Washington Department of Fish and Wildlife
Aquatic Invasive Species

Sediment Management Annual Review Meeting
Sep 30, 2020
Seattle District Office
Washington Department of Fish and Wildlife (WDFW) Aquatic Invasive Species (AIS) Unit

Mandatory Aquatic Conveyances Inspections Team

- 1 Captain Western WA
- 1 Sergeant Spokane
- 9 Seasonal inspectors

Prevention Team

- 1 Coordinator Olympia
- 3 Biologist Olympia
- 1 Technician Spokane

Ballast Water Team

- 1 Inspector La Connor
- 1 Inspector Ridgefield
- 1 Support Olympia
Washington Invasive Species Council Top 50

INVASIVE SPECIES MANAGEMENT PRIORITIES

1. Apple maggot
2. Brazilian elodea
3. Brown marmorated stink bug
4. Butterfly bush
5. Common crupina
6. European chaffer
7. Hedral, silver
8. Flowering rush
9. Garlic mustard
10. Hydrilla
11. Infectious amphibian diseases
12. Invasive frogs and crayfish
13. Invasive knapweeds
14. Invasive knotweeds
15. Invasive milfoil
16. Invasive tunicates
17. Invasive zooplankton
18. Leafy spurge
19. Mediterranean white snail
20. New Zealand mud snail
21. Northern pike
22. Nutria
23. Peacefulwaterweed
24. Phragmites
25. Poison hemlock
26. Puncturevine
27. Purple loosestrife
28. Rush skeletonweed
29. Scarlet lily beetles
30. Scotch broom
31. Scotch thistle
32. Spurtis
33. Spotted wing drosophila
34. Tamarisk
35. White nose syndrome/PD
36. Caulerpa
37. Gypsy moths
38. Invasive crabs
39. Japanese beetle
40. Northern crawfish
41. Overbite clam
42. Zebra and quagga mussels
43. Asian carp
44. Emerald ash borers
45. Invasive fish diseases
46. Invasive longhorned beetles
47. Kudzu
48. Onion leaf miner
49. Sirex woodwasp
50. Starry stonewort
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50. Starry stonewort

Learn more about invasive species by visiting invasivespecies.wa.gov and wise.wa.gov
Prevention Team

Top Priority

Zebra & Quagga Mussels

Second Priority

European Green Crab

Everything Else

African clawed frogs (ACF)
New Zealand mudsnails (NZMS)
Other AIS
Decontaminations
Permitting/regulations
Outreach and education
Technical assistance
WDFW AIS Regulations

• Lead agency for managing invasive species of the animal kingdom statewide RCW 77.135.020

• Prohibited and regulated species RCW 77.135.040
  – Prohibited Level 1 worst of the worst zebra and quagga mussels
  – Prohibited Level 2 none
  – Prohibited Level 3 NZMS, ACF, etc.
    • Difference between the levels is Response.
  – Regulated Type A all nonnative fish classified as food and game
  – Regulated Type B all non-native aquatic animals not listed previously, aquarium and live food markets
  – Regulated Type C all non-native aquatic animals do not meet criteria for Type B

• WDFW Habitat Program lead agency for issuing Hydraulic Project Approval permit to conduct work in or near state waters RCW 77.55
  – The Habitat program notifies the AIS unit when the process needs to be upgraded, but Dredging projects should contact WDFW Habitat Program and the AIS
State Plant Regulations

• Washington State Department of Agriculture
  • Lead agency for managing spartina and purple loosestrife
    RCW 17.26.015

• Washington State Noxious Weed Control Board
  • Individual counties managing weeds RCW 17.10

• WDFW aquatic conveyance clean and drain requirements RCW 77.135.110
  • Visible native and nonnative aquatic animals, plants, or other organisms and raw water
Federal Lacey Act
18 USC 42-43
16 USC 3371-3378

- Importation and interstate transport of animal species
- Regulation of transport or use within a state is the responsibility of each state
Potential AIS Concerns for Dredging Projects

• All AIS
  – Animals and plants

• AIS mechanism for distribution?
  – Fragmentation
  – Parthenogenesis
  – Asexual
  – Sexual

• Are there known AIS in dredging project?

• Is the dredged material from freshwater going to marine?
  – During transport risk of AIS escapement?
  – Dredged material going to upland site?

• Equipment decontamination?
Capitol Lake Dredging Project

• NZMS present
• If dredged material placed in Puget Sound...
• Issues
  – Parthenogenic clones
  – High tolerance for salinity (established Columbia River Estuary)
  – Escapement from transport
NZMS Invasive History United States

Present

2000

1997

Map showing the spread of NZMS in the United States with specific dates and states highlighted.
NZMS In Washington

2000

1997
NZMS Potamopyrgus Antipodarum

- Native to New Zealand
- Live for about 1 year
- Very small less than 6 mm
- Nocturnal grazers
- Tolerant of temperatures 34° C and salinities up to 15ppt
- Densities up to 500k m²
NZMS Potamopyrgus Antipodarum

- Reach sexually maturity at 3 mm
- Western population parthenogenic clones – it only takes one female
- Spawning in summer and autumn
- Brood 20-120 embryos
Identification

- Full grown shell, fairly elongate with 5-6 whorls, maximum length usually 5mm, occasionally 6 mm
- Shell is usually horn colored but ranges from light brown to black and may be encrusted with algae, etc.
- Operculum – only visible on live snails
- Dextral – opening to the right of the animal
New Zealand mudsnail

Lymnaeidae

Fluminicola sp.

Juga sp.

Credit: King County Water and Land Resources
NZMS Invasive Risks

- Consume primary production
- Compete with native grazers and detritivors
- Alter food sources for invertebrate and vertebrate predators
- Dominate secondary production in food webs
- Less preferred/nutritious prey for native fish
Predators

Parasitic flatworm in New Zealand

Signal crayfish
Signage (NZMS at site)

**WARNING**
ACTIVE INFESTATION

*Prevent the spread of harmful New Zealand mudsnails!*

- **CLEAN** off watercraft, trailer, motor, tackle, boots, and gear by washing and scrubbing on-site.
- **DRAIN** all water from boat, motor, tackle, boots, and gear before leaving the area.
- **DRY** for at least 3 days anything that has been in the water, or freeze small items for 1 day.

- New Zealand mudsnails displace animals that are food sources for salmon, steelhead, and trout.
- Mudsnails attach themselves to watercraft, plants, debris, boots, shoes, and nets.
- Mudsnails live in brackish and fresh water. They are often found on mud, rocks, plants, and wood.
- New Zealand mudsnails are up to 1/8 inch long, cone-shaped, and have a light to dark brown or black shell with 5-6 whorls and a retractive cover.

To report invasive species, call 1-866-INVADER

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**Alert!**

*This water contains invasive New Zealand mudsnails (NZMS).*

**Stop! Avoid! Decontaminate!**

- Any boat or gear used in NZMS-infested water must be decontaminated for 24 hours before being moved to another body of water.
- Watercraft must be thoroughly cleaned and disinfected at sites designated for cleaning.
- Watercraft must be thoroughly disinfected after each use.
- Watercraft must be rinsed off before being moved to another body of water.

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**Attention dog owners!**

- Dogs must be kept on a leash and in a washable bag when in contact with water.
- Dogs must be rinsed off before being moved to another body of water.

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**Decontamination Procedures**

- Dogs must be rinsed off before being moved to another body of water.
- Watercraft must be thoroughly disinfected after each use.
- Watercraft must be rinsed off before being moved to another body of water.

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**Alert!!**

*These waters contain New Zealand Mud Snail (NZMS)*

**Prohibited**

- Remove ALL aquatic plants and animals
- Drain ALL water
- NEVER empty aquariums.
Protect Your Waters
From Aquatic Invasive Species

BEFORE and AFTER launching boat

CLEAN
Glean interior/exterior of boat, trailer, & vehicle of any organic matter such as aquatic plants & mud. Dispose of organic matter & unused bait in trash.

DRAIN
Drain bilge, ballast, wells & buckets before you leave area. Keep bilge plug out during transport.

DRY
Dry equipment before launching watercraft into another body of water.

Livewell
Anchor rope
Trailer
Ballast
Engine
Bilge
trim tabs

For information on FREE boat inspections, call 1-888-WDFW-AIS (933-9247) or visit wdfw.wa.gov/ais.

Before you launch a boat that is not registered in Washington, you MUST purchase an Aquatic Invasive Species Prevention Permit.

How to buy:
- Online at fishhunt.dfw.wa.gov
- Find a license dealer near you at wdfw.wa.gov/licenses/dealers

Funds from permit sales support efforts to keep Washington’s waters free of aquatic invasive species and manage infestations when prevention fails.

Avoid Citations or Fines
Failure to possess AIS Prevention Permit — Infraction — RCW 77.05.305
Possession of aquatic plants not meeting quarantine requirements — Infraction — RCW 77.05.210
Introduction or possession of prohibited species — up to class C felony — RCW 77.05.305.018

Signage (general AIS)
Pathways

Restoration

Surveyors

Hikers

Bucket Biologist
Pathways

- Rental Docks
- Commercial Haulers
- Commercial Fishing Gear
- Ballast Water
Pathways

Aquaculture

Pet Trade

Schools

Fish Stocking
Pathways

Float Planes

Mercy Releases

Anything that touches the water

Live Food Trade
Starting a Dredging Project

• Step 1 Contact WDFW
  – Contact AIS Unit
    • https://wdfw.wa.gov/species-habitats/invasive
  – Apply for HPA
    • https://wdfw.wa.gov/licenses/environmental/hpa
Resources and Tools

• United States Geological Survey Nonindigenous Aquatic Species National Database
  – https://nas.er.usgs.gov/

• WDFW AIS Decontamination Protocol
  – https://wdfw.wa.gov/publications/01490
Aquatic invasive species

If you work or play in Washington's many waterways, you may be unknowingly spreading aquatic invasive species destructive to the state's environment and economy. But you can also be a part of the solution, helping to stop or slow the spread of these damaging species.

The Washington Department of Fish and Wildlife encourages the public to report possible invasive species. You can report non-native, invasive species through the Washington Invasive Species Council. Please call WDFW's Aquatic Invasive Species hotline with any questions at 888-WDFW-AIS.

More information

- Search for aquatic invasive species
  Use this search function to find information on non-native aquatic animal species, including biology and current classification.

- Aquatic invasive species prevention permits
  These permits are required for operators of watercraft not registered in Washington, seaplanes, and commercial transporters of specified vessel types.

- Preventing the spread of invasive species
  Learn the proper techniques to help prevent destructive invasive species from spreading in Washington, or decontaminate potentially infested gear.
App Report AIS

http://www.invasivespecies.wa.gov/report.shtml
Questions

WDFW AIS Unit
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