Department of Fish and Game Invasive Species Status Report 2012

House Resources Committee
January 23, 2012

Tammy Davis, Project Lead
Invasive Species Program

Overview

- Invasive Species are…
- Pathways: How do they get to Alaska
- Prevention: Measures taken
- Species of Concern: Risk of introduction
- Species of Special Concern: Present
- Response Actions
- In the Works: Planning and Response

Invasive Species

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

- Not all nonnative species can sustain populations in their new environment. They require
  - an agreeable climate;
  - few to no natural predators, parasites or diseases;
  - an abundance of food plants or prey that lack protection against the newcomer; and
  - an ability to out-compete native species.

Impact on Native Species

- Invasive species:
  - Out-compete native species for habitat, food, space
  - Degrade or destroy habitats
  - Upset ecosystem functions, such as water and fire regimes
  - Limit recreational and subsistence activities such as fishing, hunting, wild-life viewing, boating, etc.

Anchorage Elodea

Photograph by USFWS

Pathways for Introduction

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

Prevention

- Regulations:
  - Prohibit intentional transfer and/or introduction of live fish, wildlife and aquatic plants between locations without a permit.
    - Illegal introduction may result in misdemeanor and fine
  - Prohibit use of live bait in freshwater.
  - Prohibit use of felt soled wading boots when angling in freshwater.
  - Regulate aquatic farming, farm products and certification of seed/spat imported for use in aquatic farm production.

Prevention

- Regulations, cont.
  - Maintenance of a Clean List of nonnative species that that can be possessed as pets (but not released into the wild) because they have proven to not be a threat to native species.
  - Prohibit harboring Muridae rodents (rats) on vessels, vehicles, aircraft.
  - Requires a control plan to be implemented when Muridae rodents are found in facilities.

Prevention

- Collaboration
  - ADF&G works closely with federal, state, local and tribal governmental agencies; nongovernmental organizations, stakeholder groups, and the public to inform, engage, and respond to invasive species.
- Inspections
  - Work with federal partners to ensure Custom and Border Protection agents are trained to complete inspections of boats entering the State.

Prevention

- Outreach
  - Public Service Announcements: Radio and television
  - Educational pamphlets, posters, books and cards
  - Presence at sportsmen's shows, festivals, workshops, trainings and forums
  - Provide materials to stakeholder groups and issue-centered bodies
- Prioritize actions based on risk, species, and pathways.

Aquatic Species of Concern: Risk of Introduction

- Atlantic salmon
- European Green Crab
- Marine Invertebrates: Tunicates
- Chinese Mitten Crab
- Zebra/Quagga Mussels
- New Zealand Mudsnails
- Rusty and Red Swamp Crayfish
- Cordgrass; *Spartina* spp.
- Hydrilla
- *Egeria Densa*
- Chytrid Fungus on Amphibians

Aquatic Species of Concern: Present in Alaska

- Northern Pike- an invasive species when outside its native range.
- *Didemnum vexillum* (D. vex) colonial tunicate
- *Elodea nuttallii* (Waterweed) freshwater weed

- Also present:
  - Botryllid tunicates
  - Didymosphenia geminata
  - Red-legged Frog

Monitoring for Invasive Species

- Platewatch- Pacific coast tunicate monitoring
  - Locations: Ketchikan, Sitka, Kachemak Bay, Seward, etc.
- European green crab monitoring
  - Locations: Ketchikan, Klackas Bay, Sitka, Gustavus, Kodiak, Homer, Seward, etc.
- Educational Programming for the public and school children

Northern Pike

- How do Northern Pike effect native/recreational species
- Systems within Southcentral effected
- Actions:
  - Control-netting
  - Change harvest regulations
  - Research movement patterns
  - Alexander Creek Project

Northern Pike

- Actions, continued
  - Eradications
    - Public scoping, permitting, application, monitoring
    - 5 successful thus far
    - 1 Large project in the works- Stormy Lake, Kenai Peninsula
- Strategic Planning
  - Prioritize future projects
  - Work with Military to assist with their eradication projects

Northern Pike

- Legislature allocated funding in 2009
- Alexander Creek: Salmon Restoration Efforts
  - Goal of project is to provide economic support for local, regional and state economies.
- Historically a productive system for native fish
  - Salmon Escapement goals
    - 1979: ~6,000 fish
    - 1989: ~3,500 fish
    - 1999:~4,000 fish
    - 2009: >1,000 fish
- Alexander Creek is prime pike habitat

Northern Pike

- Objectives of Project
  - Initiate an annual, large-scale gillnetting protocol in side channel sloughs of Alexander Creek to remove spawning northern pike resulting in 60 – 80% reduction in inseason catch rates in targeted areas
  - Document movement patterns of pike
  - Begin monitoring salmonids in the drainage for long-term evaluation of suppression effort

Northern Pike: What's Next

- Stormy Lake rotenone treatment and native fish restoration
- Control-netting
  - Cheney Lake
  - Alexander Lake/Alexander Creek
- Revise Northern Pike Management Plan
- Alexander Lake Project
- Target prioritized projects as able

Didemnum vexillum (D.vex)

Man-made embayment located adjacent to the Sitka airport and near the USCG base.

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

D. vex

- Life History
- First detected in Whiting Harbor June 2010
- USFWS funds ADF&G to study distribution and develop response plan.
- Commercial Fisheries Division divers complete surveys in 09/2010 and 01/2011.
- Outreach to aquatic farmers, public- local and statewide, stakeholder groups
- Restrict fisheries access and request the public avoid the area.

D. vex

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

D. vex: What is Next?

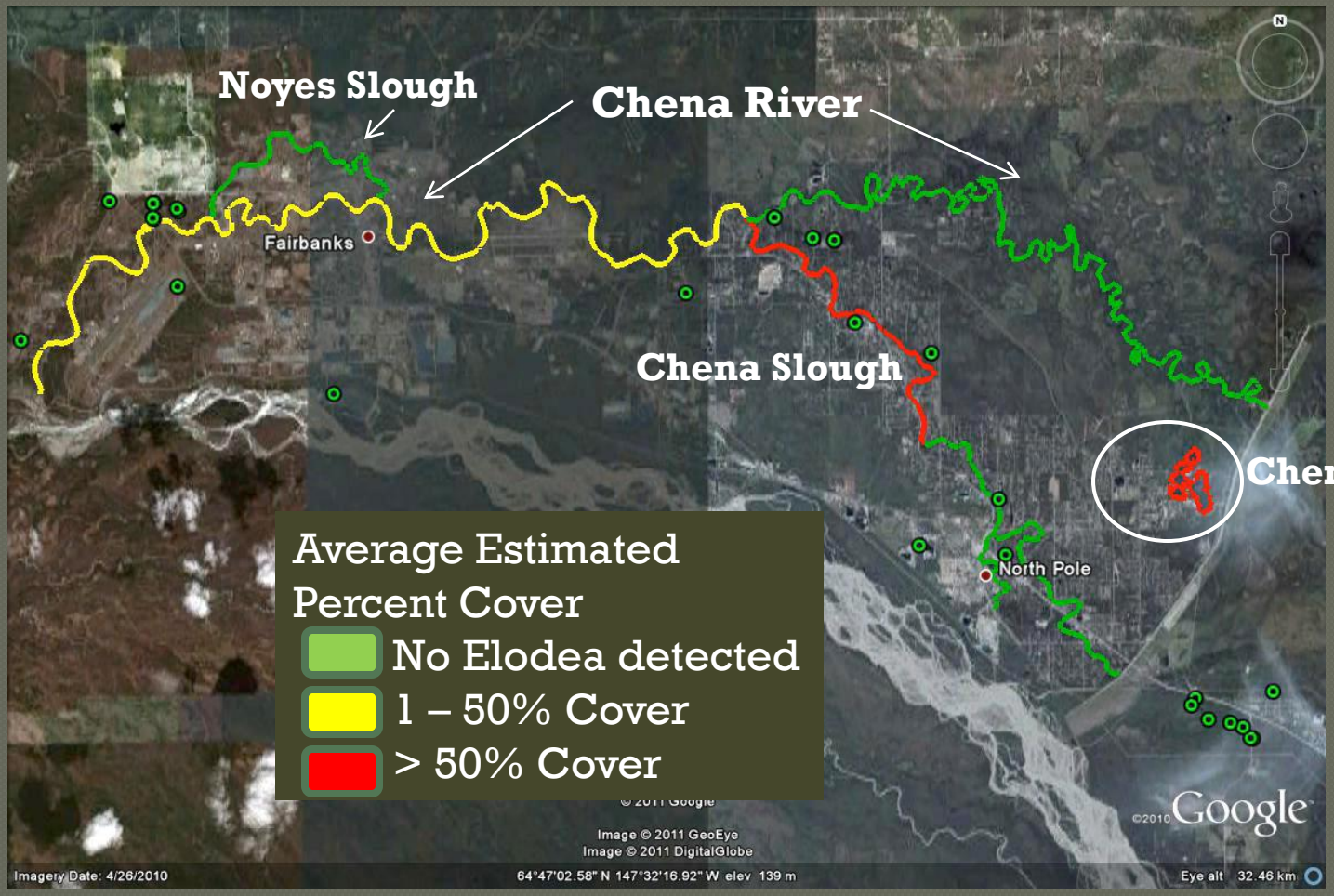
- Smithsonian Environmental Research Center (SERC) involved in studying the organism, life history, predators, eradication options for natural substrate
- Outreach floating materials as a pathway (docks, floats, etc.)

Elodea: Waterweed

- Life History
- First detected by USFS in September 2010 in Chena Slough.
- Fairbanks Soil and Water Conservation District takes on coordination of efforts.
- Legislative and USFWS funds support detection, outreach and response activities.
- Surveys in Fairbanks of 29 water bodies, collaborative effort, confirm *Elodea* in Chena Lake, and distinct populations in Chena River
- Chena Lake is part of the Fairbanks Rec area.

Elodea: Waterweed

FAIRBANKS DISTRIBUTION by PERCENT COVER



Slide- Fairbanks Soil and Water Cons Dist.

Elodea: Waterweed

- Shoreline/wading surveys in Southcentral:
  - 9 in Anchorage basin- 3 positive
  - 4 in Mat-Su area- all negative
  - 2 on Kenai Peninsula- negative
- USFWS confirmed waterweed in Sand, DeLong and Little Campbell Lakes

Elodea: Sand Lake

Pondweed and *Elodea* along a resident's shoreline

USFWS photo

USFWS photo

Many residents who live on Sand Lake are floatplane owners.

USFWS photo

Elodea: What's Next

- Fairbanks Soil and Water Conservation District has AKSSF funding to investigate mechanical control options
- Support continued surveys statewide
- Outreach to stakeholders importance of cleaning gear to avoid being a vector

Planning and Response

- Discussions with UAS to prioritize freshwater systems most suitable to sustain zebra/quagga mussels. Goal to implement Quagga Zebra Mussel Action Plan monitoring
- Education and Outreach campaign at high use/high risk systems in Alaska.
  - Audio, video, web-based and on-site messaging about species of concern identification, avoid spreading invasive species and reporting

Thank You

- Acknowledgement of partners
  - USFWS
  - USFS
  - NOAA
  - BLM
  - USCG
  - Sitka Tribe of Alaska
  - University of Alaska
  - Fairbanks Soil and Water Conservation District
  - City of Sitka
  - Smithsonian Environmental Research Center
  - Alaska SeaLife Center
  - SSSC
  - Volunteers who assist with invasive species actions throughout the state