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November 5, 2019

MEMORANDUM

TO: Fish and Wildlife Committee Members

FROM: Kendall Farley

SUBJECT: Washington State Aquatic Invasive Species Program Overview:
WDFW

BACKGROUND:

Presenter: Bill Tweit, Special Assistant, Fish Program, WDFW and Allen Pleus, Aquatic Invasive Species Coordinator, WDFW

Summary: This presentation will provide a briefing on Washington's Aquatic Invasive Species Program (AIS) including information on monitoring, prevention, enforcement, education and management for aquatic invasive species in fresh and salt water across the state of Washington. The presentation will provide information on Washington's ballast water management program, the statewide enforcement, education and inspection efforts, and the range of AIS threats the state is currently addressing. Agency efforts and partnerships with other entities will be covered.

Relevance: 2014 Fish and Wildlife Program emerging priority #4: Preserve program effectiveness by supporting: (1) expanded management of predators,... (3) and aggressively addressing non-native and invasive species.

Background: The WDFW Aquatic Invasive Species Unit is responsible for early detection monitoring efforts state wide to look for invasive freshwater mussels in Washington's waters. Quagga and zebra mussels pose a huge threat to the environment and economy and across the basin and Columbia Basin states and Canadian provinces are working together to keep invasive mussels out of the Pacific Northwest. However, no effort to prevent invasive mussels is perfect and it is possible that invasive mussels could slip into the Basin. Invasive mussels aren't the only threat to fish and wildlife in the Columbia River Basin. Northern pike (*Esox lucius*) are non-native and considered to be invasive species in parts of British Columbia (where non-native), in all of Washington, and all of Oregon.

In Washington state, northern pike were first identified in the Columbia River in 2004 when they were found in the reservoir behind Box Canyon Dam. Since then, northern pike have continued their spread and are now two dams away from important Columbia River salmon spawning habitat, where billions have been invested in salmon and steelhead recovery.

Washington Department of Fish and Wildlife

AQUATIC INVASIVE SPECIES UNIT OVERVIEW

Presented to
NWPPCC Fish & Wildlife Committee

Allen Pleus, AIS Unit Manager

Bill Tweit, Special Assistant

November 12, 2019



Mission

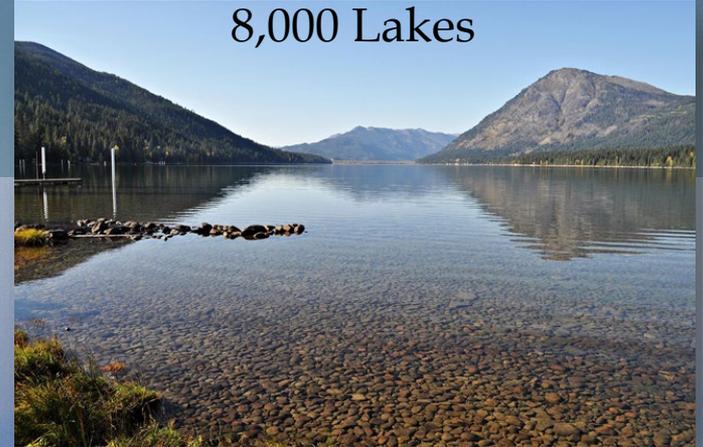
The Washington Department of Fish and Wildlife's Aquatic Invasive Species (AIS) Unit serves Washington's citizens by protecting, restoring, and enhancing fish and wildlife and their habitats, while providing sustainable and wildlife-related recreational and commercial opportunities.

AIS Prevention Benefits

3,500 Miles Coastline



8,000 Lakes



70,000 Miles Rivers



Healthy Ecosystems

46 endangered, threatened, and sensitive wildlife species + 87 Candidates

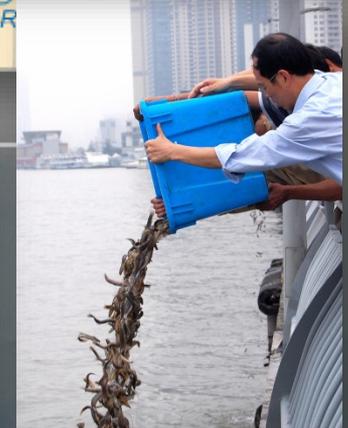
AIS Pathways



NUTRIA . . . NEWEST OPPORTUNITY

New fur-bearing animal now being bred in U.S. Offers huge profits to breeders. This fur is next to Mink NOW in price and will soon surpass it. 15 to 20 young per year. Most easily and economically raised animal known. 1 1/4¢ per day to feed. ANY CLIMATE, disease resistant. The Cabana Marrone strain is obtainable ONLY through Cabana Nutria, Inc. and its authorized dealers and distributors. For free booklet and address of Cabana ranch nearest you write:

CABANA NUTRIA, INC. Dept. 27
636 West Lemon Avenue, Arcadia, California



AIS Unit Core Functions

- Prevention
- Early detection
- Rapid response
- Infested site management
- Local/regional coordination
- Education/outreach
- Enforcement



Zebra &
Quagga
Mussels



Ballast
Water



European
Green Crab

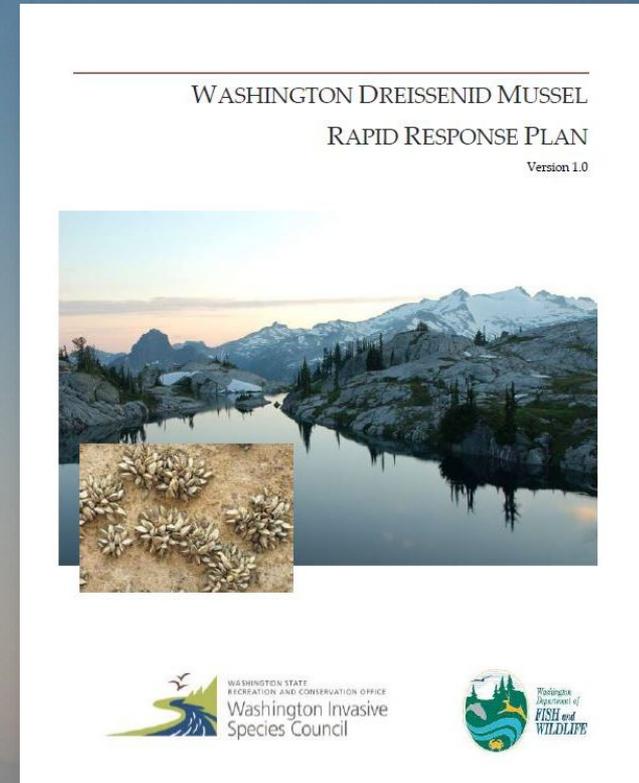


Northern
Pike

Zebra & Quagga Mussels

Management Actions:

- **Watercraft Inspections**
 - WDFW Enforcement Lead
- **Watercraft Decontaminations**
 - WDFW Prevention Lead
- **Early Detection Monitoring:**
 - Plankton, substrate, shoreline, eDNA, water quality, ponar
- **Rapid Response**
 - State plan
 - Cooperative exercises



Watercraft Pathway: Inspections

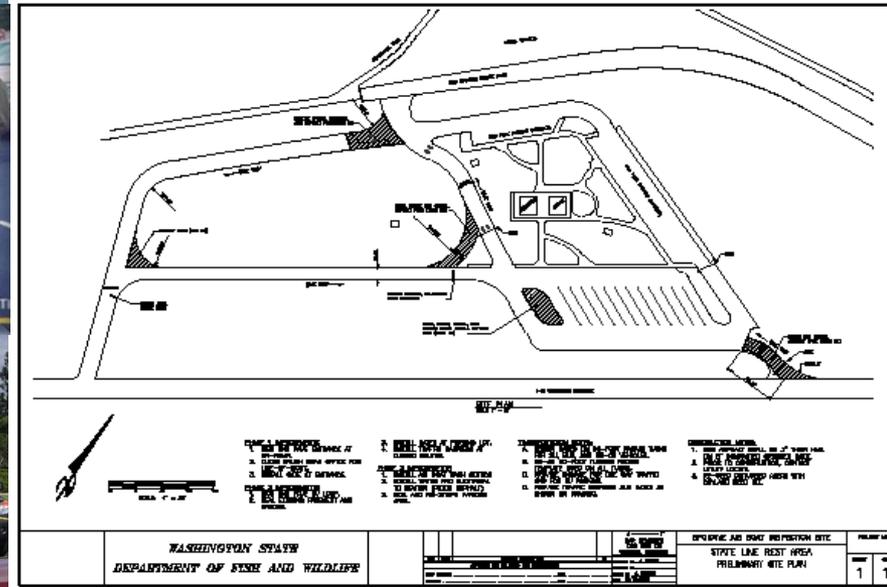
- Operated by WDFW Enforcement Program
- Two Check Stations: Spokane and Plymouth
- Spokane is Flagship Check Station
- Non-enforcement staff set-up & manage
- WDFW Officers enforce mandatory stops
- Use State \$'s to leverage Federal WRDA \$'s



Metric	2016	2017	2018	2019
Check Station days	86	216	469	559
Boats Inspected	2,180	9,054	24,645	32,390
Mussel Boats	0	0	4	19

Watercraft Pathway: Inspections

2018
Flagship
Station
Spokane



Watercraft Pathway: Inspections

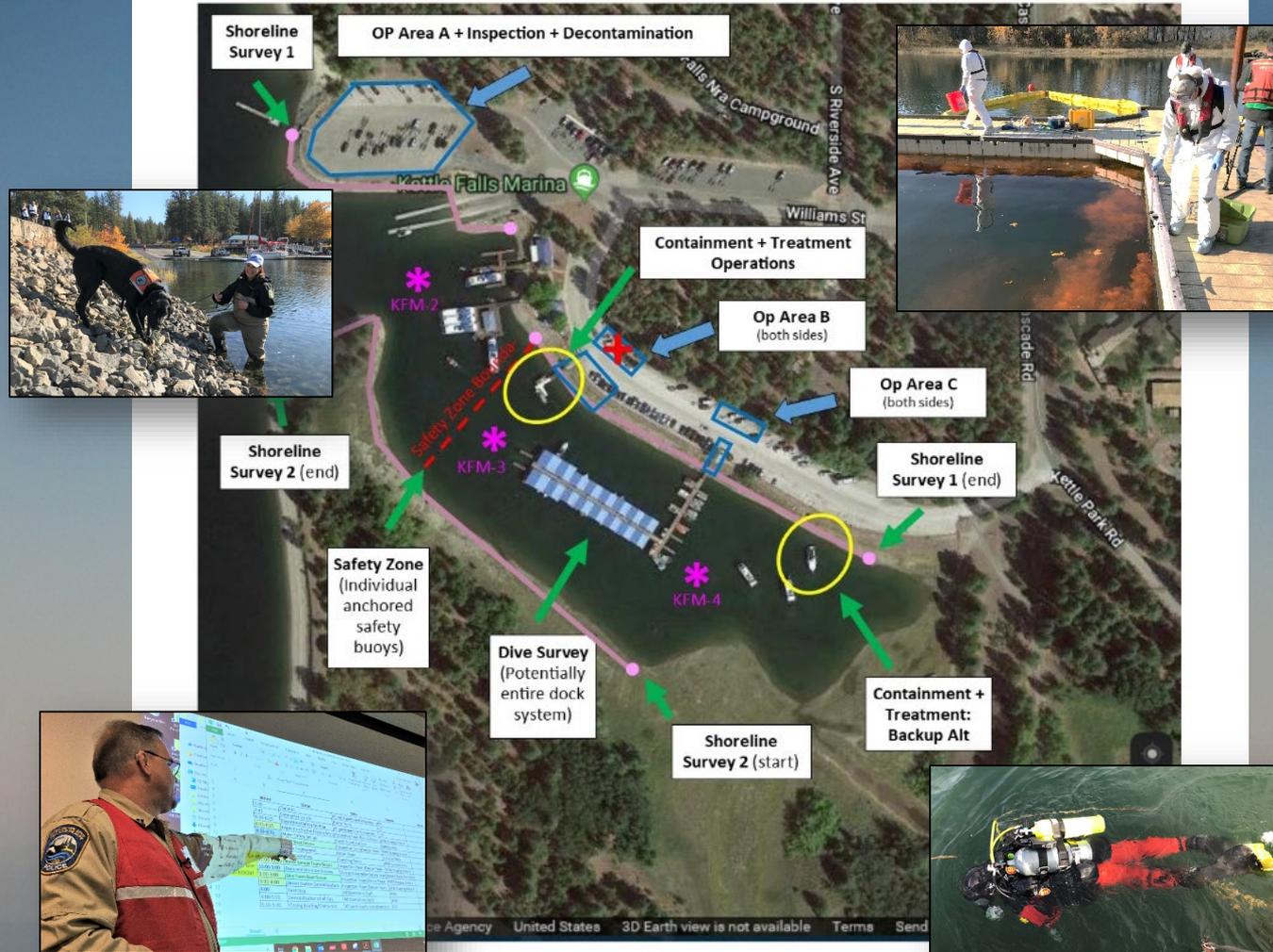
WDFW Mussel Dog!



“Puddles”!

- Bureau of Reclamation Grant
- Rescue dog
- Trained all ZQ life stages detection
- Boat and shoreline ZQ inspections
- Stationed in Spokane
- >100 media outlet coverage
- WDFW Facebook and Instagram pages (puddles_wa)
- Ed/outreach program

Kettle Falls Marina Rapid Response Exercise Planning Map



Field Operation Objectives

1. Watercraft Inspections
2. Watercraft Decontaminations
3. Containment (barrier)
4. Treatment (Non-Toxic)
5. Dive-Based Dreissenid Surveys
6. Boat-Based Dreissenid Surveys
7. Shoreline Dreissenid Surveys-Canine
8. USCG Safety Zone

* KFM-1 = Boat-based survey sites and site numbers

+ = First Aid Station

See other side for staging and containment/
treatment location details

Participants:

- WDFW
- Rec & Conservation Office
- LR Nat Park Serv.
- US Bureau of Reclamation
- Alberta Envir & Parks
- US Coast Guard
- US Army Corps of Engineers

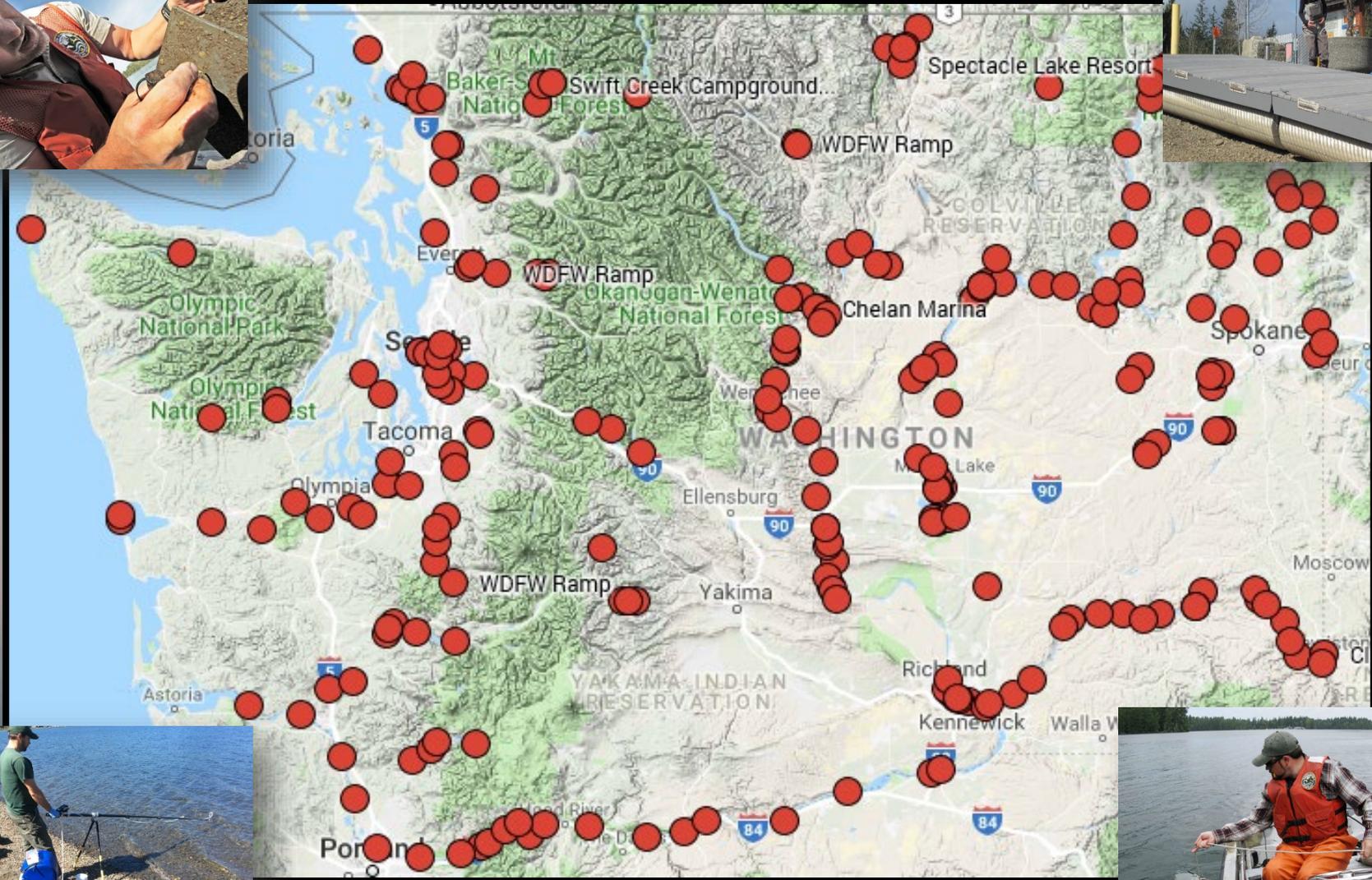
Observers:

- Colville Conf Tribes
- Spokane Tribe
- Col River Basin Team
- Reg Dist of Okanagan-Similkameen (BC)
- Rep Maycumber
- Office of Sen McMorris-Rodgers
- House Republican Caucus

October 23, 2019

Bureau of Reclamation Grant

Zebra & Quagga Mussels



225 Early Detection Monitoring Sites

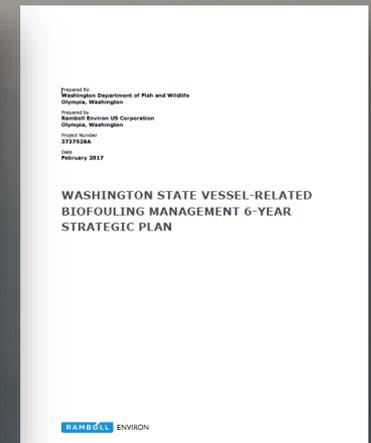
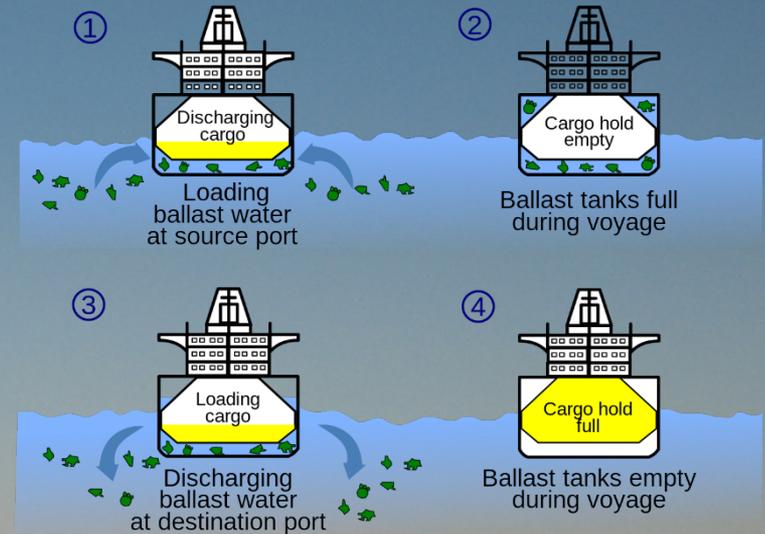
ZQ Partnerships

- Lake Roosevelt National Park Service
- Colville, Spokane and Kalispell Tribes
- CRITFC
- Mid-Columbia PUDs
- City of Bellingham

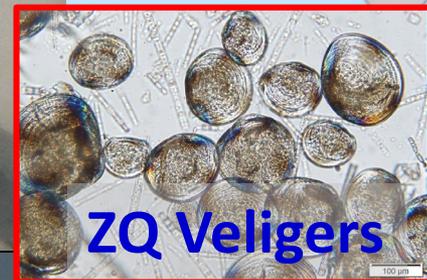
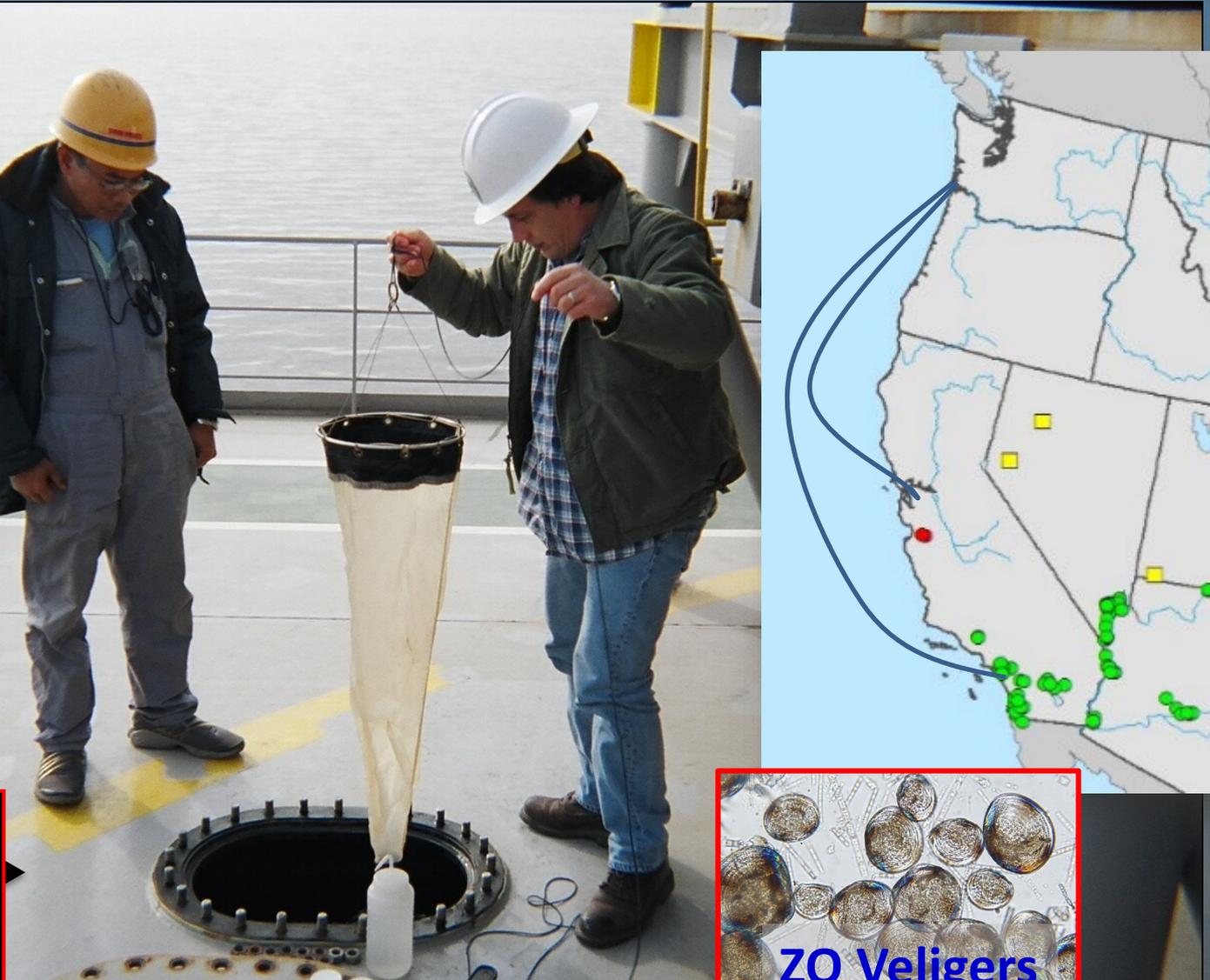
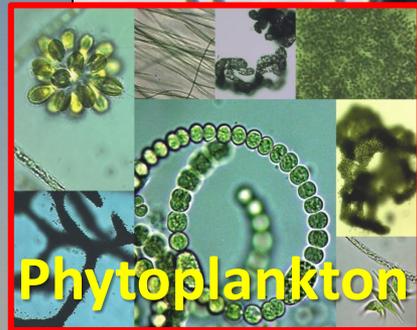
Ballast Water Pathway

Management Actions:

- Vessel Inspections
- Data Management
- Stakeholder Consultation
- Ballast Water 6-Year Strategic Plan (2017)
- Biofouling 6-Year Strategic Plan (2017)
- Vessel Incidental Discharge Act Negotiations/ Implementation



Ballast Water Pathway Risks



European Green Crab Risks

**Eelgrass and estuary destruction
affecting salmon recovery**

**Shellfish predation: Dungeness
crabs, mussels, clams and oysters**



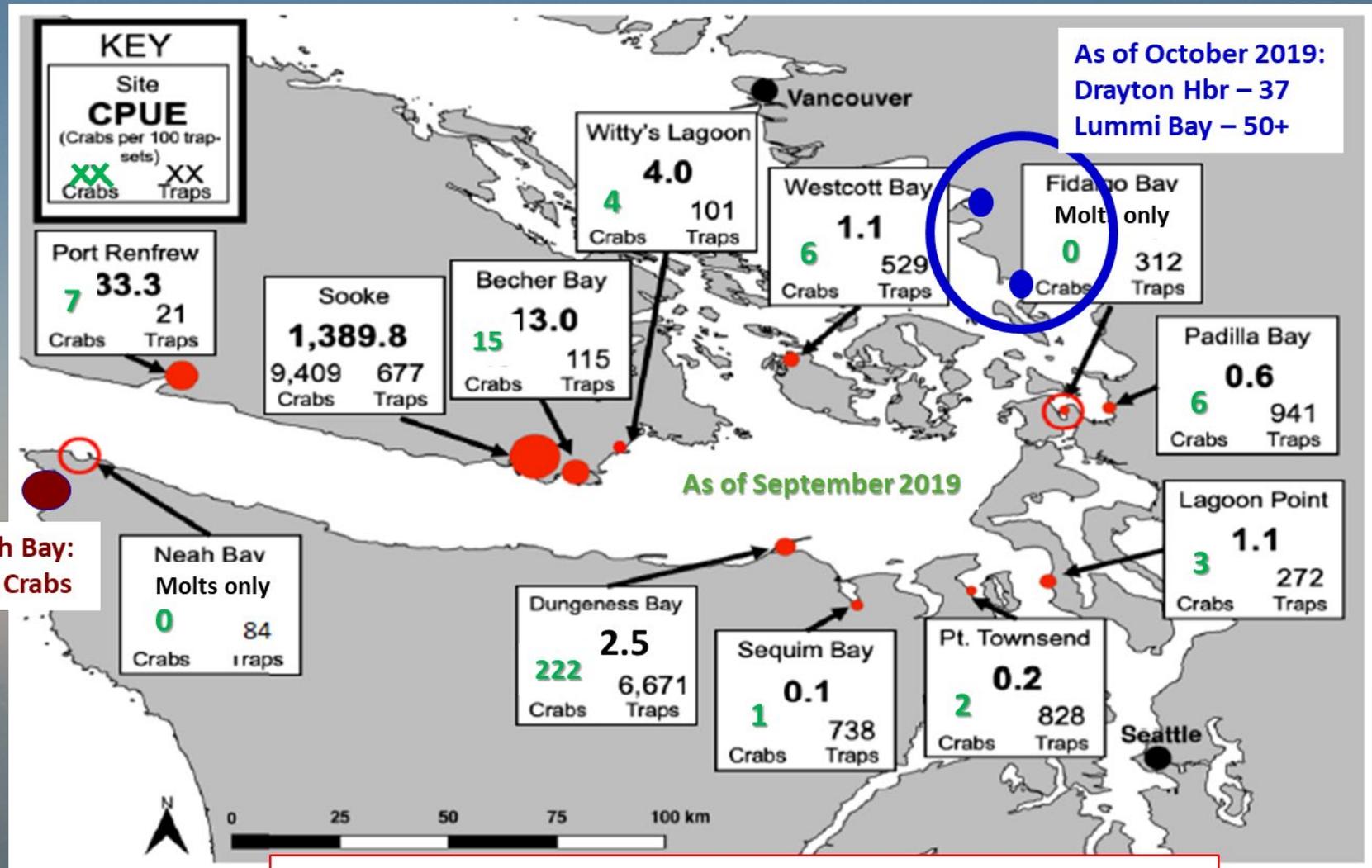
Pre EGC: 2010

Post EGC: 2013

Photos by Hillary Neckles/U.S. Geological Survey

Eelgrass destruction in Maquoit Bay, Maine, before and after invasion of dense European green crab populations.

European Green Crab



Green crab remain very rare at most sites

Northern Pike

Known Risks and Potential Impacts



Fish Harvest

Tribal Fisheries

- Commercial harvest value estimated at \$48.9 million in 2006.
- \$48.9 million does not reflect an economic value placed on personal use or ceremonial and subsistence use.

Commercial Fisheries

- Commercial harvest valued at \$65.1 million in 2006.

Recreational Fisheries

- 428,480 recreational anglers spent an estimated 904.8 million in 2006 on fishing-related equipment and trip-related items.

Species Recovery

- More than \$731 million invested in salmon recovery since 1991.

Fish Hatchery and Management Investment

- More than \$20 million invested annually by Washington Department of Fish and Wildlife.

Hydropower Operating Permit Requirements



State of Washington

2018 Pacific NorthWest Economic Summit | Invasive Species Working Group

Other AIS

African clawed frog



Chytrid Fungus



Aquatic Plants



Spiny Water Flea



Rusty Crayfish



Japanese Tsunami Marine Debris



VHS Fish Disease



Freshwater Jellyfish



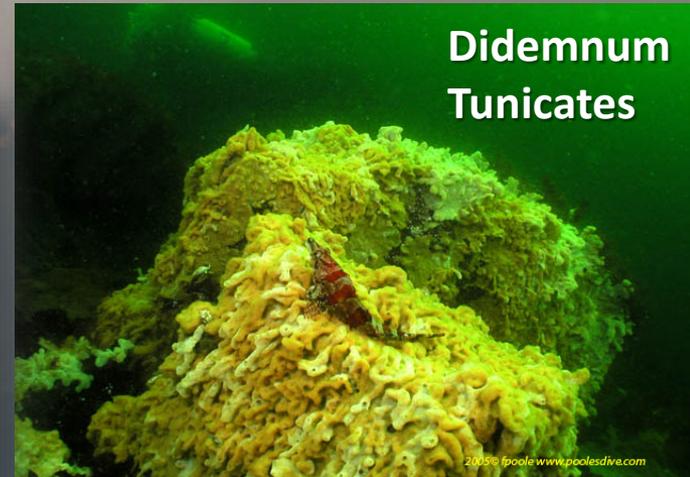
Didymo



Snapping Turtles



Didemnum Tunicates



Nutria



2017-19 AIS Biennium Budget

➤ Base Revenues:

- **\$1.0 million \$2 resident boater fee** (AIS Prevention & Enforcement)
- **\$0.64 million ALEA + USFWS grant** (Ballast water program)

➤ New User Fee:

- **\$0.8 million non-resident boaters, seaplanes, commercial transporters** (projected revenue)

➤ Grants/Contracts:

- **\$0.08 PSMFC** (European green crab)
- **\$0.59 US BOR** (Zebra/quagga)
- **\$0.85 US ACE** (Zebra/quagga)
- **\$0.50 RCO** (Decon stations)

Questions?

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The next AIS
often arrives
unexpectedly

Asian Carp

