

Early Detection Zebra and Quagga Mussel Monitoring Program Update

Columbia River Basin Team Meeting
June 4, 2024

Jesse Schultz, Prevention Section Lead Aquatic Invasive Species Unit



Early Detection Monitoring Partners

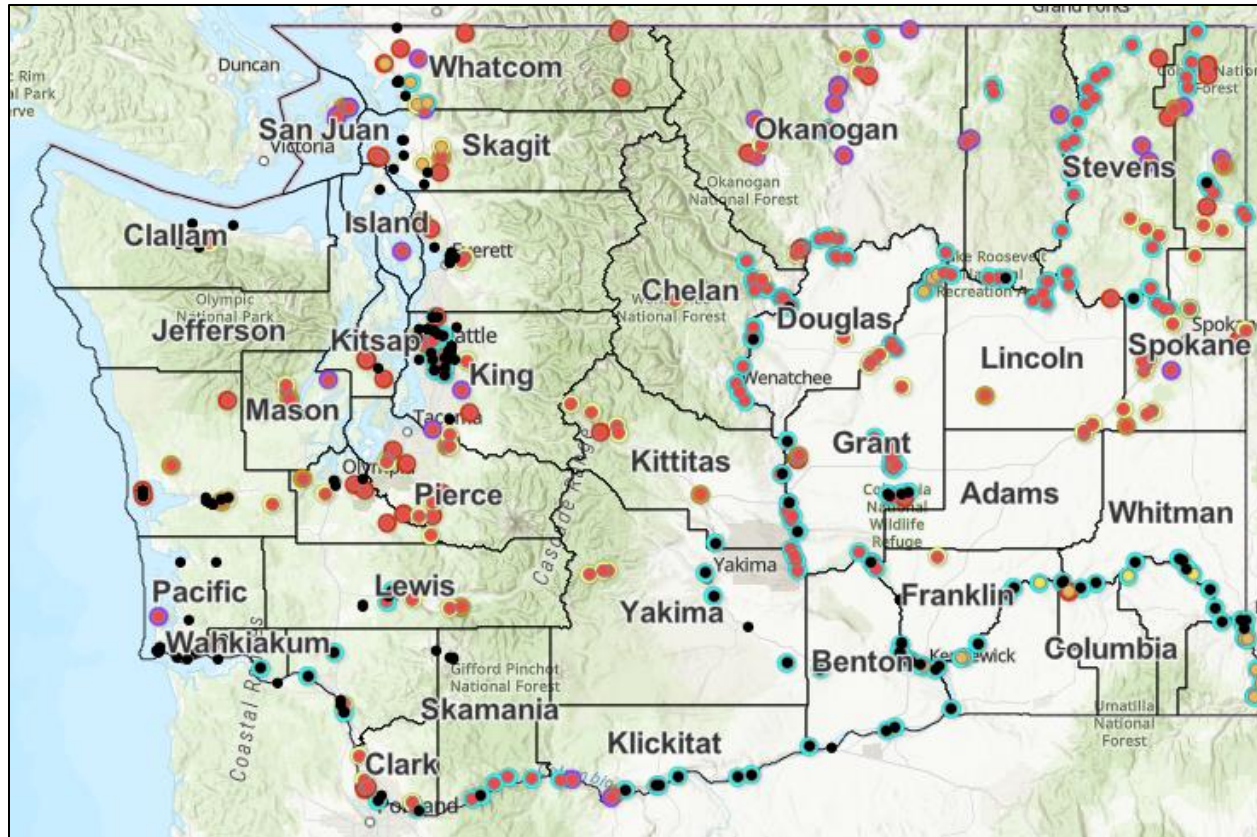
(Communication is Key)

Partners	Water Body Common Name
Chelan County PUD	Lake Entiat
Confederated Tribes of the Colville Reservation	Lake Roosevelt, Rufus Woods Lake, and Kettle River
Douglas County PUD	Lake Pateros
Grant County PUD	Priest Rapids Lake and Wanapum Lake
Seattle City Light	Boundary Reservoir
Snohomish County PUD	Spada Lake
Spokane Tribe of Indians	Lake Roosevelt
U.S. Bureau of Reclamation	Lake Roosevelt
Portland State University	Columbia River, Snake River, Lake Umatilla, Lake Wallula, Boundary Reservoir, and Box Canyon Reservoir



Field Maps (monitoring map)

(127 water bodies/322 sites)



1 of 2

Lake Sacajawea

Edit Zoom to

Water Body #	203
Site	Charbonneau Park
Site #	435
Monitoring Schedule	3 a year
Substrate Location	End dock
Substrate Attached To	Piling bracket
Latitude	46.256800
Longitude	-118.846900
County	Walla Walla
WDFW Region #	1
Mountain Range	Eastern
Sampled?	Sampled - 1
Notes	



YouTube Monitoring Training Videos

The screenshot shows a YouTube playlist page for 'Aquatic Invasive Species (AIS) in Washington' by TheWDFW. The playlist contains 8 videos, each with a thumbnail, title, and view count. The videos cover various monitoring methods for zebra and quagga mussels.

Video Number	Video Title	Views	Time
1	Dissolved Calcium Sampling Zebra and quagga mussel monitoring sampling methods	65 views	1:39
2	Water Quality Sampling with Hydrolab Zebra and quagga mussel monitoring sampling methods	154 views	1:50
3	Water Quality Sampling with Secchi Disk Zebra and quagga mussel monitoring sampling methods	43 views	1:50
4	Benthic Sampling with Ponar Grab Sampler Zebra and quagga mussel monitoring sampling methods	66 views	3:47
5	Plankton Tow Sampling Zebra and quagga mussel monitoring sampling methods	185 views	5:00
6	eDNA Sampling Zebra and quagga mussel monitoring sampling methods	63 views	4:46
7	Artificial Substrates Zebra and quagga mussel monitoring sampling methods	53 views	1:59
8	Visual Shoreline Check Zebra and quagga mussel monitoring sampling methods	108 views	2:15



YouTube Monitoring Training Videos

All Videos

<https://youtube.com/playlist?list=PLo22nBM4mjeQwuqRUGKE-9P-8q-l3dLZc&si=svk2mtJZITZow6s>

Dissolved Calcium

<https://youtu.be/NqOq02ShNp0?si=oQC-clmhCxU7eQC7>

Water Quality Sampling with Hydrolab

<https://youtu.be/JdqtKx0PWsY?si=u0WSI-CwLBVspi8M>

Water Quality Sampling with Secchi Disk

https://youtu.be/ViLK4Pb_h6U?si=zcTCh1IoHoP15Pcx

Benthic Sampling with Ponar Grab Sampler | Zebra and quagga mussel monitoring sampling methods

<https://youtu.be/jYHvmxZ2Zk?si=GkY8c6HDW-KPkFZK>

Plankton Tow Sampling | Zebra and quagga mussel monitoring sampling methods

https://youtu.be/wMutlOrK_SI?si=NHjLGeUDxI0wbRHl

eDNA Sampling | Zebra and quagga mussel monitoring sampling methods

<https://youtu.be/pSf1hD6vTwc?si=WnUqyRKGnheZYPQj>

Artificial Substrates | Zebra and quagga mussel monitoring sampling methods

https://youtu.be/1Ky4s7ZT_JY?si=gA5nTeSjqlMxvmYs

Visual Shoreline Check | Zebra and quagga mussel monitoring sampling methods

<https://youtu.be/GqorXIUoGzk?si=r7DI-XtG676gjwfO>



Sampling Methods

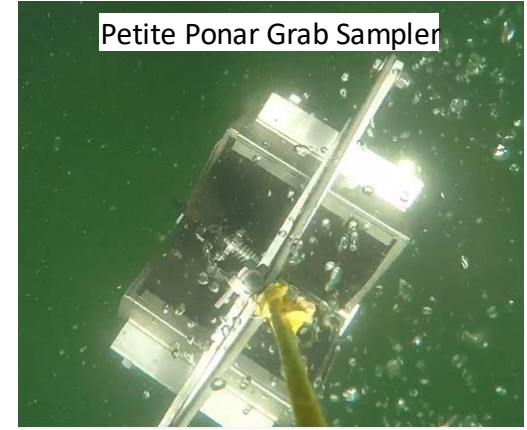
Vertical and Horizontal Plankton Tows



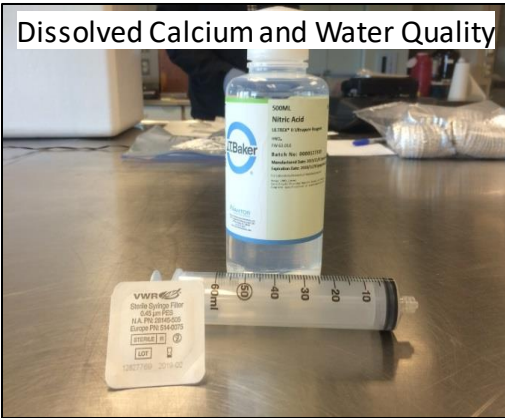
Environmental DNA



Petite Ponar Grab Sampler



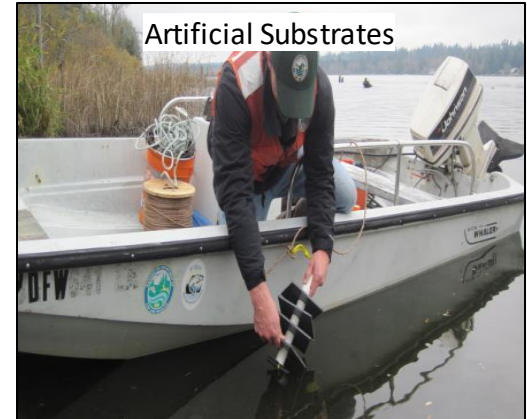
Dissolved Calcium and Water Quality



Visual and Tactile Shoreline Surveys



Artificial Substrates



Mussel Monitoring Teams

(2-person team and a boat)



2024 May 1 – November 15

- Olympia (western)
- Spokane (eastern)
- Ephrata (central)

2024 July 1 – November 15

–Pasco (Snake River System)

–Scientific Technician 2s up to \$25/HR

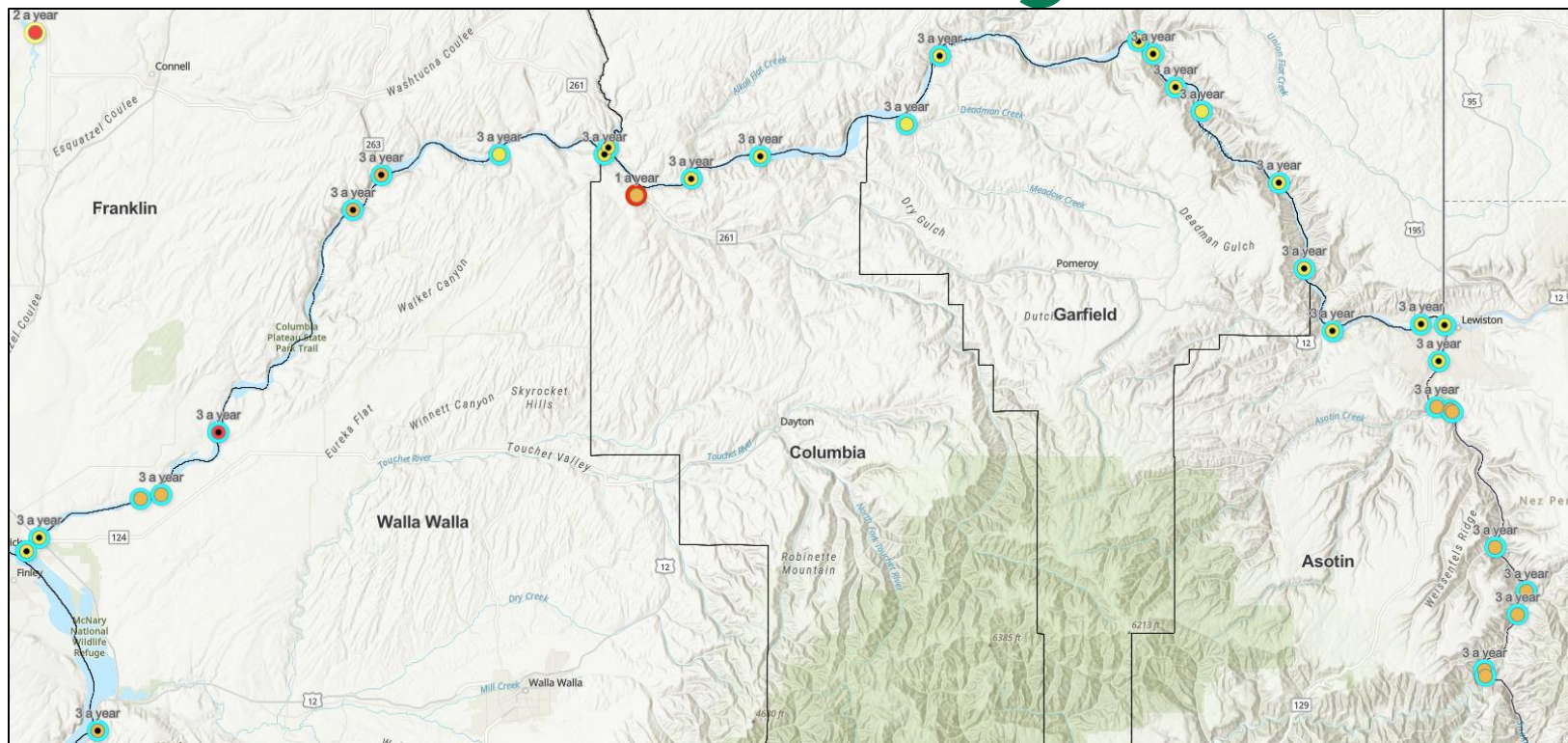


Labs

- Plankton tow samples
 - Steve Wells, Aquaticus LLC
 - Cameron Lange, Consultant
 - **Procuring third lab for 2024**
- eDNA samples
 - Lisa Crosson, PhD WDFW Molecular Genetics Lab
 - Secondary confirmation Washington State University
- Dissolved calcium
 - Carmen Nezat, PhD Eastern Washington University



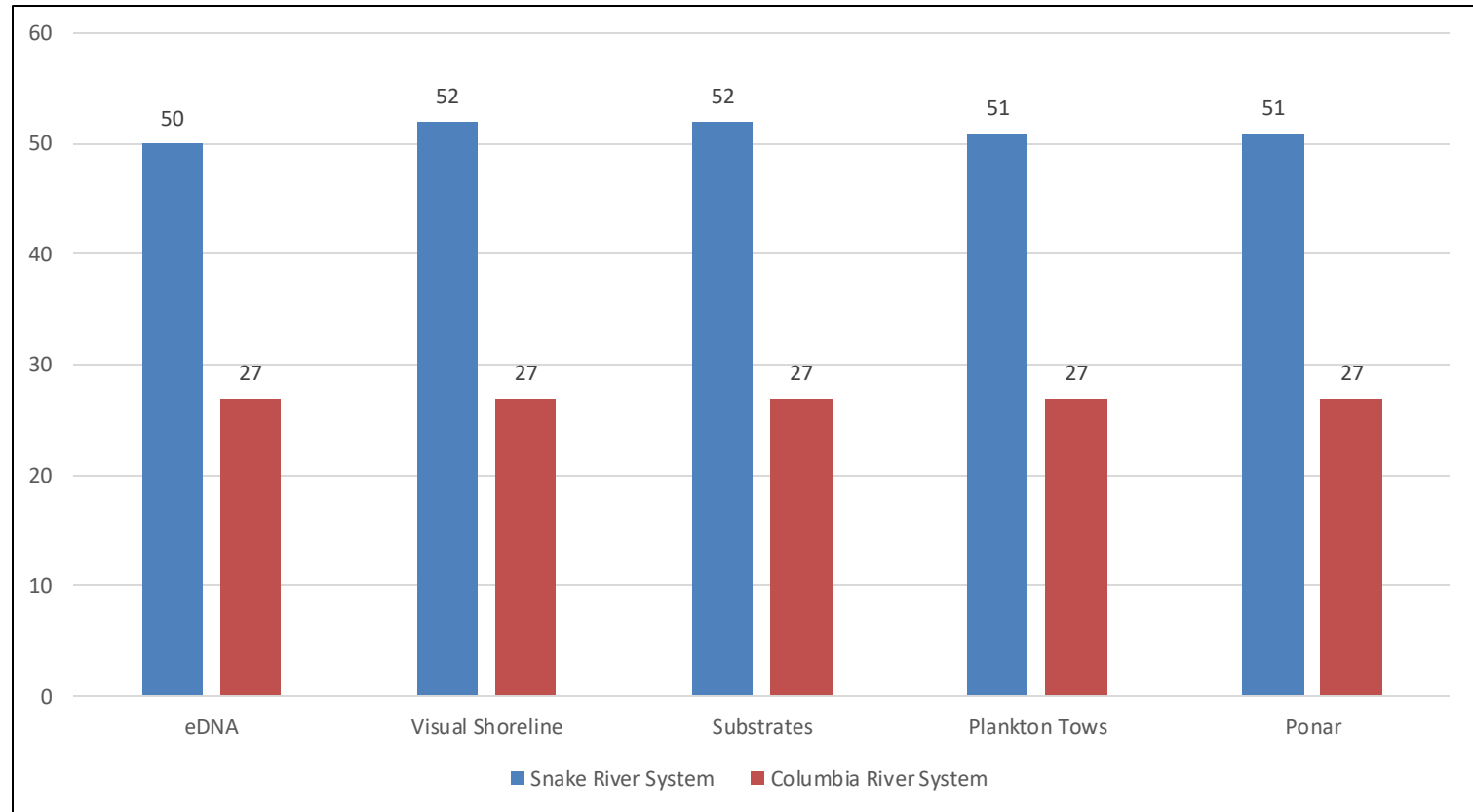
Snake River Monitoring Sites



- 23 sites prior to Idaho detection
- Added 8 sites from Swallows Park in Clarkston to WA, OR, ID border
 - Thanks to USDA Officer Austin Hess
- Total of 31 sites



2024 Preliminary Results Snake River and Columbia River (NO zebra/quagga mussels detected)



- 584 dissolved calcium samples 2016-2023 average is 20 mg/L
- Started monitoring the Snake River April 17th water temp 10°C



State Fiscal Year (FY) 2025

Zebra and Quagga Mussel Proviso

- Biennium 2023 – 2025 Fiscal Year 2025 July 1, 2024 – June 30, 2025
- \$1,810,000 General Fund – State, \$1,810,000 General Fund – Federal
- Solely for monitoring and response efforts for invasive quagga mussels, which were discovered on the Snake River in Idaho.




State Fiscal Year (FY) 2025

Zebra and Quagga Mussel Proviso

- Biennium 2023 – 2025 Fiscal Year 2025 July 1, 2024 – June 30, 2025
- \$1,810,000 General Fund – State, \$1,810,000 General Fund – Federal
- Activities include coordination with tribal, federal, regional, state, and local entities, watercraft inspections and decontamination, equipment, and training, monitoring of potential residential and commercial pathways, and public outreach.



State of Washington Interagency Zebra and Quagga Mussel Rapid Response Plan



STATE OF WASHINGTON
INTERAGENCY ZEBRA AND QUAGGA
MUSSEL RAPID RESPONSE PLAN

June 2024

Prepared for

Washington Department of Fish and Wildlife
Natural Resources Building
111 Washington St SE
Olympia, Washington 98501

Prepared by

Four Peaks Environmental
Science & Data Solutions
338 South Mission Street
Wenatchee, Washington 98801

- WDFW internal review ends June 7th
- External review
- State Environmental Policy Act (SEPA) 14-day public comment
- July 15th tentative completion date

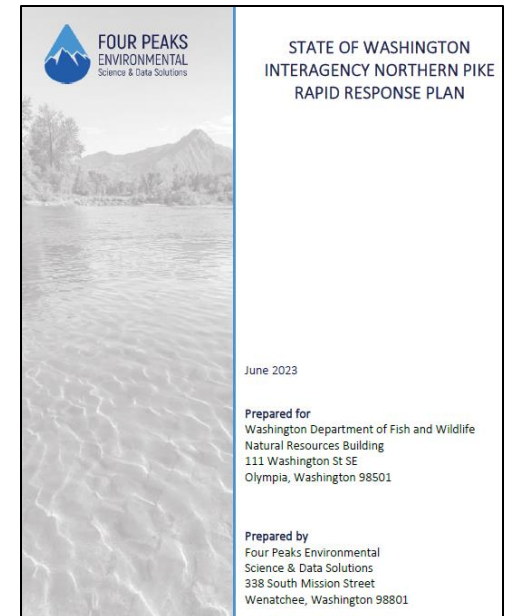


Northern Pike Detection February 2024 Carefree Lake on San Juan Island

- Angler caught, photographed, and released a Northern Pike
- Photos reported to WDFW Area Habitat Biologist
- March 5-8 rapid response eDNA and gill nets
 - 6 Northern Pike captured by gill nets
 - 20" to 31.5"/2.8 lbs to 8.7 lbs
 - 4 sexually mature and ready to spawn



Photo Credit Evan Hiatt



Potential Next Steps Pike Carefree

- Last rotenone treatment conducted in western Washington 1998 for Northern Pike at Crocker Lake in Jefferson County
- WDFW routinely conducts rotenone treatments annual in eastern Washington



Questions?



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Aquatic Invasive Species Unit

