and Engine Fuel Efficiency**
- Section C—Up to $300K for the purchase of Fishing Quota Shares
- Section D—Up to $35K to satisfy past due federal Tax Obligations
- Section E—Up to $1 Million for each eligible community, to purchase Quota Shares
- Section F—Up to $300K for Tender Vessel Product Quality Improvement Upgrades

Total amount of loans from all programs to a borrower may not exceed $400K

Loan Eligibility for Sections A & B

- **Section A**
  - Must have been a **state resident** for a continuous period of two years immediately preceding date of application.
  - Must have possessed a commercial fishing license or permit for the year preceding the loan application and for any two years of the past five years.
  - Also, must have participated in those fisheries during those periods.
  - Must not be past due on any child support obligations.
- **Section B**
  - Must have been a **state resident** for a continuous period of two years immediately preceding date of application.
  - **Must be ineligible for financing through a commercial bank or through the Commercial Fishing and Agriculture Bank (CFAB).**
  - Must lack employment opportunities other than commercial fishing in area of residence, or must be economically dependent on commercial fishing as a livelihood and as a traditional way of life.
  - Must not be past due on any child support obligations.

Interest Rates

PROGRAM	CURRENT INTEREST RATE	RATE UNDER HB 177
Entry Permits, Vessel and Gear Purchase and other Section A, B, C, D & F Loans	5.25%	5.25%
Community Quota Entity Loans—Section E	5.25%	5.25%
Engine Fuel Efficiency Upgrade Loans—Section A & B	4.25%	3%
Product Quality Improvement Loans—Section A	4.25%	3%

Technical Fix: The Community Quota Entity Revolving Loan Fund

- Section 6 of HB 177 establishes that income earned on investments of the Community Quota Entity Revolving Loan Fund rolls back into the fund—a feature that is absent in current statute.

- This section also allows monies in the fund to be used for administering the CQE loan program (in the same way that CFRLF earnings are used to pay for its programs' administrative costs).

Small Business Economic Development

- HB 177 encourages development of **predominately resident** fisheries by incentivizing more Alaskans to make substantial investments in the **efficiency and profitability** of their businesses.

- The bill will give the Division of Economic Development better tools to improve the vitality of **Alaska-owned businesses** and strengthen one of the state's **cornerstone industries.**

Amendment to CSHB177(FSH)

- **The amendment language is inserted in Section 1 of the bill, after line 13**.

  With the new language in blue below, Subsection (2) now reads that a loan issued from the Commercial Fishing Revolving Loan Fund…

  "(2) may not bear interest **at a rate**

  (A) exceeding the prime rate, as defined by AS 44.88.599, plus two percentage points;

  (B) [AT A RATE] of more than 10 ½ percent a year; [or]

  (C) that is less than the prime rate, as defined by AS 44.88.599, minus three percentage points; or

  (D) [AT A RATE] that is less than three percent a year [THE COST OF FUNDS TO THE STATE];

- Under CSHB177 as amended, for any loan made from the CFRLF, all of the above statements (A,B,C &D) must be true.

Amendment to CSHB177(FSH)

- **With the amendment, Subsection (2) now supplies**
  - **a "floating" ceiling to the interest rate—(A) which is tied to the Prime Rate**
  - **and a "fixed" ceiling—(B) at simply 10 ½ percent**
  - **And a "floating" floor—(C) which is tied to the Prime Rate**
  - **And a "fixed" floor—(D) at simply 3 percent.**

With the new language in blue below, Subsection (2) now reads that a loan issued from the Commercial Fishing Revolving Loan Fund…

"(2) may not bear interest **at a rate**

(A) exceeding the prime rate, as defined by AS 44.88.599, plus two percentage points;

(B) [AT A RATE] of more than 10 ½ percent a year; [or]

(C) that is less than the prime rate, as defined by AS 44.88.599, minus three percentage points; or

(D) [AT A RATE] that is less than three percent a year [THE COST OF FUNDS TO THE STATE];

- Under CSHB177 as amended, for any loan made from the CFRLF, all of the above statements (A,B,C &D) must be true.

Amendment to CSHB177(FSH)

- **Without the amendment**, if the prime rate were, for example, 8 percent, it would be lawful to make a loan at an interest rate as little as three percent.
  - In other words, the loan could be offered by as much as 6 percent below prime, since the only "floor" is a minimum 3 percent a year.
- **With the amendment**, if the Prime Rate were 8 percent, it would only be lawful to make a loan at an interest rate as low as 5 percent.
  - In other words, the loan could only be offered for as much as 3 percent below prime, as defined by (2)(C).

Subsection (2):

"(2) may not bear interest **at a rate**

(A) exceeding the prime rate, as defined by AS 44.88.599, plus two percentage points;

(B) [AT A RATE] of more than 10 ½ percent a year; [or]

(C) that is less than the prime rate, as defined by AS 44.88.599, minus three percentage points; or

(D) [AT A RATE] that is less than three percent a year [THE COST OF FUNDS TO THE STATE];

Example: **A Product Quality Improvement Loan offered at 2 percent below Prime under HB 177.**

- **If the Prime Rate were at 8 percent**, the interest rate on the loan would be 6 percent a year, well within the Subsection (2) parameters.
  - Under Subsection (2), all these statements are true:
    - (A) 6 percent does not exceed the Prime Rate plus two percent.
    - (B) 6 percent a year is not more than 10 ½ percent a year.
    - (C) 6 percent a year is not less than the Prime Rate minus 3 percent.
    - (D) 6 percent a year is not less than 3 percent a year.
- **However, if the Prime Rate were at 3.25 percent**, as it is today, the interest rate on the loan would **hit the fixed 3 percent floor** in (D), and so the rate would be 3 percent .

THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Commerce, Community, and Economic Development

DIVISION OF ECONOMIC DEVELOPMENT
Finance Section

P.O. Box 34159
Juneau, Alaska 99803-4159
Main: 907.465.2510
TDD: 907.465.5437
Fax: 907.465.2103
Toll free: 1.800.478.LOAN (5626)

MEMORANDUM

TO: Representative Paul Seaton

DATE: Monday, February 03, 2014

FROM: Joe Jacobson

RE: House Fisheries Committee follow up re: HB 177 graphics

Figure 1: Fund Equity from 1995-2013 (note that PQI and EFE interest rate was 3% from 1992 through 2012)

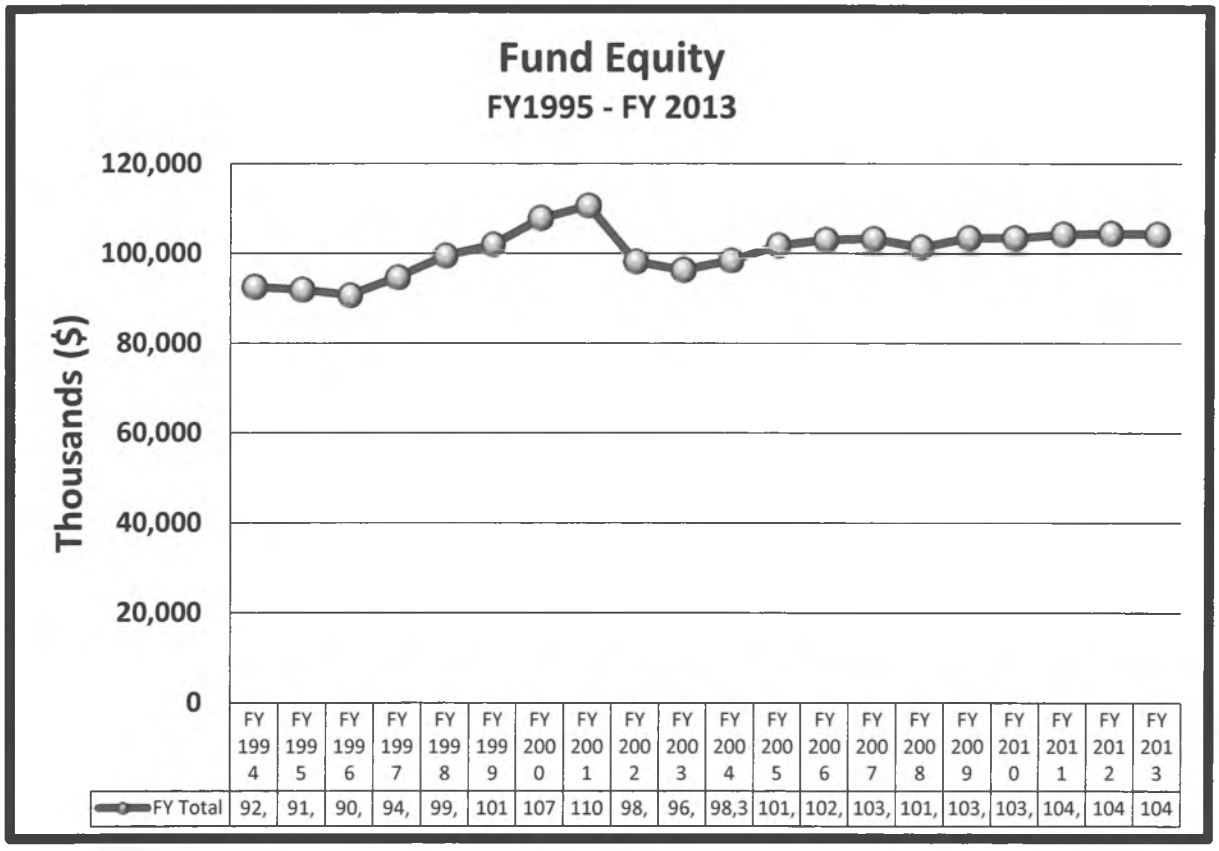


Figure 2: Commercial Fishing Appropriations Summary

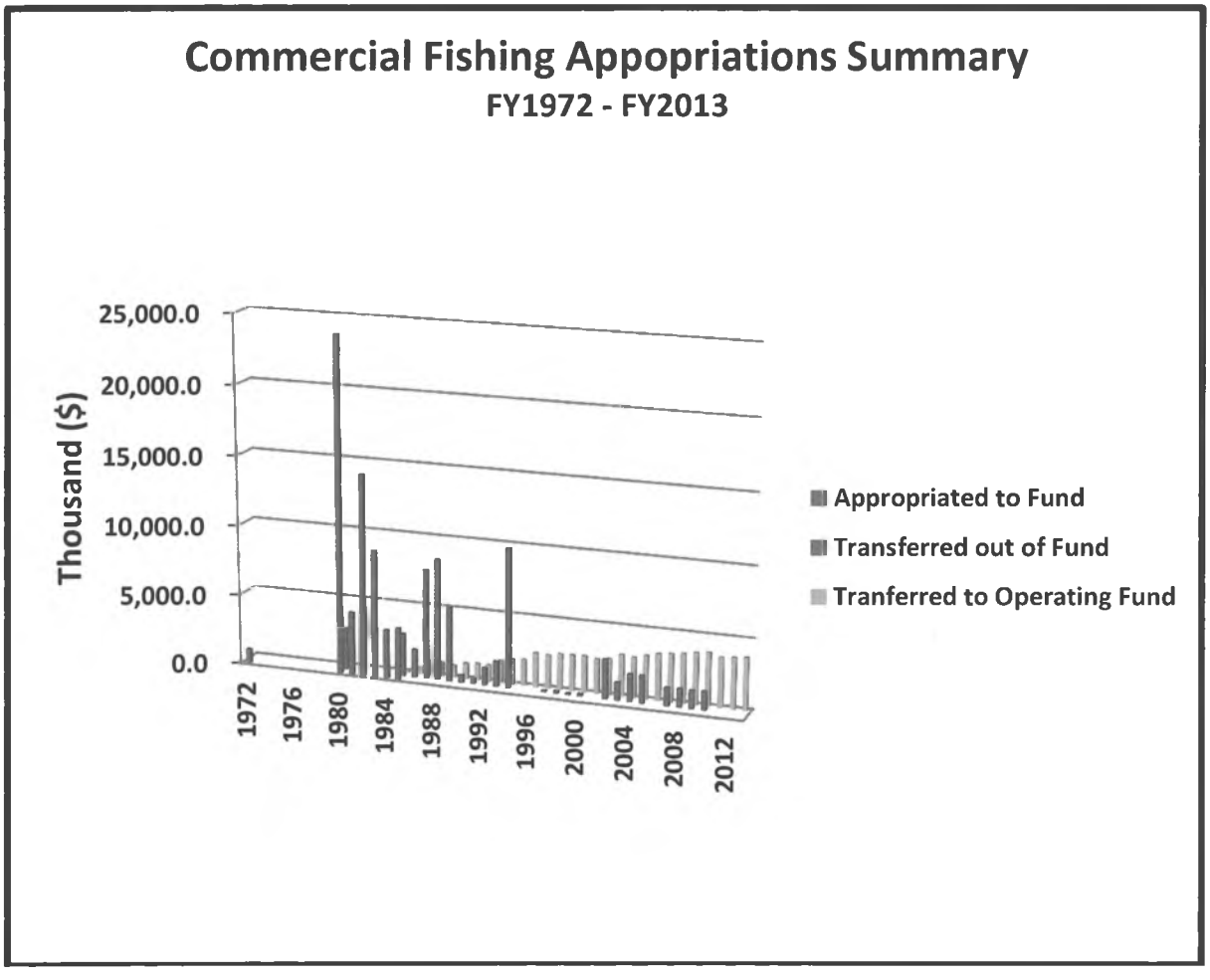
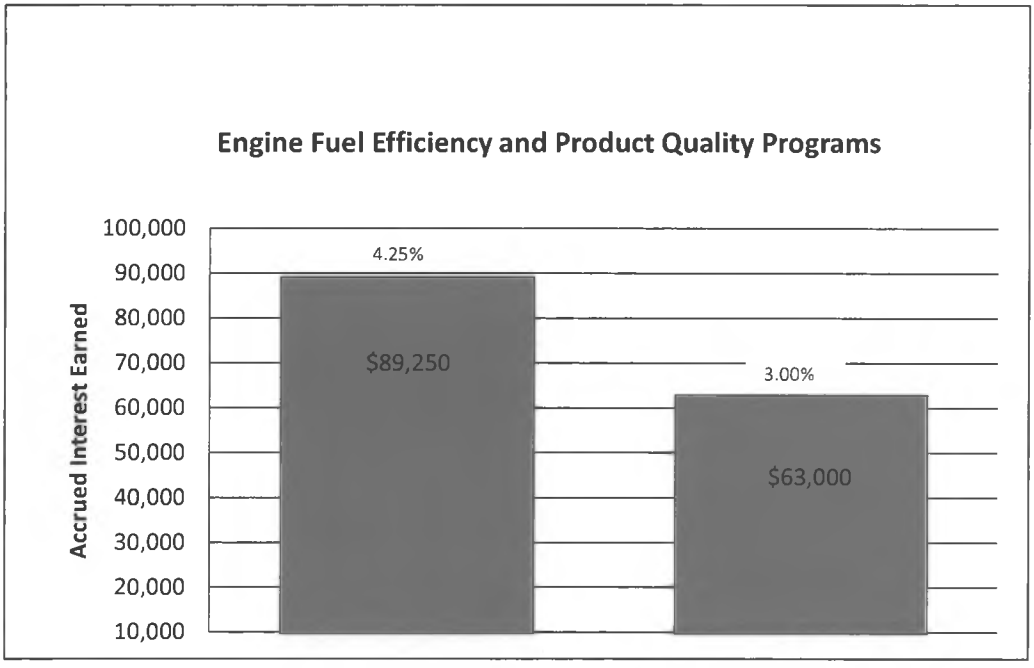


Figure 3: The total value of new loans made under these programs in FY13 was $2,100,000. The operating expenses charged to these programs were $14,800. In both scenarios the accrued interest exceeds operating expenses, thereby ensuring fund sustainability.



HB 192

<TARGET><BILL>HB 192</BILL><SUBJECT>HB 192</SUBJECT><COMM>HFSH28</COMM></TARGET>

Alaska Legislature
Representative Charisse Millett

Session:
State Capitol Building, Room 403
Juneau, AK 99801
Phone (907) 465-3879
Fax (907) 465-2069

Interim:
Anchorage LIO
716 W 4th Ave., Room 390
Anchorage, AK 99501
Phone (907) 269-0222
Fax (907) 269-0223

MEMORANDUM

To: The Honorable Paul Seaton Chair,
House Special Committee on Fisheries

From: Rep. Charisse Millett

Re: Hearing Request for House Bill 192

Date: April 1st, 2013

Chair Seaton,

I respectfully request a hearing at your earliest convenience in the House Special Committee on Fisheries for House Bill 192. My staff on this piece of legislation is Vasilios Gialopsos. His phone number is 465-4937. Attached to the memorandum should be the materials required to consider a hearing request. If and when the hearing is scheduled, I ask your indulgence to update the list of testifiers.

Respectfully,
Rep. Charisse Millett

Alaska Legislature
Representative Charisse Millett

Session:
State Capitol Building, Room 403
Juneau, AK 99801
Phone (907) 465-3879
Fax (907) 465-2069
Toll free (888) 269-3879

Interim:
Anchorage LIO
716 W 4th Ave., Room 390
Anchorage, AK 99501
Phone (907) 269-0222
Fax (907) 269-0223

District 24

SPONSOR STATEMENT
HB 192

Currently, commercial fishermen are required to submit the resource landing tax by April 1st. The difficulty with this fixed date is that Department of Fish and Game does not always have the statewide average fish report by that time. Though the Department of Revenue does grant an automatic extension to file the landing tax return if the report has not been submitted within 30 days of the due date, there are no extensions for payment time. This results in penalties and interest to occur. For example, the 2011 list was not published until May 29, 2012. This results in in the accumulation of unfair penalties and interest to commercial fishermen. Commercial fishermen are also required to make equal quarterly payments. This means that in some instances, the current statute would require payment of 50% of the landing taxes before even leaving port.

House Bill 192 makes necessary changes to the resource landing tax statutes. The first section aligns the due date for the resource landing tax with the date that the statewide average fish report is released. This is a long overdue remedy. The State of Alaska should not punish our fishing industry for the delay of information they have no control over.

The second section of House Bill 192 still maintains that 100% of the previous year's tax liability or at least 90% of the estimated amount is owed. However, the requirement to make equal quarterly payments is deleted. Instead, the commercial fisherman is allowed to pay their quarterly tax based on their production and estimated price for that specific quarter. It only makes sense that a way of life as volatile as that of our commercial fishermen should have a tax structure that reflects those realities. House Bill 192 provides a tax regime that is equitable and fair.

House Bill 192 has been referred to the Fisheries and Finance Committees. I would greatly appreciate you in joining me in supporting Alaska's commercial fishing industry.

Prepared by: Vasilios Gialopsos

LEGAL SERVICES

DIVISION OF LEGAL AND RESEARCH SERVICES
LEGISLATIVE AFFAIRS AGENCY
STATE OF ALASKA

(907) 465-3867 or 465-2450
FAX (907) 465-2029
Mail Stop 3101

State Capitol
Juneau, Alaska 99801-1182
Deliveries to: 129 6th St., Rm. 329

MEMORANDUM April 2, 2013

SUBJECT: Sectional summary of HB 192 (Work Order No. 28-LS0725\A)

TO: Representative Charisse Millett
Attn: Vasilios Gialopsos

FROM: Alpheus Bullard
Legislative Counsel

You have requested a sectional summary of the above-described bill.

As a preliminary matter, note that a sectional summary of a bill should not be considered an authoritative interpretation of the bill and the bill itself is the best statement of its contents. If you would like an interpretation of the bill as it may apply to a particular set of circumstances, please advise.

Section 1. Amends AS 43.77.020(b) to change the date that the Fishery Resource Landing Tax is due.

Section 2. Amends AS 43.77.020(d) to change how the Department of Revenue determines whether a taxpayer is subject to a tax penalty based on a taxpayer's quarterly payments of the Fishery Landing Tax.

TLAB:lnd
13-198.lnd

Alaska Legislature
Representative Charisse Millett

Session:
State Capitol Building, Room 403
Juneau, AK 99801
Phone (907) 465-3879
Fax (907) 465-2069

Interim:
Anchorage LIO
716 W 4th Ave., Room 390
Anchorage, AK 99501
Phone (907) 269-0222
Fax (907) 269-0223

MEMORANDUM

To: The Honorable Paul Seaton Chair,
House Special Committee on Fisheries

From: Rep. Charisse Millett

Re: Preliminary List of Testifiers for HB 192

Date: April 1st, 2013

Chair Seaton,

Below are the names of two individuals who are available to testify in regard to House Bill 192:

Julianne Curry, Executive Director, United Fishermen of Alaska

Kathy Hansen, Executive Director, Southeast Alaska Fishermen's Alliance

I ask your indulgence that, if and when HB 192 is scheduled for a hearing, we may update the list of testifiers. Thank you for your consideration.

Respectfully,

Rep. Charisse Millett

Vasilios Gialopsos

From: Vasilios Gialopsos
Sent: Monday, April 01, 2013 4:17 PM
To: 'Louie.Flora@akleg.gov'
Subject: Hearing Request for HB 192
Attachments: HB 192 Signed Hearing Request.pdf; HB 192 Sponsor Statement.pdf; HB0192A.PDF; HB 192 Preliminary List of Testifiers.pdf

Louie,

Attached are all the documents. Thanks again. Glad you enjoyed skits!

Respectfully,
Vasilios Gialopsos
Office of Representative Charisse Millett
State Capitol, Office 403
Juneau, Alaska
465-4937

It was all sent that day to Louie

28-LS0725\U
Bullard
4/10/13

CS FOR HOUSE BILL NO. 192( )

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-EIGHTH LEGISLATURE - FIRST SESSION

BY

Offered:
Referred:

Sponsor(s): REPRESENTATIVES MILLETT, Peggy Wilson, Kerttula

A BILL

FOR AN ACT ENTITLED

"An Act relating to the fishery resource landing tax."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

*** Section 1.** AS 43.77.020(b) is amended to read:

(b) The return shall be made on the basis of the calendar year**. The return** [AND] is due **on the last day of the month following the month that the department posts the statewide average fish price calculated by the Department of Fish and Game for** [BEFORE APRIL 1 AFTER THE CLOSE OF] the calendar year **for which the return is made**, and any unpaid tax shall be paid with the return.

*** Sec. 2.** AS 43.77.020(d) is amended to read:

(d) A person subject to the tax under this chapter shall make quarterly payments of the tax estimated to be due for the year, as required under **(e) of this section** [REGULATIONS ADOPTED BY THE DEPARTMENT]. A taxpayer will be subject to an estimated tax penalty, determined by applying the interest rate specified in AS 43.05.225 to the underpayment for each quarter, unless the taxpayer makes estimated tax payments **as required under (e) of this section** [IN EQUAL

INSTALLMENTS THAT TOTAL EITHER

(1) AT LEAST 90 PERCENT OF THE TAXPAYER'S TAX LIABILITY UNDER THIS CHAPTER FOR THE TAX YEAR; OR

(2) AT LEAST 100 PERCENT OF THE TAXPAYER'S TAX LIABILITY UNDER THIS CHAPTER FOR THE PRIOR TAX YEAR].

* **Sec. 3.** AS 43.77.020 is amended by adding new subsections to read:

(e) A person subject to tax under this chapter shall make estimated quarterly tax payments on or before March 31, June 30, September 30, and December 31 of each year in the following amounts:

(1) four equal installments the sum of which is at least equal to the taxpayer's tax liability under this chapter for the immediately preceding calendar year;

(2) four equal installments the sum of which equals at least 90 percent of the taxpayer's tax liability under this chapter for the current calendar year; or

(3) four installments, calculated in each quarter, equal to 90 percent of the sum of the number of pounds of unprocessed fish of each species landed in the state during the quarter that are subject to tax under this chapter, multiplied by the respective statewide average price for each species posted by the department in the immediately preceding calendar year, multiplied by the applicable tax rate under this chapter.

(f) By March 31 of each year, a taxpayer shall notify the department of the estimated payment method under (e) of this section that the taxpayer will use during that calendar year. Once a method is selected, the taxpayer may not change the estimated payment method until the following calendar year. If a taxpayer fails to make a payment by March 31, the department shall calculate the taxpayer's estimated liability under (e)(1) and (2) of this section, and apply the estimated payment method that results in the lowest tax liability to determine the taxpayer's underpayment and estimated tax penalty.

Alaska Legislature
Representative Charisse Millett

Session:
State Capitol Building, Room 403
Juneau, AK 99801
Phone (907) 465-3879
Fax (907) 465-2069

Interim:
Anchorage LIO
716 W 4th Ave., Room 390
Anchorage, AK 99501
Phone (907) 269-0222
Fax (907) 269-0223

HOUSE BILL 192
EXPLANATION OF CHANGES

Changes in Section 1

In the original bill, "the return is due **within 30 days** after the department posts the statewide average fish price calculated." Depending on the date the department posts this information, the due date for the return could be a different part of the month every year.

The Committee Substitute (CS) changes this to "**the last day of the month following the month**" the department posts the statewide average fish price. The return will always be due at the end of a month.

Changes in Section 2

The new language in Section 2 gives fishermen three different methods to make their estimated quarterly payments:

(e) (1) pay 100% of the prior year's tax,

(e) (2) pay 90% of the current year's estimated tax, or

(e) (3) pay 90% of the estimated tax (based on last year's prices) due for the actual fish landed each quarter.

(e)(1) and (e)(2) allows those fishermen who catch most of their fish at the beginning of the year to spread their tax payment throughout the year.

(e)(3) could be used by those who do not start fishing until later in the year.

A new section (f) requires the taxpayer to notify the department by March 31st of each year which payment method under (e) is being used. If the taxpayer fails to select a payment method, the department will apply the payment method under section (e)(1) or (e)(2), whichever is less.

Fiscal Note

State of Alaska
2013 Legislative Session

Bill Version: HB 192
Fiscal Note Number:
() Publish Date:

Identifier: HB192SS-DOR-TAX-04-10-13
Title: PAYMENT OF FISHERY RESOURCE LANDING TAX
Sponsor: MILLETT
Requester: (H) FSH

Department: Department of Revenue
Appropriation: Taxation and Treasury
Allocation: Treasury Division
OMB Component Number: 121

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2014 Appropriation Requested	Included in Governor's FY2014 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2014**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Fund Source (Operating Only)							
None							
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Positions							
Full-time							
Part-time							
Temporary							
Change in Revenues		***	***	***	***	***	***

Estimated SUPPLEMENTAL (FY2013) cost: 0.0

Estimated CAPITAL (FY2014) cost: 0.0

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? Yes
If yes, by what date are the regulations to be adopted, amended or repealed? 12/31/13

Why this fiscal note differs from previous version:

Initial version, with sponsor substitute reflected.

Prepared By: John Bernasconi, Chief of Operations & Tim Cottongim, RAS Phone: (907)465-4773
Division Tax Division Date: 04/10/2013 04:00 PM
Approved By: Alicia Egan, Legislative Liaison Date: 04/10/13
Department of Revenue

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2013 LEGISLATIVE SESSION

BILL NO. SSHB 192

Analysis

Bill Language:
This bill will change the return and payment due date of Fishery Resource Landing Tax returns to the end of the month following the month after the department publishes the statewide average price list. Currently, taxpayers must file their returns and make payment by April 1st of each year. The Fishery Resource Landing Tax is calculated using the statewide average price which historically is not published until sometime in May of each year. If a taxpayer fails to pay the full amount of tax owed, the taxpayer is charged interest on the unpaid tax from the date the tax was due until the tax is ultimately paid. It is virtually impossible for taxpayers to know the exact amount of tax they owe on April 1st since the information they need to calculate the tax isn't available until May. This bill also allows a taxpayer to avoid penalties on estimated payments if the taxpayer pays at least 90% of the amount of tax owed each quarter based on the statewide average price of the same species posted in the previous year times the number of pounds of fishery resource landed during the quarter.

Revenues:
We expect to see a small decline in interest revenue received on late payments as a result of this legislation. However, we are unable to project the exact amount as there are several variables used in the calculation of interest. Additionally, we expect that the amount of penalty imposed on estimated tax payments will also decrease. However, the amount of penalty for the past two fiscal years was $9,088 for FY2012 and $5,216 for FY2011. Therefore, we estimate that the decrease in penalty for failure to underpay estimated tax payments would not exceed $9,088 (the highest of the past two fiscal years).

Expenditures:
We anticipate the provisions within this bill can be implemented in the Tax Division using existing staff and resources.

Regulations:
This bill will require a change to 15 AAC 77.025 to address the "pay-as-you-fish" provision allowed for estimated tax payments provided in this bill. Additionally, current regulation 15 AAC 77.015 should be repealed as there will no longer be a requirement for an automatic extension of the time to file a return. We anticipate regulations can be adopted by December 31, 2013.

Alaska Scallop Association
PO Box 8989
Kodiak, AK 99615
907-512-7018

March 14, 2013

Representative Paul Seaton, Chairman
House Special Committee on Fisheries
Alaska State Legislature
State Capitol, 120 Fourth Street
Juneau, AK 99801-1182

RE: HB 192, *"An Act relating to the filing date for the final quarterly payment of, and to the assessment of penalties under, the fishery resource landing tax."*

Dear Representative Seaton, Chairman and Fisheries Committee Members,

Alaska Scallop Association (ASA) is a trade organization representing the Alaska Weathervane Scallop catcher/freezer boats.

ASA is in support of SB 71, "An Act relating to the filing date for the final quarterly payment of, and to the assessment of penalties under, the fishery resource landing tax."

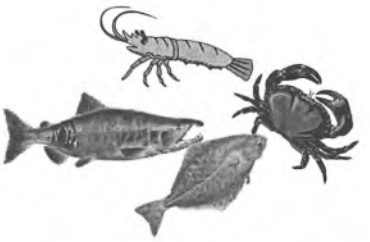
As operators of fishing vessels shucking scallops and selling our own product we are required to pay Landing Taxes. Under current statutes our landing taxes must be paid in 4 equal payments at the end of each quarter with final payment due by March 31 of the following year. While this might be fine for entities operating year round, there are certainly problems with "Seasonal" operations, particular ones that only operate on the second half of the calendar year.

Problem #1; The Scallop Season begins July 1, our first product normally lands in Kodiak, mid-July with payment from our customers for this product beginning to trickle in by mid-August. Current statutes require we pay landing tax at the end of each quarter, March 31, June 30, Sept 30 & December 31. With our season timing the current statute requires us to pay 50% of our landing taxes before we have even left the dock to go fishing. This can place a difficult financial burden on our fishing boats as they prepare for the upcoming season.

Problem #2; Landing taxes are calculated using a Statewide Average Price put out by the Department of Revenue. This Statewide Average Price list is normally released to us in May. Our final Landing tax payment is due March 31, four to six weeks before the price list is released. While we can estimate fairly closely we can never get the exact correct price that ADOR publishes. It just seems logical to have the final payment due 30 days after the Statewide Average Price list is released, rather than a date before we know what price to use.

Regards, Jim Stone, ASA Vice President

Southeast Alaska Fishermen's Alliance
9369 North Douglas Highway
Juneau, AK 99801
Phone: 907-586-6652 Email: seafa@gci.net
Fax: 907-523-1168 Website: http://www.seafa.org



April 2, 2013

Senate Resources
Alaska State Legislature
State Capitol, Room 205
Juneau, AK 99801-1182

RE: Support HB 192

Dear Representative Paul Seaton, Chair and Fish Committee members,

Southeast Alaska Fishermen's Alliance (SEAFA) is a multi-gear/multi-species, membership based association. SEAFA supports HB 192 which addresses an issue that affects several of our members.

HB 192 will prevent the imposition of tax penalties and interest for a situation that is completely out of the tax payer's control. SB 192 aligns the date the tax is due to correspond with the date the report is due. Currently the report is due March 31st or the last day of the month following the month the State publishes the statewide prices that must be used on the return which generally is in May but the tax is due on April 1st. How do you pay a tax when you don't know what you owe.

HB 192 deletes the requirement to make **equal** quarterly payments and allows the commercial fisherman to pay each quarter based on their production and estimated price for that quarter. A commercial fisherman has no idea of how their season is going to go until they are done fishing - asking to pay before they fish is difficult as you don't know how much to pay nor do you have income from the fishing to pay for the taxes.

In FY 2012, 78 Resource landing tax reports were filed by 67 tax payers.

This legislation does not take away the right of the State to assess penalties or interest if a tax payer does not pay an appropriate quarterly payment based on their production.

SEAFA supports HB 192 that provides a tax regime that is equitable and fair.

Sincerely,



Kathy Hansen
Executive Director

HB 201

<TARGET><BILL>HB 201</BILL><SUBJECT>HB 201</SUBJECT><COMM>HFSH28</COMM></TARGET>

ALASKA STATE LEGISLATURE

REPRESENTATIVE GARA
REPRESENTATIVE KERTTULA
REPRESENTATIVE TARR

House Bill 201

Sponsor Statement

HB 201: Application of Pesticides and Broadcast Chemicals

Clean drinking water and chemical-free salmon are a vital part of living in Alaska. House Bill 201 would protect salmon streams and drinking water sources from toxic pesticides by establishing buffer zones. The legislation would prevent the application of herbicides and pesticides within 150 feet of salmon streams, and within 600 feet of drinking water sources. HB 201 would also restore requirements for public notification and opportunities for public participation in the pesticide permitting process.

In February 2013, the Parnell Administration issued regulations that eliminated the right of Alaskans to participate in decisions about the spraying of toxic pesticides and herbicides on public lands. The Administration's regulation changes issued by the Alaska Department of Environmental Conservation (ADEC) eliminated requirements to identify and safeguard the state's waters including salmon streams, sensitive waterways, drinking water sources, fish and wildlife habitat, and public health.

This bill addresses the concerns of many Alaskans about the need to protect salmon and their habitat from harmful chemicals. Deep concerns have been expressed by the public about the potential contamination of our drinking water sources, which is viewed by many as a critical public health issue. This bill offers protection of these vital resources and re-establishes right-to-know provisions and public involvement in decisions about pesticide use in public places.

January-May: State Capitol • Juneau, AK 99801-1182 • (907) 465-2647 • Fax (907) 465-3518
June-December: 716 W. 4th Avenue • Anchorage, AK 99501• (907) 269-0106• Fax (907) 269-0109
Rep.Les.Gara@akleg.gov

HB 201—"An Act relating to the application of non-aerial pesticides and broadcast chemicals near fish habitat or water for human consumption, and in public places."—Q and A

What the regulations stipulated prior to being changed.

The regulations under 18 AAC 90.500 required a permit application and approval by the Alaska Department of Environmental Conservation (ADEC) for "public pesticide programs or projects" initiated by the state, a borough or city. This permitting process required that the agency that intended to apply herbicides or pesticides (including the Alaska Railroad and Department of Transportation) submit a permit application to ADEC. ADEC then sent the application out for public review and comment. The permit application included information about the proposed pesticide application including the chemical(s) to be used, locations/maps, vulnerable public water sources and sensitive aquatic habitats in the vicinity, mitigation and monitoring measures. The public had an opportunity to review, submit written comments, and/or testify at a public hearing. Other state and federal agencies also had the opportunity to weigh in before the ADEC decided whether to issue a permit. The ADEC would then consider public and agency comments, evaluate the application, then either issue the permit, require modifications to be protective of human health and the environment, and/or establish mitigating measures and monitoring requirements. Decisions about pesticide permit applications could be appealed by the public. Anyone who disagreed with the decision could request an adjudicatory hearing.

What changed in the regulations?

In 2013, the Alaska Department of Environmental Conservation adopted new regulations that eliminate the requirement for a state agency to obtain a permit from ADEC to spray herbicides or pesticides on state lands and rights-of-way. This change in the regulations also eliminated the public's right to participate in the decision-making process. The regulatory changes mean that there is no requirement for the applicator agency to submit a pesticide application to ADEC and ADEC therefore relinquishes permitting authority. These changes also:

- Eliminate permit requirements for the spraying of pesticides by state agencies on state public lands and rights-of-ways. This, among other things, means that there is no requirement to identify water bodies, water courses, private drinking water sources, or to establish buffers necessary to safeguard the state's water resources, sensitive waterways, drinking water sources, fish and wildlife habitat, or public health;
- Prevent public participation in decisions about pesticide spraying on public lands and rights-of-way—with no public hearings, opportunity for written public comments, or a way to appeal bad decisions. This deprives Alaskans of our right to speak out about potential harm to our drinking water, fishing streams, lands held in the public trust, subsistence uses, dangers to our children and public health;
- Promote the application of potentially harmful pesticides and herbicides without consideration of toxicity and effects to human health and the environment;
- Weaken public right-to-know requirements to notify the public about places where the pesticides will be sprayed.

What the regulations stipulate today.

The regulations stipulate that "the application of one or more pesticides on land owned or leased by an agency of the state, or on a right-of-way managed by the agency, is authorized if 1) the application follows an integrated pest management plan appropriate for the pest of concern...and adopted by the agency applying a pesticide; 2) the integrated pest management plan is published on the department's website..." The regulations require only that the department be notified 15 days in advance of a pesticide application and that public notices be published in a local newspaper (and not on the site of pesticide applications) not later than 30 days before application, however with no opportunity for public comment. The IPM requirements are weak, with no opportunity for review and comment prior to a pesticide application.

How this bill fixes the issue and why this bill is so important.

HB 201 re-instates a requirement for reasonable public notification, public comment, and written notices to be posted on the application site. This would apply to applications of pesticides in public places, including common areas of apartment buildings or other multi-family dwellings; government facilities; plazas, parks, sport fields, and transportation rights-of way. HB 201 also establishes reasonable and prudent buffer zones to protect anadromous fish and fish habitat. The buffer zones that would require that pesticides not be applied within 150 feet of anadromous or resident fish habitat or within 600 feet of a public or private water source.

Information provided by Pam Miller, Executive Director of Alaska Community Action on Toxics; highlights made by the bill sponsor

Alaska Administrative Code Currentness
Title 18. Environmental Conservation
Chapter 90. Pesticide Control
Article 5. Permit Requirements (Refs & Annos)

18 AAC 90.500

18 AAC 90.500. Permit for certain public pesticide programs or projects.

Except as provided in 18 AAC 90.510, a government entity may not, without first obtaining a permit issued by the department, direct, carry out, allow, or participate in the spraying or application of a pesticide in any program or project

(1) in a state-owned greenhouse or nursery, on a state right-of-way, or on more than one acre of land owned or leased by the state, except where the pesticide is applied on less than one acre of land on a right-of-way wholly within the boundaries of an airport owned by either the state or a municipality and the pesticide is not applied by aircraft or helicopter; or

(2) if that spraying or application affects property owned separately by two or more persons.

Credits
(Eff. 2/15/98, Register 145; am 3/31/2002, Register 161; am 11/30/2003, Register 168; am 9/30/2007, Register 183)

AUTHORITY: AS 46.03.010, AS 46.03.020, AS 46.03.320, AS 46.03.330, AS 46.03.730

Current through December 7, 2012 (Register 204)

18 AAC 90.500, 18 AK ADC 90.500

End of Document

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Mead Treadwell
Lieutenant Governor
State Capitol
Juneau, Alaska 99811
907.465.3520 465.5400 Fax
WWW.LTGOV.ALASKA.GOV

530 West 7th Ave, Suite 1700
Anchorage, Alaska 99501
907.269.7460 269.0263
LT.GOVERNOR@ALASKA.GOV

OFFICE OF THE LIEUTENANT GOVERNOR
ALASKA

MEMORANDUM

TO: Gary Mendivil, AAC Contact
Department of Environmental Conservation

FROM: Scott Meriwether
Special Assistant
907.465.3509

DATE: February 6, 2013

RE: Filed Permanent Regulations: Department of Environmental Conservation

Regulations re: application of pesticides on state-owned or state-leased property: 18 AAC 90.500; 18 AAC 90.640 - 18 AAC 90.650

Attorney General File:	JU2012200148
Regulation Filed:	2/5/2013
Effective Date:	3/7/2013
Print:	205, April 2013

cc with enclosures: Linda Miller, Department of Law
Robert Pearson, Administrative Regulation Review Committee
Judy Herndon, LexisNexis

JU2012200148

ORDER ADOPTING CHANGES TO
REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

The attached 5 pages of regulations, dealing with 18 AAC 90, Pesticides, and Integrated Pest Management Plans are adopted and certified to be a correct copy of the regulation changes that the Department of Environmental Conservation adopts under the authority of AS 37.10.050, AS 37.10.052, AS 41.17.100, AS 44.46.025, AS 46.03.020, AS 46.03.320, AS 46.03.330, and AS 46.03.730 , and after compliance with the Administrative Procedure Act (AS 44.62), specifically including notice under AS 44.62.190 and 44.62.200 and opportunity for public comment under AS 44.62.210.

This action is not expected to require an increased appropriation.

In considering public comments, the Department of Environmental Conservation paid special attention to the cost to private persons of the regulatory action being taken.

The regulation changes adopted under this order take effect on the 30th day after they have been filed by the lieutenant governor, as provided in AS 44.62.180.

DATE: January 22, 2013
Anchorage, Alaska

Larry Hartig, Commissioner

FILING CERTIFICATION

I, Mead Treadwell, Lieutenant Governor for the State of Alaska, certify that on February 5, 2013, at 4:55 p.m., I filed the attached regulations according to the provisions of AS 44.62.040 - 44.62.120.

Mead Treadwell, Lieutenant Governor

Effective: March 7, 2013.

Register: 205, April 2013.

18 AAC 90.500 is repealed and readopted to read:

18 AAC 90.500. Permit for certain public pesticide programs or projects. Except as provided in 18 AAC 90.510, the state or a borough or city of any class may not, without first obtaining a permit issued by the department, initiate a public pesticide program or project that affects property owned separately by two or more persons. (Eff. 2/15/1998, Register 145; am 3/31/2002, Register 161; am 11/30/2003, Register 168; am 9/30/2007, Register 183; am 3/7/2013, Register 205)

Authority: AS 46.03.010 AS 46.03.320 AS 46.03.730
AS 46.03.020 AS 46.03.330

18 AAC 90 is amended by adding new sections to read:

18 AAC 90.640. Pesticide applications on state land. (a) Except as provided under 18 AAC 90.500 and 18 AAC 90.505, the application of one or more pesticides on land owned or leased by an agency of the state, or on a right-of-way managed by the agency, is authorized if

(1) the application follows an integrated pest management plan appropriate for the pest of concern in accordance with 18 AAC 90.645, and adopted by the agency applying a pesticide;

(2) the integrated pest management plan is published on the department's website;

(3) not later than 30 days before the application, or 30 days before the first application of a multi-application project, notification has been provided by mail, return receipt requested, to owners of public water systems if the application will occur within 200 feet of the

water source; in this paragraph, "public water system" has the meaning given in 18 AAC 80.1990;

(4) a pesticide will be applied by an applicator certified by the department;

(5) public notice of the application is provided in accordance with (b) of this section;

(6) the department is notified not later than 15 days before an application; notification is required under this paragraph before each application of a multi-application project;

(7) the person in charge described in 18 AAC 90.650 keeps an accurate written record of each application of each pesticide for at least two years after that use; the record must be available to the department upon request and must contain

(A) the information listed in 18 AAC 90.415(2); and

(B) a record of all notifications issued under (a)(3) and (6) and (b) of this section;

(8) for each pesticide applied to more than a total of 20 acres in a calendar year, the person in charge described in 18 AAC 90.650 posts a report on the agency's website that describes the complete product name, EPA registration number, quantity of mixed pesticide applied, and location of each application; and

(9) the department is granted access to the property at reasonable times without prior approval during pesticide applications.

(b) If specific notice requirements under 18 AAC 90.625 or 18 AAC 90.630 do not apply, the agency applying a pesticide must publish two consecutive notices of the pesticide

application in a newspaper of general circulation in the affected area. The notice must be completed not later than 30 days before application, or 30 days before the first application of a multi-application project, and must include

(1) the location of the proposed activity;

(2) the complete name and EPA registration number of each pesticide to be used;

(3) the target pest for the pesticide application;

(4) the method of applying each pesticide; and

(5) how the public can receive more information.

(c) The agency may perform multiple applications of one or more pesticides during one calendar year. Before the first application of the year during a multi-application project, notice must be provided under (a)(3) and (b) of this section. The notice must also provide an approximate number of applications for the proposed project.

(d) For the purposes of this section, multiple applications of one or more pesticides are considered a single public pesticide program or project if each application of each pesticide

(1) is intended to control the same pest or group of pests;

(2) is conducted in the same calendar year;

(3) is conducted by the same agency;

(4) uses only the pesticides designated in a single integrated pest management plan, and uses those pesticides at the same or a similar concentration, within 10 percent; and

(5) is applied using the same or a similar method.

(e) The following pesticide applications on state land are not subject to the requirements of this section:

(1) application of antimicrobial pesticides;

(2) application of pesticides on a total of less than one acre of land during a calendar year; and

(3) application of pesticides inside buildings or structures. (Eff. 3/7/2013 Register 205)

Authority: AS 46.03.010 AS 46.03.320 AS 46.03.730
AS 46.03.020 AS 46.03.330

18 AAC 90.645. Integrated pest management plan. An integrated pest management plan must establish a procedure for the use of one or more pesticides in a manner that poses the least possible hazard to people, property, and the environment, by using pesticides only after nonchemical practices, sanitation, and other preventive methods have failed or are impractical. The integrated pest management plan must include a description of

(1) the preventive methods used to keep pest problems from occurring;

(2) the activities to monitor for the presence of pests;

(3) the thresholds for allowable pest presence;

(4) when appropriate, the use of mechanical and physical controls to reduce pest presence;

(5) the complete name and EPA registration number of each pesticide product used when determined necessary under the integrated pest management plan; and

(6) the identity of the person in charge described in 18 AAC 90.650. (Eff. 3/7/2013, Register 205)

Authority: AS 46.03.010 AS 46.03.320 AS 46.03.730
AS 46.03.020 AS 46.03.330

18 AAC 90.650. Person in charge. The agency initiating a public pesticide program or project shall identify a person in charge to oversee pest control. That person shall

(1) develop and implement an integrated pest management plan in accordance with 18 AAC 90.645;

(2) ensure compliance with the integrated pest management plan;

(3) review and update the integrated pest management plan every two years;

(4) act as the point of contact for information on the public pesticide program or project for the department and for the public; and

(5) when appropriate under the integrated pest management plan, approve the use of pesticides and ensure that they are used in compliance with this chapter. (Eff. 3/7/2013, Register 205)

Authority: AS 46.03.010 AS 46.03.320 AS 46.03.730
AS 46.03.020 AS 46.03.330

Petersburg Vessel Owners Association

PO Box 232

Petersburg, AK 99833

Phone & Fax: 907.772.9323

pvoa@gci.net • www.pvoaonline.org

August 26, 2013

Commissioner Patrick J. Kemp
Alaska Department of Transportation & Public Facilities
PO Box 112500
3132 Channel Drive
Juneau, Alaska 99811-2500

Via email: dot.commissioner@alaska.gov

RE: Herbicide and Pesticide applications in Southeast Alaska

Dear Commissioner Kemp;

Petersburg Vessel Owners Association (PVOA) is a diverse group of over 100 commercial fishermen and businesses operating primarily in Southeast Alaska. Our members provide millions of meals to the public annually by participating in a variety of fisheries statewide including salmon, herring, halibut, cod, crab, black cod, shrimp, and dive fisheries.

Regulations adopted earlier this spring would allow state agencies to apply herbicides and pesticides on state property and rights of way without obtaining a permit from the Department of Environmental Conservation (DEC) and without public review. The broad application of herbicides and pesticides can and does affect aquatic habitats; the habitat necessary for the production of commercially harvested species that our members are entirely dependent upon for their livelihood. As such, PVOA is in opposition to the broad-based spraying of herbicides or pesticides on state property and rights of way and is in support of the efforts by the Petersburg Borough (RE: Petersburg Borough August 19 letter) and other Home Rule local governments to prohibit such actions on lands within their community boundaries.

The seafood industry and the State of Alaska have invested millions of dollars in marketing efforts publicizing the sustainability, and health benefits of consuming wild Alaska seafood. The foundation of that marketing effort is based on and is absolutely dependent upon Alaska's pristine waters uncontaminated with toxic chemicals. Alaska seafood is not only consumed locally, but is marketed globally. Any suspicion that Alaska seafood may be contaminated with pesticide/herbicide residue could do irreparable harm to that marketing effort, the seafood industry in general and the PVOA membership specifically.

Upon review of the Integrated Vegetation Management Program (IVMP), particularly Table 1, POTENTIAL HERBICIDES TO BE USED BY ADOT&PF, and our obtaining a recent scientific study of the documented reports on the toxicity of Glyphosate in humans, we have become increasingly concerned about the broad-based spraying of herbicides containing Glyphosates. The IVMP, lists those herbicides approved by the EPA for aquatic environments which includes Aquamaster® (active ingredient Glyphosate). Section 6.3, Chemical Control, also states: *"ADOT&PF may use Aquamaster, Habitat, and Garlon 3 throughout its right-of-ways, FAA*

certified airports, accessible non-certified airports, and facilities in compliance with their EPA approved labels. "...Aquamaster...may be used to control vegetation within aquatic areas, if needed, only after an Alaska Pollution Discharge Elimination System Pesticide General Permit and a Pesticide Use Permit are obtained." While the EPA considers herbicides containing Glyphosate minimally toxic to humans and safe for use in aquatic environments, a peer-reviewed study published in the April, 2013 edition of the scientific journal *Entropy*[1] presents data and results disputing EPA's assertions of low toxicity and safety. As stated in the Abstract, Discussion and Conclusions sections:

> **Abstract:** *"Glyphosate, the active ingredient in Roundup®, is the most popular herbicide used worldwide. The industry asserts it is minimally toxic to humans, but here we argue otherwise... Glyphosate's inhibition of cytochrome P450 (CYP) enzymes is an overlooked component of its toxicity to mammals. CYP enzymes play crucial roles in biology, one of which is to detoxify xenobiotics. Thus, glyphosate enhances the damaging effects of other food borne chemical residues and environmental toxins. Negative impact on the body is insidious and manifests slowly over time as inflammation damages cellular systems throughout the body."*
>
> **Discussion:** *"Contrary to the current widely-held misconception that glyphosate is relatively harmless to humans, the available evidence shows that glyphosate may rather be the most important factor in the development of multiple chronic diseases and conditions that have become prevalent in Westernized societies."*
>
> **Conclusions:** *"Glyphosate is likely to be pervasive in our food supply, and, contrary to being essentially nontoxic, it may in fact be the most biologically disruptive chemical in our environment."*

This peer-reviewed study casts a disturbing light on the use of any herbicides in or near aquatic environments. The study not only underscores our concerns about the IVMP's use of herbicides in or near aquatic environments but also provides specific justification for the suspension of that plan.

This study has been widely disseminated to the public by a variety of news media, particularly web-based media. As such, the public's awareness and perception of the use of these herbicides in or near Alaska's pristine waters could likely have a negative impact on the public's willingness to buy and consume Alaska seafood. Also, the presence of known toxins in Alaska seafood products could also have a major impact on the global marketing and distribution of those products.

In conclusion, we urge you to reassess the current chemical control provisions in the IVMP and eliminate of the broad-based spraying of herbicides and pesticides as part of the IVMP.

Thank you for your time and attention to this important matter.

Sincerely,

Brian Lynch

Brian Lynch
Executive Director

CC: Gov. Sean Parnell, Sen. Dennis Egan, Sen. Bert Stedman, Rep. Beth Kerttula, Rep. Cathy Munoz, Rep. Jonathan Kreiss-Tomkins, Rep. Peggy Wilson, Stefanie Moreland, ADF&G Commissioner Cora Campbell

[1]Samsel, S.; Seneff, S. Glyphosate's suppression of cytochrome P450 enzymes and amino acid biosynthesis by the gut microbiome: Pathways to modern diseases. *Entropy* **2013**, 15, 1416-1463.

ALASKA STATE LEGISLATURE

600 East Railroad Ave., Ste 1
Wasilla, Alaska 99654
(907) 376-3370
Fax (907) 376-3157

State Capitol
Juneau, Alaska 99801
(907) 465-6600
Fax (907) 465-3805

Mike Dunleavy
Senator

May 9, 2013

Mr. Clark Hopp
Vice President, Engineering
Alaska Railroad Corp.
PO Box 107500
Anchorage, AK 99501

via: email

Dear Mr. Hopp:

I have recently become aware of serious concern with the Alaska Railroad's upcoming plan to spray herbicides on the track in the Talkeetna area. While I understand the need and requirement for the Alaska Railroad Corporation (ARRC) to control vegetation along your tracks, and I acknowledge that your plan appears to comply with the State regulations governing these activities, I write to urge you to do everything in your power to conduct this project in a manner respectful of the local residents and sensitive to the environment.

To that end, I ask that you carefully review the letters directed to you on this issue from the Talkeetna Community Council, and other concerned area citizens, and to do all you can to accommodate their requests. While I recognize the track area itself may not be classified as a public area, the ARRC should take into consideration the community's concerns by not spraying herbicides on public areas within the Alaska Railroad Right-of-Way. (Those areas include: parts of the Chase trail that lay within the spraying area; any areas where the Chase Trail crosses the Alaska Railroad tracks; downtown Talkeetna; the Talkeetna Depot, and the area adjacent to the bridge over the Talkeetna River.)

Of particular concern is Talkeetna's public water source and other water sources used by local residents in the adjacent areas. I suggest the Alaska Railroad continue to work with community members to identify individual home-site drinking water sources and flag stops used by community residents to provide an adequate set back from those areas. The Alaska Railroad must maintain an adequate distance from these water sources to ensure herbicides do not enter the community's drinking water. Additionally, I strongly urge the ARRC to employ all available means and diligence in order to ensure that the chemicals used in your operation do not compromise any area waters; either through direct application, drift or migration.

To better understand this issue generally, I would appreciate some historic information as to why the Alaska Railroad uses herbicides, what other options have been used in the past or have been explored as alternatives to herbicide treatment, and what if any emerging technology could be considered in lieu of herbicide application. While I understand the

necessity of vegetation control, I believe it is incumbent upon the ARRC to continue to look for the best possible way to accomplish this sort of task.

Thank you for your immediate and continued attention to this important matter. I look forward to a report on how the concerns outlined above were addressed and the additional information I requested at your earliest convenience. Additionally, I ask that you provide a copy of your reply to me to the Talkeetna Area Community Council so they may also have that information. Should you need clarification on this issue or additional information from my office, please feel free to contact either myself or Brett Huber, my Chief of Staff, at 907.376.3370.

Sincerely,

Senator Mike Dunleavy
Senate District D

cc: Tim Sullivan, Manager External Affairs, ARRC
Whitney Wolff, Talkeetna Community Council, Inc.
Mr. John Strasenburgh
Ms. Beck Long

MD:bwh

Talkeetna Community Council, Inc.

A non-profit, community service organization

Alaska Railroad
Stephanie Wheeler - Corporate Comm. Officer
Clark Hopp - Vice President of Engineering

May 7, 2013

The Talkeetna Community Council Inc. met last night for it's regular monthly meeting where we responded to numerous citizen concerns regarding the ARR's upcoming plan to apply herbicides to the rail in our area . According to a notice posted on the ARR web site, and Tom Brooks who was present at the meeting, this spraying is poised to commerce next week.

1.) **TTCI REQUESTS ARR SUSPEND SPRAYING FROM MP 225 TO MP 232 (Craver's Right of Way Farm to the end of the Chase Trail)**

These miles of track pass through or within close proximity to: a farm, a playground, an ARR depot with tourists, a camper park, a restaurant, an active heli pad, a crossing frequented by bicyclists, a Princess bus loading area, the National Park Service residence, Talkeetna's public water source, and the Chase Trail used recreationally.

The herbicide Oust Extra has specifically stated on it's label that it is not to be applied in recreational areas. The section of track noted above is used recreationally. Tom Brooks has confirmed that application of the herbicide will follow guidelines on the label.

2.) NOTIFICATION OF SPRAYING - TCCI requests that the ARR actively contact residents of the Chase area to identify flagstop mile posts and drinking water sources within 200 feet of the tracks for suspension of spraying. No spraying should be conducted within 200 feet of a flagstop, drinking water source, or water body.

Local residents have taken the initiative to put PSA's (public service announcements) on our local KTNA radio to alert flagstop users that they can submit locations to ARR. Residents of the Chase area do not have access to newspapers - especially during break up. TCCI has reviewed the notice on the ARR site and finds it inadequate. It

does not alert residents that they can submit a flagstop location or drinking water source to request that no spraying occur within 200 feet of those locations.

TCCI also requests a hard copy notice of spraying be posted at the crossing at ARR MP 232. Notification must contain *SPECIFIC DATES* of spraying so trail users can be out of the vicinity and avoid dangerous contact.

3.) TCCI REQUESTS A DETAILED PLAN AND PROCEDURES FOR IDENTIFYING WATER BODIES, FLAGSTOPS AND AREAS OF SUSPENDED SPRAYING.

TCCI is alarmed that the ARR does not appear to have a plan for how water bodies and flagstops will be identified and omitted from spraying. Tom Brooks was asked what system is in place for this critical safety measure required in the IVMP - he was specifically asked if the blue and white color coded tie marking system from the 2010 Seward to Indian application would be used in 2013 - he was clear that it would not. He stated vaguely that a GPS system would be used but provided no details of the procedures.

The impending spraying will occur in the next weeks - it is imperative the affected communities have detailed information about the safety and no spray buffer plan. Stephanie Wheeler states in a letter to Talkeetna resident Becky Long " ARR will use appropriate methods such as a pilot car and setbacks" to protect water.

TCCI adamantly requests a pilot car be required during ALL herbicide application and specifically from Sunshine through the Hurricane Turn route. It is common knowledge that this stretch of track is both residential and used recreationally. It is in close proximity to the Susitna and Indian Rivers, and is actively advertised by the ARR as a tourism destination. (Gold Creek area will also host several work camps this season for Susitna Watana studies - one of which is adjacent to the rail and bridge)

TCCI has consistently been opposed to the ARR use of herbicides. It is a hazard to humans, fish, wildlife and all aspects of the ecosystem. The systematic removal of the DEC public process concerning herbicide application allows for no oversight or participation from those who will be adversely affected.

We look forward to a timely response to our requests.
Sincerely,

Whitney Wolff
Talkeetna Community Council, Inc.

PETERSBURG
ALASKA

June 17, 2013

Commissioner Patrick J. Kemp,
Department of Transportation & Public Facilities
PO Box 112500
3132 Channel Drive
Juneau, Alaska 99811-2500

Re: Herbicide and Pesticide applications in the Petersburg Borough

Dear Commissioner Kemp;

The Petersburg Borough has learned that earlier this spring, regulations were adopted that would allow state agencies to apply herbicides and pesticides on state property and rights of way without obtaining a permit from the Department of Environmental Conservation and without public review. The Petersburg Borough is very concerned that this action denies our citizens the right to participate in the decision-making process and jeopardizes our community. The broad application of herbicides and pesticides can and does affect drinking water, aquatic habitat, and impacts traditional food gathering areas. In addition, this process exposes our children and pets to harmful, possibly carcinogenic, toxins.

These regulations were adopted despite widespread public opposition across the state. The people of Alaska collectively own our public water supply, our fish and our wildlife resources. We strongly feel that we should have a voice regarding if and when there are any plans which might negatively impact those resources within our area. The 30-day notification requirement prior to application that was adopted, allows for no public input. This falls way short of providing our citizens a voice.

Alaska markets our wild salmon to the world by touting our pristine waters. Applying toxic chemicals to the upland habitat would certainly make that a questionable claim. Spraying our uplands could negatively impact productivity of local salmon streams. Even the small tributaries are important fish rearing habitat. Also, many out-the-road residents rely on surface run-off and small streams for their drinking water. Many of our residents gather berries, fiddlehead ferns, and other traditional foods along roadways in our area. If herbicides and pesticides are applied, there is simply no way to protect against contamination. This is particularly true in our island rain forest ecosystem where anything applied to the land is rapidly washed into adjacent waterways and eventually into salt water by the rain.

You may recall that several years ago the Department of Transportation announced plans to spray herbicides to control plant growth along Mitkof Highway. The people of

Borough Administration
PO Box 329, Petersburg, AK 99833 – Phone (907) 772-4519 Fax (907)772-3759
www.ci.petersburg.ak.us

Petersburg expressed strong opposition and that program was stopped before it got started. Some were opposed to the visual impact, but most were more concerned that toxic residue would contaminate residential runoff-based water supplies and run into aquatic habitats and impact fish productivity. Those concerns have not changed. ADOT went back to mowing the roadsides and, although that method is more labor intensive, it has kept the vegetation down and kept toxic chemicals out of the island's water supplies and waterways.

Article 10 of the State Constitution clearly provides broad powers to local governments. **Home Rule** local governments enjoy even broader powers. Article 10, Section 11 of Alaska's Constitution provides that: "A home rule borough or city may exercise **all** legislative powers not prohibited by law or by charter. Adoption of a Home Rule charter promotes maximum local self-government to the greatest extent possible."

Given that language in the constitution, it certainly seems that the Borough, not the state, should be making the decision on whether or not it is important to protect our primary industry and protect the residents of the borough from toxic contamination. We feel strongly the large-scale application of herbicides and pesticides should not be allowed within our Borough. This is the best way to protect our citizens and the waterways of our community.

The Borough hopes that it does not have to consider the adoption of an ordinance and land use restrictions that will ban the large-scale application of herbicides and pesticides within Borough boundaries. At the very least any plans to apply herbicides or pesticides should require a public review process and approval by the Assembly before application could occur.

We would appreciate your immediate attention to this issue.

Sincerely,

Susan Flint
Vice Mayor

Distribution

KFSK Radio
Petersburg Pilot
Senator Dennis Egan (email)
Representative Beth Kerttula (email)

Borough Administration
PO Box 329, Petersburg, AK 99833 – Phone (907) 772-4519 Fax (907)772-3759
www.ci.petersburg.ak.us

Municipality of Skagway

GATEWAY TO THE KLONDIKE

P.O. BOX 415 SKAGWAY, ALASKA 99840

(PHONE) 907-983-2297 – Fax 907-983-2151

WWW.SKAGWAY.ORG

July 19, 2013

Patrick J. Kemp, Commissioner
Dept. of Transportation & Public Facilities
State of Alaska
P.O. Box 112506
Juneau, AK 99811

RE: ADOT&PF Herbicide Use in the Skagway Borough

The Municipality of Skagway opposes the use of herbicides and pesticides as a maintenance tool for vegetation control measures on Alaska Dept. of Transportation & Public Facilities (ADOT&PF) owned or leased lands and facilities within the Skagway Borough.

About 27% of the land in the Skagway Borough is State-owned and managed; this land includes State Street, Dyea Road and the local airport, all of which are significantly utilized by local residents and seasonal visitors and represent the bulk of the main transportation corridors within the Borough. The care and maintenance of these areas is integral to the viability of the community, and this maintenance has the potential to affect not only Skagway's quality of life, but also the health of its citizens and natural surroundings.

State Street runs through the middle of the Skagway townsite, with residential homes and local businesses bordering it along its entire length. The Dyea Road provides access not only to more residential areas, but also to remote, natural recreational areas that are highly valued by locals. The airport in Skagway is closely bordered on the west side by the Skagway River, and on the east by residential areas.

ADOT&PF's Integrated Vegetation Management Plan of June 2013 specifies that the agency intends to begin using herbicide as a vegetation control tool to "provide improved maintenance service and public safety in a more cost-effective manner." The Municipality of Skagway maintains that the use of herbicides for the maintenance of vegetation has the potential to negatively affect the health and safety of the public as well as the natural environment, at a cost that may be unquantifiable.

The ADOT&PF's vegetation management plan lists alternative preventative and mechanical methods of vegetation maintenance that include mowing, brush cutting, hydro-axing and

burning. The Municipality of Skagway asks that these alternative methods are solely used in the maintenance of vegetation in the Skagway Borough, as they are highly preferable for maintaining the quality of life and health of the borough's citizens and natural surroundings and for substantially reducing possible negative effects known to be caused by the use of herbicides.

Sincerely,

Stan Selmer

Stan Selmer
Borough Mayor

HAINES BOROUGH, ALASKA

P.O. BOX 1209 • HAINES, ALASKA 99827
Administration 907.766.2231 • (fax) 907.766.2716
Tourism 907.766.2234 • (fax) 907.766.3155
Police Dept. 907.766.2121 • (fax) 907.766.2128
Fire Dept. 907.766.2155 • (fax) 907.766.3373

June 25, 2013

Pat Kemp, Commissioner
Alaska Department of Transportation
PO Box 112506
Juneau, AK 99811

Re: Herbicide and Pesticide use in the Haines Borough

The Alaska Department of Environmental Conservation's decision earlier this year to eliminate the public review process and permitting requirements for using chemicals on state lands deeply concerns the Haines Borough. At a minimum, the Haines Borough requests that DEC reinstate a public review process, including right of appeal, for the potential use of herbicides and pesticides within the borough.

Most of the Haines Borough roadways lie adjacent to, or cross anadromous streams and salmon habitat. The Haines Highway passes through the world class Alaska Chilkat Bald Eagle Preserve, home to the largest gathering of Bald Eagles. Spraying herbicides and pesticides has the potential to harm the environment, fish, wildlife, and human health. Healthy salmon returns for commercial, sport and subsistence fisheries provide major economic benefit to Southeast Alaskans. There is a wealth of scientific literature that links pesticide and herbicide contamination with salmon mortality as well as non-lethal impacts that result in lowered survival rates. Many salmon spawn in waterways adjacent to Haines' roadways. The commercial value of the Lynn Canal salmon fishery ranges from $1 million to $3.4 million annually.

Pesticide and herbicide use near residences and areas that our citizens use for gathering food, medicinal substances, or craft materials is inherently dangerous. Use within watersheds that provide drinking water for communities or individuals also poses serious threats. Pesticides and herbicides contain toxic chemicals which rapidly disperse in our local rainforest environment. They have been linked with numerous environmentally caused cancers and may have additional detrimental effects that are presently unknown.

Article 10 of the State Constitution clearly provides broad powers to local governments. Home Rule local governments enjoy even broader powers. Article 10, Section 11 of

Alaska's Constitution provides that: "A home rule borough or city may exercise all legislative powers not prohibited by law or by charter. Adoption of a Home Rule charter promotes maximum local self-government to the greatest extent possible."

In the past, the community of Haines has opposed the spraying of toxic herbicides or pesticides along borough roadways and on public lands. The Haines Borough continues to strongly oppose the use of herbicides and pesticides on roadways and public lands in the borough.

Protecting our residents and the environment from potential damage caused by using toxic chemicals along roadways in the Chilkat and Chilkoot watersheds and within the Alaska Chilkat Bald Eagle Preserve are of utmost importance to the Haines Borough.

Thank you for your consideration of this matter.

Sincerely,

Stephanie Scott

Stephanie Scott
Mayor, Haines Borough

Cc: Senator Bert Stedman
Representative Jonathan Kreiss-Tomkins
Representative Les Gara
Al Clough, Assistant Commissioner
Matt Boron, DOT, Haines

CITY AND BOROUGH OF WRANGELL

RESOLUTION NO. 11-13-1286

A RESOLUTION OF THE ASSEMBLY OF THE CITY AND BOROUGH OF WRANGELL, ALASKA, REQUESTING THAT THE REGULATIONS COVERING THE USE OF HERBICIDES ALONG ALASKA ROADWAYS BE AMENDED TO PROVIDE FOR PUBLIC COMMENT, AND REQUESTING THAT THE ALASKA DEPARTMENT OF TRANSPORTATION AND THE ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION MEET WITH REPRESENTATIVES FROM SOUTHEAST COMMUNITIES TO DISCUSS THE IMPACTS OF THE USE OF HERBICIDES ALONG THE REGION'S ROADWAYS

WHEREAS, the use of herbicides by the Alaska Department of Transportation along Alaska's roads and highways is a subject of great concern amongst the residents of Wrangell, Alaska; and

WHEREAS, the use of herbicides and pesticides should only be used when mechanical and/or manual methods cannot be used; and

WHEREAS, public and private lands and waterways adjacent to Alaska's roadways provide access to fish, wildlife, berries and many other naturally occurring resources that provide food, economic, lifestyle and cultural benefits to many Alaskans; and

WHEREAS, Regulations developed by the Alaska Department of Environmental Conversation and the Alaska Department of Transportation do not provide for public comment on the use of herbicides along Alaska's roadways and public lands

NOW, THEREFORE, BE IT RESOLVED that the City and Borough of Wrangell, Alaska, requests that the regulations covering the use of herbicides along Alaska roadways be amended to provide for public comment

BE IT FURTHER RESOLVED, that the City and Borough of Wrangell, Alaska, requests that the Alaska Department of Transportation and the Alaska Department of Environmental Conservation meet with representatives from Southeast communities to discuss the impacts of the use of herbicides along the region's roadways.

ADOPTED: November 12, 2013

David L. Jack, Mayor

ATTEST: Kim Lane
Kim Lane, Borough Clerk

City & Borough of Wrangell
Incorporated Borough May 30 2008
Incorporated City June 15, 1903
Alaska

PO Box 766
Talkeetna, AK 99676
July 31, 2012

Rebecca Colvin
Division of Environmental Health
Alaska Department of Environmental Conservation
555 Cordova Street
Anchorage, AK 99501

Via email: Rebecca.colvin@alaska.gov

To whom it may concern:

These are my comments on the proposed regulation changes in Title 18 of the Alaska Administrative Code, Chapter 90 dealing with Pesticide Control Regulations, according to the public notice of May 21, 2012.

These proposed changes are ill-conceived and would have the effect of facilitating rather than controlling terrestrial pesticide use[1] by state agencies on state lands and rights of way. These proposed changes represent an abdication of the Alaska Department of Environmental Conservation's ("ADEC") duty to protect human health and the environment and are inconsistent with the purpose of Chapter 90 of Alaska Administrative Code which is "to protect human health, safety, and welfare, animals, and the environment by ensuring the proper use, sale, distribution, transportation, storage, and disposal of pesticides and their containers."

I oppose these proposed regulatory changes, and recommend that they be permanently withdrawn and discarded.

Note that, unless otherwise stated, I am addressing throughout my comments the application of pesticides by a state agency to state lands and rights of way, excluding aquatic and aerial applications and the spraying of private property. I refer herein to a state agency considering or proposing the use of pesticides on state lands and rights of way as an "applicator agency."

Function and Importance of the Current Permitting Process

The current pesticide use permitting process requires that an applicator agency proposing to apply pesticides on state lands or rights of way (including railroad and road rights of way) must first obtain a permit from ADEC, whereby ADEC authorizes the applicator agency to

[1] By terrestrial pesticide use, I mean that the pesticide application program or project is not an aquatic application and is not an aerial application.

proceed with the spray program or project. A spray operation cannot proceed without such authorization. The current permitting process requires that an applicator agency prepare and submit an application, including accompanying data and additional data if requested by ADEC. The application must include such information as identification/description of water bodies, identification of public and private drinking water sources, pesticide formulation, when the spraying would occur, location, soil drainage characteristics, and other items as stipulated in 18 AAC 90.515.

In addition, the permitting process provides for meaningful public and agency participation in the decision making process. The structure of the process also facilitates consultation with other agencies as well as the gathering of information from outside sources (e.g., sister governmental agencies outside of Alaska).

ADEC may approve or deny a pesticide permit application, or approve an application with conditions that the applicant must adhere to. It may also revoke or modify a permit that it previously issued.

This permitting process is crucial in providing for the public health and protecting the environment, especially with respect to the waters of the state and public and private drinking water systems. It also allows the public a say in how its lands are used and helps prevent persons from being unknowingly or involuntarily exposed to these harmful chemicals.

The existing permitting process is a crucial because:

1. It requires an applicator agency to take a hard look at and document what they are doing and what they propose to do with respect to "pest" control and what role, if any, pesticides would play in the management of that pest. The applicator agency is held accountable because both the public and ADEC review and consider the data and information supplied in the application.

2. It informs the public in advance of a proposed pesticide program or project so that it is able to participate meaningfully in the decision of whether or not to use pesticides and, if approved, what conditions should be placed on the pesticide use.

3. It provides ADEC, the state agency possessing the practical and technical knowledge of proper and appropriate handling and use of pesticides, with the information and data necessary for it (after consideration of public comment) to make an informed decision on whether the proposed pesticide project would result in an unreasonable adverse effect.

4. It provides ADEC with a body of information, including the treatment results, of specific pesticide projects, which is essential in order to maintain the data necessary for it to properly monitor and control the use of pesticides.[2]

This permitting process, under the proposed new regulations, would be eliminated, taking virtually all of these public benefits with it.

The 2006 Alaska Railroad application to spray pesticides

On June 13, 2006, the Alaska Railroad ("ARRC") applied to ADEC for a permit to spray pesticides along its mainline track between Seward and Fairbanks and on its rail yards.[3] This permit application provides a telling example of the public process and ADEC 's analysis, which resulted in significant public benefit; all of which would be lost under the proposed new regulations.

The 2007 Decision Document[4] represents ADEC's grounds for denying the railroad's June 2006 pesticide permit application. This Document demonstrates how the permitting process works when fully engaged: the meaningful public participation process, ADEC's consultation with other agencies (state and federal), ADEC's outside consultation with sister agencies in Canada, the United Kingdom, and Norway, and, most important, ADEC's concern about protecting the waters of the state from contamination by pesticide chemicals.

The mechanism that facilitates this kind of in-depth analysis and public engagement would be eliminated under these new regulations (for spray projects by state agencies to state lands and rights of way, with the exception of aerial and aquatic applications).

The 2007 Decision Document concludes, among other things, that "The ARRC has not adequately identified all the water resources in and near the proposed spray area;" "Concerns raised during the public comment period and during inter-agency coordination with the Alaska Department of Natural Resources (DNR), Alaska Department of Fish and Game (ADF&G), and the National Park Service regarding the possibility of pollution of water resources are compelling;" "Based on the fact that the labels prohibit the application of these herbicides to water, the proposed application may result in unreasonable adverse effect to human health, animals, or the environment;" and "The proposed 10-foot spray

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[2] The current information requirements serve an important and necessary purpose in managing pesticide use on state lands and rights of way. The proposed new regulation .640 is an utterly inadequate and virtually meaningless substitute, as explained herein and particularly in my comments below for .640 under section entitled: Detail comments on each stipulation of the proposed regulations

[3] Department of Environmental Conservation, Division of Environmental Health, Alaska Railroad Corporation Permit Application for Pesticide Use for Vegetation Management on Railways and Rail Yards, Decision Document, February 2007 ("2007 Decision Document").

[4] I am attaching the 2007 Decision Document as part of my comments to be included in the record.

buffer zone around water resources proposed by the ARRC is inadequate to protect against water pollution by the herbicides" (see 2007 Decision Document, page 1).

The 2007 Decision Document, at page 4, goes on to state: "Due to the discrepancy in the data sets submitted to DEC and the large number of water bodies located throughout the rail line, any spray method, no matter how precautious, would likely result in the proposed herbicides reaching the waters of the state." And on pages 4-5: "In the permit application, the ARRC proposed to utilize a 10 foot no-spray buffer around water features. Research indicates this buffer zone is inadequate to protect against water pollution by the herbicides."

ADEC denied the application under the authority of 18 AAC 90.525(b)(5), stating: " 'the department will, in its discretion, deny a permit if the department finds that there is an unreasonable adverse effect' that would result from the pesticide application."

ADEC's analysis, evaluation, and decision on the railroad's 2006 pesticide permit application showed that ADEC viewed risk of a pesticide formulation to human health and the environment according to its toxicity, persistence in the environment, and migration characteristics. ADEC also listened and responded to concerns expressed by the public in arriving at its decision to deny the application. ADEC also took seriously the importance of protecting the waters of the state.

For these reasons, ADEC found it necessary, in order to protect water resources, to override both the EPA label (which did not stipulate or recommend establishing no-spray buffers around water bodies) **and the applicator agency's best judgment** (i.e., ADEC found inadequate the railroad's proposed 10 foot buffers around water bodies).

It is quite stunning in light of this past history, that ADEC is now, with its proposed regulations, trying to scrap this important and necessary process for controlling pesticide use and protecting human health and the environment. ADEC would be getting out of the way of pesticide use, instead of controlling it.

Under its proposed regulations, ADEC would be relying on the applicator agency to comply with pesticide laws and regulations and with the EPA label in order to protect human health and the environment, and to avoid unreasonable adverse effect resulting from the use of pesticides. An applicator agency is ill-equipped to carry out this crucial public and environmental health function. **Such reliance on the applicator agency and on the EPA label, as demonstrated in the above example,[5] has proved unreliable, and insufficient to protect human health and the environment.**

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[5]And also below under: The proposed regulatory changes fail to consider the risk to human health and environmental of different pesticide formulations

In short, the proposed new regulations would leave the ADEC with no mechanism by which to make the determination as to whether a program or project involving the use of pesticides would have an unreasonable adverse effect.

Why ADEC is proposing these changes and why the reasons are spurious

ADEC, according to public statements, is proposing these regulatory changes for two reasons. First to be consistent with other land-owners such as farmers and native corporations, neither of which are required to obtain a permit for pesticide use.

In pursuing "consistency" ADEC fails to consider that state lands are public lands. The public owns them and the public uses them. In many cases, especially along state rights of way, the public must use state lands and rights of way to get where they need to go, which means that folks would potentially be involuntarily exposed to toxic and harmful chemicals. This is very much unlike private property. The public doesn't need to cross a farmer's fields to get to where they need to go.

Furthermore, state lands and rights of way are owned by the public, and the public has a legitimate interest in its lands and has a fundamental right to meaningfully participate in the decisions about how its lands are used.

The public also has a fundamental right to meaningfully participate in agency decisions that affect it. By this I mean, for example, if a person owns property that abuts state land or right of way that may be sprayed with pesticides, that person has a right to be heard and participate in the decision. It is not legitimate for ADEC (or any government body) to take away a person's right to protect the health and safety of himself or herself or their family or property.

These proposed regulations, with no mechanism to establish buffers or no-spray zones, would allow spraying right up to a person's property line. Considering the high probability of drift during application, migration, and post-application winds blowing contaminated dust/plant debris, it is a near certainty that the adjoining private properties would be affected. This means vegetable gardens, the children's sandbox and swing set, etc. would be contaminated, and, of course the family who lives there would be exposed. All with no provision for that person, or the general public, to be heard in advance of the spraying.

People and their children would be involuntarily and sometimes unknowingly, exposed to these toxic chemicals, and they would have no say whatsoever. I am outraged, and I think that folks, if they were aware of what ADEC is up to, would be equally outraged.

If ADEC wants to pursue a goal of consistency, it can (and there is a strong argument to do so) require native corporations and farmers, and any large user of pesticides to go through the existing permitting process. That would surely improve ADEC's capacity to protect

human health and the environment. But, unfortunately, ADEC is heading, with the proposed regulations, in the exact opposite direction, which would be to facilitate rather than control pesticide use, and in the process to prevent folks from exercising their fundamental rights as citizens.

The **second** reason for getting rid of permit requirements is to free up ADEC staff time, which is presumably considered internally to be excessive.[6] ADEC's Karin Hendrickson indicated that time saved by eliminating the permit process could be spent on things like education in safe use of pesticides, outreach, inspections, and possibly water monitoring.[7]

These are all things that ADEC should be doing, and to large extent is doing,[8] ADEC could probably do more, but it should never be at the expense of the existing permitting system.

In addition, there is much interaction between a prospective permittee and ADEC. Things like education, monitoring, and outreach are integral to the existing permitting process. So, throwing out the permitting system would also be throwing out a certain amount of education, outreach, and inspections.

Even so, education, inspections, and outreach and the permitting system are not mutually exclusive... all can co-exist; ADEC can, and should, do all. ADEC should keep the current permitting system, and it should expand its education program in safe pesticide use and it should be monitoring and enforcing, and it should be collecting data on the use and effects of pesticide use. That is ADEC's job.

The use and handling of pesticides is a significant public and environmental health issue, and ADEC's efforts should not be cut short in any way. ADEC is remiss in not doing all it can to protect human health and the environment, including seeking funding if necessary.

ADEC's reasons for pursuing the change range from spurious to specious to disingenuous. It is evident that the perceived benefit to ADEC would be very small when compared to the significant harm to public health and the environment that would result if the proposed changes are adopted.

<u>The proposed regulatory changes fail to consider the risk to human health and the environment of different pesticide formulations</u>

Another reason the proposed regulations are bad public policy, and represent a high risk of resulting in unreasonable adverse effect to human health and the environment has to do

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[6] see email from Ernst Prax, staff to Representative Wes Keller, to a concerned member of the public, dated July 24, 2012 (attached)
[7] KTNA radio, Susitna Valley Voice, July 11, 2012 and KTNA news report June 21, 2012
[8] see, for example, ADEC website, Division of Environmental Health, Pesticide Control Program for educational flyers and other information, http://www.dec.alaska.gov/eh/pest/factsheets.htm

with the fact that there are many different pesticides and pesticide formulations registered in Alaska, and that these chemical formulations vary according to level of toxicity, persistence in soils, and migration characteristics. This means that the risk to human health and the environment varies among the various pesticides and pesticide formulations. The new regulations do not consider the varying levels of risk to human health and the environment represented by the various pesticide formulations.

For example, with respect to the railroad's 2006 application, ADEC currently lists a pesticide called Riverdale Solution Water Soluble IVM ("SWS") (EPA Reg No. 228-260) on its list of registered pesticides. SWS is a product that the Alaska Railroad proposed using as part of its pesticide formulation in 2006 when it applied to ADEC to spray pesticides along its mainline track between Seward and Fairbanks. The only active ingredient of SWS is 2,4-D. SWS is not classified as "restricted use" at either the state or federal level.[9] ADEC's website back in 2006 described 2,4-D compound as a highly toxic pesticide and that "a taste to a teaspoon taken by mouth could kill an average sized adult."[10] 2,4-D represents 50% of the defoliant component of Agent Orange,[11] the notorious defoliant used in Vietnam that sickened so many people.

There is a significant difference between the formulation that used SWS (2.4-D) and the pesticide product called Aquamaster, which is the pesticide the ARRC is currently spraying along portions of its right of way under ADEC-approved permits. Aquamaster, although a pesticide, is much less toxic than SWS. These two products would be treated no differently under ADEC's proposed regimen. The proposed regimen considers the risk of these two products to human health and the environment to be exactly the same. In both cases, ADEC would be relying only on the applicator agency to comply with the pesticide laws and regulations and with the EPA label.

The proposed regulations, by eliminating the permit system for terrestrial spraying on state lands and rights of way by state agencies, also eliminate the vehicle for considering such things as the toxicity, persistence, or migration and other characteristics of a pesticide as well as the circumstances (e.g., location, presence of water bodies, topography)of its application when determining risk to human health and the environment or deciding whether or not to use a pesticide. In fact, with these proposed regulations, there is no analysis of risk and there is no decision. Pesticide use is pre-approved, and left to the applicator agency.

<u>Compliance with the EPA label is not sufficient to protect human health and the environment</u>

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[9] There are special rules for "restricted use" pesticides, but since SWS is not "restricted" these do not apply to SWS.

[10] http://www.dec.state.ak.us/eh/pest/Product.asp?pID=1669095 This link was working in 2006; it came up with an error message when I tried it recently.

[11] citizen testimony, ADEC public hearings, Talkeetna, July 19, 2006, from audio tape recording.

ADEC maintains, as Karin Hendrickson did on KTNA radio, that "if pesticides are used in accordance with the label, then there should not be problems."[12] This statement is directly contradicted by ADEC's actions on the Alaska railroad's pesticide permit applications of 2006, 2009, and 2012.

ADEC denied the 2006 application, as described above; ADEC approved the 2009 application and required 100 foot buffers around water bodies; and ADEC approved the 2012 applications and required 25 food buffers around water bodies. **In all cases ADEC either denied the permit application or imposed greater restrictions on the spray operation than was required by the label.**

ADEC's denial of the 2006 application and approval of the 2009 and 2012 applications shows that ADEC recognizes that the risk to human health and the environment varies among different pesticide formulations; that some formulations are more toxic than others. The fact that ADEC, in all three instances, overrode the EPA label demonstrates that reliance on the label is not sufficient to account for the varying risk to human health and the environment represented by the various pesticide formulations. ADEC has shown in all three of these instances that compliance with the label is not sufficient to protect human health and the environment.

Given ADEC's past actions, it is inexplicable that ADEC in proposing these regulatory changes would rely on the label to account for risk. It knows that some pesticides are more toxic or otherwise riskier than others, and a pesticide doesn't have to be on the restricted use list to be very harmful. And yet, ADEC's view of risk, as represented by these proposed regulatory changes, addresses only the way a pesticide is applied rather than its toxicity. If it is an aerial application or if the pesticide is to be applied directly to water a permit is required; otherwise, a permit is not required.[13] But the toxicity, persistence, or migratory (to water for example) characteristics of a formulation do not enter into ADEC's proposed view of risk.

The effect, should these regulations be adopted, could be, for example, that the Alaska Railroad would switch from the current approved Aquamaster to the 2006 formulation, containing SWS and 2.4-D. The SWS label (which would be relied upon under the proposed regulation) contains no recommended or required buffer. Under the proposed regulations, the ARRC could change its pesticide formulation with no review or approval required by ADEC, no public process, no identification of water bodies, and no buffers around water bodies. The railroad could just do it. The only requirements would be to notify the public that it is going to spray[14] and comply with the (insufficient) label.

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[12] KTNA Susitna Valley Voice, July 11, 2012 (second segment at about 5 minutes).
[13] There is a minor exception to this, which is, a permit is required if a state agency wishes to apply pesticides to private land.
[14] See below under specific comments for reasons why the notification requirements of the proposed regulations are inadequate.

With these proposed regulations, it would be the pesticide user's choice, without the public's or ADEC's involvement.

ADEC is abdicating its fundamental duty

The proposed regulatory changes represent an abdication of the ADEC's fundamental duty to protect human health and the environment and are inconsistent with the purpose of chapter 90 which is "to protect human health, safety, and welfare, animals, and the environment by ensuring the proper use, sale, distribution, transportation, storage, and disposal of pesticides and their containers."

Under the current permitting system, ADEC has both the authority and the responsibility to control terrestrial pesticide use by state agencies on state lands and rights of way. Under the proposed regulations, there would be no permitting process, and applicator agencies would not be required to obtain approval from ADEC in order to spray pesticides (as long as it is not an aerial or aquatic application). Not only do these proposed regulations empower an applicator agency to pursue a pesticide spray operation on its own authority, but it cuts the public entirely out of the process.

ADEC is relinquishing its authority by abolishing the permit system,[15] and by taking an almost total hands off approach to the use of pesticides by state agencies on state lands and rights of way. The proposed regulations, for example, do not contain any requirement (or provide any mechanism to ensure) that ADEC

- review, evaluate, monitor, or control an applicator agency's pesticide spray operation;
- evaluate a proposal to use pesticides to determine if the spray operation would have an unreasonable adverse effect;
- review, evaluate, or approve an IPM;
- monitor or otherwise test for an applicator agency's compliance with an IPM or with the EPA label;
- obtain the information necessary to ensure protection of Alaska's water resources (e.g., no requirement or mechanism to identify water bodies or private drinking water systems or sources within or in close proximity to water bodies);
- determine the need for or impose no-spray buffers around water bodies; and
- provide for public participation in pesticide use decisions.

ADEC requires that it be notified 15 days in advance of commencement of a spray operation. The proposed regulations are silent on the nature, content, and form of the notification (e.g., would a quick phone call... "this is the Alaska Railroad, we are going to spray pesticides in 15 days, good bye"... suffice?). Even if there was guidance on the nature, content, and

[15] For non-aerial, not aquatic applications by state agencies on state lands

form of the notice, 15 days provides insufficient time for ADEC to research and understand the spray operation enough to justify a "stop" order if warranted.

ADEC may retain the responsibility to control pesticide use, but it is proposing to so gut the regulations that it would be impossible or impractical for ADEC to meaningfully exercise its authority to fulfill that responsibility. Pesticide use is a significant public health issue, and ADEC, with these proposed regulations, has decided, instead of protecting public health and the environment, to step aside, and get out of the way.

ADEC obscures from the public the true nature of the proposed regulatory changes

ADEC has provided on its website several documents that contain information about the proposed regulatory change. These documents are the primary source of information available to the public regarding the proposed changes. The substantive documents are the Proposed Regulation Change Fact Sheet, the Public Notice, and the Regulation Amendments.

The language of these documents is carefully crafted. None of the documents straightforwardly or clearly inform the public of the true nature of the change, the essence of which is that the current permitting process for the application of pesticides by state agencies on state lands and rights of way (with the exception of aerial and aquatic applications) would be abolished. And along with the elimination of the permit requirement, things like public participation and process and the identification of water bodies and drinking water sources and protection thereof would also be eliminated.

The documents dance around the subject of permit... throwing out the term "permit-by-rule" on the Fact Sheet, with no way for the public (even by calling ADEC as I did) to find out what that means. "Permit-by-rule" may be a red herring, but we don't really know.

The Regulation Amendments document does not provide a before and after red-lined version that would clearly show the wording of the regulation as it exists now, the changes, and the proposed version. A person would have to locate the current version of Chapter 90 to get the full picture, and it is not so easy to find a version of Chapter 90 that you know is current.

And, the Public Notice discusses permits, but the first word in the sentence that mentions permits is "Clarifying ...." The word "clarifying" means to "make intelligible, to free from ambiguity." It doesn't mean "get rid of" or "eliminate."

ADEC is deceiving the public by withholding or obscuring essential information about these proposed regulatory changes. **ADEC has not reasonably informed the public as to the nature and scope of these proposed changes. The public process is therefore not legitimate.**

Public Comment Deadline Extension

ADEC is putting these proposed changes out for public comment for 72 days, but it is doing so in the heart of summer recreational and business activity, which occupies most folks this time of year. The fact that folks are pre-occupied during the summer months means that 72 days isn't enough. These proposed changes are drastic, and the public is being removed from the process. ADEC must be aware that if folks were clearly informed of the content and implications of the proposed changes they would loudly object.

ADEC has received a number of requests, some from state legislators, to extend the comment period until things settle down from the hustle and bustle of summer. ADEC has chosen to deny those requests.

I see a certain irony in this. These rule changes are out for public comment at a time when folks are out trying to catch salmon in their favorite stream, completely unaware of the possibility that by this time next year their stream may be contaminated by pesticides (potentially including 2.4-D) sprayed to the water's edge and seeping or blowing into the water itself.

ADEC's lack and mischaracterization of information coupled with ADEC's refusal to extend the comment period to a time when folks can focus on something other than enjoying summer or running a business at the busiest time of year, means that the public is being deprived of its right to meaningfully be heard on the proposed changes.

Detail comments on each stipulation of the proposed regulations

These are my detail comments on each stipulation of the proposed new regulations. The regulation language[16] is in italics; my comments are in normal text, bold, and indented.

Below I describe deficiencies in the proposed new regulations. These deficiencies support the above conclusion that these proposed regulations represent an dereliction of ADEC's duty to protect human health and the environment and to engage the public in meaningful participation. These deficiencies also show that ADEC has drafted these proposed regulations carelessly, apparently without a great deal of thought to the consequences to public health and the environment.

18 AAC 90.500 is being amended to read:
11 AAC 90.500. Permit for certain public pesticide programs or projects: *Except as provided in 18 AAC 90.510, a government entity may not, without first obtaining a permit issued by the*

[16] Regulation language is taken directly from the .pdf document available on the ADEC website at http://dec.alaska.gov/eh/docs/pest/Pesticide%20Amendments%20Public%20Notice%20Version%20May%2021%202012.pdf

*department, direct, carry out, allow, or participate in the spraying or application of a pesticide in any program or project, **intended to apply pesticides to private property.***
18 AAC 90.500 (a)(1) is repealed.
18 AAC 90.500(a)(2) is repealed.

The focus of this comment letter is to object to the repeal of the permit system currently required to authorize the application of pesticides by state agencies to state lands and rights of way.

However, in addition, I find the change in language with respect to private property also to be problematic. The proposed language "...intended to apply..." contrasts with the existing language "if that spraying or application affects property owned separately by two or more persons." The proposed language is carefully crafted to eliminate the need for a permit unless there is a specific intention of a state agency to spray on private property. ADEC itself recognizes that spray applications involve the potential and likelihood of drift and it recognizes that pesticides migrate in soils.

Since the proposed regulations fail to provide a mechanism to impose no-spray buffers to private property (or to anything else), a state agency spraying to the edge of its land or right of way, would expect (due to migration and drift and post-spray dust or debris blown by the wind) that adjoining private property would in most cases be affected. The existing regulation uses the word "affects" and thus accounts for this occurrence. Substituting the "intended" language sidesteps the requirement to obtain a permit, and thus eliminates the public's and the property owner's ability to participate in the permitting decision.

ADEC's apparent lack of regard for how private property, and the health of property owners, would be affected by the proposed regulations leads one to the conclusion that ADEC is placing too much emphasis on "streamlining" the use of pesticides and not enough on doing its job of protecting public health and the environment.

The existing 90.500(a)(2) should not be repealed and should remain in effect.

18 AAC 90 is amended by adding a new section to read:
***18 AAC 90.640. Pesticide applications on state land.** (a) Pesticide applications on land owned or leased by an agency of the state, or a right-of-way managed by it, are authorized if:*

(1) the application follows a written Integrated Pest Management plan appropriate for the pest of concern pursuant to 18 AAC 90.645, and adopted by the agency applying the pesticide;

The guidance provide on .645 is vague, general, and inadequate and substantially simply outlines existing department policy[17]. See comments under proposed .645 below.

(2) the Integrated Pest Management plan is published on the department's website;

Conceptually, it is good to have an Integrated Pest Management (IPM) plan, to have it published on ADEC's website, and have it available so that it can be viewed by the public. But these regulations fall far short of how an IPM plan should be developed and administered. For example,

It is disturbing that the proposed regulations do not require ADEC to review and evaluate the IPM plan, and make a decision to approve it, disapprove it, or approve with conditions.

It is also disturbing that the public is provided no opportunity to comment on the plan and have those comments incorporated into the decision-making process.

And it is disturbing that the requirements for the content of the plan are inadequate to ensure that meaningful, useful, and consistent plans are developed and implemented.

See also my comments under .645 below.

(3) notification has been provided at least 30 days before the application, or 30 days before the first application of a multi-application project, by mail, return receipt requested, to public drinking water system owners and operators as defined in 18 AAC 80 if the application will occur within 200 feet of the water source;

I am troubled by the fact that this (3) is limited to public water systems and that no-spray buffers are not required. Also troubling is that this (3) is limited only to notification to the owners/operators that spraying will occur. There is nothing else in (3): no opportunity for the owner/operator to object in any way... no opportunity the owner/operator to participate in the decision to use a pesticide, no opportunity to request, much less require, a no-spray buffer, and no opportunity for the public (those who drink the water, for instance) to participate in any way.

In addition, this (3) fails to consider private water wells or water systems. There is no other provision, here or elsewhere within these proposed new regulations, that considers private water wells or drinking water systems... no provisions to identify private wells, no opportunity for the private well users to participate in the decision to use pesticides, no no-spray buffers.

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[17] ADEC website, Pesticide Control Program, Factsheets, IPM (Integrated Pest Management) More Effective Pest Control

Furthermore, there is no provision in this (3) or anywhere else in the proposed new regulations that requires the identification of water bodies in proximity or within a spray area. There is no provision, in this (3) or anywhere else in the proposed new regulations that requires that no-spray buffers be imposed to prevent the pesticides from reaching the waters of the state.

The citation 18 AAC 80 is incomplete, and would require the reader to search the entire chapter to figure out (guess at?) the specific provision cited.

This (3) also fails to provide guidance as to what information must accompany a notification (e.g., identification and description of the pesticide and pesticide formulation being sprayed, how much, when... etc.) and there is no guidance as to whether notification is required if there is a change in the operation, such as change in the pesticide formulation (e.g., a switch from Aquamaster to the Oust Extra/RazorPro/SWS formulation of the ARRC's 2006 proposal).

(4) the pesticide will be applied by an applicator certified by the department;

I agree that pesticides should be applied by a competent and properly trained applicator, but there is no provision for ADEC to be informed of even the name of the applicator, much less evidence of his proper certification and other credentials, as currently required under 90.515(13). Currently, an applicator agency must provide ADEC (and the public) "evidence that a person who directs, carries out, or participates in a pesticide program or project described in 18 AAC 90.500 or 18 AAC 90.505 has working knowledge of the pesticides to be applied, the necessary safety precautions, and potential impact on the environment; the evidence required by this paragraph must include proof of appropriate certification under 18 AAC 90.300 - 18 AAC 90.315." This requirement would not apply, under the proposed new regulations, to the terrestrial spraying of pesticides by state agencies to state lands.

(5) public notice of the application is provided in accordance with 18 AAC 90.640 (b);

See my comments under .640(b).

(6) the department is notified fifteen days in advance of an application on a parcel of land one acre or more in size, or greater than one mile in length;

It is troubling that ADEC's only involvement in the terrestrial use of pesticides by state agencies on state land is a 15 day notice, with no guidance on what that means. I elaborate on this in section ADEC is abdicating its fundamental duty

Turning first to the wording of (6), which is confusing and internally inconsistent (i.e., with respect to "one acre or more in size" versus "greater than one mile in length." What exactly is the purpose of the "greater than one mile in length" clause? An acre is 43,560 square feet. A mile is 5280 lineal feet. A width of 8.25 feet over one mile would equal one acre. If the railroad, for example, wanted to spray one mile of mainline track, 16 feet wide, would it need to notify ADEC? The spray area would be 1.93 acres, which means (since it is greater than one acre) notification would be required, but it is not over a mile in length, which means notification would not be required. It is confusing because application coverage is an "area" measurement, not a "lineal" measure. When one buys a can of paint, coverage is stated in square feet, not in lineal feet. This is just one of many indications that ADEC has put little serious thought in drafting these proposed regulations.

This (6) does not provide any guidance as to what a notification must contain. It doesn't even require that the notification be in writing. Is a phone call sufficient? What information must be provided to ADEC? Is such information as the time, location, purpose for the application, pesticide formulation, overview of the project, the name of the applicator, application method, quantity of pesticide, rate of application, etc. required?

(7) a record of pesticide use and notification is maintained by the land manager for five years and must be produced to the department upon request;

This (7) does not provide guidance as to specifically what information and data must be recorded and retained. Without guidance and standards for information and data collection and retention, the records will most assuredly be widely inconsistent among the agencies and be generally insufficient for any meaningful pesticide control or monitoring purposes.

(8) if 50 pounds or more of pesticides are used annually, the land manager must post a report each year on the land manager's website that describes how much of each product was used and where; and

This (8) is another example of the fact that ADEC, in proposing these new regulations, fails to recognize that pesticides vary in their toxicity, persistence, and migration characteristics. The fact is, some pesticides represent a greater risk to human health and the environment than others. These proposed new regulations fail to recognize, much less manage, this risk, as explained above under "<u>The proposed regulatory changes fail to consider the risk to human health and environmental of different pesticide formulations</u>." Fifty pounds of one formulation, in terms of risk to human health and the environment, can be equal to a teaspoon of another.

This (8) says only that the report contain "how much of each product was used and where." This (8) severely reduces current information retention requirements, and is not sufficient to serve a useful purpose in monitoring and controlling the use of pesticides.

It is unclear whether 18 AAC 90.535 would apply if the proposed regulations were adopted. This ambiguity should be addressed. 90.535 provides useful information:
(1) the dates of the treatment;
(2) the total amount of each pesticide used;
(3) an assessment of the success or failure of the treatment;
(4) any observed effect on human health, safety, or welfare, animals, or the environment;
(5) monitoring results, if under this chapter, the department required the permittee to conduct monitoring; and
(6) records required to be kept under 18 AAC 90.400 – 18 AAC 90.420

This information, specified in 90.535 should be gathered, reported to ADEC, and retained for all spray operations, both public and private. This recommendation would mean that large private landowners such as farms would be required to gather and report this information to ADEC.

(9) the department is granted access to the property without prior approval during pesticide applications.

This (9) implies that ADEC contemplates the possibility of its looking at a particular spray operation, although the proposed regulations are silent on the necessity, frequency, purpose, nature, or scope of such a visit, or whether it would be in response to an emergency, public complaint, etc.

(b) If specific notice requirements under 18 AAC 90.625 or 18 AAC 90.630 do not apply, the agency applying the pesticide on a parcel of land one acre or more in size, or greater than one mile in length, must publish two consecutive notices of the pesticide application in a newspaper of general circulation in the affected area. The notice must be completed at least 30 days prior to application, and must include:

See (6) above for my comment objecting to the "or greater than one mile in length" threshold language. My concern applies as well to the language in this (b).

In addition, a "newspaper of general circulation in the affected area" is not sufficient notice" is not adequate notice. A lot of people do not read the newspaper these days, and those who do rarely read the notices section. This notification method would reach few people.

There should be a provision for posting notices in a central place such as the ADEC website. The public cannot be expected to periodically search through or negotiate the website of every state agency. There should be a central email list maintained so that concerned folks can be asked to notified in advance of all spraying. There should be an RSS feed or equivalent that folks could sign up for. There should be

physical notification on-site on the perimeter of, and various points within, a spray area. This is especially important along the railroad and state rights of way. There should be radio announcements (e.g., KTNA in Talkeetna) wherever possible. There should be notices posted at railroad depots if the railroad is spraying. All of the above should be required by regulation.

Line item (2) "pesticides to be used" is not specific or detailed enough. The railroad, for example, could list Solution Water Soluble (SWS) described above. It would not have to notify the public that the only active ingredient is 2.4.-D (also described above). The notification needs to include this type of detailed information.

This (b) fails to provide guidance as to whether notification is required if there is a change in the operation, such as a change in the pesticide formulation (such as a switch from Aquamaster to the Oust Extra/RazorPro/SWS formulation of the ARRC's 2006 proposal). Such an action has significant public and environmental health implications, and the public should know about it.

Clearly, this (b) does not provide for reasonable public notification in advance of the application of pesticides or broadcast chemicals.

(1) location of the proposed activity;
(2) pesticides to be used;
(3) the target species for the pesticide application;
(4) the method of applying the pesticides; and
(5) how the public can receive more information.

This list of required information should also include the date spraying is to commence and when it is to end.

(c) Multiple pesticide applications can occur during one calendar year. Prior to the first application of the year during a multi-application project, notice must be provided pursuant to (a)(2) and (b). The notice must also provide an approximate number of applications for the proposed project.

This (c) refers to (a)(2) and (b). My objections and concerns for (a)(2), (a)(3) and (b) apply to this (c) as well. And, is (a)(2) a typo; should it be (a)(3)?

(d) The following pesticide applications are not subject to the requirements of this section:
(1) application of antimicrobial pesticides;
(2) application of pesticides on a total of less than 1 acre of land during a calendar year;
(3) application of pesticides on less than a total of 1 linear mile during a calendar year;
(4) personal use insect repellent products; and
(5) application of pesticides inside buildings or structures.

This (d) contains my same concern and objection about the inconsistent and confusing use of the one acre vs one linear mile language that I have expressed above.

18 AAC 90 is amended by adding a new section to read:
18 AAC 90.645. Integrated Pest Management Plan. *An Integrated Pest Management Plan (IPM) establishes a procedure for the use of pesticides in a manner that poses the least possible hazard to people, property, and environment whereby pesticides are used only after non-chemical methods have failed or are impractical. The IPM must include a description of:*

(1) the preventive methods used, such as non-chemical practices and sanitation, to keep pest problems from occurring;
(2) the activities to monitor for the presence of pests;
(3) the thresholds for allowable pest presence;
(4) when appropriate, the use of mechanical and physical controls to reduce pest presence;
(5) the pesticide products used when determined necessary by the plan; and
(6) the identity of the person in charge described in 18 AAC 90.650.

This .645 contains some useful requirements for inclusion in an IPM plan, and it may stimulate some constructive thought on the part of a prospective applicator agency, but that is all. Unfortunately, the requirements for the content of an IPM plan are so general and limited that such a plan would be virtually meaningless when addressing the risk to human health and the environment. In short, the six required topics of an IPM plan do not comport with the introduction to .645 stating that an IPM "establishes a procedure for the use of pesticides in a manner that poses the least possible hazard to people, property, and environment, whereby pesticides are used only after non-chemical methods have failed or are impractical."

For example, it is not possible to achieve the "least possible hazard..." standard when there is

- **no requirement for the identification of water bodies,**
- **no requirement for the identification of private water wells,**
- **no public participation to identify areas such as railroad flagstops or biologically sensitive areas so that no-spray buffers can be established,**
- **no requirements that water bodies, public water systems, private water systems, private property, residences, be buffered by no-spray zones**
- **no assurance that pesticides do not reach the waters of the state**
- **no recognition of the varying risk profile (i.e., toxicity, persistence, or migration characteristics) among various pesticide formulations, other than what is on the EPA label. ADEC has shown in the past that the label is insufficient to protect the waters of the state**
- **and other things required in the existing permitting process**

I elaborate on these and many other concerns and objections to the proposed new regulations in the main text of my comments.

This .645 also does not provide for public participation in the development of the IPM plan. Development of these plans should be a full and meaningful public process.

This .645 also does not provide for ADEC to review, evaluate, modify, and approve or deny the IPM.

The six requirements of .645 are incomplete and woefully inadequate to accomplish the purpose of .645. They are also general and not specific. There are no performance standards. For example, the IPM, according to .645 must include a description of "(1) preventative methods used, such as nonchemical practices and sanitation, to keep pest problems from occurring;". The IPM Plan could say under this heading: "we tried pulling weeds and it didn't work." Under the regulation, that would suffice. There are no performance standards, ADEC isn't required to review or evaluate the IPM, the public is prevented from participating.

The result will be a wide and inconsistent array of IPM plans among the various agencies. Some agencies would probably make a good faith effort to achieve the purpose of .645, but many would lack the resources or expertise to do it right. And the lack of public and ADEC oversight and the lack of strict and specific guidance in the regulations will make protection of human health and the environment highly unlikely.

18 AAC 90 is amended by adding a new section to read:
***18 AAC 90.650. Person in charge.** The agency performing a pesticide project or program shall identify a person in charge to oversee pest control. That person will:*
(1) develop and implement an Integrated Pest Management Plan in accordance with 18 AAC 90.645;
(2) ensure compliance with the Integrated Pest Management Plan;
(3) review and update the Integrated Pest Management Plan every 2 years;
(4) act as the point of contact for information on the pesticide project or program for the department and for the public; and
(5) when appropriate under the Integrated Pest Management Program, approve the use of pesticides and ensure they are used in compliance with this chapter.

This .650 is a tall order, and what ADEC is proposing would be quite a burden to impose on the applicator agencies. ADEC is shifting the responsibility/authority for the safe, proper, and legal handling of use of pesticides from itself to the various state applicator agencies. Should these proposed regulations be adopted, ADEC would be requiring an applicator agency to have a detailed knowledge of the many laws and regulations governing pesticide handling and use. It would also require that the applicator agencies gain a practical and technical knowledge of pesticide handling and use, and the effect on human health and the environment of the

various formulations. This would be a burden on the individual agencies, and certainly on the "person in charge" who becomes accountable, and a strain on the normal agency budgets. In an effort to save money, corners would be cut, and public health and the environment would suffer. In addition, the economies of scale associated with centralizing this knowledge and experience within ADEC would be lost as each applicator agency would have to reinvent the wheel. It is not realistic to expect that a 'person in charge' model would result in the development of effective pesticide control, such that human health and the environment is protected, in each of the applicator agencies.

Conclusion

These regulatory changes proposed by ADEC represent a sea change in the way pesticides are controlled, or in this case, not controlled, in Alaska.

How and to what extent pesticides are used in Alaska is a significant public and environmental health issue. With these proposed regulations, ADEC is poised to take Alaska down the same unfortunate path followed by most states in the lower 48... the misuse and overuse of pesticides.

I don't know anybody who thinks that the misuse and overuse of pesticides is a good thing. And yet, this would be the exact outcome that ADEC is now proposing to impose on the citizens and environment of Alaska.

Regulation should never be amended in a vacuum, without knowledge of the extent and effect of pesticide use that is occurring today. Does ADEC have data indicating whether or not pesticides are currently being misused or overused in Alaska, on both private and public lands and rights of way? Does ADEC know the proportion of pesticide use that occurs in Alaska is on state lands versus private lands? Does ADEC have meaningful data on the human health and environmental effects of pesticide use in Alaska? I suspect the answer to these questions is "no", for, according to ADEC's Karin Hendrickson, "... possibly start doing water monitoring, which is not something we currently do, to see if there are pesticides getting into the environment that we don't know about."[18]

ADEC should know the answers to these questions, as it would enable ADEC to then determine to how best to monitor and control pesticide use in order to protect human health and the environment. If it would require additional funding to gather this data, then ADEC should seek additional funding.

[18] KTNA news report June 21, 2012

And yet, without such information and data, ADEC is proposing to throw out a pesticide permitting process that plays a crucial role in protecting human health and the environment. The proposed regulations would fail the public in many ways, among them:

- failure to allow the public to be heard on this very important public health issue: the use of pesticides
- failure to identify and protect water bodies and drinking water systems
- failure to contemplate and establish no-spray buffers necessary to protect human health and the environment
- failure to recognize and consider varying levels of risk to human health and the environment represented by the various pesticides
- failure to recognize that EPA label is not sufficient to account for risk to human health and the environment
- failure to recognize that the best judgment of an applicator agency is insufficient to protect human health and the environment
- failure to protect from contamination the places where people congregate
- failure to provide reasonable notice to help prevent the public from being involuntarily or unknowingly exposed to the toxic chemicals
- failure to protect private property.

These are significant "failures," which demonstrate that ADEC, under these proposed regulations, would be abdicating, in a big way, its fundamental duty to protect human health and the environment. And it is proposing to do so for reasons that are without merit, especially when compared to the enormous public harm that would surely result if these regulatory changes were adopted.

And, further, ADEC has concealed or mischaracterized the true nature and scope of the proposed regulation changes, to the extent that precludes meaningful, informed comment by the general public.

ADEC should abandon and discard these proposed regulatory changes. They are contrary to the public interest and adopting them would have unreasonable adverse effect on human health and the environment.

Sincerely,

John Strasenburgh

Fiscal Note

State of Alaska
2014 Legislative Session

Bill Version: HB 201
Fiscal Note Number:
() Publish Date:

Identifier: HB201-DEC-SWM-02-07-14
Title: PESTICIDES AND BROADCAST CHEMICALS
Sponsor: GARA
Requester: House Fisheries Committee

Department: Department of Environmental Conservation
Appropriation: Environmental Health
Allocation: Solid Waste Management
OMB Component Number: 2344

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2015 Appropriation Requested	Included in Governor's FY2015 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2015**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**
Personal Services	81.6		97.9	97.9	97.9	97.9	97.9
Travel	2.0		2.0	2.0	2.0	2.0	2.0
Services	22.5		7.9	7.9	7.9	7.9	7.9
Commodities	7.5		0.5	0.5	0.5	0.5	0.5
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	**113.6**	**0.0**	**108.3**	**108.3**	**108.3**	**108.3**	**108.3**
Fund Source (Operating Only)							
1004 Gen Fund	98.6		93.3	93.3	93.3	93.3	93.3
1005 GF/Prgm	15.0		15.0	15.0	15.0	15.0	15.0
Total	**113.6**	**0.0**	**108.3**	**108.3**	**108.3**	**108.3**	**108.3**
Positions							
Full-time	1.0		1.0	1.0	1.0	1.0	1.0
Part-time							
Temporary							
Change in Revenues							

Estimated SUPPLEMENTAL (FY2014) cost: 0.0 *(separate supplemental appropriation required)*
(discuss reasons and fund source(s) in analysis section)

Estimated CAPITAL (FY2015) cost: 0.0 *(separate capital appropriation required)*
(discuss reasons and fund source(s) in analysis section)

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? Yes
If yes, by what date are the regulations to be adopted, amended or repealed? 01/01/17

Why this fiscal note differs from previous version:

Not applicable, initial version.

Prepared By: Elaine Busse Floyd, Director — Phone: (907)269-7645
Division: Environmental Health — Date: 02/07/2014 08:30 AM
Approved By: Lynn Kent, Deputy Commissioner — Date: 02/07/14
Agency: Department of Environmental Conservation

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2014 LEGISLATIVE SESSION

BILL NO. HB 201

Analysis

Analysis/Assumptions:

The bill expands permitting and public notice and comment requirements for pesticide use in public places including apartment buildings and multi-family dwellings, portions of government offices and facilities where access is not restricted to employees, plazas, parks, public sports fields and transportation rights-of-way.

Personal Services:
One Environmental Program Specialist III (Range 18) in Anchorage to revise regulations; draft and issue public notice and comment periods for pesticide use permits; inspect permitted pesticide applications for permit compliance; provide technical assistance; take compliance actions, when necessary, and conduct public outreach to inform the public how these changes impact pesticide users that are not currently regulated. The position is budgeted ten months for the first year to allow for classification and recruitment time, and twelve months each year thereafter. Administrative support will be provided by existing staff.

Travel:
Routine travel within Alaska to conduct outreach and training, and for inspections and compliance work.

Services:
Regulation revisions will require assistance from the Department of Law during the first year. Routine outreach costs for printing and advertisements will occur each year.

Commodities:
New employee costs in the first year. Outreach materials for the first and subsequent years.

Fiscal Note

State of Alaska
2014 Legislative Session

Bill Version: HB 201
Fiscal Note Number:
() Publish Date:

Identifier: HB201-DOT-TMS-2-13-14
Title: PESTICIDES AND BROADCAST CHEMICALS
Sponsor: GARA
Requester: House Fisheries Committee

Department: Department of Transportation and Public Facilities
Appropriation: Administration and Support
Allocation: Transportation Management and Security
OMB Component Number: 2607

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2015 Appropriation Requested	Included in Governor's FY2015 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2015**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Fund Source (Operating Only)							
None							
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Positions							
Full-time							
Part-time							
Temporary							
Change in Revenues							

Estimated SUPPLEMENTAL (FY2014) cost: 0.0 *(separate supplemental appropriation required)*
(discuss reasons and fund source(s) in analysis section)

Estimated CAPITAL (FY2015) cost: 0.0 *(separate capital appropriation required)*
(discuss reasons and fund source(s) in analysis section)

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? No
If yes, by what date are the regulations to be adopted, amended or repealed?

Why this fiscal note differs from previous version:

This is the initial verson.

Prepared By: Connie McKenzie, Special Assistant — Phone: (907)465-4772
Division: Office of the Commissioner — Date: 01/03/2014 10:00 AM
Approved By: Mary Siroky, Director — Date: 01/03/14
Agency: Administrative Services

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2014 LEGISLATIVE SESSION

BILL NO. HB 201

Analysis

The proposed legislation requires the department to provide, in addition to reasonable public notification, time for public comment when pesticides and broadcast chemicals are applied in a public place and adds transportation rights-of-way to the definition of public place. The proposed legislation also adds restrictions and processes for public notice and comment with respect to locations near anadromous or resident fish habitat or near a public or private water source and also includes transportation rights-of-way in the definition of public place.

There is no fiscal impact on the department.

Written testimony in response to HB 201, 28th Legislature
February 12, 2014

I am writing this letter in support of HB201 and its amendments to reinstitute public notification and a time for public comment prior to the permitting and application of pesticides and/or herbicides on state easements and public land, including transportation rights-of–way. I am also supportive of its inclusion of buffers to protect salmon streams and community watersheds.

Living in SE Alaska on Prince of Wales Island for over 30 years, teaching high school, and working as a crew member fishing commercially for salmon and halibut during this time, I have been proud of living in a state where protecting salmon habitat and preserving the reputation of a wild and chemical-free resource has been a priority. Now I feel that in the name of streamlining state government and permitting we are about to sacrifice what we have worked so hard protect. For the current administration to eliminate the public process when it comes to applying chemicals to salmon streams and community watersheds is more than disappointing, it's disturbing. This is no place to cut government corners. We have a right to know and to comment when it comes to protecting salmon habitat and our drinking water.

Thank you for the opportunity to comment.

Cheryl Fecko
Craig, Alaska

HB

204

<TARGET><BILL>HB 204</BILL><SUBJECT>HB 204</SUBJECT><COMM>HFSH28</COMM></TARGET>

28-LS0463\O

SPONSOR SUBSTITUTE FOR HOUSE BILL NO. 204

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-EIGHTH LEGISLATURE - SECOND SESSION

BY REPRESENTATIVES AUSTERMAN, Edgmon, Kerttula, Peggy Wilson

Introduced: 2/5/14
Referred: House Special Committee on Fisheries, Finance

A BILL

FOR AN ACT ENTITLED

"An Act relating to a product development tax credit for certain salmon and herring products; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

*** Section 1.** AS 43.75.035(a) is amended to read:

(a) A taxpayer that is a fisheries business may claim a [SALMON] product development tax credit of 50 percent of qualified investment in new property first placed into service in a shore-based plant or on a vessel in the state in the tax year.

*** Sec. 2.** AS 43.75.035(b) is amended to read:

(b) The amount of the tax credit applied against taxes under this section may not

(1) exceed 50 percent of the taxpayer's tax liability incurred under this chapter for processing of salmon **or herring** during the tax year; or

(2) be claimed for property first placed into service after December 31, **2020** [2015].

* **Sec. 3.** AS 43.75.035(c) is amended to read:

(c) If the property for which a tax credit is claimed is installed on a vessel, the amount of qualified investment under (a) of this section is determined by multiplying the investment cost of the qualified investment property by a fraction, the numerator of which is the weight of raw salmon **or raw herring** processed on the vessel by the taxpayer in the state in the tax year in which the property is first placed into service, and the denominator of which is the weight of raw salmon **or raw herring** processed on the vessel by the taxpayer in and outside of the state in the tax year in which the property is first placed into service.

* **Sec. 4.** AS 43.75.035(d) is amended to read:

(d) An unused credit under this section may be carried forward and applied against the tax liability incurred on salmon **or herring** in the following three tax years.

* **Sec. 5.** AS 43.75.035(g) is amended to read:

(g) If, during a tax year, property for which a credit was claimed under this section is disposed of by the taxpayer, ceases to be qualified investment property, or is removed from service in the state, the tax due under this chapter is increased by the recapture percentage of the aggregate decrease in the credit allowed under this section for all prior tax years that would have resulted solely from reducing to zero the credit allowed for the qualified investment property under this section. The amount of tax credit attributable to the qualified investment that is carried forward from prior tax years is terminated as of the first day of the tax year in which the qualified investment property is disposed of by the taxpayer, ceases to be qualified investment property, or is removed from service in the state. For purposes of this subsection,

(1) the recapture percentage during the year in which the property is first placed into service or during the first year following the year in which the property is first placed into service is 100 percent;

(2) the recapture percentage during the second year following the year in which the property is first placed into service is 75 percent;

(3) the recapture percentage during the third year following the year in which the property is first placed into service is 50 percent;

(4) the recapture percentage during the fourth or subsequent year

following the year in which the property is first placed into service is zero percent;

(5) qualified investment property used on a vessel is considered to have been removed from the state on the first day of a tax year in which the proportion of raw salmon **or raw herring** processed in the state on the vessel is less than 50 percent of total weight of raw salmon **or raw herring** processed on the vessel in and outside of the state.

* **Sec. 6.** AS 43.75.035(i) is amended to read:

(i) The department shall develop and implement procedures by which a taxpayer that is a fisheries business may submit the taxpayer's proposed investment to the department and request a preliminary determination of whether the investment qualifies for the [SALMON] product development tax credit under this section. A preliminary determination by the department that the taxpayer's submission qualifies for the credit is binding, unless the department determines that the taxpayer has made a material misrepresentation in the taxpayer's submission.

Goodenough

* **Sec. 7.** AS 43.75.035(j)(3) is amended to read:

(3) "qualified investment" means the investment cost **to purchase or convert** [IN] depreciable tangible personal property with a useful life of three years or more to be used predominantly to perform an ice making, processing, packaging, or product finishing function that is a significant component in producing value-added salmon **or herring** products**, including canned salmon products in can sizes other than 14.75 ounces or 7.5 ounces** [BEYOND GUTTING OF THE SALMON]; in this paragraph, "property"

how relate to predominately used.

(A) includes

(i) **equipment used to fillet, skin, portion, mince, form, extrude, stuff, inject, mix, marinate, preserve, dry, smoke, brine, package, freeze, scale, grind, separate meat from bone, or remove pin bones** [FILLETING, SKINNING, PORTIONING, MINCING, FORMING, EXTRUDING, STUFFING, INJECTING, MIXING, MARINATING, PRESERVING, DRYING, SMOKING, BRINING, PACKAGING, BLAST FREEZING, OR PIN BONE REMOVAL EQUIPMENT];

(ii) new parts **necessary for, or costs associated with, converting a canned salmon line to produce can sizes other than 14.75 ounces or 7.5 ounces** [TO CONVERT AN EXISTING CAN SEAMER TO POP-TOP CAN PRODUCTION];

(iii) conveyors used specifically in the act of producing a value-added salmon **or herring** product; [AND]

(iv) ice making machines;

(v) new canning equipment for herring products; and

(vi) equipment used to transform salmon or herring byproduct that is discarded as waste into saleable product;

(B) does not include

(i) vehicles, forklifts, conveyors not used specifically in the act of producing a value-added salmon **or herring** product, cranes, pumps, or other equipment used to transport salmon **or herring,** or salmon **or herring** products, knives, gloves, tools, supplies and materials, equipment, other than ice making machines, that is not processing, packaging, or product finishing equipment, or other equipment, the use of which is incidental to the production, packaging, or finishing of value-added salmon **or herring** products; [OR]

(ii) the overhaul, retooling, or modification of new or existing property, except for new parts **necessary for, or costs associated with, converting a canned salmon line to produce can sizes other than 14.75 ounces or 7.5 ounces; or**

(iii) property used predominantly to produce a salmon or herring product that is not taxed under this chapter [TO CONVERT AN EXISTING CAN SEAMER TO POP-TOP CAN PRODUCTION];

* **Sec. 8.** AS 43.75.035(j)(6) is amended to read:

(6) "value-added salmon **or herring** product" means the product of a salmon **or herring** that is processed beyond heading, gutting, or separation in a

manner that [MATERIALLY] enhances the value **or quality** of the salmon **or herring** product, such as shelf-stable, retort pouched, smoked, pickled, or filleted salmon, ikura, leather, [OR] jerky**, or a saleable product made from waste byproduct of salmon or herring**; "value-added salmon **or herring** product" does not include a salmon **or herring** or salmon **or herring** product that

(A) has been subjected to only one or more of heading, gutting, freezing, **or** packaging [, QUALITY ASSURANCE PRACTICES, OR VALUE RETENTION PRACTICES];

(B) is salmon skeins or other unprocessed salmon **or unprocessed herring** products whether fresh or frozen; **or**

(C) [IS CANNED, EXCEPT FOR SALMON PRODUCTS IN A POP-TOP CAN; OR

(D)] is produced out of the state.

*** Sec. 9.** This Act takes effect immediately under AS 01.10.070(c).

Representative Alan Austerman

Alaska State Legislature

Session:
State Capitol
Juneau, Alaska 99801
(907) 465-2487 | (800) 865-2487
(907) 465-4956 (fax)

Interim:
305 Center Ave, Suite 1
Kodiak, Alaska 99615
(907) 486-8872
(907) 486-5264 (fax)

SALMON AND HERRING PRODUCT DEVELOPMENT TAX CREDIT
HOUSE BILL 204

The Alaska Salmon Product Development Tax Credit has been in place since 2003 and is widely credited as a major factor of the increase in commercial value of Alaska salmon. The ASDTC is currently scheduled to sunset on December 31st, 2015.

There have been positive trends since this bill was enacted in 2003. We have seen increased product diversity, increased state revenues from the fisheries business tax and increased permit prices.

The current tax credit applies to investment in new property that meets a requirement for creating a value added salmon product. House Bill 204 extends the ability of industry to use this credit until 2020 and expands the credit for herring value-added processing.

Herring is an established fishery in Alaska and is a prime candidate to start utilizing more fully. If we expand out of the roe fishery and into the food fishery, there are significant economic development opportunities that will be developed. Up until now, the herring fishery has been an underutilized fishery where only 10 percent of the fish is utilized and 90 percent has very little value.

Another impending burden to industry is the Environmental Protection Agency's efforts to force industry to eliminate seafood discharges containing solids into near shore waters. Many salmon processing facilities in Alaska currently grind (1/2 inch) and pump discharge. HB 204 would incentivize investment in equipment that would reduce the waste stream from salmon and herring processing alleviating the pressure to comply with these burdensome mandates.

Currently, statute only allows investment in pop-top cans. HB 204 also provides industry the necessary flexibility to respond to changing market demands for can sizes. This bill responds to this limitation by expanding the credit to any new equipment to herring and also to produce can sizes other than 14.75 ounces or 7.5 ounces.

The continued growth of the Alaska seafood market is vital to increased revenues from our fisheries. House Bill 204 will further encourage in-state processing and expand market opportunities to processors. The extension of the tax credit will continue to spur economic development opportunities and create quality Alaska products. I urge your support for passage of this bill.

State of Alaska
Department of Revenue
Salmon Product Development Tax Credit Overview

A Presentation to the House Fisheries Committee
February 4, 2014

Angela M. Rodell
Commissioner
Alaska Department of Revenue

Statistics

Gross Revenue from Fisheries Business Tax and SPD and Utilization Credits Claimed

	Gross Revenue	Credits Claimed*	% of Revenue
FY 2004	26,319,585	(1,379,475)	5.2%
FY 2005	25,941,837	(2,314,258)	8.9%
FY 2006	32,203,813	(3,058,516)	9.5%
FY 2007	29,910,171	415,745	-1.4%
FY 2008	35,909,264	(4,501,973)	12.5%
FY 2009	42,151,283	(3,121,697)	7.4%
FY 2010	32,653,241	(4,074,071)	12.5%
FY 2011	45,669,159	(2,057,255)	4.5%
FY 2012	50,581,499	(71,598)	0.1%
FY 2013	46,905,206	(1,832,081)	3.9%

*Does not reduce municipal share
As reported on DOR Annual Reports

Statistics

SPD Credit Detail

Calendar Year	Claimed Costs	Qualified Costs	Non-qualified Costs	No. of Taxpayers	Pre-approval Requests
2003	2,322,209	823,471	1,498,738	18	-
2004	6,569,081	1,462,600	5,106,481	25	-
2005	6,468,981	3,252,045	3,216,936	22	-
2006	5,792,524	2,514,286	3,278,238	29	-
2007	14,220,435	8,605,488	5,614,947	27	-
2008	10,336,099	7,506,510	2,829,589	21	-
2009	11,989,657	9,408,320	2,581,337	13	6
2010	2,149,908	2,052,163	97,745	13	4
2011	3,958,959	3,958,959	*	19	4
2012	8,178,560	8,178,560	*	13	3
Total	**71,986,413**	**47,762,400**	**24,224,013**		

*Audits in progress

Figure 3 - Revenue Collections Detail

Listed in order of total amount FY 2012 total receipts
All receipts are General Fund unless otherwise designated

TAX TYPE	FY 2012	FY 2011	FY 2010
Fisheries Business Tax			
Established			
Shore-based	$38,007,287	$32,930,706	$22,769,614
Floating	7,356,146	6,337,078	5,045,905
Cannery	5,151,867	6,347,450	4,792,527
Developing			
Shore-based	65,474	53,585	44,158
Floating	725	340	1,037
Total Tax	**50,581,499**	**45,669,159**	**32,653,241**
Prepayments	2,405,470	1,314,972	3,612,603
Penalties and Interest	995,246	157,442	313,438
License Fees	12,250	12,475	13,250
Less Credits			
Winn Brindle	(175,338)	(184,817)	(123,060)
Alaska Education	(650,015)	(449,730)	(450,000)
Salmon Product Development	(71,598)	(2,057,255)	(4,074,071)
Total Receipts	**53,097,514**	**44,462,246**	**31,945,400**
Fisheries Business Tax Shared			
Direct to Municipalities	(24,576,578)	(22,216,898)	(16,255,158)
DCCED* Municipal Allocation	(2,075,432)	(2,153,491)	(1,686,964)
Amount Retained by State	**$26,445,504**	**$20,091,857**	**$14,003,278**

* Department of Commerce, Community and Economic Development

Mining License Tax			
General Fund			
Tax Before Credits	$46,792,131	$50,085,541	$29,673,039
Penalties and Interest	6,926	(34,164)	98,416
Mineral Exploration Incentive Credit	(5,873,944)	(949,466)	0
Alaska Education Credit	(282,928)	(121,397)	(94,471)
Total Receipts - General Fund	**40,642,185**	**48,980,514**	**29,676,984**
Constitutional Budget Reserve Fund (CBRF)	53,648	607,605	48,116
Total Receipts - All Funds	**$40,695,833**	**$49,588,119**	**$29,725,100**

Southeast Alaska Fishermen's Alliance
9369 North Douglas Highway
Juneau, AK 99801
Phone: 907-586-6652 Email: seafa@gci.net
Fax: 907-523-1168 Website: http://www.seafa.org



February 5, 2014

Alaska State Legislature
House Fisheries Committee
Representative Paul Seaton, Chair
State Capitol
Juneau, AK 99811

RE: Support HB 204

Representative Paul Seaton, Chair and Fisheries Committee Members,

Southeast Alaska Fishermen's Alliance (SEAFA) supports HB 204. We are a multi-gear/multi-species membership based commercial fishing association. We represent our membership mainly involved in the salmon, crab, shrimp and longline fisheries of Southeast Alaska/Yakutat.

Southeast Alaska Fishermen's Alliance supports HB 204 which will extend the salmon production development tax credit to 2020 and adding herring as well as salmon. This has been a good program over the years in helping to increase the value of salmon and we believe will have the same benefits to the herring fishery. The bill also encourages the utilization of development opportunities of salmon and herring by-catch.

Sincerely,

Kathryn Hansen

Kathy Hansen
Executive Director

Summary of Tom Sunderland's testimony to the Alaska House Fisheries Committee on HB 204.
Testimony given Thursday, February 6, 2014

Ocean Beauty Seafoods is a shoreside processor with six plants in Alaska. Our hope is to use this tax credit to modernize our shoreside facilities that can salmon and herring. I am going to give a market-based testimony based on salmon.

The first thing to know about the existing Salmon Product Development Tax Credit is that it worked. It was successful in helping lift the industry out of a time of low value by helping processors to diversify product offerings, and through that product diversification, diversify markets. As a result the industry is far less vulnerable to being held hostage by overreliance on either a single market, such as Japan, or a single product form, such as traditional canned salmon.

This bill is necessary to defend these gains. We are now seeing the market push back against the higher prices our products now command. It is not the case that we can forever raise prices – consumers at some point will resist. They don't necessarily see the value in a tall can of red salmon or a four ounce package of smoked sockeye that approaches $10.

Consumers don't buy these types of products by the pound, as they do fresh fish, but buy based on absolute price as they do with other packaged goods. Consider the examples of canned tuna or even breakfast cereal – those items routinely and successfully downsize their packaging as a way of mitigating absolute price on the shelf. Tuna is now sold in the US primarily in 5oz cans. The Australian tuna market is dominated by 95g (3.3 ounce) cans. They can do this much more easily than we can due to the year-round nature of their business and their location on road systems. We need this tax credit to give us the ability to respond to this market pressure and reduce the size of the cans and the shelf price. If we don't do this we risk becoming an irrelevant product to many consumers and retail customers.

While price is a primary motivator for this, price is not the only driver of this change. This move toward smaller cans is also driven by permanent household demographic changes: smaller households don't require as much food as larger ones. A smaller can is more convenient, results in less waste, costs less, and is therefore more attractive in most ways.

Gaining value from currently worthless byproduct is one of the best weapons we could have to defend the industry's price gains. We can't always expect the value of the flesh to appreciate, or to maintain current levels, but converting byproduct into saleable product is a pure win for the Alaskan industry and could hedge against price declines.

Byproduct utilization also provides us with the added benefit of keeping the EPA off of our back as they inevitably change remote discharge regulations. Every pound of byproduct we are able to manufacture into saleable product helps Alaska both directly through added value and by helping the industry deal with these new regulations.

Louie Flora

From: Rep. Paul Seaton
Subject: FW: clarification on application of product development tax credit for equipment on vessels

---

From: Louie Flora
Sent: Tuesday, February 11, 2014 5:13 PM
To: Rep. Paul Seaton; Paul Seaton (pkseaton@gmail.com)
Subject: FW: clarification on application of product development tax credit for equipment on vessels

---

From: Cottongim, Timothy D (DOR) [mailto:tim.cottongim@alaska.gov]
Sent: Tuesday, February 11, 2014 3:53 PM
To: Louie Flora
Cc: Tangeman, Bruce E (DOR); Bales, Johanna D (DOR); Kim, Anna (DOR)
Subject: RE: clarification on application of product development tax credit for equipment on vessels

Louie,

We've not previously come across the scenario you've provided. However, in this instance, we would first determine if the equipment was used predominantly to process value-added salmon. If the answer is "yes", the equipment would qualify for a credit. Second, we would determine the amount of processing taking place in the state compared to how much is taking place outside the state and allow a credit for only the percentage of processing conducted in the state. For example, if 70% of total fish processed was value-added salmon within the state, we would allow a credit for 70% of the cost of the equipment.

Tim Cottongim
Fish Tax & Licensing Manager - Juneau
Department of Revenue - Tax Division
(907)465-3695

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From: Louie Flora [mailto:Louie.Flora@akleg.gov]
Sent: Monday, February 10, 2014 5:15 PM
To: Cottongim, Timothy D (DOR)
Subject: RE: clarification on application of product development tax credit for equipment on vessels

Thanks Tim,

A further question is on the use of equipment that is used entirely on salmon in state waters, and some other fish (cod for instance) in federal waters. How would DOR treat this in terms of applying the tax credit?

Louie

From: Cottongim, Timothy D (DOR) [mailto:tim.cottongim@alaska.gov]
Sent: Monday, February 10, 2014 4:14 PM
To: Louie Flora
Cc: Tangeman, Bruce E (DOR); Bales, Johanna D (DOR); Kim, Anna (DOR); Egan, Alicia R (DOR)
Subject: RE: clarification on application of product development tax credit for equipment on vessels

Hi Louie,

No, the location of the activity is not relevant to the predominant use requirement. However, AS 43.75.035(c) provides that the qualifying investment cost otherwise eligible for the credit must be reduced based on the ratio of processing activity conducted in the state over the processing activity conducted in the state and **outside the state** (which includes federal waters).

Tim Cottongim
Fish Tax & Licensing Manager - Juneau
Department of Revenue - Tax Division
(907)465-3695

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From: Louie Flora [mailto:Louie.Flora@akleg.gov]
Sent: Monday, February 10, 2014 3:00 PM
To: Cottongim, Timothy D (DOR)
Cc: Egan, Alicia R (DOR)
Subject: clarification on application of product development tax credit for equipment on vessels

Hi Tim,

In advance of this Thursday's hearing on HB 204, Representative Seaton has asked for some clarification on how Revenue interprets the qualifications for value added equipment on vessels that operate in both state and federal waters.

Does the qualified processing equipment's usage during a fishery prosecuted in federal waters also count for determining predominant usage for purposes of a state tax credit? Or does the usage have to occur entirely in state waters?

Thanks,

Louie

Louie Flora
House Fisheries Committee Aide,

Representative Paul Seaton, Chairman
House Fisheries Committee
(907) 465-3923

THE STATE
of ALASKA
GOVERNOR SEAN PARNELL

Department of Revenue

COMMISSIONER'S OFFICE
Angela M. Rodell, Commissioner

333 Willoughby Avenue, 11th Floor
PO Box 110400
Juneau, Alaska 99811-0400
Main: 907.465.2300
Fax: 907.465.2389

February 11, 2014

The Honorable Paul Seaton, Chair
House Fisheries Committee
Alaska State Legislature
State Capitol, Room 102
Juneau, AK 99801-1182

Dear Chair Seaton:

Thank you for the opportunity to provide follow up to certain items raised during the February 6, 2014 House Fisheries Committee meeting. Please see specific items in italics and our responses immediately below.

1. Define "material misrepresentation"

The common definition of "material misrepresentation" is

- "a deliberate hiding or falsification of a material fact which, if known to the other party, could have aborted, or significantly altered the basis of, a contract, deal, or transaction."

For our purposes, it would be if a taxpayer asked for a predetermination and falsified any of the information that they provided or withheld information and, if they had been honest and provided all information, we would have denied the credit.

- For example, taxpayer states that they purchased new equipment which will be used predominantly to process salmon beyond heading, gutting and/or freezing. If we approve the credit for the equipment and then find out later that the equipment was used or was not used predominantly to process salmon or the salmon wasn't processed beyond heading, gutting, or freezing, we would be able to deny the credit.

Even in the event the taxpayer didn't intentionally mislead us, if the equipment didn't meet all criteria for the credit after the fact, then we would also be able to deny the credit at a later date. For example, if the market changed and the equipment was never placed in service, we wouldn't provide a credit.

2. What do the investments that have been made look like? This was asked by Representative Kreiss-Tomkins in response to Joe Jacobson's slide on Gross Revenue from Fisheries Bus Tax and Utilization of Credits Claimed.

Specifically it seems Representative Kreiss-Tomkins is looking for what kind of equipment the industry is purchasing, and what kind of new products, efficiency improvements, and quality improvements the industry is making that have been enabled by the tax credits.

Tax Division Auditor, Mike Kazmac prepared the attached document, which provides a general listing of qualified versus disqualified equipment, related to the tax credit.

However, Rep. Kreiss-Tomkins was looking for a more qualitative response-

- New products we have seen as a result of the tax credit: increase in Ikura (salmon roe), some oils for vitamin supplement capsules, smaller sized filet portions, skinless filets.
- Efficiency improvements: in general our list of qualified equipment has produced a varying level of efficiency, especially in cases where the work was previously performed manually.
- Quality improvements are hard to quantify and we currently don't require reporting of quality improvements.

I hope you find this information to be useful. Please do not hesitate to contact me if you have further questions.

Sincerely,

Bruce Tangeman
Deputy Commissioner

Attachment: SSHB204-SPDC qualified vs non qualified equipment.pdf

SPDC Equipment

Qualified Equipment

1. Fillet machines
2. Fillet portioners
3. Fillet trimming machines
4. Pin bone removal equipment
5. Skinning machines
6. Active trim line conveyors
7. Fillet washers
8. Fillet driers
9. Filler glazers
10. Vacuum packaging machines
11. Blast freezers
12. Plate freezers
13. Ice machines
14. Labelers
15. Printers
16. Smokehouse equipment
17. Roe separators
18. Roe washers
19. Roe dryers
20. Roe agitators
21. Brine makers
22. Tray sealers
23. Oil separators
24. Decanters
25. Retorts
26. Spice applicators
27. Parts to convert conventional canned production to pop-top

Disqualified Equipment

1. Forklifts
2. Totes
3. Tote dumpers
4. Feed hoppers
5. Workstands
6. Heading machines
7. Gutting machines
8. Tables
9. Knives
10. Spare parts
11. Pocket conveyors
12. Scrap or waste conveyors
13. Conveyors that only provide transportation
14. Blast freezers for predominately H&G
15. Plate freezers for predominantly green roe
16. Ice machines for predominantly H&G
17. Scales
18. Wall panels
19. Light fixtures
20. Plumbing
21. Building construction
22. Purchase price of a vessel
23. Pumps
24. Box strapping machines
25. Waste grinders
26. Canning machines
27. Metal detectors
28. Dud detectors
29. Retorts for conventional canning
30. Fish meal plant

Summary of Tom Sunderland's testimony to the Alaska House Fisheries Committee on HB 204.
Testimony given Thursday, February 6, 2014

Ocean Beauty Seafoods is a shoreside processor with six plants in Alaska. Our hope is to use this tax credit to modernize our shoreside facilities that can salmon and herring. I am going to give a market-based testimony based on salmon.

The first thing to know about the existing Salmon Product Development Tax Credit is that it worked. It was successful in helping lift the industry out of a time of low value by helping processors to diversify product offerings, and through that product diversification, diversify markets. As a result the industry is far less vulnerable to being held hostage by overreliance on either a single market, such as Japan, or a single product form, such as traditional canned salmon.

This bill is necessary to defend these gains. We are now seeing the market push back against the higher prices our products now command. It is not the case that we can forever raise prices – consumers at some point will resist. They don't necessarily see the value in a tall can of red salmon or a four ounce package of smoked sockeye that approaches $10.

Consumers don't buy these types of products by the pound, as they do fresh fish, but buy based on absolute price as they do with other packaged goods. Consider the examples of canned tuna or even breakfast cereal – those items routinely and successfully downsize their packaging as a way of mitigating absolute price on the shelf. Tuna is now sold in the US primarily in 5oz cans. The Australian tuna market is dominated by 95g (3.3 ounce) cans. They can do this much more easily than we can due to the year-round nature of their business and their location on road systems. We need this tax credit to give us the ability to respond to this market pressure and reduce the size of the cans and the shelf price. If we don't do this we risk becoming an irrelevant product to many consumers and retail customers.

While price is a primary motivator for this, price is not the only driver of this change. This move toward smaller cans is also driven by permanent household demographic changes: smaller households don't require as much food as larger ones. A smaller can is more convenient, results in less waste, costs less, and is therefore more attractive in most ways.

Gaining value from currently worthless byproduct is one of the best weapons we could have to defend the industry's price gains. We can't always expect the value of the flesh to appreciate, or to maintain current levels, but converting byproduct into saleable product is a pure win for the Alaskan industry and could hedge against price declines.

Byproduct utilization also provides us with the added benefit of keeping the EPA off of our back as they inevitably change remote discharge regulations. Every pound of byproduct we are able to manufacture into saleable product helps Alaska both directly through added value and by helping the industry deal with these new regulations.

HB

386

<TARGET><BILL>HB 386</BILL><SUBJECT>HB 386</SUBJECT><COMM>HFSH28</COMM></TARGET>

ALASKA STATE LEGISLATURE

House Fisheries Committee

Representative Paul Seaton, Chair

State Capitol Building, Room 102
Juneau, AK 99801 – 1182
Phone (907) 465-2689
Fax (907) 465-3472
Rep.Paul.Seaton@akleg.gov

HB 386
Sponsor Statement

In 1972, voters amended Alaska's constitution to allow limited entry into the state's commercial fisheries. Following this amendment, in 1973 the State Legislature enacted Alaska's Limited Entry Act (AS 16.43), creating the state's limited entry program and giving the Commercial Fisheries Entry Commission (CFEC) the responsibility for administering the program.

The commission serves as a regulatory and quasi-judicial agency of the state. Three commissioners are appointed by the Governor and confirmed by the legislature. Commission staff is organized into five sections: administration, adjudications, research & planning, licensing, and information technology. The commission is charged with establishing maximum numbers of entry permits for fisheries to be limited, processing entry permit applications and adjudicating claims, issuing annual permits in both limited and open access fisheries, processing requests for emergency and permanent transfers as well as research and coordination with state and federal management agencies in developing fisheries policies.

The commission has fulfilled its purpose commendably. Between 1974 and 2013, entry permits have been issued in a total of 65 commercial fisheries: 26 salmon fisheries, 19 herring fisheries, 9 crab fisheries, 5 sablefish fisheries, 3 shrimp fisheries, and 3 dive fisheries. To date, a total of 79 permit types have been issued in the 65 limited fisheries.

While undertaking the bulk of fisheries limitations in the 1970's, 80's and 90's, the commission established limited entry fisheries on nearly an annual basis. The caseload of permit adjudications before the commissioners has significantly decreased since this time. The last fishery that was limited in Alaska was in 2004. A comparative look at the permit caseload before the commissioners shows that in 1998 commissioners adjudicated 105 permit cases, 42 permit transfer cases and 10 miscellaneous actions while in 2013 commissioners adjudicated 3 entry permit applications, 2 permit transfers and one remand to the adjudication section.

Recognizing that the commission has fulfilled its statutory mandate under limited entry, HB 386 repeals the commission, and shifts the current permitting, research, licensing and other duties undertaken by the commission into a Commercial Fisheries Entry Division in the Department of Fish and Game. Employees of the Commercial Fisheries Entry Division would be moved into the classified employment category, instead of their current exempt category. Under HB 386 permit adjudications will be handled by the Office of Administrative Hearings.

The commission has served Alaska well. HB 386 would continue with the work of administering Alaska's limited entry fishery system under the Commercial Fisheries Entry Division.

ALASKA STATE LEGISLATURE

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HB 386 Sectional Analysis

HB 386 enacts a change in statutes establishing a Commercial Fisheries Entry Division in the Department of Fish and Game. HB 386 repeals references to the Commercial Fisheries Entry Commission. The majority of the sections in HB 386 enact conforming amendments replacing references to Commercial Fisheries Entry Commission with Commercial Fisheries Entry Division. The sectional below lists the topic of the section in which the conforming amendment occurs.

Please note that a sectional analysis of a bill or resolution should not be considered an authoritative interpretation of the measure itself. The legislation is the best statement of its contents.

Section 1 – Powers and Duties of the Commissioner of the Alaska Department of Fish and Game
Section 2 – Process to petition the Board of Fisheries to establish a moratorium on new entrants into a commercial fishery
Section 3 – Vessel license statute
Section 4 – Social Security number to child services agency
Section 5 – Vessel number plate
Section 6 – Issuance of permanent vessel number plate
Section 7 – Prohibition on landing or delivering fish in state without landing permit
Section 8 – Issuance of landing permits
Section 9 – Confidentiality of records
Sections 10, 11, 12 - Loans for purchase of Alaska limited entry permits
Section 13 – Limited entry permit loan default and foreclosure
Section 14 – Transfer of entry permit after foreclosure
Section 15 – Sale of a foreclosed permit
Section 16 – Commercial Fishing Loan Act definitions section modification
Section 17 – Salmon Fishery Associations
Section 18 – Establishes the Commercial Fisheries Entry Division
Section 19 – Powers and Duties of the Commercial Fisheries Entry Division
Section 20 – Regulations and hearing procedures
Section 21 - Application of Administrative Procedure Act
Sections 22, 23 –Requirement for entry permit
Section 24 – Failure to renew an entry permit
Section 25 – Death of a permit holder
Section 26 – Voluntary relinquishment of a permit
Section 27, 28, 29 – Annual fee for entry permit
Sections 30, 31, 32, 33 – Transferability of permits

Section 34 – Emergency permit transfers
Section 35 – Administrative areas
Sections 36, 37, 38, 39– Interim use permits
Section 40 – Moratorium on new entrants into certain fisheries
Section 41 – Moratorium in Southeast Alaska Dungeness crab fishery
Sections 42, 43 – Moratorium in Southeast Alaska dive fisheries
Section 44 – Designation of distressed fisheries
Sections 45, 46 – Determination of the maximum number of entry permits for initial issue
Section 47 –Standards for initial issuance of entry permits
Sections 48, 49, 50, 51, 52 – Application for initial issuance of entry permits
Sections 53, 54, 55 – Initial issuance of entry permits
Section 56 – Optimum number of entry permits
Section 57 – Revision of optimum number of entry permits
Section 58 – Establishment of buy-back funds and permit buy-back assessments
Section 59 – Administration of buy-back program
Section 60, 61 – Issuance of new entry permits; appropriations related to fleet reduction
Sections 62, 63 – Educational entry permit
Section 64, 65 – Terms and conditions of education entry permit
Section 66 – Accounting of harvest
Section 67 – Adoption of regulations
Section 68 – Special harvest area entry permits
Section 69 – Terms and Conditions of special harvest area entry permits
Section 70 – Adoption of regulations
Sections 71, 72, 73 – Demerit point system for commercial salmon fishery violations
Sections 74, 75 – Assessment of demerit points
Sections 76, 77, 78 – Permit suspensions
Section 79 – Notice and appeal
Section 80 – Required notice to commission
Section 81 – Hearings in proximity to Board of Fisheries Meetings
Section 82, 83, 84, 85, 86, 87, 88, 89 - Commission revocation or suspension of permits
Section 90, 91, 92, 93 – Penalties
Section 94 – Public disclosure of certain documents prohibited
Section 95 – Annual report requirement
Section 96, 97, 98 – Definitions
Section 99 – Child support lien against commercial fishing earnings
Section 100 – Program receipts reference – Fiscal Policies Act
Section 101 – Election to terminate salmon enhancement tax
Section 102 – Election to approve and or terminate dive fishery management assessment
Section 103 – Definitions
Section 104 – Election to approve and or terminate salmon fishery assessment
Section 105 – Definitions
Section 106 – Permit buy-back assessment
Section 107 – Election to approve and or terminate seafood development tax
Section 108 – Jurisdictions of the office of Administrative Hearings
Section 109 – Pledge of permit for security on loan with the Commercial Fishing and Agriculture Bank (CFAB)
Section 110 – Initial notice of default (CFAB)
Section 111 – Foreclosure (CFAB)
Section 112 – Termination of permit interest (CFAB)
Sections 113, 114 – Transfer of entry permits after foreclosure (CFAB)
Section 115 – Definitions (CFAB)

Section 116 – Repeal of Commercial Fisheries Entry Commission statutes and references: Definition section of Commercial Fishing Loan Act - 16.10.360(1), enabling statute of Commercial Fisheries Entry Commission – 16.43.02, Commission term of office, vacancy and removal – 16.43.030, Commission quorum – 16.43.040, Commission qualifications – 16.43.050, Commission compensation – 16.43.060, Commission legal counsel – 16.43.070, Commission Employment of personnel – 16.43.080, a portion of the Southeast Alaska dive fisheries statute is deleted as it is no longer valid statute – 16.43.228(e), The Commercial Fisheries Entry Commission is removed from the exempt service statute 39.25.110(11)(D), removes the Commercial Fisheries Entry commission from the public official financial disclosure law 39.50.200(b)(10)
Section 117 – Transition language
Section 118 – Employees

EXECUTIVE SUMMARY

CHANGES IN THE DISTRIBUTION OF ALASKA'S COMMERCIAL FISHERIES ENTRY PERMITS, 1975 to 2013

CFEC Report Number 14-2N-EXEC

Alaska Commercial Fisheries Entry Commission
8800 Glacier Highway, Suite 109
P.O. Box 110302
Juneau, Alaska 99811-0302
(907) 789-6160

TABLE 3: Total Number of Initial Permit Holders by Permit Type and Resident Type

Permits First Issued in:	All Permits Issued to Alaska Rural Local	Alaska Rural Nonlocal	Alaska Urban Local	Alaska Urban Nonlocal	NR	All Transferable Permits Issued to Alaska Rural Local	Alaska Rural Nonlocal	Alaska Urban Local	Alaska Urban Nonlocal	NR	All Permits Alaska Total	Grand Total
1975												
SE Salmon Seine	**147**	**0**	**66**	**1**	**205**	**147**	**0**	**66**	**1**	**205**	**214**	**419**
SE Salmon Drift Gillnet	172	1	143	4	155	172	1	143	4	155	320	475
Salmon Power Troll	**321**	**5**	**354**	**11**	**281**	**321**	**5**	**354**	**11**	**281**	**691**	**972**
Yakutat Salmon Setnet	129	3	0	22	18	129	3	0	22	18	154	172
PWS Salmon Seine	**184**	**13**	**0**	**14**	**56**	**184**	**13**	**0**	**14**	**56**	**211**	**267**
PWS Salmon Drift Gillnet	354	20	0	27	136	354	20	0	27	136	401	537
PWS Salmon Setnet	**21**	**0**	**0**	**2**	**7**	**20**	**0**	**0**	**2**	**7**	**23**	**30**
Cook Inlet Salmon Seine	76	0	7	1	1	76	0	7	1	1	84	85
Cook Inlet Salmon Drift	**170**	**12**	**197**	**9**	**185**	**170**	**12**	**197**	**9**	**185**	**388**	**573**
Cook Inlet Salmon Setnet	204	16	445	25	56	204	16	445	25	56	690	746
Kodiak Salmon Seine	**77**	**26**	**165**	**10**	**106**	**77**	**26**	**165**	**10**	**106**	**278**	**384**
Kodiak Salmon Beach Seine	13	2	18	1	2	12	1	17	1	1	34	36
Kodiak Salmon Setnet	**44**	**3**	**79**	**11**	**51**	**44**	**3**	**79**	**11**	**51**	**137**	**188**
Chignik Salmon Seine	32	12	0	28	19	32	12	0	28	19	72	91
Pen/Aleutian Salmon Seine	**102**	**0**	**0**	**3**	**16**	**102**	**0**	**0**	**3**	**16**	**105**	**121**
Pen/Aleutian Salmon Drift	99	1	0	13	49	99	1	0	13	49	113	162
Pen/Aleutian Salmon Setnet	**98**	**0**	**0**	**9**	**9**	**98**	**0**	**0**	**9**	**9**	**107**	**116**
Bristol Bay Salmon Drift	712	185	0	233	745	712	185	0	233	745	1,130	1,875
Bristol Bay Salmon Setnet	**660**	**64**	**0**	**163**	**154**	**557**	**49**	**0**	**140**	**137**	**887**	**1,041**
	3,615	363	1,474	587	2,251	3,510	347	1,473	564	2,233	6,039	8,290
1976												
Upper Yukon Salmon Gillnet	**57**	**3**	**13**	**1**	**1**	**57**	**3**	**13**	**1**	**1**	**74**	**75**
U Yukon Salmon Fish Wheel	141	4	17	2	1	141	4	17	2	1	164	165
Kuskokwim Salmon Gillnet	**662**	**5**	**172**	**0**	**0**	**662**	**5**	**172**	**0**	**0**	**839**	**839**
Kotzebue Salmon Gillnet	54	2	157	6	1	54	2	157	6	1	219	220
Lower Yukon Salmon Gillnet	**672**	**27**	**0**	**12**	**1**	**672**	**27**	**0**	**12**	**1**	**711**	**712**
Norton Sound Salmon Gillnet	178	1	23	2	0	178	1	23	2	0	204	204
	1,764	42	382	23	4	1,764	42	382	23	4	2,211	2,215
1977-78												
SE Roe Herring Seine	**24**	**0**	**17**	**0**	**6**	**24**	**0**	**17**	**0**	**6**	**41**	**47**
SE Herring Gillnet	44	0	39	1	27	44	0	39	1	27	84	111
PWS Roe Herring Seine	**32**	**44**	**0**	**19**	**10**	**32**	**44**	**0**	**19**	**10**	**95**	**105**
Cook Inlet Herring Seine	46	5	4	13	7	46	5	4	13	7	68	75
	146	49	60	33	50	146	49	60	33	50	288	338
1980-87												
Salmon Hand Troll	**992**	**11**	**964**	**42**	**153**	**380**	**1**	**282**	**8**	**34**	**2,009**	**2,162**
NSEI Sablefish Longline	14	2	31	2	22	14	2	31	2	22	49	71
SSEI Sablefish Longline	**4**	**0**	**8**	**0**	**4**	**3**	**0**	**7**	**0**	**4**	**12**	**16**
SSEI Sablefish Pots	1	0	1	0	1	1	0	1	0	0	2	3
SE Red,Blue King Crab Pot	**2**	**0**	**2**	**0**	**2**	**2**	**0**	**2**	**0**	**2**	**4**	**6**
SE Red,Blue,Brn Kng Crb Pot	4	0	1	0	2	3	0	1	0	1	5	7
SE Brown King Crab Pot	**6**	**0**	**3**	**0**	**1**	**3**	**0**	**1**	**0**	**1**	**9**	**10**
SE Red,Blue King/Tanner Pot	6	0	7	0	1	6	0	7	0	1	13	14
SE Brown King/Tanner Pot	**2**	**0**	**1**	**0**	**3**	**2**	**0**	**0**	**0**	**2**	**3**	**6**
SE All King/Tanner Pot	17	0	8	0	4	16	0	7	0	4	25	29
SE Tanner Crab Pot	**10**	**1**	**6**	**0**	**10**	**8**	**1**	**6**	**0**	**5**	**17**	**27**
PWS Roe Herring Gillnet	20	0	0	0	4	20	0	0	0	4	20	24
PWS Her Spawn on Kelp Pound	**69**	**8**	**0**	**15**	**36**	**69**	**8**	**0**	**15**	**36**	**92**	**128**
Kodiak Roe Herring Seine	11	11	43	3	17	9	5	36	1	6	68	85
Kodiak Roe Herring Gillnet	**6**	**28**	**55**	**18**	**12**	**6**	**20**	**40**	**12**	**4**	**107**	**119**
Kodiak Roe Her Seine/Gill	0	0	1	0	1	0	0	1	0	0	1	2
	1,164	61	1,131	80	273	542	37	422	38	120	2,436	2,709
1988-91												
BBay Herring Spawn on Kelp	**276**	**4**	**0**	**6**	**5**	**276**	**4**	**0**	**6**	**5**	**286**	**291**
Norton Sd Her Beach Seine	0	4	0	1	4	0	4	0	1	4	5	9
Nelson Island Her Gillnet	142	19	0	8	9	126	18	0	7	7	169	178
Nunivak Island Her Gillnet	**44**	**7**	**0**	**8**	**5**	**40**	**5**	**0**	**6**	**3**	**59**	**64**
Lower Yukon Herring Gillnet	94	5	0	4	3	88	2	0	2	0	103	106
Norton Sd Herring Gillnet	**154**	**36**	**6**	**40**	**64**	**154**	**36**	**6**	**40**	**64**	**236**	**300**
	710	75	6	67	90	684	69	6	62	83	858	948

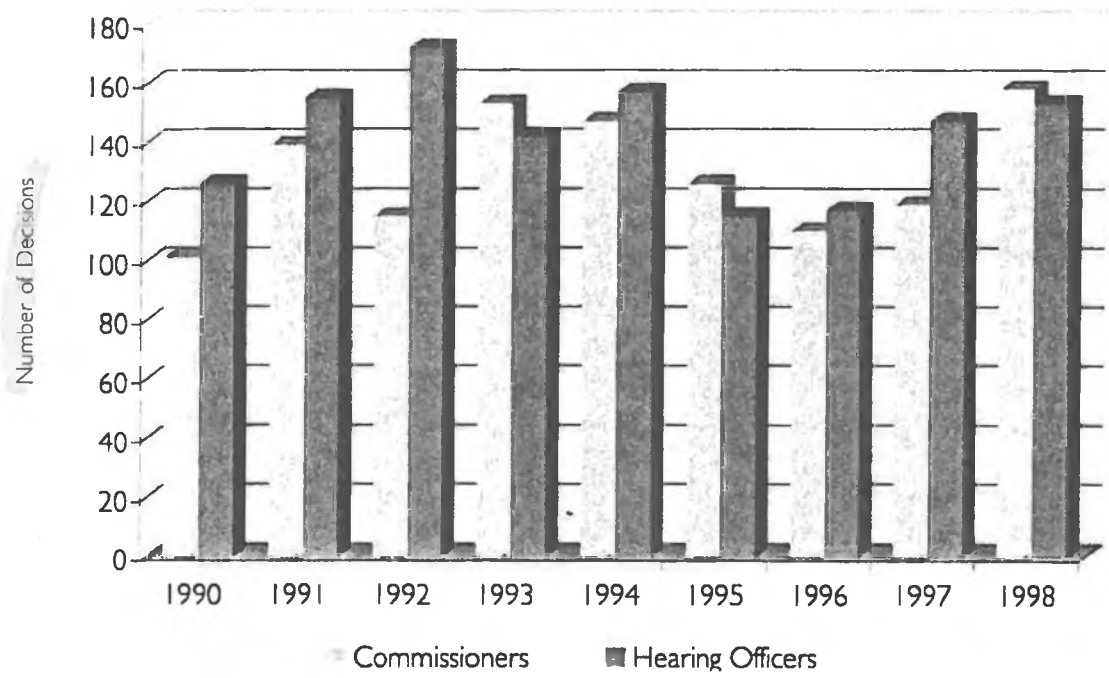
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1997												
SE Dungeness Ring Net	6	0	2	0	0	0	0	0	0	0	8	8
SE Dungeness Dive	1	0	2	0	0	0	0	0	0	0	3	3
SE Dungeness 300 Pot	32	0	7	0	13	32	0	7	0	13	39	52
SE Dungeness 225 Pot	29	0	8	1	10	28	0	7	1	10	38	48
SE Dungeness 150 Pot	54	0	18	0	15	53	0	17	0	13	72	87
SE Dungeness 75 Pot	78	3	25	0	21	50	1	14	0	7	106	127
Cook Inlet Dunge Ring Net	1	0	0	0	0	0	0	0	0	0	1	1
Cook Inlet Dungeness Pot	58	3	6	2	2	49	2	4	2	2	69	71
	259	6	68	3	61	212	3	49	3	45	336	397
1998												
NSE Her Spawn on Kelp Pound	32	1	58	4	17	32	1	58	4	17	95	112
SSE Her Spawn on Kelp Pound	146	0	48	1	14	114	0	28	1	10	195	209
SE Shrimp Otter Trawl	0	0	0	1	0	0	0	0	0	0	1	1
SE Shrimp Beam Trawl	25	0	2	0	5	18	0	2	0	3	27	32
SE Shrimp Pot	171	4	113	4	20	84	1	54	3	13	292	312
PWS Sablefish Net Gear	0	0	0	1	0	0	0	0	1	0	1	1
PWS Sablefish Fixed 90ft	1	0	0	0	0	1	0	0	0	0	1	1
PWS Sablefish Fixed 60ft	0	0	0	2	0	0	0	0	2	0	2	2
PWS Sablefish Fixed 50ft	6	7	0	15	4	6	7	0	15	4	28	32
PWS Sablefish Fixed 35ft	3	2	0	2	3	3	2	0	2	3	7	10
	384	14	221	30	63	258	11	142	28	50	649	712
1999-2002												
SE Urchin Dive	8	1	21	2	51	8	1	21	2	50	32	83
SE Geoduck Dive	22	0	31	3	56	7	0	8	1	34	56	112
SE Cucumber Dive	111	2	162	7	107	42	0	69	3	42	282	389
Goodnews Bay Her Gillnet	46	122	0	13	1	46	116	0	13	1	181	182
Kodiak Fd/Bt Her Seine/Gill	1	0	4	0	0	1	0	4	0	0	5	5
Kodiak Fd/Bt Her Trawl 75ft	0	0	0	0	1	0	0	0	0	1	0	1
Kodiak Fd/Bt Her Trawl 70ft	0	0	1	0	0	0	0	1	0	0	1	1
Kodiak Fd/Bt Her Trawl 60ft	0	0	0	0	2	0	0	0	0	2	0	2
	188	125	219	25	218	104	117	103	19	130	557	775
2004												
Kodiak Tnr Bairdi Pot 120ft	0	3	31	2	7	0	2	25	2	6	36	43
Kodiak Tnr Bairdi Pot 60ft	15	7	92	10	14	15	7	87	9	13	124	138
	15	10	123	12	21	15	9	112	11	19	160	181
Overall Totals	8,245	745	3,684	860	3,031	7,235	684	2,749	781	2,740	13,534	16,565

ceeding and six on miscellaneous actions. (The miscellaneous actions were primarily on qualifications for interim-use permits in fisheries subject to moratoria.) At the end of the year, 363 cases were pending before hearing officers.

The Commissioners adjudicated a total of 158 cases during 1998: 105 permit applications, 42 permit transfers, one notice to show cause action and 10 miscellaneous actions. At the end of the year, 227 cases were pending before the Commissioners.

Decisions Completed



THE COMMISSION'S WEB SITE NOW INCLUDES INFORMATION ABOUT THE NUMBERS OF LIMITED ENTRY PERMIT APPLICATIONS PENDING IN THE ADJUDICATION PROCESS

The Adjudication Section's staff issued 108 decisions in 1999: 69 on entry permit applications, 33 on permit transfers, five renewal fee cases and one case on an applicant's qualifications for an interim-use permit in a fishery subject to a moratorium At the end of the year, 323 cases were pending before hearing officers.

The Commissioners adjudicated a total of 127 cases during 1999: 80 permit applications, 41 permit transfers, five renewal fee cases and one moratorium case. At the end of the year, 217 cases were pending before the Commissioners.

The Commission's web site now includes information about the numbers of limited entry permit applications pending in the adjudication process for each fishery. The web site also has synopses of specific Commission decisions on entry permit applications.

JUDICIAL RULINGS AND APPEALS

The Alaska Supreme Court did not issue any decisions on limited entry cases during 1999.

Administrative Proceedings and Decisions

During 2000, the Adjudication Section evaluated and classified applications for entry permits in the Southeast Alaska sea urchin dive fishery.

The Adjudications Section's staff issued 84 decisions in 2000: 47 on entry permit applications, 27 on permit transfers, 3 on notices to show cause and 7 on miscellaneous issues. At the end of the year, 291 cases were pending before hearing officers.

The Commissioners adjudicated a total of 103 cases during 2000: 70 permit applications, 25 permit transfers, 3 notices to show cause and 5 miscellaneous issues. At the end of the year, 177 cases were pending before the Commissioners.

The Commission's web site now includes information about the numbers of limited entry permit applications pending in the adjudication process for each fishery. The web site (www.cfec.state.ak.us) also has synopses of specific Commission decisions on entry permit applications.

The Commission's Web Site Now Includes Information About The Numbers Of Limited Entry Permit Applications Pending In The Adjudication Process

Judicial Rulings and Appeals

The Alaska Supreme Court did not issue any decisions on limited entry cases during 2000.

Administrative Proceedings and Decisions

The Adjudications section's staff issued 97 decisions in 2001: 64 permit applications, 25 permit transfers, and 8 miscellaneous issues. At the end of the year, 256 entry permit application cases were pending before hearing officers.

The commissioners adjudicated a total of 108 cases during 2001: 71 permit applications, 27 permit transfers, 1 fee arrearage, and 9 miscellaneous issues. At the end of the year, 166 cases were pending before the commissioners.

The Commission's web site includes information about the number of limited entry permit applications pending in the adjudication process for each fishery. The web site (www.cfec.state.ak.us) also has synopses of specific Commission decisions on entry permit applications.

The Commission's web site includes information about the number of limited entry permit applications pending in the adjudication process for each fishery.

Judicial Rulings and Appeals

The Alaska Supreme Court issued two decisions on limited entry permit application cases during 2001.

In *Leuthe v. State, CFEC*, 20 P.3d 547 (Alaska 2001), the court upheld the CFEC's refusal to accept a permit application that Leuthe attempted to file three years after the application deadline.

In *Estate of Basargin v. State, CFEC*, 31 P.3d 796 (Alaska 2001) the court affirmed CFEC's denial of Basargin's point claims for unavoidable circumstances, investment in vessel and gear and income dependence. The court also rejected Basargin's claim that he was not given a meaningful opportunity to be heard because he presented his case, with counsel, to a hearing officer and again in oral appearances before the commissioners.

and bait herring trawl fishery. Additional information on these fisheries can be found in the "Decisions and Activities" section of this report.

The Adjudications section's staff issued 81 decisions in 2002: 53 on permit applications, 16 on permit transfers, 4 on assessment of fines, 7 on notices to show cause, and 1 on miscellaneous issues. At the end of the year, 204 entry permit application cases were pending before hearing officers.

The commissioners adjudicated a total of 104 cases during 2002: 75 on permit applications, 16 on permit transfers, 3 on assessment of fines, 7 on notices to show cause, and 3 on miscellaneous issues. At the end of the year, 158 cases were pending before the commissioners.

THE COMMISSION'S WEB SITE INCLUDES INFORMATION ABOUT THE NUMBER OF LIMITED ENTRY PERMIT APPLICATIONS PENDING IN THE ADJUDICATION PROCESS FOR EACH FISHERY.

The Commission's web site includes information about the number of limited entry permit applications pending in the adjudication process for each fishery. The web site (www.cfec.state.ak.us) also has synopses of specific Commission decisions on entry permit applications.

JUDICIAL RULINGS AND APPEALS

The Alaska Supreme Court issued two decisions on limited entry permit application cases during 2002.

In *Cleaver v. State, CFEC*, 48 P.3d 464 (Alaska 2002), the court upheld CFEC's denial of Cleaver's claim that extraordinary circumstances prevented him from qualifying for participation credit for 1983. Cleaver's attempt to participate in the fishery failed because he used unsuitable equipment, lacked experience and abandoned his intention to participate after some initial difficulties. The court agreed that Cleaver did not encounter an "extensive mechanical breakdown" as required under CFEC's extraordinary circumstances regulation.

In *Crivello v. State, CFEC*, 59 P.3d 741 (Alaska 2002), the court upheld CFEC's decision to give Crivello only three of the six points available for owning a vessel and gear because he shared ownership of the vessel and gear with a partner. The court rejected Crivello's claim that his partner should be able to donate the additional points to him. It also rejected his claim

Adjudications

Overview

The Adjudications Section evaluates, classifies, and adjudicates applications for limited entry permits. Permit applicants are classified and ranked against each other under point systems that measure each applicant's past participation and economic dependence on a fishery. Entry permits are issued first to applicants shown by their point levels to be most dependent on a fishery and then to applicants at successively lower classification levels, until a maximum number of permits for the fishery has been issued.

Adjudication functions are performed by paralegals, hearing officers, and commissioners. Paralegals evaluate entry permit applications and make the initial determination accepting, denying, or classifying each application. An applicant may challenge the denial or classification of an entry permit application by requesting a hearing. Commission hearing officers conduct administrative hearings and issue decisions based on the record.

Hearings may also be requested if the Commission's Licensing Section denies requests for emergency transfers or permanent transfers of entry permits. Emergency transfer hearings are held and decided by paralegals. Permanent transfer hearings are held and decided by hearing officers.

Commissioners review each paralegal and hearing officer decision and may order further review and hearings on their own motion or upon the request of an affected party. Commissioners may also take formal action to modify, reverse, or affirm the decisions.

COMMISSION HEARING OFFICERS CONDUCT ADMINISTRATIVE HEARINGS AND ISSUE DECISIONS BASED ON THE RECORD.

Hearing officers also preside over hearings that arise from enforcement proceedings, where the Commission may impose fines, revoke, or suspend permits of those who attempt to mislead the Commission with false information. These hearings are held in the presence of the commissioners.

Administrative Proceedings and Decisions

The Adjudications staff issued 38 decisions in 2010, 7 permit applications, 30 permit transfer requests, and a miscellaneous matter (fee refund). At the end of the year, 13 entry permit application cases were pending before hearing officers.

Commissioners adjudicated a total of 46 cases during 2010; 14 permit applications, 31 permit transfers, and a fee refund. At the end of the year, 26 entry permit applications were pending before the commissioners.

Adjudications

Overview

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Administrative Proceedings and Decisions

The Adjudications staff issued 31 decisions in 2011: 4 permit applications, 26 permit transfer requests, and 1 miscellaneous matter (demerit points). At the end of the year, 9 entry permit application cases were pending before hearing officers.

Commissioners adjudicated a total of 30 cases during 2011: 5 permit applications, 24 permit transfers, and 1 demerit point case. At the end of the year, 26 entry permit applications were pending before the commissioners.

Adjudications

Overview

The Adjudications Section evaluates, classifies, and adjudicates applications for limited entry permits. Permit applicants are classified and ranked against each other under point systems that measure each applicant's past participation and economic dependence on a fishery. Entry permits are issued first to applicants shown by their point levels to be most dependent on a fishery and then to applicants at successively lower classification levels, until a maximum number of permits for the fishery has been issued.

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Hearing officers also preside over hearings that arise from enforcement proceedings, where the Commission may impose fines, revoke, or suspend permits of those who attempt to mislead the Commission with false information. These hearings are held in the presence of the commissioners.

Administrative Proceedings and Decisions

The Adjudications staff issued 29 decisions in 2012: 2 entry permit applications, 22 permit transfer requests, and 5 miscellaneous matters (fees and residency status). At the end of the year, 7 entry permit application cases were pending before hearing officers.

Commissioners adjudicated a total of 19 cases during 2012: 3 entry permit applications, 9 permit transfers and 7 miscellaneous cases. At the end of 2012, 25 entry permit applications were pending before the commissioners.

By the end of 2012, commissioners and hearing officers had made substantial progress reducing the Commission's adjudication caseload. Looking back to 1990, as the result of the *Wassillie* settlement (authorizing hundreds of new applications in the salmon fisheries) and a series of Alaska Supreme Court cases during the 1980s, the Commission's caseload had risen to nearly 900 cases.

Additionally, since 1990, the Commission has been required by statute to limit 26 additional fisheries generating thousands of new applications for entry permits. From 1990 through 2012, the Commission issued more than 2,100 final decisions, thereby deciding cases at a rate faster than applicants filed new appeals and reducing its overall caseload to 32.

Commission decisions implementing the Limited Entry Act and their review by the Alaska Courts have generated a unique body of law characterized by one Alaska Supreme Court Justice as "arcane".

Louie Flora

Subject: FW: 2013 adjudications, cfec

From: Glass, Frank A (CFEC) [mailto:frank.glass@alaska.gov]
Sent: Monday, March 17, 2014 4:17 PM
To: Louie Flora
Cc: Twomley, Bruce C (CFEC); Brown, Ben (CFEC)
Subject: 2013 adjudications, cfec

Mr. Flora:

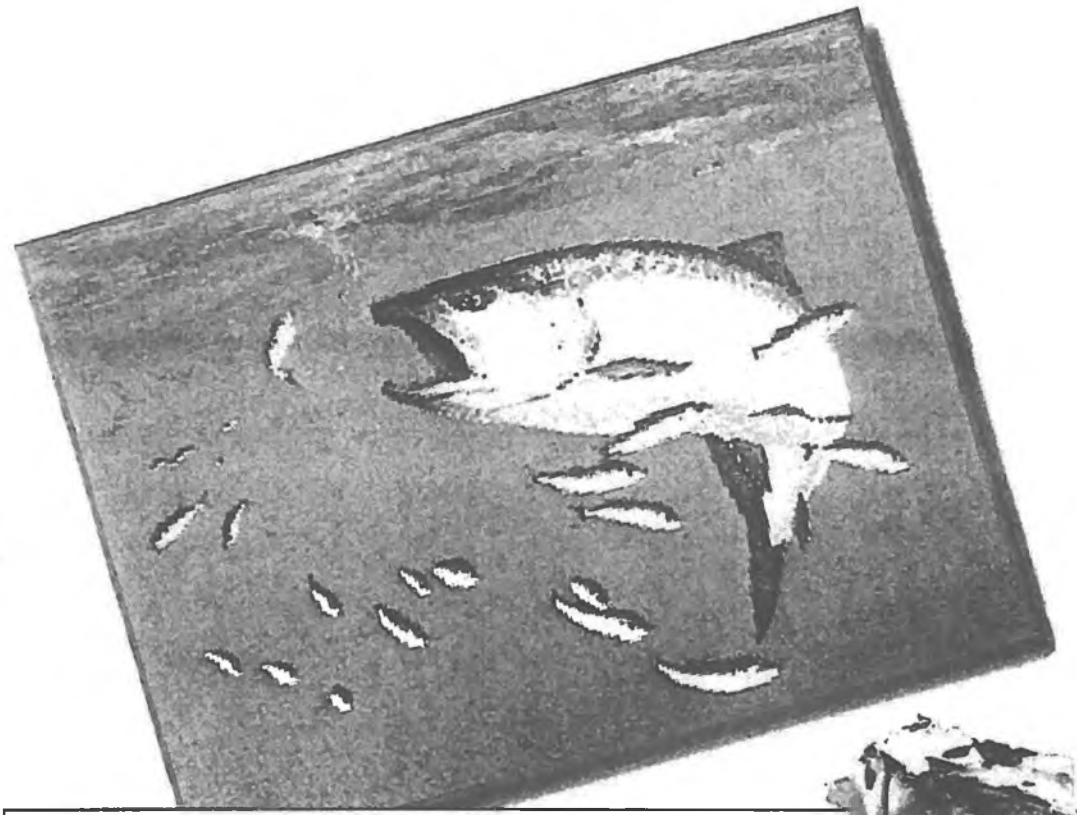
I obtained the numbers of adjudicative decisions at the CFEC during calendar year 2013. Using the format from CFEC annual reports:

"The adjudication staff issued 41 decisions in 2013: 1 entry permit application, 34 permit transfer requests, and 6 miscellaneous matters. At the end of the year, 7 entry permit application cases were pending before hearing officers.

"Commissioners adjudicated a total of 6 cases during 2013: 3 entry permit applications, 2 permit transfers and 1 remand to the adjudication section. At the end of 2013, 22 entry permit applications were pending before the commissioners."

Do not hesitate to contact me if you have questions or need more information.

Frank Glass
CFEC Adjudications
790-6926



C F E C

Commercial Fisheries Entry Commission 2012 Annual Report

Introduction

The commercial fishing industry is a crucial component of Alaska's economy and serves as the economic backbone of Alaska's coastal communities. The seafood industry is the state's largest private-sector employer. The Alaska Commercial Fisheries Entry Commission (CFEC or Commission) plays an essential management role in developing and sustaining Alaska's billion-dollar fishing industry.

The Limited Entry Act directs the Commission to promote the conservation and sustained-yield management of Alaska's fishery resources, and the economic health and stability of the fishing industry, by regulating entry into Alaskan commercial fisheries. To fulfill these responsibilities, the Commission is organized into five sections: Administration, Adjudications, Research & Planning (sometimes shortened to Research), Licensing, and Information Technology (IT) (see chart on page 8).

The Commission engages in the following activities as mandated by the Limited Entry Act (AS 16.43.010 *et seq.*):

- Establishing maximum numbers of entry permits for fisheries to be limited and administering applications and point systems to rank eligible applicants;
- Processing entry permit applications and adjudicating claims not resolved in the initial classification process;
- Issuing annual permits in limited and open-access fisheries, and issuing annual vessel licenses for all commercial vessels as required to legally participate in the state's commercial fisheries;
- Processing requests for emergency and permanent transfers of limited entry and interim-use permits and compiling data on all such transfers;
- Enforcing provisions of the Limited Entry Act including regulation of permit transfer activities;
- Participating in the research and development of comprehensive fisheries economic data;
- Working with other State and federal management agencies to develop, analyze, and coordinate fisheries policies;
- Assessing demerit points against, and when appropriate suspending the fishing privileges of, permit holders for convictions for violations of commercial fishing laws in the salmon fisheries.

The Commission has limited entry into 68 of Alaska's fisheries, continues to receive requests for the limitation of additional fisheries and works with fishermen and the Alaska Department of Fish & Game (ADF&G) to analyze these requests.

The percentage of limited entry permits held by Alaska residents continues to remain relatively stable. After 40 years, Alaskans hold about 77% of all limited entry permits. At the end of 2012, Alaskans held nearly 11,000 permanent limited entry permits, with rural Alaskans holding nearly two-thirds of that number.

For calendar year 2012, the Commission issued a combined total of 29,574 permanent permits, interim-use permits, and vessel licenses, and reviewed 1,972 permit transfer requests. In fiscal year 2012 (July 1, 2011 to June 30, 2012), the Commission collected approximately $7.5 million in revenues for the State. The economic challenges facing the salmon industry have generated substantial discussion about potential cost efficiencies in the fisheries, including consideration of options for reducing fleet size. The Commission plays a direct role in fleet-reduction programs, and continues to participate in ongoing discussions with the public and policy makers, and provides data to assist and inform

the exploration of ideas for further fleet-reduction plans (see Decisions and Activities section for more information, page 4).

By working with other State and federal agencies, the Commission continues to help Alaska fishermen protect their fishing privileges. In addition to working with policy makers, agencies, fisheries organizations, and individual fishermen on the many pressing issues facing the fishing industry, the Commission continues to perform its primary functions of limiting fisheries, licensing fishermen and vessels, adjudicating claims, performing critical research, and providing data to governmental agencies, private organizations and the general public.

Major decisions and activities of the Commission in 2012 are outlined in this report. Prior years' activities, events, and decisions that affected the Commission's operations are highlighted in the appendices.

Alaska's fishing industry is vital to the state's economy and provides an important food source to the world. Alaskans must continue to ensure that our fisheries are developed wisely and sustained through sound management. We at the Commission are committed to fulfill our statutory role in achieving this goal.



Photo courtesy of Susan Brown French From the collection of Dr Charles Black & family
Photo is circa 1917

HCR

25

<TARGET><BILL>HCR 25</BILL><SUBJECT>HCR
25</SUBJECT><COMM>HFSH28</COMM></TARGET>

ALASKA STATE LEGISLATURE

House Fisheries Committee

Representative Paul Seaton, Chair

State Capitol Building, Room 102
Juneau, AK 99801 – 1182
Phone (907) 465-2689
Fax (907) 465-3472
Rep.Paul.Seaton@akleg.gov

HCR 25

Sponsor Statement

A motion to establish a bycatch/catch share program for the Gulf of Alaska trawl fisheries has been under consideration by North Pacific Fishery Management Council (NPFMC) since October of 2012. The catch share program is proposed as a means to slow the race for fish and minimize bycatch. This trawl catch share/bycatch proposal will be discussed at the April 2014 council meeting.

Past federal catch-share or "rationalization" programs such as Individual Fishing Quota system for halibut, and the Bering Sea Crab Rationalization have resulted in negative impacts to coastal communities as fisheries quota and access migrate away from local residents.

The federal Magnuson-Stevens Act provides a mechanism to protect coastal community interests through the Community Fishing Association (CFA) structure. The Magnuson-Stevens Act indicates that fishing communities can be recipients of catch shares under a rationalization plan. The allocation of quota share to CFAs can enhance catch share programs by anchoring economic development in communities, maintaining employment and fishing heritage in coastal communities, and incorporating community sustainability plans with clear stewardship requirements.

CFAs have been developed within fisheries rationalization programs on the east and west coasts. Coastal Alaskans from King Cove to Kodiak are actively engaging the NPFMC with requests that the CFA structure be included in a Gulf of Alaska trawl catch share program.

HCR 25 asks the Governor to request that the NPFMC protect coastal Alaska communties by including analysis of direct quota allocations to Community Fishing Associations at their upcoming April meeting.

C-5(a) GOA Trawl Bycatch Management
North Pacific Fishery Management Council motion
October 5, 2013

The Council requests that staff provide a discussion paper reviewing the program structure described below using the decision framework provided in the June 2013 'roadmap' document and the Council's purpose and need statement. The paper should evaluate whether and how the elements of this design address the objectives in the Council's purpose and need statement. The intent is to receive feedback characterizing: 1) how the fishery would operate under the new design; 2) how well it may meet the Council's stated objectives; and 3) which second-tier decisions are necessary to transform the program structure into alternative(s) for analysis. The paper should also include information on bycatch reduction results from other trawl catch share programs in the North Pacific and other regions.

GOA Trawl Bycatch Management Program

1. Bycatch management

The primary objective of this action is to improve incentives for PSC reduction and PSC management, achieved in several ways through this program design.

a. **Reduced PSC**. The Council intends to adopt a program to: (1) minimize Chinook salmon bycatch, and (2) achieve more efficient use of halibut PSC, allowing some efficiency gains to provide additional target fishery opportunity while leaving some halibut PSC savings in the water for conservation and contribution to exploitable biomass.

b. **Duration of shares.** A portion of target species share allocations (maximum 25%) will be evaluated for retention based on achievement of performance targets relative to bycatch and other Council objectives after a set period of time (3 - 10 years). The time period and the criteria used to evaluate performance will be established in regulation.

c. **Cooperative management.** A system of cooperative management is best suited to managing and reducing bycatch (such as, hotspot program, gear modifications, excluder use, incentive plan agreements) while maximizing the value of available target species. Cooperatives are intended to facilitate a flexible, responsive, and coordinated effort among vessels and processors to avoid bycatch through information sharing and formal participation in a bycatch avoidance program.

d. **Gear modification**. Option: gear modifications for crab protection.

2. Observer coverage

All trawl catcher vessels in the GOA will be in the 100% observer coverage category.

3. Areas
Western Gulf, Central Gulf, West Yakutat

4. Sector allocations of target species and PSC

Allocations for the trawl CP and CV sectors for WG and CG Pacific cod (Am 83), CGOA rockfish program (Am 88), and GOA pollock (Am 23) are maintained. Am 80 target sideboards and GOA flatfish eligibility are maintained. Allocate halibut and Chinook salmon PSC caps between the CP and CV sectors.

5. Allocated species
Target species are pollock and Pacific cod. PSC species include halibut and Chinook salmon.

6. **Program structure for trawl catcher vessel fishery**

Voluntary cooperative structure

a. Allocate target species (pollock, Pacific cod) at the cooperative level, based on aggregate catch histories associated with member vessels' LLPs.

b. Apportion halibut PSC and Chinook salmon PSC limits to each cooperative on a pro rata basis relative to target fisheries of GOA trawl vessels in the cooperative [such as, pollock Chinook salmon PSC cap divided based on pollock landings; non-pollock Chinook salmon cap divided based on non-pollock landings (excluding rockfish); halibut PSC apportioned in proportion to the cooperative's allocation of target species.]

c. Participants can choose to either join a cooperative or operate in a limited access pool [sector-level, non-transferable target allocations and PSC]. Harvesters would need to be in a cooperative with a processor by a specified date prior to the season to access a transferable allocation of target species and PSC.

d. Initial (2 years) cooperative formation would be based on the majority of a license holder's historical landings (aggregate trawl groundfish deliveries, excluding Central GOA rockfish harvested under a rockfish cooperative quota allocation) to a processor.

e. Each cooperative would be required to have a private cooperative contract. The contract would require signatures of all harvesters in the cooperative and the processor (option: and community in which the processor is located). The contract would include clear provisions for how the parties may dissolve their contract after the first two years. If a harvester wants to leave that cooperative and join another cooperative, they could do so if they meet the requirements of the contract.

f. Additional contract elements (such as, bycatch management, active participation, mechanism to facilitate entry, community provisions) may be required to ensure the program is consistent with Council objectives.

Option: Each processor controls a portion of PSC within a cooperative and negotiates terms of access through private agreement. The processor would activate the incremental PSC through NMFS, making it accessible to the cooperative. PSC made available by these agreements cannot be used by processor-owned vessels.

7. **Fishery dependent community stability**

a. Consolidation limits
   - Vessel caps and limits on the percentage of the total allocation that a person can hold (accessible only through a cooperative).
   - Processor caps in each area (WG and CG).

b. Target species quota would be regionalized (WG or WY/CG designation) based on historical delivery patterns.

   Option: Target species CG quota that has historically been landed in Kodiak would have a port of landing requirement to be delivered to Kodiak; CG quota not historically landed in Kodiak would be regionalized (WG or WY/CG).

c. Require individuals or entities to meet fishery participation criteria in order to be eligible to purchase an eligible trawl license with associated history.

8. **Transferability**

   a. (Annually) Full transferability for annual use within the cooperative. Cooperatives can engage in inter-cooperative agreements on an annual basis.

   b. (Long-term) The LLP is transferable, with the associated history of the target species (which, when entered into a cooperative, brings with it a pro rata share of PSC.) Target species history is severable and transferable to another eligible license.

9. **Gear conversion**

Upon further development, the Council could include gear conversion provisions that allow Pacific cod trawl allocations to be fished with fixed gear, although any harvest would continue to be deducted from the vessel's annual trawl quota account and would not affect the fixed gear Pacific cod sector allocations.

Magnuson-Stevens Act Sections on Fishing Communities and Regional Fishing Associations

16 U.S.C. 1802
MSA § 3

(17) The term "fishing community" means a community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community.

(14) The term 'regional fishery association' means an association formed for the mutual benefit of members —

(A) to meet social and economic needs in a region or subregion; and

(B) comprised of persons engaging in the harvest or processing of fishery resources in that specific region or subregion or who otherwise own or operate businesses substantially dependent upon a fishery.

16 U.S.C. 1853a
MSA § 303A

(3) FISHING COMMUNITIES . —

(A) IN GENERAL. —

(i) ELIGIBILITY . — To be eligible to participate in a limited access privilege program to harvest fish, a fishing community shall —

(I) be located within the management area of the relevant Council;

(II) meet criteria developed by the relevant Council, approved by the Secretary, and published in the Federal Register;

(III) consist of residents who conduct commercial or recreational fishing, processing, or fishery-dependent support businesses within the Council's management area; and

(IV) develop and submit a community sustainability plan to the Council and the Secretary that demonstrates how the plan will address the social and economic development needs of coastal communities, including those that have not historically had the resources to participate in the fishery, for approval based on criteria developed by the Council that have been approved by the Secretary and published in the Federal Register.

(ii) FAILURE TO COM PLY WITH PLAN . — The Secretary shall deny or revoke limited access privileges granted under this section for any person who fails to comply with the requirements of the community sustainability plan. Any limited access privileges denied or revoked under this section may be reallocated to other eligible members of the fishing community.

(B) PARTICIPATION CRITERIA. — In developing participation criteria for eligible communities under this paragraph, a Council shall consider —

(i) traditional fishing or processing practices in, and dependence on, the fishery;
(ii) the cultural and social framework relevant to the fishery;

(iii) economic barriers to access to fishery;

(iv) the existence and severity of projected economic and social impacts associated with implementation of limited access privilege programs on harvesters, captains, crew, processors, and other businesses substantially dependent upon the fishery in the region or subregion;

(v) the expected effectiveness, operational transparency, and equitability of the community sustainability plan; and

(vi) the potential for improving economic conditions in remote coastal communities lacking resources to participate in harvesting or processing activities in the fishery.

(4) REGIONAL FISHERY ASSOCIATIO NS. —

(A) IN GENERAL. — To be eligible to participate in a limited access privilege program to harvest fish, a regional fishery association shall —

(i) be located within the management area of the relevant Council;

(ii) meet criteria developed by the relevant Council, approved by the Secretary, and published in the Federal Register;

(iii) be a voluntary association with established by-laws and operating procedures;

(iv) consist of participants in the fishery who hold quota share that are designated for use in the specific region or subregion covered by the regional fishery association, including commercial or recreational fishing, processing, fishery dependent support businesses, or fishing communities;

(v) not be eligible to receive an initial allocation of a limited access privilege but may acquire such privileges after the initial allocation, and may hold the annual fishing privileges of any limited access privileges it holds or the annual fishing privileges that members contribute; and

(vi) develop and submit a regional fishery association plan to the Council and the Secretary for approval based on criteria developed by the Council that have been approved by the Secretary and published in the Federal Register.

(B) FAILURE TO COM PLY WITH PLAN . — The Secretary shall deny or revoke limited access privileges granted under this section to any person participating in a regional fishery association who fails to comply with the requirements of the regional fishery association plan.

(C) PART ICIPAT ION CRITERIA. — In developing participation criteria for eligible regional fishery associations under this paragraph, a Council shall consider —

(i) traditional fishing or processing practices in, and dependence on, the fishery;

(ii) the cultural and social framework relevant to the fishery;

(iii) economic barriers to access to fishery;
(iv) the existence and severity of projected economic and social impacts associated with implementation of limited access privilege programs on harvesters, captains, crew, processors, and other businesses substantially dependent upon the fishery in the region or subregion;

(v) the administrative and fiduciary soundness of the association; and

(vi) the expected effectiveness, operational transparency, and equitability of the fishery association plan.

Community Fishing Associations

Strengthening Alaska's Fishing Communities Amidst the Gulf of Alaska Catch Share Program

The North Pacific Fishery Management Council is in the process of developing a catch share program (rationalization) for the Gulf of Alaska trawl fishery. As the current title suggests, the Gulf of Alaska (GOA) Trawl Bycatch Management Program is in response to a growing management concern: bycatch of critical species, particularly Chinook salmon, halibut and Tanner crab in the Gulf of Alaska trawl fisheries.

Catch share programs or individual transferable quota (ITQs) programs allocate a specific portion of the fishery resource to participants thus ending the 'race for fish' and providing the trawl fleet with the tools needed to reduce bycatch. Nevertheless, nearly 20 years of direct experience with catch share programs in Alaska demonstrates clearly how catch share programs can adversely impact fishing dependent coastal communities. The problems encountered in catch share programs in Alaska and around the world are widespread, well-documented and now predictable. These include:



- absentee ownership of quota
- fewer locally based vessels
- high leasing fees
- rapid vessel consolidation
- consolidation of quota ownership
- lower crew pay and job loss
- out-migration of fisheries based wealth and fishery access opportunities from communities

What is a Community Fishing Association?

Direct allocations to fishing communities were authorized in the 2006 reauthorization of the Magnuson-Stevens Act (MSA). Under this provision, fishing communities are eligible to receive initial allocations of quota, or to purchase or hold quota. The North Pacific Fishery Management Council held a workshop on Community Fishing Associations (CFAs) at their Seattle meeting in February 2014 to inform the Council and other North Pacific stakeholders on key issues and elements that need to be considered in order to facilitate the inclusion of a CFA in a GOA Bycatch Management Program. The workshop provided valuable real-world examples of how CFAs benefit communities, support new generations of fishermen, and promote growth and stability of fishing businesses.

There is a NEW management construct, proven successful on both the east and west coasts, that can help mitigate the community impacts caused by catch share programs: Community Fishing Associations (CFAs). CFAs ensure that a portion of the fishing quota is anchored in the community in perpetuity. The strongest CFAs have quota allocated at the time a catch share program is started. Quota allocated to the community is then used to address community goals of keeping a local fleet, encouraging participation by future fishermen, equitable crew compensation and vessel/owner residency. Creating a CFA as part of the GOA Bycatch Management Plan will enable Gulf of Alaska communities to address some of the adverse community impacts associated with rationalizing fisheries.

How will a CFA strengthen GOA fishing communities under a catch share program?

1. CFAs effectively anchor quota to communities in perpetuity.

Anchoring quota to communities will provide a local management tool that should ensure long-term multiplier of benefits, especially fish dollars, to local communities. Anchoring quota to communities allows the community to leverage its quota to encourage fishermen to deliver to the community, remain in the community, use community services and infrastructure and treat crew equitably.

2. CFAs support new generations of fishermen, including crew and new entrants.

CFAs are often designed to help transition fishermen without adequate capital into a new fishery and they also can be used to acknowledge crew as real stakeholders. CFAs can include crew contracts and codes of conduct as a way to protect crew from reduced compensation because of lease rates for quota transferred within a catch share program.

3. Initial allocation of quota to CFAs amplifies community benefits.

Initial allocation of quota to communities is critical to buffering initial changes caused by catch shares. Initial allocation of fishing quota to communities via the CFA will advance community protections by years if not generations as the community works to build or rebuild strong local businesses and enable positive local impacts.

4. CFAs provide for community involvement and diversity within decision-making.

CFAs offer a way to include fishermen and community perspectives in the operation and decision-making processes which impact local communities and businesses. The inclusion of community perspectives in decision-making processes ensures that the variety of participants and stakeholders in local communities benefit from local fishery resources.

Summary

Healthy fishing communities depend on healthy ecosystems, but they also depend on fisheries access, second generation fishermen transitioning into the fishery and local participation. A CFA structure can strengthen the emerging GOA catch share program and help to ensure that the program benefits Gulf of Alaska coastal communities. Looking back on our experience over the past 20 years and identifying the negative impacts catch share programs have had on fishing communities elsewhere makes clear: Now is the time for Alaska catch share programs to include the CFA management tool.

For more information, contact:

Alaska Marine Conservation Council

Theresa Peterson
AMCC Kodiak Outreach Coordinator
theresa@akmarine.org
907.539.1927

Chuck McCallum
GOAC3 Executive Director
goaccc@alaska.net
907.561.7633

ALASKA
Journal of Commerce
Alaska's Paper of Record • Established 1977

Stakeholders ponder protections under Gulf rationalization

By Molly Dischner, Alaska Journal of Commerce

Published: 2014.02.20 12:04 PM

King Cove Mayor Henry Mack overlooks the empty King Cove boat harbor just days before the crab season was set to begin in October 2005. Before the fleet was severely consolidated under crab rationalization, 75 to 80 boats arrived at the harbor to pick up crab pots, fuel up, buy groceries and get their tanks checked before the crab season began. More than 1,000 crew jobs were eliminated in the crab fishery under rationalization, with severe impacts on King Cove and Kodiak. Preventing such effects is a now major focus for the North Pacific Fishery Management Council as it prepares to rationalize the Gulf of Alaska trawl fisheries.



SEATTLE — Fisheries stakeholders gathered Feb. 10 to talk about community protections in the pending Gulf of Alaska rationalization program.

The North Pacific Fishery Management Council has asked for a discussion paper on how to provide bycatch management tools for the Gulf of Alaska trawl fisheries, in particular through a rationalization program that ends the race for fish by allocating harvest privileges among user groups.

In October, the council asked staff to analyze a general structure for rationalizing Gulf of Alaska trawl fisheries as a means to minimize bycatch.

A program could allocate pollock and Pacific cod to cooperatives in the western Gulf, central Gulf and west Yakutat based on members' catch history. The prohibited species catch, or PSC, of species such as chinook salmon and halibut would be apportioned out to cooperatives on a pro rata basis.

Fishery participants could also have the option of operating in a limited access pool. A portion of the target species allocation could be based on performance standards that emphasize low bycatch rates.

The council's October motion also asked for analysis of regional delivery requirements, inclusion of processors and communities into the cooperatives and certain cooperative requirements addressing active participation, bycatch management and other issues.

Caps on the allowable levels of king salmon and halibut bycatch have already been set, and the trawl fleet has asked for the action to help them meet those caps.

Some past rationalization programs, however, have had unanticipated consequences for fishery participants and communities, particularly through consolidation of effort that has led to job losses.

When the Bering Sea crab fisheries were rationalized in 2005, some 1,000 jobs were eliminated in the first season when the fleet consolidated its effort to about one-third of the boats that had operated under open access.

Community entities have asked for certain protections, concerned that the rationalization program could lead to increased consolidation and will raise the cost of entry, limiting the number of participants who can invest in the fishery.

At the workshop, the council heard from those who have implemented community-fishing programs in a response to rationalization in an effort to see how inclusion of communities in cooperatives, or in the program via another mechanism, might play out.

The workshop was held in a panel format with representatives from East and West Coast community fishing organizations sharing their stories, as well as council members and analysts involved in the relevant rationalization programs.

The West Coast representatives were involved in a Morro Bay program in Northern California, while the East Coast individuals were from the Cape Cod area.

In Morro Bay, the city worked with other community groups to acquire quota share and vessel permits for the West Coast Groundfish Fishery's trawl sector. Those are used by local fishermen, and have helped maintain a fishing industry in the community. After rationalization, fishing activity out of that port declined to the point where the only remaining processor considered leaving and other support businesses also faced the possibility of shutting down.

A similar program is now being developed for Monterey Bay, according to David Crabbe, who talked about the West Coast program.

The Cape Cod Fisheries Trust also provides access to quota to local fishermen participating in Northeast groundfish and scallop fisheries. Generally, the goal is to see help them enter the fishery, or continue fishing, until they are able to buy their own quota. Much of that quota has been purchased from retiring fishermen, and is then leased out with certain requirements for residency and other qualifications.

In both regions, the community quota entities developed after the rationalization programs.

That detail stuck out to council member John Henderschedt, who represents the state of Washington on the council, who said he thought it provided food for thought.

"I was taken by how bottom up both of the models that we heard about were," Henderschedt said.

Ernie Weiss, from the Aleutians East Borough, noted that the North Pacific council has the opportunity to craft such programs from the beginning.

"We have the possibility to get out in front of it," he said. "Even a small initial allocation could help a community leverage more."

Nicole Kimball, who serves as the alternate to Alaska Department of Fish and Game Commissioner Cora Campbell on the North Pacific council, wrote in an email that the programs showed how a community can develop a way for both long-term fishermen and new entrants to participate in a fishery.

"I don't think they gave themselves enough credit for the community leadership necessary to make these programs successful," Kimball wrote. "And what came out loud and clear was the need for regional councils to make the hard decisions upfront, both allocation decisions and other provisions that can avoid excessive consolidation and either facilitate or promote the continued direct and indirect participation of the coastal communities that are dependent upon the fisheries you are proposing to change."

The workshop also drew additional members of the public to the council meeting.

Rep. Jonathan Kreiss-Tomkins, D-Sitka, came down from Juneau for the discussion.

Kreiss-Tomkins said he's had a few conversations with other legislators about the council's pending Gulf of Alaska action, and that there's increasing interest from lawmakers in making sure that Alaska fisheries benefit people in Alaska communities. That, he said, is hopefully a "healthy development" in the rationalization conversation.

Kreiss-Tomkins said he had the chance to talk to the Cape Cod representatives, and was impressed with their ability to self-govern and deal with management politics.

Council members have expressed concerns about creating a mechanism that required constant council oversight.

In the case of the Cape Cod program, much of the management has been done by the fishery participants, and Henderschedt said he was interested by the collaborative relationship between managers and the communities.

The council is expected to take the bycatch management package up again in April, and Weiss of the Aleutians East Borough said it's now up to communities to come up with some possible ideas for community fishing associations. How to make one or multiple entities that reflect the diversity of needs and communities throughout the Gulf will be the challenge, he said.

"That's an unanswered question," he said.

Molly Dischner can be reached at molly.dischner@alaskjournal.com.

Alaska House Bush Caucus

Representative Bryce Edgmon, Chair
Alaska State Legislature
Capitol Building, Room 410
Juneau, AK 99801

Honorable Sean Parnell
Governor, State of Alaska
P.O. Box 110001
Juneau, AK 99811

March 11, 2014

Dear Governor Parnell,

At the April 7 through 15 meeting of the North Pacific Fishery Management Council (NPFMC) there will be deliberations over the development of a catch share program to manage by-catch in the Gulf of Alaska groundfish trawl fishery.

While Individual or Vessel Transferable Quota systems allow for strategies that can significantly lessen levels of prohibited species catch, they also have been shown to adversely impact Alaskan coastal communities that depend on fishing. Catch share programs in other fisheries have resulted in less access for young Alaskans, loss of jobs and other economic benefits through extreme fleet consolidation, loss of locally based vessels, and flight of wealth from our ports.

The federal Magnuson-Stevens Act recognized this problem and provided a provision making fishing communities eligible to receive initial allocations of quota for catch share programs. In other catch share programs Community Fishing Associations (CFAs) have proven effective in mitigating the drawbacks noted above. By ensuring that a portion of the fishing quota remains with the community, CFAs allow communities to retain local fleets, sustain opportunities for resident skippers and deckhands, and support the entry of new generations into gainful fishing careers.

Experience has shown how difficult it is to redress unwanted impacts on communities once catch share programs have been established. Because it is so crucial that CFAs be given careful consideration at this early juncture in the process, we members of the Alaska House Bush Caucus respectfully request that you strongly urge the Council to add this important matter to its agenda. We ask you to instruct your Alaskan representatives on the NPFMC to include Community Fishing Associations among the program components to be analyzed for consideration.

Sincerely,

Representative Bryce Edgmon
House District 36
Bush Caucus Chairman

Representative Alan Austerman
House District 35

Representative Eric Feige
House District 6

Representative Neal Foster
House District 39

Representative David Guttenberg
House District 38

Representative Bob Herron
House District 37

Representative Sam Kito
House District 32

Representative Jonathan Kreiss-Tomkins
House District 34

Representative Cathy Munoz
House District 31

Representative Benjamin Nageak
House District 40

Representative Paul Seaton
House District 30

Representative Peggy Wilson
House District 33

Cc by Email Delivery:
ADF&G Commissioner Cora Campbell
Eric Olson, Chairman, North Pacific Fishery Management Council
John Henderschedt, Vice Chairman, NPFMC
Jim Balsinger, NPFMC
Craig Cross, NPFMC
Ed Dersham, NPFMC
Duncan Fields, NPFMC
Dave Hanson, NPFMC
Dan Hull, NPFMC
Roy Hyder, NPFMC
David Long, NPFMC
Doug McBride, NPFMC

Cc by Email Delivery, Cont.:
Lisa Lindeman, NPFMC
RADM Tom Ostebo, NPFMC
Nicole Ricci, NPFMC
Bill Tweit, NPFMC
Stefanie Moreland, Office of the Governor

SWAMC

Southwest Alaska Municipal Conference
3300 Arctic Boulevard, Suite 203 Anchorage, AK 99503 p: 907.562.7380 www.swamc.org

Alaska Peninsula
Aleutian Chain
Bristol Bay
Kodiak Island
Pribilof Islands

BOARD RESOLUTION 2014-02

A RESOLUTION SUPPORTING ANALYSIS OF COMMUNITY FISHING ASSOCIATIONS FOR SOUTHWEST ALASKA FISHING COMMUNITIES IN THE GULF OF ALASKA BYCATCH MANAGEMENT PROGRAM

WHEREAS, healthy fisheries are the backbone of the economies and cultures for Southwest Alaska coastal communities, including fishermen, processors, support businesses and community residents; and

WHEREAS, the North Pacific Fishery Management Council (NPFMC), is currently considering a bycatch management program for the Gulf of Alaska groundfish trawl fisheries which includes a catch share or rationalization program; and

WHEREAS, catch share programs, if improperly designed, result in significant harm to coastal communities through fleet consolidation, unnecessary loss of crew jobs, high quota lease rates, reduced crew compensation, reduced revenues for support business and municipal infrastructure and loss of access to fisheries resources for local fishermen and processors; and

WHEREAS, Community Fishing Associations on both the East and West Coasts of the US have successfully mitigated some of the adverse impacts that catch share programs can have on coastal communities.

NOW BE IT RESOLVED that the SWAMC Board of Directors requests the NPFMC include an option for Community Fishing Associations to be analyzed for possible inclusion as a component of the Gulf of Alaska trawl bycatch management/catch share program; and

BE IT FURTHER RESOLVED that the SWAMC Board of Directors requests the NPFMC ensure that the Gulf of Alaska trawl bycatch management/catch share program includes adequate community protections to sustain fisheries access and maximize, to the extent practicable, economic benefits for Southwest Alaska communities.

PASSED AND ADOPTED by the Southwest Alaska Municipal Conference Board of Directors this 8th Day of March, 2014.

IN WITNESS THERETO:

Alice Ruby, SWAMC President

ATTEST:

Erik OBrien, SWAMC Interim Director

FISCAL NOTE

STATE OF ALASKA
2014 LEGISLATIVE SESSION

Bill Version: HCR 25
Fiscal Note Number:
() Publish Date: 3/24/2014

Identifier (file name):
Title: Catch shares in NPFMC Groundfish Plan
Sponsor: House Rules By Request
Requester: House Fisheries

Dept. Affected:
Appropriation:
Allocation:
OMB Component Number:

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	FY15 Appropriation Requested	Included in Governor's FY15 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY15**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19**	**FY20**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants, Benefits							
Miscellaneous							
TOTAL OPERATING	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

FUND SOURCE		(Thousands of Dollars)						
1002	Federal Receipts							
1003	GF Match							
1004	GF							
1005	GF/Prgm (DGF)							
1007	I/A Rcpts (Other)							
1156	Rcpt Svcs (DGF)							
		0.0	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

POSITIONS							
Full-time							
Part-time							
Temporary							

CHANGE IN REVENUES							

Estimated SUPPLEMENTAL (FY14) operating costs _____ *(separate supplemental appropriation required)*
(discuss reasons and fund source(s) in analysis section)

Estimated CAPITAL (FY15) costs _____ *(separate capital appropriation required)*
(discuss reasons and fund source(s) in analysis section)

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? _____

If yes, by what date are the regulations to be adopted, amended, or repealed? _____ Discuss details in analysis section.

Why this fiscal note differs from previous version (if initial version, please note as such)

Prepared by: Louie Flora, House Fisheries Committee Aide
Phone: 465-3923
Division: House Fisheries Committee
Date/Time: 3/24/14 12:00 AM
Approved by:
Date: 3/24/2014
Division:

(Revised 8/16/2013 OMB)

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2014 LEGISLATIVE SESSION

BILL NO. HCR 25

Analysis

HJR

5

<TARGET><BILL>HJR 5</BILL><SUBJECT>HJR
5</SUBJECT><COMM>HFSH28</COMM></TARGET>

as amended

HOUSE JOINT RESOLUTION NO. 5

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-EIGHTH LEGISLATURE - FIRST SESSION

BY REPRESENTATIVES TARR, Kawasaki, Austerman, Reinbold, Tuck, Kerttula

Introduced: 1/28/13
Referred: House Special Committee on Fisheries, Resources

A RESOLUTION

Opposing the United States Food and Drug Administration's preliminary finding relating to genetically engineered salmon; urging further examination of genetically engineered salmon; opposing AquaBounty's petition to produce genetically engineered salmon; and proposing, if AquaBounty's petition is approved, that its product should be labeled as "genetically modified."

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS the United States Food and Drug Administration recently announced the release of a draft environmental assessment and preliminary finding of no significant impact concerning genetically engineered AquaBounty AquAdvantage salmon; and

WHEREAS the state has bountiful fisheries that provide wild, natural, and sustainable seafood; and

WHEREAS Alaska seafood is naturally high in essential vitamins, including vitamins E, C, D, and A, and minerals, including zinc, iron, calcium, and selenium; and

WHEREAS fish habitat in the state is (less polluted) cleaner than fish habitat in other locations; and

WHEREAS fisheries are a vital component of the state's economy; and

WHEREAS the state's fisheries are managed to ensure that Alaska seafood continues to be the finest in the world for future generations; and

WHEREAS, in 2009, 95 percent of pacific salmon landings in the United States occurred in the state; and

WHEREAS, in 2012, 124,000,000 salmon were harvested in the state, for a value of $505,000,000; and

WHEREAS Alaska ports consistently rank among the top ports in the United States based on volume and ex-vessel value for various fisheries including salmon; and

WHEREAS the state's fishing industry provides over 70,000 jobs annually and is the second largest source of private sector employment in the state; and

WHEREAS the United States Food and Drug Administration is accepting comments on the proposal to allow, for the first time, a genetically modified organism to be sold for human consumption; and

WHEREAS the inevitable accidental release of transgenic fish into the wild could devastate native fish populations and ecosystems; and

WHEREAS citizens and public interest groups overwhelmingly oppose genetically engineered food and have submitted over 400,000 public comments opposing genetically engineered salmon; and

WHEREAS the United States Food and Drug Administration has not conducted adequate testing to determine the long-term safety of consuming genetically engineered salmon; and

WHEREAS the sale of genetically engineered salmon could imperil the state's fishing industry; and

WHEREAS seven members of the United States Senate continue to have concerns about AquaBounty's proposal and the United States Food and Drug Administration's review of the proposal; and

WHEREAS the United States Food and Drug Administration's review applies only to a limited set of production and rearing facilities and fails to consider the broader applications of this technology that would assuredly occur should final approval be granted;

BE IT RESOLVED that the Alaska State Legislature urges the United States Food

and Drug Administration not to make a final decision regarding genetically engineered salmon until the United States Congress has fully examined the issue and the potential release of genetically engineered fish into the waters of the United States; and be it

FURTHER RESOLVED that the Alaska State Legislature opposes AquaBounty's petition to produce AquAdvantage Salmon, a genetically engineered salmon; and be it

FURTHER RESOLVED that, if the petition is approved by the United States Food and Drug Administration, despite strong environmental and human health concerns, product labeling requirements (should) must include the words "Genetically Modified" prominently displayed on the front of the product's packaging. disregin

COPIES of this resolution shall be sent to the Honorable Barack Obama, President of the United States; the Honorable Joseph R. Biden, Jr., Vice-President of the United States and President of the U.S. Senate; the Honorable Tom Vilsack, United States Secretary of Agriculture; the Honorable Margaret Hamburg, M.D., Commissioner of Food and Drugs; and the Honorable Lisa Murkowski and the Honorable Mark Begich, U.S. Senators, and the Honorable Don Young, U.S. Representative, members of the Alaska delegation in Congress.

ALASKA STATE LEGISLATURE

REPRESENTATIVE GERAN TARR

Sponsor Statement
House Joint Resolution 5
Oppose Genetically Engineered Salmon

House Joint Resolution 5 (HJR 5) is a resolution from the 28th Alaska State Legislature opposing the United States Food and Drug Administration's preliminary finding in relation to genetically engineered salmon, and urging further examination of genetically engineered salmon before allowing them to be grown, harvested, and sold in the United States.

In December 2012, the FDA announced the genetically modified salmon grown by AquAdvantage in Canada and Panama pose no significan t threat to salmon stocks in the wild even though they are notably more aggressive than their wild counter parts. According to scientists, "the FDA's environmental assessment of genetically modified salmon does not adequately consider the growing body of research on genetic and ecological risks and lacks basic quantitative information necessary to verify conclusions."

Alaska's fishing industry is valued at $1.5 billion annually, and $3.6 billion wholesale, according to the Alaska Department of Fish and Game. Some studies have shown that AquAdvantage fish could eliminate wild populations within 30 years and pose real environmental risks to the sustainability of the fish, and to the pocketbooks of Alaskans.

Salmon farms in Canada, Europe and South America have been criticized for crowded conditions, fecal contamination, use of chemicals, proliferation of disease and escapees. Atlantic salmon have been caught in Alaska's waters, after escaping from neighboring fish farms in British Columbia. Many are infested with sea lice. They are considered an invasive species by Alaskans. The FDA is now considering allowing production of fish that could completely decimate wild salmon populations.

This resolution will send a clear message to the Federal government that the Alaska State Legislature does not condone the growth, sale or release of genetically engineered salmon in the United States. Please join me in ensuring the safety and well-being of Alaska's wild salmon.

January-May: State Capitol • Juneau, AK 99801-1182 • (907) 465-3424 • Fax (907) 465-3793
June-December: 716 W. 4th Avenue • Anchorage, AK 99501• (907) 269-0144• Fax (907) 269-0148
Rep.Geran.Tarr@akleg.gov

adopted

Potential Amendments

P. 1, Line 14 – **cleaner** [less polluted]

P. 3, Line 8 – **must** [should]

P. 3, Line 8 - "Genetically Modified"**, as required by Alaska law,**

ALASKA STATE LEGISLATURE

REPRESENTATIVE GERAN TARR

February 1, 2013

To: Representative Paul Seaton
Chairman House Fisheries Committee

From: Representative Geran Tarr

Re: Hearing Request for HJR 5

Please see the attached House Joint Resolution 5 and supporting documents. You will find the current version of HJR 5, letters of support, and documents with regards to genetically modified salmon.

We are requesting a hearing at the earliest possible convenience of the House Special Committee on Fisheries.

Thank you for your time. Feel free to contact me with any questions, concerns, or comments about this resolution.

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ALASKA STATE LEGISLATURE

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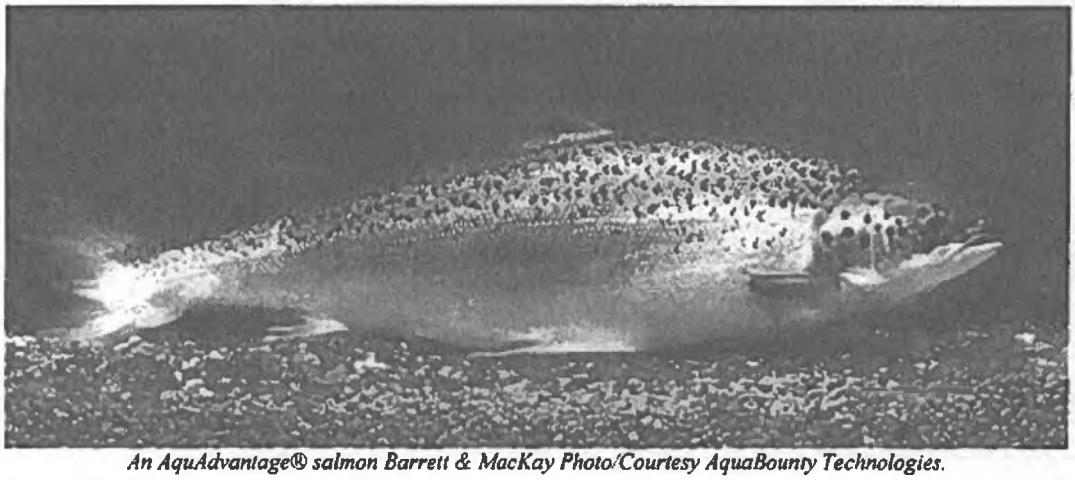
White House Ends Its Interference in Approval of Genetically Modified Salmon

By Jon Entine | Updated Friday, Dec. 21, 2012, at 2:03 PM ET
| Updated Friday, Dec. 21, 2012, at 2:03 PM ET

Slate.com

ENABLE SOCIAL READING White House Ends Its Interference in a Scientific Review

Leaks suggest politics blocked genetically modified salmon. Now the fish is on its way to approval.



An AquAdvantage® salmon Barrett & MacKay Photo/Courtesy AquaBounty Technologies.

Update, Dec. 21, 2012: On Wednesday, Slate and the Genetic Literacy Project published investigations into whether the White House was interfering in a scientific review process by the FDA. An environmental assessment of genetically modified salmon had cleared all internal regulatory hurdles and was due to be released in April, but the Obama administration put a hold on the release. Hours after the stories were published, according to FDA sources, the White House lifted its hold. Today, the FDA finally published the environmental assessment, one of the final stages in what could be the first federal approval of a genetically-modified animal in the United States.

The original article is below:

As president, Barack Obama promised to change "the posture of our federal government from being one of the most anti-science administrations in American history to one that embraces science and technology." To publicly guarantee that, the White House issued a science integrity memorandum in 2009 pledging, "Political officials should not suppress or alter scientific or technological findings and conclusions."

Except, it appears, when it comes to the fate of the first transgenic animal to be considered for federal approval—a genetically modified (GM) salmon developed by AquaBounty Technologies of Massachusetts. The so-called AquAdvantage salmon is a fish that has been modified to grow to market size in about half the usual time. It's raised in contained structures that eliminate many of the environmental effects that make farmed salmon unpopular with some environmentalists, including the generation of excess waste and the potential to spread disease or escape and compete with wild salmon.

The bioengineered salmon has been winding its way through a labyrinthine approval process for 17 years. And it's been in regulatory purgatory for more than two years since the Food and Drug Administration held public hearings—and promised a final determination within weeks.

As recently as last week, a spokeswoman for the Food and Drug Administration told me, "The application is still under review." But that's not the whole story.

The Genetic Literacy Project (GLP), which I direct, has learned that in April, the FDA completed its draft environmental assessment (EA), the final step in its scientific evaluation. The agency confirmed that the salmon is safe to eat and poses no serious environmental hazards. The approval document had made its way through every appropriate agency in an interagency review process coordinated by the Office of Science and Technology Policy (OSTP), which oversees the president's science policies and is empowered to enforce integrity guidelines.

But within days of the expected public release of the EA this spring, the application was frozen. The delay, sources within the government say, came after meetings with the White House, which was debating the political implications of approving the GM salmon, a move likely to infuriate a portion of its base.

The GLP has been leaked a confidential copy of the 159-page assessment, dated April 19, 2012, which had been circulated and approved—a summary of which we have been given permission to publish. It states that the Center for Veterinary Medicine, which has regulatory responsibility within the FDA, reached a "no effect" determination under the Endangered Species Act. That should have led to the publication of the EA in the Federal Register, paving the way for a public review period, which would have lasted 30 to 90 days. If the process had been followed, genetically modified salmon could have been on dinner tables by next year.

When asked about the holdup, FDA spokeswoman Siobhan DeLancey said, "I recommend you talk to the OMB or the White House. That's all I'm willing to say."

If, as FDA sources confirm, the scientific review is complete, the refusal to publish the draft EA in the Federal Register directly contradicts not only the president's directives, but also regulatory mandates ensuring the integrity of science at the Department of Health and Human Services, which oversees the FDA, and OSTP, which is under the executive branch.

"This shouldn't be happening," said Gregory Jaffe, director of biotechnology at the Center for Science in the Public Interest. Although cautious about biotechnology, Jaffe participated in a scientific review panel that unanimously endorsed the FDA's findings that the salmon was safe. "AquaBounty deserves regulatory due process," he added. "We need science-based decisions made in a timely fashion. The public deserves this, and there are questions whether that is what's going on in this case."

AquaBounty's fish is an Atlantic salmon with two added genetic elements: a Chinook salmon growth hormone gene and an on-off switch from the ocean pout, another edible fish. The modifications make the salmon grow through the winter, unlike conventional salmon. Only females are produced for consumption, and they are rendered sterile.

Americans consume 650 million pounds of salmon each year, with more than 530 million pounds of that imported. If allowed into the marketplace, the AquAdvantage salmon, as it is called, could lead to lower salmon prices and an increase in consumption of salmon, a heart-healthy food.

GM crops and animals are regulated under the 1986 Coordinated Framework. But while plants have a clear path to approval under guidance in place by 1992, animals must travel through regulatory no-man's land. The FDA has approved only one product, an anticoagulant derived from the milk of transgenic goats.

AquaBounty initiated its application to commercialize in 1995. By 2004, it had assembled its "data package," but its path to approval was never entirely clear. Finally in 2008, the Bush administration decided that transgenic animals intended for the dinner table would be regulated as animal drugs by the FDA's Center for Veterinary Medicine.

Anticipating environmental concerns, AquaBounty developed the salmon at a secure indoor facility in Prince Edward Island, Canada. A second facility was established in the mountains of Panama to evaluate whether the fish perform well under standard commercial conditions.

As part of its evaluation, the FDA inspected both facilities, determining the fish would be securely contained with multiple redundant systems that would prevent the salmon from escaping into the wild—one of the main concerns for people opposed to GMOs. The FDA concluded that even a catastrophic event at the Panamanian facility would not pose a threat. Lengthy expanses of warm, muddy water outside the facility would serve as a graveyard to any escaped cold-water fish. If some somehow made it to the ocean, they would die in the warm currents thousands of miles from their spawning grounds in the frigid waters of the North Atlantic.

There is no chance, independent scientists say, that released salmon would win a Darwinian war in open waters with wild salmon—the so-called Trojan gene effect. GMO opponents cite a 1999 study concluding that modified fish that grow extra large would have a competitive advantage, threatening extinction of conventional varieties. But AquaBounty engineered the salmon so it grows no larger than conventional fish. A co-author of that study, Bill Muir of Purdue University, who developed the risk assessment model for transgenic fish for the Department of Agriculture, studied the AquaBounty salmon and determined it has no fitness advantage—and now endorses it.

After years of reviews, in September 2010, the FDA released a long-awaited comprehensive guidance analysis that found the salmon environmentally benign and safe for human consumption. The agency concluded the AquAdvantage salmon is comparable to the traditional variety in every measurable way.

To underscore its commitment to transparency, the FDA's CVM convened a science advisory panel, which held public hearings a few weeks later. The scientists, including representatives from organizations skeptical of GMOs, unanimously reaffirmed the food safety report: AquaBounty salmon was materially identical to conventional salmon and posed no apparent environmental hazards.

The final step in the process—a "no effect" finding required under the Endangered Species Act—was expected within weeks, which would lead to its publication in the Federal Register and public hearings. Echoing one headline—"FDA to Approve GM Salmon Despite Strong Opposition"—everyone from the New York Times to anti-GMO activist groups was reporting that AquaBounty appeared to be on its way to producing the fish eggs that other companies could purchase to raise the quick-growing salmon.

Nothing has been released by the FDA since.

Friends of the Earth, Greenpeace, Union of Concerned Scientists, and other anti-GMO groups sent a letter to FDA Commissioner Margaret Hamburg demanding further review of whether wild salmon could face a competitive survival risk. AquaBounty's response noted the FDA's expert panel had already rejected those speculations.

Congressional politics then flared up. Forty members of Congress, most from the Pacific Northwest—whose salmon competes with Atlantic salmon—sent a letter to the FDA citing a supposed lack of transparency in the process. Whether because of the suddenly hostile political climate or renewed lobbying by opponents, the formal environmental assessment, which reporters had been told might be released any day, was never made public.

When rumors that approval was near surfaced again, in June 2011, a dozen members of the House, in a voice vote, approved a budget amendment prohibiting the FDA from approving the AquaBounty salmon. "Frankenfish is uncertain and unnecessary," said the bill's sponsor, Rep. Don Young, R-Alaska. "Should it receive approval as an animal drug, it clears the path to introduce it into the food supply; my amendment cuts them off before they can get that far." The Senate did not immediately take up the bill.

Critics cited the snail-like pace of approval as evidence that the AquaBounty application was in trouble. "If the FDA was so assured of the scientific merits of this application, they would have approved it by now," said Colin O'Neil of the Center for Food Safety. "The mere fact that it has taken this long tells me that jury is still out."

In fact, by summer 2011, by all reports, the FDA had yet again reaffirmed its finding that the salmon was ready for approval. The draft environmental assessment was prepared and circulated under an interagency review process coordinated by the president's Office of Science and Technology Policy. The two other agencies responsible for assessing the application under the Endangered Species Act, Fish and Wildlife, and the National Marine Fisheries Service, signed off on the "no effect" determination.

The review even went to the OMB at the Executive Office, which under normal circumstances would have no input on individual applications. Its authority is usually limited to reviewing new regulations. However I've been told that, because of the politicized nature of this case, the White House wanted to be involved. According to Talking Points Memo and my sources, OMB signed off on release of the EA that summer.

The approval was derailed when anti-GMO organizations circulated a report that the salmon at AquaBounty's Canadian facility had tested positive for a salmon virus two years previously. The company had reported the incident to Canadian authorities but not to the FDA—which reportedly did

not make officials happy. The FDA immediately put a hold on the release of the draft EA. It took months before the agency determined the incident had been isolated and had nothing to do with AquaBounty's technology.

While that controversy was being addressed, Food and Water Watch, Consumers Union, and the Center for Food Safety submitted a formal petition in February 2012, demanding the FDA reclassify AquaBounty's AquAdvantage salmon and its components as a food additive, setting up the possibility of a different regulatory regime that would have resulted in the process starting over at square one. The FDA stood firm, reaffirming its commitment to the evaluation by the CVM.

Finally, on April 19, 2012, the FDA circulated a draft EA that was an almost exact copy of what had been approved months before. The "approval of the AquaAdvantage Salmon," the document states, "... will not jeopardize the continued existence of the United States populations of threatened or endangered Atlantic salmon, or result in the destruction or adverse modification of their critical habitat."

For AquaBounty, the end again seemed in sight.

"It's a lengthy process, especially when you are dealing with a first-in-kind product that cuts across many dimensions," the FDA's Hamburg told the New York Times. A revised environmental assessment, she said, would be issued "very soon"—in a matter of days, weeks at most.

Then the gears of government and communication between the federal officials and AquaBounty shut down completely.

Late spring was a challenging time at the White House. The GOP primaries had just wrapped up, and Republicans were coalescing around Mitt Romney, who appeared to be a formidable candidate. The president's popularity remained lackluster. A late June Newsweek/Daily Beast poll showed that 54 percent of Americans thought Obama was doing a poor job—one of the lowest approval ratings of his presidency.

The main concern, politicos mused at the time, was a lack of enthusiasm by his political base, whose turnout would be critical if Obama hoped to squeeze out a victory during distressed economic times. Environmental activists were particularly ambivalent. They were upset about the president's unwillingness to block the Keystone pipeline and shale gas exploration using hydraulic fracturing.

And some of them were incensed about what they considered weak-kneed regulatory oversight by the FDA on chemicals and GMOs, which they believed had gotten a pass during the Bush administration. In late March, the FDA, citing "sound science," rejected a petition by the Natural Resources Defense Council to introduce tough restrictions on bisphenol A (BPA), a controversial plastic additive. "The FDA is out-of-step with scientific and medical research," the NRDC wrote in a blistering rebuke. "The agency has failed to protect our health and safety."

The last thing the Obama re-election effort needed was a messy dustup over the first genetically modified animal. But that was brewing. Union of Concerned Scientists' Margaret Mellon, a foe of bioengineering, had already publicly warned of "a firestorm of negative response" if the FDA approved the salmon.

With political opposition bubbling in Congress and anti-GMO activists mobilizing in cyberspace, AquaBounty's president and CEO, Ronald Stotish, encountered FDA Secretary Hamburg at an industry event in Boston.

"You've been great," he quoted her as saying. "You've been patient and taken the high road." She pointedly did not repeat her statement of a month before that the publication of the EA would be coming any day now.

Her comment set off alarm bells within the industry. Was there a new holdup? Stotish and Jim Greenwood, president of the biotech industry trade group BIO, met on July 11 with HHS Secretary Kathleen Sibelius' senior adviser Andrea Palm. Palm is known as a "fixer"—she coordinates policy with politics, often working directly with Valerie Jarrett, the president's most trusted adviser. Sources say the White House had been hearing regularly from anti-GMO organizations.

Palm professed to have no knowledge of the salmon controversy, according to people in the meeting. Palm promised to get back to them within a week. Five months later, dozens of calls and emails have gone unreturned. I've fared no better; Palm did not respond to my request for a statement.

Sources within the FDA have repeatedly asserted that the scientific review process is complete and the agency is not the source of the holdup. The media office says the application itself has not been formally approved. DeLancey referred me to the executive branch, to the White House and OMB. The OMB referred me back to the FDA. The White House declined to respond to requests for comment.

The regulatory foot-dragging sparked a letter sent to the White House in late September from more than 50 scientists and interested parties concerned about the delay.

"There is much more at stake here than just a fish," the letter asserted. "The inexplicable regulatory bottleneck that has been encountered by the AquAdvantage salmon suggests that the FDA's science-based regulatory review process for the products of animal biotechnology has no predictable timeline and is holding up the development of an industry that promotes economic growth, innovation, competitiveness, and job creation in the United States."

China has launched an $800 million public-private investment into transgenic animals, and genetically modified animals are being developed in India, New Zealand, and across Latin America, including in Cuba. But North America has become a dead zone.

James Murray, an animal scientist at the University of California–Davis has developed goats that make milk with diarrhea-preventing lysozyme, a bacteria-fighting protein that could save children's lives. With no government or private money on the horizon, he's set up his lab in Brazil, a more biotech-friendly locale. "When you don't have a regulatory pathway forward and the government doesn't support research in this area, what company will invest in this field?" he asked. "None. The AquaBounty situation is just confirmation of a hopelessly politicized process."

The future of animal genetics is so dire, universities are killing off courses. "My program started off doing genetic engineering," said Alison Van Eenennaam, a University of California–Davis animal scientist who co-authored a scathing article for Nature Biotechnology on the broken approval process.

"I couldn't get any government funding for my work in this area, so I shut the program down. Why would I train graduate students for jobs that won't exist?"

A question remains whether the White House or FDA could face legal challenges for intervening in a scientific evaluation process that is supposed to be insulated from politics. The Federal Food, Drug & Cosmetic Act requires that the Health and Human Services secretary approve the AquaBounty application within six months after compliance with Section 512. The company holds letters from earlier this year from the FDA advising that every major component of its application has been successfully addressed.

The FDA, apparently caught in the political crossfire, appears to be in violation of its own scientific integrity guidelines, adopted last February. Scientists and staffers involved in the process say they have been instructed not to discuss the application. Key provisions of the guidelines require the agency to shield its staff from "political influence" and to allow the "FDA staff to communicate their personal scientific or policy views to the public, even when those views differ from official Agency opinions."

The FDA has referred any questions about the logjam to the White House. The chief spokesperson for the OSTP, which is empowered by the executive branch to ensure that scientists are insulated from political concerns, has not responded to requests for comment.

"I think the credibility of our regulatory process is destroyed if someone at the White House or even at the FDA can essentially, arbitrarily pocket veto an application," said Stotish.

But that's what's going on, say those monitoring science policy—even those critical of the AquaBounty salmon. The Union of Concerned Scientists, which has campaigned against bioengineering, expressed its concern that the science approval process is being compromised by politics.

"If the statutes say the decision is supposed to be made based on science, and promptly, the government should follow that," Francesca Grifo, who helped craft UCS's scientific Integrity reports, told me. "Despite what the President might have said about scientific integrity, we've seen White House interference on what should be science regulatory decisions. They have a legal responsibility to follow their own guidelines."

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THE CENTER FOR
FOOD SAFETY

October 25, 2010

ECONOMIC CONCERNS AND IMPACTS RELATING TO GE SALMON

On August 25, 2010, U.S. Food and Drug Administration (FDA) officials announced their process for making a decision on an application relating to the first genetically engineered (GE) animal intended for human consumption, the AquAdvantage Salmon (AA Salmon) produced by Aqua Bounty Technologies. FDA convened two separate public meetings in September to discuss the GE fish, yet absent from FDA's meetings and materials are any discussions about potential economic impacts that would result from GE salmon approval or the unintended escape of GE salmon. Below is a summary of the major concerns:

Market Contamination

The AA Salmon application under consideration by FDA stipulates that the GE eggs will be grown in a land-based facility on Prince Edward Island, Canada, and then shipped to a land-based facility in Panama where they will be grown-out and processed for shipment to the U.S. and the international market. If GE salmon are approved, there exists significant potential for GE contamination of processed seafood as well as the likelihood for GE salmon to be sold as non-GE due to either human or tracking error. The international seafood market already suffers from deficient regulation and any tracking measures beyond the Country-of-Origin Labeling (COOL) requirements will be very difficult. FDA officials acknowledged during the public meetings that the Agency currently inspects only a small amount of fish imported to the US, making the risk of global market contamination a vital concern.

As demonstrated by the StarLink contamination fiasco, biological contamination of non-GE foods can have tremendous consequences for producers and markets. StarLink was a variety of GE corn was not approved for human consumption due to concerns that it could cause allergic reactions. However, wide swaths of corn acreages were contaminated by StarLink, which lead to the recall of tens of millions of supermarket items. The event was further complicated by the slow and deplorable investigation by the FDA. In 2003, a group of farmers was awarded a $110 million settlement due to the loss of foreign markets resulting from the StarLink contamination.[i]

Market Confusion or Rejection

The risk of market confusion or rejection resulting from GE salmon approval would have additional effects on the U.S. salmon and seafood industry. Consumer confusion about what types of salmon or seafood are genetically engineered may deter shoppers from purchasing such products. This confusion would be made worse by the absence of mandatory GE labeling requirements. Approving GE salmon is a sharp contradiction to the agreements the United States has signed at the North Atlantic Salmon Conservation Organization, where transgenic salmonids are considered a serious threat to wild salmon. Furthermore, GE salmon could result in trade disparities and the potential loss of foreign markets that may have differing opinions on labeling or safety assessments - for example in the EU, all GE animals must be labeled. Concerns over potential food contamination or environmental impacts may also affect consumer choice in the U.S. which could lead to consumers' forgoing buying wild and farmed salmon altogether. A recent poll from Lake Research Partners found that 91 percent of Americans felt FDA should not introduce GE fish and meat into the marketplace.[ii] A 2008 Consumer Reports poll found that 95 percent of respondents said they thought food from genetically engineered animals should be labeled.[iii]

Main Office: 660 Pennsylvania Ave., S.E., Suite 302, Washington, D.C. 20003 Phone: 202-547-9359 Fax: 202-547-9429
California Office: 2601 Mission Street, Suite 803, San Francisco, CA 94110 Phone: 415-826-2770 Fax: 415-826-0507
Email: info@centerforfoodsafety.org | www.centerforfoodsafety.org | www.ge-fish.org

A number of fishing associations as well as salmon farming companies have already voiced their opposition to the use of transgenic salmon including the Bristol Bay Regional Seafood Development Association, the Pacific Coast Federation of Fishermen's Association, International Salmon Farmers Association, the Irish Salmon Growers Association, the New Brunswick Salmon Growers' Association, Alaska Trollers Association, the Gloucester Fishermen's Wives Association, the Massachusetts Fishermen Partnership, Inc, Cooke Aquaculture, Inc, Marine Harvest ASA, Canadian Aquaculture Industry Alliance, Scottish Salmon Producers Organization, California Fisheries Network, SalmonAid, North Atlantic Marine Alliance, the Rhode Island Fishermen's Alliance, and many others. AquaBounty conducted trials of genetically engineered salmon in both New Zealand and Scotland that were halted by government regulators in New Zealand and public outcry in Scotland. Salmon producers worry that since AquaBounty has approached Chilean salmon farmers about growing its salmon once it is approved in the US, Chile, the second largest farmed salmon producer in the world, could become a major source of this GE fish.

Effect on Wild Stocks and Fisheries

Millions of farmed salmon have escaped from open-water net pens, competing with wild species for resources and placing an increased pressure on ecosystems.[iv] A potential escape of GE salmon will both directly and indirectly affect the livelihoods of the tens of thousands of salmon fishers and fishing communities in the U.S. and will have ripple effects throughout markets. States that have commercial salmon fishing are Alaska, California, Oregon and Washington. Species of commercially fished salmon are: Chum, Pink (Humpback), Sockeye (Red), Coho (Silver), Chinook (King). Each state has different regulations on which species can be fished commercially; for example, in Alaska you can fish for all five species of salmon. In the Northeastern United States, wild Atlantic salmon is on the endangered species list and commercial fishing is prohibited. In both restricted and commercial fisheries, GE salmon would pose serious risks to wild populations of fish and any approval of GE fish will have direct and indirect effects on wild stocks as well as the fisheries themselves.

The seafood industry in Alaska is the largest private sector employer creating 56,600 direct and 22,000 indirect jobs annually, more jobs than oil, gas and mining combined.[v] In 2007, the overall value of the Alaska seafood industry alone was over $1.5 billion paid to fishermen and $3.6 billion at the wholesale level. Total 2007 value at the dock for the non-Indian commercial salmon fisheries within Washington, Oregon and California was $11.6 million.[vi] Research published by Andrew Dyke and U. Rashid Sumaila notes that wild fisheries can also have significant economic impacts in other sectors, such as agriculture, forestry, manufacturing and financial services, observing that "changes in the fishing industry could affect livelihoods in and the viability of many economic sectors." The researchers found that regionally, every $1 of fisheries-sector output supports more than $3 of output throughout the North American economy.[vii] Many of Alaska's salmon processors are based in Seattle and elsewhere in Washington, Oregon or California, meaning that revenue and value is generated and spread across many states. At the same time, the increased demands by salmon farms for forage fish and fishmeal additionally affect the health of wild stocks and place an added stress on wild fisheries.

The American Sportfishing Association (ASA), the trade association representing the sportfishing industry, released economic information indicating that a full recovery of California's Central Valley Chinook salmon runs can potentially provide $5.7 billion in new economic activity for the state and the creation of 94,000 new jobs. It is estimated that the current shutdown of the salmon fishery due to pollution and degradation of habitats is costing California $1.4 billion in lost economic activity and 23,000 jobs in both the commercial and recreational saltwater fishing sectors.[viii] As ASA suggests, reinvestment in wild fisheries could generate thousands of new jobs and billions of dollars in revenue. Investments to restore native Atlantic salmon fisheries in the Northeast are being made and through strong support there could be a similar creation of new jobs and additional revenue.

Conclusion

In moving forward, it is critical that economic impacts associated with the production and sale of GE salmon are fully addressed. In the recent Supreme Court case *Monsanto v. Geertson Farms*, the Court recognized that the threat of transgenic contamination is harmful and onerous to organic and conventional farmers and that the injury allows them to challenge future biotech crop commercializations in court. Given the serious potential economic consequences, not to mention potential environmental and human health risks associated with the GE salmon, FDA must complete an Environmental Impact Statement (EIS) to consider the range of foreseeable economic impacts of this novel fish.

Please contact Bill Wenzel, Policy Advisor for the Center for Food Safety (bwenzel@icta.org) or Colin O'Neil, Regulatory Policy Analyst for the Center for Food Safety (colin@icta.org)with any questions:
(ph) 202-547-9359 | (fax) 202-547-9429

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[i] Paul E. (2003, February 7). Biotech firms pay $110 million to settle StarLink lawsuit. *Associated Press. Available at* http://ipm.osu.edu/trans/023_071.htm.

[ii] Lake Research Partners, Commissioned by Food and Water Watch. 9/20/10 http://documents.foodandwaterwatch.org/release-FWW-Omnibus.pdf

[iii] Consumer Reports. 11/11/08 http://www.greenerchoices.org/pdf/foodpoll2008.pdf

[iv] 1 According to the Ministry of Agriculture and Lands (BCMAL)in Canada, the agency responsible for tracking industry-reported farmed salmon escapes, over 1.5 million farmed salmon escaped into BC waters between 1987 and 2008 (http://www.al.gov.bc.ca/fisheries/escape/escape_reports.htm); This is also referenced in a report by World Wildlife Federation [Eva B. Thorstad, Ian A. Fleming, Philip McGinnity, Doris Soto, Vidar Wennevik & Fred Whoriskey (January 2008). Incidence and Impacts of Escaped Farmed Atlantic Salmon in Nature, Technical Report to the Salmon Aquaculture Dialogue. World Wildlife Federation, p.5.

[v] Northern Economics of Anchorage (January 2009) *The Seafood Industry in Alaska's Economy.* Commissioned by the Marine Conservation Alliance, At-sea Processors Association and the Pacific Seafood Processors Association.

[vi] Pacific Fishery Management Council. 2008. *Review of 2007 Ocean Salmon Fisheries.* (Document prepared for the Council and its advisory entities.) Pacific Fishery Management Council, 7700 NE Ambassador Place, Suite 200, Portland, Oregon 97220-1384

[vii] Dyck, A.J. and U.R. Sumaila. 2010. Economic impact of ocean fish populations in the global fishery.
Journal of Bioeconomics. DOI: 10.1007/s10818-010-9088-3 [See attached summary by PEW Environment Group]

[viii] See "Economic Data Supports Efforts to Recover California's Salmon Fisheries" (August 2009) Commisioned by the American Sportfishing Association and produced by Southwick Associates.

Petersburg Vessel Owners Association

PO Box 232
Petersburg, AK 99833
Phone & Fax: 907.772.9323
pvoa@gci.net • www.pvoaonline.org

February 1, 2013

Alaska State Legislature
House Fisheries Committee
Representative Paul Seaton, Chair
State Capitol
Juneau, AK 99811

RE: SUPPORT HJR 5, OPPOSING GENETICALLY MODIFIED SALMON

Dear Chairman Seaton and Fisheries Committee Members,

The Petersburg Vessel Owners Association (PVOA) is a diverse group of over 100 commercial fishermen and businesses based in Alaska. Our members provide millions of meals to the public annually by participating in a variety of fisheries statewide with our foremost interest being the commercial halibut and sablefish fisheries managed by the North Pacific Fishery Management Council. PVOA appreciates the opportunity to comment on HJR 5.

PVOA supports the passage of HJR 5. PVOA is already on record with the FDA opposing the development and marketing of GE Salmon. Alaska leads the world in sustainable fishery management practices and the Alaska seafood industry has gone to great effort and expense to differentiate our seafood products in the marketplace. **We oppose allowing genetically engineered (GE) salmon to be sold in the U.S. at all.** However, if GE salmon, or any GE salmon products are allowed to be sold in the U.S. then those products must be clearly and distinctly labeled as being genetically modified. We are particularly concerned that if GE salmon is allowed to be sold in the U.S. Alaska fishermen and coastal communities will suffer job losses and economic hardship due to consumer confusion about the origins and wholesomeness of salmon in general.

Thank you for the opportunity to comment on this resolution. If we can provide further information or answer any questions as you make this important decision, please feel free to contact us.

Sincerely,

Brian Lynch
Executive Director

United States Senate

WASHINGTON, DC 20510

September 28, 2010

Margaret A. Hamburg, M.D.
Commissioner of Food and Drugs
U.S. Food and Drug Administration
10903 New Hampshire Ave.
Silver Spring, MD 20993

Dear Commissioner Hamburg:

We the undersigned members of the United States Senate request you halt all proceedings related to the U.S. Food and Drug Administration (FDA) approval of the first genetically engineered (GE) animal for human consumption – a hybrid salmon produced by AquaBounty Technologies. There are a number of serious concerns with the current approval process and many potential human health and environmental risks that are associated with producing GE fish have not been fully or openly reviewed. Critical information has been kept from the public and consequently, only FDA and AquaBounty know important details about the approval process for this GE salmon, or the product itself. Accordingly, we urge you to discontinue the FDA's approval process of the GE salmon at this time to protect consumers, fishing and coastal communities, and the environment.

AquaBounty's GE product is a transgenic Atlantic salmon egg, in which genes from an ocean pout have been inserted into the genes of Chinook salmon, and then inserted into an Atlantic salmon. The egg is meant to produce a fish that grows to full size twice as fast as a normal Atlantic salmon. The eggs are intended for sale to aquaculture companies which will grow them to market-sized fish to be sold for human consumption.

One of the most serious concerns regarding AquaBounty's application is the FDA has no adequate process to review a GE animal intended as a human food product. FDA is considering this GE fish through its process for reviewing a new drug to be used by animals, not for creation of a new animal, especially one intended for human consumption. Clearly, this is inappropriate. Creation of a new genetically engineered species should not be treated as an animal drug issue but undergo formal evaluation by FDA's Center for Food Safety and Applied Nutrition to review the product's potential health effects on humans.

Such a limited review of the first GE animal for human consumption is wholly inadequate to review potential public safety concerns associated and recklessly and needlessly endangers consumer health. A recent *New York Times* article reported, "the engineered salmon have slightly higher levels of insulinlike growth factor," and "some

studies suggest that high levels of [this] insulinlike hormone in the bloodstream are associated with greater cancer risk."

The FDA's review process lacks transparency. It has been nearly impossible for the public to obtain clear information about the FDA's process or particulars about the fish itself. According to existing regulations, FDA is not required to release important details regarding AquaBounty's GE salmon as this is considered a "trade secret." Even though the proposal has been pending for nearly a decade, the FDA only recently released some information on the matter barely two weeks before public hearings began on Sunday, September 19. FDA should have made public all information regarding the salmon well in advance of any hearings to encourage full and knowledgeable public participation. To have facilitated broader public participation, hearings on such a contentious issue should not have been held in Rockville, Maryland, but rather in a more central location and with outreach to regions dependent on wild salmon production.

There are serious concerns about damage to the environment if FDA approves AquaBounty's GE salmon. While the current application only covers the grow-out of GE salmon at a land-based facility, we believe that any approval must also include a thorough review of the possible devastating effects were fish farmers to grow GE fish in open water net pens and cages. Such a review is essential given the threats posed by escaped fish, fish waste, other pollutants, and infectious diseases that could spread to the natural environment.

AquaBounty claims its eggs will produce reproductively sterile fish to help prevent any escaped fish from interbreeding with wild fish. However, the company's own data suggests 5 percent of its eggs may not be sterile and it plans to produce millions of eggs. Studies suggest that an invasion of transgenic fish that escape into a natural fish population could lead to the extinction of both wild and transgenic fish in that region even if they are sterilized. Concerns include competition for habitat and food, abnormal behaviors of farmed fish and their interactions with wildlife and uncertainty regarding all potential impacts. Finally, we are concerned about the dangerous precedent that this ruling could set, as companies will likely seek FDA approval for other genetically engineered products such as GE tilapia and GE trout.

Given the inappropriate approval process, the lack of transparency for over ten years regarding this particular application, and the myriad of potential human health and ecological risks associated with production and consumption of GE animals, we believe the AquaBounty salmon should not be approved for human consumption. We strongly urge you to stop the approval process immediately to allow for review and examination

of the various concerns associated with genetically engineered animals, openly and with meaningful public input.

Sincerely,

Mark Begich

Lisa A. Murkowski

Patty Murray

Bernard Sanders

Maria Cantwell

Ron Wyden

Patrick J. Leahy

Kirsten E. Gillibrand

Barbara A. Mikulski

Jeff Merkley

Jon Tester

Cc: Kathleen Sebelius, Secretary of Health and Human Services
Michael, M. Landa, J.D., Acting Director, Center for Food Safety and Applied Nutrition
Janet Woodcock, M.D., Director, Center for Drug Evaluation and Research

United States Senate

WASHINGTON, DC 20510

January 11, 2013

Dr. Margaret Hamburg, M.D.
Commissioner
U.S. Food and Drug Administration
10903 New Hampshire Avenue
Silver Spring, MD 20993

Re: Docket No. FDA-2011-N-0899

Dear Dr. Hamburg:

We, the undersigned United States Senators, request a 60-day extension to the public comment period for the U.S. Food and Drug Administration's (FDA) draft Environmental Assessment (EA) and preliminary Finding of No Significant Impact (FONSI) concerning genetically engineered Atlantic salmon.

While the AquaBounty Technologies proposal has been under consideration for some 15 years, the surprise publication of the draft EA and FONSI on Dec. 26, 2012, came in the midst of the holiday season when the public was more concerned with family matters than reviewing a 144-page, highly-technical scientific document.

Publication of the FDA's findings also came just days before the new Congress was sworn in. Many incoming members from affected states will be preoccupied with organizational issues during the next few months that will preclude them from giving adequate attention to a precedent-setting decision that could lead to approval of the first genetically engineered animal for human consumption.

We continue to have serious concerns about the AquaBounty proposal and the FDA review process that would regulate a proposed food product as if it were a new animal drug. The FDA review narrowly applies only to a limited set of production and rearing facilities, and fails to consider the implications of the broader application of this technology which assuredly would occur should the FDA's final approval be granted.

Congress has and will continue to raise these and other concerns about this controversial and unsustainable seafood product, including the potential escape of these engineered fish into U.S. waters. Legislation will be introduced in the 113th Congress to seek a more comprehensive environmental review of this and other genetically engineered fish, and require labeling of any such products sold in the U.S. so consumers are aware of what is on their dinner plates.

An extension of the public comment period regarding approval of the first genetically engineered animal for human consumption is necessary and appropriate. A 60-day extension to afford better public review of this draft action is minimal when compared to lengthy review process already afforded this proposal.

Thank you for consideration of this request.

Sincerely,

Mark Begich
United States Senator

Patty Murray
United States Senator

Ron Wyden
United States Senator

Barbara Mikulski
United States Senator

Lisa Murkowski
United States Senator

Maria Cantwell
United States Senator

Jeff Merkley
United States Senator

Congress of the United States

Washington, DC 20510

February 8, 2011

The Honorable Mike Chenault
Speaker
Alaska State House of Representatives
State Capitol Room 208
Juneau AK, 99801

Dear Speaker Chenault:

Alaska's Congressional delegation supports passage of House Joint Resolution 8 (HJR8) to urge the United States Food and Drug Administration (FDA) to deny any application to sell genetically engineered salmon in the United States. HJR8 also calls on Congress to enact product labeling requirements to include the words "Genetically Modified" prominently displayed on the package if the application is approved by the FDA.

HJR8 would support comparable legislation now pending before the U.S. Senate and House of Representatives and send a clear signal of disapproval of "frankenfish" by the Alaska State Legislature.

The FDA's consideration of a hybrid Atlantic salmon as the first genetically engineered animal for human consumption is a risky precedent and a threat to Alaska's wild salmon. The genes allow the creation to grow about twice as fast as its natural cousin and raise serious questions about the potential impacts of this engineered species on human health, wild salmon and its habitat, and the economy of coastal fishing communities.

The FDA process to review this proposal has taken place mostly behind closed doors, without meaningful consultation with the National Marine Fisheries Service and leaves much to be desired.

Alaska was correct in banning finfish farming in state waters over 20 years ago and instead focusing its attention on the sustainable management of wild salmon stocks. Last summer's harvest of 169 million salmon worth $534 million to fishermen demonstrates the productivity and economic value of Alaska's wild salmon.

Salmon farms in Canada, Europe and South America have been criticized for crowded conditions, contamination, use of chemicals, proliferation of disease and escapees. Atlantic salmon have been caught in Alaska's waters after escaping from neighboring fish farms in British Columbia with many infested with sea lice. They are rightly considered an invasive species by Alaskans.

HJR8 will send a clear message to the Food and Drug Administration and President Obama that the Alaska State Legislature does not condone the growth, sale or release of genetically engineered salmon in the United States.

We applaud the leadership of Representatives Scott Kawasaki, Bob Miller, Peggy Wilson, Beth Kerttula, and Steve Thompson in this matter and urge full passage of HJR8 by the Alaska State Legislature.

Sincerely,

Lisa Murkowski
United States Senator

Mark Begich
United States Senator

Don Young
Congressman

Cc: Alaska State House of Representatives

STATE CAPITOL
PO Box 110001
Juneau, Alaska 99811-0001
907-465-3500
fax: 907-465-3532

Governor Sean Parnell
STATE OF ALASKA

550 West 7th Avenue #1700
Anchorage, Alaska 99501
907-269-7450
fax: 907-269-7463
www.gov.alaska.gov
Governor@alaska.gov

September 23, 2010

Margaret A. Hamburg, M.D.
Commissioner
Food and Drug Administration
10903 New Hampshire Avenue
Silver Spring, MD 20993-0002

Dear Commissioner Hamburg,

The State of Alaska wishes to express its strong concern regarding AquaBounty's application to market genetically engineered Atlantic salmon. Due to the significant potential threats genetically engineered salmon pose to the environment, consumer health, and the wild seafood industry, we urge you to withhold approval of this application. Furthermore, we question whether the application has received sufficient scientific and public scrutiny, and are troubled by the lack of transparency that has marked the review process.

Like many, we fear genetically engineered salmon could jeopardize the health of wild salmon stocks if released into the wild. Genetically engineered salmon could spread disease, cross-breed with wild salmon, and out-compete them for food and mates. The U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration (NOAA), in a joint letter to the FDA in 2001, and the National Academy of Sciences in a 2002 study, have recognized these concerns and warned the Food and Drug Administration (FDA) about the potential dangers associated with escaped genetically engineered fish.

While AquaBounty proposes containment measures to reduce the chance of genetically engineered salmon escapes, these measures would not eliminate the risk. That risk would grow if AquaBounty supplies genetically engineered salmon eggs to a network of commercial farms, as the company intends. Alaskans are well aware that fish farming containment measures are not fail-safe. Commercial fishermen in Alaska have caught hundreds of Atlantic salmon, escaped from fish farms in Canada and the state of Washington.

We urge you to honor a provision introduced by the late Senator Ted Stevens and Senator Lisa Murkowski, which became law as part of the Food and Drug Administration Amendments Act of 2007 (P.L. 110-85). The provision requires the FDA Commissioner "to consult with the Assistant Administrator of the National Marine Fisheries Service of the National Oceanic and Atmospheric Administration to produce a report on any environmental risks associated with genetically engineered seafood products, including the impact on wild fish stocks." This statutory language was intended to ensure NOAA played a role in the FDA's approval process for genetically engineered seafood products. To our knowledge, no such report has been produced for AquaBounty's genetically engineered salmon.

Before genetically engineered salmon are allowed into the U.S. food supply, more rigorous scientific research is necessary to ensure its long-term consumption is safe for a large cross-section of the population, including sensitive populations such as young children and expectant mothers. As you know, salmon is widely recognized for its health benefits, and many consumers purchase salmon for this reason. Allowing a company to sell a genetically engineered product that has not been the subject of sufficient long-term testing would undermine consumer confidence in all salmon products, as well as the health benefits of salmon consumption.

Genetically engineered salmon could also erode the strength of the wild seafood industry, especially if appropriate labeling is not mandated. For Alaska, the results could be devastating. Alaska's salmon industry is critically important to the state's economy, and is the primary source of employment and revenue in many of our coastal villages. Farmed salmon has already threatened the position of Alaska's wild salmon in the seafood market. Alaska salmon, however, regained its status thanks to significant investments in infrastructure, product quality, and marketing. Marketers focused on distinguishing the health benefits and taste properties of Alaska salmon. Studies still show, however, that consumers struggle to distinguish seafood in the marketplace. Adding genetically engineered salmon to the store shelf could further complicate the efforts of consumers seeking healthy, wild seafood products.

The State of Alaska is also disturbed by the process employed by FDA to review AquaBounty's application. The environmental and public health implications associated with genetically engineered salmon and the significance of approving the first genetically modified animal for consumption in the U.S. warrant the highest level of public participation and transparency. The studies and data submitted to the FDA for consideration of AquaBounty's product were not made available to the public for review and comment until very recently, leaving consumers in the dark about the effects of genetically engineered salmon. We urge you to conduct a more public and transparent process.

Concurrent with the decision on approval of AquaBounty's application, we understand that the FDA is also considering the issue of product labeling for genetically engineered fish. The State of Alaska does not support approval of genetically engineered salmon for sale. If, despite significant environmental and human health concerns, the FDA approves such an application, it should also require that genetically engineered salmon sold in the United States be clearly labeled "genetically modified," so consumers can make an informed choice. This label should be prominently displayed on the front of the package in a contrasting color, and a minimum print size should be required. Alaska statutes require the conspicuous labeling of such products sold in the state.

I appreciate your consideration of Alaska's position on this important issue.

Sincerely,

Sean Parnell
Governor

cc: The Honorable Lisa Murkowski, United States Senate
The Honorable Mark Begich, United States Senate
The Honorable Don Young, United States House of Representatives
Bernadette M. Dunham, D.V.M., Ph.D., Director, Center for Veterinary Medicine, Food and Drug Administration
Aleta Sindelar, Center for Veterinary Medicine (HFV-3), Food and Drug Administration

STATE CAPITOL
PO Box 110001
Juneau, Alaska 99811-0001
907-465-3500
fax: 907-465-3532

Governor Sean Parnell
STATE OF ALASKA

550 West 7th Avenue #1700
Anchorage, Alaska 99501
907-269-7450
fax: 907-269-7463
www.gov.alaska.gov
Governor@alaska.gov

December 14, 2011

The Honorable Mark Begich
Chairman
U.S. Senate Subcommittee on Oceans,
Atmosphere, Fisheries, and Coast Guard
420A Hart Senate Office Building
Washington, DC 20510

The Honorable Olympia Snowe
Ranking Member
U.S. Senate Subcommittee on Oceans,
Atmosphere, Fisheries, and Coast Guard
227 Hart Senate Office Building
Washington, DC 20510

Re: Environmental Risks of Genetically Engineered Fish

Dear Chairman Begich and Ranking Member Snowe,

I commend the subcommittee for its attention to the environmental risks associated with genetically engineered fish. My administration continues to have strong concerns regarding AquaBounty's application to market genetically engineered Atlantic salmon. Due to the significant potential threats genetically engineered salmon pose to the environment, consumer health, and the wild seafood industry, we have urged the United States Food and Drug Administration (FDA) to withhold approval of this application. Furthermore, we question whether the application has received sufficient scientific and public scrutiny, and are troubled by the lack of transparency that has marked the review process.

Threat to Wild Salmon Stocks

Like many, we fear genetically engineered salmon could jeopardize the health of wild salmon stocks if released into the wild. Genetically engineered salmon could spread disease, cross-breed with wild salmon, and out-compete them for food and mates. The United States Fish and Wildlife Service (FWS) and National Oceanic and Atmospheric Administration (NOAA) have recognized these risks, and warned the FDA about the potential dangers associated with escaped genetically engineered fish in a joint letter to the FDA in 2001, and the National Academy of Sciences in a 2002 study.

While AquaBounty proposes containment measures to reduce the chance of genetically engineered salmon escapes, these measures would not eliminate the risk. That risk would grow if AquaBounty supplies genetically engineered salmon eggs to a network of commercial farms, as the company intends. Alaskans are well aware that fish farming containment measures are not fail-safe. Commercial fishermen in Alaska have caught hundreds of Atlantic salmon, escaped from fish farms in Canada and the state of Washington.

Insufficient Consultation with National Marine Fisheries Service (NMFS)

We have urged the FDA to honor a provision authored by the late Senator Ted Stevens and Senator Lisa Murkowski, which became law as part of the Food and Drug Administration Amendments Act of 2007 (P.L. 110-85). The provision requires the Commissioner of FDA "to consult with the Assistant Administrator of the NMFS of the National Oceanic and Atmospheric Administration to produce a report on any environmental risks associated with genetically engineered seafood products, including the impact on wild fish stocks." This statutory language was intended to ensure NOAA played a role in the FDA's approval process for genetically engineered seafood products. We are not convinced that this statutory obligation has been fully met.

Threat to Human Health and Consumer Confidence in Salmon

Before genetically engineered salmon is allowed into the United States' food supply, more rigorous scientific research is necessary to ensure its long-term consumption is safe for a large cross section of the population, including sensitive populations such as young children and expectant mothers. As you know, salmon is widely recognized for its health benefits, and many consumers purchase salmon for this reason. Allowing a company to sell a genetically engineered product that has not been the subject of sufficient long-term testing would undermine consumer confidence in all salmon products as well as the health benefits of salmon consumption.

Economic Impact on Wild Seafood Industry

Genetically engineered salmon could also erode the strength of the wild seafood industry, especially if appropriate labeling is not mandated. For Alaska, the results could be devastating. Alaska's salmon industry is critically important to the state's economy, and is the primary source of employment and revenue in many of our coastal villages. Farmed salmon has already threatened the position of Alaska's wild salmon in the seafood market. Alaska salmon, however, regained its status thanks to significant investments in infrastructure, product quality, and marketing. Marketers focused on distinguishing the health benefits and taste properties of Alaska salmon. Studies still show, however, that consumers struggle to distinguish seafood in the marketplace. Adding genetically engineered salmon to the store shelf could further complicate the efforts of consumers seeking healthy, wild seafood products.

Lack of Public Participation and Transparency

In addition, my administration is disturbed by the process employed by the FDA to review AquaBounty's application. The environmental and public health implications associated with genetically engineered salmon and the significance of approving the first genetically modified animal for consumption in the United States warrants the highest level of public participation and transparency. We do not believe that FDA's review process for veterinary drugs allows for a sufficiently public and transparent process.

Lack of Genetically Engineered Labeling

FDA's statements that suggest it may not be able to require labeling for AquaBounty's genetically engineered salmon is also troubling. The State of Alaska does not support approval of genetically engineered salmon for sale. If, despite significant environmental and human health concerns, the FDA approves such an application, genetically engineered salmon sold in the United States should

be clearly labeled "genetically modified," so consumers can make an informed choice. This label should be prominently displayed on the front of the package in a contrasting color, and a minimum print size should be required. Alaska statutes require the conspicuous labeling of such products sold in the state.

For the reasons mentioned above, I support legislation to prevent the FDA's approval of genetically engineered salmon for human consumption and to require appropriate labeling for any genetically engineered seafood products.

I appreciate your consideration of Alaska's position on this important issue and respectfully request that this letter be included in the hearing record.

Sincerely,

Sean Parnell
Governor

cc: The Honorable John Rockefeller, Chairman, United States Senate Committee on Commerce, Science, and Transportation
The Honorable Kay Bailey Hutchison, Ranking Member, United States Senate Committee on Commerce, Science, and Transportation
The Honorable Lisa Murkowski, United States Senate
The Honorable Don Young, United States House of Representatives
The Honorable Cora Campbell, Commissioner, Alaska Department of Fish and Game
The Honorable Larry Hartig, Commissioner, Alaska Department of Environmental Conservation

UNITED FISHERMEN OF ALASKA

Mailing Address: PO Box 20229, Juneau AK 99802-0229
Physical Address: 410 Calhoun Ave Ste 101, Juneau AK 99801
Phone: (907)586-2820 **Fax:** (907) 463-2545
Email: ufa@ufa-fish.org **Website:** www.ufa-fish.org

February 1, 2013

Representative Paul Seaton, Chairman
House Special Committee on Fisheries
Alaska State Legislature
State Capitol
Juneau, AK 99801-1182

RE: SUPPORT HJR 5, OPPOSING GENETICALLY MODIFIED SALMON

Dear Chairman Seaton and Committee Members,

UFA is on record with the U.S Food and Drug Administration (FDA) in opposition to approval of genetically modified salmon for production and consumption in the U.S. However, if approved for production and consumption in this country, we have strongly requested that FDA regulations require that salmon or any other genetically modified seafood products be clearly labeled as such.

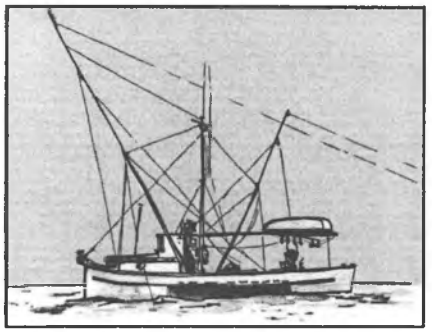
Alaska leads the world in sustainable fishery management practices and we have gone to great effort and expense to differentiate our seafood products in the marketplace. We are very concerned that if genetically modified salmon is allowed to be sold in the U.S. at all, or not labeled clearly, Alaska fishermen and coastal communities will suffer job losses and economic hardship due to consumer confusion about the wholesomeness of salmon in general.

United Fishermen of Alaska represents 34 Alaska Commercial fishing organizations, and hundreds of individual fishermen and related businesses. We support HJR 5 and we applaud the State Legislature for your dedication to Alaska's fisheries and position in the global marketplace.

Sincerely,

Julianne Curry
Executive Director

MEMBER ORGANIZATIONS
Alaska Bering Sea Crabbers • Alaska Independent Fishermen's Marketing Association
Alaska Independent Tendermen's Association • Alaska Longline Fishermen's Association • Alaska Scallop Association • Alaska Trollers Association
Alaska Whitefish Trawlers Association • Aleutian Pribilof Islands Community Development Association • Armstrong Keta • At-sea Processors Association
Bristol Bay Reserve • Cape Barnabas Inc. • Concerned Area "M" Fishermen • Cook Inlet Aquaculture Association • Cordova District Fishermen United
Douglas Island Pink and Chum • Groundfish Forum • Kenai Peninsula Fishermen's Association • Kodiak Regional Aquaculture Association •
North Pacific Fisheries Association • Northern Southeast Regional Aquaculture Association • Petersburg Vessel Owners Association
Prince William Sound Aquaculture Corporation • Purse Seine Vessel Owner Association • Seafood Producers Cooperative
Southeast Alaska Herring Conservation Alliance • Southeast Alaska Fisherman's Alliance • Southeast Alaska Regional Dive Fisheries Association
Southeast Alaska Seiners • Southern Southeast Regional Aquaculture Association • United Catcher Boats • United Cook Inlet Drift Association
United Southeast Alaska Gillnetters • Valdez Fisheries Development Association



Alaska Trollers Association

130 Seward #205
Juneau, AK 99801
(907)586-9400
ata@gci.net

February 1, 2013

Representative Paul Seaton, Chairman
House Special Committee on Fisheries
Alaska State Legislature
State Capitol
Juneau, AK 99801-1182

RE: HJR 5 Oppose FDA Approval of GE Salmon

Dear Representative Seaton and Committee Members:

The Alaska Trollers Association (ATA) strongly supports HJR 5, which seeks, among other things, to persuade the Food and Drug Administration (FDA) to deny the approval and marketing of genetically engineered salmon in the United States.

ATA is pleased to read the strong statements embodied in HJR 5. We believe the resolution appropriately reflects not only the concerns and wishes of most Alaskan's, but also those of a vast majority of American citizen's.

It is time the public be allowed the opportunity to openly consider and debate the issues surrounding the most intimate of topics – our nation's food supply. The FDA has a long way to go before it can truthfully say that the risks of genetically engineered salmon have been fully evaluated and that this is a safe food choice. It is well known that within the scientific community, professional disagreement exists regarding the safety of this and other genetically modified foods. More data and peer review are necessary to resolve and clarify those concerns.

Poll after poll has reveals the public's distrust of genetically engineered foods, yet the FDA has been allowed to conduct its analyses of GE salmon under a cloak of secrecy, in order to protect the patent rights of the companies involved. Of significant concern is that fact that this review is being conducted under the rules governing animal drugs – not food for human consumption – and is based on too little data provided by the developer, and too little review by FDA or independent scientists. Some of those data sets are pretty skimpy and proposed scenarios idyllic, which is not reflective of conditions that would exist if this animal was raised at production scale.

Here in Alaska, our concerns extend beyond the food on our plates to the fish with tails that transit our waters. Farmed fish from British Columbia and Washington State escape on a regular basis and are already harvested in our fisheries. Our members are concerned about the impact of those fish on our wild stocks - everything from disease transmission to competition for food and disruption on the spawning grounds. What new impacts will genetically engineered fish bring? At this point, we just don't know, but the risk seems far too high for a fish dependent state like our own.

I have attached for the record ATA's comments to the FDA on genetically engineered salmon and labeling requirements. These comments were submitted for the only public comment period that was allowed for GE

salmon. Only one public hearing was held, by the FDA's veterinary committee, and participation was limited to a handful of people. Note that FDA only requested comments on labeling – not the question of whether or not GE salmon should be approved for human consumption. Ironically, FDA has no authority to label anything, leading us to wonder why they even opened that comment period.

It is our hope that FDA's current Finding of No Significant Impact (FONSI) will be rejected, because the basis for the decision appears flawed. FDA has failed to adequately evaluate the impact of this designer fish on either humans or the environment. The agency must evaluate this product as a food source – not a drug – and the data and FDA's analyses should undergo rigorous peer review. A full Environmental Impact Statement and consultation under the Endangered Species Act, on both the East and West Coasts, are both appropriate and necessary parts of that process. And the process will be exceedingly important, as this first-ever review of a GE animal will set the precedent for the other animals currently in the pipeline for review.

If, at the end of the day, FDA and knowledgeable scientists and health experts deem this salmon safe for consumption, a robust statutory and regulatory package will be required, including provisions to protect both humans and the environment. In addition, FDA, or another appropriate agency, should be given direction and authority to ensure that all life stages and final product forms are prominently labeled. This will require industry support and a substantial government investment in monitoring and enforcement. We, the people, must be given an opportunity to accept, or decline, participation in the grand GMO experiment. Labeling will be essential towards that end.

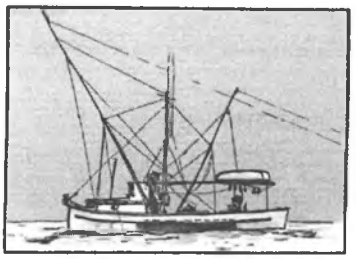
In sum, the outcome of FDA's GE salmon review is of significant concern to our association. ATA appreciates and fully supports the intent of HJR 5 - we urge you to vote in support.

Thank you for considering ATA's point of view on this matter. Should you have additional questions, please don't hesitate to contact me about this or other issues of concern to the commercial fishing industry.

Best regards,

Dale Kelley

Dale Kelley
Executive Director



Alaska Trollers Association
130 Seward #205
Juneau, AK 99801
(907) 586-9400 phone
(907) 586-4473 fax

November 21, 2010

Division of Dockets Management (HFA-305)
5630 Fishers Lane, Rm 1061
Rockville, MD 20852

RE: **Docket No. FDA-2010-N-0385** Labeling of AquAdvantage genetically engineered salmon

To Whom It May Concern:

The Alaska Trollers Association (ATA) represents hook and line salmon fishermen operating off the coast of Alaska, where our salmon resource is healthy and our fisheries are well-managed. Our members take quite seriously the job of delivering a wholesome, high quality product to market and are firmly committed to sound science underpinning the decisions made regarding the food people eat.

ATA strongly opposes the genetic engineering of seafood. For the record, ATA requests FDA reconsider its basis and rationale for approving GE animals for consumption and conduct the appropriate studies to prove the claim that this product, and how it will be raised, will ultimately be safe for human health and the environment.

FDA does not appear to have conducted the necessary science, and has not allowed the public access to adequate information, time, and forums to have meaningful input into the issue, yet all signals suggests that the product will be approved. Therefore we are also compelled to say that our members strongly support mandatory labeling to distinguish GE salmon if it ever should reach the marketplace.

Fishermen are particularly alarmed by the cavalier approach the nation has taken on the issue of genetically engineered foodstuffs. One quickly called hearing on the East Coast, during fishing season, where participation was limited – with small amounts of information released just days before the hearing -- does not amount to an acceptable public process.

The failure of our country to vision a transparent approval process and strict regulatory program for genetically engineered animals/foods is shameful. FDA's own published, non-binding, *Guidance for Industry Regulation of Genetically Engineered Animals Containing Heritable Recombinant DNA Constructs* includes this qualifier:

> *This guidance represents the Food and Drug Administration's (FDA's) current thinking on this topic. It does not create or confer any rights for or on any person and does not operate to bind FDA or the public.*

Does this mean that FDA has no intention of regulating the corporations who will hold valuable patents to GE animals that likely have a ready market worth untold amounts of money? As small businessmen who operate under significant international, national, and state regulatory burdens in

order to produce healthy food for the nation and world, it is our hope that FDA, and our nation's policymakers, will further clarify their intent in this regard.

In reading through FDA's documents it was interesting to see the emphasis on the need to prevent mislabeling of a product. We completely agree and believe that identifying GE salmon with a label would simply be a matter of truth in advertising.

How could an Atlantic salmon – essentially a sea-run trout – that is gene spliced with a true Pacific salmon and a non-salmonid -- be considered anything BUT genetically engineered? Once you allow it to be modified, it becomes different and the level of risk changes, period. Your own scientists pointed that out during the 1990s debate on FDA's policy on GE plants. It stands to reason that GE salmon should bear a label revealing the very basic fact that it is engineered, simply so the consumer can make an informed choice.

While FDA and industry backgrounders try to calm the public by explaining that these fish will be just like any other Atlantic salmon, that's simply not true. Wild Atlantic salmon are not genetically modified. Farmed Atlantic salmon are selectively bred, but not yet modified. Engineered salmon certainly aren't like any other salmon, yet the public could easily become confused about which fish are modified and which are not, and opt out of salmon altogether. Those of us in the seafood industry know far too well that there exists a great deal of confusion when it comes to the seafood market. Our industry could bear a direct cost if this happens.

Most importantly, how are you so certain that the salmon, chemically, is the same as wild Atlantic salmon, at the minutest levels? Where are the rigorous, published studies to back that up? What about over generations of breeding and under different conditions and production rules? Will biomarkers have any affect now, or in the future, on the composition of the fish (not to mention the health risk)?

It is already well documented that when it comes to safe food production and GE, the jury is out amongst the scientific community. FDA's own veterinary advisory committee suggested that the science presented was incomplete, particularly if these fish will be raised outside of the two test farms and under full scale production scenarios.

For many years, a variety of scientists – from federal agency staff, to academics, and farm and fisheries professionals – have questioned whether or not genetically modified animals and plants are safe. At minimum, questions regarding toxicity and allergens do not appear to have been thoroughly vetted and resolved. FDA's own regulations mandate that new substances be subjected to peer reviewed studies prior to determining them 'safe' (21 CFR Sec. 170.30 (a-b)). How can FDA move ahead without adequate science?

Add to that the complication of farmed GE salmon, which may be fed some combination of GE foods and be subjected to a variety of pharmaceuticals and pesticides during the culture phase. Many of these farms, including the two GE test farms, aren't even in the US and all countries and states are likely to be governed by a variety of conflicting laws. How will modified animals respond to various foods, chemicals, and conditions? How can FDA be sure it and other agencies can foresee, monitor, and control any changes in toxicity, or the development of new metabolites that may result from genetic engineering of animals across generations? Will inspections of foreign and domestically farmed seafood have to be increased to monitor such issues? There is a raft of potential dangers to the environment should these fish escape, and even if they don't, since no one has analyzed or discussed with the public the impact of large, production scale closed containment. Where will the funding for this, and more, come from?

Who will be doing the necessary research, monitoring, and enforcement – FDA? And, where are the appropriate human and environmental and economic risk analyses? Previous statements from FDA give us little hope and make us wonder what other agency, if any, will take on this role? In 1998 FDA stated that it had, *...not found it necessary to conduct comprehensive scientific reviews of foods derived from bioengineered plants.* Your policies haven't changed much since that time. FDA has also claimed that it has no public process obligation under NEPA for this issue, nor does it have labeling authority, since it is not regulating GE salmon. So, who is in charge of exploring this issue in a more meaningful, scientific, and bioethical way? Why should the animal be approved before that's done?

It appears that FDA and the nation are more than willing to place the burden of proving or disproving food safety on either a multi-national industry that stands to gain financially from GE salmon; or the small seafood industry that stands to lose by being overwhelmed by increased farmed production or consumer fears about salmon; or perhaps even the end consumer themselves.

Labeling of GE foods boils down to one of the most fundamental of human needs and rights –access to wholesome foods and information about how they are produced. While the GE salmon may ultimately prove safe and wholesome, there is no doubt that it is unlike any other salmon available today. It is a processed food at its most basic level, and should be labeled accordingly, particularly when no independent science exists to prove that it is safe. Such a label is not misleading, nor is it in any way false, it is simply telling the consumer the truth about a type of food that until just a few years ago was inconceivable. People should have the right to choose!

While FDA might not currently believe that GE salmon is markedly different, we have to wonder what other countries might think, and why, since so many of them have strongly disagreed with the US on this and other policy questions swirling around GE foods. While current trade agreements and the tendency to lean towards agency discretion may be forcing the hand of the courts and nations, there is obviously no consensus amongst scientists on the matter of GE food and policy. In the court of public appeal, we suggest most people do believe GE salmon is different, and most aren't certain it's safe, therefore, it should be labeled.

Furthermore, there are many reasons beyond food safety that people may choose to avoid GE foods. Social, cultural, religious, and other factors all have a role in food selection. Respect for those choices can also be accomplished through labeling.

While the use of genetic engineering may be appropriate and beneficial for a variety of purposes, such as medical advancement, it does not appear that the science exists to underpin decisions with regard to what, if any, genetically engineered foods belong in the food chain and environment.

Additionally, a clearly articulated set of publicly negotiated policies, along with relevant statutory, regulatory, research, monitoring, enforcement, and remediation programs do not even appear to be in development.

Until such time as the public is adequately brought into the debate; appropriate, peer reviewed, science shows genetically engineered salmon to be safe for human health and the environment; and, the appropriate statutory and regulatory sideboards are in place, ATA does not believe FDA should issue its approval for GE seafood products. If FDA goes against what appears to be the will of a vast majority of Americans, then labeling of any GE seafood product should be mandatory.

Thank you for considering ATA's point of view. Please let me know if I can answer questions on ATA's position or be of assistance to FDA as you work through this matter.

Best regards,

Dale Kelley

Dale Kelley
Executive Director

ALASKA GLACIER SEAFOODS INC
"Alaska's Finest"

February 6, 2013

Alaska State Legislature
House Fisheries Committee
Representative Paul Seaton, Chair
State Capitol
Juneau, AK 99811

Chairman Seaton and Fisheries Committee Members,

Alaska Glacier Seafoods is a family owned seafood company with approximately 135 employees seasonally in Juneau, Alaska. We have been operating since 1996 and have become extremely dependent on the strong stocks of our wild fisheries.

As a member of the seafood industry, our company has a vested interest in the health of the wild salmon stocks. GE salmon run the risk of escaping into the wild and harming wild salmon populations. We have seen, with farmed salmon, that despite measures taken, they cannot be controlled and kept out of the wild salmon stock, and often are infected with sea lice.

GE salmon will also threaten the jobs of Alaskan fisherman and coastal communities that thrive off of the commercial fishing industry. The fishing industry in the state of Alaska is the largest source of private sector employment and is valued at $505 million.

It is important the FDA and the Federal Government hear our concerns, and adequately assess the threat that GE salmon pose to our state.

Thank you for the opportunity to voice our support for House Joint Resolution 5.

Sincerely,

Michael J Erickson Sr.
President
Alaska Glacier Seafoods

P.O. BOX 34363 • JUNEAU, ALASKA 99803 • (907) 790-3590 • Fax: (907) 790-4286

February 8, 2013

Alaska State Legislature
House Fisheries Committee
Representative Paul Seaton, Chair
State Capitol
Juneau, AK 99811

Chairman Seaton and Fisheries Committee Members,

PLEASE READ!!!!!!!!!!!!!!!!!!!

Pickled Willys is the only salmon pickling plant in Alaska. Located in Kodiak, our products are sold largely on the basis of the quality of our fish and its health claims. Organic vinegar, sustainable fish and made in Alaska. Genetically engineered salmon, should it get into our waters, (and it will) WOULD KILL OUR PRODUCT AND OUR BUSINESS. I plead with you not to allow this to happen. Retired from the medical field in high risk pregnancy, working with genetics every day I understand what this is about. Genetically engineered salmon once in our system will never be reversed or contained. This is a decision that will impact our salmon in Alaska and other areas for the life of our plant. This should not and can't happen. If the FDA lets this go ahead than they should provide me (or the company who lets it escape) with the means to show my salmon is not GE. This should come at no cost to me.

Genetically engineering life always comes with a consequence and I don't want it to be Alaska.

As a member of the seafood industry, our company has a vested interest in the health of the wild salmon stocks. GE salmon run the risk of escaping into the wild and harming wild salmon populations. We have seen, with farmed salmon, that despite measures taken, they cannot be controlled and kept out of the wild salmon stock, and often are infected with sea lice.

GE salmon will also threaten the jobs of Alaskan fisherman and coastal communities that thrive off of the commercial fishing industry. The fishing industry in the state of Alaska is the largest source of private sector employment and is valued at $505 million.

It is important the FDA and the Federal Government hear our concerns, and adequately assess the threat that GE salmon pose to our state.

Thank you for the opportunity to voice our support for House Joint Resolution 5.

Sincerely,

Barbara Hughes
Co/owner
Pickled Willys LLC
907-512-7635

Cordova District Fishermen United
PO Box 939 | 509 First Street | Cordova, AK 99574
phone. (907) 424 3447 | fax. (907) 424 3430
web. www.cdfu.org | email. cdfu@ak.net

February 8, 2013

Rep. Paul Seaton
House Fisheries Committee
State Capitol Room 102
Juneau, AK 99801
f. 465.3472

RE: HJR 5 - "A Resolution opposing the US FDA's preliminary finding relating to genetically engineered salmon"

Dear Chairman Seaton and Committee Members:

I am writing on behalf of the Cordova District Fishermen United Board of directors and our membership to express our support of HJR 5 and proposed position of statewide opposition to the US Food and Drug Administration's (FDA) preliminary approval of Aquabounty's New Animal Drug Application (NADA) for genetically engineered salmon.

As one of Alaska's oldest fishing organizations, CDFU represents over 800 fishermen and their families in the Prince William Sound region, each with tremendous investment in their fishing operations and a commitment to the continued sustainability and productivity of Alaska's wild salmon runs.

We are extremely concerned with the ramifications that approval of GE salmon may have on Alaska's fishing industry. And are appreciative of the authors' recognition of the deficiencies in the FDA process to adequately assess the broader implications of approving GE salmon based on the limited scope considered in the preliminary EA and FONSI. We also support the state's proposed commitment to pursue mandatory product labeling should federal approval of this product be granted.

Thank you for your thorough consideration of HJR 5.

Sincerely,

Alexis Cooper
Executive Director

CC: Rep. Tarr

Southeast Alaska Fishermen's Alliance
9369 North Douglas Highway
Juneau, AK 99801
Phone: 907-586-6652 Email: seafa@gci.net
Fax: 907-523-1168 Website: http://www.seafa.org



February 5, 2013

Alaska State Legislature
House Fisheries Committee
Representative Paul Seaton, Chair
State Capitol
Juneau, AK 99811

RE: Support HJR 5

Representative Paul Seaton, Chair and Fisheries Committee Members,

Southeast Alaska Fishermen's Alliance (SEAFA) supports HJR 5, a resolution that opposes FDA's preliminary finding relating to Genetically engineered salmon and if approved that the end product should be labeled.

We urge speedy passage of this resolution so that it may be submitted by the Feb. 24 comment deadline published in the federal register.

We also urge the Alaska State Legislature to consider if a final approval is given to Aquabounty to require mandatory labeling in the State of Alaska.

Thank you for this opportunity to testify on this legislation. If you have any questions about our testimony or points raised in the testimony, please contact the office, we would be glad to provide additional information.

Sincerely,

Kathy Hansen
Executive Director

February 1, 2013
Representative Paul Seaton, Chairman
House Special Committee on Fisheries
Alaska State Legislature
State Capitol
Juneau, AK 99801-1182
RE: HJR 5 Oppose FDA Approval of GE Salmon

Mr. Chairman,

My name is Steve Merritt and I am a commercial fisherman living in Craig, Alaska. I strongly support HJR 5, which seeks, among other things, to persuade the Food and Drug Administration (FDA) to deny the approval and marketing of genetically engineered salmon in the United States.

The FDA has been allowed to conduct its analyses of GE salmon under a cloak of secrecy, in order to protect the patent rights of the companies involved. Of significant concern is that fact that this review is being conducted under the rules governing animal drugs – not food for human consumption. If this bogus analyses is allowed to prevail the implications for the future approval of basic cyanide as a food source, seems possible, as long as it passes the animal drug rules. The irrationality of approving a product heading for human consumption using rules that govern animal drugs can be called one thing. Stupid!!

Only one public hearing was held, by the FDA's veterinary committee, and participation was limited to a handful of people. Note that FDA only requested comments on labeling – not the question of whether or not GE salmon should be approved for human consumption. Ironically, FDA has no authority to label anything, leading to the question, Why even opened that comment period? This irrational dodging of the main issue is suggestive of only one thing. Corruption.!! It appears the FDA has been bought by Aquabounty so to sneak this GE salmon approval through no matter what the cost to consumer's safety. Is there nothing left in the back bone of the FDA's bureaucracy that is of any moral, ethical fiber? Any scientific rational thinking left? Has the US government fallen so far in the direction of squalidness, that it ignores this agency's blatant misconduct?

I ask you to uses your legislative powers and support HJR 5 in hopes to bring the FDA back in line and make that agency a respectable representative of the US government..
FDA has failed to adequately evaluate the impact of this designer fish on either humans or the environment. The agency must evaluate this product as a human food source – not a drug – and the data and FDA's analyses should undergo rigorous peer review. A full Environmental Impact Statement and consultation under the Endangered Species Act, on both the East and West Coasts. In addition, FDA, or another appropriate agency, should be given direction and authority to ensure that all life stages and final product forms of this creature are prominently labeled so an educated choice can be made by US consumers. A concept that founded this country!!

Sincerely, Steve Merritt

Steve Merritt
Box 1138
Craig, Alaska 99921

To all members of Alaska's Legislative body –

I have read House Joint Resolution 5 and am in full support of it. PLEASE VOTE YES and let those in Washington DC know we do not support AquaBounty's

petition to produce AquAdvantage Salmon, a genetically engineered salmon. There are too many unknowns – personally I would NEVER consider eating such a product!

Thank you.

Kim

Kim Elliot

7 Maksoutoff Street

Sitka, AK 99835-7556

(907) 747-7677

email: kelliot@gci.net

February 8, 2013

Alaska State Legislature
House Fisheries Committee
Representative Paul Seaton, Chair
State Capitol
Juneau, AK 99811

Chairman Seaton and Fisheries Committee Members,

My name is Sara Pozonsky and I co-own Wild Alaskan Salmon Company, an online Alaskan seafood store (www.SEABEEF.com). I am also the producer of a documentary called A Fishy Tale, which exposes the devastating environmental and health impacts of farmed fish. You can learn more about the film at www.afishytalemovie.com.

I grew up commercial fishing with my father, Chuck Crapuchettes, out in the Bristol Bay as well as in the Cook Inlet and fell in love with Alaska and our fisheries at a young age. I have a huge interest in keeping our marine environment pristine, and especially the health of our wild salmon stocks. I am so concerned about the risks of farmed salmon, and now Frankenfish, that I have privately funded a documentary to try to spread awareness about this devastating industry and practice.

We are told that GE salmon (Frankenfish) are sterile and, even if they escape, they will not harm our wild salmon populations. However, since we have no prior history with this genetically modified salmon, we do not know how much trust we can put into that claim. In fact, of the GE salmon tested, it is noted that up to 5 percent of the fish could be fertile even though they're engineered to be sterile females.[1] We have seen with farmed salmon, that they cannot be controlled and kept out of the wild salmon stock, and have devastated the wild salmon fisheries that surround them. In addition, the amount of pollution that fish farms produce is devastating to the ocean floors and kills all marine life and organisms living there. In fact, NASA space photos reveal that ocean dead zones are found most everywhere open-net fish farms are located.

Also of great concern, is that Monsanto, THE fish feed producer for GE salmon, is spending an absurd amount of money lobbying Congress protecting their interests and have also made sizeable donations to Congressman re-election campaigns. According to OpenSecrets.org data, Monsanto spent almost 6 million dollars in lobbyist efforts in 2012, more than any other agribusiness firm except the tobacco company Altria. [2]

It makes it almost impossible to compete against that kind of power. The money spent by any environmental coalition or concerned person trying to combat Monsanto pales in comparison. It makes it all the more important that Alaska, and all concerned private citizens around the world, join in this important battle by adding their voice to the opposition of GE salmon.

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[1] Genetically Engineered Salmon Nears FDA Approval - http://abcnews.go.com/Health/genetically-modified-frankenfish-nears-fda-approval-debate-heats/story?id=18078157&page=2

[2] Monsanto Co - http://www.opensecrets.org/lobby/clientsum.php?id=D000000211&year=2012

All farmed fish threatens the jobs of Alaskan fisherman and coastal communities that thrive off of the commercial fishing industry. Alaskans need to be vigilant and on guard, making sure that even if the federal government allows GE salmon to be sold, that no fish farm be allowed to operate in Alaska.

Alaskan fishermen have taken great pride in the fact that our government has outlawed fin-fish farms. However, federal waters run well into some of our most pristine commercial fishing waters, and any fish farm located in those waters would devastate those local fisheries. Alaskans do not have control over what the federal government does in federal waters. It would take someone only one visit to British Columbia in Canada to see the economic and environmental devastation fish farms have caused to their once vibrant wild salmon fishery and community.

The health risks of consuming GE salmon are unknown. The health risks of consuming any farmed fish have always been alarming and called into question. We know that the environmental impacts of farmed salmon have also been devastating, and we should expect nothing less from these genetically modified GE salmon. The escape of GE salmon could be devastating to wild fisheries as has been demonstrated by the current farmed fish industry. Prior to approval, the FDA must do its own independent and credible research – not base its findings on the studies given to them by the makers of GE salmon.

And finally, the labeling of GE salmon, and all farmed salmon, must be required. Just as alcohol and cigarette companies are required to put health warnings on their labels, the federal government should require these same health warnings to be on all farmed salmon, especially salmon that has been genetically modified.

It is important the FDA and the Federal Government hear our concerns, and adequately assess the economic threat that GE salmon poses to Alaska.

Thank you for the opportunity to voice my support for House Joint Resolution 5.

Sincerely,

Sara Pozonsky, Owner
Wild Alaskan Salmon Company

Producer, A Fishy Tale

International Seafoods of Alaska, Inc.

Kodiak • Egegik • Seattle

February 1, 2013
Alaska State Legislature
House Fisheries Committee
Representative Paul Seaton, Chair
State Capitol
Juneau, AK 99811

Chairman Seaton and Fisheries Committee Members,

We are a seafood processor in Kodiak, Alaska. We process wild caught Salmon, which is imperative to our local community. As a member of the seafood industry, our company has a vested interest in the health of the wild salmon stocks. GE salmon run the risk of escaping into the wild and harming wild salmon populations. We have seen, with farmed salmon, that despite measures taken, they cannot be controlled and kept out of the wild salmon stock, and often are infected with sea lice.

GE salmon will also threaten the jobs of Alaskan fisherman and coastal communities that thrive off of the commercial fishing industry. The fishing industry in the state of Alaska is the largest source of private sector employment and is valued at $505 million.

It is important the FDA and the Federal Government hear our concerns, and adequately assess the threat that GE salmon pose to our state.

Thank you for the opportunity to voice our support for House Joint Resolution 5.

Sincerely,

Ted Kishimoto
Vice President
International Seafoods of Alaska, Inc.

☑ 517 Shelikof Street
P.O. Box 2997
Kodiak, AK 99615-2997, USA
TEL: 907 / 486-4768
FAX: 907 / 486-4885

KODIAK SEAFOOD

☐ 2360 West Commodore Way
Seattle, WA 98199-1285, USA
TEL: 206 / 284-4830
FAX: 206 / 286-5920

Fish Factor: FDA-approved Frankenfish fight continues

January 25th 2:46 pm | **Laine Welch** print email link

Fishing groups, consumers and health organizations are launching a final push to prevent genetically modified fish from getting the nod for American dinner plates.

During the holidays, the Food and Drug Administration issued its environmental assessment concluding that the fish, tweaked to grow at least three times faster than normal, will not have any significant impacts on the human environment and is unlikely to harm wild stocks. The FDA's environmental green light is the last step before AquaBounty, the creators of so called Frankenfish, can send the mutant to markets. The public has until February 26 to send comments to the FDA.

Alaska Senators Begich and Murkowski have written to the FDA asking for a 60 day extension to the comment deadline, citing the holiday timing and new transitions in Congress. Senators from Washington, Oregon and Maryland also signed on to the comment extension request. No word yet on if the request has been granted.

Meanwhile, Senator Begich said the agency is moving "full steam ahead with fine-tuning its Frankenfish regulations," and he is not optimistic that public opinion will sway the federal OK.

Indeed. Late last year the federal government

awarded a coveted $500,000 research grant from the National Institute of Food and Agriculture to

AquaBounty when the company disclosed it could run out of cash early this year. Over the past 16 years, Aqua Bounty has spent $67 million to genetically tweak its "AquaAdvantage" Atlantic salmon and navigate the permitting processes.

Senator Begich called the FDA's support of the mutant fish "totally misguided."

"I think the FDA is not equipped to understand the impacts this genetically engineered fish will have on the environment and ecosystem," he said in a recent teleconference.

That echoed earlier comments by Rep. Don Young and Senator Murkowski who called the FDA's actions "especially troubling since the agency is ignoring the opposition of fishing groups as well as more than 3,000 consumers and health organizations."

As of Friday there were 3,209 comments posted on the FDA regulation page - of the 15 pages of comments posted, not a single one spoke in support of the GM fish. The Alaska legislature and state fishing groups have come out strongly against Frankenfish as has the National Humane Society, Center for Food Safety, among others.

"Can they move forward even with so much opposition by so many diverse groups? The sad answer to this is probably," said Begich.

"Still I encourage more people to make comments. I think the more comments the agency gets on the official record may slow them down or prevent them from moving forward," he added.

According to AquaBounty documents, the company plans to grow the modified Atlantic salmon eggs at a lab in Prince Edward Island, fly them to Panama where they will be raised at inland fish farms, and then

shipped back for sale in the U.S. Prospective fish farmers are lined up

in South Dakota, West Virginia, Wisconsin and Ohio.

Meanwhile, Alaska's Congressional delegation intends to keep pressure on the FDA.

"We intend to reintroduce legislation that will deal with not allowing this product to come to market," Senator Begich said. "We will also deal with the labeling issue and some others. So if they think we are just going to roll over because they think they are a regulatory agency that just gives a check off and that's good enough, they are mistaken."

The Guardian newspaper in the UK quipped: If approved, the fish would be the world's first modified animal "to make its way into the food chain, clearing the way for an entire menagerie of redesigns, from fast-growing trout and tilapia to the "enviro-pig", genetically altered to produce less polluting poo."

Comments on Frankenfish can be sent to www.regulations.gov

Docket No. FDA-2011-N-0899.

Money for "Made in America"

Federal grants are available for Alaska companies that are getting pinched by competing imports.

"We look to assist firms that produce products or services made in America and in doing so, save and create as many U.S. jobs as possible," said

Gary Kuhar, director of the nonprofit Northwest Trade Adjustment Assistance Center, an arm of the U.S. Dept. of Commerce Economic Development Administration.

If Alaska companies have lost sales or production to foreign competitors, they are eligible for up to $75,000 in matching grants for projects of their choice. Smaller companies, for example, can get up to $30,000 with a 25 percent match of $7,500 for the company and the grant covers the rest. Large companies have a 50/50 split with a maximum grant of $150,000.

The money can't be used to buy equipment or pay salaries, but it can cover consulting, training, website development and marketing.

"We do a lot in the marketing field," Kuhar said. "We help develop a marketing strategy and then help produce the tools needed to implement the strategy."

The TAA grants can help producers in manufacturing, agriculture, seafood and service firms such as fish brokerage companies. Co-ops and trade groups also may apply. Kuhar said his staff assists from the get go, from submitting applications and preparing and implementing projects through completion.

He added that the trade grants also are a tool for Alaska legislators.

"In some states we have very good success where the legislators refer clients to us. We are a tool to help their

constituents," Kuhar said. Learn more at www.nwtaac.org

Fish switch

Arni Thomson, one of Alaska's best known fishery advocates and policy wonk has joined the new Alaska Salmon Alliance as its first executive director. The ASA was formed in late 2011 to promote policies that protect fish and ensure long term fishing benefits at Cook Inlet. Its membership includes Inlet fishing organizations, fishermen, and the region's four major processors.

Thomson is well known for his decade's long work at state and federal levels with Bering Sea crab fisheries and as recent president of United Fishermen of Alaska.

Thomson says the ASA will not focus on salmon fishing disputes between Cook Inlet user groups. Another focus is the loss of salmon habitat due to encroaching development and land uses.

"We want to stay out of allocative issues as much as possible. The objective is public education, communication and outreach to all user groups in the Cook Inlet salmon fisheries," he said in an interview.

The Alliance aims to make sure that the commercial fishing sector retains access to the resource. Both sport charters and Inlet setnetters were completely shut down last summer to protect king salmon returns, along with closures in the Mat Su drainage.

Thomson said at a recent meeting of a new Board of Fisheries task force "there was a serious effort by all the parties to start exchanging real proposals" and that "some interim solutions could be tested this summer."

Fish watch

The nation's largest fishery opens on January 20 - Alaska pollock. This year's total catch from the Bering Sea and Gulf of Alaska is 1,387,146 metric tons or more than 3 billion pounds. Alaska pollock accounts for 30 percent of all U.S. seafood landings.

Fish bucks

American Seafoods Company is accepting applications for its Alaska community grant program. A total of $30,000 will be given out by the company's Community Advisory Board for projects addressing issues such as hunger, housing, safety, education, research, natural resources and cultural activities. Deadline to apply is Feb. 6; recipients will be selected

on Feb. 14th.

Request forms are available

at www.americanseafoods.com,

by contacting kim.lynch@americanseafoods.com or call 206-256-2659.

Contact us about this article at editor@thedutchharborfisherman.com

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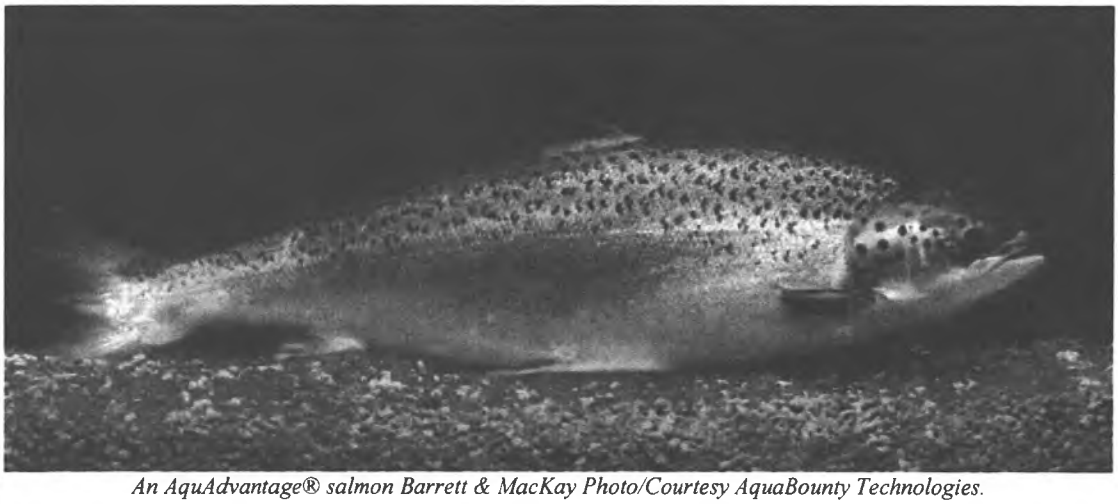
White House Ends Its Interference in Approval of Genetically Modified Salmon

By Jon Entine | Updated Friday, Dec. 21, 2012, at 2:03 PM ET
| Updated Friday, Dec. 21, 2012, at 2:03 PM ET

Slate.com

ENABLE SOCIAL READING White House Ends Its Interference in a Scientific Review

Leaks suggest politics blocked genetically modified salmon. Now the fish is on its way to approval.



An AquAdvantage® salmon Barrett & MacKay Photo/Courtesy AquaBounty Technologies.

Update, Dec. 21, 2012: On Wednesday, Slate and the Genetic Literacy Project published investigations into whether the White House was interfering in a scientific review process by the FDA. An environmental assessment of genetically modified salmon had cleared all internal regulatory hurdles and was due to be released in April, but the Obama administration put a hold on the release. Hours after the stories were published, according to FDA sources, the White House lifted its hold. Today, the FDA finally published the environmental assessment, one of the final stages in what could be the first federal approval of a genetically-modified animal in the United States.

The original article is below:

As president, Barack Obama promised to change "the posture of our federal government from being one of the most anti-science administrations in American history to one that embraces science and technology." To publicly guarantee that, the White House issued a science integrity memorandum in 2009 pledging, "Political officials should not suppress or alter scientific or technological findings and conclusions."

Except, it appears, when it comes to the fate of the first transgenic animal to be considered for federal approval—a genetically modified (GM) salmon developed by AquaBounty Technologies of Massachusetts. The so-called AquAdvantage salmon is a fish that has been modified to grow to market size in about half the usual time. It's raised in contained structures that eliminate many of the environmental effects that make farmed salmon unpopular with some environmentalists, including the generation of excess waste and the potential to spread disease or escape and compete with wild salmon.

The bioengineered salmon has been winding its way through a labyrinthine approval process for 17 years. And it's been in regulatory purgatory for more than two years since the Food and Drug Administration held public hearings—and promised a final determination within weeks.

As recently as last week, a spokeswoman for the Food and Drug Administration told me, "The application is still under review." But that's not the whole story.

The Genetic Literacy Project (GLP), which I direct, has learned that in April, the FDA completed its draft environmental assessment (EA), the final step in its scientific evaluation. The agency confirmed that the salmon is safe to eat and poses no serious environmental hazards. The approval document had made its way through every appropriate agency in an interagency review process coordinated by the Office of Science and Technology Policy (OSTP), which oversees the president's science policies and is empowered to enforce integrity guidelines.

But within days of the expected public release of the EA this spring, the application was frozen. The delay, sources within the government say, came after meetings with the White House, which was debating the political implications of approving the GM salmon, a move likely to infuriate a portion of its base.

The GLP has been leaked a confidential copy of the 159-page assessment, dated April 19, 2012, which had been circulated and approved—a summary of which we have been given permission to publish. It states that the Center for Veterinary Medicine, which has regulatory responsibility within the FDA, reached a "no effect" determination under the Endangered Species Act. That should have led to the publication of the EA in the Federal Register, paving the way for a public review period, which would have lasted 30 to 90 days. If the process had been followed, genetically modified salmon could have been on dinner tables by next year.

When asked about the holdup, FDA spokeswoman Siobhan DeLancey said, "I recommend you talk to the OMB or the White House. That's all I'm willing to say."

If, as FDA sources confirm, the scientific review is complete, the refusal to publish the draft EA in the Federal Register directly contradicts not only the president's directives, but also regulatory mandates ensuring the integrity of science at the Department of Health and Human Services, which oversees the FDA, and OSTP, which is under the executive branch.

"This shouldn't be happening," said Gregory Jaffe, director of biotechnology at the Center for Science in the Public Interest. Although cautious about biotechnology, Jaffe participated in a scientific review panel that unanimously endorsed the FDA's findings that the salmon was safe. "AquaBounty deserves regulatory due process," he added. "We need science-based decisions made in a timely fashion. The public deserves this, and there are questions whether that is what's going on in this case."

AquaBounty's fish is an Atlantic salmon with two added genetic elements: a Chinook salmon growth hormone gene and an on-off switch from the ocean pout, another edible fish. The modifications make the salmon grow through the winter, unlike conventional salmon. Only females are produced for consumption, and they are rendered sterile.

Americans consume 650 million pounds of salmon each year, with more than 530 million pounds of that imported. If allowed into the marketplace, the AquAdvantage salmon, as it is called, could lead to lower salmon prices and an increase in consumption of salmon, a heart-healthy food.

GM crops and animals are regulated under the 1986 Coordinated Framework. But while plants have a clear path to approval under guidance in place by 1992, animals must travel through regulatory no-man's land. The FDA has approved only one product, an anticoagulant derived from the milk of transgenic goats.

AquaBounty initiated its application to commercialize in 1995. By 2004, it had assembled its "data package," but its path to approval was never entirely clear. Finally in 2008, the Bush administration decided that transgenic animals intended for the dinner table would be regulated as animal drugs by the FDA's Center for Veterinary Medicine.

Anticipating environmental concerns, AquaBounty developed the salmon at a secure indoor facility in Prince Edward Island, Canada. A second facility was established in the mountains of Panama to evaluate whether the fish perform well under standard commercial conditions.

As part of its evaluation, the FDA inspected both facilities, determining the fish would be securely contained with multiple redundant systems that would prevent the salmon from escaping into the wild—one of the main concerns for people opposed to GMOs. The FDA concluded that even a catastrophic event at the Panamanian facility would not pose a threat. Lengthy expanses of warm, muddy water outside the facility would serve as a graveyard to any escaped cold-water fish. If some somehow made it to the ocean, they would die in the warm currents thousands of miles from their spawning grounds in the frigid waters of the North Atlantic.

There is no chance, independent scientists say, that released salmon would win a Darwinian war in open waters with wild salmon—the so-called Trojan gene effect. GMO opponents cite a 1999 study concluding that modified fish that grow extra large would have a competitive advantage, threatening extinction of conventional varieties. But AquaBounty engineered the salmon so it grows no larger than conventional fish. A co-author of that study, Bill Muir of Purdue University, who developed the risk assessment model for transgenic fish for the Department of Agriculture, studied the AquaBounty salmon and determined it has no fitness advantage—and now endorses it.

After years of reviews, in September 2010, the FDA released a long-awaited comprehensive guidance analysis that found the salmon environmentally benign and safe for human consumption. The agency concluded the AquAdvantage salmon is comparable to the traditional variety in every measurable way.

To underscore its commitment to transparency, the FDA's CVM convened a science advisory panel, which held public hearings a few weeks later. The scientists, including representatives from organizations skeptical of GMOs, unanimously reaffirmed the food safety report: AquaBounty salmon was materially identical to conventional salmon and posed no apparent environmental hazards.

The final step in the process—a "no effect" finding required under the Endangered Species Act—was expected within weeks, which would lead to its publication in the Federal Register and public hearings. Echoing one headline—"FDA to Approve GM Salmon Despite Strong Opposition"—everyone from the New York Times to anti-GMO activist groups was reporting that AquaBounty appeared to be on its way to producing the fish eggs that other companies could purchase to raise the quick-growing salmon.

Nothing has been released by the FDA since.

Friends of the Earth, Greenpeace, Union of Concerned Scientists, and other anti-GMO groups sent a letter to FDA Commissioner Margaret Hamburg demanding further review of whether wild salmon could face a competitive survival risk. AquaBounty's response noted the FDA's expert panel had already rejected those speculations.

Congressional politics then flared up. Forty members of Congress, most from the Pacific Northwest—whose salmon competes with Atlantic salmon—sent a letter to the FDA citing a supposed lack of transparency in the process. Whether because of the suddenly hostile political climate or renewed lobbying by opponents, the formal environmental assessment, which reporters had been told might be released any day, was never made public.

When rumors that approval was near surfaced again, in June 2011, a dozen members of the House, in a voice vote, approved a budget amendment prohibiting the FDA from approving the AquaBounty salmon. "Frankenfish is uncertain and unnecessary," said the bill's sponsor, Rep. Don Young, R-Alaska. "Should it receive approval as an animal drug, it clears the path to introduce it into the food supply; my amendment cuts them off before they can get that far." The Senate did not immediately take up the bill.

Critics cited the snail-like pace of approval as evidence that the AquaBounty application was in trouble. "If the FDA was so assured of the scientific merits of this application, they would have approved it by now," said Colin O'Neil of the Center for Food Safety. "The mere fact that it has taken this long tells me that jury is still out."

In fact, by summer 2011, by all reports, the FDA had yet again reaffirmed its finding that the salmon was ready for approval. The draft environmental assessment was prepared and circulated under an interagency review process coordinated by the president's Office of Science and Technology Policy. The two other agencies responsible for assessing the application under the Endangered Species Act, Fish and Wildlife, and the National Marine Fisheries Service, signed off on the "no effect" determination.

The review even went to the OMB at the Executive Office, which under normal circumstances would have no input on individual applications. Its authority is usually limited to reviewing new regulations. However I've been told that, because of the politicized nature of this case, the White House wanted to be involved. According to Talking Points Memo and my sources, OMB signed off on release of the EA that summer.

The approval was derailed when anti-GMO organizations circulated a report that the salmon at AquaBounty's Canadian facility had tested positive for a salmon virus two years previously. The company had reported the incident to Canadian authorities but not to the FDA—which reportedly did

not make officials happy. The FDA immediately put a hold on the release of the draft EA. It took months before the agency determined the incident had been isolated and had nothing to do with AquaBounty's technology.

While that controversy was being addressed, Food and Water Watch, Consumers Union, and the Center for Food Safety submitted a formal petition in February 2012, demanding the FDA reclassify AquaBounty's AquAdvantage salmon and its components as a food additive, setting up the possibility of a different regulatory regime that would have resulted in the process starting over at square one. The FDA stood firm, reaffirming its commitment to the evaluation by the CVM.

Finally, on April 19, 2012, the FDA circulated a draft EA that was an almost exact copy of what had been approved months before. The "approval of the AquaAdvantage Salmon," the document states, "... will not jeopardize the continued existence of the United States populations of threatened or endangered Atlantic salmon, or result in the destruction or adverse modification of their critical habitat."

For AquaBounty, the end again seemed in sight.

"It's a lengthy process, especially when you are dealing with a first-in-kind product that cuts across many dimensions," the FDA's Hamburg told the New York Times. A revised environmental assessment, she said, would be issued "very soon"—in a matter of days, weeks at most.

Then the gears of government and communication between the federal officials and AquaBounty shut down completely.

Late spring was a challenging time at the White House. The GOP primaries had just wrapped up, and Republicans were coalescing around Mitt Romney, who appeared to be a formidable candidate. The president's popularity remained lackluster. A late June Newsweek/Daily Beast poll showed that 54 percent of Americans thought Obama was doing a poor job—one of the lowest approval ratings of his presidency.

The main concern, politicos mused at the time, was a lack of enthusiasm by his political base, whose turnout would be critical if Obama hoped to squeeze out a victory during distressed economic times. Environmental activists were particularly ambivalent. They were upset about the president's unwillingness to block the Keystone pipeline and shale gas exploration using hydraulic fracturing.

And some of them were incensed about what they considered weak-kneed regulatory oversight by the FDA on chemicals and GMOs, which they believed had gotten a pass during the Bush administration. In late March, the FDA, citing "sound science," rejected a petition by the Natural Resources Defense Council to introduce tough restrictions on bisphenol A (BPA), a controversial plastic additive. "The FDA is out-of-step with scientific and medical research," the NRDC wrote in a blistering rebuke. "The agency has failed to protect our health and safety."

The last thing the Obama re-election effort needed was a messy dustup over the first genetically modified animal. But that was brewing. Union of Concerned Scientists' Margaret Mellon, a foe of bioengineering, had already publicly warned of "a firestorm of negative response" if the FDA approved the salmon.

With political opposition bubbling in Congress and anti-GMO activists mobilizing in cyberspace, AquaBounty's president and CEO, Ronald Stotish, encountered FDA Secretary Hamburg at an industry event in Boston.

"You've been great," he quoted her as saying. "You've been patient and taken the high road." She pointedly did not repeat her statement of a month before that the publication of the EA would be coming any day now.

Her comment set off alarm bells within the industry. Was there a new holdup? Stotish and Jim Greenwood, president of the biotech industry trade group BIO, met on July 11 with HHS Secretary Kathleen Sibelius' senior adviser Andrea Palm. Palm is known as a "fixer"—she coordinates policy with politics, often working directly with Valerie Jarrett, the president's most trusted adviser. Sources say the White House had been hearing regularly from anti-GMO organizations.

Palm professed to have no knowledge of the salmon controversy, according to people in the meeting. Palm promised to get back to them within a week. Five months later, dozens of calls and emails have gone unreturned. I've fared no better; Palm did not respond to my request for a statement.

Sources within the FDA have repeatedly asserted that the scientific review process is complete and the agency is not the source of the holdup. The media office says the application itself has not been formally approved. DeLancey referred me to the executive branch, to the White House and OMB. The OMB referred me back to the FDA. The White House declined to respond to requests for comment.

The regulatory foot-dragging sparked a letter sent to the White House in late September from more than 50 scientists and interested parties concerned about the delay.

"There is much more at stake here than just a fish," the letter asserted. "The inexplicable regulatory bottleneck that has been encountered by the AquAdvantage salmon suggests that the FDA's science-based regulatory review process for the products of animal biotechnology has no predictable timeline and is holding up the development of an industry that promotes economic growth, innovation, competitiveness, and job creation in the United States."

China has launched an $800 million public-private investment into transgenic animals, and genetically modified animals are being developed in India, New Zealand, and across Latin America, including in Cuba. But North America has become a dead zone.

James Murray, an animal scientist at the University of California–Davis has developed goats that make milk with diarrhea-preventing lysozyme, a bacteria-fighting protein that could save children's lives. With no government or private money on the horizon, he's set up his lab in Brazil, a more biotech-friendly locale. "When you don't have a regulatory pathway forward and the government doesn't support research in this area, what company will invest in this field?" he asked. "None. The AquaBounty situation is just confirmation of a hopelessly politicized process."

The future of animal genetics is so dire, universities are killing off courses. "My program started off doing genetic engineering," said Alison Van Eenennaam, a University of California–Davis animal scientist who co-authored a scathing article for Nature Biotechnology on the broken approval process.

"I couldn't get any government funding for my work in this area, so I shut the program down. Why would I train graduate students for jobs that won't exist?"

A question remains whether the White House or FDA could face legal challenges for intervening in a scientific evaluation process that is supposed to be insulated from politics. The Federal Food, Drug & Cosmetic Act requires that the Health and Human Services secretary approve the AquaBounty application within six months after compliance with Section 512. The company holds letters from earlier this year from the FDA advising that every major component of its application has been successfully addressed.

The FDA, apparently caught in the political crossfire, appears to be in violation of its own scientific integrity guidelines, adopted last February. Scientists and staffers involved in the process say they have been instructed not to discuss the application. Key provisions of the guidelines require the agency to shield its staff from "political influence" and to allow the "FDA staff to communicate their personal scientific or policy views to the public, even when those views differ from official Agency opinions."

The FDA has referred any questions about the logjam to the White House. The chief spokesperson for the OSTP, which is empowered by the executive branch to ensure that scientists are insulated from political concerns, has not responded to requests for comment.

"I think the credibility of our regulatory process is destroyed if someone at the White House or even at the FDA can essentially, arbitrarily pocket veto an application," said Stotish.

But that's what's going on, say those monitoring science policy—even those critical of the AquaBounty salmon. The Union of Concerned Scientists, which has campaigned against bioengineering, expressed its concern that the science approval process is being compromised by politics.

"If the statutes say the decision is supposed to be made based on science, and promptly, the government should follow that," Francesca Grifo, who helped craft UCS's scientific Integrity reports, told me. "Despite what the President might have said about scientific integrity, we've seen White House interference on what should be science regulatory decisions. They have a legal responsibility to follow their own guidelines."

X



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HJR 5: No to GMO Salmon



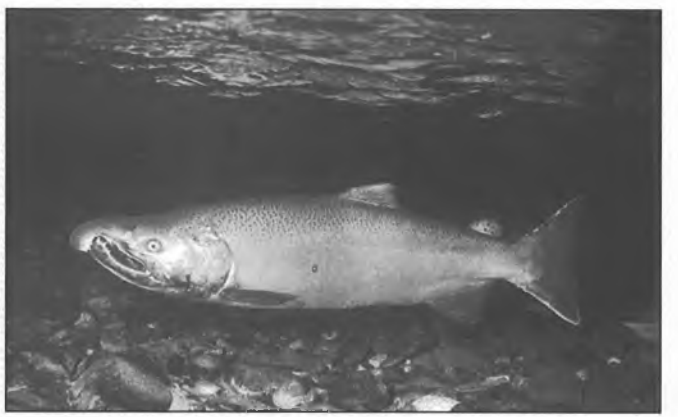
Significance of this decision

- Final stage of approval
- First time FDA would approve a genetically modified (GM) organism for human consumption

What is GM salmon?

- Genetically modified using fast growing Atlantic salmon and DNA from two other species of fish
  - Ocean pout (an eel like fish)
  - Chinook salmon (King)





How does it work?

- Chinook DNA makes the GE fish grow bigger faster
- Ocean pout DNA makes it grow year-round



- The DNA of the top fish has been genetically engineered to continually produce growth hormones for its entire life
- GM salmon grow to full size twice as fast

Need for Action

- December 2012 announcement by FDA that genetically modified salmon pose no significant threat (FONSI)
- Comments being accepted until February 25, 2013
- Legislature would join Governor Parnell, Senators Mark Begich and Lisa Murkowski, and Representative Don Young in opposing this application

Concerns about GM salmon

- Possible effects of GM salmon
  - Threat to wild salmon stalks
  - Risk the state's economy
  - Risks to public health

Threat to Wild Salmon

- Escapement poses a threat
- Reports from Alaska fisherman that they have caught farmed Atlantic salmon that was reared in Washington and British Columbia
- Risks were recognized by the USFWS and NOAA

Threat to Wild Salmon

- GM salmon can spread disease
- More aggressive, can out compete wild salmon
- Cross breed with wild fish

Risk to Human Health

- People who eat the GMO salmon will be eating the foreign DNA, along with the growth hormones.
- The FDA has not conducted sufficient long term safety testing to determine that genetically engineered salmon is safe to eat and that long- term consumption does not pose health risks
- Vulnerable populations: children and expectant mothers.

Risk to State's Economy

- Look back to introduction of farmed salmon
- Significant investments in marketing and branding for health benefits
- Could undermine confidence in Alaska wild salmon
- Second largest private sector employer with over 70,000 jobs

Let's speak in one
UNIFIED ALASKAN VOICE!

Questions?

HR

6

<TARGET><BILL>HR 6</BILL><SUBJECT>HR 6</SUBJECT><COMM>HFSH28</COMM></TARGET>

Alaska State Legislature

State Capitol, Room 102
Juneau, AK 99801
Phone: 465-2689
Fax: 465-3472
Toll Free (800) 665-2689
Rep.Paul.Seaton@akleg.gov

270 W. Pioneer Avenue
Suite B
Homer, AK 99603
Phone: 235-2921
Fax: 235-4008

House Fisheries Committee

Representative Paul Seaton, Chair

HR 6 CHINOOK BYCATCH LIMITS

Sponsor Statement

Alaska's recreational, subsistence, and commercial fisheries have faced dramatic shortfalls of Chinook salmon in recent years leading to fisheries closures and hardship for Alaskan residents. In the summer of 2012 Governor Parnell issued a disaster declaration for the Yukon-Kuskokwim and Cook Inlet regions due to low Chinook returns.

In the fall of 2012 the Department of Fish and Game convened a Chinook Symposium in Anchorage to identify king salmon knowledge gaps in order to maintain sustainable stocks. This is one of many efforts to learn more about this important fish and why there has been low abundance in certain areas. While long-term research is underway, it is essential to begin dealing with the problems facing Chinook salmon that we do know about.

One of these problems is salmon by-catch in Bering Sea and Gulf of Alaska trawl fisheries. According to a 2013 report by the North Pacific Fisheries Management Council, the 5-year average for Chinook salmon by-catch in these fisheries was 40,621 fish. If not intercepted, many of these king salmon would have returned to Alaskan waters and provided harvest opportunities as well as much needed escapement.

This resolution asks the North Pacific Fishery Management Council to take action to reduce the level of Chinook salmon by-catch in Bering Sea and Gulf of Alaska trawl fisheries to at least half of the current limits. In this time of low king salmon abundance, it is critical that unintended mortality be reduced. This resolution is an attempt to address a known cause of substantial mortality and help restore strong king salmon runs to our rivers.

— Need to Adopt —

28-LS0575\O
Bullard
3/20/13

CS FOR HOUSE RESOLUTION NO. 6( )

as amended

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-EIGHTH LEGISLATURE - FIRST SESSION

BY

Offered:
Referred:

Sponsor(s): HOUSE SPECIAL COMMITTEE ON FISHERIES

A RESOLUTION

Requesting that the North Pacific Fishery Management Council take action to reduce the quantity of Chinook salmon bycatch in the Gulf of Alaska and Bering Sea trawl fisheries by setting new limits in the Gulf of Alaska trawl fisheries and lowering the existing limits in the Gulf of Alaska and Bering Sea pollock fisheries to at least half of the current limits; and requesting that the North Pacific Fishery Management Council require that participants in those trawl fisheries take part in the SeaShare program and that edible bycatch from the Gulf of Alaska and Bering Sea fisheries be provided to Alaska residents.

BE IT RESOLVED BY THE HOUSE OF REPRESENTATIVES:

WHEREAS the Chinook salmon, the official state fish, is of critical importance to the state, providing significant income to the state and its residents through commercial and charter fisheries, and providing a critical source of food taken in recreational and subsistence fisheries; and

WHEREAS the Chinook salmon is a cultural icon for both Native and non-Native

Alaskans; and

WHEREAS, in 2012, Chinook salmon runs were dramatically low, and disaster declarations were made for Upper Cook Inlet and the Yukon and Kuskokwim Rivers; and

WHEREAS, in 2012, economic losses to the state for commercial and recreational fisheries were over $34,000,000, not including significant effects on subsistence users and on the cultural and spiritual values of Alaskans; and

WHEREAS, in 2012, setnet fisheries in Upper Cook Inlet were almost entirely shut down for fear of intercepting hundreds of Chinook salmon; and

WHEREAS, in 2012, recreational fisheries for Chinook salmon on the Kenai River were completely shut down; and

WHEREAS, in 2012, subsistence fisheries in the Yukon and Kuskokwim Rivers were under severe restrictions, and, despite those restrictions, many escapement goals were not met; and

WHEREAS Chinook salmon stocks from Alaska are caught and discarded in the Bering Sea and Gulf of Alaska pollock fisheries and other trawl fisheries in the Gulf of Alaska; and

WHEREAS Chinook salmon bycatch is a direct and controllable source of mortality for extremely valuable and declining salmon runs throughout the state; and

WHEREAS nets containing salmon-excluding devices are available, and new concepts and designs to reduce Chinook salmon bycatch are becoming available; and

WHEREAS the Chinook salmon bycatch cap in the Bering Sea pollock fishery is set at 60,000, which is more than the entire subsistence fishery on the Yukon River; and

WHEREAS the Chinook salmon bycatch cap in the Gulf of Alaska pollock fishery is set at 25,000, which is more than the 10-year average bycatch in the fishery; and

WHEREAS the Gulf of Alaska bycatch allowance represented 20 percent of the 2011 Cook Inlet, Prince William Sound, Kodiak, Chignik, and Alaska Peninsula sport, subsistence, and commercial Chinook salmon harvest and will likely represent a greater percentage of the 2012 harvest; and

WHEREAS the other Gulf of Alaska trawl fisheries, other than the pollock fishery, currently operate without any bycatch limits; and

WHEREAS the North Pacific Fishery Management Council is considering a cap on

Gulf of Alaska fisheries, other than the pollock fishery, and is initiating a catch share program for the Central Gulf of Alaska trawl fisheries, which could lead to the adoption of regulations that would further reduce bycatch;

BE IT RESOLVED that the House of Representatives requests that the North Pacific Fishery Management Council take action to reduce Chinook salmon bycatch in the Gulf of Alaska and Bering Sea trawl fisheries by setting new limits in the Gulf of Alaska trawl fisheries and lowering existing limits in the Bering Sea and Gulf of Alaska pollock fisheries to at least half of the current limits and to further reduce bycatch in any Gulf of Alaska catch share program; and be it

FURTHER RESOLVED that the House of Representatives requests that the North Pacific Fishery Management Council require 100 percent observer coverage in all Gulf of Alaska trawl fisheries to provide accurate estimates of bycatch; and be it

FURTHER RESOLVED that the House of Representatives requests that the North Pacific Fishery Management Council require that participants in the Gulf of Alaska and Bering Sea trawl fisheries take part in the SeaShare program and require that edible bycatch from these fisheries be provided to Alaska residents.

COPIES of this resolution shall be sent to the Honorable Sean Parnell, Governor of Alaska; and all members of the North Pacific Fishery Management Council.

LEGAL SERVICES

DIVISION OF LEGAL AND RESEARCH SERVICES
LEGISLATIVE AFFAIRS AGENCY
STATE OF ALASKA

(907) 465-3867 or 465-2450
FAX (907) 465-2029
Mail Stop 3101

State Capitol
Juneau, Alaska 99801-1182
Deliveries to: 129 6th St., Rm. 329

MEMORANDUM March 20, 2013

SUBJECT: SeaShare Program CSHR 6( ) (Work Order No. 28-LS0575\O)

TO: Representative Bob Herron
Attn: Kate Wolgemuth

FROM: Alpheus Bullard TLAB
Legislative Counsel

You requested that a conceptual amendment relating to the SeaShare program[1] be added to HR 6. I made a corresponding change to the title of the resolution.

The conceptual amendment adding a new "Whereas" clause to SeaShare also provided that edible bycatch should be provided to Alaska residents. In drafting the clause I provided that the edible bycatch was bycatch from the Gulf of Alaska and Bering Sea trawl fisheries. Is this consistent with the committee's intent? Note also that it is not clear that the SeaShare program provides any bycatch to Alaska residents.

Finally, the committee may wish to add one or more "Whereas" clauses relating to the SeaShare program to support the new "Further Resolved" paragraph.

If you have questions, or changes that you would like made to this draft, please do not hesitate to contact me.

TLAB:ljw
13-192.ljw

Enclosure

[1] Information about the SeaShare organization can be found at http://www.seashare.org and http://www.seattlefoundation.org/npos/Pages/Seashare.aspx.

Need to Draft

28-LS0360\C
Bullard
3/20/13

CS FOR HOUSE BILL NO. 110( )

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-EIGHTH LEGISLATURE - FIRST SESSION

BY

Offered:
Referred:

Sponsor(s): REPRESENTATIVES SEATON, Gara

A BILL

FOR AN ACT ENTITLED

"An Act prohibiting the use of barbed hooks in certain freshwater areas."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

*** Section 1.** AS 16.05 is amended by adding a new section to read:

Sec. 16.05.422. Prohibition on the use of barbed hooks. (a) A person may not use a barbed hook when participating in a freshwater fishery for a species that may not be retained under a regulation adopted by the Board of Fisheries.

(b) The Board of Fisheries may prohibit the use of barbed hooks in a freshwater fishery coincident with a fishery for a species that may not be retained under a regulation adopted by the Board of Fisheries.

(c) In this section,

(1) "barbed hook" means a hook with at least one subsidiary point facing in a different direction from that of the main point of the hook; "barbed hook" does not include a hook from which all barbs have been pinched down, filed off, or otherwise removed;

(2) "freshwater" means all inland water;

(3) "inland water" means water separated from salt water at the mouths of creeks and streams and rivers at a line between the extremities of the banks of a river at a mean low tide or at a point to be determined and adequately marked by the department.

28-LS0575\N
Nauman/Bullard
2/27/13

HOUSE RESOLUTION NO.

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-EIGHTH LEGISLATURE - FIRST SESSION

BY

Introduced:
Referred:

A RESOLUTION

Requesting that the North Pacific Fishery Management Council take action to reduce the quantity of Chinook salmon bycatch in the Gulf of Alaska and Bering Sea trawl fisheries by setting new limits in the Gulf of Alaska trawl fisheries and lowering the existing limits in the Gulf of Alaska and Bering Sea pollock fisheries to at least half of the current limits.

BE IT RESOLVED BY THE HOUSE OF REPRESENTATIVES:

WHEREAS the Chinook salmon, the official state fish, is of critical importance to the state, providing significant income to the state and its residents through commercial and charter fisheries, and providing a critical source of food taken in recreational and subsistence fisheries; and

WHEREAS the Chinook salmon is a cultural icon for both Native and non-Native Alaskans; and

WHEREAS, in 2012, Chinook salmon runs were dramatically low, and disaster declarations were made for Upper Cook Inlet and the Yukon and Kuskokwim Rivers; and

WHEREAS, in 2012, economic losses to the state for commercial and recreational

fisheries were over $34,000,000, not including significant effects on subsistence users and on the cultural and spiritual values of Alaskans; and

WHEREAS, in 2012, setnet fisheries in Upper Cook Inlet were almost entirely shut down for fear of intercepting hundreds of Chinook salmon; and

WHEREAS, in 2012, recreational fisheries for Chinook salmon on the Kenai River were completely shut down; and

WHEREAS, in 2012, subsistence fisheries in the Yukon and Kuskokwim Rivers were under severe restrictions, and, despite those restrictions, many escapement goals were not met; and

WHEREAS Chinook salmon stocks from Alaska are caught and discarded in the Bering Sea and Gulf of Alaska pollock fisheries and other trawl fisheries in the Gulf of Alaska; and

WHEREAS Chinook salmon bycatch is a direct and controllable source of mortality for extremely valuable and declining salmon runs throughout the state; and

WHEREAS the Chinook salmon bycatch cap in the Bering Sea pollock fishery is set at 60,000, which is more than the entire subsistence fishery on the Yukon River; and

WHEREAS the Chinook salmon bycatch cap in the Gulf of Alaska pollock fishery is set at 25,000, which is more than the 10-year average bycatch in the fishery; and

WHEREAS the Gulf of Alaska bycatch allowance represented 20 percent of the 2011 Cook Inlet, Prince William Sound, Kodiak, Chignik, and Alaska Peninsula sport, subsistence, and commercial Chinook salmon harvest and will likely represent a greater percentage of the 2012 harvest; and

WHEREAS the other Gulf of Alaska trawl fisheries, other than the pollock fishery, currently operate without any bycatch limits; and

WHEREAS the North Pacific Fishery Management Council is considering a cap on Gulf of Alaska fisheries, other than the pollock fishery, and is initiating a catch share program for the Central Gulf of Alaska trawl fisheries, which could lead to the adoption of regulations that would further reduce bycatch;

BE IT RESOLVED that the House of Representatives requests that the North Pacific Fishery Management Council take action to reduce Chinook salmon bycatch in the Gulf of Alaska and Bering Sea trawl fisheries by setting new limits in the Gulf of Alaska trawl

fisheries and lowering existing limits in the Bering Sea and Gulf of Alaska pollock fisheries to at least half of the current limits and to further reduce bycatch in any Gulf of Alaska catch share program; and be it

FURTHER RESOLVED that the House of Representatives requests that the North Pacific Fishery Management Council require 100 percent observer coverage in all Gulf of Alaska trawl fisheries to provide accurate estimates of bycatch.

COPIES of this resolution shall be sent to the Honorable Sean Parnell, Governor of Alaska; and all members of the North Pacific Fishery Management Council.

28-LS0575\U
Bullard
2/25/13

HOUSE RESOLUTION NO.

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-EIGHTH LEGISLATURE - FIRST SESSION

BY

Introduced:
Referred:

A RESOLUTION

Requesting that the North Pacific Fishery Management Council take action to reduce the quantity of Chinook salmon bycatch in the Gulf of Alaska and Bering Sea trawl fisheries by setting new limits in the Gulf of Alaska trawl fisheries and lowering the existing limits in the Gulf of Alaska and Bering Sea pollock fisheries to at least half of the current limits.

BE IT RESOLVED BY THE HOUSE OF REPRESENTATIVES:

WHEREAS the Chinook salmon, the official state fish, is of critical importance to the state, providing significant income to the state and its residents through commercial and charter fisheries, and providing a critical source of food taken in recreational and subsistence fisheries; and

WHEREAS the Chinook salmon is a cultural icon for both Native and non-Native Alaskans; and

WHEREAS, in 2012, Chinook salmon runs were dramatically low, and disaster declarations were made for Upper Cook Inlet and the Yukon and Kuskokwim Rivers; and

WHEREAS, in 2012, economic losses to the state for commercial and recreational

fisheries were over $34,000,000, not including significant effects on subsistence users and on the cultural and spiritual values of Alaskans; and

WHEREAS, in 2012, setnet fisheries in Upper Cook Inlet were almost entirely shut down for fear of intercepting hundreds of Chinook salmon; and

WHEREAS, in 2012, recreational fisheries for Chinook salmon on the Kenai River were completely shut down; and

WHEREAS, in 2012, subsistence fisheries in the Yukon and Kuskokwim Rivers were under severe restrictions, and, despite those restrictions, many escapement goals were not met; and

WHEREAS Chinook salmon stocks from Alaska are caught and discarded in the Bering Sea and Gulf of Alaska pollock fisheries and other trawl fisheries in the Gulf of Alaska; and

WHEREAS Chinook salmon bycatch is a direct and controllable source of mortality for extremely valuable and declining salmon runs throughout the state; and

WHEREAS the Chinook salmon bycatch cap in the Bering Sea pollock fishery is set at 60,000, which is more than the entire subsistence fishery on the Yukon River; and

WHEREAS the Chinook salmon bycatch cap in the Gulf of Alaska pollock fishery is set at 25,000, which is more than the 10-year average bycatch in the fishery; and

WHEREAS the other Gulf of Alaska trawl fisheries, other than the pollock fishery, currently operate without any bycatch limits; and

WHEREAS the North Pacific Fishery Management Council is considering a cap on Gulf of Alaska fisheries, other than the pollock fishery, and is initiating a catch share program for the Central Gulf of Alaska trawl fisheries, which could lead to the adoption of regulations that would further reduce bycatch;

BE IT RESOLVED that the House of Representatives requests that the North Pacific Fishery Management Council take action to reduce Chinook salmon bycatch in the Gulf of Alaska and Bering Sea trawl fisheries by setting new limits in the Gulf of Alaska trawl fisheries and lowering existing limits in the Bering Sea and Gulf of Alaska pollock fisheries to at least half of the current limits and to further reduce bycatch in any Gulf of Alaska catch share program; and be it

FURTHER RESOLVED that the House of Representatives requests that the North

Pacific Fishery Management Council require 100 percent observer coverage in all Gulf of Alaska trawl fisheries to provide accurate estimates of bycatch.

COPIES of this resolution shall be sent to the Honorable Sean Parnell, Governor of Alaska; and all members of the North Pacific Fishery Management Council.

Draft Alaska Legislature Resolution

Requesting the North Pacific Fishery Management Council take action to reduce Chinook salmon bycatch in the Gulf of Alaska and Bering Sea trawl fisheries by setting new limits in Gulf fisheries and lowering existing limits in the Bering Sea and Gulf pollock fisheries to at least half of the current limits.

WHEREAS Chinook salmon, the official fish of Alaska, are of critical importance to the state of Alaska, providing for significant income to the state and its residents via commercial and charter fisheries, a critical source of food via recreational and subsistence fisheries and a cultural icon for both Native and non-Native Alaskans; and

WHEREAS Chinook salmon runs were dramatically low in 2012, with disaster declarations for the Upper Cook Inlet, Yukon and Kuskokwim Rivers; and

WHEREAS economic losses to the State of Alaska for commercial and recreational fisheries alone was over $34 million, not including significant impacts to subsistence users and economic, cultural and spiritual values to Alaskans; and

WHEREAS setnetters in Upper Cook Inlet were almost entirely shut down in 2012 for fear of intercepting hundreds of Chinook salmon; and

WHEREAS recreational fisheries for Chinook salmon on the Kenai River were completely shut down in 2012, and

WHEREAS subsistence fisheries in the Yukon and Kuskokwim Rivers were under severe restrictions in 2012 and despite these restrictions many escapement goals were still not met;

WHEREAS these same Chinook salmon are caught and discarded in the pollock fisheries in the Bering Sea and Gulf of Alaska and other trawl fisheries in the Gulf of Alaska; and

WHEREAS this bycatch is a direct and controllable source of mortality for extremely valuable and declining salmon runs throughout the State; and

WHEREAS the Chinook salmon bycatch cap in the Bering Sea pollock fishery is set at 60,000 Chinook salmon, which is more than the entire subsistence fishery on the Yukon River; and

WHEREAS the Chinook salmon bycatch cap in the Gulf of Alaska pollock fishery is set at 25,000 Chinook salmon, which exceeds the 10 year average bycatch in the fisheries; and

WHEREAS the other Gulf of Alaska trawl fisheries beyond the pollock fishery currently operate under no limit; and

WHEREAS the Council is currently considering a cap on the non-pollock fisheries in the Gulf of Alaska and is initiating a catch share program for Central Gulf of Alaska trawl fisheries which should reduce bycatch further; and

BE IT RESOLVED that the Alaska State Legislature requests the North Pacific Fishery Management Council take action to reduce Chinook salmon bycatch in the Gulf of Alaska and Bering Sea trawl fisheries by setting new limits in Gulf fisheries and lowering existing limits in the Bering Sea and Gulf pollock fisheries to at least half of the current limits, and to further reduce bycatch in any Gulf of Alaska catch share program.

BE IT FURTHER RESOLVED that the Alaska Legislature requests the North Pacific Fishery Management Council require at least 100% observer coverage in all trawl fisheries in the Gulf of Alaska to provide accurate estimates of bycatch.

COPIES should be sent to Governor Sean Parnell and all members of the North Pacific Fishery Management Council.

Whereas in 2011 the combined Sport, Subsistence, and Commercial harvest of Chinook in the Cook Inlet, Prince William Sound, Kodiak, Chignik and Alaska Peninsula fisheries was 122,000 Chinook Salmon

Whereas the Gulf of Alaska Bycatch allowance represents 20 percent of the 2011 Cook Inlet, Prince William sound, Kodiak, Chignik and Alaska Peninsula Sport, Subsistence, and Commercial Chinook harvest and likely a greater percentage of the 2012 harvest.

CONCEPTUAL AMENDMENT #1 Adopted

OFFERED IN THE HOUSE BY REPRESENTATIVE SEATON

TO: HR6

Page 2, following line 28:

Insert new material to read:

"**WHERE AS**, the House of Representatives acknowledges and appreciates the work that has been done by the trawl industry and the North Pacific Fishery Management Council to reduce bycatch, and encourages the trawl industry and the council to further reduce bycatch; and be it"

Page 2, line 29:

Delete "**BE IT**"

Insert "**FURTHER**"

#1 adopted

CONCEPTUAL AMENDMENT

OFFERED IN THE HOUSE BY REPRESENTATIVE SEATON

TO: HR6

Page 2, following line 28:

Insert new material to read:

"**WHERE AS**, the House of Representatives acknowledges and appreciates the work that has been done by the trawl industry and the North Pacific Fishery Management Council to reduce bycatch, and encourages the trawl industry and the council to further reduce bycatch; and be it"

Page 2, line 29:

Delete "**BE IT**"

Insert "**FURTHER**"

conceptual whereas after line 22 following #2 ed

WHEREAS SeaShare is a non-profit organization that partners the seafood industry with the nation's food bank network to utilize edible bycatch as a source of nutrition for hunger-relief; and

Conceptual amendments (Heron)

Page 2, Line 15

Whereas, there exist salmon excluders, nets that maximize salmon exclusion, with new designs and concepts coming out regularly to reduce Chinook and chum salmon byctach

Page 3, Line 7

Be it further resolved to expand the SeaShare program to deliver more or all of the edible bycatch to Alaskans and not out of state

Alaska State Legislature

State Capitol, Room 102
Juneau, AK 99801
Phone: 465-2689
Fax: 465-3472
Toll Free (800) 665-2689
Rep.Paul.Seaton@akleg.gov

270 W. Pioneer Avenue
Suite B
Homer, AK 99603
Phone: 235-2921
Fax: 235-4008

House Fisheries Committee

Representative Paul Seaton, Chair

Timeline:
Salmon Bycatch Management Measures in Bering Sea and Gulf of Alaska Groundfish Fisheries

1982: "foreign fishing days," when the groundfish harvest was primarily taken by foreign boats: catch limit of 55,250 Chinook salmon. This limit was allocated among the nations participating in the fishery, and any nation which exceeded their limit was not allowed to fish in much of the Bering Sea for the rest of the season

1990: "penalty box" system put in place. Individual vessels with high bycatch rates were to be prohibited from fishing for a set period of time. This program was never put into place because of due process issues and observer data concerns.

1994: Bering Sea Chum salmon savings area adopted: fixed area closure which is closed to all trawling Aug. 1-31 and remains closed if 42,000 chum salmon are caught in the Catcher Vessel Operating Area (CVOA) between August 15 and October 14. Regulation still in place, but all vessels are currently exempt under the rolling hot spot system (Amendment 84).

1995: Bering Sea Chinook salmon savings area adopted: areas closed when 29,000 Chinook salmon are caught. Timing of closures varied based on when the trigger was exceeded. This regulation is not in place since 2011 when Amendment 91 went into effect.

2006: Bering Sea Rolling Hot Spot system put in place. Vessels are exempt from salmon savings areas if they are participating in the rolling hot spot program. The rolling hot spot program, administered by the pollock fisheries, is designed to move pollock boats away from the areas of highest salmon bycatch throughout the season. The areas are not fixed in location, but adjust through time to the changing location of high bycatch areas.

Alaska State Legislature

State Capitol, Room 102
Juneau, AK 99801
Phone: 465-2689
Fax: 465-3472
Toll Free (800) 665-2689
Rep.Paul.Seaton@akleg.gov

270 W. Pioneer Avenue
Suite B
Homer, AK 99603
Phone: 235-2921
Fax: 235-4008

House Fisheries Committee

Representative Paul Seaton, Chair

2011: Amendment 91 with hard caps on Bering Sea Chinook salmon bycatch goes into effect.

Amendment 91 includes an overall cap of 60,000 Chinook salmon if the pollock fishery is participating in approved incentive plans, or an overall hard cap of 47,591 if the industry is not participating in approved incentive plans. If they are participating in approved incentive plans, they may exceed the performance standard of 47,591 in two out of any seven years (but only up to 60,000 Chinook salmon). If they exceed the performance standard in a third year out of any seven the cap drops to 47,591 permanently. Amendment 91 also requires that all participants in the pollock fishery must have at least 100% observer coverage: those vessels which were previously required to have 200% observer coverage are still required to do so.

2012: Cap of 25,000 Chinook salmon goes into effect for the Gulf of Alaska pollock fleet.

Louie Flora

Subject: FW: Requested Information re: Harvest Data of Chinook salmon
Attachments: West of Yakutat catches.xlsx

From: Mulligan, Ben (DFG) [mailto:ben.mulligan@alaska.gov]
Sent: Wednesday, February 27, 2013 10:24 AM
To: Louie Flora
Subject: Requested Information re: Harvest Data of Chinook salmon

Louie,

Bob Clark asked me to pass this along to you. Attached is a table of directed harvests of Chinook salmon in commercial, subsistence/personal use, and recreational fisheries west of Yakutat (i.e. Prince William Sound, Cook Inlet, Kodiak, Chignik, South Peninsula) and bycatch in federally managed fisheries (i.e., NMFS area 610, 620, and 630) during 1996-2011. Harvest for some of these fisheries is not yet available. I understand the original request was for harvests west of Prince William Sound but after talking to Bob that was proving difficult to do with the way NMFS Areas are designated relative to ADF&G Management Areas.

If you have any more questions or need more information please let us know.

Ben Mulligan
Legislative Liaison
ADF&G
(907) 465-6137

KING BYCATCH IN THE GULF OF ALASKA

Table 1. Chinook Salmon Mortality in Gulf of Alaska Groundfish Fisheries SOURCE: NMFS

Year	Annual Total	GOA Pollock Fisheries					Other Fisheries
		First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Annual	Annual
1991	**38,894**	3,239	538	1,799	2,862	8,439	30,455
1992	**16,787**	2,289	2,663	1,457	1,801	8,210	8,578
1993	**19,260**	6,499	157	2,730	4,192	13,578	5,682
1994	**13,615**	3,685	88	1,973	1,474	7,219	6,396
1995	**14,652**	1,408	32	2,342	1,136	4,917	9,735
1996	**15,761**	4,802	57	6,421	100	11,380	4,381
1997	**15,230**	4,622	48	4,742	30	9,443	5,787
1998	**16,984**	1,672	1	8,550	4,005	14,228	2,755
1999	**30,600**	10,408	35	5,981	10,003	26,428	4,173
2000	**26,729**	4,298	2,313	9,744	2,058	18,413	8,317
2001	**15,104**	4,204	3,107	754	1,466	9,531	5,573
2002	**12,920**	1,505	640	553	2,463	5,161	7,758
2003	**15,396**	765	389	948	2,298	4,400	10,995
2004	**17,777**	3,632	2,176	2,207	5,137	13,152	4,625
2005	**31,270**	11,100	5,123	1,076	10,629	27,927	3,343
2006	**19,004**	2,918	4,292	4,859	3,875	15,944	3,060
2007	**40,539**	1,487	28,424	1,309	3,958	35,177	5,362
2008	**16,176**	578	7,682	387	2,048	10,696	5,480
2009	**8,397**	704	1,423	656	412	3,195	5,202
2010	**54,559**	4,963	2,045	4,841	32,929	44,779	9,780
2011	**20,769**	1,716	1,260	1,508	9,348	13,832	6,937
2012	**5,909**	2,904	864	-	-	3,768	2,141

1991 - 2002: Blend data. Week end date was used to determine quarters. Week end dates do not always match quarter dates.

2003 - Current: Catch Accounting System.

Due to changes in regulatory pollock season dates from 1991 to 2001 and to match current pollock season dates, data were grouped by quarter.

First Quarter	Jan 1 - Feb 28
Second Quarter	Mar 1 - May 31
Third Quarter	Jun 1 - Sep 30
Fourth Quarter	Oct 1 - Dec 31

Updated 6/27/2012

KING SALMON BYCATCH SKYROCKETED TO OVER 50,000 FISH IN 2010

42,000 caught

2012 Alaska Commercial Salmon Harvests — Exvessel Values

Source: ADF&G, Revised December 3, 2012

PRELIMINARY DATA: 2012 Salmon Season



Area	Species	Average Weight (in pounds)	Average Price per Pound	Number of Fish (in thousands)	Pounds of Fish (in thousands)	Estimated Exvessel Value (in thousand $)
SOUTHEAST/YAKUTAT	CHINOOK	13.02	$4.50	266	3,461	$15,566
	SOCKEYE	6.36	$1.55	817	5,193	$8,047
	COHO	6.35	$1.38	1,949	12,380	$17,077
	PINK	3.57	$0.41	20,703	73,836	$29,955
	CHUM	9.28	$0.84	10,611	98,494	$82,629
	totals			34,346	193,364	$153,273
PRINCE WILLIAM SOUND	CHINOOK	20.94	$5.33	12	251	$1,339
	SOCKEYE	6.72	$1.70	3,680	24,736	$41,950
	COHO	8.15	$1.06	202	1,645	$1,743
	PINK	3.77	$0.48	26,749	100,779	$48,504
	CHUM	6.66	$0.69	3,746	24,933	$17,314
	totals			34,390	152,345	$110,849
COOK INLET	CHINOOK	14.53	$2.85	2	36	$103
	SOCKEYE	6.70	$1.51	3,280	21,966	$33,149
	COHO	6.20	$0.75	104	643	$482
	PINK	3.45	$0.36	727	2,508	$905
	CHUM	8.17	$0.57	334	2,732	$1,570
	totals			4,448	27,884	$36,209
BRISTOL BAY	CHINOOK	13.9	$0.85	17	237	$202
	SOCKEYE	5.7	$1.00	20,557	117,833	$117,833
	COHO	5.4	$0.55	107	577	$317
	PINK	3.1	$0.40	910	2,849	$1,140
	CHUM	6.7	$0.35	666	4,465	$1,563
	totals			22,258	125,961	$121,054
KODIAK	CHINOOK	7.37	$0.97	15	109	$106
	SOCKEYE	5.56	$1.41	2,234	12,414	$17,504
	COHO	6.96	$0.58	208	1,451	$841
	PINK	3.58	$0.40	16,873	60,417	$24,167
	CHUM	7.88	$0.58	866	6,824	$3,958
	totals			20,196	81,214	$46,575
CHIGNIK	CHINOOK	13.44	$0.97	4	49	$47
	SOCKEYE	6.81	$1.05	1,800	12,263	$12,876
	COHO	6.78	$0.43	33	226	$97
	PINK	3.28	$0.32	138	452	$145
	CHUM	8.97	$0.41	171	1,533	$629
	totals			2,145	14,523	$13,794
AK PEN/ALEUTIAN IS.	CHINOOK	15.96	$0.99	9	139	$133
	SOCKEYE	5.90	$0.84	2,765	16,316	$13,714
	COHO	6.30	$0.45	124	779	$345
	PINK	3.10	$0.35	651	2,020	$619
	CHUM	7.30	$0.43	894	6,544	$2,714
	totals			4,443	25,798	$17,524
KUSKOKWIM	CHINOOK	15.3	$0.85	8	125	$107
	SOCKEYE	6.8	$0.85	91	616	$523
	COHO	6.1	$0.73	143	876	$642
	PINK					
	CHUM	6.6	$0.77	151	1,000	$768
	totals			393	2,617	$2,040
YUKON	CHINOOK					
	SOCKEYE	6.00	$0.75	< 1	< 1	< $1
	COHO	6.15	$1.18	75	460	$542
	PINK					
	CHUM	6.25	$0.68	609	3,811	$2,581
	totals			684	4,270	$3,123
NORTON SOUND	CHINOOK					
	SOCKEYE	6.91	$1.45	< 1	1	$1
	COHO	6.61	$1.47	37	245	$361
	PINK	2.40	$0.36	205	492	$175
	CHUM	6.77	$0.52	63	425	$222
	totals			305	1,163	$759
KOTZEBUE	CHINOOK					
	SOCKEYE					
	COHO					
	PINK					
	CHUM	7.7	$0.32	228	1,751	$568
	totals			228	1,751	$568
ALASKA TOTALS	CHINOOK	13.25	$3.99	333	4,408	$17,602
	SOCKEYE	6.00	$1.16	35,225	211,338	$245,596
	COHO	6.46	$1.16	2,983	19,280	$22,448
	PINK	3.63	$0.43	66,957	243,354	$105,609
	CHUM	8.32	$0.75	18,340	152,511	$114,515
	totals			123,837	630,891	$505,769

Preliminary figures may not total exactly due to rounding.
Estimates based on fish tickets and reports from Area Managers.
DATA NOT FOR LEGAL INTERPRETATIONS.

[a] No escapement adjustments were made for Chinook salmon that spawn below the weir, or those removed by the sport and subsistence fisheries above the weir.

[b] Late-run sockeye salmon total includes a post-weir escapement estimate.

COMMERCIAL FISHERY

The CMA was open to commercial salmon fishing for 84 days during the 2012 commercial salmon season. The first fishing period occurred on June 8 and the CMA closed to commercial salmon fishing (September 9) shortly after area salmon processors ceased operations. In 2012, 70 permit holders (including the department's test fishery permit) made a total of 2,915 landings (Table 2).

Table 2.- Total commercial salmon harvests, including home pack, and department test fishery from the Chignik Management Area by species and year, 2002 through 2012.

	Permits Making		Chignik Management Area Harvest					
Year	Deliveries	Landings	Chinook	Sockeye	Coho	Pink	Chum	Total
2002	42	2,432	1,521	1,050,553	46,372	66,050	54,559	1,222,055
2003	44	2,073	3,068	1,100,297	103,896	502,638	64,044	1,773,943
2004	33	1,346	2,520	704,652	37	2,380	505	711,473
2005	97	1,669	3,408	1,152,133	6,956	194,045	8,821	1,365,363
2006	49	2,066	2,256	902,709	39,221	383,547	61,630	1,389,363
2007	56	2,101	1,773	834,547	73,277	2,019,748	78,553	3,007,898
2008	55	2,217	970	687,270	161,536	2,389,958	209,325	3,449,059
2009	56	2,172	3,319	1,198,105	110,373	1,408,339	256,425	2,976,561
2010	66	2,532	10,380	1,379,785	159,198	489,781	581,329	2,620,473
2011	65	2,617	6,586	2,497,004	76,792	905,166	269,503	3,755,051
2012	70	2,915	3,687	1,800,121	33,316	137,706	171,112	2,145,942
Averages								
2002-11	56	2,123	3,580	1,150,706	77,766	836,165	158,469	2,227,124
2007-11	60	2,328	4,606	1,319,342	116,235	1,442,598	279,027	3,161,808

Harvest

Chinook Salmon

A total of 3,636 Chinook salmon were commercially harvested (excluding home pack and the department's test fishery) in 2012 (Table 3), which was similar to recent average harvests (Table 2). The majority of the 2012 CMA Chinook salmon harvest occurred in the Central and Western districts (Table 3). Most of the Chinook salmon harvest occurred from late June until the end of July.

Sockeye Salmon

A total of 1,797,519 sockeye salmon were commercially harvested (excluding home pack and the department's test fishery) in the CMA during 2012 (Table 3), which was above the prior 5- and 10-year average harvests (Table 2). The majority of the 2012 CMA sockeye salmon harvest came from the Chignik Bay and Central districts (Table 3).

In 2012, Cape Igvak opened to commercial salmon fishing for the first time on June 9 and Southeastern District Mainland (SEDM) opened to commercial salmon fishing on June 16. A total of 157,604

KODIAK MANAGEMENT AREA
COMMERCIAL SALMON HARVEST SUMMARY
(INSEASON HARVEST ESTIMATES)

	DAILY HARVEST	TOTAL THROUGH September 9, 2012
Chinook	2	14,046
Sockeye	3,240	2,152,851
Coho	4,088	179,903
Pink	1,771	16,611,759
Chum	4,152	856,596
TOTAL	13,253	19,815,155

Narrative:
Catch estimates are based on inseason processor reports, and will be updated as additional information and fishtickets become available.

ESTIMATED SALMON CATCH TO DATE
BY GEOGRAPHIC AREA / FISHERY, WITHIN THE KODIAK MANAGEMENT AREA
September 9, 2012

	Chinook	Sockeye	Coho	Pink	Chum
Karluk, NW Kodiak, & SW Afognak	5,932	827,597	106,522	8,871,450	329,507
Ayakulik, Halibut Bay, & Sturgeon	560	230,580	6,264	821,389	12,781
Olga, Moser, & Alitak Bay	3	184,024	941	139,165	3,254
Cape Alitak & Humpy-Deadman	228	166,444	1,434	1,408,204	23,458
East & Northeast Kodiak	2,276	168,463	9,998	783,608	178,341
Duck, Izhut, & Kitoi Bays	2,389	105,717	40,380	2,904,124	221,061
NW Afognak, Shuyak, & Perenosa	149	81,023	7,686	1,017,884	20,390
SE Afognak & Raspberry	55	4,713	5,155	581,317	1,167
Cape Igvak & Wide Bay	2,138	352,296	978	30,548	44,291
Mid & North Mainland	316	31,994	545	54,070	22,346
TOTAL	14,046	2,152,851	179,903	16,611,759	856,596

Area M Salmon Harvest Summary

COMMERCIAL SALMON HARVEST SUMMARY

(INSEASON HARVEST ESTIMATES)

Species	Daily Harvest	Total Through September 4, 2012
Chinook	0	9,827
Sockeye	96	2,753,739
Coho	0	122,878
Pink	0	660,781
Chum	0	892,254
TOTAL	96	4,439,479

Narrative:
Catch estimates are based on inseason processor reports, and will be updated as additional information and fishtickets become available.

Estimated Salmon Catch to Date, by Geographic Area

September 4, 2012

South Peninsula	Chinook	Sockeye	Coho	Pink	Chum
Post June McGinty Point to Moss Cape	15	35,963	1,050	16,196	15,989
Post June Belkofski Bay to Cold Bay	4	14,904	38	7,543	2,350
Post June Thin Point Section	0	0	0	0	0
Post June Morzhovoi Bay to South Unimak	288	73,384	47,253	23,590	74,447
Post June Shumagin Islands	698	129,071	37,321	140,456	100,979
Southeastern District Mainland	154	153,401	1,361	37,986	31,370
Northwest Stepovak Section (7/1-7/25)	5	62,383	173	1,735	2,081
June Shumagin Islands	1,943	637,803	2	89,476	183,692
June South Unimak	5,651	890,948	10	170,417	206,097
June South Unimak & Shumagin Islands	7,594	1,528,751	12	259,893	389,789
Total South Peninsula	**8,758**	**1,997,857**	**87,208**	**487,399**	**617,005**
North Peninsula					
Northwestern District	6	48,268	1,088	748	164,246
Black Hills	55	57,338	4,177	282	89,857
Nelson Lagoon	282	118,432	30,392	8	5,909
Moller and Herendeen Bays	0	0	0	0	0
Port Moller to Outer Port Heiden	726	531,844	13	103	15,237
Inner Port Heiden	0	0	0	0	0
Cinder River	0	0	0	0	0
Total North Peninsula	**1,069**	**755,882**	**35,670**	**1,141**	**275,249**
Total Aleutian Islands	**0**	**0**	**0**	**172,241**	**0**
TOTAL AREA M	**9,827**	**2,753,739**	**122,878**	**660,781**	**892,254**

* Confidential information

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES
NEWS RELEASE

Cora Campbell, Commissioner
Jeff Regnart, Director



Contact:
Glenn Hollowell, Finfish Area Management Biologist
Ted Otis, Finfish Area Research Biologist
Ethan Ford, Fishery Biologist
Phone: (907) 235-8191
Fax: (907) 235-2448

Lower Cook Inlet Area Office

3298 Douglas Place
Homer, AK 99603

Date Issued: 1/18/2013
Time Issued: 11 a.m.

2012 PRELIMINARY LOWER COOK INLET SALMON SEASON SUMMARY

The preliminary estimate of the 2012 Lower Cook Inlet Area commercial salmon harvest as based on current fish ticket data is 498,597 salmon. The harvest was composed of 256,267 pink, 186,581 sockeye, 55,434 chum, 182 coho, and 133 Chinook salmon. The harvest was comprised of 382,895 (77%) commercial common property fishery (CPF) fish, and 115,702 (23%) hatchery cost recovery and broodstock fish.

Southern District

The 2012 preseason commercial harvest forecast for natural production in the Southern District was 1,900 sockeye and 6,200 pink salmon. Hatchery releases from previous years at Leisure Lake, Hazel Lake, Tutka Bay, Port Graham and English Bay were anticipated to contribute 8,500 sockeye salmon to the 2012 commercial harvest. The commercial salmon fishing season in the Southern District began on Friday, June 1. Purse seine harvest for the 2012 season was 6,396 sockeye and 157,770 pink salmon. This compares to a previous 10-year harvest average of 78,561 for sockeye and 10,702 for pink salmon. The set gillnet harvest was 10,260 sockeye and 10,305 pink salmon. The previous 10-year harvest average for this gear type is 30,597 sockeye and 3,730 pink salmon. Preliminary estimates show that pink salmon escapement in index streams was near the midpoint of the cumulative sustainable escapement goal (SEG) range of 59,700–178,500 fish. The weir at the English Bay River passed 3,985 sockeye salmon. This was below the SEG of 6,000–13,500 for this system.

Outer District

The 2012 preseason commercial harvest forecast for the Outer District was 16,700 sockeye and 256,000 pink salmon. The commercial salmon fishing season began in this district on Thursday, July 26. Overall harvest was 77 sockeye, 69,259 pink and 51,313 chum salmon. This harvest compares to previous 10-year averages of 14,558 sockeye, 422,428 pink and 24,149 chum salmon. Preliminary escapement survey indices for chum salmon were near the upper end of the SEG range of 12,850–34,600. Pink salmon were in the lower end of their SEG range of 54,500–237,200. Aerial surveys of Desire Lake documented 8,840 sockeye salmon. This is within the

districts for much of the season. This allowed for targeted fishing effort on wild pink salmon and expanded area for targeted fishing effort on enhanced pink salmon. Inseason pink salmon aerial survey escapement estimates were below anticipated escapement thresholds in the Eshamy District for the entirety of the 2012 season, resulting in some time and area restrictions in the Southwestern District to reduce fishing effort on Eshamy District pink salmon stocks traveling through migratory corridors. The area-under-the-curve estimate of pink salmon escapement used for direct comparison with the SEG goals is not yet available, but considering that inseason pink salmon escapement indices were above anticipated aerial survey counts, overall escapement was likely within the even-year SEG range for all districts except Eshamy District. Aerial surveys ended early this year because of poor weather.

COHO SALMON

The VFDA coho salmon run was anticipated to be 129,000 fish. VFDA's broodstock objective was 1,000 coho salmon. Total CPF harvest of coho salmon in PWS (excluding Copper River and Bering River districts) was 28,000 fish. This was the lowest PWS CPF coho salmon harvest since 2010, when 15,000 fish were harvested. The majority of CPF coho salmon harvested in the Southwestern (9,000) and Coghill (10,200) districts are assumed to be of enhanced stock origin.

Table 1.–Preliminary Area E salmon harvest, 2012.

District	Chinook	Sockeye	Coho	Pink	Chum	Total
Bering River	1	0	46,095	1	0	46,097
Copper River	11,617	1,855,903	123,957	6,192	29,219	2,026,888
Eastern	30	9,671	7,222	10,509,665	99,152	10,625,740
Northern	1	534	496	3,638,861	1,999	3,641,891
Coghill	155	427,574	10,248	3,252,752	2,409,957	6,100,686
Northwestern	0	58	28	52,697	37	52,820
Eshamy	65	1,281,219	286	105,307	278,706	1,665,583
Southwestern	87	83,973	8,999	5,607,558	173,556	5,874,173
Montague	16	2,505	177	173,557	293,205	469,460
Southeastern	30	3,324	650	225,259	35,061	264,324
Unakwik	0	1,897	0	49	150	2,096
CPF Total	**12,002**	**3,666,658**	**198,158**	**23,571,898**	**3,321,042**	**30,769,758**
Hatchery						
Solomon Gulch	0	0	1,000 [a]	1,383,133	2,675	1,386,808
Cannery Creek	0	0	0	106,625	0	106,625
Wally Noerenberg	0	0	2,700 [b]	1,042,350	422,336	1,467,386
Main Bay	0	13,793	0	0	0	13,793
Armin F. Koernig	0	0	0	645,252	0	645,252
Hatchery total [c]	**0**	**13,793**	**3,700**	**3,177,360**	**425,011**	**3,619,864**
PWS Total Harvest	**12,002**	**3,680,451**	**201,858**	**26,749,258**	**3,746,053**	**34,389,622**

[a] SGH coho salmon broodstock needs as stated in AMP (no harvest as of October 2).

[b] WNH coho salmon broodstock needs as stated in AMP (no harvest as of October 2).

[c] Hatchery sales harvest for operating costs and broodstock harvest.

Table 3.–Page 2 of 2.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1995	17,893	2,951,827	446,954	133,575	529,422	4,079,671
1996	14,306	3,888,922	321,668	242,911	156,501	4,624,308
1997	13,292	4,176,738	152,404	70,933	103,036	4,516,403
1998	8,124	1,219,242	160,660	551,260	95,654	2,034,940
1999	14,383	2,680,510	125,908	16,174	174,541	3,011,516
2000	7,350	1,322,482	236,871	146,482	127,069	1,840,254
2001	9,295	1,826,833	113,311	72,559	84,494	2,106,492
2002	12,714	2,773,118	246,281	446,960	237,949	3,717,022
2003	18,490	3,476,159	101,756	48,789	120,767	3,765,961
2004	26,922	4,926,220	311,056	357,939	146,164	5,768,301
2005	28,171	5,238,168	224,657	48,419	69,740	5,609,155
2006	18,029	2,192,730	177,853	404,111	64,033	2,856,756
2007	17,625	3,316,779	177,339	147,020	77,240	3,736,003
2008	13,333	2,380,135	171,869	169,368	50,315	2,785,020
2009	8,750	2,045,794	153,210	214,321	82,811	2,504,886
2010	9,901	2,828,367	207,256	292,672	228,670	3,566,866
2011	11,248	5,277,440	95,276	34,030	129,202	5,547,196
2012[a]	2,358	3,093,825	103,452	471,468	278,938	3,950,041
1966-2011 Avg	15,706	2,950,675	302,426	463,242	438,984	4,171,033
2002-2011 Avg	16,518	3,445,491	186,655	216,363	120,689	3,985,717

[a] 2012 data preliminary.

Table 4.–Average catches and fishery-specific activities recommended to fill knowledge gaps in catch assessment.

Chinook Fishery	Average catch (1994–2005)	Average catch (2006–2011)	Stock-Specific Catch Assessment
Southeast	Subsistence: 1,000 Commercial: 303,000 Sport: 70,000	Subsistence: 1,000 Commercial: 310,000 Sport: 69,000	Genetics mixed-stock analysis and sampling of troll, sport, and districts 108 and 111 gillnet
Copper River and Prince William Sound	Subsistence: 7,000 Commercial: 50,000 Sport: 10,000	Subsistence: 6,000 Commercial: 21,000 Sport: 9,000	Age-size of commercial catch. CWT recovery of major fisheries at 20% minimum coverage; genetic mixed-stock analysis of major fisheries
Cook Inlet	Subsistence: 1,000 Commercial: 18,000 Sport: 74,000	Subsistence: 1,000 Commercial: 13,000 Sport: 53,000	Comprehensive marine CWT and genetics sampling of Upper subdistrict set gillnet, Kenai Peninsula sport, Tyonek subsistence, Northern District set gillnet, Central District drift gillnet, winter sport fishery in Homer
Kodiak	Subsistence: <1,000 Commercial: 19,000 Sport: 7,000	Subsistence: <1,000 Commercial: 16,000 Sport: 10,000	CWT recovery of major fisheries at 20% minimum coverage; genetic mixed-stock analysis of major fisheries
Chignik/ Alaska Peninsula	Subsistence: <1,000 Commercial: 17,000 Sport: 4,000	Subsistence: <1,000 Commercial: 14,000 Sport: 3,000	CWT recovery of major fisheries at 20% minimum coverage; genetic mixed-stock analysis of major fisheries
Bristol Bay	Subsistence: 16,000 Commercial: 75,000 Sport: 8,000	Subsistence: 14,000 Commercial: 49,000 Sport: 9,000	Improved genetic baseline resolution (listed under Table 2)
Kuskokwim	Subsistence: 81,000 Commercial: 31,000 Sport: 2,000	Subsistence: 79,000 Commercial: 22,000 Sport: 1,000	Improved genetic baseline resolution (listed under Table 2)
Yukon	Subsistence: 51,000 Commercial: 66,000 Sport: 1,000	Subsistence: 46,000 Commercial: 17,000 Sport: 1,000	Improved genetic baseline resolution (listed under Table 2)
Norton Sound Kotzebue	Subsistence: 6,000 Commercial: 5,000 Sport: 1,000	Subsistence: 4,000 Commercial: 1,000 Sport: <1,000	Improved genetic baseline resolution (listed under Table 2)
federal waters bycatch (pollock trawl only)	GOA: 13,000 EBS: 37,000	GOA: 21,000 EBS: 46,000	GOA: Improvement in observer coverage (catch and CWT/genetic catch composition). EBS: Sample for CWT at 20% minimum for catch coverage. Both: Improved geographic and stock-specific resolution of bycatch to the individual haul.
Totals	Subsistence: 164,000 Commercial: 760,000 Sport: 176,000 Federal Waters: 50,000	Subsistence: 152,000 Commercial: 463,000 Sport: 155,000 Federal Waters: 67,000	

2012 Catch In Sport + In River

average of 770,000 kings caught in Alaskan fisheries (2006-2011)

federal water pollock trawl bycatch constitutes ~8.7% of the above number

Table 1. Estimated escapements and numbers of chinook salmon that were caught, released, and retained in the Kenai River recreational fishery during 1986 through 1991.

Year	Run Component	Numbers of Chinook Salmon			Percent Released	Estimated Escapement[a]
		Caught	Retained	Released		
1986	Early	12,117	7,561	4,556	38	19,519
	Late	15,331	9,004	6,327	41	48,559
	Both	27,448	16,565	10,883	40	68,078
1987	Early	19,119	13,281	5,838	31	12,362
	Late	16,701	12,237	4,464	27	52,787
	Both	35,820	25,518	10,302	29	65,149
1988	Early	18,693	12,747	5,946	32	8,133
	Late	23,238	17,512	5,726	25	34,496
	Both	41,931	30,259	11,672	28	42,629
1989	Early	9,901	7,256	2,645	27	10,736
	Late	12,210	9,127	3,083	25	19,908
	Both	22,111	16,383	5,728	26	30,644
1990	Early[b]	4,973	1,735	3,238	65	8,656
	Late[b]	8,637	6,247	2,390	28	25,770
	Both	13,610	7,982	5,628	41	34,426
1991	Early[b]	3,716	891	2,825	76	9,922
	Late	8,091	6,849	1,242	15	27,943
	Both	11,807	7,740	4,067	34	37,865
All	Early	68,519	43,471	25,048	37	69,328
	Late	84,208	60,976	23,232	28	209,463
	Both	152,727	104,447	48,280	32	278,791

[a] Inriver return minus the sport harvest.

[b] Release of catch mandatory for all or part of run.

ABSTRACT

The widespread practice of hook-and-release fishing for chinook salmon *Oncorhynchus tshawytscha* in the Kenai River prompted the Alaska Department of Fish and Game to initiate a multi-year investigation of mortality associated with this fishing technique. Findings from four hook-and-release experiments, conducted during 1989 to 1991, are presented in this report.

Short-term (1-5 d) hooking mortality for chinook salmon that were caught and released in the Kenai River recreational fishery was assessed using radio telemetry. Biological and fishery variables were recorded for each of 226 early-run and 220 late-run fish that were tagged during the study. The average mortality was 7.6% for all experiments combined, and ranged from 10.6% in 1989 to 4.0% in 1991. In all experiments, small males suffered the highest mortality when compared to large males and females. Most mortality took place within 72 h of release. The distribution of fishery variables differed among runs, largely due to management regulations, but no relationship was found associating these variables with the fates of radio-tagged fish. The survival of chinook salmon that were injured in the gills or bleeding was significantly reduced; however, the frequency of gilled and bleeding fish was small in all experiments.

Initial movements of radio-tracked fish occurred in both upstream and downstream directions. Late-run salmon that moved downstream to Cook Inlet returned to the river at a significantly lower rate than early-run fish. Movement occurred most frequently during the second half of the day. Upstream movements to spawning destinations were variable, and frequently punctuated by milling behavior. An average of 33 days elapsed between tagging and spawning. Most (81%) early-run fish that were radio tracked spawned in tributary streams with peak spawning occurring in mid-July, while most (96%) late-run fish that were radio tracked spawned in the mainstem with peak activity in mid-August. Spawner destinations within each run were independent of weekly entry times.

KEY WORDS: Kenai River, chinook salmon, *Oncorhynchus tshawytscha*, radio telemetry, transmitters, mortality, hook-and-release, angling variables.

Attention- Kelly

HRG- House Fisheries Committee

~ Name, fisheries, support, rationale
· no can close State fisheries

My name is Theresa Peterson representing myself & I've been living & commercial fishing out of Kodiak w/ my family for over 25yrs. We are involved in the Tanner crab, cod, halibut & salmon fisheries, my husband & I as setnetters & now our son runs the boat seining around the island. We are dependent upon healthy fishery resources for our livelihoods & have weathered many ups & downs over the years as abundance levels wax & wane. We fish within the limits in Alaska & as a result we still have fish to catch.

During times of low returns of species like Chinook, it is encumbant upon fishery managers to be responsive & reduce fishing mortality to provide for the long term health of the resource. State action to protect chinook runs is shiftt. Emergency Orders shut down commercial fisheries for directed salmon fisheries immediately in times of low returns as the Cook Inlet setnetters experienced last summer. It is painful,

and the economic losses are enormous, but the long term health of the Chinook salmon must come 1st

Action to reduce mortality of chinook salmon in the federal arena is a much slower process & it is critical the the NPFMC hear from our State legislatures that Federal Council action must continue to implement management measures to reduce bycatch of Chinook salmon & improve data w/ increased observer coverage.
Alaska is respected worldwide for sustainable fisheries & as State representatives I encourge you to support HR6 & send a message to the NPFMC that bycatch of our iconic chinook salmon must be reduced in federal fisheries.

HOUSE RESOLUTION 6, CHINOOK SALMON BYCATCH
Comments by Myron Naneng
March 19, 2013

House Resolution 6, requesting the North Pacific Fishery Management Council to take action to reduce Chinook salmon bycatch in the Gulf of Alaska and Bering Sea trawl fisheries, is sponsored by the House Fisheries Committee, and is before the committee today for review.

According to the Alaska Department of Fish & Game (ADF&G), Chinook returns to the Kuskokwim River last year were the lowest ever. Local fishermen were arrested when they attempted to feed their families by fishing during a closure.

The failure of the North Pacific Fishery Management Council to limit Chinook bycatch is akin to many other federal overreach problems faced by the citizens of Alaska in managing our resources. In other examples where federal management has over stepped its authority in the way of resource management, the State of Alaska Department of Law has filed litigation on behalf of the citizens of Alaska.

In the situation involving Chinook salmon on the Kuskokwim River, the State of Alaska is prosecuting local residents who attempted to feed their families. The violations were the result of closures due to the lack of Chinook salmon, while at the same time the North Pacific Fishery Council allowed excessive levels of bycatch of the resource.

Instead of prosecuting Alaskan residents, the State of Alaska should be pursuing litigation against the North Pacific Fishery Management Council.

The House Fisheries Committee is hereby requested to consider the following amendment to House Resolution 6:

AMENDMENT

On page 3, line 6, insert the following:

"; and be it

FURTHER RESOLVED that if the North Pacific Fishery Management Council fails to take any significant action in a timely manner, the State of Alaska Department of Law is encouraged to file litigation on behalf of the citizens of Alaska who depend upon this resource as a critical source of food in subsistence and recreational fisheries."

Quyana.

Raymond Watson, Chairperson
Myron P. Naneng Sr., President
Phone: (907) 543-7300
Fax: (907) 543-3369

AVCP

Association of Village Council Presidents
Administration
Pouch 219, Bethel, AK 99559

Akiachak
Akiak
Alakanuk
Andreafsky
Aniak
Atmautluak
Bethel
Bill Moore's Sl.
Chefornak
Chevak
Chuathbaluk
Chuloonawick
Crooked Creek
Eek
Emmonak
Georgetown
Goodnews Bay
Hamilton
Hooper Bay
Lower Kalskag
Upper Kalskag
Kasigluk
Kipnuk
Kongiganak
Kotlik
Kwethluk
Kwigillingok
Lime Village
Marshall
Mekoryuk
Mtn. Village
Napaimiut
Napakiak
Napaskiak
Newtok
Nightmute
Nunakauyak
Nunam Iqua
Nunapitchuk
Obogamiut
Oscarville
Paimiut
Pilot Station
Pitka's Point
Platinum
Quinhagak
Red Devil
Russian Mission
Scammon Bay
Sleetmute
St. Mary's
Stony River
Tuluksak
Tuntutuliak
Tununak
Umkumiut

March 12, 2013

Representative Bryce Edgmon
State Capitol, Room 410
Juneau, AK 99801-1182
Fax: 907.465.3445

Dear Representative Edgmon:

The Association of Village Council Presidents (AVCP) is the recognized tribal organization and non-profit Alaska Native regional corporation for its fifty-six member indigenous villages within Western Alaska. Your district includes many of our member tribes in the Yukon and Kuskokwim regions as well as our coastal villages.

As you are well aware, Chinook salmon stocks on the Yukon and Kuskokwim Rivers are essential to the cultural, nutritional and economic well-being and way of life of the tribal villages and peoples we both represent who live along these river drainages. Chinook salmon runs on both the Yukon and Kuskokwim Rivers have declined dramatically in recent years with federal fishery disasters declared for 2008-2012 on the Yukon and 2011-2012 for the Kuskokwim. Chinook salmon runs have declined to the point that commercial fisheries are closed, and subsistence fisheries are seriously restricted. In recent years subsistence fisheries have been restricted to the point where villages are not obtaining the amount of Chinook salmon necessary to meet their basic needs. Despite all these restrictions, on the Yukon River Canadian escapement goals have only been met in two out of the last five years, posing a threat to the future of the salmon runs as well.

At the same time, these very same Chinook salmon are caught and discarded as bycatch in the Bering Sea pollock fishery. The Bering Sea pollock fishery, managed by the North Pacific Fishery Management Council (the Council) and National Marine Fisheries Service, is limited by an overall cap of 60,000 which they are allowed to hit in two out of any seven years without consequence, and by a 47,591 cap in other years. The best information currently available indicates that 50-73% of the Bering Sea pollock fishery's Chinook salmon bycatch is fish of Western Alaska origin. In 2010, an alarming 42% of the bycatch was from coastal Western Alaska (including Bristol Bay, the Kuskokwim and lower Yukon) and another 31% was from the middle and upper Yukon Rivers.

Given the current state of our Chinook salmon runs, and the impacts to our people in terms of food security and economic and cultural well-being, it is simply unacceptable that the pollock fishery has the opportunity to catch 60,000 Chinook salmon in a single year while our people are restricted from meeting their basic subsistence needs.

We understand that the Bush caucus, under your leadership, is considering a letter addressing the issue of salmon bycatch. Given the dire state of Chinook salmon in Western Alaska, it

would be unforgiveable to leave Bering Sea Chinook salmon bycatch out of this letter. We request that you include in the letter a request that the Council significantly reduce the Chinook salmon bycatch limit in the Bering Sea pollock fishery because of the current state of Western Alaska Chinook salmon stocks. We further request that the letter include a request that the pollock fishery be levied a significant fine for each Chinook taken as bycatch and that these funds be used for research into the decline of Western Alaska Chinook stocks.

If you have any questions about this matter please contact me at (907)543-7300. Thank you for your attention to this issue of supreme importance to the region you represent.

Sincerely,
Association of Village Council Presidents

Myron P. Naneng, Sr.
President, AVCP

ASSOCIATION OF VILLAGE COUNCIL PRESIDENTS
P.O. BOX 219
BETHEL, ALASKA 99559

ASSOCIATION OF VILLAGE COUNCIL PRESIDENTS
EXECUTIVE BOARD OF DIRECTORS

BETHEL, ALASKA MARCH 5, 2013

RESOLUTION NO. 13-03-03

TITLE: **Calling for the State of Alaska to Institute Legal Challenges and Take Other Actions to Invalidate the North Pacific Fishery Management Council's Actions Allowing 60,000 Chinook Salmon to be Taken as By-Catch in the Bering Sea Pollock Fishery**

WHEREAS The Association of Village Council Presidents (AVCP) is the recognized tribal organization and non-profit Alaska Native regional corporation for its fifty-six member indigenous Native villages within Western Alaska and supports the endeavors of its member villages, and

WHEREAS AVCP fully supports its member villages in all aspects of their self-determination, health and well-being, and

WHEREAS Healthy and abundant Chinook Salmon stocks of the Yukon and Kuskokwim Rivers are essential to the cultural, nutritional and economic well-being and way of life of the tribal villages and peoples who live along these river drainages, and

WHEREAS Food security is a basic human right recognized by the United Nations and affirmed by the United States in the UN Declaration of Rights of Indigenous Peoples, and

WHEREAS The Chinook stocks in the Yukon and Kuskokwim River drainages, and Chinook stocks throughout the Arctic-Yukon-Kuskokwim region, are in a serious state of decline, resulting in closed commercial fisheries and subsistence fisheries restricted to the point where villages are not attaining the amount needed to satisfy their basic needs and tribal members have been issued citations and had their nets confiscated for fishing for Chinook salmon to feed their families, and

WHEREAS The projected Chinook runs for the Yukon and Kuskokwim Rivers next season are projected to demonstrate a more drastic decline, and recent information demonstrates that this trend has existed over the last decade or more, and

WHEREAS Representatives of the State of Alaska joined other members of the North Pacific Fishery Management Council (NPFMC) in voting to allow as many as 60,000 Chinook salmon to be wasted as by-catch in the Bering Sea Pollock trawl fishery each year, and a large percentage of these Chinook have been scientifically shown to be headed to the Yukon and Kuskokwim Rivers; and

WHEREAS The State and NPFMC decided to allow this large by-catch despite knowing that the Chinook stocks on the Yukon and Kuskokwim Rivers are in trouble, that the

tribal people who depend upon these salmon for cultural, nutritional and economic survival are suffering, and that international agreements with Canada regarding Yukon Chinook cannot be satisfied (at least without extreme sacrifices by Villages throughout the U.S portion of the Yukon; and

WHEREAS The State of Alaska is quick to sue the Federal agencies anytime it thinks that a resource classification, for example a listing as endangered of threatened under the Endangered Species Act, will impact any potential development or any desire of industry, and the State has either filed litigation or threatened to do so for the related to ESA listings for Polar Bears and several other marine mammal species; and

WHEREAS The State of Alaska has also filed numerous lawsuits against the Federal agencies related to these agencies' efforts to protect the Alaska Native subsistence way of life and the tribes' customary and traditional hunting and fishing practices and needs, despite the State's failure to keep its promise for a rural subsistence priority or a constitutional amendment allowing for a meaningful State subsistence priority.

NOW THEREFORE BE IT RESOLVED that the Association of Village Council Presidents Executive Board calls on the State of Alaska Governor and Attorney General to file a lawsuit challenging the NPFMC's decision to allow 60,000 Chinook salmon to be wasted as by-catch annually in the Bering Sea Pollock fishery, to seek relief through this lawsuit that would instead minimize and within a reasonable time work to eliminate Chinook by-catch, and to work with AVCP in this litigation, and

BE IT FURTHER RESOLVED that as an alternative to litigation, the State of Alaska representatives to the NPFMC introduce a formal process to, without delay, reconsider its decision on Chinook by-catch, and that the State work in this reconsiderations to significantly reduce allow Chinook by-catch below 60,000 and eventually eliminate this by-catch, and

BE IT FURTHER RESOLVED that the State of Alaska work with AVCP to establish a through federal legislation a significant per fish fine for by-catch of Chinook salmon in the Pollock fishery and dedicate funds derived from these fines to research designed to identify Chinook stocks taken as by-catch, ways to eliminate by-catch, and science into the causes of the decline in Chinook stocks through the AYK region, and to establish a tribal voting seat on the NPFMC.

ADOPTED by the Association of Village Council Presidents during an Executive Board Meeting held at Bethel, Alaska, this 5th day of March 2013 with a duly constituted quorum.

CERTIFIED:

Raymond J. Watson, Chairman

Myron P. Naneng Sr., President

Alaska Marine Conservation Council

November 27, 2012

Eric Olson, Chair
North Pacific Fishery Management Council
605 W. Fourth Ave.
Anchorage, AK 99501

Re: Agenda Item C-2 (c) Chinook Salmon PSC in the GOA Non -Pollock Trawl Fisheries

Submitted via email to npfmc.comments@noaa.gov

Dear Chairman Olson and Council members:

The Alaska Marine Conservation Council is dedicated to protecting the long-term health of Alaska's oceans and sustaining the working waterfronts of our coastal communities. Our members include fishermen, subsistence harvesters, marine scientists, small business owners and families. Our ways of life, livelihoods and local economies depend on sustainable fishing practices and productive oceans. The Gulf of Alaska (GOA) provides a plethora of commercial, sport and subsistence fisheries which are revered world wide.

Significant and unrestricted Chinook salmon bycatch has been occurring in the GOA for decades. The Council recently took action to put a long overdue limit on Chinook salmon bycatch in the GOA pollock fisheries. It is time to follow suit for the non-pollock trawl fisheries in the GOA. While these fisheries on average contribute a third of the known Chinook salmon bycatch in the GOA, and in some years as much as 70% of the bycatch, they remain at present unrestricted. Given the disastrous state of Chinook salmon runs throughout the GOA it is long past time that the Council meets its obligations under National Standard 9 and reduce bycatch in this fishery. **We urge the Council to act now and select a bycatch limit under Alternative 2 of 5,000 Chinook salmon for the GOA non-pollock trawl fleet as a starting point for bycatch reduction.**

In 2012, the state of salmon stocks around the GOA was quite literally a disaster. All monitored Chinook salmon runs were below average.[1] In Upper Cook Inlet, Chinook salmon runs were so poor that the Secretary of Commerce declared a fisheries disaster. The setnet fishery was almost completely shut down, and the Kenai River was closed to all recreational Chinook salmon fishing. Despite these closures, only four out of twelve escapement goals were met in Upper Cook Inlet in 2012.[2] **Economic losses in Cook Inlet to commercial fishing alone are estimated at almost $10 million, with another**

[1] North Pacific Fishery Management Council, Initial Review Draft Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis, Nov. 2012 at 43 [hereinafter EA/RIR/IRFA].
[2] *Id.*

PO Box 101145 Anchorage, AK 99510 www.akmarine.org
tel 907.277.5357 fax 907.277.5975 email amcc@akmarine.org

$17.7 million in direct and indirect spending lost to sport fisheries and additional losses to subsistence fishers.[3] Seven GOA Chinook salmon stocks are currently listed as Stocks of Concern by the Alaska Board of Fisheries.[4] Beyond the Gulf of Alaska, at least three Endangered Species Act-listed Chinook salmon are caught in the Gulf of Alaska trawl fisheries.

While the analysis is not able to provide direct estimates of the number of any particular salmon stock which would be "saved" under any of the alternatives, it is clear that any reduction in bycatch would be beneficial to the impacted Chinook salmon stocks. In this particular case, the magnitude of the bycatch is important – fisheries around Cook Inlet were closed down completely because of the possibility that they may catch a few hundred Chinook salmon. The GOA trawl fisheries, on the otherhand, are allowed to catch thousands. Placing a limit on non-pollock trawl fisheries now is critical both as a matter of conservation and equity in these times of Chinook salmon shortages.

A bycatch limit of 5,000 Chinook salmon is barely below the 2003 to 2011 average bycatch for the GOA non-pollock fisheries of 6,001 Chinook salmon.[5] The Council's mandate under National Standard 9 is to minimize bycatch, not to maintain it at historic levels. The GOA non-pollock trawl fisheries have been operating without any requirement to minimize bycatch, and under the status quo there is no economic incentive to do so. A potentially constraining limit will provide the incentives necessary to prompt the development of methods to avoid Chinook salmon. The analysis highlights this effect:

> Under a PSC limit, and especially if the attainment of the threshold appears to be imminent, the non-pollock trawl fleet may be active in making efforts to avoid high PSC rates, in order to preserve the opportunity to fully harvest the groundfish TAC's..... the adoption of a Chinook PSC limit likely will prompt efforts to gain better information concerning Chinook avoidance, improving the ability of participants to avoid Chinook in the long run.[6]

We understand that the Council has begun the process of developing a catch share program for the GOA, and this may provide additional bycatch reduction "tools." However, past experience designing and implementing catch share programs tells us this process will be lengthy and complex, and is unlikely to provide anything resembling a quick fix to bycatch issues. Our Chinook salmon populations in the Gulf are in crisis now, and we cannot wait three years to begin to put limitations on bycatch. Additional bycatch reduction can appropriately be addressed through a catch share program, but it is imperative that the Council takes a first step now to put an upper bound on the allowable bycatch in the Gulf of Alaska non-pollock trawl fisheries.

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[3] Susan Bell, Commissioner Alaska Department of Commerce, Community, and Economic Development, Letter to Senator Murkowski, Senator Begich, and Congressman Young, Nov. 8, 2012. *Available at* http://www.scribd.com/doc/113181249/Susan-Bell-letter-to-congressional-delegation-on-salmon-disaster.
[4] EA/RIR/IRFA, *supra note 1* at 36.
[5] *Id.* at 109.
[6] *Id.* at ES-4.

The Draft EA/RIR/IRFA raises some compelling and disturbing concerns related to monitoring and enforcement.[7] According to this analysis, deck sorting is common practice in this fishery and on unobserved boats "there is a high likelihood that salmon PSC has been sorted from the catch prior to delivery."[8] Furthermore, under a PSC limit, this action is "highly susceptible to introduction of intentional bias into salmon PSC estimation," meaning that under a PSC limit it is highly likely that fishermen would discard Chinook salmon at sea rather than have them be counted, and potentially trigger a cap. This supposition raises substantial concerns about current bycatch estimation, discussed further below. In the context of this action, however, the Council should not allow concerns over the current observer coverage to obfuscate the need or ability to take action now. The Council's obligation is to identify and recommend necessary management measures. Monitoring and enforcement needs, including observer coverage can then be adapted to meet the needs of the management regime. In this case, a lack of observer coverage is no reason to delay action, but rather identifies a need to design monitoring programs which will meet the management requirements of our fisheries. In the Bering Sea pollock fishery, observer coverage for all catcher vessels was increased to 100% to meet these concerns with the implementation of Amendment 91. If similar concerns exist in the Gulf of Alaska, the solution would seem to be the same.

The concerns raised in the management enforcement considerations[9] also create substantial doubt as to the actual degree of impact the status quo fisheries have on salmon. If the monitoring concerns are accurate, then the numbers presented throughout this document as the salmon bycatch numbers are likely inaccurate. In fact, if a great deal of at-sea discards are occurring in the fishery, the actual impact on Chinook salmon is likely greatly understated throughout the draft analysis. Similarly, these monitoring concerns call into question the information on which the Biological Opinion for ESA-listed Chinook salmon caught in these fisheries is based. If in fact a high degree of catch is discarded at sea, estimates of the incidental take of ESA-listed stocks are likely biased low as well.

While estimates of Chinook salmon impacts are likely *underestimated* throughout the analysis due to the monitoring concerns addressed above, economic impacts to the non-pollock trawl fisheries are likely *overestimated* throughout the document. The analysis of foregone revenue assumes no change in fishing behavior: "…regulatory impacts must be viewed with the caveat that fishers did not alter their behavior to avoid Chinook salmon and forestall PSC-related fishery closures."[10] In addition, and perhaps more importantly, the analysis of foregone pollock, because it looks retrospectively, simply assigns the foregone pollock and revenue from the projected season closure date on. In reality, with a PSC limit in place harvesters will likely alter their fishing behavior to shift away from target fisheries with high levels of PSC to ensure that higher value, lower PSC fisheries can occur. While these mitigating circumstances are discussed qualitatively in the

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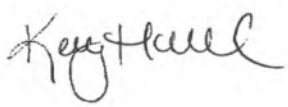
[7] *See* EA/RIR/IRFA, *supra* note 1 at 176-187.
[8] *Id.* at 178.
[9] *Id.* at 176.
[10] *Id.* at 154.

analysis, the quantitative tables of impacts do not reflect these probable adaptations and are therefore likely much higher than actual impacts.

In closing, Chinook salmon are a vital and essential component of our communities, our cultures and our economies in the Gulf of Alaska. For reasons of conservation and equity it is critical that bycatch of this critical species is reduced in a meaningful way. **We urge the Council to act now and select a bycatch limit under Alternative 2 of 5,000 Chinook salmon for the GOA non-pollock trawl fleet as a starting point for bycatch reduction.**

Thank you for your continued attention to this important issue.

Sincerely,



Kelly Harrell
Executive Director
Alaska Marine Conservation Council

Introduced by:	Haggerty, Johnson, Mayor
Date:	02/05/13
Action:	Adopted
Vote:	8 Yes, 0 No, 1 Absent

KENAI PENINSULA BOROUGH
RESOLUTION 2013-013

A RESOLUTION URGING THE NORTH PACIFIC FISHERY MANAGEMENT COUNCIL TO ADOPT MEASURES THAT REDUCE THE CHINOOK SALMON BYCATCH IN THE GULF OF ALASKA AND BERING SEA TRAWL FISHERIES

WHEREAS, Chinook salmon is the official fish of Alaska and a cultural icon for both native and nonnative Alaskans; and

WHEREAS, Chinook salmon is a significant source of food in both the subsistence and recreational fisheries and a key component of the State's commercial and charter fisheries; and

WHEREAS, on September 12, 2012, the U.S. Secretary of Commerce determined that a commercial fishery failure due to a fishery resource disaster exists for three regions of the Alaska Chinook salmon fishery, including Cook Inlet; and

WHEREAS, economic losses to the State of Alaska for commercial and recreational fisheries alone was over $34 million, which does not include the significant impacts to subsistence users; and

WHEREAS, closures in the 2012 Cook Inlet setnet fishery caused by low Chinook salmon returns resulted in a sockeye harvest with an ex-vessel value that was about 10 percent of the recent five-year average; and

WHEREAS, the sport fish harvest of late-run Kenai River Chinook was 103 fish, which was 99 percent below the recent five-year average; and

WHEREAS, these same Chinook salmon are caught and discarded in the Pollock fisheries in the Bering Sea and the Gulf of Alaska and other trawl fisheries in the Gulf of Alaska; and

WHEREAS, bycatch by the trawl fleets can be regulated to protect the mortality of this extremely valuable resource; and

WHEREAS, the Chinook bycatch cap in the Gulf of Alaska pollock fishery is set at 25,000 Chinook salmon, which exceeds the ten-year average bycatch in the fishery; and

WHEREAS, the non-pollock Gulf of Alaska trawl fisheries currently operate under no bycatch limit; and

WHEREAS, the North Pacific Fishery Management Council is considering a cap on the non-pollock fisheries in the Gulf of Alaska and is initiating a catch share program for Central Gulf of Alaska trawl fisheries which should reduce bycatch further;

NOW, THEREFORE BE IT RESOLVED BY THE ASSEMBLY OF THE KENAI PENINSULA BOROUGH:

SECTION 1. That the KPB Assembly urges the North Pacific Fishery Management Council (NPFMC) to adopt and implement management measures that reduce the Chinook salmon bycatch in the Gulf of Alaska (GOA) trawl fisheries by setting new limits.

SECTION 2. That the KPB Assembly urges NPFMC to lower the existing Chinook bycatch limits in the GOA and Bering Sea pollock fisheries to at least half the current limits.

SECTION 3. That the KPB Assembly urges the NPFMC to further reduce Chinook bycatch in any catch share program.

SECTION 4. That the KPB Assembly urges NPFMC to require 100 percent observer coverage in all trawl fisheries in the GOA to provide accurate estimates of bycatch.

SECTION 5. That a copy of this resolution shall be provided to Governor Parnell and all legislators representing the Kenai Peninsula Borough and all members of the North Pacific Fisheries Management Council.

SECTION 6. That this resolution takes effect immediately upon its adoption.

ADOPTED BY THE ASSEMBLY OF THE KENAI PENINSULA BOROUGH THIS 5TH DAY OF FEBRUARY, 2013.

Linda Murphy, Assembly President

ATTEST:

Johni Blankenship, MMC, Borough Clerk

KENAI PENINSULA BOROUGH 1964

Yes:	Haggerty, Johnson, McClure, Pierce, Smith, Tauriainen, Wolf, Murphy
No:	None
Absent:	Smalley

C-2(c) GOA Chinook Salmon Bycatch in the Non-Pollock Trawl Fisheries
Council motion
December 9, 2012

The Council forwards the analysis for public review with changes to the alternatives and options described below. The Council requests staff revise the analysis to address SSC minutes and requests in the AP motion to NMFS and Council staff. Additions to the original motion are underlined.

Problem statement:
Magnuson-Stevens Act National Standards require balancing achieving optimum yield with minimizing bycatch, while minimizing adverse impacts on fishing dependent communities. Chinook salmon prohibited species catch (PSC) taken incidentally in GOA trawl fisheries is a concern, and incidental take is limited in the Biological Opinion for ESA-listed Chinook salmon stocks. The Council recently adopted a PSC limit of 25,000 Chinook salmon for the Western and Central GOA pollock trawl fisheries, while also indicating an intent to evaluate Chinook salmon bycatch in the non-pollock GOA trawl fisheries, which currently do not have a Chinook salmon bycatch control measure.

The following alternatives apply to non-pollock trawl fisheries in the Central and Western GOA.

Alternative 1: Status quo.

Alternative 2: 5,000, 7,500, 10,000, or 12,500 Chinook salmon PSC limit (hard cap).

Option 1: Apportion limit between Central and Western GOA.
Option 2: Apportion limit by directed fishery operational type (CV vs. CP).
Applies to both options 1 and 2: a) Apportion proportional to historic average bycatch of Chinook salmon (5- or 10-year average). b) historic groundfish harvest + 5-10 yr. range 7-4
Option 3: No more than 50% or 66% of the annual hard cap limit can be taken before June 1.
Option 4: Separate Chinook salmon PSC limit (hard cap) to the CGOA rockfish program:
a) 1,500
b) 2,500
c) 3,500

Suboption 1: Divide by sector (CV and CP) based on actual Chinook salmon PSC usage by sector for the rockfish catch share program years of 2007 – 2012.
Each LLP holder within sector will receive an allocation of Chinook salmon PSC equivalent to the license's proportion of the sector's target rockfish catch history from the program's initial allocations. Member LLP allocations will be allocated to their respective cooperative.

Suboption 2: On October 1st, rollover all but 200, 300, or 400 remaining Chinook salmon to support other fall non-pollock trawl fisheries.

Suboptions 1 and/or 2 can be selected for Option 4.

Alternative 3: Full retention of salmon.

Vessels will retain all salmon bycatch until the number of salmon has been determined by the vessel or plant observer and the observer's collection of any scientific data or biological samples from the salmon has been completed.

Note, both Alternative 2 and Alternative 3 could be selected by the Council in their preferred alternative. Likewise, under Alternative 2, both Option 1 and Option 2, or Option 2 and Option 3, could be selected by the Council; Option 4 can be selected with any of the other options.



YUKON RIVER DRAINAGE FISHERIES ASSOCIATION

725 Christensen Drive, Suite 3-B, Anchorage, Alaska 99501
Tel: 907-272-3141 Fax: 907-272-3142

Resolution: 2013-02
Salmon Bycatch

WHEREAS the Yukon River Drainage Fisheries Association (YRDFA) works on behalf of subsistence and commercial fishing families within the Alaskan and Canadian Yukon River drainage who depend on wild salmon for subsistence and commercial fisheries; and

WHEREAS Chinook and chum salmon provide an essential source of food, income and culture for the people of the Yukon River, with chum salmon increasingly important for commercial fisheries and subsistence as Chinook salmon decline; and

WHEREAS subsistence harvests of Chinook salmon have been severely restricted in recent years, and no directed commercial harvests of Chinook salmon have taken place on the Yukon River; and

WHEREAS despite these restrictions the Chinook salmon Canadian escapement goal has only been met in 2 out of the last 5 years and mean run size of Canadian-origin Chinook salmon (which comprise approximately 50% of the run) declined 45% for the period 1998-2010 compared to 1982-1997; and

WHEREAS the Board of Fish has recently taken action to restrict subsistence fishing on the first pulse of Chinook salmon as a conservation measure; and

WHEREAS the Bering Sea pollock fishery catches these same salmon as bycatch; catching over 122,000 wild Chinook salmon in 2007 and over 700,000 chum salmon in 2005; and

WHEREAS according to the best available scientific information half to 70% of the Chinook salmon taken as bycatch are of Western Alaska origin, and of this 40% are from the Yukon River; and

WHEREAS the management measures adopted in April 2009 by the North Pacific Fishery Management Council (the Council) provide for a 47,591 bycatch level in most years, with the potential for the fleet to reach 60,000 in two out of every seven years without consequence; and

WHEREAS although bycatch has remained well below the cap in recent years, the current management regime allows the potential for the pollock fleet to catch as many as 60,000 Chinook salmon as bycatch; and

WHEREAS Chinook salmon bycatch in the pollock fishery is consistently high from October 1 on, and in 2011 over half of the annual bycatch was taken in October and November; and

WHEREAS in these times of severe Chinook salmon declines, all sources of mortality must be reduced and all harvesters of salmon must bear equitably in conserving Chinook salmon; and

WHEREAS there is currently no limit on chum salmon in the Bering Sea pollock fishery in place;

THEREFORE BE IT RESOLVED that YRDFA requests that the North Pacific Fishery Management Council take action immediately to reduce the overall bycatch cap to 30,000 and change the pollock fishing season closing date to Sept. 30 to avoid the consistently high bycatch in October.

BE IT FURTHER RESOLVED that YRDFA requests that the North Pacific Fishery Management Council also take action to adopt chum salmon bycatch management measures which will adequately protect Western Alaska chum salmon runs.

COPIES of this resolution will be sent to the North Pacific Fishery Management Council, National Marine Fisheries Service, Alaska Department of Fish and Game Commissioner, Yukon River Panel, U.S. Fish and Wildlife Service, U.S. Department of State, Bering Sea Fishermen's Association, Association of Village Council Presidents, Tanana Chiefs Conference and other Western Alaska salmon groups.

APPROVED unanimously this 14th day of February 2013 by the Board members and delegates of YRDFA assembled at their Twenty-third Annual Meeting held in St. Mary's, Alaska.

Attest: Richard Burnham

Richard Burnham, YRDFA Co-Chair

William Alstrom, YRDFA Co-Chair

TANANA CHIEFS CONFERENCE

Executive Board of Directors

Resolution No. 2013 - xx 03

TITLE: **Calling for the State of Alaska to Institute Legal Challenges and Take Other Actions to Invalidate the North Pacific Fishery Management Council's Actions Allowing 60,000 Chinook Salmon to be Taken as By-Catch in the Bering Sea Pollock Fishery**

WHEREAS, The Tanana Chiefs Conference (TCC) is the recognized tribal organization and non-profit Alaska Native regional corporation for 42 member indigenous Native villages within Interior Alaska and support the endeavors of its member villages; and

WHEREAS, TCC fully supports its member villages in all aspects of their self-determination, health and well-being; and

WHEREAS, Healthy and abundant Chinook Salmon stocks of the Yukon and Kuskokwim Rivers are essential to the cultural, nutritional and economic well-being and way of life of the tribal villages and peoples who live along these river drainages; and

WHEREAS, Food security is a basic human right recognized by the United Nations and affirmed by the United States in the UN declaration of Rights of Indigenous Peoples; and

WHEREAS, The Chinook stocks in the Yukon and Kuskokwim River drainages, and Chinook stocks throughout the Arctic-Yukon-Kuskokwim region, are in a serious state of decline, resulting in closed commercial fisheries and subsistence fisheries restricted to the point where villages are not attaining the amount needed to satisfy their basic needs and tribal members have been issued citations and had their nets confiscated for fishing for Chinook salmon to feed their families; and

WHEREAS, The projected Chinook runs for the Yukon and Kuskokwim Rivers next season are projected to demonstrate a more drastic decline, and recent information demonstrates that this trend has existed over the last decade or more; and

WHEREAS, Representatives of the State of Alaska joined other members of the North Pacific Fishery Management Council (NPFMC) in voting to allow as many as 60,000 Chinook salmon to be wasted as by-catch in the Bering Sea Pollock trawl fishery each year, and a large percentage of these Chinook have been scientifically shown to be headed to the Yukon and Kuskokwim Rivers; and

WHEREAS, The State and NPFMC decided to allow this large by-catch despite knowing that the Chinook stocks on the Yukon and Kuskokwim Rivers are in trouble, that the tribal people who depend upon these salmon for cultural and economic survival are suffering, and that international agreements with Canada regarding Yukon Chinook cannot be satisfied

(at least without extreme sacrifices by Villages throughout the U.S. portion of the Yukon; and

WHEREAS, The State of Alaska is quick to sue the Federal agencies anytime it thinks that a resource3 classification, for example a listing as endangered of threatened under the Endangered Species Act, will impact any potential development or any desire of industry, and the State has either filed litigation or threatened to do so for the related to ESA listings for Polar Bears and several other marine mammal species; and

WHEREAS, The State of Alaska has also filed numerous lawsuits against the Federal Agencies related to these agencies' efforts to protect the Alaska Native subsistence way of life and the tribes' customary and traditional hunting and fishing practices and needs, despite the State's failure to keep its promise for a rural subsistence priority or a constitutional amendment allowing for a meaningful State subsistence priority.

ΕREFORE BE IT RESOLVED that Tanana Chiefs Conference Executive Board calls on the State of Alaska Governor and Attorney General to file a lawsuit challenging the NPFMC's decision to allow 60,000 Chinook salmon to be wasted as by-catch annually in the Bering Sea Pollock fisher, to seek relief through this lawsuit that would instead minimize and within a reasonable time work to eliminate Chinook by-catch, and to work with TCC in this litigation; and

BE IT FURTHER RESOLVED that as an alternative to litigation, the State of Alaska representatives to the NPFMC introduce a formal process to, without delay, reconsider its decision on Chinook by-catch, and that the State work in this reconsideration to significantly reduce allow Chinook by-catch below 60,000 and eventually eliminate this by-catch; and

BE IT FURTHER RESOLVED that the State of Alaska work with TCC to establish a through federal legislation a significant per fish fine for by-catch of Chinook salmon in the Pollock fishery and dedicate funds derived from these fines to research designed to identify Chinook stocks taken as by-catch, ways to eliminate by-catch, and science into the causes of the decline in Chinook stocks through the AYK regions, and to establish a tribal voting seat on the NPFMC.

CERTIFICATION

I hereby certify that this resolution was duly passed by the Tanana Chiefs Conference Board of Directors on March 9, 2013 at Fairbanks, AK and a quorum was duly established.

Pat McCarty,
Secretary/Treasurer



North Pacific Fishery Management Council

- manages offshore Federal fisheries off Alaska (3-200 miles) with NMFS
- Management governed by the Magnuson-Stevens Act (U.S. Federal law). Balance of 10 National Standards, including:
  - Minimize (salmon) bycatch to extent practicable
  - Prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery (e.g., the Alaska groundfish fisheries)
  - Provide for the sustained participation of and minimize adverse impacts on fishing communities

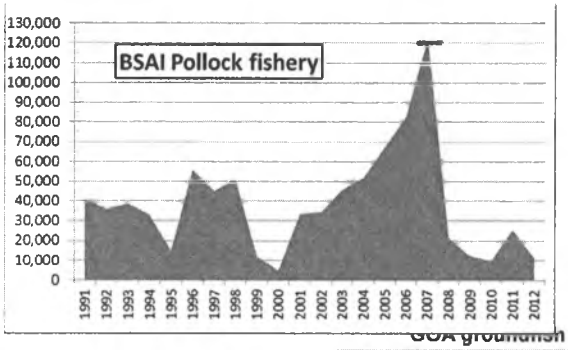
Salmon bycatch in the Alaska groundfish fisheries

NOTE: Council does not regulate any salmon fisheries (State of Alaska), only salmon bycatch occurring in offshore groundfish fisheries

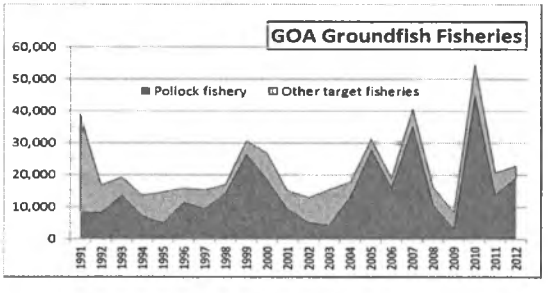
- Trawl fisheries catch Chinook salmon as bycatch
  - In the Bering Sea, bycatch is in the pollock fishery
  - In the GOA, it is mostly in the pollock fishery (~75%), but also in flatfish, Pacific cod, and rockfish fisheries
- By law, bycatch is counted, but cannot be retained or sold

Chinook bycatch 1991-2012

(number of salmon)



GOA groundfish fisheries



- Note difference in scale between BSAI and GOA
- Most recent 5-year averages (2008-2012):
  - BSAI pollock: 16,079
  - GOA pollock: 18,325
  - GOA other: 6,217

What action has the Council taken? Bycatch limits that close the fishery

- Bering Sea pollock fishery
  - 60,000 Chinook salmon bycatch limit, with incentive plans to remain below 47,951 salmon *(implemented 2011)*
    - Apportioned by sector (catcher vessel, catcher processor, mothership, CDQ) and inshore cooperative
    - If sector exceeds its apportionment of 47,591 Chinook salmon 3 times in 7 year period, sector's limit will permanently reduce to lower cap
    - Council receives annual report on incentive programs

What action has the Council taken? Bycatch limits that close the fishery

- GOA pollock fishery
  - 25,000 Chinook salmon bycatch limit *(implemented mid-2012)*
    - Apportioned between the central and western regulatory area pollock fisheries
- GOA non-pollock fisheries
  - Limits currently under review range from 5,000-12,500 Chinook salmon
    - Council final action scheduled for June

What action has the Council taken? Stock of origin research

- Purpose:
  - to understand relationship between Chinook salmon bycatch in the groundfish fisheries and the status of individual Chinook stocks

What action has the Council taken? Stock of origin research

- Bering Sea
  - Basis of Council action in 2009 (PSC limit)
    - bycatch and genetics information from 2005-2007
    - AEQ model provided information on proportional stock of origin of bycatch, broken out to regional and western Alaska river systems
    - Coastal western Alaska is largest component of bycatch
  - Since 2011: systematic sampling procedure for Chinook
    - including full census and increased observer coverage (min. 100%)
  - genetic breakdown of samples presented each April
    - April 2013 is first time will receive complete annual report based on full census and systematic sampling protocol (for 2011)
  - Best information on impact rate to western Alaska
    - bycatch was between 0.7% - 2.4% of combined run sizes in 2011
    - *See Stram and Ianelli paper from AYKSSI, December 2012*

What action has the Council taken? Stock of origin research

- GOA
  - Very limited information to date
    - Insufficient samples for stock composition analysis
    - Indication of presence of stocks from limited samples (primarily from pollock fishery) and coded wire tags
  - Systematic sampling procedure now underway in pollock fishery (result of Council action)
    - Census from observed and unobserved pollock deliveries, but lower observer coverage than Bering Sea
  - Genetic breakdown of available samples each April ?
    - awaiting 2011 results; 2010: stocks present predominantly Pacific Northwest, British Columbia, and coastal southeastern AK
  - Full retention under review in non-pollock fisheries
    - Census sampling will likely not be possible, but other sampling methodology may be used.

What action has the Council taken?

- Extensive outreach to coastal and interior communities
  - Purpose: solicit input on salmon bycatch actions prior to Council action, promote 2-way dialogue
  - Community meetings, participation at subsistence regional advisory council meetings, regional large forums (e.g., AVCP, YRDFA, YRP), statewide teleconferences
- Food bank donations
  - Council amended requirements in 1996 to allow donation of bycaught salmon to food banks
  - Voluntary industry program; heightened participation in recent years, in Bering Sea and GOA
  - Donations of salmon and halibut in 2012:
    - BSAI: 73,000 lbs; ~85% salmon
    - GOA: 30,000 lbs; ~15% salmon

What action is the Council taking? Chinook salmon bycatch reduction in other management actions

- Bering Sea chum salmon bycatch reduction
  - Measures to reduce chum salmon bycatch in pollock fishery need to be tempered by concurrent objective to not increase Chinook salmon bycatch
  - To date, measures under consideration have been shown to exacerbate Chinook bycatch reduction. Council is developing more adaptive approaches.
- Development of bycatch management tools for GOA underway
  - Council considering cooperative management and bycatch avoidance incentives for trawl fisheries
  - Necessary in context of Chinook salmon PSC limits as well as recent halibut and crab protections

Summary

- Chinook salmon bycatch reduction is continuing priority for Council
- Management achieved through hard cap limits as well as incentive programs
- Regular reporting of Chinook salmon bycatch levels allows the Council to react to potential problems



Catches (in thousands) of Chinook salmon in commercial, subsistence, and recreational fisheries; and bycatch taken in federally-managed groundfish fisheries in the Gulf of Alaska west of Yakutat, 1996-

Year	Commercial	Subsistence	Recreational	Total	Bycatch
1996	104	7	91	203	16
1997	103	10	101	214	15
1998	110	11	76	197	17
1999	110	12	103	226	31
2000	63	11	105	179	27
2001	80	10	95	185	15
2002	84	10	77	171	13
2003	98	9	96	203	15
2004	118	11	99	228	18
2005	96	7	105	208	31
2006	86	8	102	197	19
2007	91	10	94	194	41
2008	49	8	72	129	16
2009	38	5	54	97	8
2010	55	6	53	114	55
2011	63	7	51	122	21

Dec 13, 2012 - 02:43 PM AKST

Bycatch reductions for chinooks, chums keep moving

MOLLY DISCHNER, ALASKA JOURNAL OF COMMERCE

Chinook and chum could receive a little extra protection in federal waters when work continues on salmon bycatch efforts.

The North Pacific Fishery Management Council agreed Dec. 9 that it is time for public review of a chinook measure for the non-pollock trawl fisheries in the Gulf of Alaska. That came after the council asked the Bering Sea pollock fleet to look at ways it could reduce its catch of western Alaska chum salmon. Any action for the Bering Sea is likely farther down the road.

The council passed a cap of 25,000 chinooks for the Gulf of Alaska pollock fleet that took effect in 2012. The pollock fleet uses pelagic, or midwater, gear. The new measure for the Gulf will affect non-pelagic, or bottom trawl, gear for the flatfish and cod fleets.

Council member Cora Campbell, the Alaska Department of Fish and Game commissioner, motioned to move ahead with public review of the potential chinook protections, with some options added to the alternatives staff had already presented.

Campbell's motion included additions to the analysis that the Advisory Panel, or AP, and Scientific and Statistical Committee, or SSC, had recommended. The SSC had also recommended releasing it for public review once the additions were made. The AP, however, had recommended not yet releasing the measure for public review.

The alternatives now up for analysis include hard caps with a variety of options. Those include apportioning a cap between the western and central Gulf of Alaska fisheries, apportion the limit by type of vessel, allowing only part of the limit to be taken early in the season and having a separate limit for the rockfish program. Several suboptions will also be considered, including apportioning the limit based on either historic chinook catch or historic total catch, and various specifications for a limit in the rockfish program.

Campbell said she realized that hard caps are far from an ideal way to control prohibited species catch, but that those tools are farther down the road, and it isn't responsible to have fisheries with unlimited potential for chinook mortality.

"We have stocks of salmon that are highly valued by fishing communities, we have fisheries that have a potential for unlimited mortality on stocks at a time when there's great uncertainty about the ability of those stocks to support high levels of mortality, and we have a requirement under the natural standards to minimize bycatch to the extent practicable and also to minimize the adverse affects in our action on fishing communities," Campbell said.

Council member Duncan Fields offered the amendment, which the council approved, to add the suboption to look at apportioning based on historical harvest in addition to looking at apportioning based on historic prohibited species catch.

During discussion, council member John Henderschedt questioned the method of dividing a prohibited species cap amongst sectors, rather than calculating everyone's needs and adding them together.

"Trying to use division to do this is just, is not the best way to be doing this," Henderschedt said.

Council chair Eric Olson disagreed.

"Well, if there was enough fish to provide for the sum of all the needs there would be no problem here," Olson said. "The problem is we don't have enough fish. And so now we have to find a way to use division to get there."

Glenn Merrill, sitting in for National Marine Fisheries Service Alaska Region Administrator Jim Balsiger, said the agency is always supportive of reducing bycatch, but would need to find ways to address enforcement and management issues before they can support final action on the alternatives.

The council is also working on a way to provide more bycatch tools in the Gulf through rationalization, or allocating fishing privileges to eliminate the race for fish, but such a package is far from being ready for action.

The council heard significant public testimony on the action, including those who wanted the smallest cap the council is considering, and those who don't think the plan is ready to move forward.

John Gauvin said he thought divvying up the prohibited species cap could make compliance more difficult, but that those participating in the fishery want to limit their take of those fish.

"I think the fleets do want to do better," Gauvin said.

Julie Bonney from the Alaska Groundfish Data Bank said that organization did not support moving forward immediately, and wanted to see the trawl fleet gain tools to comply with bycatch before moving on with caps. She also said stock identification information was needed to better understand what is being caught and the impact the fleet has on the fishery. Those things would help them support an effort, she said.

"This isn't the action to get us there," she said.

Homer fishermen Pete Wedin said that while there are many unknowns about what's happening to salmon, wasting chinook is definitely an issue.

"Many small boat fishermen throw up their hands and say that the corporations that exploit these large fisheries are too big to fight, too big to fail. In the case of chinook salmon in the Gulf of Alaska, these iconic fish are in short supply."

For Bering Sea chum bycatch reduction, the council opted to ask industry for a plan outlining how they could work within the existing chinook incentive plan agreements, or IPA, rather than continue work on the current options. IPAs took effect in 2011 for the Bering Sea pollock fisheries and allow a larger share of the chinook salmon cap in exchange for vessels taking additional steps to minimize bycatch.

The council discussed the difficulties of balancing chinook and chum protections for western Alaska extensively, and also heard from staff that the alternatives they had in front of them might not make a sizable difference in chum escapement.

Quantifying the impact of chum bycatch on area fisheries is difficult, in part, because genetic identification work so far hasn't been able to separate out various river systems within western Alaska.

Molly Dischner can be reached at molly.dischner@alaskajournal.com.

This article appears in the December Issue 3 2012 issue of Alaska Journal of Commerce

Read more: http://www.alaskajournal.com/Alaska-Journal-of-Commerce/December-Issue-3-2012/Bycatch-reductions-for-chinooks-chums-keep-moving/#ixzz2KjptwRhR

NOAA Technical Memorandum NMFS-AFSC-244

Genetic Stock Composition Analysis of Chinook Salmon Bycatch Samples from the 2011 Bering Sea and Gulf of Alaska Trawl Fisheries

by
C. M. Guthrie III, H. T. Nguyen, and J. R. Guyon



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Alaska Fisheries Science Center

March 2013

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were more similar, larger amounts of more southern stocks (Coastal Southeast Alaska, British Columbia, and west coast US) were estimated in 2011 than 2008 and 2010.

Likewise, the 2007, 2008, and 2011 "B" season stock composition estimates were similar with large amounts from Coastal Western Alaska (Fig 8.) In contrast with the 2010 "B" season estimate, the 2011 "B" season estimate identified smaller contributions from British Columbia, West Coast U.S. and Coastal Southeast Alaska stocks. Unlike previous years studied, most of the Chinook salmon bycatch occurred during the "B" season such that the sample set was relatively large this year. In addition, 2011 was the first year systematic random sampling was employed where genetic samples were collected from one of every 10 Chinook salmon encountered. The combined size of the sample set and the proportional sampling methods employed help make the 2011 "B" season estimates representative of the total catch.

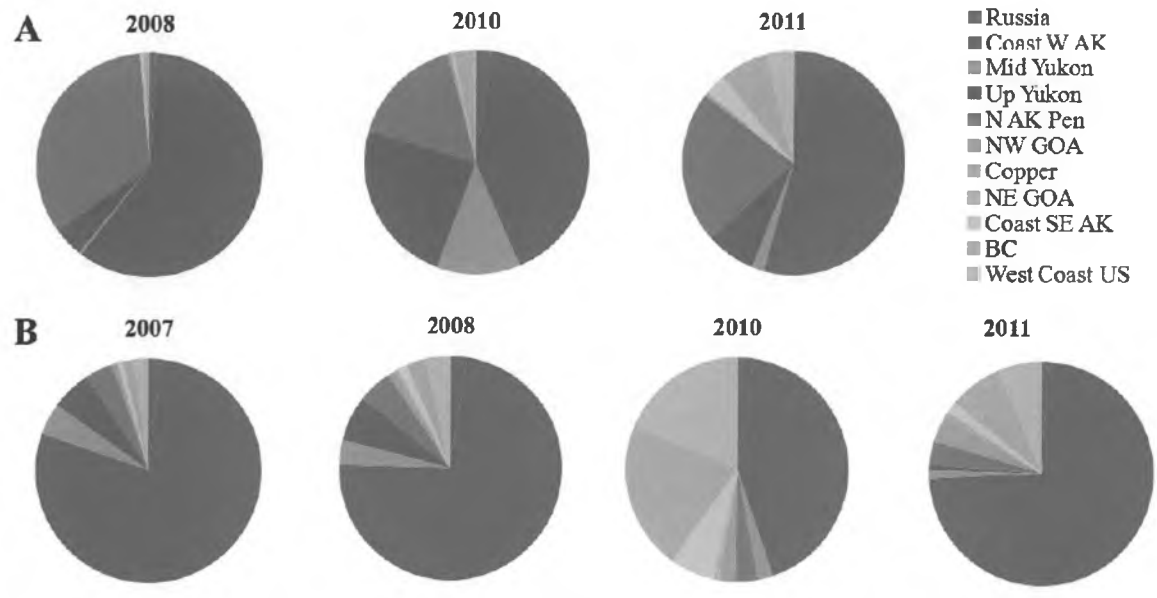


Figure 8.– Comparison of "A" season genetic stock composition estimates for 2008,2010 and 2011 based on available genetic samples from the BSAI Chinook salmon bycatch. Comparison of "B" season genetic stock composition estimates for 2007, 2008, 2010, and 2011 stock composition estimates based on available genetic samples from the BSAI "B" season Chinook salmon bycatch. The same genetic baseline and regional groupings were used in all analyses.

While changes in sampling protocols between years necessitate caution in comparing annual analyses across years, when the stock compositions were analyzed for the entire year, Coastal Western Alaska and North Alaska Peninsula stock compositions trended downward between 2008 and 2010 but increased in 2011 (Fig. 10). The Yukon River contribution dropped to its lowest levels in 2011, while British Columbia and West Coast U.S. stock compositions continued to trend upward (Fig. 9).

For the GOA, the opportunistic sampling protocols employed between 2010 and 2011 limit the results to indentifying only presence of individual stocks. In addition, available sample numbers were very low, with 161 samples from 2010 (0.4% sampling rate) and 240 samples in

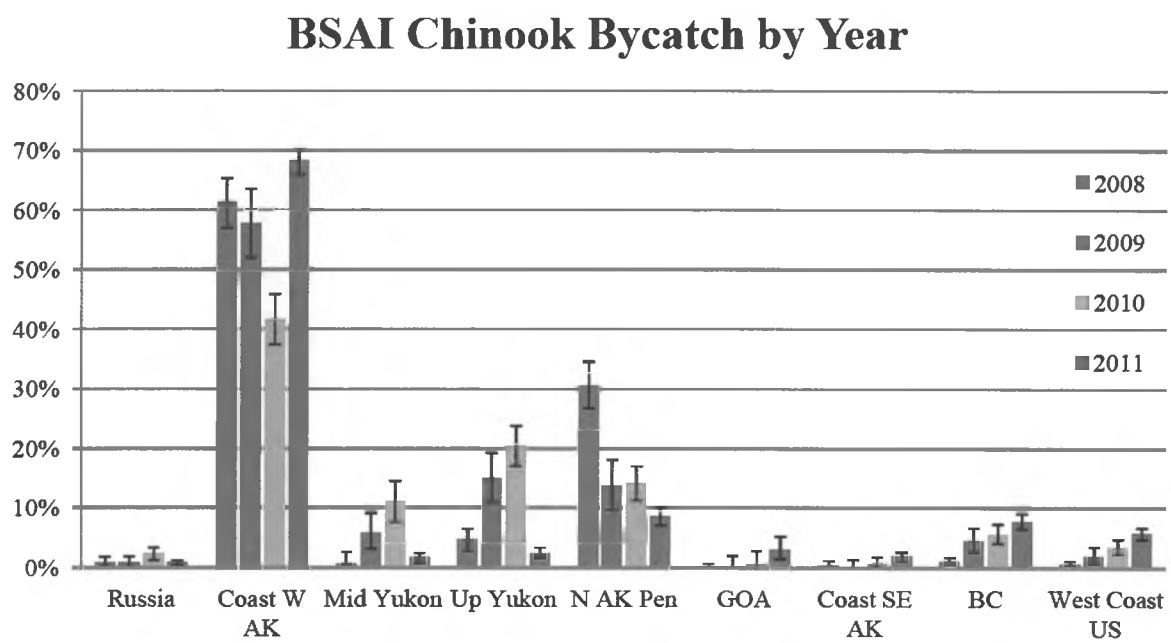


Figure 9. -- Comparison of yearly stock composition estimates (2008-2011) based on genetic samples from the Bering Sea Chinook salmon bycatch. The same genetic baseline and general regional groupings were used in all analyses. GOA group consists of combined values for NWGOA, Copper, and NE GOA. BAYES 95% credible intervals are plotted for yearly estimates.

Alaska Marine Conservation Council

BYCATCH UPDATE

Jan 2013

Recent Actions to Reduce Salmon and Halibut Bycatch & Opportunities for Additional Reductions on the Horizon

Bycatch Overview: Moving Toward Cleaner Fisheries

The summer of 2012 has been marked by extremely low Chinook salmon returns in rivers across Alaska. Subsistence, sport, and commercial fisheries have been closed due to low king numbers. This in turn has translated into an unprecedented call for action to reduce bycatch, or the incidental harvest, of Chinook salmon by other fisheries that capture them. There is much uncertainty about the overall impact that bycatch is having on Chinook salmon populations. Many scientists believe that changing ocean conditions are playing a major role in the declines. Still, federal fishery managers are mandated to minimize bycatch under the Magnuson-Stevens Act. AMCC has worked to support clean fisheries since its inception in 1994, and much progress has been made. **Many bycatch limits have been put in place or reduced in the last five years.** But Alaska can and should do more to support the long-term health of fish populations and ensure that directed subsistence, commercial and sport fisheries are not diminished by the capture of their target species in another fishery.

What is Bycatch?

From skates and urchins to halibut and Chinook salmon, marine life that is caught and discarded in pursuit of another commercially targeted species is considered bycatch.

All fisheries and types of gear have some level of bycatch. At one end of the spectrum is jig gear, the most selective, which deploys single hooks off the bottom. At the other end of the spectrum is bottom trawl gear that is the least discriminate and has the highest habitat disturbance as it is dragged along the seafloor.

AMCC promotes reducing bycatch of all species, clean gear and fishing practices that minimize bycatch.

Gulf of Alaska Chinook Salmon Bycatch

Prized Chinook salmon runs from the Copper River to Cook Inlet and Kodiak have been low in recent years, with fishery disasters declared for the Upper Cook Inlet in 2012. At the same time that salmon fishermen were restricted, **bycatch of our prized king salmon soared to over 51,000 Chinook in the Gulf of Alaska in 2010**. This all-time high number reinvigorated a call for a limit on king salmon bycatch in Gulf trawl fisheries.

In June 2011, the North Pacific Fishery Management Council (NPFMC) established the first-ever limit on Chinook salmon bycatch in the Gulf of Alaska pollock fishery at 25,000 kings. This cap went into effect in August 2012. Once the Chinook cap is reached, the pollock fleet has to stop fishing. While that number is higher than the 15,000 initially called for, it's considered an important first step. In addition to the cap is a requirement to retain salmon bycatch, which should provide more accurate counts.

The Council is now in the process of considering a cap for the other trawl fisheries in the Gulf, other than the pollock fishery. On average these other fisheries are responsible for about a third of the Chinook salmon bycatch every year, but in some years they've caught as much 60% or more of the bycatch. **The Gulf non-pollock trawl fisheries are the only fishery left which catches a significant amount of salmon bycatch, yet does not have a limit.** It's critical that we close this loophole and put a cap in place. **At their Dec. 2012 meeting the Council will considered a range of caps from 5,000-12,500 and is tentatively scheduled to take final action in April 2013.**



Federal fishery observer counting bycatch in a trawl net.

Gulf of Alaska Halibut Bycatch

Halibut populations have experienced significant declines in Gulf of Alaska management areas over the past decade. Commercial and charter fishing limits have been reduced by as much as 50% or higher in some management areas - causing hardships for the many people and communities who depend on this resource. At the same time, allowable halibut bycatch remained at the same level since 1989. **In June 2012, the NPFMC voted to reduce the halibut bycatch cap by 15% for the**

trawl fleet, and to also reduce the limit in the longline sector. The reduction will be phased in over 3 years – 7% in year 1 (likely 2014), another 5% in year 2 and the final 3% in year 3. **With halibut declining for unknown reasons, reducing bycatch is important to rebuild the population and the fishery.**

Bering Sea Salmon Bycatch

Chinook salmon populations returning to Western Alaska rivers are facing steep declines. Returns to the Yukon River, the farthest migrating salmon run in the world, have been so low in recent years that even subsistence fisheries have been severely restricted. Even with these restrictions, escapement goals have not always been met. In 2012, returns were so low in both the Yukon River and the neighboring Kuskokwim that a disaster was declared for both rivers. **In 2009, the Council voted to limit Chinook salmon bycatch in the Bering Sea pollock fishery. For the first time, the pollock fishery must close if the bycatch cap is reached.** However, the limit is high: 47,591 kings, with a provision for the fleet to catch up to 60,000 Chinook salmon in any 2 out of 7 years without penalty. Western Alaskans, and in-river fishery managers, recommended a 30,000 Chinook cap. As runs decline, the inequity of placing severe restrictions on Alaskans harvesting salmon to provide food for the winter while thousands of the same fish are discarded at sea is dramatic.

The Bering Sea pollock fishery also catches chum salmon as bycatch. Chum salmon runs have been relatively strong in Western Alaska in recent years (except in Norton Sound). But as Chinook runs decline, chum salmon are especially important and it's critical that bycatch of this species is reduced as well. The NPFMC is considering new chum salmon bycatch management measures, including caps and mechanisms to close bycatch hot spots during the fishing season. They are scheduled to take this issue up again in December 2012.

Further Opportunities for Bycatch Reductions

When the Council approved measures to control Gulf of Alaska Chinook salmon and halibut bycatch, they indicated that further reductions would be examined under a future catch share program for groundfish (such as pollock and cod) to give the trawl fleet new ways to fish more selectively. **The Council will next consider this program at the February 2013 meeting.** Currently they have no plan to re-examine Chinook salmon bycatch in the Bering Sea. However, continued declines in Western Alaska Chinook salmon runs could spur further action.

Support Action to Reduce Bycatch

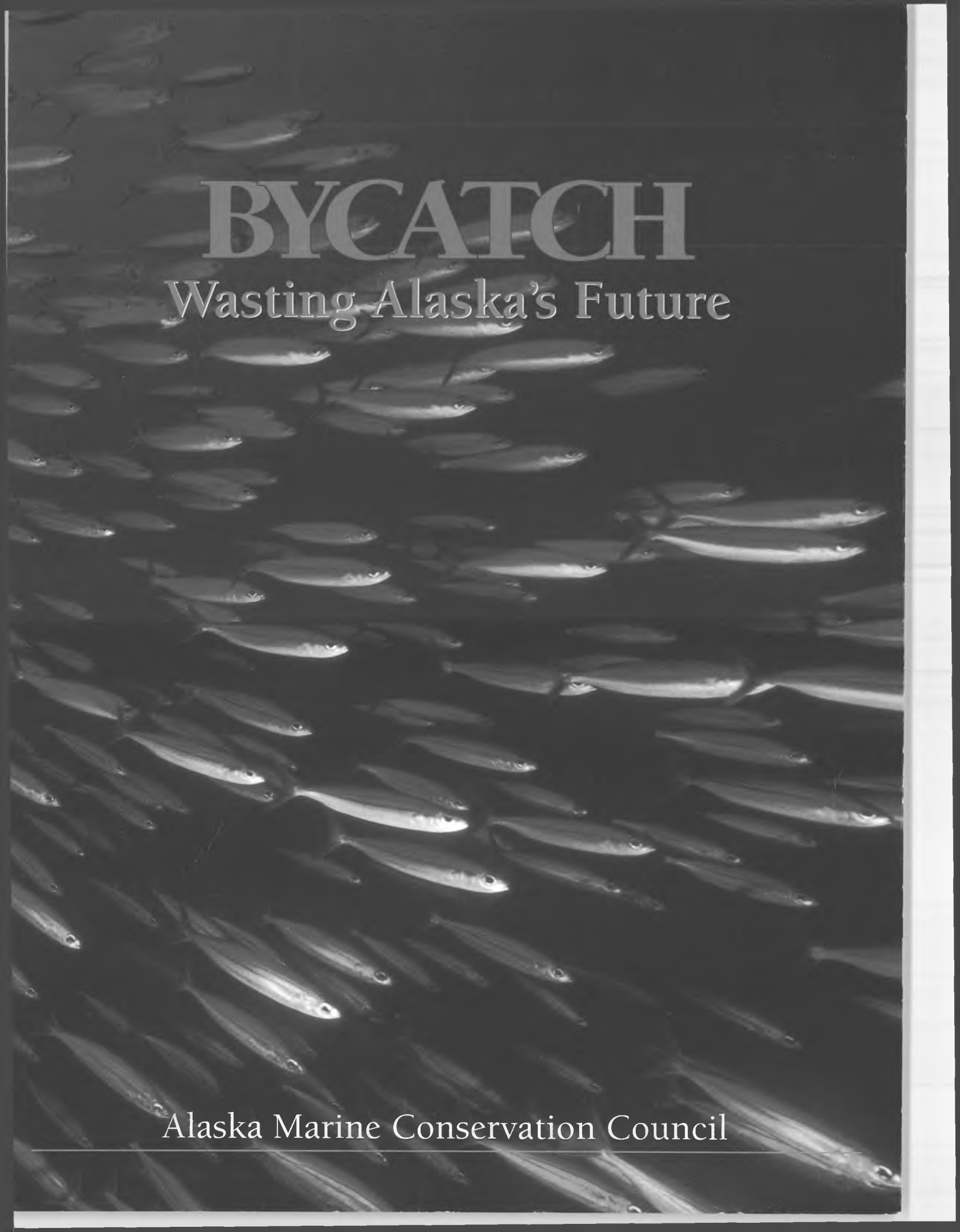
Members of the Alaska State Legislature can support reductions in salmon bycatch in a number of ways, including providing comments via a letter to the North Pacific Fishery Management Council for their April 2013 meeting.



For more information contact:

Pete Wedin - #(907) 399-6001 * Email: pete@captpete.com

Visit www.akmarine.org



BYCATCH

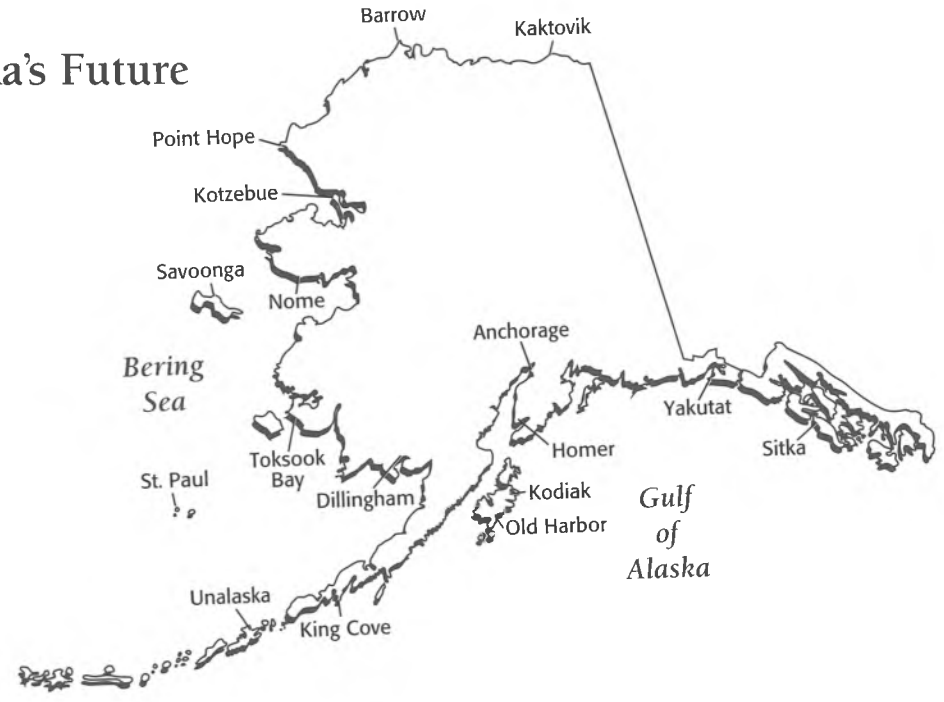
Wasting Alaska's Future

Alaska Marine Conservation Council

BYCATCH: Wasting Alaska's Future

October 1998

Prepared by Francine Bennis,
Dorothy Childers & Steve Ganey



About Alaska Marine Conservation Council

AMCC is a community–based organization of commercial and recreational fishermen, subsistence hunters and fishermen, marine biologists, small business owners and others throughout Alaska whose livelihoods and ways of life depend on a healthy and diverse marine ecosystem.

We bring a coastal community perspective to conservation. Please join us!

For further information about AMCC's program, how to reach our Board of Directors and Field Offices, or how to get involved:

P.O. Box 101145
Anchorage, AK 99510
(907) 277-5357; fax 277-5975
e-mail: amcc@akmarine.org
homepage: www.akmarine.org

AMCC is a non-profit 501(c)(3) organization. Contributions are tax deductible.

This report is made possible by the generosity of The Skaggs Foundation of Juneau, Alaska and The Pew Charitable Trusts.

We wish to thank many people for their help: Terry Johnson, Joe Macinko, Luise Woelflein, Ed Roberts, Bob Mikol, Teresa Turk, Bob Childers, Dave Albert, Janet Smoker, Nancy Lord, the NMFS Observer Training Center, Chris Hitchcock, Northern Printing and those fishermen who, for many years, have given of their time and experience to find solutions to bycatch.

I feel the life in my fingers,
the strength to pick fish
and the patience to mend nets,
and the power
and the need to do the other work
to keep fish and fishing alive,
to do what I can to bring together
history and heaven.

– Nancy Lord
from Fishcamp: Life on an Alaskan Shore

A Call to Action

EVERY YEAR HUNDREDS of millions of pounds of halibut, salmon, crab and other fish and marine life are hauled aboard fishing vessels in Alaskan waters and then tossed overboard as bycatch. Year in and year out, 15-20 percent of all the groundfish caught in the North Pacific are dumped back into the sea dead or dying because they are too small, the wrong sex, or the wrong species.

WHAT EFFECTS are such excessive levels of bycatch having on the marine ecosystem? Does allowing so much waste make economic sense? How does bycatch in the North Pacific affect our coastal communities? How do Alaskans feel about it? This report tells the story of bycatch.



Bycatch includes fish, crabs and other marine life important to the ocean and our economies.

BUT IT'S NOT ENOUGH to just describe the problem. A bright future must include cleaning up wasteful fishing practices and minimizing the associated habitat destruction. To start down the path of solutions, this report provides Alaskans, policy makers and fishery managers specific guidelines for minimizing bycatch in compliance with law. We hope it will serve as a guide as we work together to shape a healthy and productive future for our children and communities.



It was Alaska's coastal peoples who first saw the warning signs of our seas in trouble. Long-lasting solutions will emerge from the people. Our coastal communities are the ecosystem's first line of defense.

Nevette Bowen,
Yakutat

North Pacific Fisheries - A History



Pot gear

My grandma used to say that everything is connected and if we do something that hurts a part of our environment then we're going to pay consequences. Sometimes we don't know what the consequences are and sometimes they take a long time to manifest themselves. That's the way she raised us – to respect where we live and not to waste, always to share.

Olga Pestrikoff
Old Harbor

THE NORTH PACIFIC is one of the most biologically productive oceans in the world. Enormous plankton blooms in the early spring form the base of the marine food chain which in turn supports nearly 500 species of fish and a diversity of sea mammals and seabirds, some migrating long distances to summer feeding and breeding grounds in Alaska's waters (NRC, 1996). The cultural history of coastal peoples around Alaska is a testament to its richness.



Longline Hooks

It is not surprising then that the North Pacific holds some of the most productive commercial fisheries remaining in the world. Over the last 40 years groundfish fisheries for pollock, cod, yellowfin sole, rock sole, crab and others have developed into highly mechanized industrial operations designed to maximize catch and efficiency. There is more fishing power today (both in numbers of vessels and technology) in the North Pacific than ever before.

Starting in the 1950s, foreign-flagged fishing vessels from Russia, Poland, Japan, and Korea began expanding commercial fisheries offshore Alaska. In an effort to gain control over the management of fishery resources around the United States, Congress passed the Magnuson Fishery Conservation and Management Act in 1976 heralding a new era for North Pacific fisheries. This Act established the Exclusive Economic Zone (EEZ), or those waters from three to 200 miles off the U.S. coast. Congress also formed the North Pacific Fishery Management Council to manage groundfish fisheries of the Bering Sea and Gulf of Alaska. The federal government then began subsidizing development of an American-flagged fleet to build domestic economic opportunities. By 1988 huge foreign offshore vessels that once dominated the North Pacific had fully given way to an immense "Americanized" fleet.



Trawl on deck

These are the groundfish species that are included in the Bering Sea/Aleutian Islands and Gulf of Alaska fishery management plans. Some of these species are managed as assemblages with harvest quotas set for the group. The federal Groundfish Observer Program monitors bycatch in these fisheries. (The State of Alaska monitors bycatch in the crab and scallop fisheries).

- Pollock
- Pacific cod
- Atka mackerel
- Sablefish
- Rockfish
  - Pacific Ocean perch
  - northern rockfish
  - rougheye rockfish
  - shortraker rockfish
  - sharpchin rockfish
  - dusky rockfish
  - thornyhead rockfish
  - canary rockfish
  - china rockfish
  - copper rockfish
  - quillback rockfish
  - rosethorn rockfish
  - tiger rockfish
  - yelloweye rockfish
- Flatfish
  - rock sole
  - yellowfin sole
  - Greenland turbot
  - arrowtooth flounder
  - flathead sole
  - rex sole
  - Dover sole
  - starry flounder
  - longhead dab
  - english sole
  - butter sole
  - Alaska plaice

What is bycatch?

NEARLY 1,000 SPECIES of marine life are caught as bycatch in the North Pacific groundfish fisheries (NMFS, 1998). By weight, this bycatch exceeds the amount of fish harvested during peak years in all the Alaska salmon fisheries combined (NMFS, 1995). The excessive volume of bycatch in the North Pacific is a consequence of modern, large-scale fishing operations driven largely by economic incentives to catch as much fish as possible, as quickly as possible. Vessels out to catch particular groundfish species throw back fish and other marine life that are too small, the wrong sex or the wrong species.

There are several categories of bycatch:

Economic Discards: These are fish of an undesirable size (most of these are juvenile fish, too small for the processing machinery), sex (for example, males in the rock sole roe fishery), or quality.

Species with No Commercial Value: These are species such as corals, skates, sea stars, sponges, sea onions, sea anemones, and countless invertebrates from the ocean bottom, which are important in the marine food web or as habitat for other species (see Ecological Impacts).

Regulatory Discards: These are fish that must be discarded because the season is closed for that species or some other regulatory mechanism is in place.

Prohibited Species: These include crab, halibut, herring and salmon, which are illegal to retain in groundfish fisheries because they are the target species for other fishermen.



Ground up bycatch from trawl vessel

All fisheries and types of gear have some level of bycatch. At the two ends of the spectrum, bottom trawl nets are the most indiscriminate gear because the nets are dragged along the ocean floor where many different species live together. Among the groundfish fisheries, jig gear is the most selective. Lost pot, longline and trawl gear can continue to catch fish or entangle marine mammals and birds. This bycatch from "ghost fishing" is not accounted for. As one solution, crab pots are now required to have a biodegradable panel to create an escape route.

Some fisheries have higher bycatch rates than others. Some fisheries waste as much or more fish than they keep. For example, the Bering Sea rock sole trawl fishery had a 60 percent bycatch rate in 1997. In the same year, the Gulf of Alaska slope rockfish fishery had a 54 percent bycatch rate. On the other hand, the combined bottom and mid-water trawl fishery for Bering Sea pollock had a nine percent bycatch rate in 1997 (Pacific Associates, 1998). This bycatch was largely economic discards of juvenile groundfish combined with a lesser volume of halibut, crab and other species. However, a relatively low rate may not indicate a small amount of bycatch. In the case of pollock, a small percentage of a large volume fishery represents a lot of wasted marine life.

Amount of bycatch from all groundfish fisheries in the Bering Sea / Aleutian Islands & Gulf of Alaska.
Source: Pacific Associates 1995, 1998

	1994	1995	1996	1997
Groundfish Species	751,190,000 lbs	645,970,000 lbs	616,919,000 lbs	644,654,000 lbs
Halibut (mortality*)	17,267,000 lbs	14,960,000 lbs	14,926,000 lbs	14,620,000 lbs
Herring	3,995,000 lbs	1,038,000 lbs	3,561,000 lbs	2,515,000 lbs
Chinook Salmon	58,538 fish	36,678 fish	78,638 fish	63,231 fish
Other Salmon	137,112 fish	86,103 fish	82,288 fish	65,578 fish
Red King Crab	281,000 crabs	39,971 crabs	106,747 crabs	74,634 crabs
Other King Crab	83,355 crabs	19,897 crabs	22,304 crabs	29,093 crabs
Bairdi Tanner Crab	2,618,771 crabs	2,223,306 crabs	2,291,576 crabs	2,262,152 crabs
Other Crab	12,495,390 crabs	5,052,305 crabs	3,830,046 crabs	5,654,941 crabs
Marine Life with No Commercial Value	– no information available –			

* Halibut mortality is the portion of total halibut bycatch that is considered dead and counted against the cap (see Prohibited Species, p. 8). Total halibut bycatch is over two times the amount of halibut mortality.

ECOLOGICAL IMPACTS

MARINE LIFE WASTED as bycatch is made up of species that are integral members of the marine ecosystem either as food or shelter for other species. The ecological impacts of bycatch include:

Removal of essential species in the marine ecosystem: "Some species–even uncommon ones–are so important in their ecosystem that they merit special attention in conservation efforts. Removal of these species might not even be noticed, but would have profound effects on the composition, structure, and functioning of their entire [biological] community" (Norse, 1993). Bycatch of juvenile fish and bottom-dwelling life that may be important is routinely undocumented or underestimated.

Destruction of sea floor habitats by fishing gear and disturbance to the natural abundance of species sharing the intricate food web: Marine life on the ocean floor and physical structures such as corals and boulders are habitat for fish and invertebrates. When parts of a sea floor habitat are crushed, upended or removed by fishing gear, the habitat is changed and can no longer support all the species that once lived there in their former abundance. In the North Atlantic, scientists have shown that complex bottom habitat supports greater commercial fish productivity (Collie, et al, 1997).

Removal of juvenile fish reduces future fishery productivity: Scientists have demonstrated that harvesting juvenile fish can turn what appears to be a sustainable fishing rate to an unsustainable one (Myers & Mertz, 1998). For example, the extinction of the common skate in the Irish Sea was caused by fisheries that took too many juvenile skates as bycatch (Brander, 1981). The fate of this species illustrates what may happen to many others that fishery managers are simply unaware of or for which they are unwilling to control the bycatch.

Unobserved mortality and sub-lethal effects from fishing gear: Bycatch may not always be visible from the deck of a fishing boat. Many fish and other ocean dwellers may not actually be caught in fishing gear, yet are crushed or otherwise injured by it. Another source of unobserved bycatch is the potential lethal effects of dumping large quantities of wasted fish on the ocean floor essentially smothering the seabed community (Dayton, et al, 1995).

Habitat destruction and indiscriminate bycatch of species important to the ecosystem may be bringing about significant ecological changes beyond our understanding. "As with the loss of human cultures and languages after the passing of the elders with their wisdom, so too is humanity losing the evolutionary wisdom found in intact ecosystems" (Dayton, 1998).



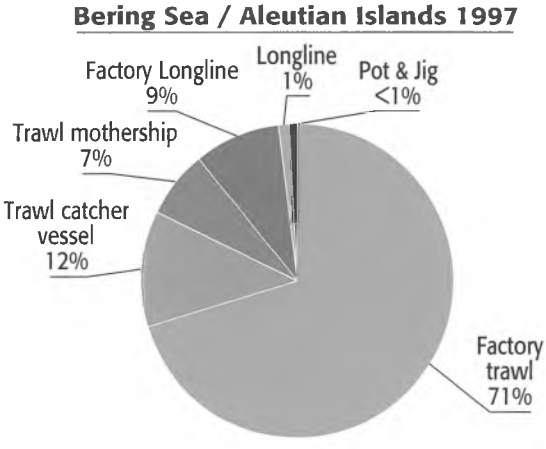
Bycatch is just another word for destruction. We will never understand the negative consequences of this on living marine ecosystems until it is too late. That's why it must stop now.

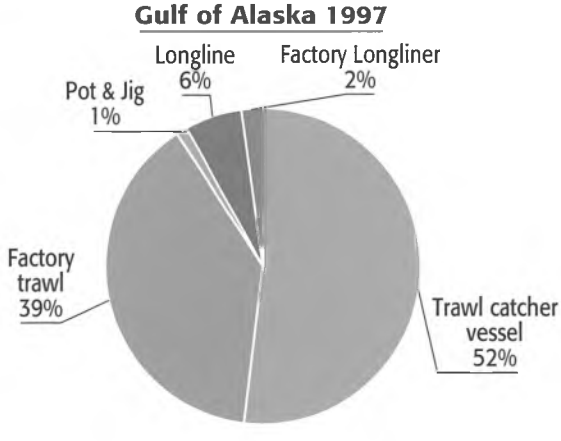
Larry Merculieff
St. Paul



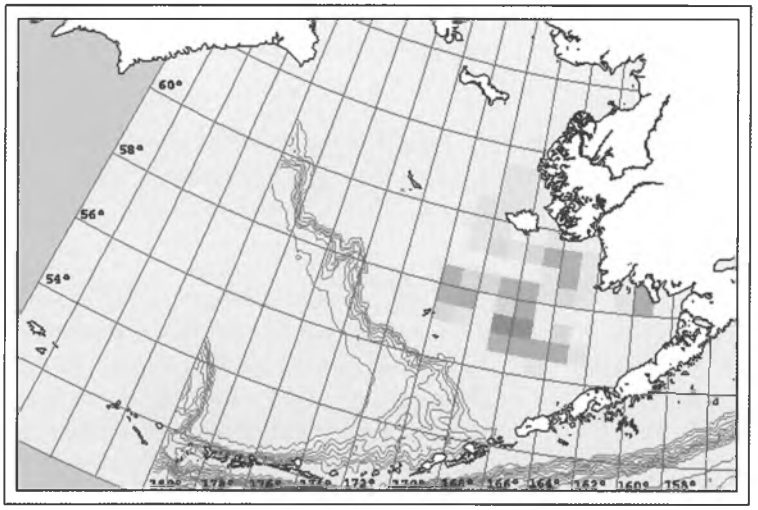
Sea anenomes and tube worms

Amount of the total bycatch by each gear type in the Bering Sea/Aleutian Islands & Gulf of Alaska.
Source: Pacific Associates 1998.



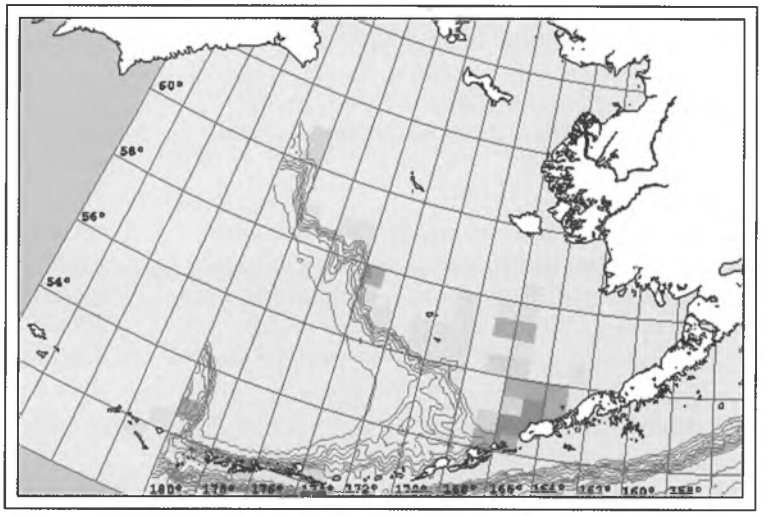


Yellowfin Sole
(Limada aspera)

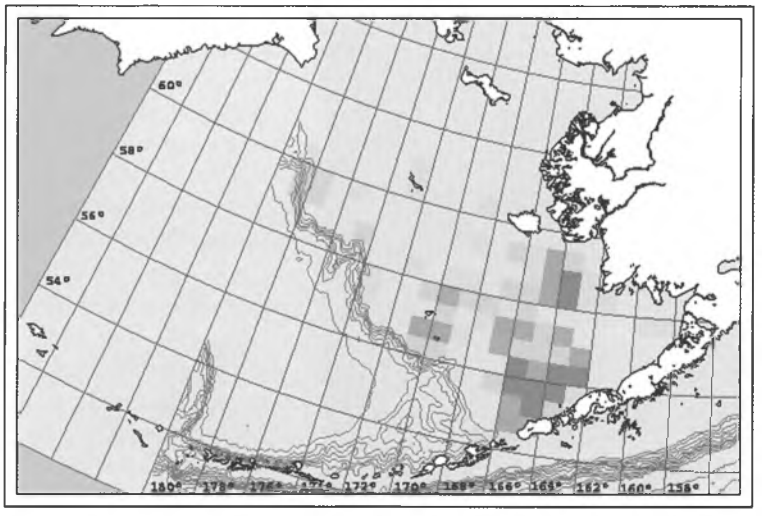


These are computerized maps showing the amount and concentrations of halibut bycatch in three Bering Sea trawl fisheries in 1994. These halibut average less than six pounds each. The amount and location of bycatch in these and other fisheries varies from year to year.

Pacific Cod
(Gadus macrocephalus)



Other Flatfish
(e.g. Rock Sole and Flathead Sole)



Total halibut bycatch (lb)

- > 110,000 lbs
- 55,000 - 110,000 lbs
- 10,000 - 55,000 lbs
- 11,000 - 22,000 lbs
- 2,200 - 11,000 lbs
- < 2,200 lbs

Maps developed by AMCC & Interrain Pacific using a geographic information system (GIS). Data source: NMFS Observer Program

Economic Considerations

BYCATCH has both short- and long-term economic consequences. One study estimated direct economic losses from bycatch in the Bering Sea and Gulf of Alaska amounted to more than $250 million per year (McGinn, 1998). Some fisheries are called "deficit fisheries" because they actually throw away more value than they keep and sell. For example, the value of bycatch in the Bering Sea rock sole and yellowfin sole fisheries during 1992 and 1993 constituted a net loss of about $1.79 million each year of wasted halibut, cod, pollock, yellowfin sole, rock sole, and king, bairdi, opilio and blue king crab (Homer Crab Group, 1994).

Bycatch often precludes other valuable uses of fishery resources:

Every year groundfish fisheries are allocated over eight million pounds of halibut as bycatch in the Bering Sea and over six million pounds in the Gulf of Alaska (NPFMC, 1994 & 1995). Halibut that is allocated for bycatch represents fish taken away from directed halibut fishermen.

In years when salmon returns are poor, subsistence and commercial fishermen are hurt. Yet industrialized fishing vessels continue to waste the resource at the usual levels as bycatch offshore. In fact, salmon bycatch in 1996 and 1997 exceeded the 48,000 limit (ADFG, 1998). (By comparison, 48,000 salmon is the entire quota allowed in Alaska's winter troll fishery.) Also during these two years, over 145,000 other salmon (mostly chum) were wasted as bycatch. Most of these were juvenile salmon that were one or two years away from returning to their rivers of origin to spawn (ADFG, 1998).

In 1991, bycatch in the Bering Sea groundfish fisheries caused more than $50 million in losses for the Bering Sea crab fishery (McGinn, 1998).

Sometimes commercial fisheries are shut down prematurely due to excessive bycatch caused by other fisheries. For example, in 1997 the trawl fisheries in the Aleutian Islands wasted an excessive amount of shortraker and rougheye rockfish. The Pacific cod longline fishery involves a smaller amount of rockfish bycatch. But when the longline fishery opened in the same area later that year, they were shut down before they could catch their cod quota in order to prevent overfishing of rockfish. The longliners suffered significant economic losses in terms of foregone harvest opportunity for cod as a result of trawl bycatch.

In the long-term, the economic cost of bycatch comes from losses to future fishery productivity and thus future harvest opportunities (Leaman, 1994). Most halibut wasted as bycatch are juvenile fish (averaging less than 10 pounds depending on the year and the gear type). These fish will not mature to reproductive age to contribute to the future population. Nor will they be available to halibut fishermen for subsistence, commercial or recreational use. The same holds true for the hundreds of millions of pounds of juvenile cod and pollock caught in trawl fisheries.

Other economic impacts of bycatch are more difficult to quantify but no less important:

Bycatch destabilizes the marine ecosystem needed to support commercial, subsistence and recreational fisheries (see Ecological Impacts). Uncertainty in how much bycatch actually occurs increases uncertainty about the total fishery harvest. This in turn makes it more difficult to assess the health of fish stocks, set appropriate catch levels and prevent overfishing. Bycatch reduces the abundance of species that do not have commercial value today, but may tomorrow.



Remember, what the federal managers call bycatch is my living. What they call the cost of doing business will bankrupt our coastal communities. What they call a prohibited species is what we eat.

Buck Laukitis
False Pass

Tracking Bycatch

MANAGEMENT of North Pacific fisheries depends on scientific data collected by some 400 fishery observers. As biologists on board longline, pot and trawl vessels, observers estimate the total amount of fish caught. They record what species are in the catch and the amount of bycatch. Observers are the eyes and ears of the management system. They collect data used for regulatory compliance and biological data needed for conservation. But how much accuracy is there in accounting for marine life that is caught and discarded as bycatch?

Accurate accounting for bycatch relies completely on an effective Observer Program. But despite laudable efforts, observers are plagued with an overwhelming array of duties and tasks, only one of which is counting bycatch. Observers also face logistical challenges on board. Often the decks of vessels are not physically suited for the observer sampling a haul that may exceed 50 metric tons, or over 100,000 pounds. A single tow of a pollock factory trawler net may exceed 100 metric tons.

Current levels of observer coverage are inadequate to quantify the amount of bycatch, especially of non-commercial species. Vessels 125 feet or longer are required to carry one observer full-time. That observer can only monitor fishing activity about 55 percent of the time (NPFMC, 1996). Vessels from 60 to 124 feet are required to have an observer aboard for 30 percent of their fishing time which translates into as little as 15 percent of the catch actually observed. Lack of more than one observer on larger vessels and the patchy coverage on smaller vessels leads to considerable uncertainty in estimated bycatch.

Another factor adding to the uncertainty in bycatch data is a practice called "net bleeding." When a trawl vessel catches too many fish in its net, the vessel operator will "bleed" the net or dump fish in order to safely bring the bulging net aboard. Also vessels may "top off" their catch by targeting on marketable bycatch before delivering their load to a processor. When more fish are caught in the topping off process than is allowed for that bycatch species, the surplus is dumped at sea. Even if an observer is present, estimating the amount of wasted fish is very difficult under these circumstances (Visi, 1996).



The people who make bycatch should think about what they are wasting is what we need to catch for our food.

Annie Alowa
Savoonga



Observer measures volume of fish in trawl.

As a trawl vessel observer, I would measure the volumetric shape of the codend and collect 10 baskets of 100 pounds of fish randomly throughout the codend to assess the variety of species. Through this sample I would also collect 150 target fish per day to collect sex and length data. For each haul I had to estimate gross weight of fish caught, retained and discarded, assess the amount of prohibited species bycatch, monitor interactions with [marine mammals and seabirds]. I would watch for marine pollution violations and overall compliance with fishing regulations. I had to collect fishing effort data by checking vessel logbooks.

Tim Visi, former fishery observer



As a foreign fishery observer it wasn't uncommon to see them throw overboard 40-50 ton bags of fish.

Bob Mikol
Fairbanks

Magnuson-Stevens Act



So far measures to control bycatch have been bandaids that have failed to solve the overriding problem of excessive and steadily increasing amount of bycatch.

Paul Seaton
Homer



The Magnuson-Stevens Act is our best hope for protecting the North Pacific from fishery collapses and habitat destruction that has occurred in Atlantic fisheries. It gives us the tools to look after the ecological integrity of our waters and, as a consequence, the economic needs of our communities.

Bob Storrs
Unalaska

Bycatch Yesterday and Today

In the 1970s and 1980s, U.S. fishery managers imposed bycatch restrictions on the foreign fleet operating offshore Alaska. They set bycatch limits on Chinook salmon. There were no-trawl zones in Bristol Bay to protect pot fisheries and a no-trawl zone along the Aleutian Islands to protect halibut. In 1983 they began an aggressive five-year bycatch reduction plan for halibut, salmon and crab. Foreign vessels that fished more selectively and reduced their bycatch of these species were rewarded with extra fishing time.

However, when U.S. flagged vessels entered the fishery bycatch increased because they were not held to the same constraints as the foreign fleet. The no-trawl zones were opened to domestic trawlers in 1983. Ironically, caps on halibut and crab bycatch, established for all fisheries in 1989, institutionalized bycatch at a level higher than had occurred earlier in the foreign fleet. Salmon bycatch was unconstrained in the domestic fleet until 1995 (Witherell & Pautzke, 1998).

Today there are expanded requirements and volunteer measures in place designed to restrain further increase in bycatch, reduce bycatch rates, or protect depleted fisheries or sensitive habitats from further damage. While the list of management measures appears long and some areas are benefiting from a reduction of high-impact fishing practices, the total volume of bycatch remains nearly the same. Management measures to date include:

Prohibited Species Caps: These are limits on allowable bycatch of halibut, herring, salmon and crab. When the fleet reaches the caps assigned to specific fishery or area, that fishery shuts down or the area closes.

Seasonal and Area Trawl Closures to Protect Habitat, Crab, Herring or Salmon: The areas include Pribilof Islands, Bristol Bay, some areas around Kodiak Island, eastern Gulf of Alaska, and prescribed Bering Sea locations for salmon and herring.

Bycatch Hotspots: Groups of trawlers and longliners volunteer to use a Geographic Information System to share the location of and avoid bycatch "hot spots."

Improved Retention/Improved Utilization (IR/IU): In 1998 vessels were required to retain all pollock and cod rather than discarding the unwanted, mostly juvenile, fish. However, vessels that have the capacity to produce fishmeal or deliver easily to a fishmeal plant are not likely to change their fishing practices to avoid catching juvenile fish. Unless fishermen successfully avoid bycatch, the IR/IU program fails to achieve the conservation goal. It may, in fact, help to legitimize indiscriminate fishing practices by making it appear on paper that there is less bycatch.

Ban on Bottom Trawling for Bering Sea Pollock: This reduced the overall Bering Sea bycatch caps by 220,000 pounds of mostly juvenile halibut, 203,000 whole crabs, and about 350,000 pounds of groundfish (NPFMC, 1998).

The ban on bottom trawling for Bering Sea pollock was approved for the 1999 fishery. It was the first management decision to reduce the total amount of halibut and crab bycatch. More conservation measures are needed to continue ratcheting down those bycatch caps as well as lowering bycatch of juvenile fish and neglected species that have little or no commercial value but play vital roles in maintaining healthy marine ecosystems.

Wouldn't it be better to not catch it in the first place?

To address excessive bycatch and respond to a concerned public, Congress amended the Magnuson-Stevens Fishery Conservation and Management Act in 1996. The Act requires that fishery managers adopt measures to minimize all forms of bycatch by *avoiding* unwanted catch. Congress also required accurate assessment of the amount and type of bycatch occurring in the fisheries. Congress required that these changes be accomplished in two years (by October 1998).

Finally, Congress added a specific requirement for North Pacific fisheries to adopt measures to lower the total amount of economic discards. Leaving no room for interpretation, Congress explicitly legislated that only measures to *avoid* bycatch will satisfy the new law.

Congressional Record
PROCEEDINGS AND DEBATES
Senator Ted Stevens,
Sept. 19 1996 CR S10933:

"We have passed a bill to try to eliminate waste in the fisheries off our shores. If these mechanisms we have adopted through compromise do not work, I intend to be back with a stronger bill. The waste has become just unacceptable, totally unacceptable."

SOLUTIONS

PEOPLE THROUGHOUT ALASKA are concerned about the impacts of bycatch on our coastal communities, economies and the marine ecosystem. Because fishery resources are public resources, every Alaskan has an opportunity and a responsibility to help change fisheries management to reduce bycatch.

Conservation Guidelines for Bycatch Reduction

Developed by the Alaska Marine Conservation Council

Fishery management measures to reduce bycatch must meet these guidelines in order to achieve conservation goals and to comply with the Magnuson-Stevens Fishery Conservation and Management Act:

- Measures to minimize bycatch must result in avoidance of all categories of bycatch including species that are ecologically important but have no commercial value.
- Measures to minimize bycatch must result in lowering the total amount of marine life removed from the ocean ecosystem. This means not only lowering bycatch rates, but also lowering total bycatch volume.
- Measures with the greatest potential for success apply positive incentives which offer economic rewards for conservation.
- Measures to minimize bycatch must be integrated with an improved Observer Program to ensure a high level of integrity in data collection and compliance monitoring by fishery managers. The fees assessed to the fleet to cover the cost of the program must be equitably distributed so that one sector of industry is not unfairly burdened.



Observer sorting bycatch

Some ideas for effective bycatch reduction measures:

- Individual Accountability – Incentive programs to reward fishermen who reduce their bycatch with more allocation
- Increasing fishery allocations to cleaner gear types
- Increasing observer coverage to improve catch data and to achieve greater accountability
- Reducing caps for allowable bycatch of halibut, salmon, herring and crab
- Restrict indiscriminate fishing gear in biologically sensitive habitats

What You Can Do

- Write a letter to the North Pacific Fishery Management Council (NPFMC) urging them to act now to minimize bycatch in groundfish fisheries. Write a letter to the Governor of Alaska and urge him to work for bycatch reduction.

NPFMC
605 W. Fourth Ave.
Anchorage, AK 99501
(907) 271-2809

Governor Tony Knowles
State Capitol
P.O. Box 110001
Juneau, AK 99811

The NPFMC meets five times per year. Call the NPFMC, get the schedule and find out when you can join other concerned citizens to testify on bycatch measures. Feel free to contact AMCC for the same information.

- Contact your city council, local Fish and Game Advisory Committee or Chamber of Commerce and urge them to pass a resolution supporting bycatch reduction in groundfish fisheries.
- If you are a fisherman or a tribal member, work with your fishing association or tribal council on resolutions supporting bycatch reduction in groundfish fisheries.
- Join AMCC. Call, email or write for more information on how we can work with you or your community. Or check out AMCC's website.

As fishermen, we benefit from the resource. Taking responsibility for conservation is how we give something back.

Steve Fish
Sitka

If a net was pulled across the Kenai Peninsula catching all the moose, bears, caribou, squirrels, and waterfowl, and then at the end you threw back everything except for the marketable trees – people would go crazy. Yet this is exactly what's being done to our seas. Are we going to allow this until it's too late?

Don Hall
Homer

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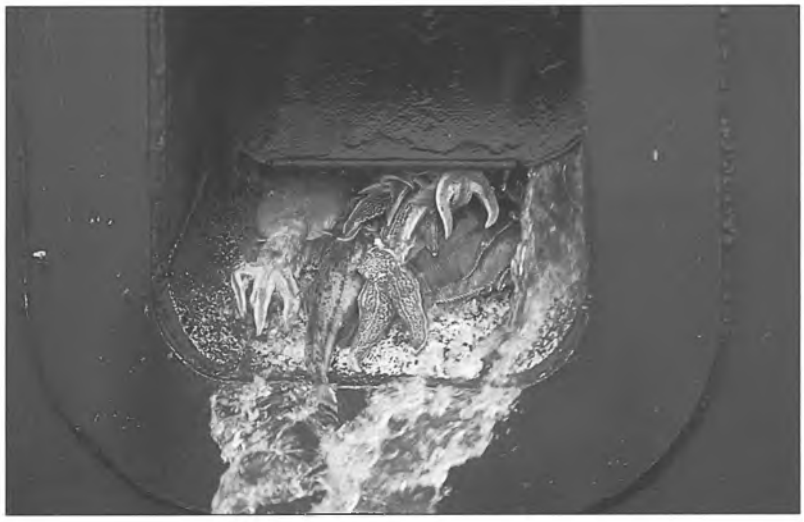
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SB

54

<TARGET><BILL>SB 54</BILL><SUBJECT>SB
54</SUBJECT><COMM>HFSH28</COMM></TARGET>

ALASKA STATE LEGISLATURE

Sen. Cathy Giessel, Chair
Sen. Fred Dyson, Vice Chair
Sen. Lesil McGuire
Sen. Anna Fairclough
Sen. Click Bishop
Sen. Peter Micciche
Sen. Hollis French

State Capitol, Room 427
Juneau AK 99801-1182
907-465-4843
Fax: 907-465-3871
800-892-4843

Senate Resources Committee

MEMORANDUM

Date: March 20, 2013

To: Representative Paul Seaton
Chairman, House Special
Committee on Fisheries

From: Senator Cathy Giessel
Chairman, Senate Resources Committee

Re: Request to Hear SB 54

I am writing to request a hearing on Committee Substitute for Senate Bill 54 in the House Special Committee on Fisheries. As you know, CSSB 54 is legislation was sponsred by the Senate Resources Committee at the request of the Alaska Commercial Fisheries Entry Commission (CFEC). The original version of this legislation extended the "sunset" date currently in statute from December 30, 2013, until December 30, 2023, for CFEC's vessel-based limited entry programs for the Alaska weathervane scallop and Bering Sea hair crab fisheries. The Senate Resources Committee amended the legislation to provide for a five-year extension instead of ten-year extension as a compromise with those who wish to see more scrutiny of the vessel-based limited entry programs.

Attached please find a copy of the most recent version of the bill, a Sponsor Statement, a Sectional Analysis, two zero fiscal notes, a resolution and letters of support, and a letter in opposition to the bill. Also attached is a copy of a report on the ownership of limited entry permits in the Alaska weathervane scallop fisheries, a media piece covering this report, and a letter from CFEC in response to the inaccuracies in the media report. Senate Resources Committee Aide Sharon Long is working on this bill, along with CFEC Commissioner Benjamin Brown. They will be able to address any questions you may have about other information you may need for the House Special Committee on Fisheries to consider this legislation.

Thank you for scheduling CSSB 54 for a hearing.

THE STATE
of ALASKA
GOVERNOR SEAN PARNELL

Commercial Fisheries Entry Commission

8800 Glacier Highway, Suite 109
PO Box 110302
Juneau, Alaska 99811-0302
Main: 907.789.6160
Licensing: 907.789.6150
Fax: 907.789.6170

Sponsor Statement for Senate Resources Committee Substitute for Senate Bill 54

The Senate Resources Committee Substitute for Senate Bill 54 will extend for five years the "sunset" date for Alaska's vessel-based limited entry fisheries for weathervane scallops and Bering Sea hair crab. Limited entry into the vast majority of Alaska's commercial fisheries has been implemented with a skipper-based system that awards permits to individual fishermen based on their prior history of participation in and economic dependence on each specific fishery. Vessel-based limited entry is a very narrow exception to the individual-based system, created by the State Legislature ten years ago.

In 2002 the Legislature amended the Limited Entry Act to allow vessel-based limited entry permits to be given to vessels with a history of fishing for weathervane scallops and Bering Sea hair crab in State waters. Because of concerns that innovation could have a "slippery slope" effect, and lead to vessel-based limited entry in other fisheries, the Legislature put a five-year limit on the new vessel-based limited entry system. When the five-year time limit was about to be reached in 2008, the Legislature extended the program for a further five years. Without the passage of CSSB 54, vessel-based limited entry for weathervane scallops and Bering Sea hair crab will automatically be stricken from the statute books on the 30th of December 2013.

The past ten years have shown that vessel-based limited entry is working well, with a small but efficient fleet of Alaskan vessels successfully harvesting weathervane scallops in State waters in addition to their fishing activity in federal waters. While conservation concerns have not allowed for any commercial openings of the Bering Sea hair crab fishery in the past decade, these permits are still held by vessels that are ready and able to harvest hair crab if and when fisheries managers decide that circumstances permit this fishery to open.

While opponents of vessel-based limited entry have predicted dire consequences if vessel-based limited entry were allowed to become law, none of these negative predictions has come true. Extending the sunset date for vessel-based limited entry within the Limited Entry Act is good policy, as it will allow the weathervane scallop fishery to continue operating as it has and will allow for a potential future opening of the hair crab fishery.

THE STATE
of ALASKA
GOVERNOR SEAN PARNELL

Commercial Fisheries Entry Commission

8800 Glacier Highway, Suite 109
PO Box 110302
Juneau, Alaska 99811-0302
Main: 907.789.6160
Licensing: 907.789.6150
Fax: 907.789.6170

MEMORANDUM

To:	The Hon. Cathy Giessel Senator, District 'N' Chairman, Senate Resources Committee Alaska State Senate	Date:	12 March 2013
CC:	Heather Brakes Legislative Director Office of the Governor	Telephone:	(907) 790-6942 voice (907) 790-7042 facsimile
From:	Benjamin Brown, Commissioner Commercial Fisheries Entry Commission	Subject:	sectional analysis of CSSB 54

Section 1 of this bill deletes the year (2013) in which ten discrete sections of the Limited Entry Act will be repealed, and replaces it with the year 2018. This will extend the so-called "sunset" date in statute and prolong for five years the life of the Commercial Fisheries Entry Commission's vessel-based limited entry permit systems for the Alaska weathervane scallop and Bering Sea hair crab fisheries.

Section 2 of the proposed legislation provides for this legislation to take effect retroactively if the bill does not take effect before the 30th of December 2013, the current "sunset" date.

Please accept my analysis of this legislation with the cautionary reminder that a bill itself is always the best statement of its own contents and effects.

FISCAL NOTE

STATE OF ALASKA
2013 LEGISLATIVE SESSION

Bill Version: **Senate Bill 54**
Fiscal Note Number:
() Publish Date:

Identifier (file name): SB54-DFG-CFEC-03.04.13
Dept. Affected: Fish & Game
Title: Senate Bill 54 - extending the termination date of the ystem for the weathervane scallop and Bering Sea hair crab f
Appropriation: Comm Fisheries Entry Commission
Allocation: Comm Fisheries Entry Commission
Sponsor: Senate Resources Committee by Request
Requester: Commerical Fisheries Entry Commission
OMB Component Number: 471

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	FY14 Appropriation Requested	Included in Governor's FY14 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY14**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**	**FY19**
Personal Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Travel	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Commodities	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capital Outlay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grants, Benefits	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL OPERATING	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

FUND SOURCE		(Thousands of Dollars)						
1002	Federal Receipts							
1003	GF Match							
1004	GF							
1201	CFEC Rcpts (DGF)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1037	GF/MH (UGF)							
1178	temp code (UGF)							
	TOTAL	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

POSITIONS							
Full-time	**0**	0	0	0	0	0	0
Part-time	**0**	0	0	0	0	0	0
Temporary	**0**	0	0	0	0	0	0

CHANGE IN REVENUES	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Estimated SUPPLEMENTAL (FY13) operating costs 0.0 *(separate supplemental appropriation required)*
(discuss reasons and fund source(s) in analysis section)

Estimated CAPITAL (FY14) costs 0.0 *(separate capital appropriation required)*
(discuss reasons and fund source(s) in analysis section)

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? No

If yes, by what date are the regulations to be adopted, amended, or repealed? N/A Discuss details in analysis section.

Why this fiscal note differs from previous version (if initial version, please note as such)

This is the first version of a fiscal note for this legislation.

Prepared by: Shirley Penrose, Operations Manager — Phone 907-790-6960
Division: Commercial Fisheries Entry Commission — Date/Time 1/14/2013
Approved by: Benjamin Brown, Commissioner — Date 1/14/2013
Commercial Fisheries Entry Commission

(Revised 11/5/2012 OMB)

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2013 LEGISLATIVE SESSION

BILL NO. Senate Bill 54

Analysis

There are no significant fiscal impacts for CFEC associated with this legislation.

Limited Entry in the Alaska Weathervane Scallop Fishery

Introduction

In 2001, the National Marine Fisheries Service (NMFS) issued limited entry licenses for scallop fishing in federal waters under the Scallop License Limitation Program (SLLP) . This was followed by a limited entry program for scallops in state waters in 2004, when the Commercial Fisheries Entry Commimission (CFFEC) issued vessel limited entry permits.

The state and federal programs differ in that state licenses were issued to qualifying *vessels*, whereas NMFS SLLP licenses were issued to *vessel owners*. The SLLP licenses may be fished on any federally-permitted boat, subject to the restrictions applied to the permit. Both the state and federal licenses established two fishery areas: the Cook Inlet area and a 'statewide area' encompassing waters in the Bering Sea and in the Gulf of Alaska outside of Cook Inlet.

Nine individual fishing operations qualified for state and federal permits. Each qualifying operation originally consisted of a vessel, a state permit, and a corresponding federal license. This structure allowed operations to fish seamlessly across scallop beds that are bisected by state and federal waters.

Between initial issuance and the present time, many changes have occurred with respect to permit and vessel ownership. The following sections describe the initial permit allocations and the subsequent changes.

Federal Moratorium and License Limitation Program

In February 1999, the North Pacific Fishery Management Council (NPFMC or Council) recommended replacing a federal moratorium program with a license limitation program. This action became Amendment 4 to the federal scallop Fishery Management Plan (FMP). The federal moratorium expired June 30, 2000, and was replaced by the Scallop License Limitation Program that became effective on January 16, 2001. Between June 30, 2000 and January 16, 2001 the fishery was in open access status, although no additional vessels entered the fishery. Initial issuance of SLLP licenses by National Marine Fisheries Service occurred in April, 2001.

Initially, eight entities received permanent licenses, while two entities received interim licenses, pending the respective adjudication of their license applications. Interim SLLP 002 belonging to Forum Star Inc. was later adjudicated to be eligible for a permanent, transferable SLLP license. The application for Interim SLLP 001 was eventually denied. The vessel owners associated with the initial issuance of SLLP licenses are shown in Table 1.

One SLLP license was issued with a single 6-foot dredge restriction (License 001 came with a similar restriction, but the application for this license was eventually denied). The fishing histories associated with these licenses consisted of harvests only from the Cook Inlet registration area. To prevent further increases in fishing capacity, the licenses were restricted to a dredge capacity no greater than what was used during the qualifying years. They could be used to fish outside of Cook Inlet, but only with a 6-foot dredge.

The Council established ownership caps on licenses. No person, corporation, or entity can hold or control more than two scallop licenses. The Council determined that ownership greater than two licenses would constitute an excessive share of harvest privileges in this fishery.[1] SLLP licenses were also issued with vessel length constraints, which correspond to the size of the harvesting boats used during the qualifying years.

[1] License Limitation Program for the Scallop Fishery; 50 CFR 679 (14 December, 2000); pp 78113.

Table 1. Initial Issuance of Federal Scallop License Limitation Permits By the National Marine Fisheries Service.

License	License Holder	MLOA	Transferable	Gear Restrictions
002	Forum Star, Inc.	97'	No - Interim	None
003	Hogan, Thomas C.	75'	Yes	Single 6ft scallop dredge *
004	Hulse, Max et al.	79'	Yes	Single 6ft scallop dredge *
005	Ocean Fisheries LLC	100'	Yes	None
006	Oceanic Research Services, Inc.	70'	Yes	None
007	Pursuit, Inc.	101'	Yes	None
008	Provider, Inc.	124'	Yes	None
009	Carolina Boy, Inc.	95'	Yes	None
010	Carolina Girl II, Inc.	96'	Yes	None
001	Asp, Svend, Maxine (eventually denied)	98'	No – Interim	Single 6ft scallop dredge

** Gear restrictions were subsequently amended in 2005 (see Table 4)*

Transfers of Federal SLLP Licenses

There have been a total of twelve transfers of SLLP licenses since initial issuance. Table 2 provides the current holdings of SLLP licenses.[2]

- SLLP 002 from Forum Star, Inc. to American Seafoods Co. LLC; November 5, 2005.
- SLLP 003 from Thomas C. Hogan to William J. Harrington; December 10, 2009.
- SLLP 005 from Ocean Fisheries LLC to Arctic Hunter LLC; October 31, 2008.
- SLLP 006 from Oceanic Research Services, Inc. to Thomas J. Gilmartin; April 18, 2001.
  SLLP 006 subsequently transferred from Gilmartin to EWT LLC; January 9, 2012.
  SLLP 006 subsequently transferred from EWT LLC (Mass.) to EWT LLC (Alaska); July 12, 2012.
- SLLP 007 from Pursuit, Inc. to Arctic Hunter LLC; June 16, 2008.
  SLLP 007 subsequently transferred from Arctic Hunter LLC to Ocean Fisheries LLC; October 31, 2008.
- SLLP 008 from Provider, Inc. to Provider Fisheries LLC; June 16, 2008.
- SLLP 009 from Carolina Boy, Inc. to Ocean Fisheries, LLC; August 21, 2003.
- SLLP 010 from Carolina Girl II, Inc. to Alaska Scallop LLC; December 23, 2002.
  SLLP010 subsequently transferred from Alaska Scallop LLC to Alaska Scallop Fisheries; June 18, 2008.

Table 2. Federal Scallop License Limitation Permits as of December 2012.

License	License Holder	MLOA	Transferable	Gear Restrictions
002	American Seafoods Co, LLC	97'	Yes	None
003	Harrington, William J.	75'	Yes	2 dredges; combined width no more than 20 feet (6.1m)
004	Hulse, Max	79'	Yes	2 dredges; combined width no more than 20 feet (6.1m)
005	Arctic Hunter LLC	100'	Yes	None
006	EWT LLC	70'	Yes	None
007	Ocean Fisheries LLC	101'	Yes	None
008	Provider Fisheries, Inc.	124'	Yes	None
009	Ocean Fisheries LLC	95'	Yes	None
010	Alaska Scallop Fisheries, LLC	96'	Yes	None

[2] Source: National Marine Fisheries Service, Restricted Access Division.

State Moratorium and Vessel Limited Entry Permit Program

In 1997, the Alaska Legislature enacted a four-year vessel moratorium for scallop fishing in state waters.[3] Ten vessels originally qualified for the moratorium. The moratorium was originally set to expire June 30, 2001; however, in 2001 the legislature extended the date to June 30, 2004.

In 2002, the legislature passed a bill that authorized the creation of a vessel-based limited entry program in the state's weathervane scallop and hair crab fisheries.[4] The law included a sunset provision, which called for an end to the program in 2008.[5] In 2008, the legislature extended the sunset date. Unless reauthorized or changed by the legislature, the vessel permit law will expire at the end of 2013.

On May 6, 2004, using the new authority implemented in 2002, the Commercial Fisheries Entry Commission adopted regulations 20 AAC 05.1425 – 20 AAC 05.1444 which established a vessel permit system for the statewide weathervane scallop fishery. To qualify for a vessel entry permit, a vessel must have legally participated in the Alaska weathervane scallop fishery and commercially harvested at least 1,000 pounds (shucked meat) of scallops:

> 1) in at least one calendar year during the time period 1991 through 1996, and in at least three calendar years during the time period 1997 through 2003; or,
>
> 2) in at least four calendar years during the time period 1997 through 2003.

For a vessel to qualify as having legally participated, that vessel must have satisfied all of the criteria listed below under (1) or (2) for each year used to qualify for a permit:

1) In internal waters of the state and territorial sea:
    - Had scallops lawfully harvested from a vessel with a scallop dredge as described in 5 AAC 38.055, 5 AAC 38.076(f) and 5 AAC 38.322 during a fishing period established by the Department of Fish and Game under 5 AAC 38.076(h);
    - Had a person on board the vessel who held an interim-use permit for the fishery from CFEC under AS 16.43.210;
    - Had a vessel license from CFEC under AS 16.05.490;
    - Had a vessel registration from the Department of Fish and Game under 5 AAC 38.076(c); and
    - Been permitted under AS 16.43.906 (CFEC vessel moratorium permit) from July 1, 1997 through 2003, if fished during that time:
2) In the Exclusive Economic Zone (EEZ):
    - Had scallops lawfully harvested from a vessel with a scallop dredge as described in 5 AAC 38.055, 5 AAC 38.076(f) and 5 AAC 38.322 during a fishing period established by the Department of Fish and Game under 5 AAC 38.076(h);
    - Had a person on board the vessel who held an interim-use permit for the fishery from CFEC under AS 16.43.210;
    - Had a vessel license from CFEC under AS 16.05.490;
    - Had a vessel registration from the Department of Fish and Game under 5 AAC 38.076(c); and,
    - Had a valid federal permit or license from April 11, 1997 through 2003.

Ownership caps stipulated that a person may not hold an interest in more than one scallop vessel entry permit, unless the person's ownership interest existed at the time of limitation on January 23, 2004.

---

[3] AS 16.43.906 (repealed).
[4] AS 16.43.450–520.
[5] CSHB206 (RLS) am S.

Based on these regulations, the nine vessels listed in Table 3 were eligible for a state limited entry vessel permit. The application period for permits was May 15, 2004 through September 1, 2004. Each of the initial vessel permits was associated with a corresponding federal scallop SLLP, which is also shown.

CFEC regulations established two length categories for vessel permits, based on the maximum length overall (LOA) of the vessel initially used to qualify for the permit. Five permits (type W 2ABV) were issued to vessels greater than 80 feet. These include the fishing vessels Carolina Boy, Forum Star, Ocean Hunter, Provider and Pursuit. For vessels 80 feet or less, three permits (type W 2BBV) were issued. These included the fishing vessels Arctic Storm, Kilkenny and La Brisa.

On December 23, 2002, Carolina Girl II, Inc. transferred its federal SLLP license 010 to Alaska Scallop, LLC. The parties to this sale executed a *Request for Termination of State Moratorium Qualification* with the State of Alaska in January, 2003. Although the F/V Carolina Girl II would have qualified for a permanent vessel permit, Alaska Scallop, LLC thereby relinquished all eligibility rights to the vessel's state scallop moratorium and vessel limited entry permits. Owners of the eight remaining eligible vessels applied for and received CFEC vessel permits. Of the eight, only seven now remain, as the permit associated with the F/V Pursuit was relinquished on August 17, 2007 (the federal fishing rights formerly associated with the Pursuit are now used on the F/V Arctic Hunter).

Table 3. Vessels Initially Eligible for a CFEC Limited Entry Vessel Permit.

Vessel Name	ADFG Number	State Waters Vessel Limited Entry Permit	Corresponding Federal Scallop LLP License
F/V Carolina Girl II	64111	Relinquished limited entry eligibility rights on 1/2003	Initial Issue of SLLP license 010
F/V Ocean Hunter	40924	Initial Issue of state LEP W 2ABV 85007 on 6/17/2004	Initial Issue of SLLP license 005
F/V Provider	58200	Initial Issue of state LEP W 2ABV 85008 on 6/28/2004	Initial Issue of SLLP license 008
F/V La Brisa	23574	Initial Issue of state LEP W 2BBV 85012 on 9/23/2004 (substituted to F/V Wayward Wind)	Initial Issue of SLLP license 004
F/V Carolina Boy	64110	Initial Issue of state LEP W 2ABV 85013 on12/3/2004	Initial Issue of SLLP license 009
F/V Forum Star	59687	Initial Issue of state LEP W 2ABV 85014 on12/6/2004	Initial Issue of SLLP license 002
F/V Kilkenny	54966	Initial Issue of state LEP W 2BBV 85015 on 12/6/2004	Initial Issue of SLLP license 003
F/V Pursuit	40312	Initial Issue of state LEP W 2ABV 85016 on 12/6/2004 (relinquished W2ABV85016Z on 8/17/2007)	Initial Issue of SLLP license 007
F/V Arctic Storm	66700	Initial Issue of state LEP W 2BBV 85018 on 1/6/2005	Owners purchased SLLP license 006 on 4/18/01

Transfers and Changes

When CFEC vessel permits were issued in 2004 and 2005, each permit was associated with a federal SLLP license. Over time, many of the initial associations have changed. Permits have been transferred, vessels have been substituted, two permits have been relinquished, and owner name changes and/or corporate restructuring have occurred.

CFEC regulations prohibit the ownership of more than one vessel permit, whereas the ownership cap in the federal program is two SLLP licenses. Also note that state permits were issued to qualifying vessels, whereas the SLLP licenses were issued to vessel owners. SLLP licenses may be fished on any federally-permitted boat, subject to the restrictions applied to the permit.

In addition to the previously noted relinquishment of permit eligibility for the F/V Carolina Girl II, the transfers, ownership changes, and relinquishments that have occurred on state vessel limited entry permits since initial issuance are:

- W2ABV 85008 (F/V Provider) vessel divested from permit; permit transferred from Provider Inc. to Tom Minio, January 30, 2009. No substitute vessel named; permit currently in suspension.
- W2BBV 85012 (F/V LaBrisa) substitution of vessel to F/V Billy D, Sept 23, 2004
  Billy D subsequently re-named to Wayward Wind, April 11, 2005
- W2ABV 85014 (F/V Forum Star) transferred from Forum Star, Inc. to Forum Star LCC; March 16, 2006.
- W2BBV 85015 (F/V Kilkenny) transferred from Thomas C. Hogan to William J. Harrington, December, 9 2009.
- W2ABV85016 (F/V Pursuit) vessel divested from permit, June 8, 2005
  Permit subsequently relinquished by Future Fisheries, August 17, 2007.
- W2BBV 85018 (F/V Arctic Storm) vessel divested from permit; permit transferred from Thomas Gilmartin to EWT LLC, January 12, 2012. No substitute vessel named; permit currently in suspension.

Table 4 compiles the information shown in the previous sections of this report to provide a timeline of changes that have occurred on permits and associated vessels. The table begins with 2004 when CFEC permits were first issued. The vessels that were originally named to the CFEC permits are shown, as are the associated federal SLLPs at the time. Each change that has occurred to the respective vessels and/or licenses is noted under the appropriate year. The table also indicates, with an asterisk, which state and federal licenses are currently associated with the Alaska Scallop Association cooperative.

Table 5 details the ownership of CFEC vessel permits and federal SLLPs as they exist at the time of this writing. To portray ownership in a meaningful manner, the table continues the ownership associations between the CFEC vessel permit and the SLLP license as they existed at initial issuance in Table 6, but updates each to their current status. For example, at initial issuance the fishing vessel Pursuit was associated with permits W2ABV85016 and SLLP007. Although the state permit was relinquished by Future Fisheries, Inc. on August 17, 2007, the associated federal license continues to be valid; the license has new owners, which are shown in the table, and is currently used on the fishing vessel Arctic Hunter.

Note again that two CFEC permits have been relinquished in apparent actions to consolidate fishing rights. Two other CFEC permits are currently held in suspension; although the permits remain valid (not relinquished) the owners have not named vessels to the permits. Of the five active CFEC permits, one is named to the F/V Carolina Boy, which was last licensed in Alaska in 2003 and is listed with a home port of Seaford, Virginia.[6] The other four vessels associated with active CFEC permits are located and licensed in Alaska.

As in Table 4, an asterisk next to the permit number indicates a permit that is associated with the Alaska Scallop Association cooperative. There are ten permits and nine member-groups associated with the cooperative.

To enforce CFEC's prohibition on owning more than one vessel permit, corporations are required to declare all the shareholders who hold more than five percent of the entity's stock. Information on the principal shareholders for federal SLLP permits in Table 4 comes from online government databases.

[6] NOAA Fisheries; Vessel Documentation Search by ID: www.st.nmfs.noaa.gov/st1/CoastGuard/VesselByID.html.

Table 4. Timeline of Ownership Changes to CFEC Vessel Entry Permits and Associated Licenses from the Federal Limited License Program For the Alaska Weathervane Scallop Fishery, 2004 – 2012.

			Holder on Record								
Permits	**Original Holder**		**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
W2ABV85007 *	Vessel	F/V Ocean Hunter									
	Owner	Ocean Fisheries LLC									
SLLP005 *	Owner	Ocean Fisheries LLC					Arctic Hunter LLC				
W2ABV85008 *	Vessel	F/V Provider						F/V Provider divested from CFEC permit			
	Owner	Provider, Inc						Tom Minio			
SLLP008 *	Owner	Provider, Inc					Provider Fisheries LLC				
W2BBV85012	Vessel	F/V La Brisa	F/V Billy D	F/V Wayward Wind (vessel renamed)							
	Owner	La Brisa, Inc						Alaskan Dream Ventures (name change)			
SLLP004	Owner	Hulse et al. (La Brisa Inc)									
W2ABV85013 *	Vessel	F/V Carolina Boy									
	Owner	Carolina Boy, Inc									
SLLP009 *	Owner	Ocean Fisheries LLC									
W2ABV85014 *	Vessel	F/V Forum Star									
	Owner	Forum Star, Inc			Forum Star LLC						
SLLP002 *	Owner	Forum Star, Inc		American Seafoods LLC							
W2BBV85015	Vessel	F/V Kilkenny									
	Owner	Thomas Hogan						William Harrington			
SLLP003	Owner	Thomas Hogan						William Harrington			
W2BBV85018	Vessel	F/V Arctic Storm									Vessel sold w/o pmt
	Owner	Tom Gilmartin									EWT LLC
SLLP006	Owner	Tom Gilmartin									EWT LLC | EWT LLC
W2ABV85016	Vessel	F/V Pursuit		Vessel sold w/o CFEC permit							
	Owner	Future Fisheries				CFEC permit relinquished					
SLLP007 *	Owner	Pursuit, Inc					Arctic Hunter	Ocean Fisheries LLC			
(permit not issued)	Vessel	Carolina Girl II									
	Owner	Alaska Scallop LLC	CFEC permit rights relinquished								
SLLP010 *	Owner	Alaska Scallop LLC					Alaska Scallop Fisheries LLC				

** Indicates a permit that is currently associated with the Alaska Scallop Association cooperative.*

Table 5. Ownership of State (W2ABV And W2BBV) and Federal (SLLP) Scallop Limited Entry Permits, Including Relinquished Permits or Eligibility, as of December 2012.

	Permit	Named Vessel	Listed Owner	Principal Shareholders
Active CFEC Vessel Permits	W2ABV85007 *	Ocean Hunter	Ocean Fisheries LLC	Jim Stone Glenn Mikkelsen Egil Mikkelsen John Lemar Stein Nyhammer
	SLLP005 *		Arctic Hunter LLC	James H. Stone
	W2BBV85012	Wayward Wind	Alaskan Dream Ventures, Inc.	Max Hulse Robert Hulse Mary Hulse Denise Hulse
	SLLP004		Max G. Hulse	n/a
	W2ABV85013 *	Carolina Boy	Carolina Boy, Inc.	William Wells, Jr.
	SLLP009 *		Ocean Fisheries LLC	Jim Stone Glenn Mikkelsen Egil Mikkelsen John Lemar Stein Nyhammer
	W2ABV85014 *	Forum Star	Forum Star LLC	Bernt Bodal Jeff Davis Coastal Bering Sea Fish Assoc Management
	SLLP002 *		American Seafoods Co. LLC	(unavailable)
	W2BBV85015	Kilkenny	William J. Harrington	n/a
	SLLP003		William J. Harrington	n/a
Suspended CFEC Vessel Permits	W2ABV85008 *	(formerly Provider)	Thomas Minio	n/a
	SLLP008 *	(currently fished on F/V Provider)	Provider Fisheries LLC	Jim Stone Glenn Mikkelsen Egil Mikkelsen John Lemar Tom Minio Stone Management
	W2BBV85018	(formerly Arctic Storm)	EWT LLC	Erik Orman Warren J Alexander
	SLLP006		EWT LLC	Erik Orman Warren J Alexander
Relinquished CFEC Permits or Relinquished Eligibility for a Permit	~~W2ABV85016~~	~~Pursuit~~	~~Future Fisheries, Inc~~ (permit relinquished in 2007)	~~Roy Enoksen~~ ~~Ronald Enoksen~~ ~~Peter Anthony~~ ~~Francis O'Hara~~
	SLLP007 *	(currently fished on F/V Arctic Hunter)	Ocean Fisheries LLC	Jim Stone Glenn Mikkelsen Egil Mikkelsen John Lemar Stein Nyhammer
	~~W2ABV85xxx~~	~~Carolina Girl II~~	~~Alaska Scallop LLC~~	
	SLLP010 * (relinquished eligibility rights for a CFEC permit associated with F/V Carolina Girl II)		Alaskan Scallop Fisheries	Jim Stone Glenn Mikkelsen Egil Mikkelsen John Lemar Tom Minio

Notes: 1) An asterisk (*) indicates permits that are associated with the Alaska Scallop Association cooperative.
2) Sources: CFEC vessel limited entry permit files; NMFS SLLP files; the Alaska Division of Corporations, Business & Professional Licensing, online database at www.commerce.alaska.gov/OCC/Home_corporations.html; and the Washington Secretary of State, Corporations and Charities Division online database at www.sos.wa.gov/corps

Shell game: state scallop fishery faces scrutiny

MOLLY DISCHNER, ALASKA JOURNAL OF COMMERCE

A bill extending the limited entry program for scallops is making its way through the Alaska State Senate, but not without scrutiny.

On March 11, an amendment to Senate Bill 54 passed in the Resources Committee to shorten the length of the program as a result of concerns raised in hearings from legislators and in public comment about consolidation in the fishery over the last decade under parallel state and federal limited entry.

When the bill was introduced by Resources Committee Chair Sen. Cathy Giessel, R-Anchorage, in February, it would have extended the program by 10 years until 2023. Before the bill was introduced, discussion revolved around making it permanent.

The concerns have arisen because a small group of partners from Washington led by Jim Stone of Lakewood have come to control virtually the entire scallop harvest valued at about $4.5 million in 2012.

Including American Seafoods, that core group now controls six of nine state and federal permits for the scallop fishery along with the F/V Ocean Hunter, one of the two vessels that still fish in state waters. Since 2009, the Ocean Hunter has harvested scallops in state waters on behalf of the Alaska Scallop Association members with "lease fees" paid to the permit holders who do not associate their permits with a vessel.

According to a 2006 federal report on the scallop fishery, about $244,000 in "lease fees" were paid from Stone's Ocean Fisheries LLC and Mark Kandianis' Provider Inc. in 2003 to permit holders who were not actively fishing.

The scallop limited entry program administered by the Commercial Fisheries Entry Commission, or CFEC, is scheduled to sunset at the end of 2013, a result of the last extension of the program passed by the legislature in 2008.

Because some of the scallop beds around Alaska straddle the three-mile boundary between state and federal waters, the state limited entry program operates in conjunction with the federal program.

Gov. Sean Parnell told Journal correspondent Bob Tkacz on Feb. 28 that CFEC asked him to have the bill introduced under his sponsorship, but he did not do so because of the number and scope of other bills he is sponsoring. Instead, Giessel brought it forward.

"I support the bill," Parnell said.

Quick consolidation

Soon after the 2008 extension was approved by the Alaska legislature, partnerships involving Stone, Glenn and Egil Mikkelsen, John Lemar and Tom Minio subsequently formed two new LLCs on May 7, 2008, and then acquired three federal licenses over three days in June 2008.

Two of those permits were purchased from Mark and Teresa Kandianis.

Associated with those federal licenses purchased in 2008 were two state permits that had been relinquished, and a third that is now under suspension because it has not been assigned to a vessel after being acquired by the partners.

Bill Harrington of Kodiak runs the Kilkenny, which is the only other boat other than the Stone group's Ocean Hunter now operating in state waters, and he delivers fresh scallops mainly to Homer. Max Hulse of Eagle River has also previously delivered fresh scallops.

Hulse said he intends to fish again in the future, and he and Harrington have gone on the legislative record supporting the program's extension.

At the March 11 Resources Committee hearing, a letter from Kodiak fishermen George Hutchings questioned the current system and objected to a letter from the federal North Pacific Fishery Management Council to the Alaska legislature in support of extending the scallop limited entry in state waters.

That letter from the North Pacific council came at the request of Stone, who brought the matter to the council on the last day of its meeting in Portland, Ore., in February during the "staff tasking" agenda item.

At the time, Stone passed around to the council a copy of a similar letter written in 2007 to the legislature, and a 2007 Alaska Department of Fish and Game report on the scallop fishery.

Council member Duncan Fields of Kodiak asked Stone, "Are there additional issues we should consider as we write the letter as opposed to 2007?"

In response, Stone said, "Mr. Fields, no. Everything is identical. I believe there was one change in ownership of a permit, federal and state. I don't believe there's anything else. Quotas are very similar, quotas are slightly down. There are no other issues."

However, there have been at least four federal license transfers since the 2007 ADFG report and the last council letter to the legislature was written, with Stone personally involved in three of the transactions.

When contacted by the Journal, Stone said he "misspoke" before the council regarding license transfers since 2007 because he did not have the information in front of him.

Hutchings wrote to Giessel on March 7 that he was in Portland for the council meeting and would have stayed through the end "if scallops had been listed on the agenda."

"Being denied notice and an opportunity to be heard, I feel betrayed by the Council taking this action with no public input other than from the personal testimony from Mr. Jim Stone, who is the primary player in this game and voiced only his own opinion ..." Hutchings wrote to Giessel.

CFEC Commissioner Ben Brown confirmed for the committee that there was no advance notice that the council would consider a letter at that meeting, but said that there was significant opportunity for the public to participate when the program was initially developed.

Seaton questions constitutionality

The scallop fishery is the only vessel-based limited entry program in the state, and it was made vessel-based because assigning permits to individuals with fishing history would have resulted in 10 or 11 permits. That number was greater than the nine determined to be the most vessels the fishery could support.

Multiple federal permits may be fished off the same vessel, but only one state permit may be associated with a vessel.

At a House Finance Committee hearing for the CFEC budget Feb. 14, Rep. Paul Seaton, R-Homer, raised the constitutional question to Brown of CFEC. Seaton is also the chair of the House Fisheries Committee.

"I'm concerned, I have been concerned for a long time, about the vessel entry permits," Seaton told Brown. "They don't require a person to participate in the fishery at all. I'm fearful that consolidation that has taken place in that fishery has reached a point where we may be running afoul of the constitutional prohibition on a special right of fisheries."

Later in that hearing, Brown responded to Seaton's critique of the scallop vessel-based program.

"The current operation, although it may not to be Rep. Seaton's liking in every way, but it is not diminishing the resource," Brown said.

Seaton had an answer for that as well.

"Time does go on and things change, and there wasn't consolidation to a very few select people at the time (in 2008), which may run afoul of other parts of the constitution and a special right of fishery," Seaton said to Brown.

After the hearing, Seaton questioned the CFEC advocacy for the scallop program further to Journal correspondent Tkacz.

"For several years there seems to have been a philosophy at the CFEC that they are the chief supporters of a position of policy instead of implementing the policy that is set by the

legislature," Seaton said shortly after SB 54 was introduced. "Although they were implementing the policy, to oppose a change in policy by the legislature is, I believe, beyond their real mission."

If the bill passes the Senate, it may go to the House Fisheries Committee, which Seaton chairs, although that isn't guaranteed. A determination won't be made until the bill is on the Senate floor, and it could go to House Resources or another committee.

Brown addressed the constitutional question in the first Senate Resources Committee hearing on the bill March 4, stating that, "as an attorney, if this were unconstitutional somebody would have challenged it by now."

But both Seaton and Hutchings disagree. In his letter, Hutchings said that if he had the financial resources, he would consider appealing to the state and federal court systems.

Alaska case law

There are two Alaska Supreme Court cases decided in 1988 and 2005 that are contributing to the question of constitutionality. The first is Johns vs. CFEC, in which a fisherman challenged the "optimum number" of permits that were to be issued for the state herring fishery.

In ruling for Johns, the Court addressed the tension inherent in the Limited Entry Act and the constitutional requirement for Alaska resources to be available to all Alaskans.

"The optimum number provision of the Limited Entry Act is the mechanism by which limited entry is meant to be restricted to its constitutional purposes," the Court wrote. "Without this mechanism, limited entry has the potential to be a system which has the effect of creating an exclusive fishery to ensure the wealth of permit holders and permit values, while exceeding the constitutional purposes of limited entry."

In Grunert vs. State, decided in 2005, the Supreme Court struck down a cooperative fishery in Chignik approved by the Board of Fisheries.

Under that cooperative, designed to reduce fishing effort and improve quality at a time of depressed salmon prices, permit holders were paid lease fees by fishermen who took the harvest.

During the first year of the cooperative, 77 boats joined and only 18 fished.

In striking down the cooperative, the Court wrote: "Participation by the individual is inherent in the limited entry permit system. The Chignik cooperative fishery scheme is fundamentally at odds with this premise because it allows people who are not actually fishing to benefit from the fishery resource ... The co-op fisher in this scenario sharply diverges from the model of the economically dependent fisher whom the Limited Entry Act was intended to protect."

Federal control

There is also a federal ownership cap of two licenses for any "individual, corporation, partnership, or other legal entity."

According to the final rule for the scallop fishery published in the Dec. 14, 2000, Federal Register, "The two-license ownership limit is intended to prevent any person from obtaining an excessive share of harvest privileges in the scallop fishery as required by national standard 4 of the Magnuson-Stevens Act. The Council determined that holding more than two scallop LLP licenses would constitute an excessive share in the context of this relatively small fishery."

Despite federal intent language to limit any person to two permits, and a similar state intention limiting to one per vessel, federal regulators have said the current ownership structures for Stone and his partners are legal.

The National Marine Fisheries Service Restricted Access Management Division said the federal program does not specify legal corporate ownership structures, and because each entity has a different name, it is considered a different entity even if the shareholders are the same.

Stone also noted that while the same group of individuals holds multiple permits, no one person has the equivalent to ownership of even one entire vessel.

And Stone asserts that opportunity still exists for new participants to enter the fishery if they so desire, although individuals testified at the first Senate Resources hearing that they would like to participate were the fishery more accessible to small, new, participants.

Lobbyists on board

Legislators and participants aren't the only ones weighing in on the program.

The United Fishermen of Alaska, of which the Alaska Scallop Association is a member, submitted a letter unanimously supporting the program. The Alaska Scallop Association, with its address at Stone's Lakewood, Wash., residence, has hired several lobbyists to help make its case.

According to the state's lobbyist directory, former CFEC Chairman Frank Homan, Gerald McCune, Thomas Meiners and former United Fishermen of Alaska President Bobby Thorstenson are being paid a total of $47,000 to lobby for SB 54.

Homan, who Tkacz reported for Laws for the Sea has been accompanied by current CFEC Commissioner Brown in the halls of the Capitol, described his lobbying interests on behalf of the scallop association as supporting a program "promoting local ownership and control of the state issued permits" and said it enabled several smaller Alaskan scallopers to participate in the fishery.

"These fisheries were once owned and controlled by entirely out of state interests and would likely revert to such control if the Program were to sunset," Homan wrote in his disclosure.

The necessity of limited access was a point made by ADFG Commissioner Cora Campbell, Brown and others in the first Senate Resources Committee hearing March 4.

Proponents of extending the program have said ADFG would not be able to manage the fishery if it were in open access.

The quota for the state waters fishery is limited, they have said, and open access could lead to overfishing so quickly that the state might not allow a fishery at all.

In his letter to the committee, Hutchings of Kodiak, disputed that claim by noting the state water fishery could operate as other parallel fisheries do under open access.

Prior commissioners of ADFG have told the legislature that the department has authority to require 100 percent observer coverage, which allows real-time catch reporting and prevents exceeding crab bycatch limits, as well as the ability to set a separate harvest in state waters or to close areas to prevent localized depletion.

The high start-up costs and small state harvest also make it unlikely several boats would rush into the fishery under open access.

"If State scallop fishery is allowed to revert to open access, new participants that are motivated to fish more cleanly could target scallops," Hutchings wrote. "The same folks that want to keep other participants out of their regulation-created monopoly have overblown the fears of unrestricted fishing and disproportionate harvests."

There is no question that Alaska scallop stocks are in good shape and are managed conservatively. The Alaska Scallop Association's marketing efforts have also helped the wholesale price leap to $10 per pound in 2012.

According to its members' public testimony, the cooperative paid $1.6 million in crew shares, bought $850,000 worth of fuel in Alaska, had $480,000 in maintenance work done on their vessels and bought another $335,000 in groceries and supplies last year.

As a small fishery with what is now only two boats operating in state waters, managing the harvest is extremely simple.

That's not the only thing Seaton is considering, however.

"We need to look at this in all aspects," Seaton told the CFEC's Brown in February, "and not just in ease of management."

Molly Dischner can be reached at molly.dischner@alaskajournal.com.

Journal correspondent Bob Tkacz contributed to this report. He can be reached at fishlawsbob@gmail.com.

THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Commercial Fisheries Entry Commission

8800 Glacier Highway, Suite 109
PO Box 110302
Juneau, Alaska 99811-0302
Main: 907.789.6160
Licensing: 907.789.6150
Fax: 907.789.6170

March 21, 2013

Andrew Jensen
Managing Editor
editor@alaskajournal.com

Molly Dischner
Reporter
molly.dischner@alaskajournal.com

Re: *Shell Game* (Alaska Journal of Commerce 3/13/13)

Dear Mr. Jensen and Ms. Dischner:

We appreciate the catchy title *Shell Game . . .* for the article concerning SB 54, pending state legislation to extend the 2013 termination date for the Alaska state waters limited scallop fishery. However, the article confuses the Alaska Commercial Fisheries Entry Commission's limitation of the commercial scallop harvest in state waters (the sole subject of SB 54) with the federal limitation in federal waters. This confusion leads to a series of misstatements, which we will address in the order they appear.

The article (p. 1) states:

> A small group of partners from Washington led by Jim Stone of Lakewood have come to control virtually the entire scallop harvest valued at about $4.5 million in 2012.
>
> * * *
>
> Including American Seafoods, that core group now controls six of nine state and federal permits for the scallop fishery.

In fact, the group identified holds only a single state waters scallop permit and faces competition in both state and federal waters from Alaskans William J. Harrington and Max Hulse and his family. Additionally, a third set of independent state and federal permits represents potential competition.

The article (p.1) further states:

> the Ocean Hunter has harvested scallops in state waters on behalf of the Alaska Scallop Association members with "lease fees" paid to the permit holders who do not associate their permits with a vessel.

In fact, there is only one individual associated with the Alaska Scallop Association who holds a state permit not currently assigned to a vessel: Tom Minio, an Alaska resident, who is an active captain in the scallop fishery.

The article (p. 1-2) also states:

> Associated with those federal licenses purchased [by the partners] in 2008 were two state permits that had been relinquished, and a third that is now under suspension because it has not been assigned to a vessel after being acquired by the partners.

The partners have not acquired a state permit that is not assigned to a vessel. Consistent with state law, the partners hold only one state permit, and the permit is assigned to a vessel.

Only one state permit has ever been relinquished, and the relinquishment had nothing to do with the partners. In 2007, a state permit holder became embroiled in a contract dispute over the permit and relinquished the permit following a discussion with CFEC staff about relinquishment. This single

relinquishment of a permit severed the only connection to the fishery this former permit holder ever had.

Before the state limited entry program existed, parties to a 2002 transfer of federal fishing rights agreed to forego and extinguish any rights that might later arise to apply for a state waters permit . The state waters limited entry program would not exist until 2004, so there was no permit to relinquish and no certainty there would ever be one. The recipient subsequently transferred their federal rights and no longer participates in the Alaska scallop fishery.

The phrase "under suspension" implies a ministerial act blocking the operation of a permit – which has never occurred. Only two state waters permits are not currently assigned to vessels, but their holders must continue to pay fees, and they can fish the permits whenever they attach them to a vessel. One of the two permits is not connected to the partners.

The article's treatment of Jim Stone (p.2) shows the confusion generated when the state limitation is lumped together with the federal limitation. The Council's letter pertained only to extending state limitation in state waters—the sole subject of SB 54 and the sole responsibility of CFEC. Having reviewed CFEC's licensing files, we believe that the state limited fishery looks very much as it did when the Council wrote its last letter and the legislature extended the program in 2008. No individual or entity holds more than a single state permit, a new Alaskan participant has entered the fishery, and there is competition between permit holders.

The article (p.2) provides an unattributed statement (appearing under the heading ***Seaton questions constitutionality***) as follows:

> The scallop fishery is the only vessel-based limited entry program in the state, and it was made vessel-based because assigning permits to individuals with fishing history would have resulted in 10 or 11permits. That number was greater than the nine determined to be the most vessels the fishery could support.

This statement is misleading. Over the years for establishing vessel eligibility, some 47 individual captains had participated in the fishery and would have been eligible to apply for permits under traditional limited entry. If the commission had implemented traditional limited entry, each of those captains could have brought a new vessel into the fishery during the period of time required to adjudicate their claims to permits (with extreme luck, at least 3 years). In good conscience, the commission could not have risked visiting that much fishing power on (in the words of Commissioner Campbell) "a hard bottom dredging" fishery which could potentially do terrible damage if not very carefully controlled. The possibility of 47 vessels (or even a substantial portion of them) compared to 9 participating vessels presented a stark choice to the commission.

The article attributes the following statement to Rep. Paul Seaton:

> "For several years there seems to have been a philosophy at the CFEC that they are the chief supporters of a position of policy instead of implementing the policy that is set by the legislature," shortly after SB 54 was introduced. "Although they were implementing the policy, to oppose a change in policy by the legislature is, I believe, beyond their real mission."

Some years ago during the course of a hearing, Rep. Bill Hudson made a somewhat parallel comment to the commission, but in the form of praise for being "proactive."

The comment attributed to Rep. Seaton fails to acknowledge that the commission's actions are solidly grounded in specific direction from the legislature and the Alaska Constitution.

The article correctly cites *Johns v. Commercial Fisheries Entry Commission,* 758 P.2d 1256, 1266 (Alaska 1988), for the proposition that the Limited Entry Act directed CFEC to determine an optimum number to ensure that a limited fishery was not too exclusive:

> The optimum number provision of the Limited Entry Act is the mechanism by which limited entry is meant to be restricted to its

> constitutional purposes. Without the mechanism, limited entry has the potential to be a system which has the effect of creating an exclusive fishery to ensure the wealth of permit holders and permit values, while exceeding the constitutional purposes of limited entry.

CFEC agrees and requests the opportunity to examine an optimum number for the state scallop limitation. That opportunity will be destroyed if the limited fishery terminates at the end of 2013. Preserving our statutory opportunity to perform an optimum number determination is a principal reason the commission supports extending the termination date for the fishery. The procedure would also be fair to Mr. Harrington, Mr. Hulse, and the other permit holders.

Those advocating termination of state scallop limited entry know that termination would create a risk that the resulting open-to-entry scallop fishery may have to be closed to protect the stocks. Risking such a closure would be reckless and is wholly unnecessary.

Current management of the fishery under limited entry has earned high marks. The Monterey Bay Aquarium Seafood Watch has bestowed upon Alaska Weathervane Scallops their **"Best Choice"** award based on a showing that the Alaska scallop resource is abundant, well-managed and caught in an environmentally friendly way.

Those who advocate for an unlimited fishery should bear the burden of explaining what exactly would be improved. If they cavalierly accept the risk that the fishery might close, they should reacquaint themselves with Article VIII, Section 4, of the Alaska Constitution, which requires of the legislature and state managers alike that "Fish . . . and all other replenishable resources belonging to the State shall be utilized, developed, and maintained on the sustained yield principle . . . . "

CFEC is not willing to assume the risk of a closure. CFEC would examine the optimum number for the fishery, if it is afforded that opportunity by extending the termination date of the State scallop limitation.

Yours truly
Alaska Commercial Fisheries Entry Commission
Bruce Twomley, Chair
Benjamin Brown, Commissioner

SWAMC
Southwest Alaska Municipal Conference
3300 Arctic Boulevard, Suite 203 Anchorage, AK 99503 p: 907.562.7380 www.swamc.org
Alaska Peninsula
Aleutian Chain
Bristol Bay
Kodiak Island
Pribilof Islands

March 28, 2013

Representative Paul Seaton
Chair of the House Fisheries Committee
State Capitol, Room 102
Juneau, AK 99801

Re: SWAMC Support for SB54 - Extending Termination Date of Weathervane Scallop and Bering Sea Hair Crab Fisheries

Representative Seaton,

The Southwest Alaska Municipal Conference (SWAMC) would like to provide support for SB 54, an act extending the termination date of the Weathervane Scallop and Bering Sea Hair Crab Fisheries.

The scallop fishery provides an important economic contribution to our coastal communities, especially Kodiak and Unalaska where the fleet bases operations. Our communities provide services and supplies supporting this fishery, adding to fisheries diversity, and thus a more stable labor force. In addition to the direct impact of providing goods and services, the fishery provides a positive tax base for local and state government. In the 2012/13 fishing season, over 400,000 pounds of product were landed Statewide at an ex-vessel value of approximately $4,000,000. This money flowed to crew members, owners and vendors who live and spend time in Southwest Alaska.

If the current limited entry system ends, the Department of Fish & Game has advised they will be forced to close the state portion of the scallop fishery, as it could be unmanageable in an open access scenario. This would cause avoidable economic loss to our region and the state. SB54 has the support of Governor Parnell, the Senate, the Department of Fish and Game, United Fishermen of Alaska and now SWAMC, due to the importance of maintaining healthy fisheries in our region.

Thank you for your consideration.

Sincerely,

Andy Varner
Executive Director

Kilkenny, LLC
Box 8166
Kodiak, AK 99615

Senate Resources Committee
Alaska State 28th Legislature

Dear Senator Wagoner and Committee Members,

This letter is in support of Senate Bill 54 to extend the vessel-based limited entry system for the Alaska weathervane scallop and Bering Sea hair crab fisheries. My comments are limited to the scallop fishery as the Owner/ Captain of the F/V Kilkenny.

I have extensive experience in the scallop fishery in New England in the 1970s and in Alaska throughout the 1980s. I have operated the F/V Kilkenny since 2009 as an independent business, employing eight to ten crewmembers per season. With the exception of one student, all crew are Alaska residents, young people who have developed the skills to efficiently and sustainably harvest the resource with attention to the future of the stocks. I have trained two capable relief skippers in the past three years.

When I re-entered the scallop fishery in 2009 I was immediately included in resource management discussions with both the Alaska Weathervane Scallop Cooperative and State and Federal managers. I have been impressed with the collaboration between all participants in the industry, with everyone focused on sustainable management of this valuable but limited resource.

I believe the language in SB 54 to extend the current system until 2023 is the best option to maintain the weathervane scallop fishery in a commercially viable form. I truly believe that wide-open access at this point would jeopardize the businesses of those currently invested in the fishery while also failing to provide successful alternatives to potential new entrants. I am also concerned about the effects of more gear on the harvestable beds, and of the state's ability to effectively regulate an open access fishery without greatly expanding the personnel currently assigned to the management of the fishery, at considerable cost. The use of a moratorium will preserve the rights of others to enter the fishery at a later date, if the stocks improve, without total privatization of the resource.

I urge your support for SB54. I would be pleased to provide more information and answer any questions at a public hearing.

Respectfully,

Bill Harrington

cc: Senator Gary Stevens
Representative Alan Austerman
Commissioner Benjamin Brown

8344 Mary Esther Dr.
Eagle River, AK 99577

February 27. 2013

Senate Resources Committee
Juneau, Alaska

This is in regard to scallop SB 54.

My two sons and I hold a statewide Scallop Fishing Vessel Entry Permit # W2BBV85012H, Category:B, Overall Length less than 80'.

Our vessel is the F/V Wayward Wind, ADF&G #23574. We also hold a Federal Scallop Limitation License, SSLP No.004. We were issued these permits due to our ***historical participation*** in the Alaska Scallop Fishery. My sons and I have been Alaska residents since 1966 and involved in Alaska fisheries since 1979.

Due to the decrease in state scallop quotas and the high cost of fuel and the observer, we have not fished our state permit for the past few years---strictly due to economics. In 2011 we dry docked our scallop vessel for some upgrades, and do plan to participate in the fishery in the near future. Hopefully, the quotas will improve, especially in the Kayak Island areas which have been closed in some years.

It is my understanding should Senate Bill 54 not be passed, and the fishery is open to all comers, there is a great possibility that Fish and Game will close the fishery due to the small quotas and difficulty in management.

Seems fair and logical to me that ***historical participation*** in a fishery should count for something. Accordingly, I ask the legislation to enact SB 54 and not take my two sons' future in the scallop fishery away.

Sincerely,

Max G. Hulse

Frank Kelty
PO Box 162
Unalaska, Alaska 9968
E-Mail kelty1149@yahoo.com
907-581-1301

April 2, 2013

Representative Paul Seaton
120 4th Street State Capital Room 102
Juneau, Alaska 99811-0001

Subject: SB 54

Mr. Chairman:
I am writing to you today in support of Senate Bill 54 which would extend the termination date of the authority of the Commercial Fisheries Entry Commission to maintain vessels – based limited entry fisheries for the Weathervane Scallop and Bering Sea hair crab fisheries until December 30, 2018. I would hope that this bill will move out of the Fisheries Committee that you are the Chairman of very soon.

I have worked in the Alaska Seafood industry for 30 years in Unalaska, working for two different companies in the Unalaska/Dutch Harbor area, and have firsthand knowledge of these fisheries. The main reason I support this bill is that it will continue to be basically a rationalized cooperative based fishery. If this fishery goes back into and open access mode in state waters for this small amount of poundage, this will create major problems for Alaska Department of Fish and Game on how they will manage it; if there too many vessels involved ADFG may decide not open it. With new players getting involved in the fishery bycatch issues could increase with vessels operators that aren't familiar with the fishing grounds increasing bycatch amounts that could close productive fishing areas.

I believe it is important to allow this cooperative to be extended until 2018, It is important that operators who have worked this fishery, are dependent on this fishery, and have produced a first class product, have reduced bycatch in many areas, should be able continue to work this fishery. I've seen first had the problems with over-capitalize fisheries in the Halibut/Sablefish, Pollock, and Bering Sea Crab Fisheries. A more rationalized fishery is the way to go in this situation, with fewer players you have less bycatch, a better product is produced at a higher value, and management of the fishery is also improved. I would urge you to pass this bill from the Fisheries Committee as soon as possible it the right thing to do. If you have any questions or concerns my contact numbers are listed above.

Sincerely

Frank Kelty
CC: Rep. Bob Herron
Rep. Bryce Edgmon
Sen. Cathy Giessel

---------- Forwarded message ----------
From: **Donald Lane** <donlane71@gmail.com>
Date: Thu, Mar 21, 2013 at 9:39 AM
Subject: Scallops
To: "Rep. Paul Seaton" <Representative_Paul_Seaton@legis.state.ak.us>

Hi Paul,

I applaud your efforts to force a public review of the Alaska Scallop fishery. In the 80's I was on the Homer Fish and Game Advisory Board and we worked hard to develop the Augustine Island Scallop fishery, specifically for smaller Coastal boats. 6' dredge, king crab by catch cap etc. It was viable and important fishery typically with off the dock sales. The scallop beds were repeatedly raided by the Large offshore scallopers with big dredges and this piracy resulted in a number of years of forced closures. After the F/V Big Ben (?) incident that forced an emergency closure to all Alaska Scalloping, nearshore and offshore, the NPFMC was forced, mostly by hysteria, to create and all inclusive Scallop Management Plan. I testified a number of times at the NPFMC about the benefits and need to keep Cook Inlet out of the Plan. However, because the scallop beds were actually in Federal waters, my comments were ignored. I resent the way the Scallop Fishery has evolved. It is no longer a fishery that Homer has a sense of ownership and responsibility. The consolidation that has taken place has been troubling for me for years. The F/V Kilkenny still comes to Homer and sells scallops, because he has Homer connections and I appreciate that.
Please consider the following comments in your Scallop thoughts.
1. The NPFMC reacted and designed this program but it appears the problems have fallen in the State of Alaska lap.
2. The Owners of the Scallops permits clearly are not on the boats and I appreciate your efforts to shine a light on what the Scallop Fishery has become, and should have Constitutional review.
3. I believe the State is saddled with the financial responsibility for management, ie. I know the M/V Pandalus has spent a lot of time doing scallop surveys. How much has that cost and who is benefiting?
4. I noticed the Scallop permit owners (less than a handful) refer to all the jobs etc. etc. I am wondering if those are Alaskan jobs?I do not I believe they import a lot of the crew from East Coast, not sure where the raw scallops end up for final processing. Much out of state I believe.

It is hard to get a sense of history after so many years but Homer once had a well managed local scallop fishery that was taken away. It has since been given to mostly corporate owners, the state seems to have management burden., I am not seeing where coastal Alaska has benefited

Again, thank you for shining a light on this debacle of management. What poor management can become after 25 years.

The Best. Don Lane.

March 7, 2013

George Hutchings, President
Americans for Equal Access
P.O. Box 8242
Kodiak, AK 99615

Senator Cathy Giessel
Chair Senate Resources Committee
State Capitol Room 427
Juneau, AK 99801-1182

Via email: Sharon.Long@akleg.gov.

RE: SB 54 and the North Pacific Fishery Management Council

Dear members of the Senate Resources Committee:

For the record, my name is George Hutchings and I am a long-term Alaska resident and commercial fisherman based out of Kodiak. When I first came to Kodiak in 1981, the opportunities for a small commercial fisherman were abundant. There was a huge small boat fleet that fished crab, halibut, salmon, and herring. There were also small boats that participated in the trawling, shrimping, and scalloping fisheries; to name a few, F/V *Meridian, Sharon W, Heidi Kay,* and *Rose-Ann Hess*.

Scallops were the first privatization of public fisheries, followed by the halibut and black cod Individual Fishing Quota programs, the king crab rationalization program in the Bering Sea, Gulf rockfish quotas for trawlers, and now a proposed program to privatize the Gulf trawl quota to match the American Fisheries Act program. The devastation to the Kodiak fleet because of all these actions, and the devastation to the community, is very obvious to any long-term resident or Alaska fisherman and not just myself.

I would like to take this opportunity to inform members of the Senate Resources Committee that I am unhappy with and disappointed by the recent unilateral action taken by the North Pacific Fishery Management Council during staff tasking at its February away-meeting in Portland, Oregon in support of the State scallop fishery as it is currently managed and continuing the vessel-based limited entry program. **During the Council meeting, there was no opportunity for the public to comment on the Council's action on the scallop fishery and no notice to the public *because the scallop fishery was not on the meeting agenda.***

After personally spending a large sum of money to attend the Council's away-meeting in Portland for another agenda item, I would have gladly given up a few more days of fishing and stayed through the end of the meeting *if scallops been listed on the agenda*. Being denied notice and an opportunity to be heard, I feel betrayed by the Council taking this action with no public input other than from personal testimony from Mr. Jim Stone, who is the primary player in this game and voiced only his own opinion, which in itself should be illegal. For the Council to draft this letter and mislead the Resources Committee in such in a back-door fashion diminishes the Council's credibility and the public's trust.

I have read the Council's letter to Senator Cathy Giessel and the Resources Committee and disagree with many of the substantive points the Council makes. I was not, however, permitted

an opportunity to either counter Mr. Stone's perspective to the Council or to review the Council's letter as a stakeholder. For example, there should be a parallel fishery inside State waters, in addition to the State waters and Federal scallop fisheries. The scallop fishery has a much lower quota today. The players are very limited and able to save only the nicest size to shuck, and therefore bring top dollar, while returning smaller, less desirable scallops back to sea. If State scallop fishery is allowed to revert to open access, new participants that are motivated to fish more cleanly could target scallops. The same folks that want to keep other participants out of their regulation-created monopoly have overblown the fears of unrestricted fishing and disproportionate harvests.

I wish I had the financial resources of larger fishing-processing entities or fishing associations, like Trident, so that I could appeal the unilateral practices of the Council and meeting outcomes to the State and Federal Court systems. The Commissioners and Department of Fish and Game are on a trend here with these vessel-based limited entry fisheries that is unconstitutional, immoral, and ethically wrong. I would support limiting the fishery through catch shares in a non-privatized, non-monetary form, but as Emil Christiansen, President of Old Harbor Native Corporation, stated to the Council at the February meeting, the time when fish were caught by fisherman and their boats is in the past; those entities were paid for those fish and that does not constitute a future give-away right.

Sincerely,
George Hutchings
Kodiak fisherman
President, Americans for Equal Access

UNITED FISHERMEN OF ALASKA

Mailing Address: PO Box 20229, Juneau AK 99802-0229
Physical Address: 410 Calhoun Ave Ste 101, Juneau AK 99801
Phone: (907)586-2820 **Fax:** (907) 463-2545
Email: ufa@ufa-fish.org **Website:** www.ufa-fish.org

UFA Resolution 2013 - 02

A Resolution by the United Fishermen of Alaska to Support continuation of the vessel-based limited entry in the the weathervane scallop and Bering Sea hair crab fisheries.

Whereas, the people of Alaska amended the Alaska Constitution in 1972 to allow for limitation of entry into commercial fisheries for purposes of resource conservation, to prevent economic distress among fishermen and those dependent upon them for a livelihood, and to promote the efficient development of aquaculture in Alaska; and,

Whereas, the Alaska State Legislature in 1973 passed into law the Limited Entry Act to promote the conservation and the sustained yield management of Alaska's fishery resource and the economic health and stability of commercial fishing in Alaska by regulating and controlling entry of participants and vessels into the commercial fisheries in the public interest and without unjust discrimination; and,

Whereas, in enacting the Limited Entry Act, the Alaska State Legislature found that commercial fishing for fishery resources had reached participation levels that were impairing the economic welfare of the fisheries of Alaska, the efficiency of the harvest, and the sustained yield management of the fishery resource; and,

Whereas, in the 1980s and 1990s the Alaska weathervane scallop fishery saw rapid growth in participation, with vessels coming to Alaska from other parts of the United States to harvest this resource with increasing aggression, while there was no federal fishery management plan for the fishery in federal waters, and the fishery was open-access in State waters; and,

Whereas, in response to the unsustainable levels of participation in the Alaska weathervane scallop fishery, the Alaska Legislature unanimously enacted a moratorium on new entrants in 1997, at the same time making findings about the biological, ecological, and technological realities of this fishery, envisioning a vessel-based limited entry system for this fishery, and allowing the State of Alaska to manage fisheries in federal waters; and,

Whereas, the United States North Pacific Fishery Management Council (NPFMC) implemented a moratorium in federal waters in 1997 on new entrants into the weathervane scallop fishery for the same reasons as the Alaska Legislature; and,

Whereas, the NPFMC instituted a License Limitation Program to assign limited fishing privileges to participants in the weathervane scallop fishery in 2001; and,

Whereas, the Alaska State Legislature enacted House Bill 206 in 2002, which allowed the Alaska Commercial Fisheries Entry Commission (CFEC) to create and implement a vessel-based limited entry system for the weathervane scallop and Bering Sea hair crab fisheries, in order to

allow these fisheries to be managed for sustained yield and the well-being of the fishermen in these fisheries; and,

Whereas, CFEC followed the Alaska State Legislature's direction, and carefully undertook to limit entry to the weathervane scallop and Bering Sea hair crab fisheries, and in accordance with the law, the Legislature's intent, and the facts pertaining to these fisheries, issued vessel-based limited entry permits in these two fisheries; and,

Whereas, in 2008 the Alaska State Legislature extended the life of the vessel-based limited entry systems until the end of 2013; and,

Whereas, CFEC, in conjunction with the Alaska Department of Fish & Game (ADF&G), has overseen the successful, stable, sustainable management of the weathervane scallop fishery for the past decade, in compliance with the Alaska Constitution and the Limited Entry Act; and,

Whereas, allowing the vessel-based limited entry systems to expire at the end of 2013 would prevent the sustained yield management of these fisheries, and would significantly harm those who hold permits for these fisheries and those employed in these fisheries; and,

Whereas, allowing the vessel-based limited entry systems to expire at the end of 2013 would benefit no one, and would cause loss of opportunity and economic harm;

Therefore Be It Resolved by the United Fishermen of Alaska Board of Directors that UFA strongly supports the swift passage of Senate Bill 54 in the first regular session of the 28th Alaska Legislature, based on the firm belief that vessel-based limited entry is a fair, legal, logical, and prudent way to limit entry to the weathervane scallop and Bering Sea hair crab fisheries. UFA notes that this is the only fishery in which we support vessel-based limited entry.

By UFA Board of Directors, February 21, 2013:

Bruce H. Wallace

Bruce Wallace
President
United Fishermen of Alaska

Attest: Julianne Curry
Executive Director

North Pacific Fishery Management Council

Eric A. Olson, Chairman
Chris Oliver, Executive Director

Telephone (907) 271-2809

605 W. 4th Avenue, Suite 306
Anchorage, AK 99501-2252

Fax (907) 271-2817

Visit our website: http://www.alaskafisheries.noaa.gov/npfmc

February 25, 2013

Senator Cathy Giessel
Chair Senate Resources Committee
State Capitol Room 427
Juneau, AK 99801-1182

Sent by email: Senator.Cathy.Giessel@akleg.gov

Dear Senator Giessel;

The North Pacific Fishery Management Council (Council) supports the State of Alaska extending the current limited entry program for the Weathervane scallop fishery in state waters. The Council delegated authority to the State of Alaska to manage all aspects of the scallop fishery in federal waters off Alaska, except limited access, which remained a federal responsibility. The Fishery Management Plan for the Scallop Fishery off Alaska (FMP) established a license limitation program (LLP) in federal waters, effective January 16, 2001. The Alaska Legislature, as you know, also established a four-year vessel moratorium in 1997 that was first extended an additional three years until June 10, 2004, and then replaced with a vessel-based limited entry program that was scheduled to expire in 2008. At that time the legislature extended that expiration until the end of 2013. The Council is currently concerned that if this program is allowed to expire, the potential exists for an open-access fishery in State waters that is inconsistent with management measures to limit effort in federal waters.

Conservation concerns with crab bycatch and the overharvest of scallops in the early 1990s prompted the Council and the Alaska Board of Fisheries (BOF) to work cooperatively to reduce scallop fishing effort in the overcapitalized Weathervane scallop fishery. In several areas of the state, Kodiak and Yakutat for example, scallop beds are bisected by the 3-mile boundary line separating state from federal waters. In these areas, the majority (80% or more) of the scallop harvest is taken from the federal waters portion of the scallop beds. Guideline harvest ranges established by the Alaska Department of Fish and Game (ADF&G) are applied to the entire registration area, and are not apportioned to either state waters or federal waters. If the state waters portion of the fishery reverted to open access, additional vessels with unrestricted fishing capacity could target scallops in state waters. Disproportionate harvest of the scallop beds could lead to stock conservation concerns; including that portion of the stock in federal waters. Two additional concerns result from a bifurcated management regime. First, regulatory enforcement along the 3-mile line would be problematic. Second, Tanner and red king crab bycatch would likely increase as a result of increased fishing effort within a restricted portion of the scallop bed. Weathervane scallop stocks in Alaska are small. Concerns with overcapitalization, and the resulting stock conservation and crab bycatch concerns have largely been addressed through complementary federal and state limited entry/access programs. The Council encourages the Alaska Legislature to extend the Weathervane Scallop limited entry program in state waters to coordinate with the federal program implemented by this Council.

If you need any additional information relative to this issue, please feel free to contact the Council's Executive Director, Chris Oliver.

Thank you for considering these comments.

Sincerely,

Eric A. Olson, Chair
North Pacific Fishery Management Council

Cc: Ben Brown, Commissioner CFEC

ADF&G SCALLOP FISHERY MANAGEMENT IN THE ABSENCE OF THE STATE VESSEL-BASED-LIMITED-ENTRY PROGRAM

Prepared by:
Gregg Rosenkranz
ADF&G Scallop Biometrician
April, 2013

The Alaska Department of Fish and Game (ADF&G) supported the vessel-based limited entry program for the state water weathervane scallop fishery when it was introduced in 2004 and when it was reconsidered in 2008. If the limited entry program expires in December 2013, the scallop fishery in state waters will revert to open access while the fishery in federal waters 3–200 nautical miles offshore will remain under the federal license limitation program (LLP) approved by the North Pacific Fishery Management Council (NPFMC) in 2001. If the state limited entry program expires, ADF&G fishery managers from around the state (Figure 1) who currently manage the scallop fishery in both state and federal waters would decide how to manage the open access state waters scallop fishery.

Scallop Fishery in State Waters

In Southeast Region, seven discrete scallop beds have been identified from scallop observer program logbooks (Figure 2). Of this area, 17 percent lies in state waters and we estimate that 23 percent of the total 2009/10 through 2012/13 (most recent four seasons) catch of 629,000 lbs. scallop meat was harvested from state waters.

In the Central Region Area E fishery off Kayak Island (Figure 3), 10 percent of the area identified as scallop beds using observer program logbooks lies in state waters, and over the 2009/10 through 2010/11 seasons, about 2.5 percent of the 42,100 lbs. scallop harvest was taken from state waters. The Kayak Island fishery was not opened during the 2012/13 season.

In Kodiak Shelikof District, about 32 percent of the main scallop bed between Cape Douglas and Hallo Bay (Figure 4) lies in state waters, and we estimate that 24 percent of the 584,000 lbs. harvested during the 2009/10 through 2012/13 seasons was taken in state waters. Besides the main bed, several other areas further south in Shelikof Strait that lie in state waters open to scallop fishing are occasionally targeted by the fleet but have produced less than 5 percent of the total harvest since inception of the scallop observer program in 1993.

Scallop abundance in these fisheries is currently trending downward. For example, the 2012/13 Yakutat District scallop guideline harvest level (GHL) was set at 120,000 lbs. scallop meats, a decrease from 160,000 lbs. during the 2009/10–2010/11 seasons and 150,000 lbs. during the 2006/07–2008/09 seasons. Similarly, the Kodiak Shelikof District GHL was reduced to 105,000 lbs. in 2012/13 from 135,000 lbs. for 2011/12 and 170,000 lbs. for the 2007/08–2010/11 seasons. The Kayak Island scallop fishery, which is assessed by biennial dredge surveys, is currently closed due to low estimated scallop abundance.

Current Fishery Participants

Four vessels have participated in the statewide scallop fishery over the past several seasons. Of these, two hold state waters licenses and were responsible for the state waters harvest detailed

above. One of these vessels is part of the three-vessel Alaska Scallop Association (industry cooperative) and one is a smaller vessel home ported in Kodiak that has participated in the Kodiak Area and Cook Inlet fisheries. ADF&G expects that current LLP license holders would fish in the same areas as any new entrants to the fishery, thereby competing with new entrants for the limited state waters scallop harvest. Note that two cooperative vessels that currently do not hold state waters permits would acquire rights to fish in state waters if the state's limited entry program expired. Further information on current license holders is contained in the attached Commercial Fisheries Entry Commission report *Limited Entry in the Alaska Weathervane Scallop Fishery.*

Management of an Open Access Scallop Fishery in State Waters

Decisions on how to manage open access state waters scallop fisheries would fall to ADF&G shellfish managers in each affected region. At least three possibilities exist. First, if there was not a substantial increase in scallop fishing effort, state water scallop fisheries could be managed on a parallel basis with federal water fisheries, i.e., a single GHL would be set for a management unit that included both state and federal waters and fishing would proceed until closed. Typically, scallop fisheries are closed when the upper bound of the GHL is reached but may also be closed before then due to concerns about crab bycatch or poor fishery performance. Second, separate GHLs could be set for state and federal waters. These could be based on historic information from the scallop observer program summarized above or could be set using estimates from the Kayak Island dredge survey or from experimental CamSled video surveys in Kodiak Shelikof District. Currently, abundance estimates from survey data (where available) are made on a whole bed basis rather than being split between state and federal waters. Third, managers could keep state waters closed while allowing the scallop fishery to proceed in federal waters. This might be a preferred option if effort increased substantially and raised concerns about conservation of the scallop resource. Note that in many parts of the state, scallop dredging has been prohibited in state waters by the Alaska Board of Fisheries (Figure 1).

Onboard scallop observers are required by state regulations for all vessels fishing for weathervane scallops except in Cook Inlet, where the fishery occurs in federal waters and is limited to a single dredge with maximum width 6 ft. Vessels fishing for scallops in all other areas can deploy up to two 15 ft. dredges (some smaller vessels are limited by the LLP to two 10 ft. dredges) and carry onboard observers who report to ADF&G by email regularly during fishing operations. Managers would continue to rely on inseason information from onboard observers to monitor scallop fishery harvest and bycatch in the event of open access scallop fisheries in state waters. New participants would need to make arrangements with observer contractors well ahead of the season as a limited number of trained scallop observers are available.

A possible enforcement issue could arise if the state water scallop fishery went to open access. Vessels fishing for scallops under the federal LLP are required to carry a vessel monitoring system (VMS), which allows real-time tracking of vessel position. Vessels fishing for scallops in state waters under open access would not be required to carry VMS under current regulations, and LLP vessel operators would likely complain to ADF&G, Alaska State Troopers, and/or NOAA Fisheries Office of Law Enforcement if these vessels appeared to impinge on federal waters. This problem would likely be exacerbated by the irregular nature of state-federal water boundaries in scallop fishing areas (Figures 2-4), which could make determination of vessel position with respect to the boundary difficult.

Barriers for new entrants to an open access state water scallop fishery include the onboard observer requirement, obtaining scallop dredges, approval for food processing operations (shucking or shucking/freezing of scallops) by the Alaska Department of Environmental Conservation, relatively low harvest levels, developing markets, and Alaska weather. Onboard observers currently cost $300/day and require vessels to provide accommodations for an extra person onboard who is not part of the fishing operation. Scallop dredges are heavy pieces of fishing gear, and most are built on the east coast. Vessels 50 ft. or less in overall length would in general not be well-suited for this fishery due to space and stability requirements. Still, the potential number of new entrants to an open access state water fishery is impossible to predict at this time.

As a historical note, analysis performed by NPFMC staff during consideration of the LLP (see attached report) indicated that the fishery was overcapitalized during the 1990s. Indeed, the primary reason for NPFMC approval of the LLP was economics; vessel operators successfully argued that under open access, too many vessels chasing too few scallops would make most operations unprofitable.

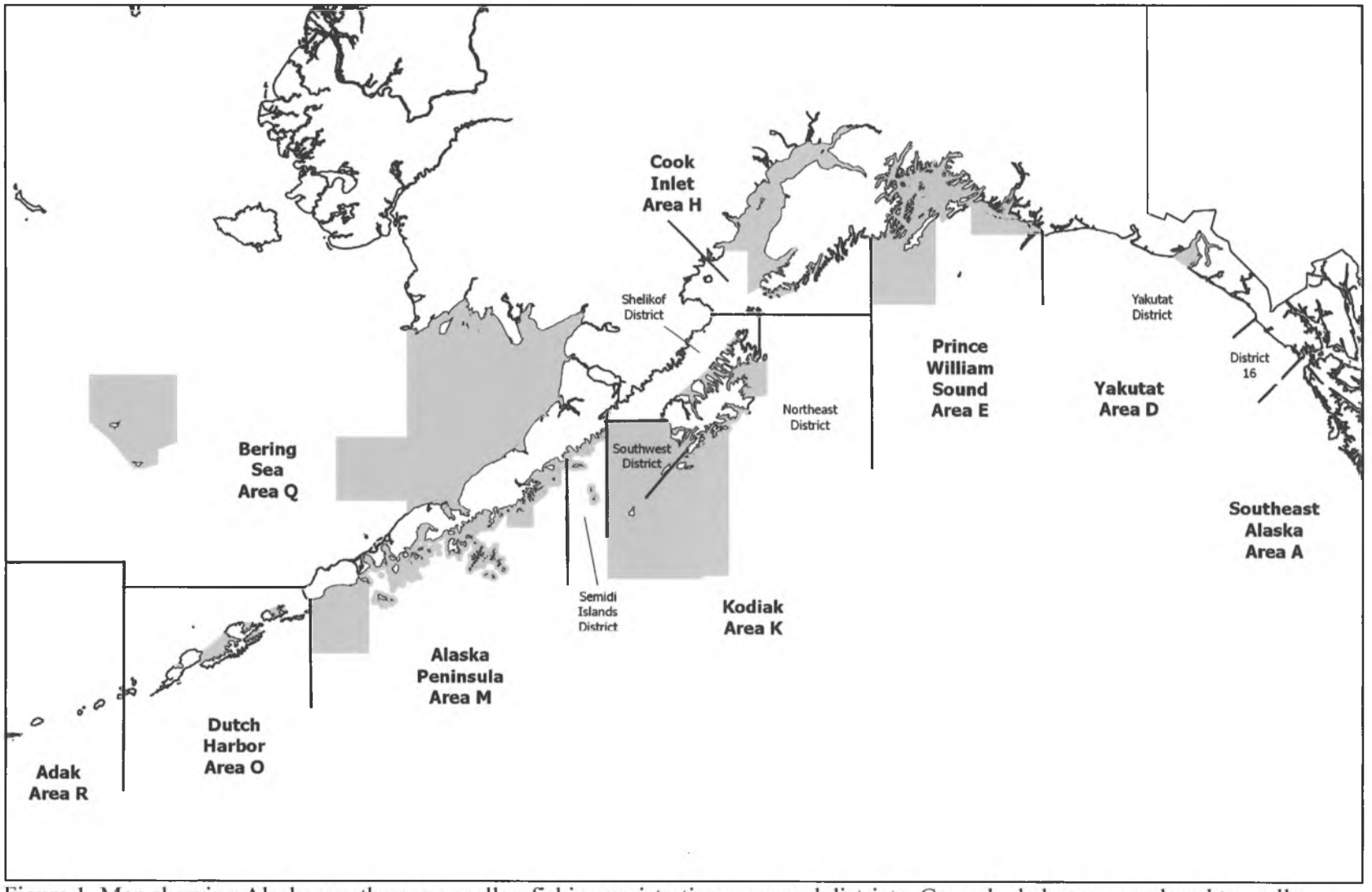


Figure 1. Map showing Alaska weathervane scallop fishing registration areas and districts. Grey-shaded areas are closed to scallop fishing. Scallop fisheries with fishing in both state and federal waters occur in Southeast Region's Area D, Central Region's Area E, and in Kodiak Shelikof District, part of Westward Region.

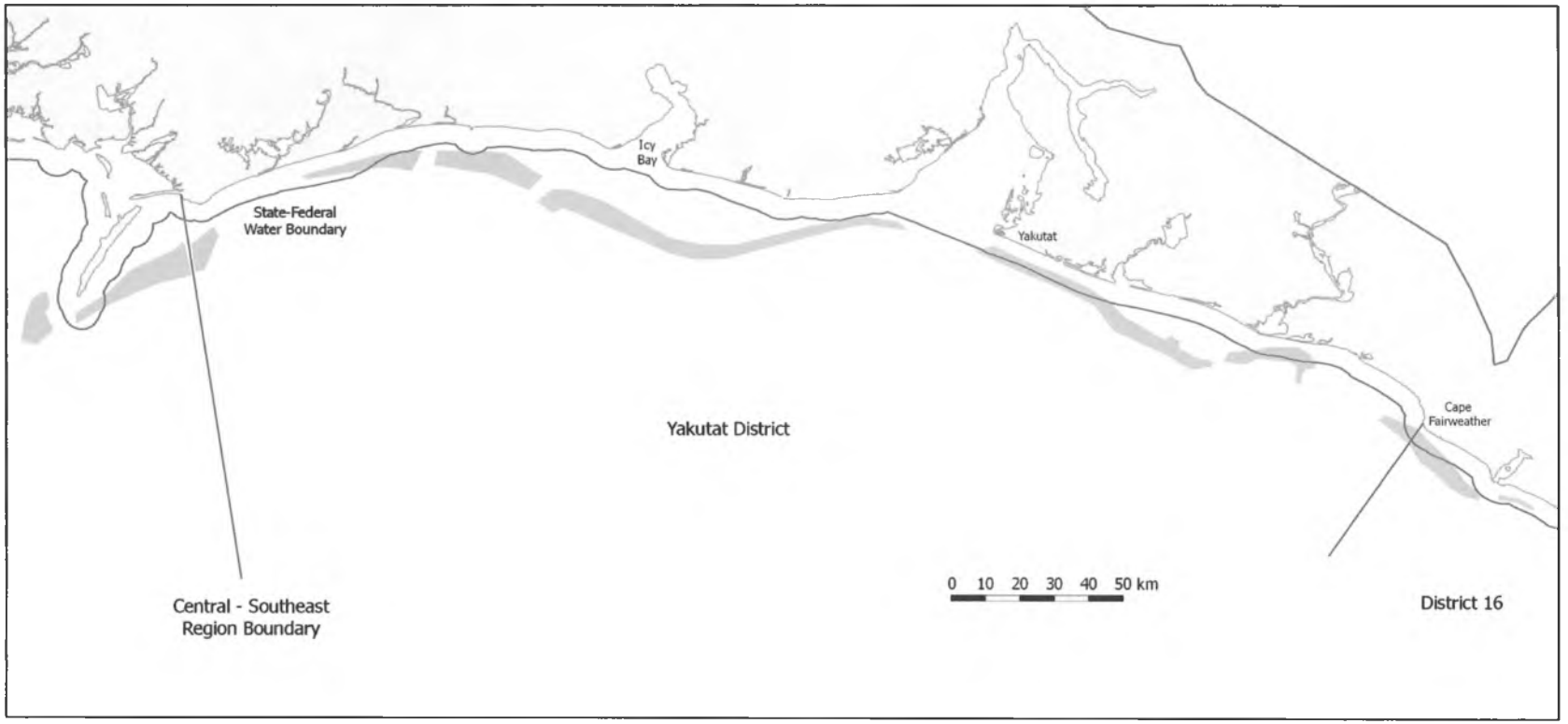


Figure 2. Map showing eastern Gulf of Alaska scallop fishing areas in state and federal waters identified from observer program logbooks (green polygons).

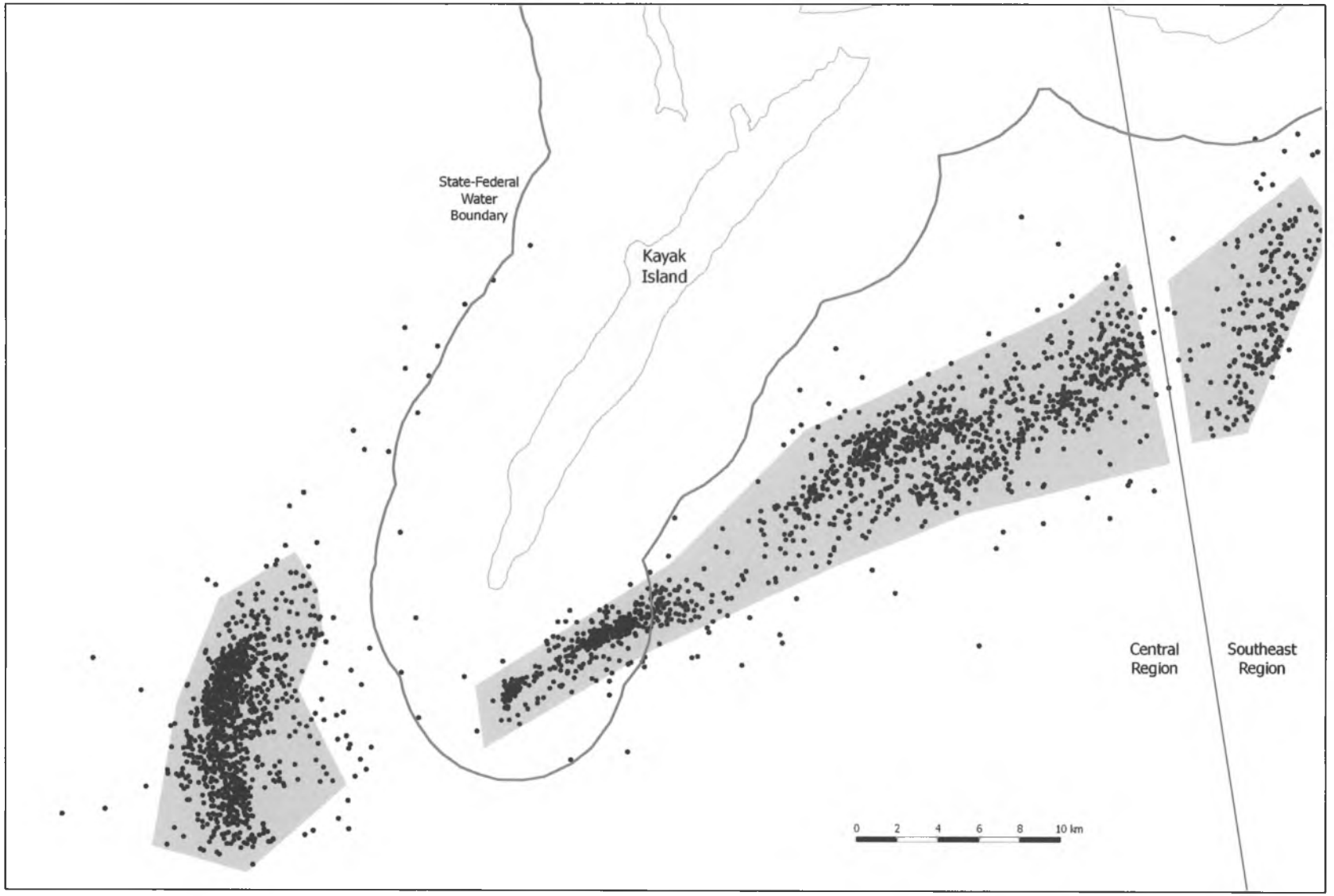


Figure 3. Map showing scallop fishing effort distribution around Kayak Island. Black dots are starting positions of all scallop tows between 1997 and 2011 from observer program logbooks.

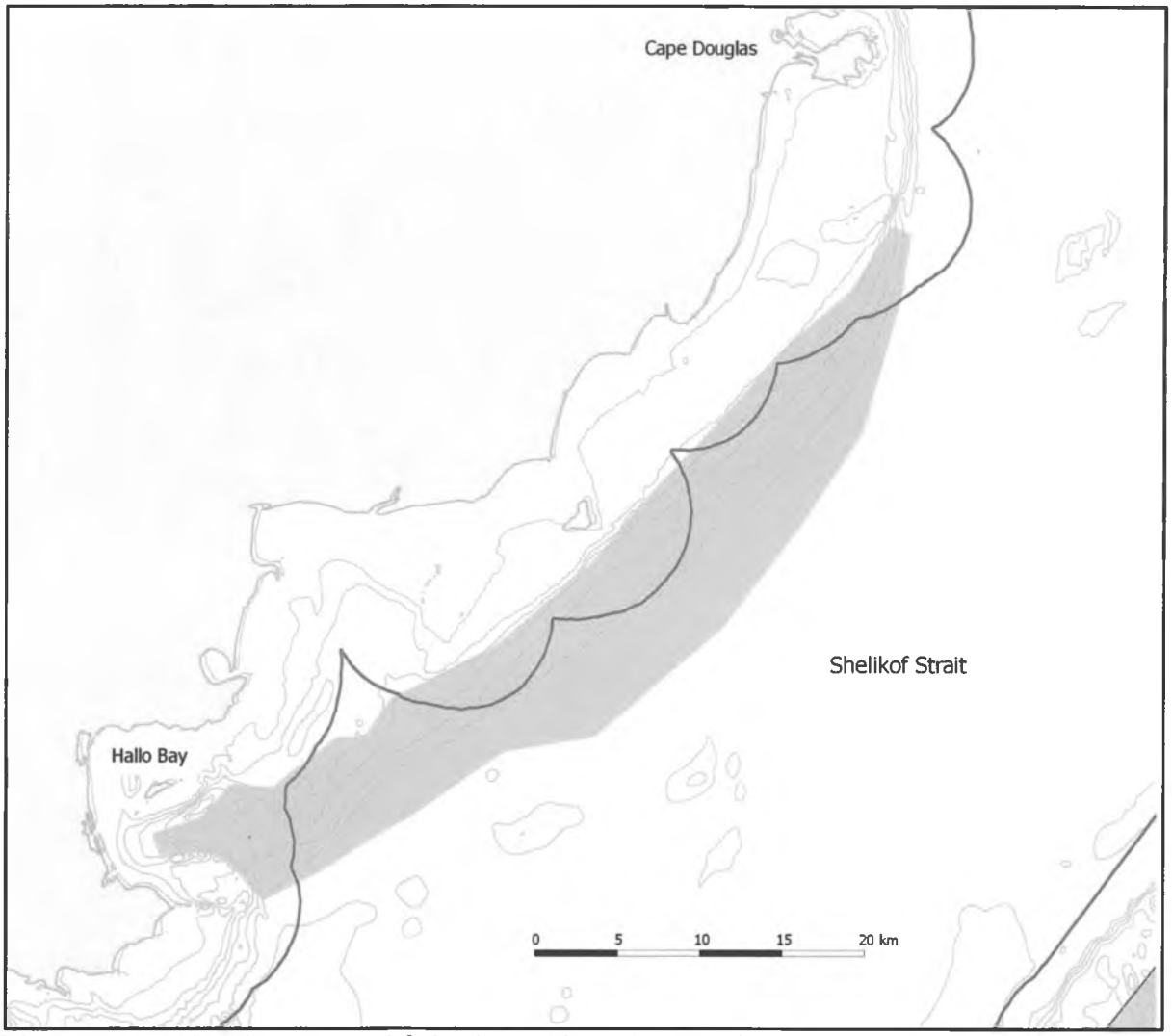


Figure 4. Map showing state and federal water boundary (red line) in Kodiak Shelikof District. The green polygon constructed from observer program logbook data encloses area that produced over 95 percent of the Shelikof District scallop harvest.

Kodiak Island Borough

Office of the Borough Mayor

710 Mill Bay Road
Kodiak, Alaska 99615
Phone (907) 486-9310 Fax (907) 486-9391

March 26, 2013

Representative Paul Seaton
Chair of the House Fisheries Committee
State Capitol, Room 102
Juneau, AK 99801

Re: Kodiak Island Borough Support for SB54 - Extending Termination Date of Weathervane Scallop and Bering Sea Hair Crab Fisheries

Representative Seaton,

The Kodiak Island Borough would like to express support for SB 54, an act extending the termination date of the Weathervane Scallop and Bering Sea Hair Crab Fisheries.

The scallop fishery provides an important economic contribution to our coastal communities, especially Kodiak and Unalaska where the fleet bases operations. Our communities provide services and supplies supporting this fishery, adding to fisheries diversity, and thus a more stable labor force. In addition to the direct impact of providing goods and services, the fishery provides a positive tax base for local and state government. In the 2012/13 fishing season, over 400,000 pounds of product were landed Statewide at an ex-vessel value of approximately $4,000,000. This money flowed to crew members, owners, and vendors who live and spend time in Southwest Alaska.

If the current limited entry system ends, the Department of Fish & Game has advised they will be forced to close the state portion of the scallop fishery, as it could be unmanageable in an open access scenario. This would cause avoidable economic loss to our region and the state. SB54 has the support of Governor Parnell, the Senate, the Department of Fish and Game, United Fishermen of Alaska, Southwest Alaska Municipal Conference, and now the Kodiak Island Borough, due to the importance of maintaining healthy fisheries in our region.

Sincerely,
KODIAK ISLAND BOROUGH

Jerome M. Selby, Mayor

Louie Flora

Subject: FW: Alaska Journal of Commerce article on scallops

From: Louie Flora
Sent: Thursday, March 21, 2013 9:36 AM
To: Rep. Peggy Wilson; Rebecca Rooney
Subject: Alaska Journal of Commerce article on scallops

Mar 13, 2013 - 04:18 PM AKST

Shell game: state scallop fishery faces scrutiny

MOLLY DISCHNER, ALASKA JOURNAL OF COMMERCE

A bill extending the limited entry program for scallops is making its way through the Alaska State Senate, but not without scrutiny.

On March 11, an amendment to Senate Bill 54 passed in the Resources Committee to shorten the length of the program as a result of concerns raised in hearings from legislators and in public comment about consolidation in the fishery over the last decade under parallel state and federal limited entry.

When the bill was introduced by Resources Committee Chair Sen. Cathy Giessel, R-Anchorage, in February, it would have extended the program by 10 years until 2023. Before the bill was introduced, discussion revolved around making it permanent.

The concerns have arisen because a small group of partners from Washington led by Jim Stone of Lakewood have come to control virtually the entire scallop harvest valued at about $4.5 million in 2012.

Including American Seafoods, that core group now controls six of nine state and federal permits for the scallop fishery along with the F/V Ocean Hunter, one of the two vessels that still fish in state waters. Since 2009, the Ocean Hunter has harvested scallops in state waters on behalf of the Alaska Scallop Association members with "lease fees" paid to the permit holders who do not associate their permits with a vessel.

According to a 2006 federal report on the scallop fishery, about $244,000 in "lease fees" were paid from Stone's Ocean Fisheries LLC and Mark Kandianis' Provider Inc. in 2003 to permit holders who were not actively fishing.

The scallop limited entry program administered by the Commercial Fisheries Entry Commission, or CFEC, is scheduled to sunset at the end of 2013, a result of the last extension of the program passed by the legislature in 2008.

Because some of the scallop beds around Alaska straddle the three-mile boundary between state and federal waters, the state limited entry program operates in conjunction with the federal program.

Gov. Sean Parnell told Journal correspondent Bob Tkacz on Feb. 28 that CFEC asked him to have the bill introduced under his sponsorship, but he did not do so because of the number and scope of other bills he is sponsoring. Instead, Giessel brought it forward.

"I support the bill," Parnell said.

Quick consolidation

Soon after the 2008 extension was approved by the Alaska legislature, partnerships involving Stone, Glenn and Egil Mikkelsen, John Lemar and Tom Minio subsequently formed two new LLCs on May 7, 2008, and then acquired three federal licenses over three days in June 2008.

Two of those permits were purchased from Mark and Teresa Kandianis.

Associated with those federal licenses purchased in 2008 were two state permits that had been relinquished, and a third that is now under suspension because it has not been assigned to a vessel after being acquired by the partners.

Bill Harrington of Kodiak runs the Kilkenny, which is the only other boat other than the Stone group's Ocean Hunter now operating in state waters, and he delivers fresh scallops mainly to Homer. Max Hulse of Eagle River has also previously delivered fresh scallops.

Hulse said he intends to fish again in the future, and he and Harrington have gone on the legislative record supporting the program's extension.

At the March 11 Resources Committee hearing, a letter from Kodiak fishermen George Hutchings questioned the current system and objected to a letter from the federal North Pacific Fishery Management Council to the Alaska legislature in support of extending the scallop limited entry in state waters.

That letter from the North Pacific council came at the request of Stone, who brought the matter to the council on the last day of its meeting in Portland, Ore., in February during the "staff tasking" agenda item.

At the time, Stone passed around to the council a copy of a similar letter written in 2007 to the legislature, and a 2007 Alaska Department of Fish and Game report on the scallop fishery.

Council member Duncan Fields of Kodiak asked Stone, "Are there additional issues we should consider as we write the letter as opposed to 2007?"

In response, Stone said, "Mr. Fields, no. Everything is identical. I believe there was one change in ownership of a permit, federal and state. I don't believe there's anything else. Quotas are very similar, quotas are slightly down. There are no other issues."

However, there have been at least four federal license transfers since the 2007 ADFG report and the last council letter to the legislature was written, with Stone personally involved in three of the transactions.

When contacted by the Journal, Stone said he "misspoke" before the council regarding license transfers since 2007 because he did not have the information in front of him.

Hutchings wrote to Giessel on March 7 that he was in Portland for the council meeting and would have stayed through the end "if scallops had been listed on the agenda."

"Being denied notice and an opportunity to be heard, I feel betrayed by the Council taking this action with no public input other than from the personal testimony from Mr. Jim Stone, who is the primary player in this game and voiced only his own opinion …" Hutchings wrote to Giessel.

CFEC Commissioner Ben Brown confirmed for the committee that there was no advance notice that the council would consider a letter at that meeting, but said that there was significant opportunity for the public to participate when the program was initially developed.

Seaton questions constitutionality

The scallop fishery is the only vessel-based limited entry program in the state, and it was made vessel-based because assigning permits to individuals with fishing history would have resulted in 10 or 11 permits. That number was greater than the nine determined to be the most vessels the fishery could support.

Multiple federal permits may be fished off the same vessel, but only one state permit may be associated with a vessel.

At a House Finance Committee hearing for the CFEC budget Feb. 14, Rep. Paul Seaton, R-Homer, raised the constitutional question to Brown of CFEC. Seaton is also the chair of the House Fisheries Committee.

"I'm concerned, I have been concerned for a long time, about the vessel entry permits," Seaton told Brown. "They don't require a person to participate in the fishery at all. I'm fearful that consolidation that has taken place in that fishery has reached a point where we may be running afoul of the constitutional prohibition on a special right of fisheries."

Later in that hearing, Brown responded to Seaton's critique of the scallop vessel-based program.

"The current operation, although it may not to be Rep. Seaton's liking in every way, but it is not diminishing the resource," Brown said.

Seaton had an answer for that as well.

"Time does go on and things change, and there wasn't consolidation to a very few select people at the time (in 2008), which may run afoul of other parts of the constitution and a special right of fishery," Seaton said to Brown.

After the hearing, Seaton questioned the CFEC advocacy for the scallop program further to Journal correspondent Tkacz.

"For several years there seems to have been a philosophy at the CFEC that they are the chief supporters of a position of policy instead of implementing the policy that is set by the legislature," Seaton said shortly after SB 54 was introduced. "Although they were implementing the policy, to oppose a change in policy by the legislature is, I believe, beyond their real mission."

If the bill passes the Senate, it may go to the House Fisheries Committee, which Seaton chairs, although that isn't guaranteed. A determination won't be made until the bill is on the Senate floor, and it could go to House Resources or another committee.

Brown addressed the constitutional question in the first Senate Resources Committee hearing on the bill March 4, stating that, "as an attorney, if this were unconstitutional somebody would have challenged it by now."

But both Seaton and Hutchings disagree. In his letter, Hutchings said that if he had the financial resources, he would consider appealing to the state and federal court systems.

Alaska case law

There are two Alaska Supreme Court cases decided in 1988 and 2005 that are contributing to the question of constitutionality. The first is Johns vs. CFEC, in which a fisherman challenged the "optimum number" of permits that were to be issued for the state herring fishery.

In ruling for Johns, the Court addressed the tension inherent in the Limited Entry Act and the constitutional requirement for Alaska resources to be available to all Alaskans.

"The optimum number provision of the Limited Entry Act is the mechanism by which limited entry is meant to be restricted to its constitutional purposes," the Court wrote. "Without this mechanism, limited entry has the potential to be a system which has the effect of creating an exclusive fishery to ensure the wealth of permit holders and permit values, while exceeding the constitutional purposes of limited entry."

In Grunert vs. State, decided in 2005, the Supreme Court struck down a cooperative fishery in Chignik approved by the Board of Fisheries.

Under that cooperative, designed to reduce fishing effort and improve quality at a time of depressed salmon prices, permit holders were paid lease fees by fishermen who took the harvest.

During the first year of the cooperative, 77 boats joined and only 18 fished.

In striking down the cooperative, the Court wrote: "Participation by the individual is inherent in the limited entry permit system. The Chignik cooperative fishery scheme is fundamentally at odds with this premise because it allows people who are not actually fishing to benefit from the fishery resource ... The co-op fisher in this scenario sharply diverges from the model of the economically dependent fisher whom the Limited Entry Act was intended to protect."

Federal control

There is also a federal ownership cap of two licenses for any "individual, corporation, partnership, or other legal entity."

According to the final rule for the scallop fishery published in the Dec. 14, 2000, Federal Register, "The two-license ownership limit is intended to prevent any person from obtaining an excessive share of harvest privileges in the scallop fishery as required by national standard 4 of the Magnuson-Stevens Act. The Council determined that holding more than two scallop LLP licenses would constitute an excessive share in the context of this relatively small fishery."

Despite federal intent language to limit any person to two permits, and a similar state intention limiting to one per vessel, federal regulators have said the current ownership structures for Stone and his partners are legal.

The National Marine Fisheries Service Restricted Access Management Division said the federal program does not specify legal corporate ownership structures, and because each entity has a different name, it is considered a different entity even if the shareholders are the same.

Stone also noted that while the same group of individuals holds multiple permits, no one person has the equivalent to ownership of even one entire vessel.

And Stone asserts that opportunity still exists for new participants to enter the fishery if they so desire, although individuals testified at the first Senate Resources hearing that they would like to participate were the fishery more accessible to small, new, participants.

Lobbyists on board

Legislators and participants aren't the only ones weighing in on the program.

The United Fishermen of Alaska, of which the Alaska Scallop Association is a member, submitted a letter unanimously supporting the program. The Alaska Scallop Association, with its address at Stone's Lakewood, Wash., residence, has hired several lobbyists to help make its case.

According to the state's lobbyist directory, former CFEC Chairman Frank Homan, Gerald McCune, Thomas Meiners and former United Fishermen of Alaska President Bobby Thorstenson are being paid a total of $47,000 to lobby for SB 54.

Homan, who Tkacz reported for Laws for the Sea has been accompanied by current CFEC Commissioner Brown in the halls of the Capitol, described his lobbying interests on behalf of the scallop association as supporting a program "promoting local ownership and control of the state issued permits" and said it enabled several smaller Alaskan scallopers to participate in the fishery.

"These fisheries were once owned and controlled by entirely out of state interests and would likely revert to such control if the Program were to sunset," Homan wrote in his disclosure.

The necessity of limited access was a point made by ADFG Commissioner Cora Campbell, Brown and others in the first Senate Resources Committee hearing March 4.

Proponents of extending the program have said ADFG would not be able to manage the fishery if it were in open access.

The quota for the state waters fishery is limited, they have said, and open access could lead to overfishing so quickly that the state might not allow a fishery at all.

In his letter to the committee, Hutchings of Kodiak, disputed that claim by noting the state water fishery could operate as other parallel fisheries do under open access.

Prior commissioners of ADFG have told the legislature that the department has authority to require 100 percent observer coverage, which allows real-time catch reporting and prevents exceeding crab bycatch limits, as well as the ability to set a separate harvest in state waters or to close areas to prevent localized depletion.

The high start-up costs and small state harvest also make it unlikely several boats would rush into the fishery under open access.

"If State scallop fishery is allowed to revert to open access, new participants that are motivated to fish more cleanly could target scallops," Hutchings wrote. "The same folks that want to keep other participants out of their regulation-created monopoly have overblown the fears of unrestricted fishing and disproportionate harvests."

There is no question that Alaska scallop stocks are in good shape and are managed conservatively. The Alaska Scallop Association's marketing efforts have also helped the wholesale price leap to $10 per pound in 2012.

According to its members' public testimony, the cooperative paid $1.6 million in crew shares, bought $850,000 worth of fuel in Alaska, had $480,000 in maintenance work done on their vessels and bought another $335,000 in groceries and supplies last year.

As a small fishery with what is now only two boats operating in state waters, managing the harvest is extremely simple.

That's not the only thing Seaton is considering, however.

"We need to look at this in all aspects," Seaton told the CFEC's Brown in February, "and not just in ease of management."

Molly Dischner can be reached at molly.dischner@alaskajournal.com.

Journal correspondent Bob Tkacz contributed to this report. He can be reached at fishlawsbob@gmail.com.

This article appears in the March Issue 3 2013 issue of Alaska Journal of Commerce

Read more: http://www.alaskajournal.com/Alaska-Journal-of-Commerce/March-Issue-3-2013/Shell-game-state-scallop-fishery-faces-scrutiny/#ixzz2OCB2bNxV

Alaska State Legislature

State Capitol Room 102
Juneau, Alaska 99801-1182
(907) 465-2689
Fax: (907) 465-3472
1-800-665-2689

270 W Pioneer Ave. Suite B
Homer, Alaska 99603
(907) 235-2921
Fax: (907) 235-4008
1-800-665-2689

Representative Paul Seaton
House District 30

Synopsis of Ownership and Control of Fishing Operations
In The
Alaska Weathervane Scallop Fishery

The scallop fishery occurs in both state and federal waters. As a result, there are two limited entry permit systems: one for state waters, and one for federal waters. Although there are two permit systems, the fishery is managed as a single unit. A federal fishery management plan delegates management authority to the Alaska Department of Fish and Game. Fishery rules, including guideline harvests and bycatch limits, apply to both state and federal waters.

In 2004, CFEC developed limited entry regulations for scallop permits in state waters. Nine independent boats had fishing histories that qualified them for permits. The CFEC regulations created a system that worked in concert with the federal limited entry program; each of the boats permitted by the state also held a federal limited entry permit. This allowed boats to easily fish back and forth in state and federal waters.

The question is then, nine years after the implementation of state limited entry, who controls the fishing activities of the original nine operations?

A CFEC report shows that a Washington Group of corporate partners controls five operations, and leases the harvest rights of a sixth vessel. Of the remaining three operations, only one is currently fishing the F/V Kilkenny. The other two fishing operations are controlled by EWT, LLC from New Bedford and the Wayward Wind corporation from Alaska. Neither of these two operations has been registered to fish for scallops since 2005.

The following provides a summary of who controls the fishing activities of the original nine qualified vessels, along with the current status of their original permit history:

Washington Group:
1) Former F/V Carolina Girl II; relinquished CFEC permit eligibility; federal permit held by the Washington Group
2) Former F/V Pursuit; relinquished CFEC permit in 2007; federal permit held by the Washington Group

3) F/V Carolina Boy; CFEC permit assigned to a vessel in Virginia; federal permit held by the Washington Group
4) F/V Ocean Hunter; CFEC permit and federal permit held by the Washington Group
5) F/V Provider; CFEC permit suspended (not named to a vessel) by a member of the Washington Group; federal permit held by the Washington Group.

6) F/V Forum Star; CFEC permit and federal permit held by Seattle corporations. Harvest rights are leased to the Washington Group. Last registered to fish in 2002.

7) Former F/V Arctic Storm; CFEC permit suspended (not named to a vessel) and federal permit held by a New Bedford corporation. Last registered to fish in 2005.

8) F/V Wayward Wind; CFEC permit and federal permit held by Alaska corporation. Last registered to fish in 2005.

9) F/V Kilkenny; CFEC permit and federal permit held by Alaska individual. Actively fishing

MEMORANDUM

State of Alaska

Department of Law

TO: Commercial Fisheries Entry Commission

FROM: Thomas E. Lenhart TEL
Assistant Attorney General

DATE: April 1, 2013

FILE NO.: JU2012200809

TEL. NO.: (907) 465-5370

SUBJECT: Constitutionality of Vessel Based Limited Entry

Senate Bill 54 and House Bill 156 would extend the current vessel based limited entry system for five more years beyond the current sunset date of December 2013. Because this program limits entry into two fisheries by controlling the number of permitted vessels instead of the number of permitted skippers, some questions have been raised as to whether this statute may result in fisheries that are so exclusive as to run afoul of the Alaska Constitution. The short answer is "no".

The vessel based entry program was first created by the Alaska Legislature in 2002, and was extended for five years in 2008. Each time, the proposed legislation was reviewed by the Department of Law and found to have no constitutional flaws. The program has now been in place for 10 years, and there have been no legal challenges to the validity of the authorizing statutes.

Looking back about 40 years to the history of limited entry in Alaska, the initial attempt at limiting entry encountered problems with the Article VIII provision of the State Constitution reserving the State's fish and wildlife for the common use of the people and with the section 15 prohibition on creation of exclusive rights. As a result, the Constitution was amended in 1972 by adding a sentence to section 15 carving out the explicit authority to limit entry into fisheries for the enumerated reasons. The Constitution does not specify whether such limitation into fisheries shall be accomplished by limiting the number of skippers or the number of vessels.

Following the amendment of the Constitution, the Legislature created the Commercial Fisheries Entry Commission and authorized it to limit "participants and vessels into the commercial fisheries in the public interest and without unjust discrimination." AS 16.43.010. The language of this original authorizing statute appears to clearly contemplate that the commission may limit either skippers or vessels in a fishery based on the judgment of which approach in a given fishery best serves the public good. The subsequent specific authorization of a vessel based limitation in the scallop and hair crab fisheries in 2002 is completely consistent with the purpose statement set forth in AS 16.43.010.

Given that the Constitution clearly allows for the limitation of fisheries as an exception to the prohibition on exclusive rights, and that the provisions in AS 16.43.450 limiting the number of vessels participating in two shellfish fisheries are completely consistent with the statutory purposes of the overall limited entry program set forth in AS 16.43.010, there are no facial issues with regard to constitutional authority or statutory consistency presented by SB 54 or by the existing vessel based program. This is the third time that the Department of Law has reached this conclusion.

However, it has been suggested that the vessel program as applied has nevertheless created a fishery that is so exclusive as to violate the Article VIII prohibition on exclusive fisheries. This suggestion does not appear to be supported by the facts. Because the hair crab fishery has been closed, this review will focus solely on the scallop fishery, but should be applicable to the hair crab fishery as well.

The initial number of scallop vessel entry permits was eight. While this number is lower than most fisheries, it is certainly not unprecedented. At least 10 other limited entry fisheries in Alaska have received 10 or fewer initial permits. CFEC website: http://www.cfec.state.ak.us/astatus/B6410P_C.HTM. The reasons for the small size of each fishery are fishery specific. However, the fact that biology, economics, or other valid considerations dictates a fishery with few participants (or vessels) does not equate to an unconstitutionally exclusive fishery.

In the case of the scallop fishery, the number of current active participating vessels has been reduced due to market forces and voluntary actions of the permit holders. Neither the statutes nor any actions of the Commission have forced this reduction. Therefore, even if the current number of participating vessels is believed by some to be so few as to be exclusionary, it is not the result of State action and the State has not created an exclusive fishing right. Holders of permits not currently fishing are free to reenter the fishery at any time. This market dynamic can be observed in many other limited fisheries, such as the Southeast salmon seine fishery, where a large percentage of valid permits were not being fished. This fishery has recently been the subject of a federally funded permit buy-back.

The issue of a reduction in active fishing permits as the result of the formation of cooperatives has been addressed by the Alaska Supreme Court. In the case of *Grunert v. Alaska Board of Fisheries,* 139 P.3d 1226 (Alaska 2006), the court examined a regulation promulgated not by the CFEC but by the Board of Fisheries. This regulation specifically authorized the creation of fishing cooperatives. The court decided this case on the grounds that the board had exceeded its authority in promulgating a regulation without statutory authority. As a result, no constitutional questions were reached.

The Alaska Supreme Court has addressed the constitutional issue of exclusivity in *Johns v. Commercial Fisheries Entry Commission,* 758 P.2d 1256, 1266 (Alaska 1988). In this case, the court noted that "the optimum number provision of the Limited Entry Act is the mechanism by which limited entry is meant to be restricted to its constitutional purposes." That is, the statutes creating limited entry provide a safeguard against market forces or other circumstances creating an overly exclusive fishery. When conditions warrant, the Commission can conduct a study to determine the optimum number of permits under current conditions. If the current number of permits is too low, additional permits can be sold at market value. In the case of the optimum number for vessel based permits, the purposes for conducting an optimum number study include promoting the economic health and stability of the fishery and to promote broad access to the fishery. AS 16.43.470.

In the case of vessel based permits, the statute also includes another protection against exclusivity. Alaska Statute 16.43.450(e) authorizes the Commission to adopt regulations to limit the number of vessel permits held by one person or by a group of related permit holders if necessary to "prevent the excessive concentration of ownership of vessel permits in the fishery." This provision, coupled with the optimum number provision, provides ample authority to assure the vessel based program does not become excessively exclusive.

As a final consideration, there is a fundamental difference in how a vessel limitation and a skipper limitation controls the number of fishers actually participating in a fishery. If instead of a vessel limitation the scallop fishery had nine skipper permit holders, only those nine individuals could "participate." That is because any vessel fishing must have the individual permit holder on board at all times under a skipper system. However, under a vessel based system, a permitted vessel may be fished by an unlimited number of different skippers. Therefore, if the vessel owner chooses to use a system of rotating crews or leases the vessel to multiple skippers or operators on some shared basis, then many more than nine fishers may have the opportunity to participate in this fishery. Legally, either approach is permissible.

In conclusion, there are no issues of constitutionality or statutory inconsistency raised by SB 54 and HB 156.

TEL/rls

---------- Forwarded message ----------
From: **Twomley, Bruce C (CFEC)** <bruce.twomley@alaska.gov>
Date: Sat, Mar 2, 2013 at 1:12 PM
Subject: RE: SB 54
To: Bob Tkacz <fishlawsbob@gmail.com>
Cc: "Brown, Ben (CFEC)" <ben.brown@alaska.gov>

Hi Bob—

I heard the Honorable Paul Seaton's allegation of exclusivity only by watching a televised budget hearing (at which you may have been present).

Representative Seaton remains committed to terminating the limitation and returning the fishery to open entry on December 30.

Normally, a limitation would be expected to survive indefinitely allowing for completion and implementation of an optimum number study – not the case here.

On the other hand, eliminating or extending the sunset date would preserve our statutory authority to perform an optimum number study and allow for CFEC to follow through. The abnormality is the

pending sunset of the limitation, a feature that distinguishes this limitation from almost all others.

And, in response to your last question, under our division of labor, my co-commissioner (and CFEC's legislative liaison) Benjamin Brown participated in the discussions leading to the introduction of SB 54. I did not. The best I can do for you is to refer you to Ben – my source of information on the subject.

Have a good weekend. --bruce

From: Bob Tkacz [mailto:fishlawsbob@gmail.com]
Sent: Wednesday, February 27, 2013 12:56 PM
To: Twomley, Bruce C (CFEC)
Subject: Re: SB 54

Hello Bruce,

I've been reading your artfully worded letter carefully and appreciate your creative comments.

On the 4th page in the paragraph beginning "In closing ..."

You say there have been allegations that the fishery has become too exclusive "which would normally trigger CFEC's statutory responsibility to examine an optimum number for the fishery."

As you have acknowledged receiving the allegations, is CFEC carrying out its "statutory responsibility" and examining an optimum number for the fishery?

If not, why not and why has CFEC chosen to, in this case, act abnormally.

Also, I'd still like to know if CFEC asked the governor to introduce SB 54 or a reason you refuse to answer that very simple question.
Cheers
Bob

March 27, 2013

Andrew Jensen
Managing Editor
editor@alaskajournal.com

Re: *Shell Game* (Alaska Journal of Commerce 3/13/13)

Dear Mr. Jensen:

Under the heading ***Seaton questions constitutionality,*** the article (p.2) states:

> The scallop fishery is the only vessel-based limited entry program in the state, and it was made vessel-based because assigning permits to individuals with fishing history would have resulted in 10 or 11 permits. That number was greater than the nine determined to be the most vessels the fishery could support.

This statement does not convey the magnitude of the problem faced by the commission. Based on the same period used to establish vessel eligibility, some 43 individual captains had participated in the fishery and would have been eligible to apply for permits (and hold interim-use permits) under traditional limited entry. Even under a shorter, hypothetical four-year period, 27 captains would have been eligible to apply. If the commission had implemented traditional limited entry, each of those captains could have brought a vessel into the fishery during the

period of time required to adjudicate their claims to permits (with judicial appeals, at least 6 years).

In good conscience, the commission could not have risked visiting that much fishing power on (in the words of Commissioner Campbell) "a hard bottom dredging" fishery, which could potentially do terrible damage if not very carefully controlled. The possibility of 43 vessels (or even 27) compared to 9 participating vessels presented a stark choice to the commission.

The article (p.3) attributes the following statements to Rep. Paul Seaton:

> "Time does go on and things change, and there wasn't consolidation to a very few select people at the time [in 2008 when the legislature extended termination of this limitation], which may run afoul of other parts of the constitution and a special right of fishery. . . . "
>
> * * *
>
> "For several years there seems to have been a philosophy at the CFEC that they are the chief supporters of a position of policy instead of implementing the policy that is set by the legislature," shortly after SB 54 was introduced. "Although they were implementing the policy, to oppose a change in policy by the legislature is, I believe, beyond their real mission."

Some years ago during the course of a hearing, Rep. Bill Hudson made a somewhat parallel comment to the commission, but in the form of praise for being "proactive."

The comments attributed to Rep. Seaton fail to acknowledge (1) that the state waters fishery looks very much the same today as it did when the legislature extended the limitation in 2008, and (2) that the commission's actions are solidly grounded in specific direction from the legislature and the Alaska Constitution.

As it did in 2008, the state waters scallop fishery includes 7 permits, and, in full compliance with state law, no individual or entity holds more than one state permit.

The article correctly cites *Johns v. Commercial Fisheries Entry Commission,* 758 P.2d 1256, 1266 (Alaska 1988), for the proposition that the Limited Entry Act directed CFEC to determine an optimum number to ensure that a limited fishery was not too exclusive.

CFEC is prepared to examine an optimum number for the state scallop limitation. That opportunity will be destroyed if the limited fishery terminates at the end of 2013. Preserving CFEC's statutory authority to perform an optimum number determination is a principal reason the commission supports extending the termination date for the fishery. The procedure would also be fair to Mr. Harrington, Mr. Hulse, and the other permit holders.

Extending termination would avoid a risk that the resulting open-to-entry scallop fishery may have to be closed to protect the stocks.

Creating the risk of closure would breach the duty of the legislature and managers alike under Article VIII, Section 4, of the Alaska Constitution, to ensure that "Fish . . . and all other replenishable resources belonging to the State shall be utilized, developed, and maintained on the sustained yield principle . . . . "

Current management of the fishery under limited entry has earned high marks. The Monterey Bay Aquarium Seafood Watch has bestowed upon Alaska Weathervane Scallops their "Best Choice" award based on a showing that the Alaska scallop resource is abundant, well-managed and caught in an environmentally friendly way.

Yours truly
Alaska Commercial Fisheries Entry Commission
Bruce Twomley, Chair
Benjamin Brown, Commissioner