

AK LEGISLATURE SPECIAL COMMITTEE FILES SCOMM 147 317145

Subsistence Fishing Management

- Management of subsistence fishing is handled by ADF&G Divisions of Commercial Fisheries and Sport Fisheries.

1990—Management of subsistence fishing in Alaska became more complex.

The Federal government began managing subsistence hunting, trapping, and fishing on Alaska's Federal public lands and non-navigable waters.

1999—Federal subsistence management expanded to include fisheries on all Federal public lands and waters.

Subsistence Opportunity, Subsistence Preference

(Alaska Statute 16.05.258)

The Alaska Board of Fisheries

- identifies fish stocks that support subsistence fisheries; and
- if there is a harvestable surplus of these stocks, adopts regulations that provide reasonable opportunities for these subsistence uses to take place; and
- whenever it is necessary to restrict harvests, provides a preference for subsistence fisheries over other uses of the stock.

	Core Services
	Applied research for use by the public, fisheries managers, and for allocation decisions implementing the subsistence law. ➤ Research, quantify, and provide the resulting information to the public about customary and traditional uses by Alaskans of fish and wildlife resources. ➤ Provide scientifically-based information for fisheries and wildlife management programs; and to Board of Fisheries and Board of Game for their use in evaluating reasonable opportunities for customary and traditional uses.

	Subsistence Hunting and Fishing Research
	The division's main responsibilities are to: ➤ conduct research to document subsistence uses, ➤ estimate subsistence harvest levels, and ➤ evaluate potential impacts to subsistence uses from other uses. Research findings are compiled and analyzed to address fish and wildlife management and regulatory issues and to provide information for state and federal land use planning. Statutory basis: AS 16.05.090; AS 16.05.094; AS 16.05.258

Office and Staff Locations

Northern
Fairbanks
Kotzebue
Southern
Anchorage
Dillingham
Juneau



FY08 Budget and Measures

Budget \$3.2 million
47% General Fund
53% Other Sources

General Fund—program management, fixed costs
Other Sources—applied research
(45% fisheries-related)

Measures

- ✓ Survey research and other studies
- ✓ Board of Fisheries/Game proposal analyses
- ✓ Report and disseminate results—public, agencies
- ✓ Management planning
- ✓ Data and information management

FY09 Budget Request Key Challenges



Key challenges to provide service and opportunities to Alaskans

- Salmon harvest database accessibility, and integrated web-interface—for public, managers, board, law
- Monitoring and reporting of Alaska subsistence salmon fisheries
- Assessment and evaluation of fish harvests and trends
- Providing opportunities for Alaskans
- Technical and scientific reporting and database integration
- Maintaining capacities—staffing, info. mgt, joint fisheries management (NPFMC, IPHC, US/Canada Yukon salmon)

143 K

156 K

Questions?



Thank you!

Martin Luther King Day
Diversity - Native Russian Old beliefs

Samuel-sample

✓ Yukon River King Salmon Canada
complaint of interception level.

✓ Sport + Com. Fish Mgmt stock assessment
✓ Sub. Div. utilization ^{+ need} research &

✓ hiring

J. Wada

- Robert
- child care
- H.S.T.
- Request for p's

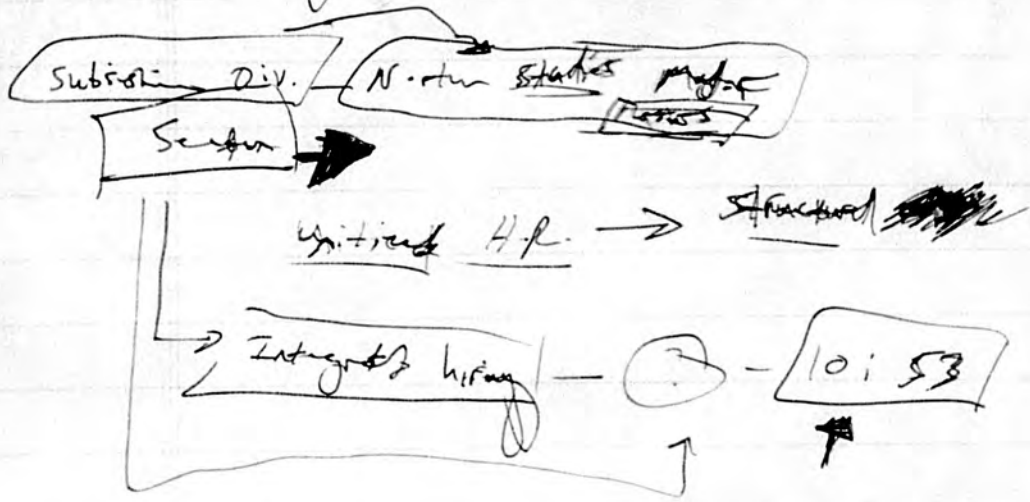
1) Increases - low much →
- 156,000 people

142,800 Fish wild Capital req'd 140,000

2) hiring + retention - requests for advancement
frustrating by requests for experience
look at who hears on appointment
who on ret.

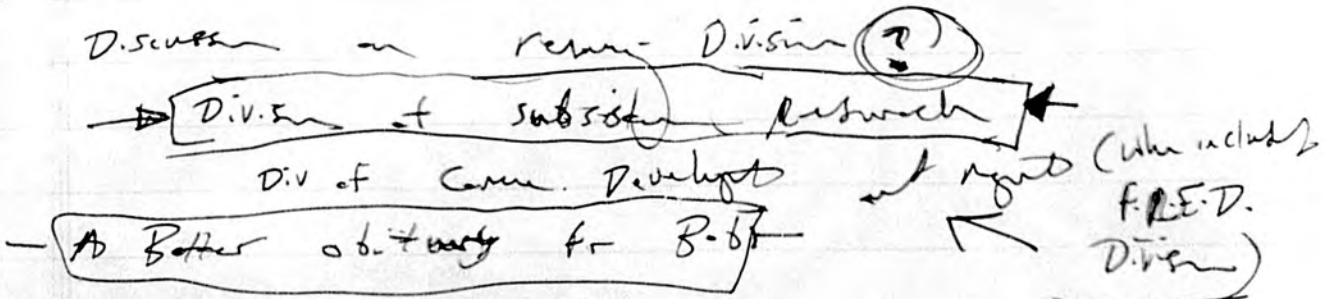
↓
Database
integration

A.) look at how to broaden base of interest



Edgman

Role of Division Support svc. related



Command or sport fish cut back

1.) Johnson - has other restrictions

A) No more salmon - was a tier II fishery

B)

Malin / Kushokuma - poor example - Pilot station since shows no run rebuilding -

→ Which goes, has many fisheries

2.) Section above Gilman on Koyukuk

2) allocation / restrictions on harvest -

J. Johnson

3.) Report - has met tier 1st 5 years has the Dept.

has to → "Scale back"

Areas / tiers been reached

Can fish either short run or } - look at
reached run so only sport fish } - extremes

Back to 1990 - COMM. + sport fish curtailed

+ when subsistence cut back

Mr.
Got bullet PTS re
Re-subsid

Section

Genetic stock analysis

or Hk runs has Panel

panel - camera for camera

Benj sea

Regulated Genetic Stock

analysis

Follow up

Still

Wilson

\$ for applied research - ~~not~~ not follow up.

55% not for fishing

1) regulatory links

3) Marine resources

Section →

Section - survey - copy of - 5 can see nothing / report

— Deposits in study - deposits in contract

? 5' to contract

What is stock rule here

Wilson - has got it now

Now not web-accessible - wants to run it like

→ Commercial - Fishing -

Database is in DCCED web-site Commercial Databases

J. Hansen

Direct info to Database or try to run in incident?

for Data work - Probably

To Sport/Comm. for

Johansen → (1) Genetic identifiers - what level +
I.D. on genetics (?) gets into discount
- Stock request → Gets into individual strains pedigree

subitans
- Request to get a copy with of fish
across the board

(2) → Rural v. Non-rural dispute

1. When does subitans dispute here when to appeal
a Final Dispute

1 → Dispute → Administration or state
have challenge dispute to a Whole

Did not Review Saxon decision specifically -
(?) Follow up w/ Johansen

→ Senter

- Would a legislative request via Congress pass
What process for request for checking decision
to me first

SCOMM

147:18

Let's call the meeting to order

Let the record reflect that it is 8:30 a.m. on Wednesday, February 13th, 2008

Present are:

Representative Johnson ✓

Representative LeDoux ✓

Representative Wilson

Representative Johansen

Representative Holmes

Representative Edgmon ✓

And myself, Representative Seaton ✓

At this time I would like to remind everyone to turn off their cell phones and address questions through the chair.

Today we will hear

A presentation by the ADF&G scallop biometrician Gregg Rosencrantz who flew from Kodiak yesterday to give this presentation on camera sled mapping of seafloor habitat and stock assessment.

Friday we will have an overview on mariculture permitting and discuss a CS to HB 257 TRANSFER AQUATIC FARMING TO DNR that deals only with apply the Alaska Grown label to mariculture products

Talking Points for HB 16 - Scallops

John Hilsinger January 30, 2008

1. Alaska Department of Fish and Game (ADF&G) supported the vessel based limited entry system for scallops and Korean hair crab when it was adopted in 2004 because it provided conservation benefits, both for scallops and for crabs, that were not provided by an individual based limited entry system (9 scallop boats versus at least 27; 18 hair crab boats versus 47). We continue to support the vessel-based limited entry system because it is an effective way to limit the number of vessels and provide for a sustainable fishery.
2. The vessel-based limited entry program works together with the guideline harvest ranges, observer data, other sampling, closed areas, seasons, and gear limitations to provide a sustainable management program for scallops.
3. If the vessel-based limited entry system goes away as of December 31, 2008, there will be no limit on the number of boats that can fish for scallops in state waters unless the Commercial Fisheries Entry Commission conducts another study and implements a different form of limited entry.
4. Fishing in federal waters, (outside three miles) will continue to be subject to the federal license limitation program. At the current time, the Department cannot make a good estimate of how many vessels may decide to fish in state waters if those waters are open to entry.
5. However, in anticipation that HB 16 may not pass, the Department asked the Alaska Board of Fisheries to consider changes to scallop management in state waters. Those changes will be considered during the March 3 – 9, 2008, meeting in Anchorage.
 - a. ADF&G approach developed by shellfish management and research staff statewide.
 - b. Besides ADF&G proposals, the public may also submit ideas for management to the Board.
 - c. The difficulty in managing the state waters fishery under an open-entry scenario stems from the fact that boundary line cuts across three of the centrally located scallop beds (Shelikof Strait, Kayak Is., and Yakutat). This will require the state to essentially manage each of these areas as two separate scallop beds.
6. Anticipated management for open-entry fishery under state proposals.
 - a. No changes to 5 AAC 38.076 Alaska Scallop Fishery Management Plan. This is the basic statewide scallop management plan that provides the ability to require observers and set bycatch limits. This plan also sets dredge size and number limitations, crew member limits, and requires hand shucking. We will continue to set and manage for Guideline Harvest Levels by area.

- b. ADF&G will propose regional management plans. There may end up being some regional differences among these plans, but all the regions are in agreement on these basic concepts:
 - i. Registration year: April 1 through March 31
 - ii. Registration deadline on April 1
 - 1. Deadline required for two reasons
 - a. give staff opportunity to assess effort to determine if a fishery can be opened or not.
 - b. give staff time to work with observer contractors to identify and train adequate number of observers (one for each boat plus spares). To do this requires identifying and approving available observers and then giving them the scallop training, which takes about 2 weeks.
 - iii. Vessels will register for state or federal waters and must fish in those waters for which they are registered. A vessel would, for example, register for the state waters of the Shelikof District or they could register for the federal waters of the Shelikof District, if they have a federal permit.
 - iv. Set separate GHGs for state and federal waters. Manage separately; close areas separately when GHGs are reached.
 - 1. initially, GHGs will be based on historical catch distribution in for Shelikof Strait and Yakutat. For Kayak Island, the separate GHGs could be based on dredge survey data. Eventually, we anticipate being able to use stock assessment data to set GHGs for state and federal waters in all regions.
 - v. Set separate crab bycatch limits for state and federal waters based on information from crab surveys where available.
 - vi. Vessel can change registration with 12 hours notice. Vessel would be required to shuck and weigh all scallops on board, make out fish ticket, and report catch to department before fishing the other side of boundary line.
 - vii. Daily reporting if necessary (catch, bycatch, other information). We anticipate starting with daily reporting and then relaxing that if it turns out not to be necessary.
 - viii. VMS requirement using NMFS approved equipment.
 - ix. Adjustments to closed waters if necessary.

Scallop background information:

1. At the current time there are 9 scallop vessels licensed in both state and federal waters. Four of those boats actually fish. (Six of the boats have formed a voluntary co-operative and usually three of those six boats fish).
2. Scallops are long lived slow growing animals that are not non-migratory as adults. Scallops are known to live to 20+ years of age, but are in prime condition for market when they are 6 – 10 years of age.
3. Once the location of a scallop bed is identified, the same bed is fished year after year. Occasionally, new beds are discovered. Population estimates exist for only 2 of the 9 registration areas. Therefore, management must be precautionary and harvest rates must be kept very low to prevent over fishing. Harvests are kept well below estimated MSY levels.
4. King and tanner crabs are intermixed with scallops and some scallop beds are closed to protect depressed crab populations. Areas open to scallop fishing have crab bycatch limits because mortality of crabs caught in scallop dredges is high.
5. Guideline harvest levels for the scallops are developed from observer data, catch per unit effort, and catch sampling. Observers also monitor crab bycatch and fisheries may be closed if crab bycatch limits are met. Because of the limited number of boats fishing and the bycatch data collected, the vessels have been able to reduce crab bycatch and avoid premature closures.
6. Recent average scallop harvests for the state are somewhat less than 500,000 pounds of meats per year. Approximately 30%, or about 145,000 pounds, are estimated to come from state waters. These harvests are lower than they were in the late 1990s because the department is lowering guideline harvest levels in order to sustain the stocks.

Department of Fish and Game
Division of Commercial Fisheries
FY09 Operating Budget Increment

Title: Statewide Scallop Stock Assessment

Location: HQ and Marine Regions

Components: HQ Fisheries Management

Contact: Doug Woodby

Total Amount Requested: \$150

Funding Source: GF

Brief Summary and Statement of Need for this Increment:

ADF&G's statewide scallop biometrics program has developed a towed underwater machine vision camera system that is a major step forward in scallop stock assessment and benthic habitat mapping. The system allows ADF&G to accurately monitor scallop abundance and recruitment and enhances our ability to manage the fishery for the highest possible sustainable yields. The system creates a georeferenced digital image archive of benthic habitat along a track covering tens of miles per day with resolution on the scale of millimeters. Current funding provides for a single survey covering one or two management areas per year and does not adequately fund equipment, replacement parts, and maintenance. The requested increment would allow surveys in additional areas each year, provide salary for a seasonal Research Analyst or Fishery Biologist to assist with data collection and analysis, and provide funds to maintain and upgrade the equipment inventory.

***List new staff required to conduct the work funded by this increment:
(Provide Job Title and Position Type—Fulltime, Part-time, Seasonal)***

Research Analyst I or Fishery Biologist I, Seasonal (11 mo)

If no new staff is needed, please list current staff that would be expected to conduct the work funded by this increment. Please describe how the new assignments of current staff would affect their performance of their existing duties. Are some existing duties being terminated, transferred to other staff, etc.?

N/A

How does this increment enhance the division's ability to manage for high abundance and increase opportunities for the public to use the state's fisheries resources? Please identify specific new or improved opportunities that might be created?

This increment will help ADF&G obtain precise scallop abundance estimates and monitor and understand scallop recruitment processes so that higher harvests may be

fine tuning will involve Kachemak Bay Research Reserve (part of the Division of Sport Fish) personnel and allow them to take part in collection of benthic habitat data inside the reserve. Our camera system was developed with the help of scientists from the HabCam project (<http://habcam.who.edu>) in Wood's Hole, Massachusetts. These researchers are currently developing software for automated processing of data collected by camera systems such as ours and will begin working with ADF&G image data in FY08. The HabCam team is excited to collaborate with ADF&G and ready to develop cooperative grant proposals that promote use of this technology in Alaska.

Workforce development and public relations. ADF&G is at the technological forefront with this innovative applied fisheries research. The database, Geographic Information System, and statistical skills needed to analyze and understand data sets collected with our camera system are the same skills needed elsewhere in the department; ADF&G can use this project to recruit technologically savvy researchers who are interested in new ways of doing fisheries science. Kachemak Bay Research Reserve personnel who will work cooperatively with Commercial Fisheries staff in FY08 are also interested in promoting this project to the public through their new visitor's center in Homer. Public comments to date indicate that this research will find strong support from the fishing industry as well as conservation groups.

List the core services and performance measures addressed by this increment:

Missions & Measures: A1. Ensure the conservation of natural stocks of fish, shellfish, and aquatic plants based on scientifically sound assessments.

Core Service: 1 **Stock Assessment & Applied Research:**

Maintain ongoing programs for the enumeration, assessment, and understanding of salmon, herring, groundfish, and shellfish stocks.

CORRECTION

THE FOLLOWING DOCUMENT(S)
HAVE BEEN REFILMED TO
ASSURE LEGIBILITY OR PAGINATION



Rev. 6/98

Central Microfilm Services
Department of Education & Early Development
State of Alaska

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taken when biomass is high and populations are able to withstand the removals. The system's low impact habitat mapping capabilities will allow us to explore and identify areas currently closed to scallop dredging that could be opened with minimal impact on habitat and on other commercially important species.

Describe how this increment might otherwise—besides better harvest opportunities—improve divisional operations in a manner that is beneficial to the public? (For example: better science/increased understanding of factors affecting biological productivity, increased or improved information services, expedited/user friendly permitting services, or improved reporting procedures, better use of technology.)

Our camera system employs cutting-edge technology that represents a significant step forward in fishery science. ADF&G staff—and the public—can now observe species we manage such as scallops, Tanner crabs, and flatfish, as they occur in their natural habitat. Our system has a light footprint on the bottom compared to alternative sampling devices (trawls and dredges) regularly deployed by ADF&G that may in fact damage habitat in areas that are currently closed to fishing. Our system creates a georeferenced digital image archive that will allow fine-scale monitoring of changes to state-managed habitat over time. The system is also likely to be a useful tool in assessment and life history studies of other benthic species such as Tanner crabs—we have barely begun to explore the possibilities.

Describe the benefits to the Division of Commercial Fisheries and the Department of Fish and Game that will result from this increment. For example, will this increment improve organizational effectiveness, address work force development issues, or foster leadership, career, and professional development opportunities for staff?

This increment provides ADF&G an opportunity to embrace technology while employing the best possible science in management of Alaska's marine fishery resources. Substantial benefits to the department are possible through 1) more efficient use of ADF&G resources, 2) partnerships within and outside ADF&G, and 3) workforce development and public relations.

Efficient use of ADF&G resources. Our camera sled technology provides a viable low-impact, cost-effective alternative to expensive dredge and trawl surveys currently conducted by ADF&G research vessels. Particularly in waters that are closed to commercial fishing due to conservation concerns, the ability to directly observe, count, and map the distribution of species such as scallops and Tanner crabs greatly improves our ability to effectively manage fisheries and monitor habitat.

Partnerships within and outside ADF&G. Camera sled surveys conducted in waters around the state will bring ADF&G staff from different regions together and allow them to work with cutting edge technology that fosters a better understanding of the species and habitats they manage. Day trips planned outside Homer for equipment testing and

fine tuning will involve Kachemak Bay Research Reserve (part of the Division of Sport Fish) personnel and allow them to take part in collection of benthic habitat data inside the reserve. Our camera system was developed with the help of scientists from the HabCam project (<http://habcam.who.edu>) in Wood's Hole, Massachusetts. These researchers are currently developing software for automated processing of data collected by camera systems such as ours and will begin working with ADF&G image data in FY08. The HabCam team is excited to collaborate with ADF&G and ready to develop cooperative grant proposals that promote use of this technology in Alaska.

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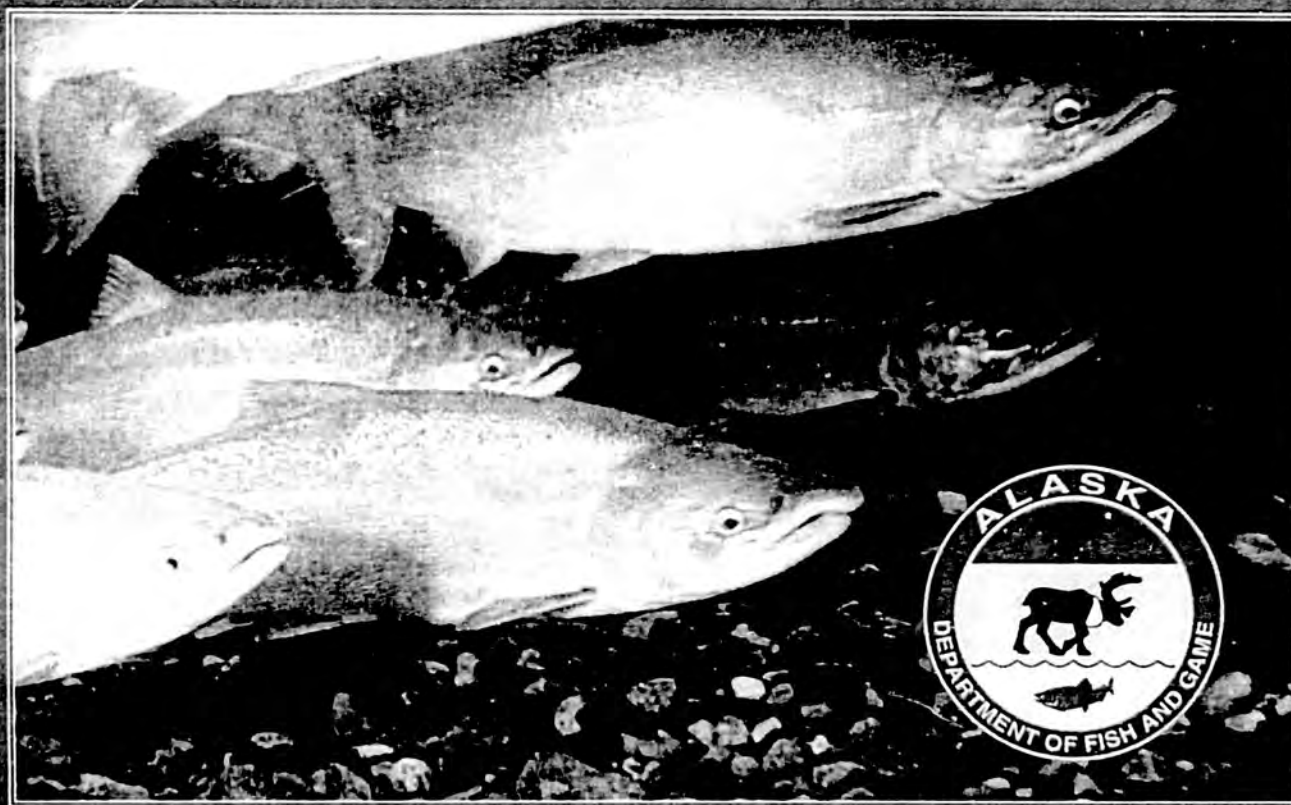
Maintain ongoing programs for the enumeration, assessment, and understanding of salmon, herring, groundfish, and shellfish stocks.

SCOMM

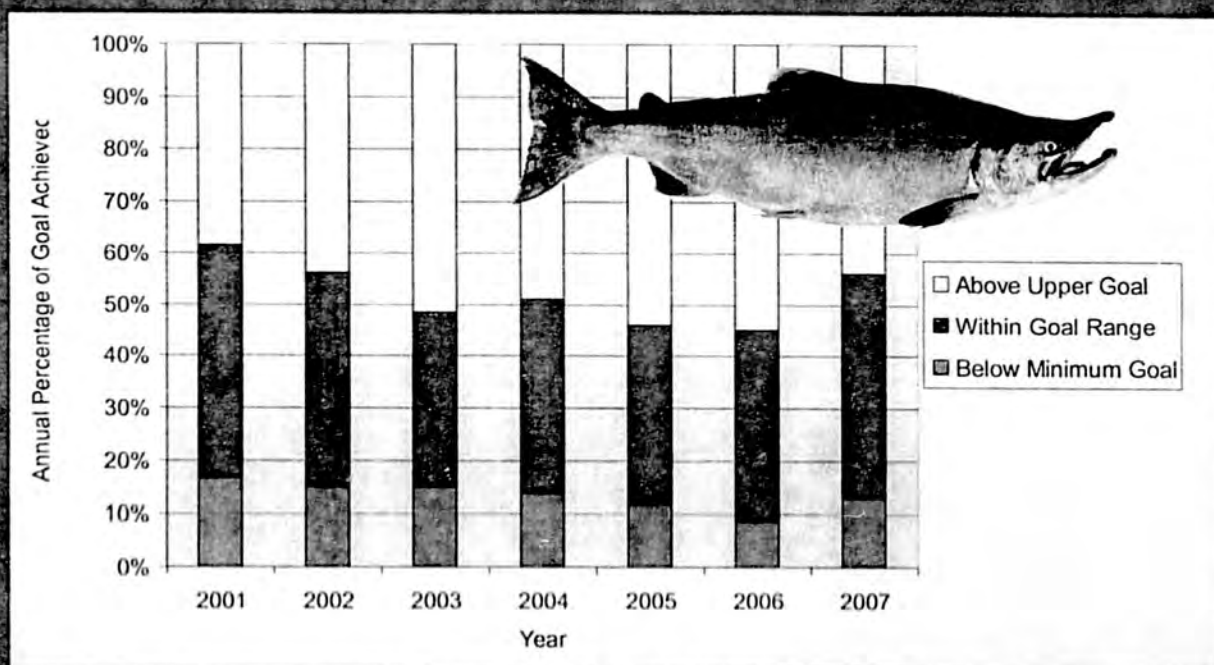
147:19

**Alaska Department of Fish and Game
Division of Commercial Fisheries**

**Salmon escapements compared to goals and
potential unrealized harvest and exvessel value
2001 to 2007**



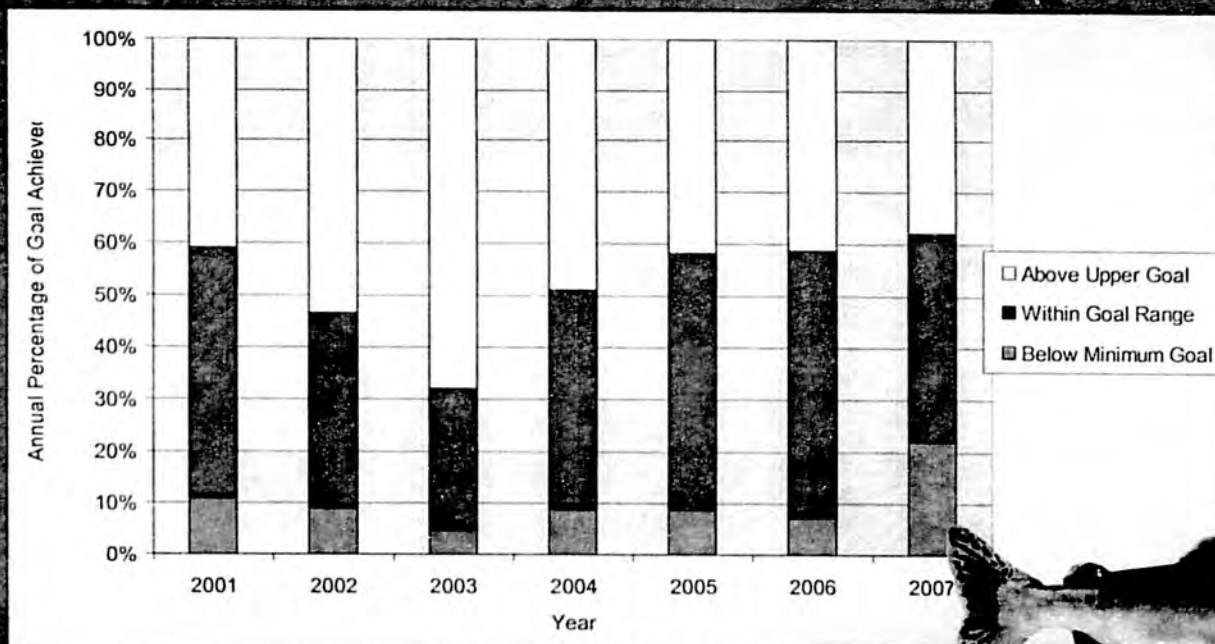
Salmon escapements compared to goals 2001 to 2007 STATEWIDE



Statewide	2001	2002	2003	2004	2005	2006	2007
Total Stocks	296	298	298	301	269	250	238
Below Minimum Goal							
• Number	50	45	46	43	32	23	31
• Percent	17%	15%	15%	14%	12%	9%	13%
Within Goal Range							
• Number	132	123	99	110	92	89	102
• Percent	45%	41%	33%	37%	34%	36%	43%
Above Upper Goal							
• Number	114	130	153	148	145	138	105
• Percent	39%	44%	51%	49%	54%	55%	44%

Salmon escapements compared to goals 2001 to 2007

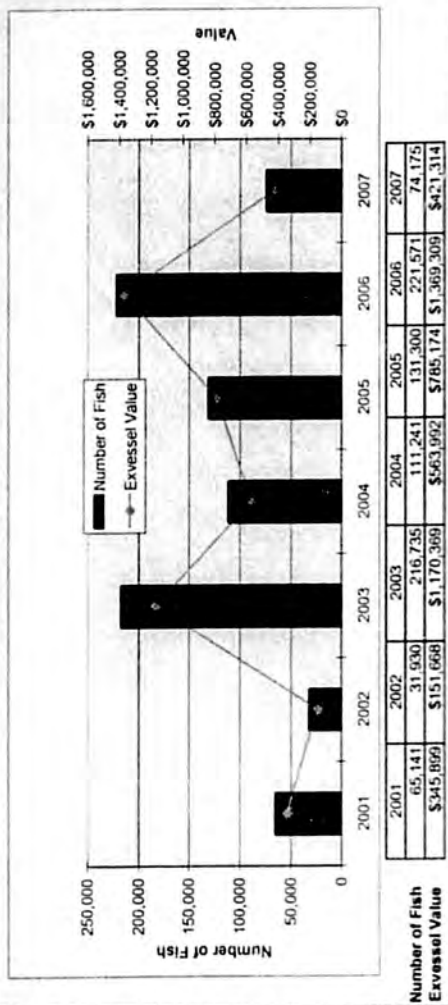
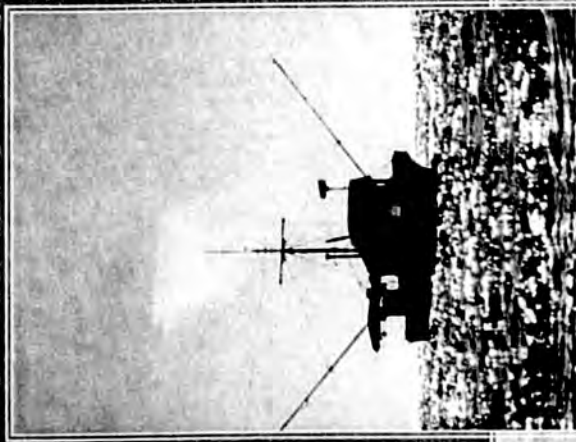
REGION 1: SOUTHEAST



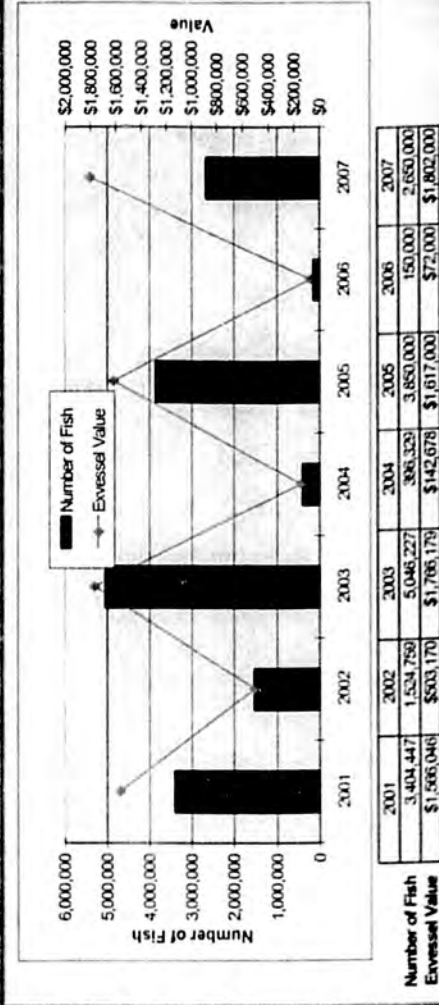
Southeast Region	2001	2002	2003	2004	2005	2006	2007
Total Stocks	44	43	44	43	43	41	37
Below Minimum Goal							
• Number	5	4	2	4	4	3	8
• Percent	11%	9%	5%	9%	9%	7%	22%
Within Goal Range							
• Number	21	16	12	18	21	21	15
• Percent	48%	37%	27%	42%	49%	51%	40%
Above Upper Goal							
• Number	18	23	30	21	18	17	14
• Percent	41%	53%	68%	49%	42%	41%	38%

Potential unrealized harvest and exvessel value

REGION 1: SOUTHEAST



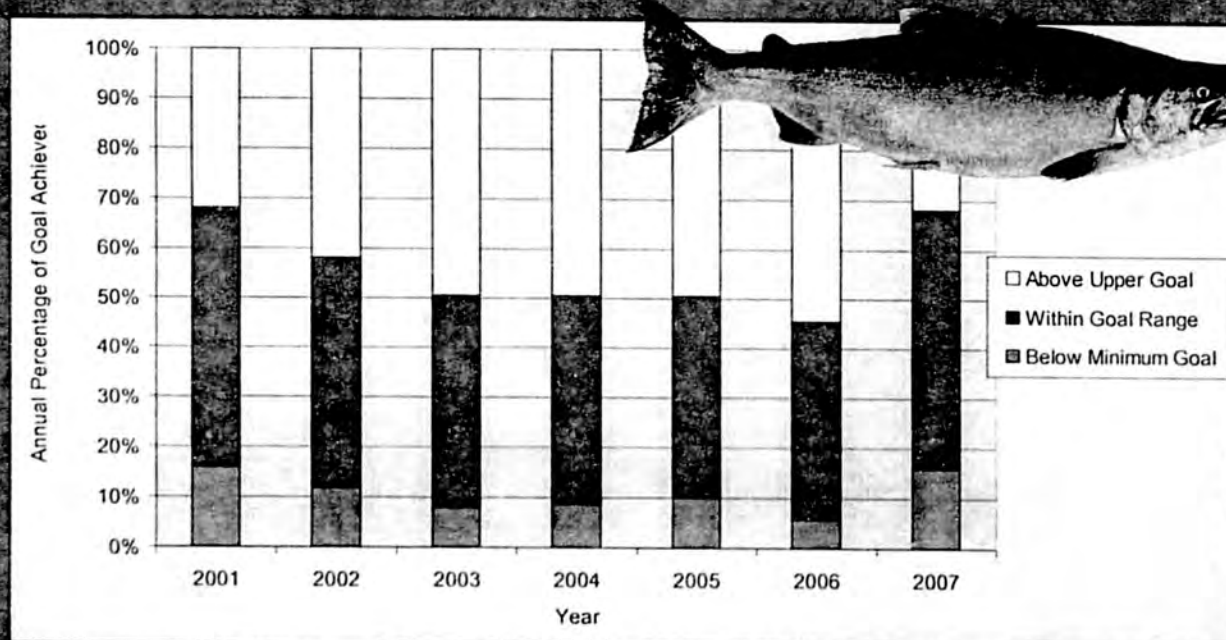
Exvessel Value



Number of Fish
Exvessel Value

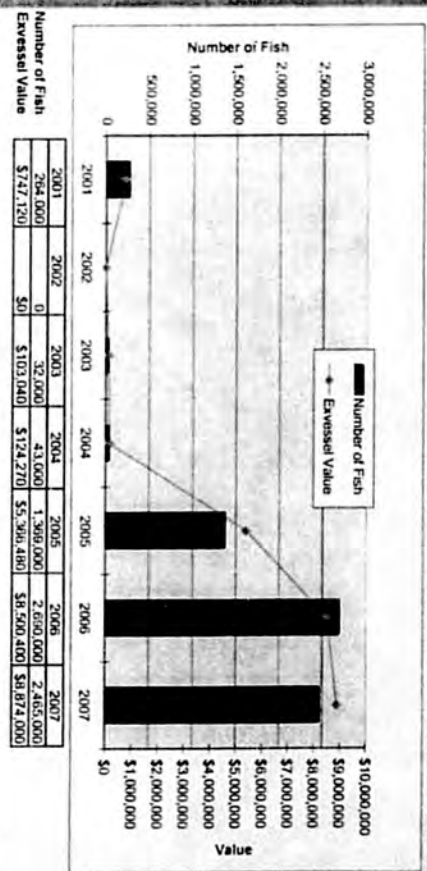
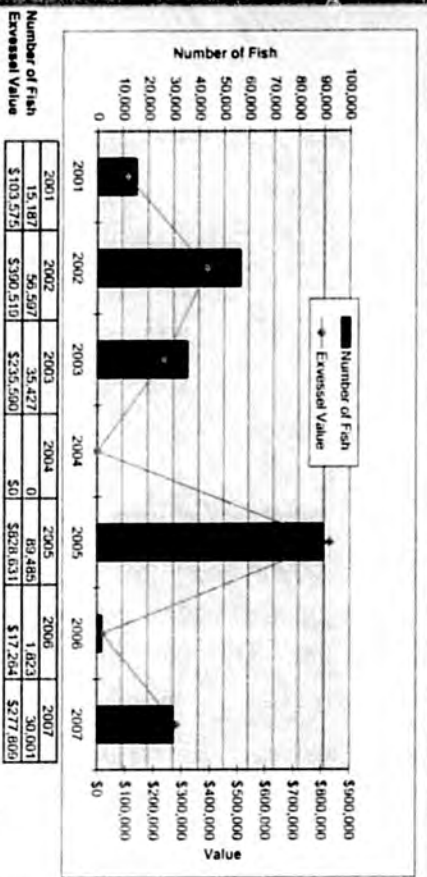
Salmon escapements compared to goals 2001 to 2007

REGION 2: CENTRAL

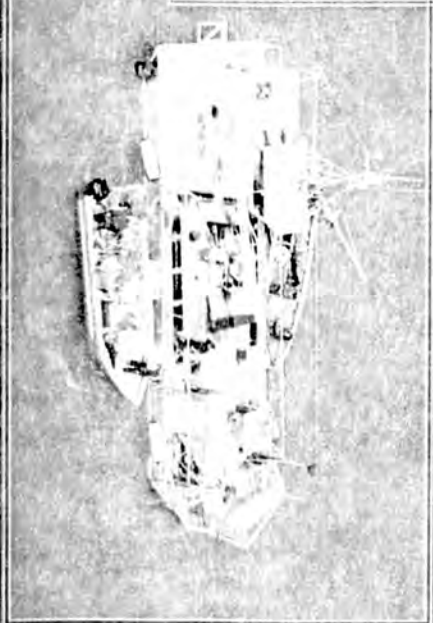
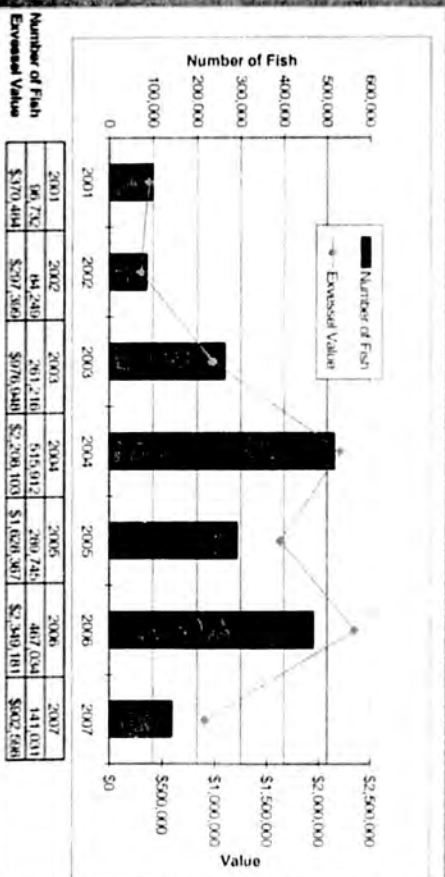


Central Region	2001	2002	2003	2004	2005	2006	2007
Total Stocks	100	102	99	101	99	86	90
Below Minimum Goal							
• Number	16	12	8	9	10	5	14
• Percent	16%	12%	8%	9%	10%	6%	16%
Within Goal Range							
• Number	52	47	42	42	40	34	47
• Percent	52%	46%	42%	42%	40%	40%	52%
Above Upper Goal							
• Number	32	43	49	50	49	47	29
• Percent	32%	42%	49%	50%	49%	55%	32%

Potential unrealized harvest and exvessel value REGION 2: CENTRAL

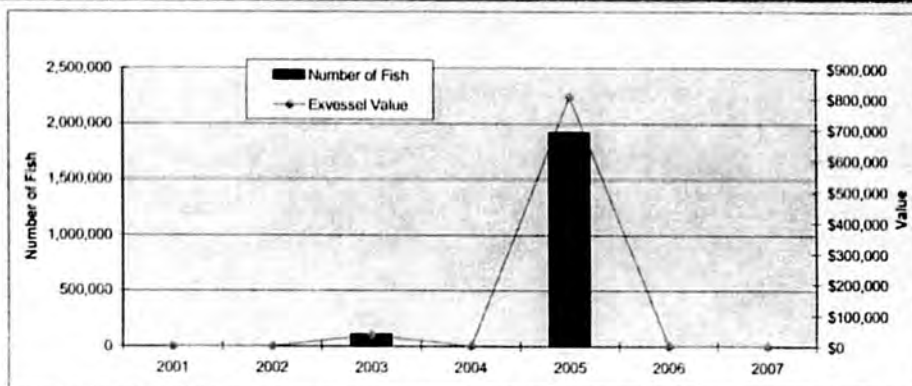


Rock Inlet



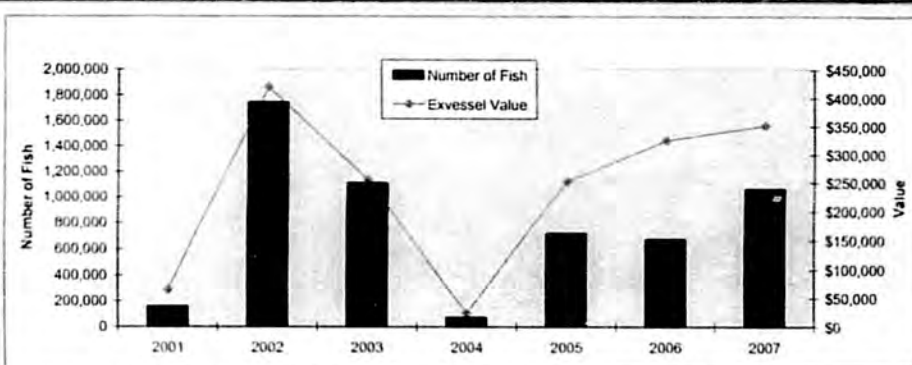
Potential unrealized harvest and exvessel value (continued)

REGION 2: CENTRAL



Number of Fish	2001	2002	2003	2004	2005	2006	2007
Exvessel Value	0	0	107,289	0	1,919,168	0	0
	\$0	\$0	\$35,624	\$0	\$806,051	\$0	\$0

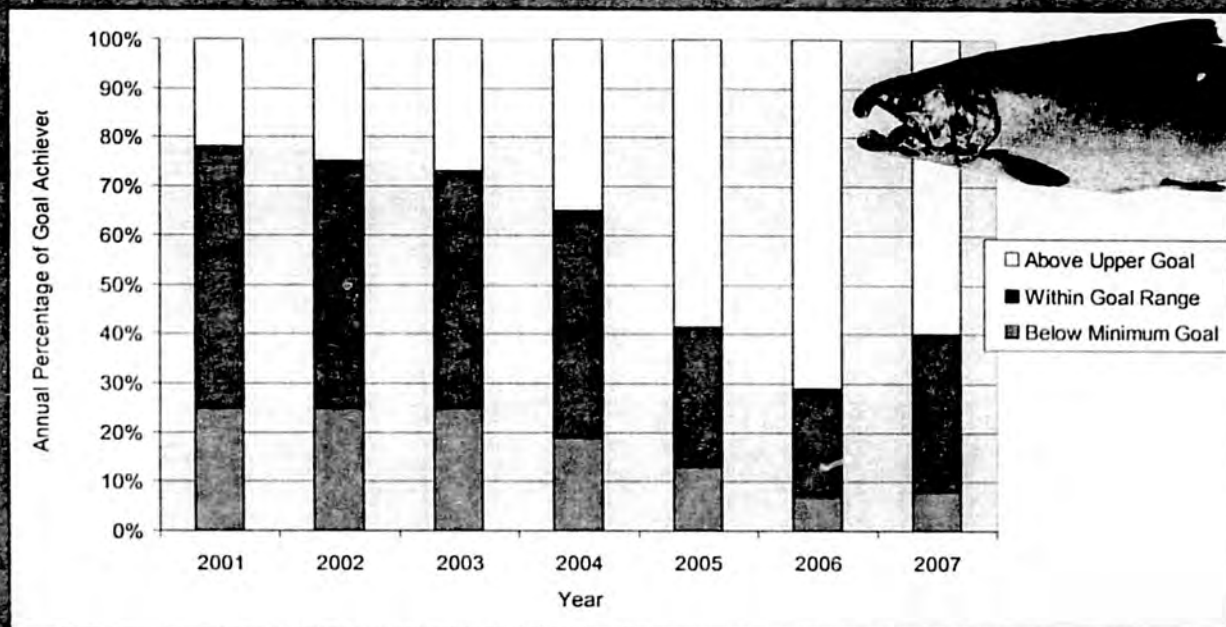
Fish species: Lower Cook Inlet



Number of Fish	2001	2002	2003	2004	2005	2006	2007
Exvessel Value	160,829	1,744,519	1,112,246	76,496	722,260	676,757	1,063,606
	\$65,940	\$418,685	\$255,817	\$24,479	\$252,791	\$324,843	\$350,900

Salmon escapements compared to goals 2001 to 2007

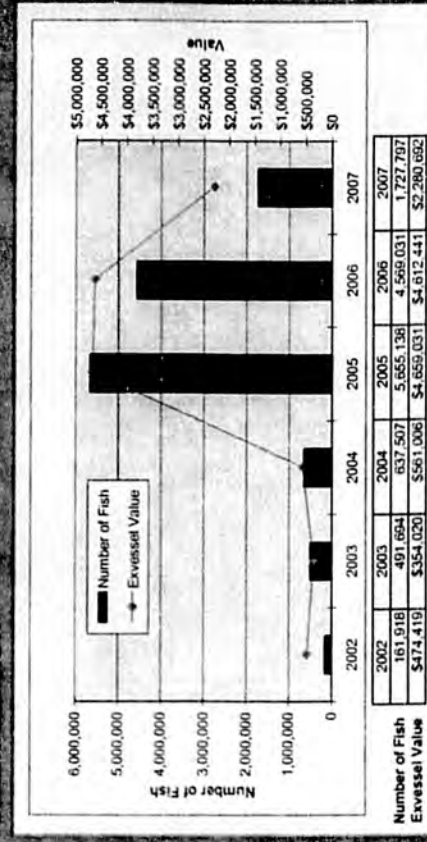
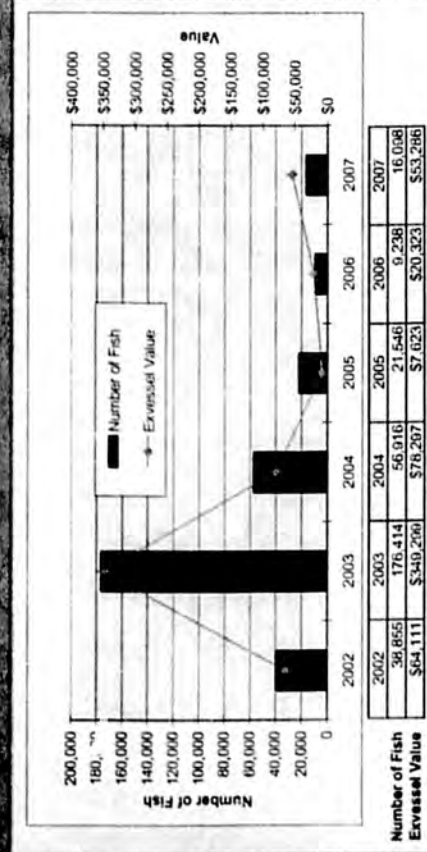
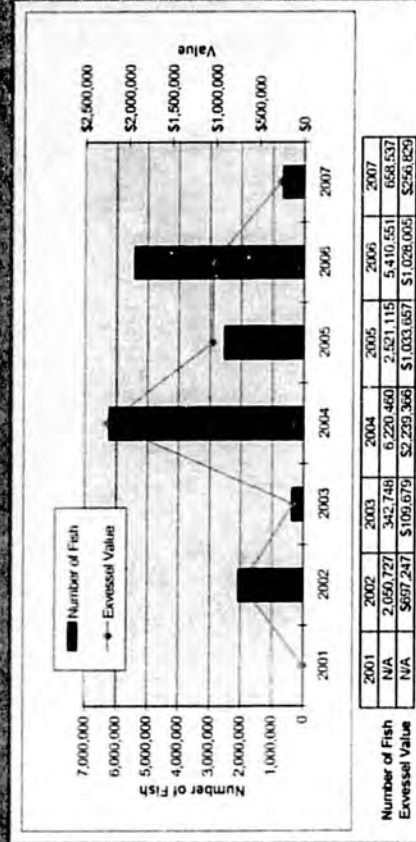
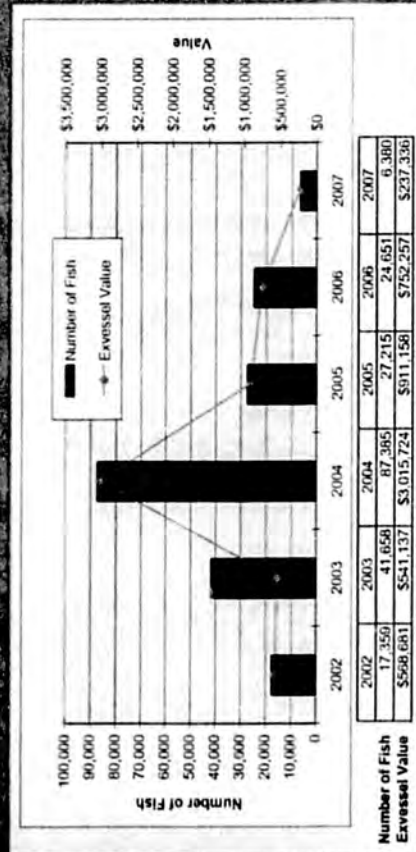
REGION 3: AYK



AYK Region	2001	2002	2003	2004	2005	2006	2007
Total Stocks	59	60	60	68	60	55	60
Below Minimum Goal							
• Number	15	15	15	13	8	4	5
• Percent	25%	25%	25%	19%	13%	7%	8%
Within Goal Range							
• Number	31	30	29	31	17	12	19
• Percent	53%	50%	48%	46%	28%	22%	32%
Above Upper Goal							
• Number	13	15	16	24	35	39	36
• Percent	22%	25%	27%	35%	58%	71%	60%

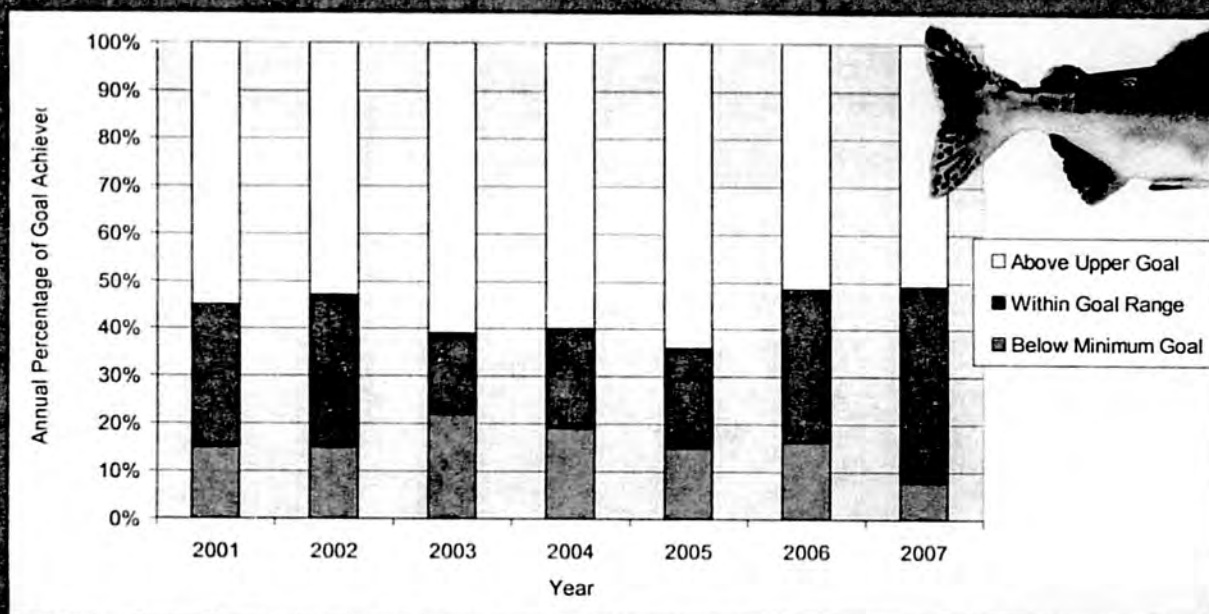
Potential unrealized harvest and exvessel value

REGION 3: AYK



Salmon escapements compared to goals 2001 to 2007

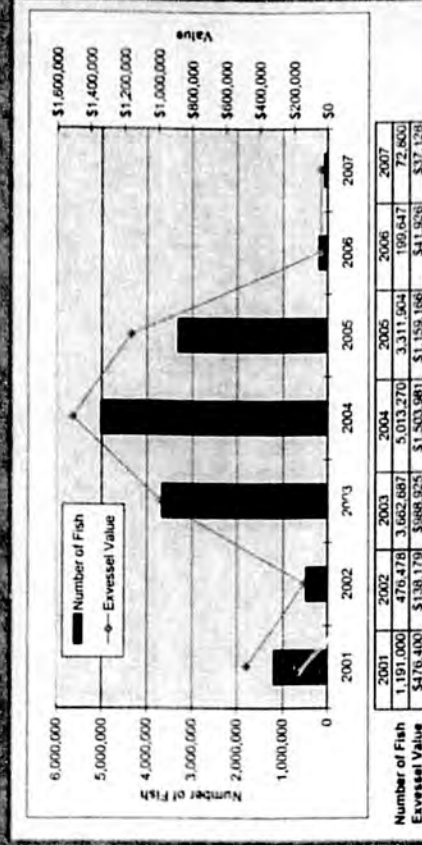
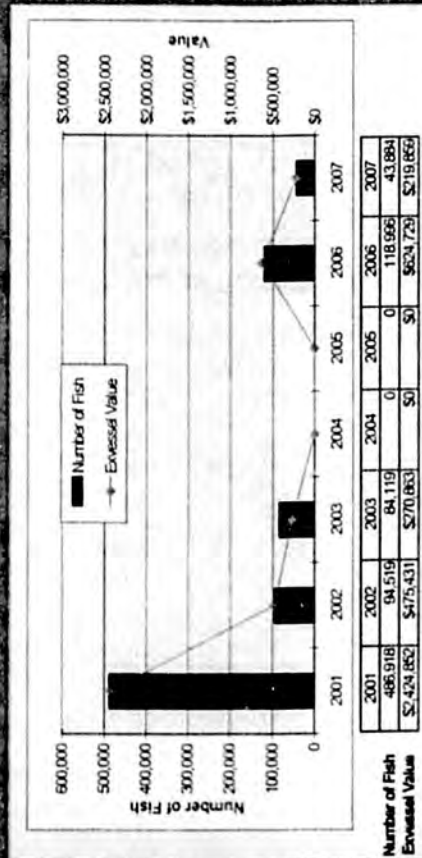
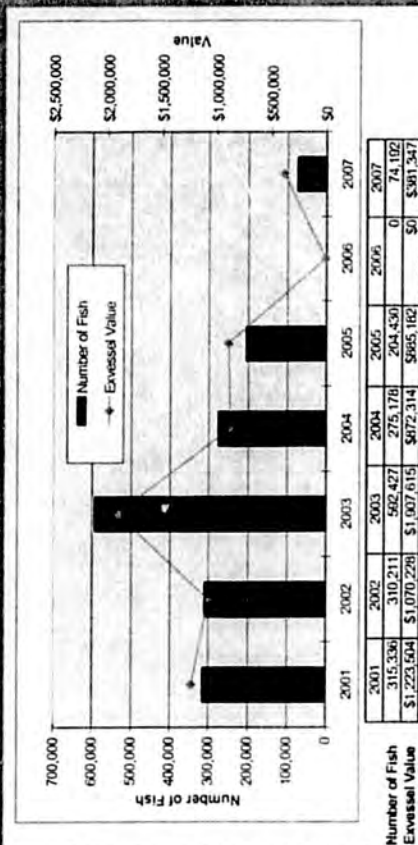
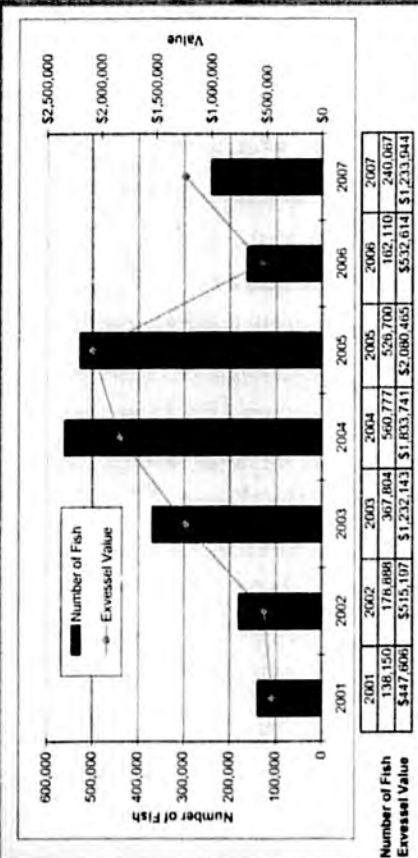
REGION 4: WESTWARD



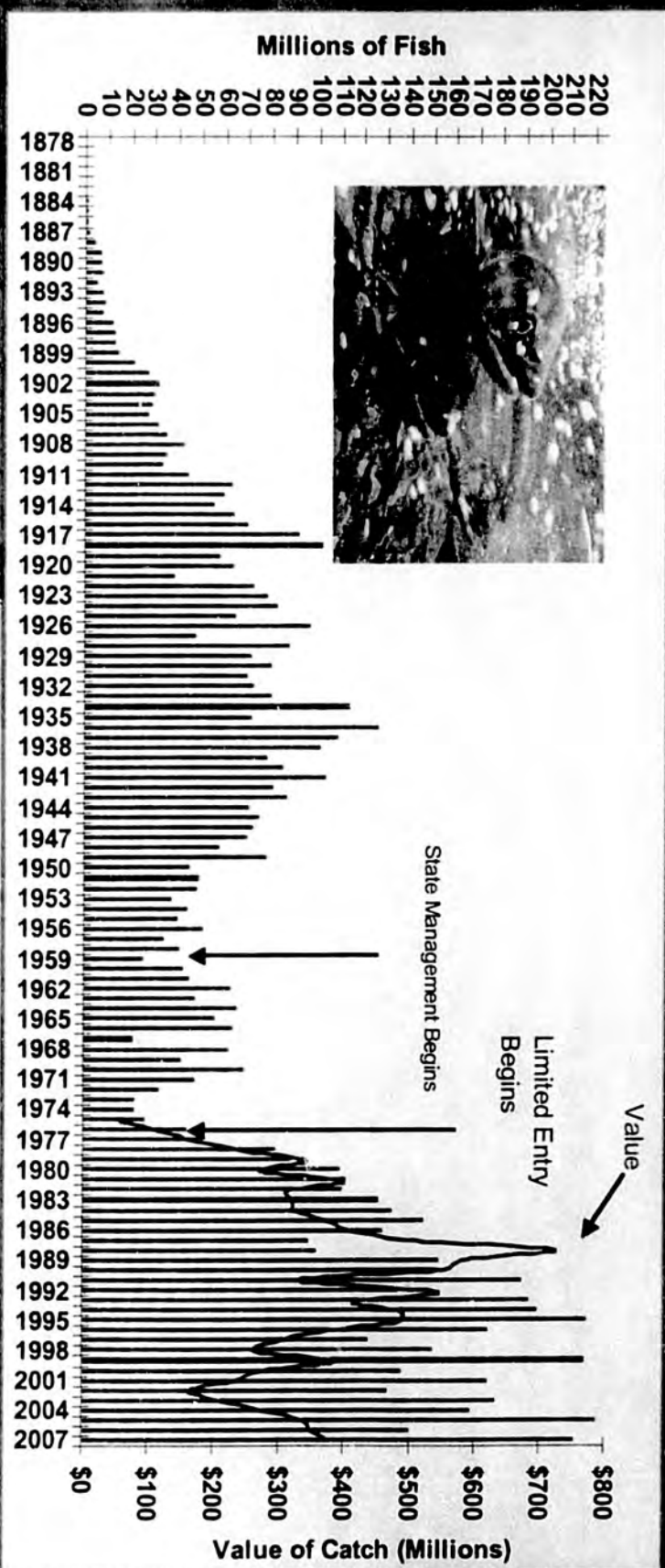
Westward Region	2001	2002	2003	2004	2005	2006	2007
Total Stocks	93	93	95	89	67	68	51
Below Minimum Goal							
• Number	14	14	21	17	10	11	4
• Percent	15%	15%	22%	19%	15%	16%	8%
Within Goal Range							
• Number	28	30	16	19	14	22	21
• Percent	30%	32%	17%	21%	21%	32%	41%
Above Upper Goal							
• Number	51	49	58	53	43	35	26
• Percent	55%	53%	61%	60%	64%	51%	51%

Potential unrealized harvest and exvessel value

REGION 4: WESTWARD



Alaska Commercial Salmon Catches and Value 1878-2007 (all species combined)



Alaska Department of Fish and Game
Division of Commercial Fisheries
Salmon Management Overview
Emphasis on escapement-based management

By Patricia Nelson



Presentation Objectives



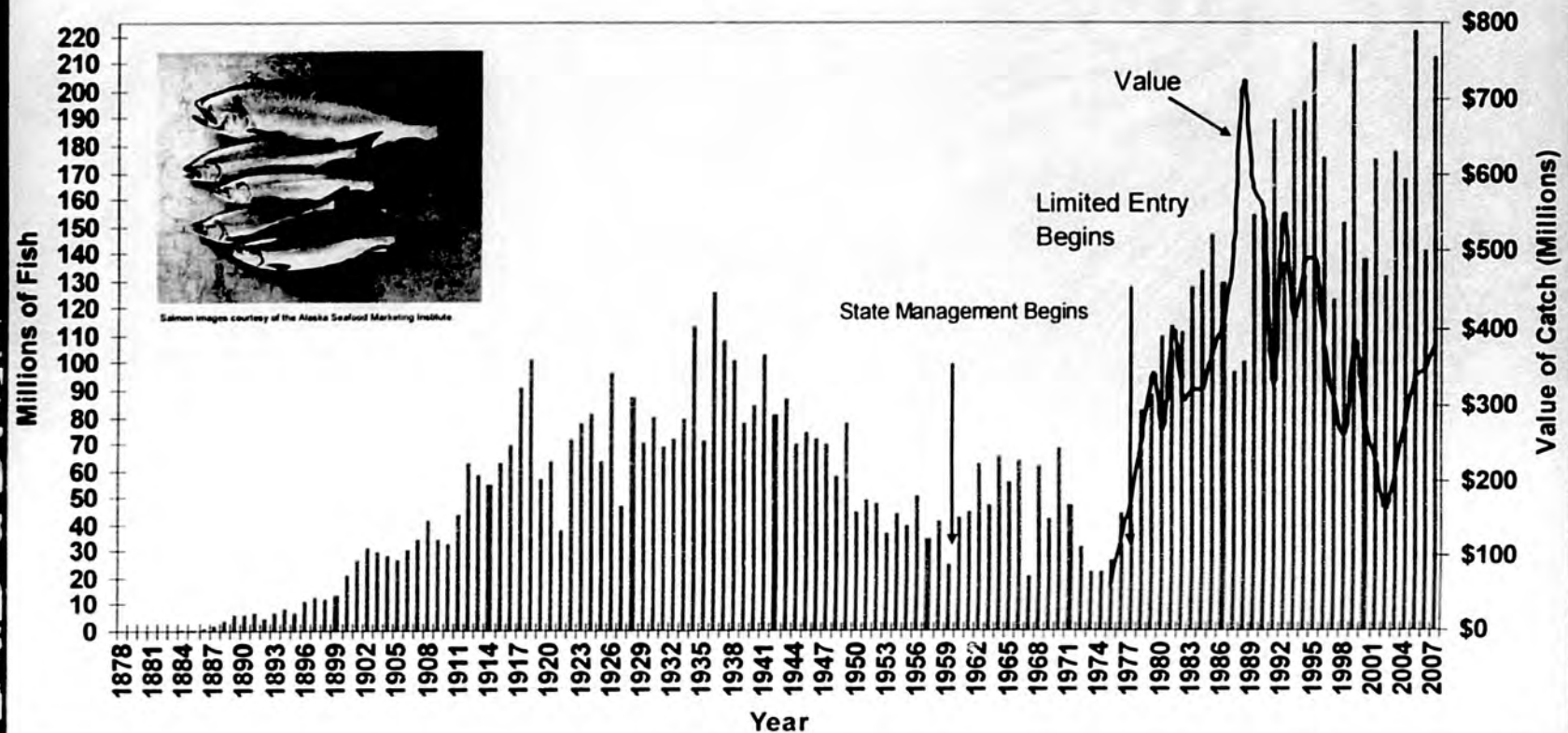
- Importance of salmon fisheries, annual harvests and exvessel values
- Review the relevant policies and definitions
- Escapement goal development
- Harvest management
- Role of the Alaska Board of Fisheries
- Recommendations for the future

Alaska's Salmon Resource

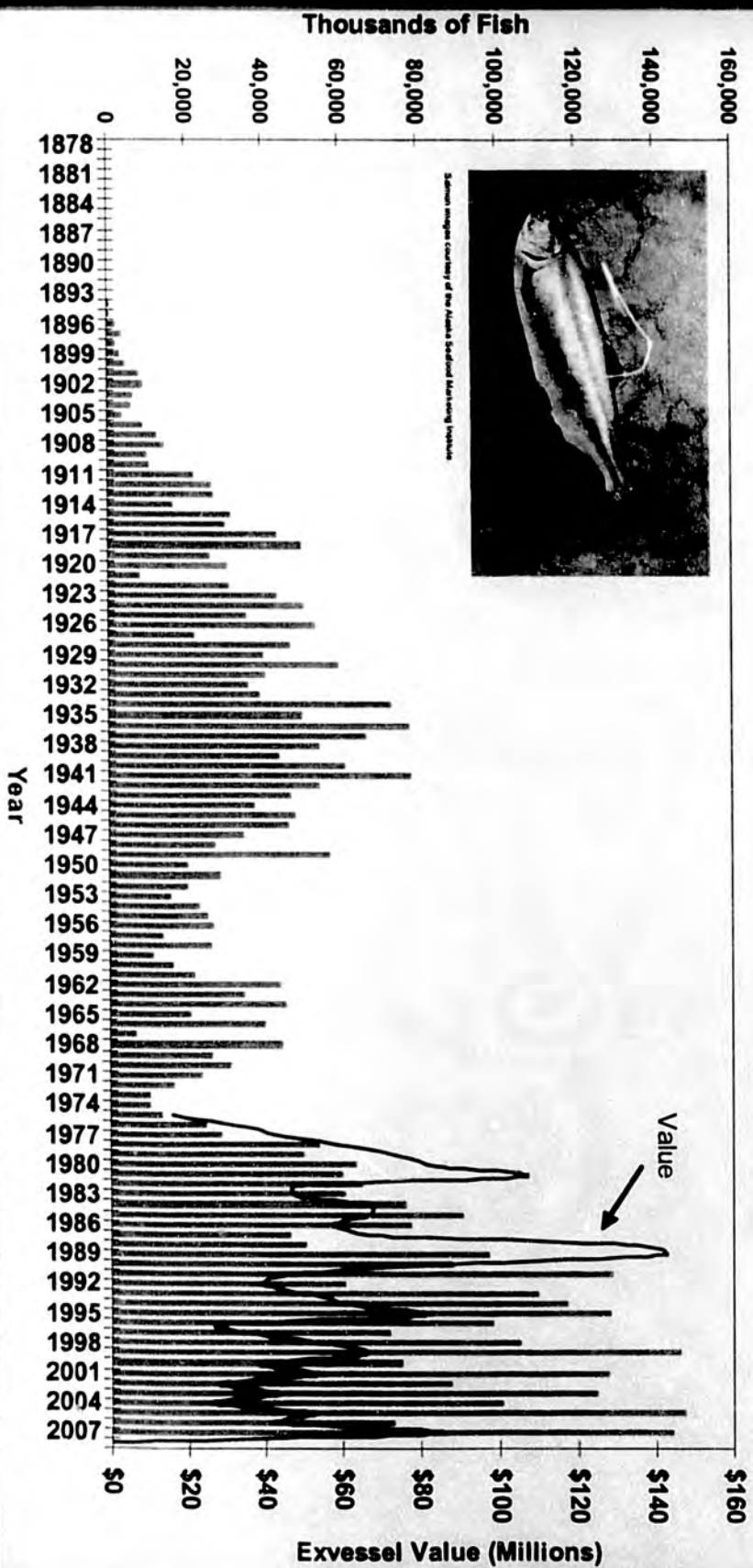


Alaska commercial salmon catches and value 1878-2007

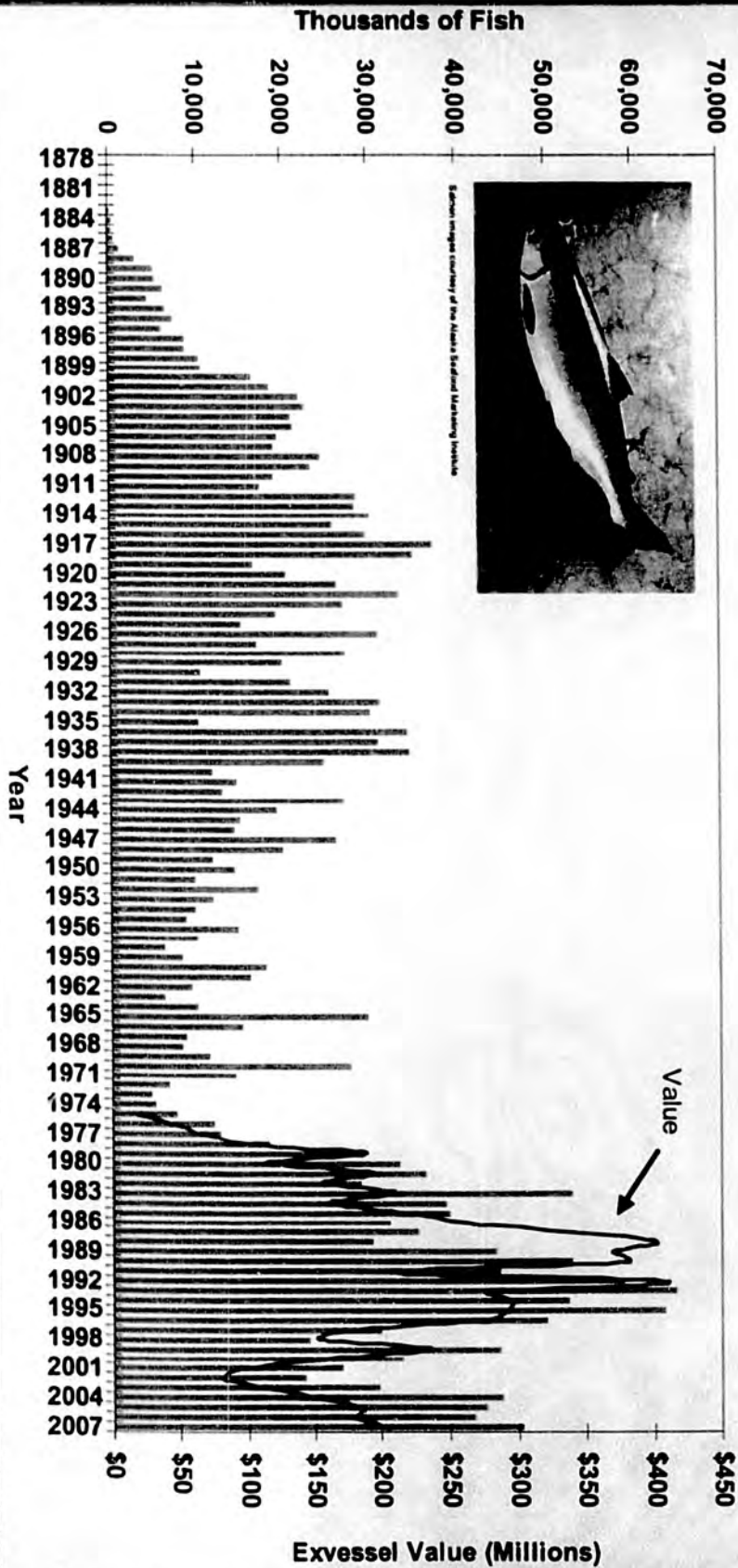
(All species combined)



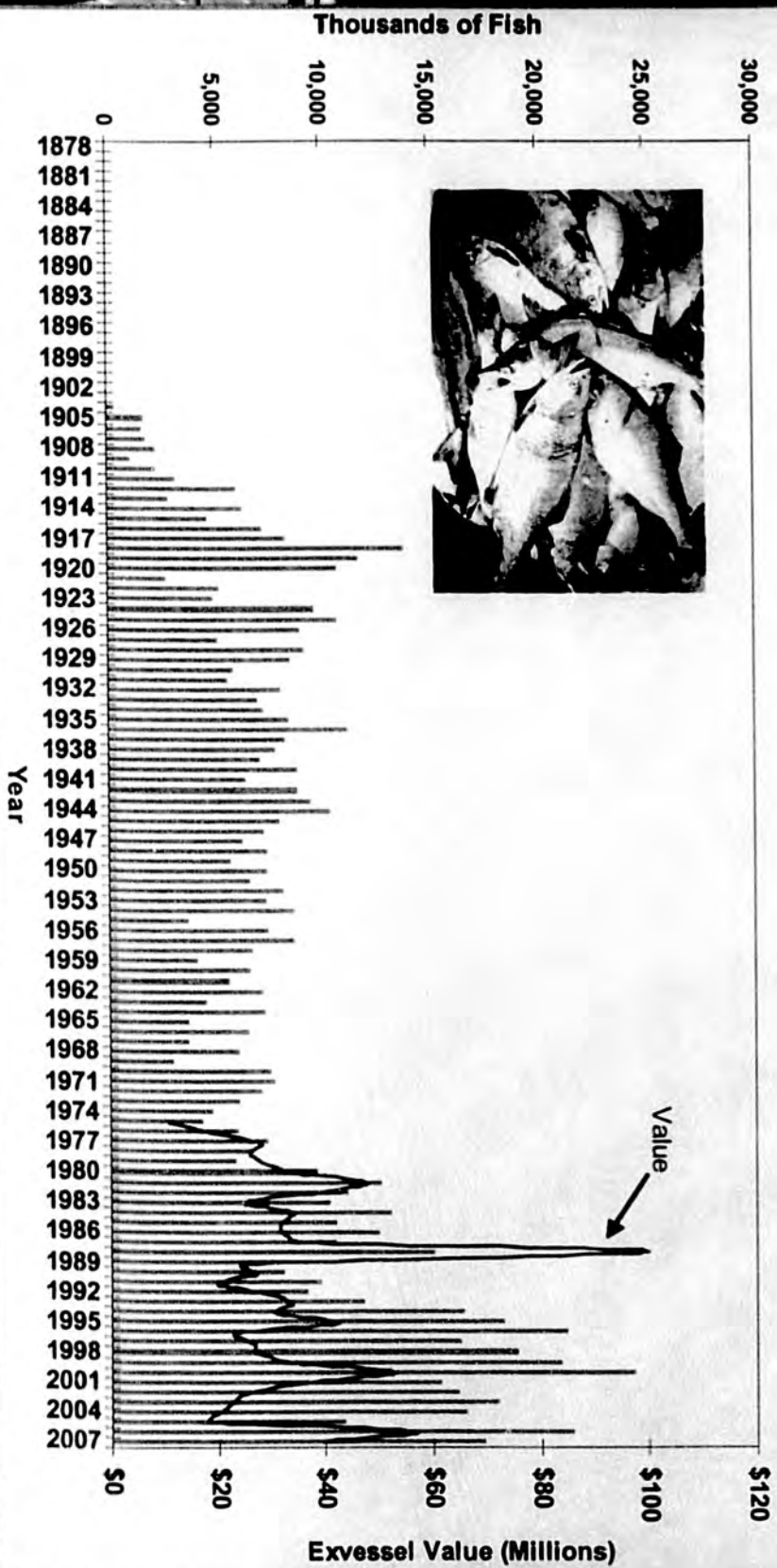
Alaska commercial pink salmon catches and value 1878-2007



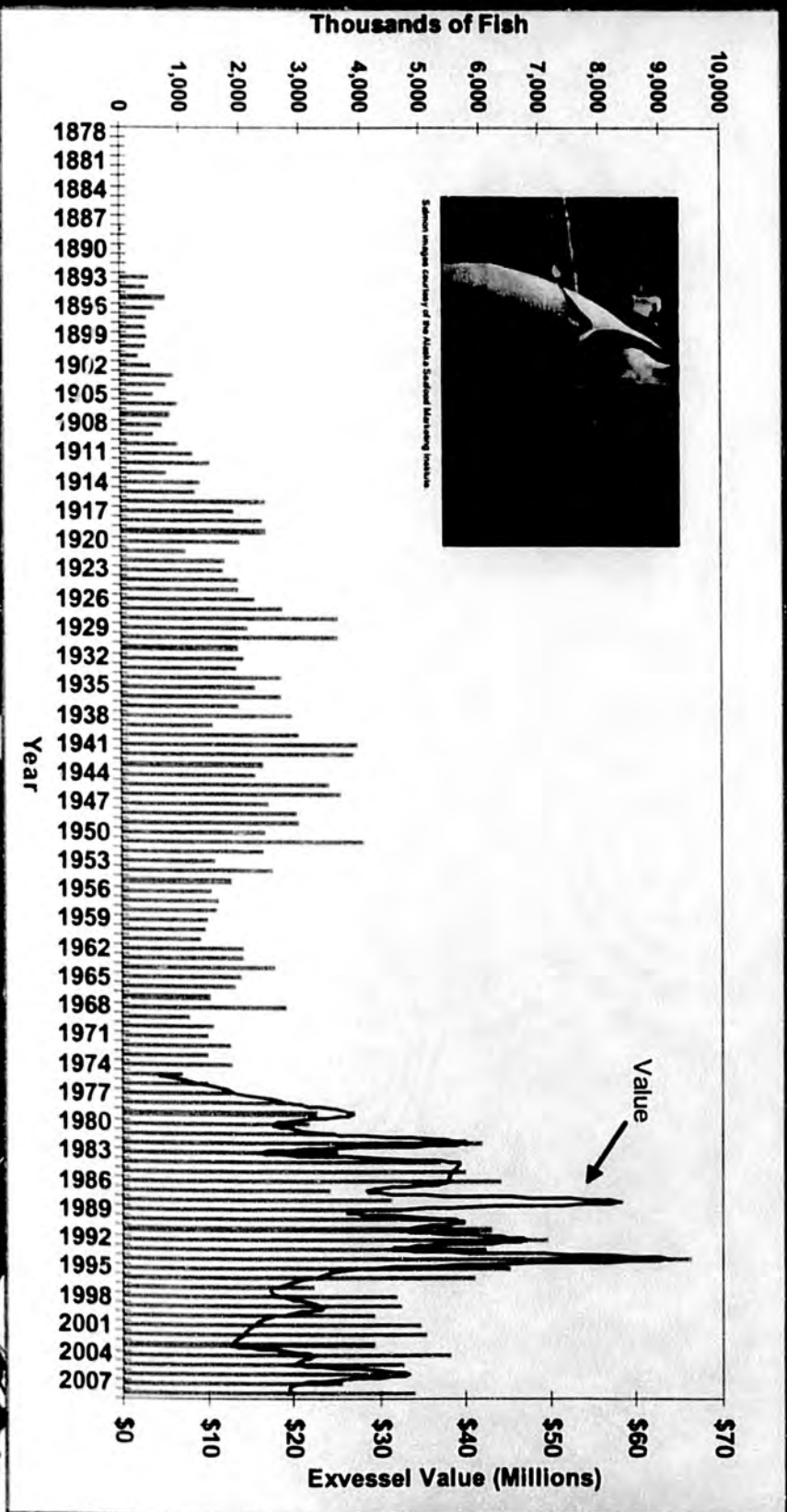
Alaska commercial sockeye salmon catches and value 1878-2007



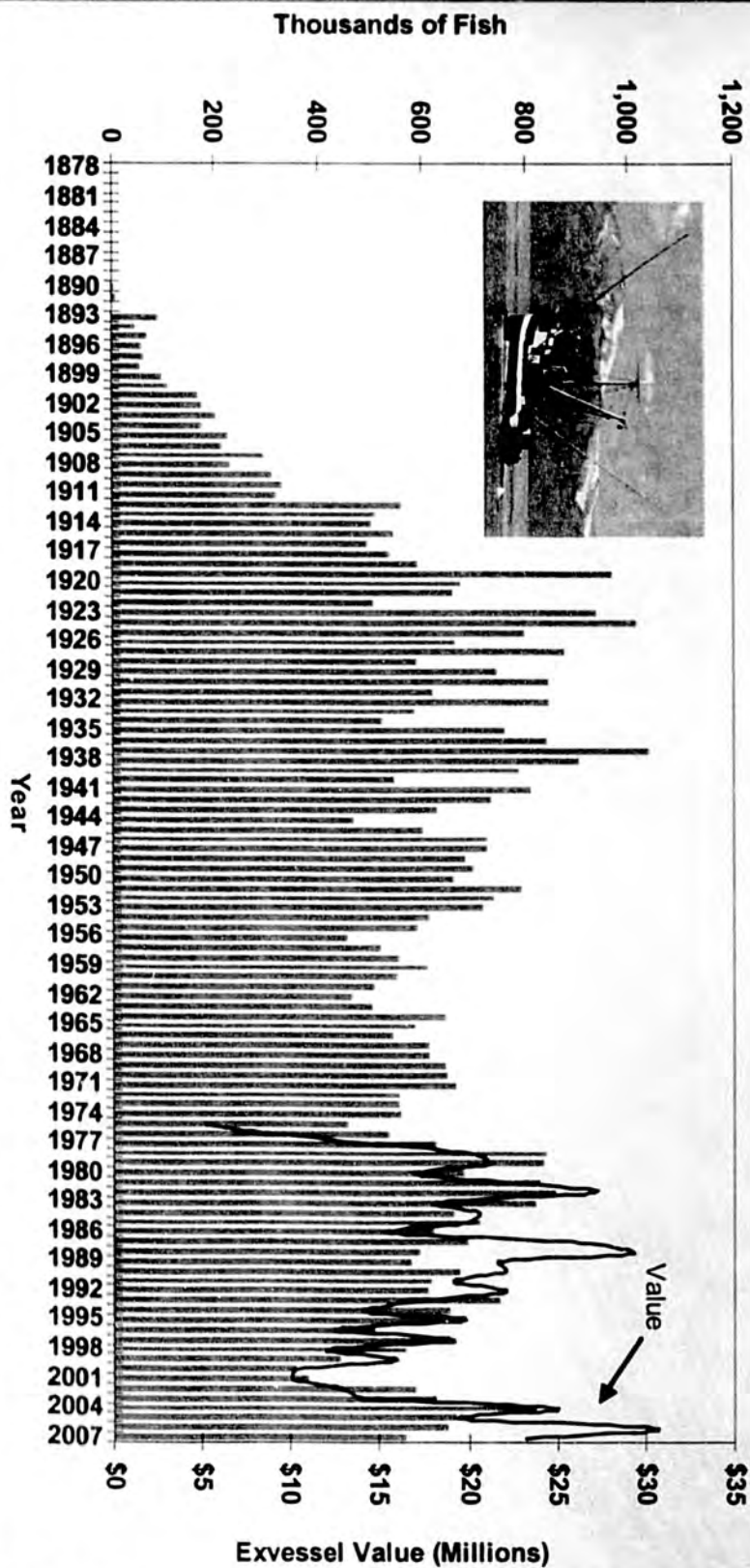
Alaska commercial chum salmon catches and value 1878-2007



Alaska commercial coho salmon catches and value 1878-2007



Alaska commercial Chinook salmon catches and value 1878-2007



Providing for sustained yield

Constitution:

Article VIII, Sec(4). 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.

Statute:

AS 16.05.020(2). The commissioner (of the Department of Fish and Game) shall manage, protect, maintain, improve and extend the fish, game and aquatic plant resources of the state in the interest of the economy and general well-being of the state.

Providing for sustained yield

Regulation

- **Salmon Management Plans**
- **Mixed-Stock Salmon Policy, 5 AAC 39.220**
- **Policy for the management of sustainable salmon Fisheries Policy, 5 AAC 39.222**
- **Policy for Statewide Salmon Escapement Goals, 5 AAC 39.223**

Escapement Goals

Biological Escapement Goal (BEG)

The escapement that provides the greatest potential for maximum sustained yield (MSY)

Sustainable Escapement Goal (SEG)

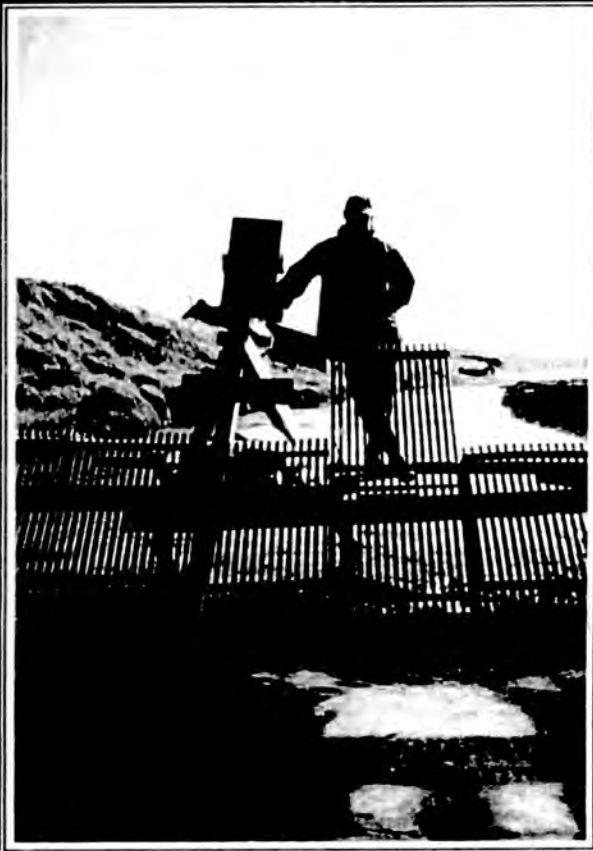
A level of escapement, indicated by an index or an escapement estimate, that is known to provide for sustained yield over a 5 to 10 year period, used in situations where a BEG cannot be estimated

Escapement Goal Review



- Determine goal type: BEG or SEG
- Determine appropriate methods
- Estimate goal and compare with current goal
- Create new goals
- Develop recommendations

Methods



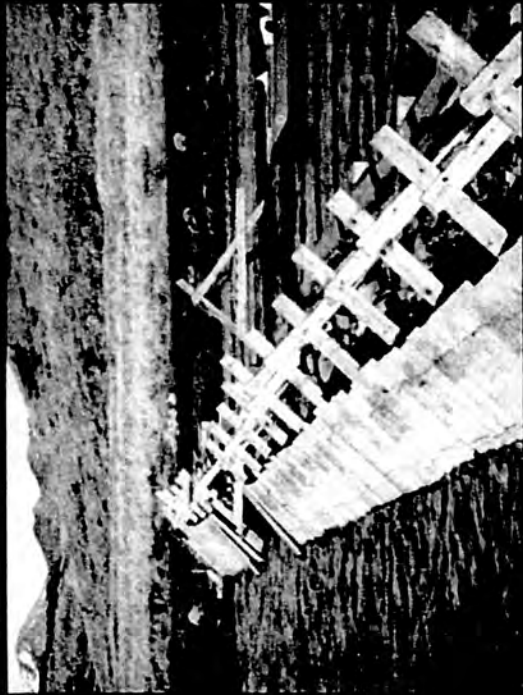
Biological Escapement Goals (BEGs)

- Spawner-recruit (S-R) analysis
- Yield-per-recruit analysis
- Habitat-based model

Sustainable Escapement Goals (SEGs)

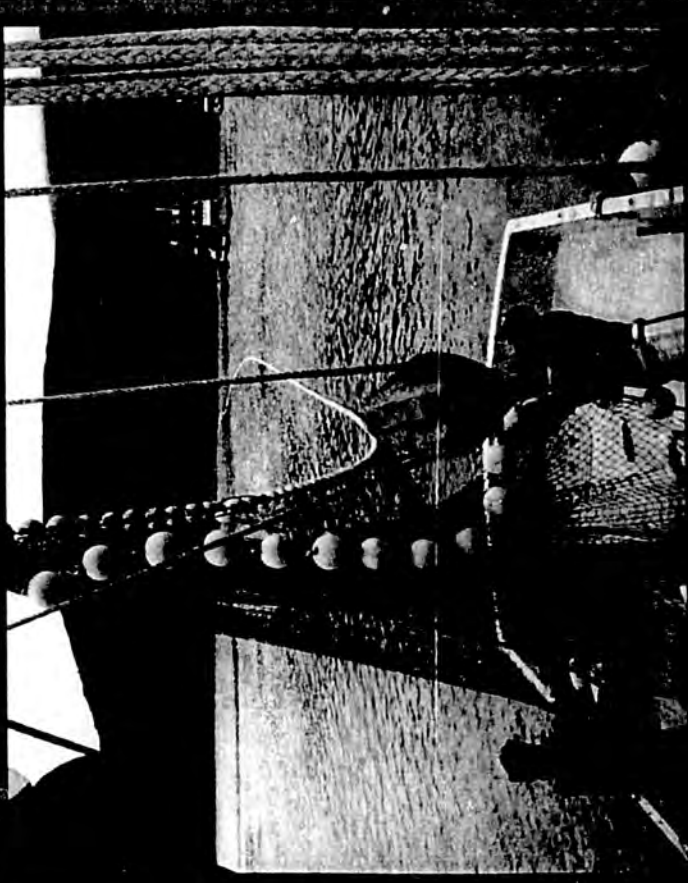
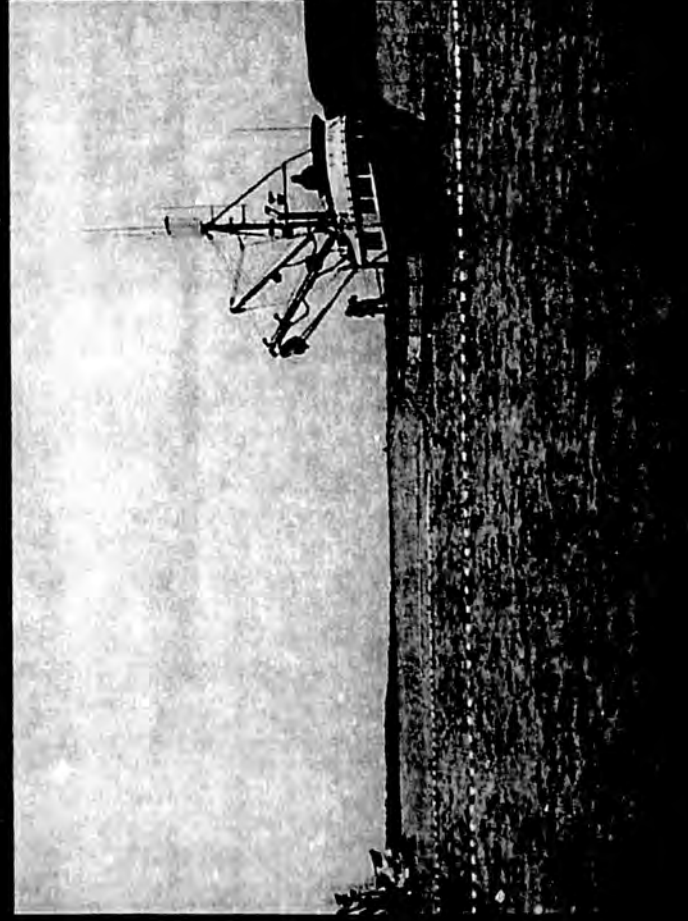
- Percentile approach
- Risk analysis
- Spawning habitat model
- Smolts-per-spawner
- Limnology models

Salmon Escapement Enumeration



Harvest Management

- Assisting the Alaska Board of Fisheries in Establishing Regulations and Management Plans
- Opening and Closing Fishing Areas and Setting Fishing Time
- Collecting Harvest and Biological Data



Alaska Board of Fisheries

- Setting seasons, bag limits, methods and means
- Setting policy and direction for the management of the state's fishery resources
- Charged with making allocative decisions

Recent Regulatory Intent Language

The following paragraph will be included in the management plans within the Upper Cook Inlet Area: Notwithstanding any other provision of this chapter it is the intent of the board that, while in most circumstances the department will adhere to the management plans in this chapter, none of the provisions within the management plans is intended to limit the commissioner's emergency order authority under AS 16.05.060 which will be used to achieve established escapement goals contained within the specific management plans as the primary management objective.

Recommendations

Research

- Develop and validate methods to determine carrying capacity
- Integrated models to test hypotheses of density dependence

Management

- Improved preseason forecasting of run strength
- Improved inseason assessment of run strength
- Study economic effects of overescapement

Thank you. Questions?



Regional Information Report No. 5J08-01

Success in Achieving Salmon Escapement Goals in Monitored Systems—Prepared at the request of the House Fisheries Committee

Edited by
Geron Bruce

February 2008

Alaska Department of Fish and Game

Division of 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, Special Publications and the Division of Commercial Fisheries Regional Reports. 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)		General		Measures (fisheries)	
centimeter	cm	Alaska Administrative Code	AAC	fork length	FL
deciliter	dL			mid-eye-to-fork	MEF
gram	g	all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	mid-eye-to-tail-fork	METF
hectare	ha			standard length	SL
kilogram	kg	all commonly accepted		total length	TL
kilometer	km	professional titles	e.g., Dr., Ph.D., R.N., etc.	Mathematics, statistics	
liter	L			all standard mathematical signs, symbols and abbreviations	
meter	m	at	@	alternate hypothesis	
milliliter	mL	compass directions:		base of natural logarithm	
millimeter	mm	east	E	catch per unit effort	
		north	N	coefficient of variation	
		south	S	common test statistics	
		west	W	confidence interval	
		copyright	©	correlation coefficient	
		corporate suffixes:		(multiple)	
		Company	Co.	correlation coefficient	
		Corporation	Corp.	(simple)	
		Incorporated	Inc.	covariance	
		Limited	Ltd.	degree (angular)	
		District of Columbia	D.C.	degrees of freedom	
		et alii (and others)	et al.	expected value	
		et cetera (and so forth)	etc.	greater than	
		exempli gratia	e.g.	greater than or equal to	
		(for example)		harvest per unit effort	
		Federal Information Code	FIC	less than	
		id est (that is)	i.e.	less than or equal to	
		latitude or longitude	lat. or long.	logarithm (natural)	
		monetary symbols		logarithm (base 10)	
		(U.S.)	\$, ¢	logarithm (specify base)	
		months (tables and figures): first three letters	Jan., ..., Dec	minute (angular)	
		registered trademark	®	not significant	
		trademark	™	null hypothesis	
		United States		percent	
		(adjective)	U.S.	probability	
		United States of America (noun)	USA	probability of a type I error	
		U.S.C.	United States Code	(rejection of the null hypothesis when true)	
		U.S. state	use two-letter abbreviations (e.g., AK, WA)	probability of a type II error	
				(acceptance of the null hypothesis when false)	
				second (angular)	
				standard deviation	
				standard error	
				variance	
				population sample	
				Var	
				var	



The Regional Information Report Series was established in 1987 and was redefined in 2006 to meet the Division of Commercial Fisheries regional need for publishing and archiving information such as project operational plans, area management plans, budgetary information, staff comments and opinions to Board of Fisheries proposals, interim or preliminary data and grant agency reports, special meeting or minor workshop results and other regional information not generally reported elsewhere. Reports in this series may contain raw data and preliminary results. Reports in this series may be subsequently revised. Please contact the author or the Division of Commercial Fisheries if in doubt of the level of review or preliminary nature of the data reported. Regional Information Reports are available through the Alaska State Library and on the Internet at: <http://www.state.ak.us/statewide/div/comfish/reginfo.htm>

REGIONAL INFORMATION REPORT NO. 5J08-01

SUCCESS IN ACHIEVING SALMON ESCAPEMENT GOALS IN MONITORED SYSTEMS—PREPARED AT THE REQUEST OF THE HOUSE FISHERIES COMMITTEE

By
Geron Bruce
Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau

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1125 N. 8th St., P.O. Box 115235, Juneau, AK 99811-5235

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Juneau, AK

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February 2008

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HOUSE FISHERIES COMMITTEE
MONITORED SYSTEMS—PREPARED AT THE REQUEST OF THE
SUCCESS IN ACHIEVING SALMON ESCAPEMENT GOALS IN

By
Geron Bruce
Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau

Geron Bruce,

*Alaska Department of Fish and Game, Division of Commercial Fisheries
1255 W. 8th St., P.O. Box 115526, Juneau AK 99811-5526*

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