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.

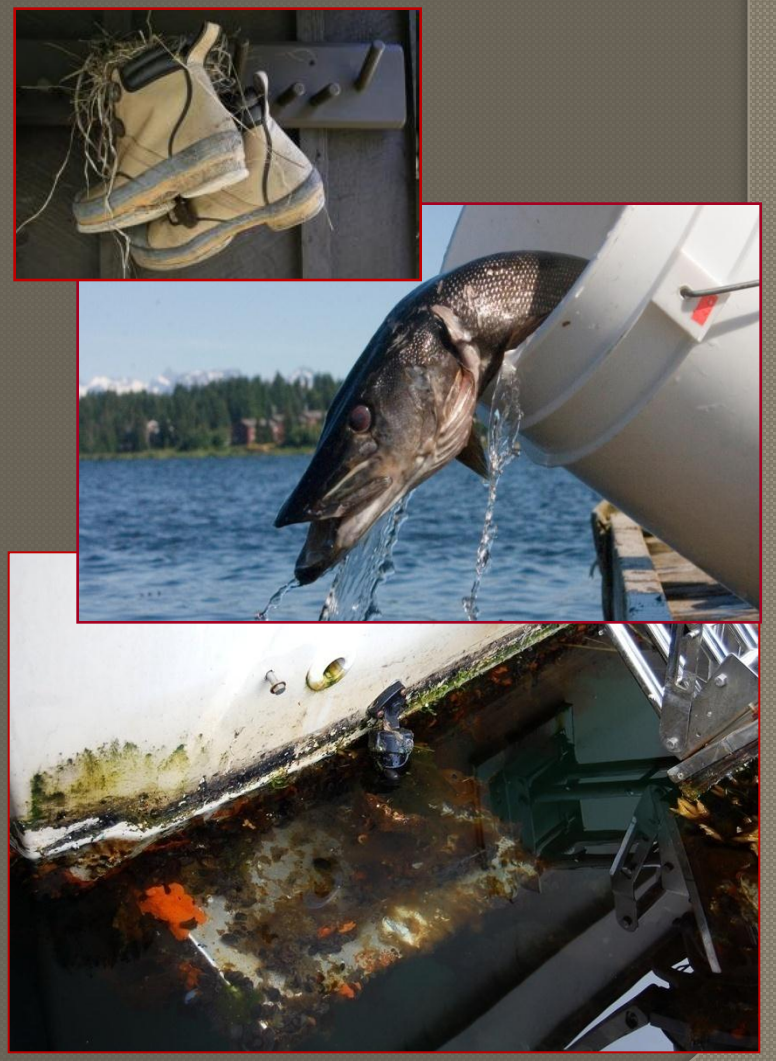
- Not all nonnative species can sustain populations in their new environment. They require
  - an agreeable host environment;
  - few to no natural predators, parasites or diseases;
  - an abundance of food that lacks defenses against the newcomer;
  - ability to out-compete native species in similar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

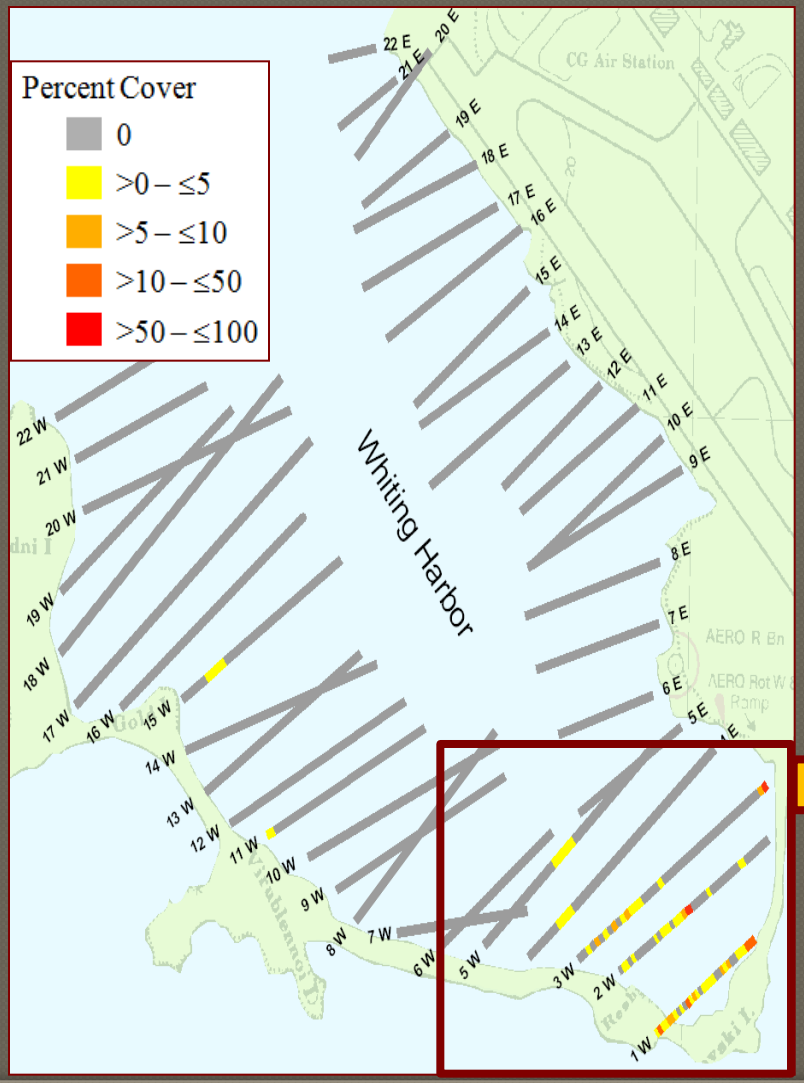
Whiting Harbor is a man-made embayment located adjacent to the Sitka airport and near the USCG base.

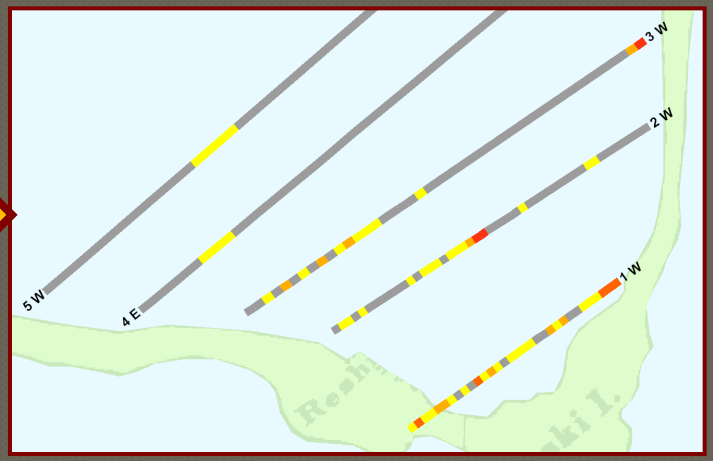
History

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



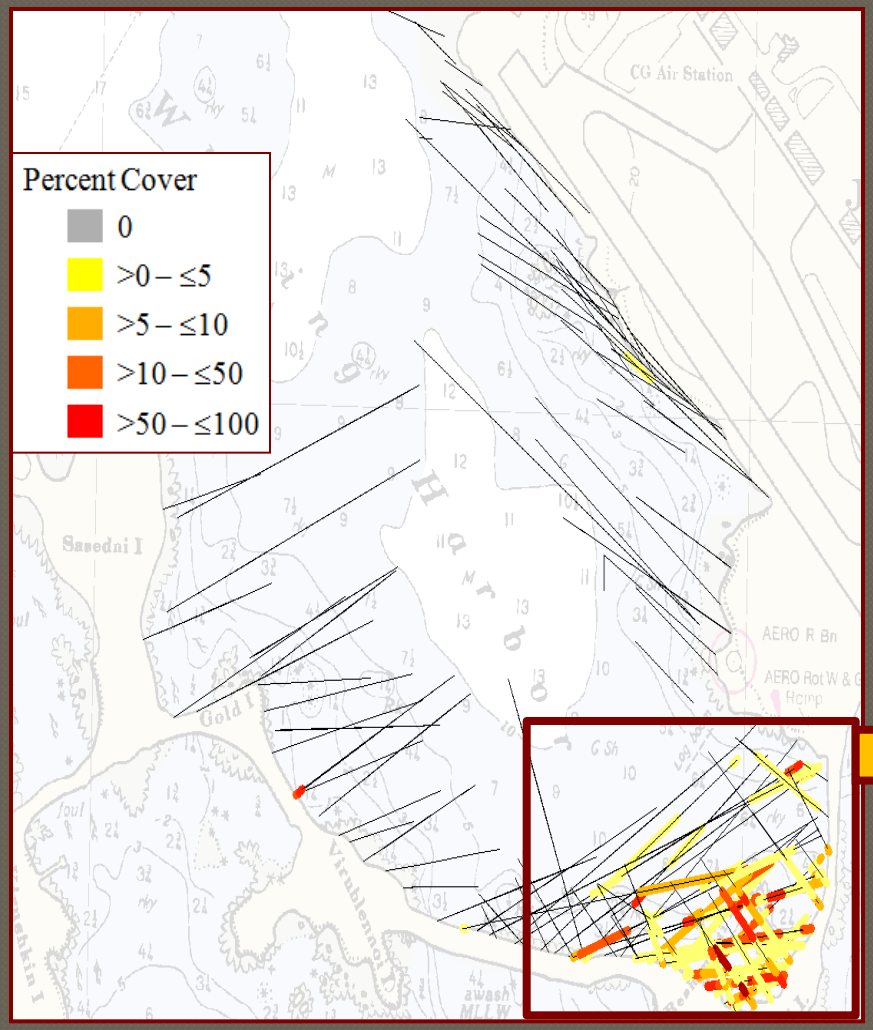


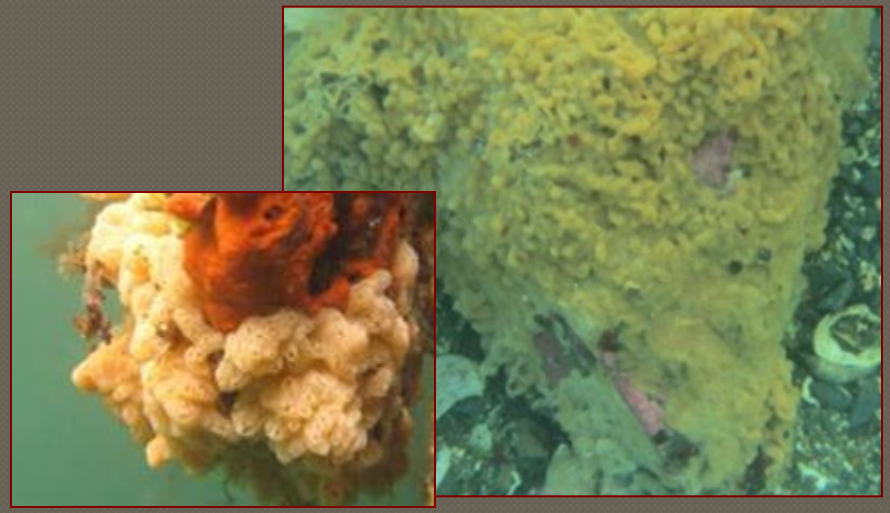
D. vex: Removing the Source

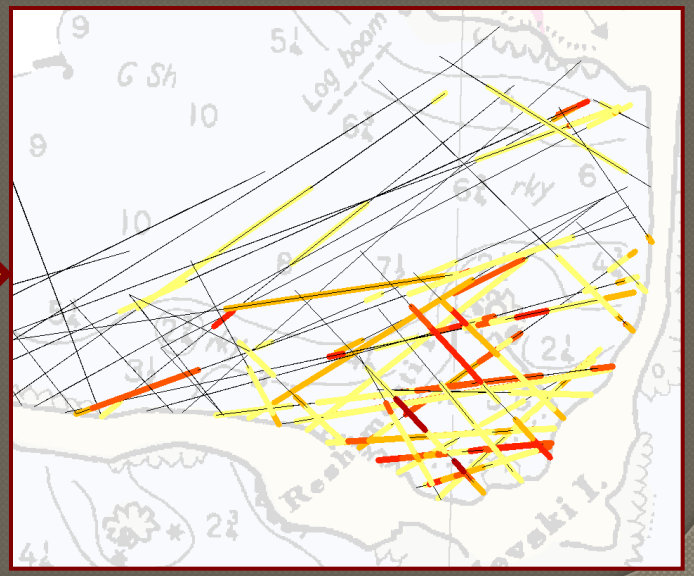
- Bag and remove lantern nets: Aug. early Sept. 2011
- Major clean up effort to remove aquatic farm infrastructure from the water: November 2011
- Collaborative effort: City of Sitka, DNR, UAS, Sitka Tribe, SERC, SSSC, USFWS, USFS, BLM, USCG, local volunteers

D. vex: Decommissioning

2012 Survey and Distribution





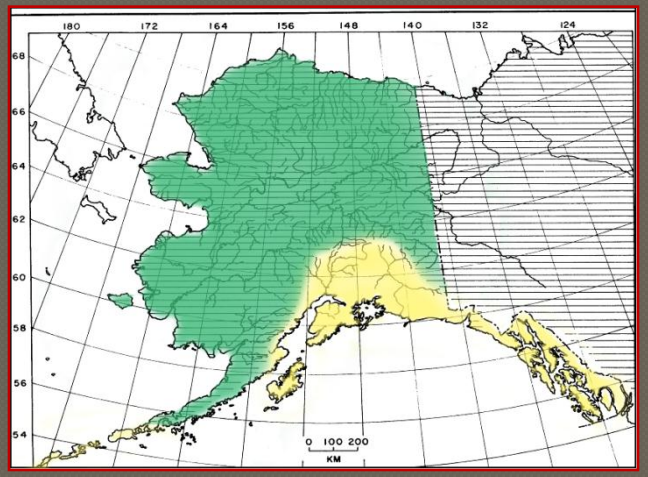


D. vex: Best Means for Success

- 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
- 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.



Range of native pike in Alaska

Area where pike are not native

- Known Impacts
  - Highly predatory on juvenile salmonids
  - Can reduce or eliminate wild and stocked fish

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.