



2021 Zebra/Quagga Mussel Early Detection Monitoring Plan

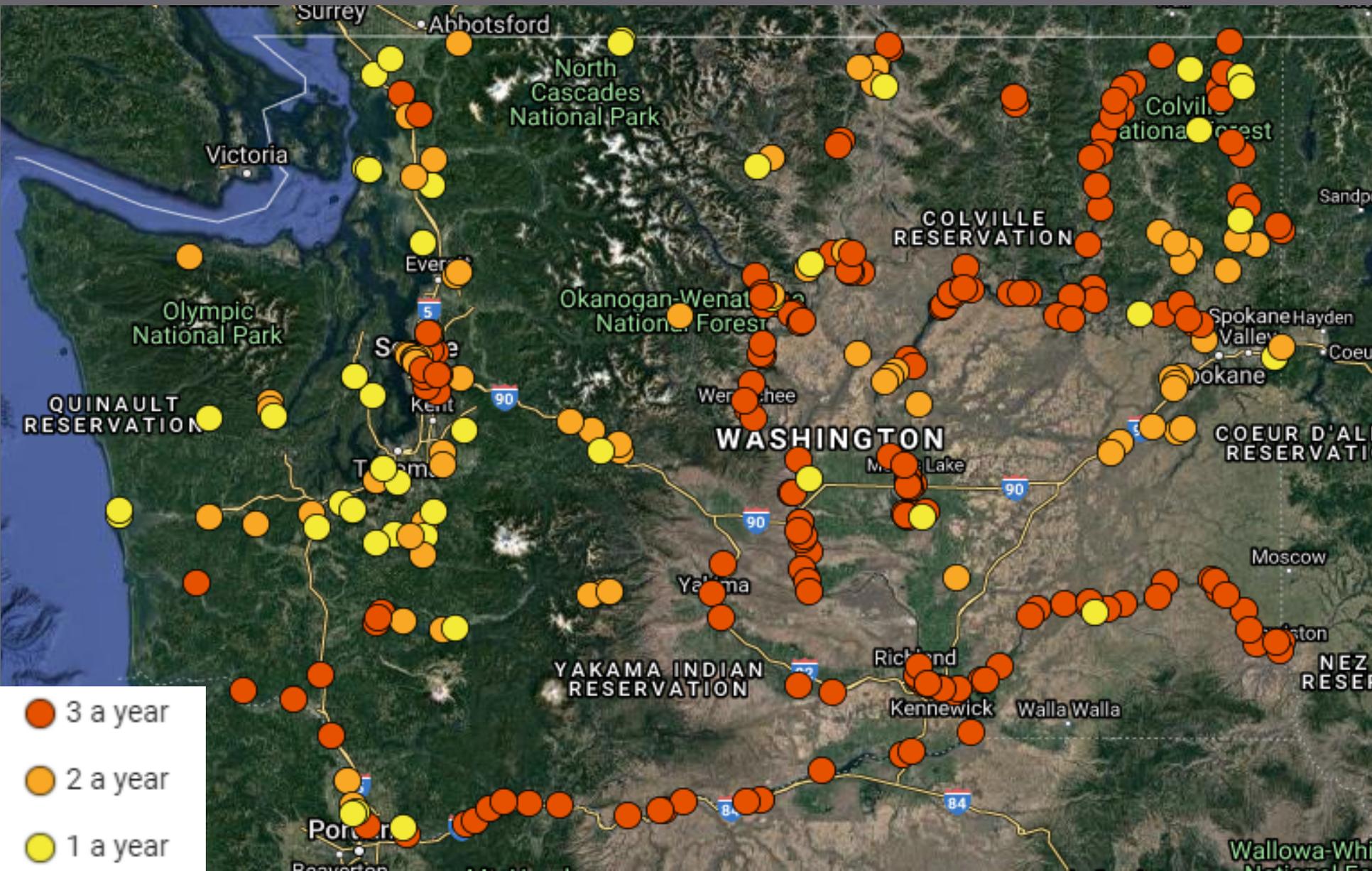
Columbia River Basin Team Meeting
June 8, 2021

Washington Department of Fish and Wildlife
Aquatic Invasive Species Unit
Jesse Schultz

Co-Partners

Sampler	Water Body	Reservoir
Chelan County PUD	Columbia River	Entiat/Rocky Reach
Confederated Tribes of the Colville Reservation	Columbia River	Roosevelt and Rufus Woods
Dougals County PUD	Columbia River	Pateros
Grant County PUD	Columbia River	Priest Rapids and Wanapum
Seattle City Light	Pend Oreille River	Boundary
Snohomish County PUD	Sultan River	Spada
Spokane Tribe of Indians	Columbia River	Roosevelt

2021 Sites (128 water bodies 303 sites)



Continued Baseline of all Water Bodies in Washington

- Site information for risk assessment
- Water quality
 - Dissolved calcium
 - pH
 - Salinity
 - Temperature
- Surface visual shoreline survey
- AIS signage



ATTENTION BOATERS

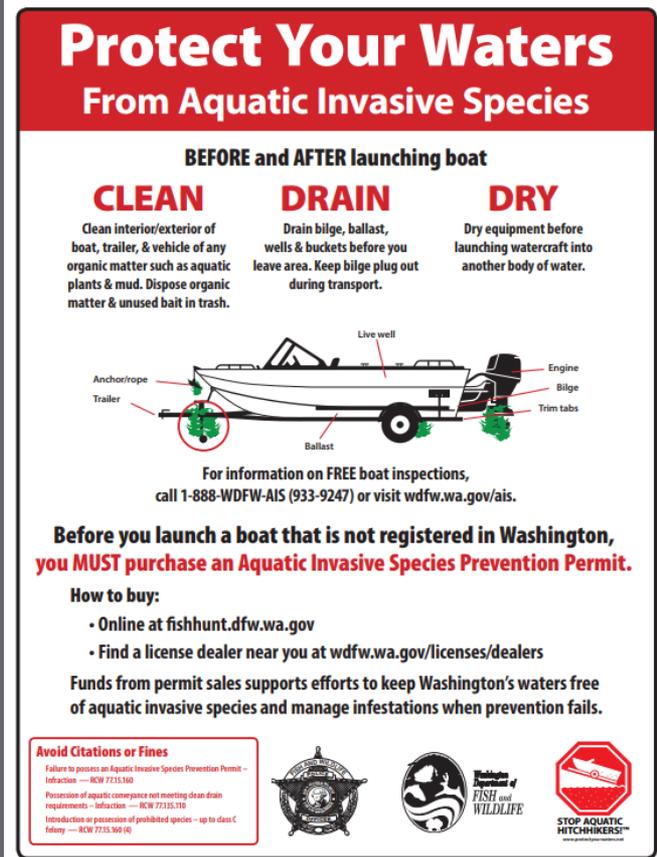
All boats registered outside of Washington State MUST have an Aquatic Invasive Species Prevention Permit BEFORE launching in Washington waters.

Failure to have permit may result in \$150 fine. RCW 77.15.160

How to buy:

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

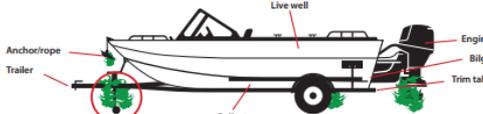
Funds from permit sales supports efforts to keep Washington's waters free of aquatic invasive species and manage infestations.



Protect Your Waters From Aquatic Invasive Species

BEFORE and AFTER launching boat

CLEAN	DRAIN	DRY
Clean interior/exterior of boat, trailer, & vehicle of any organic matter such as aquatic plants & mud. Dispose organic matter & unused bait in trash.	Drain bilge, ballast, wells & buckets before you leave area. Keep bilge plug out during transport.	Dry equipment before launching watercraft into another body of water.



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 supports efforts to keep Washington's waters free of aquatic invasive species and manage infestations when prevention fails.

Avoid Citations or Fines

- Failure to possess an Aquatic Invasive Species Prevention Permit - Infraction — RCW 77.15.160
- Possession of aquatic conveyance not meeting clean drain requirements - Infraction — RCW 77.15.170
- Introduction or possession of prohibited species - up to class C felony — RCW 77.15.360 (4)



Early Detection Zebra/Quagga Mussel Monitoring

Sample Method	Goal
Horizontal and Vertical Plankton Tows	1,650
Artificial Substrates	700
Surface Visual Shoreline	850
Dissolved Calcium	925
Water Quality (pH, salinity, and temperature)	925
eDNA	300
Sediment Samples	700

iForms



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⊗ AIS Mussel Monitoring Save

Site ID * >

Date * >

Samplers * >

Additional Samplers * >

Location >

Latitude (Read-Only):

Longitude (Read-Only):

Substrate Presence

Absent	N/A	Present
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Substrate Attached To >

Redeployed Substrate?

Yes	No	N/A
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Substrate Condition

Damaged	Intact	N/A	Out of Water
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Mussel Presence

Absent	N/A	Present
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Other Organisms Present >

Substrate Depth (m) >

Total Water Depth (m) >

Secchi Disk Depth (m) >

pH

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Salinity (ppt) >

Temperature (C) >

Calcium Sample Taken?

Plankton Tow (1) >

Vertical Depth	Tow Type	Tow Sample
		> ⌚

Visual Shoreline >

eDNA?

eDNA Scanner

 Tap to Scan >

eDNA Sample Number

* >

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eDNA Sample Number

* >

Where Filtered? >

Sample Method >

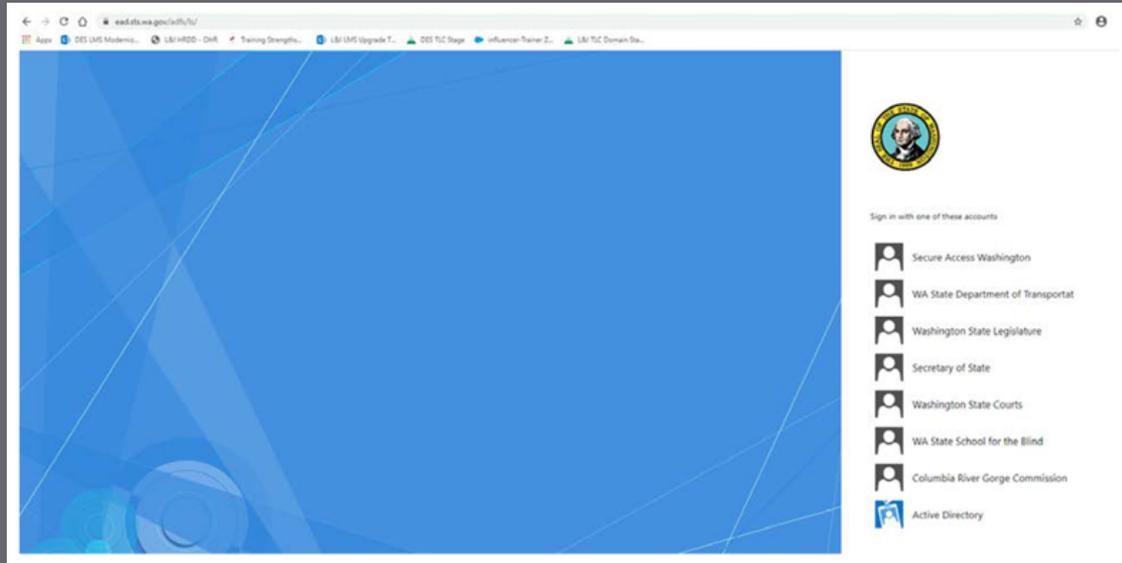
Liters Filtered? >

Negative Control Liters Filtered? >

Ponar?

Done

The App!



Washington Department of Fish and Wildlife

Apps Portal

Site

Site #	County	Latitude	Longitude	WDFW Region	Waterbody	Mountain Range	Reservoir	Site Description
14	Clark	45.577061000000	-122.38272900000	5	Columbia River	Western	N/A	Port of Camas/Washo

Substrate (22)

Plankton Tow (25)

Visual Shoreline (13)

eDNA (4)

Water Quality (23)

Ponar (6)

+ Substrate

Aug. 10th, 2020

Teams

- 2020
- May 18 – October 30
- Two 2-person teams
- Eastern WA Spokane Team
- Western WA Olympia Team
- Monday-Thursday 100% in field monitoring

- 2021
- May 3 – October 30
 - Same teams as 2020, but now some staff permanent
- July 5 – October 30 adding Central WA Ellensburg/Yakima Team! Most monitors WDFW has ever had!
 - Increase effort and samples
 - Increase team moral
 - Schedule flexible for time to complete office work

Northern Pike or Grass Pickerel



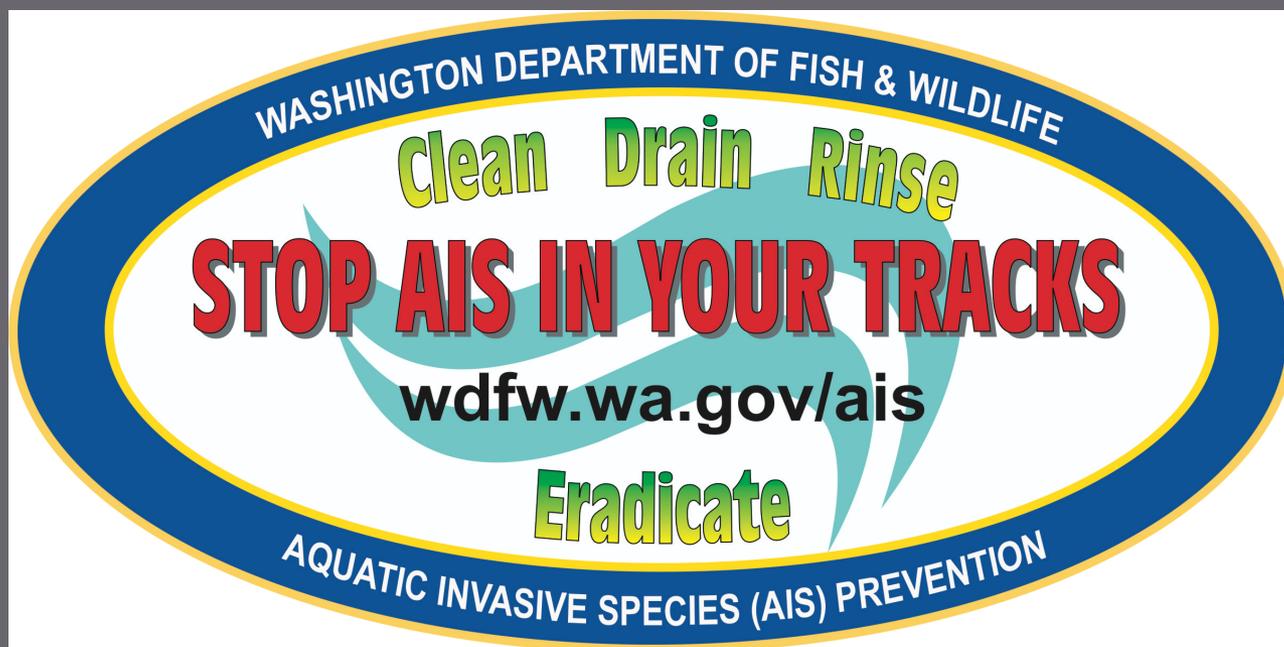
- Columbia River/Lake Wallula Kennewick, WA Benton County
- Reported May 10, 2021
- Given to WDFW Genetics Lab June 2, 2021 to analyze

Northern Pike Potholes Reservoir State Park Grant County



- October 12, 2020 eDNA positive detection
- March 23, 2021 conducted 5 eDNA samples all negative

Thanks



WDFW AIS Unit

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