

Idaho's Quagga Mussel Discovery

Early Detection and Rapid Response



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Invasive Species Wildlife Integrity Supervisor

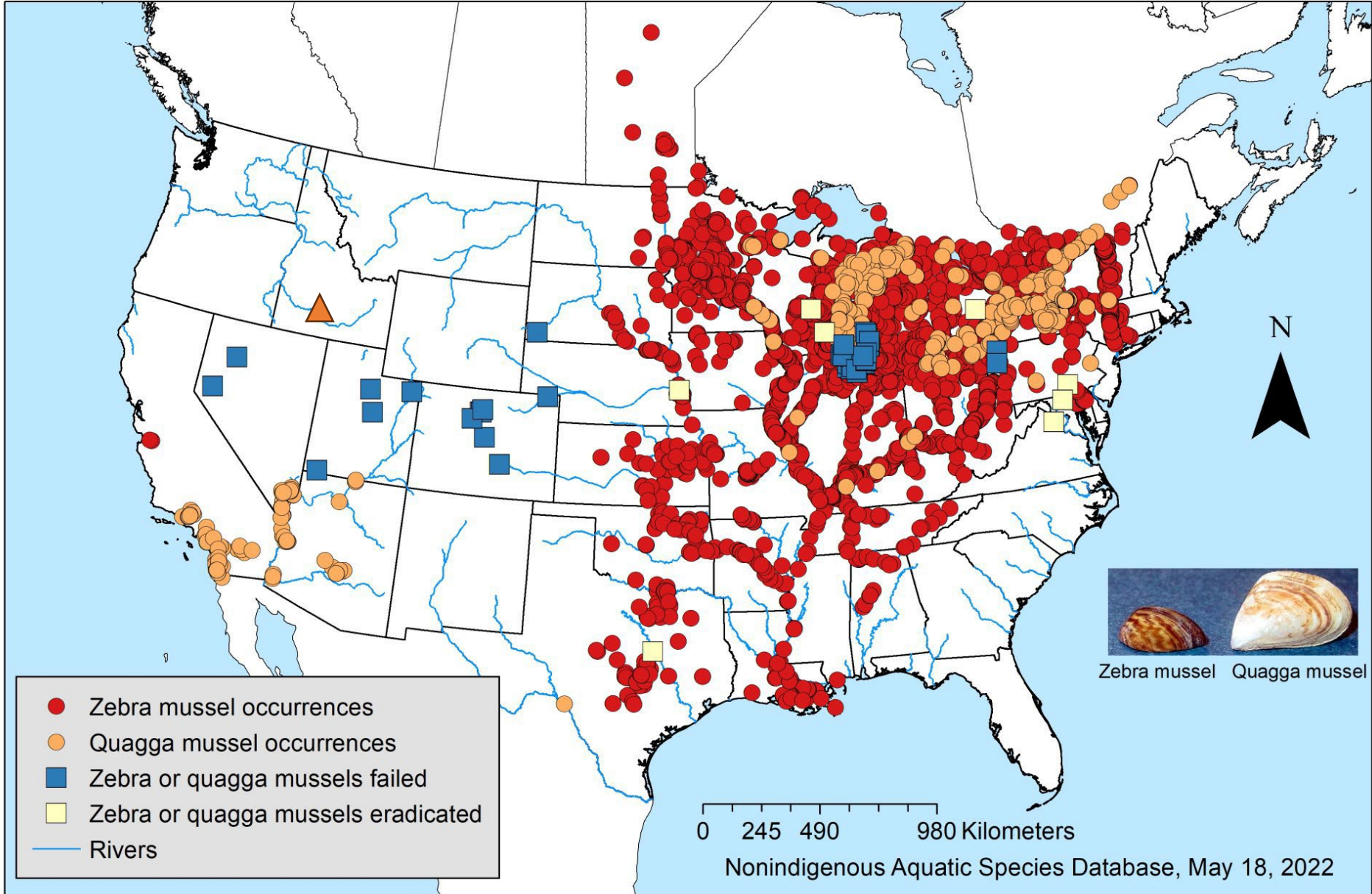


Quagga Mussel

- Quagga and Zebra mussels – Great Lakes 1980's
- Quagga Mussels found in Lake Mead 2007
- Filter feeders
- Attached to almost everything
- Spawn at @56°F (13.2°C)
- Produce 1 million eggs/year
- Veliger – Micro Free-floating stage
- Ca levels >12mg/L
- Snake River- Ca 50 mg/L

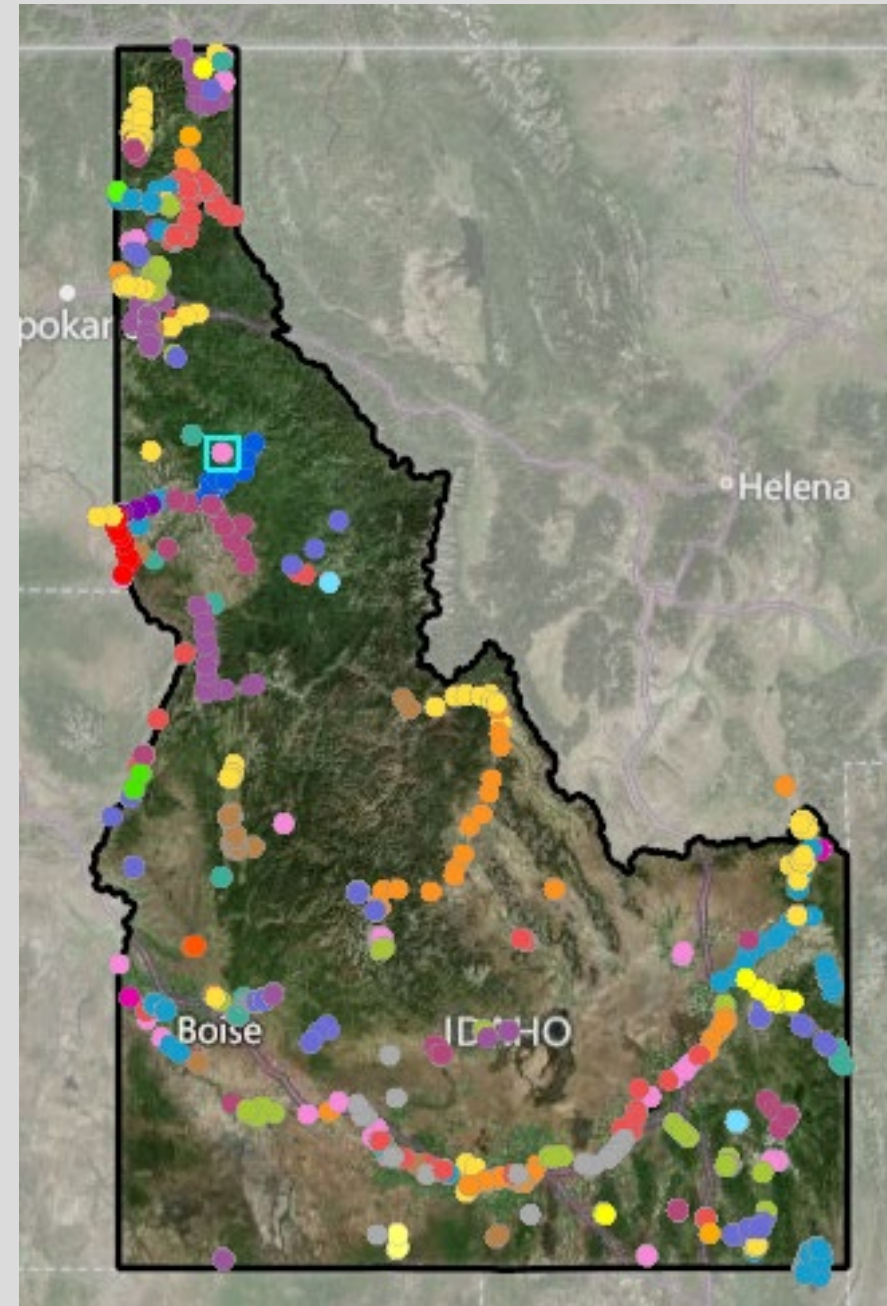
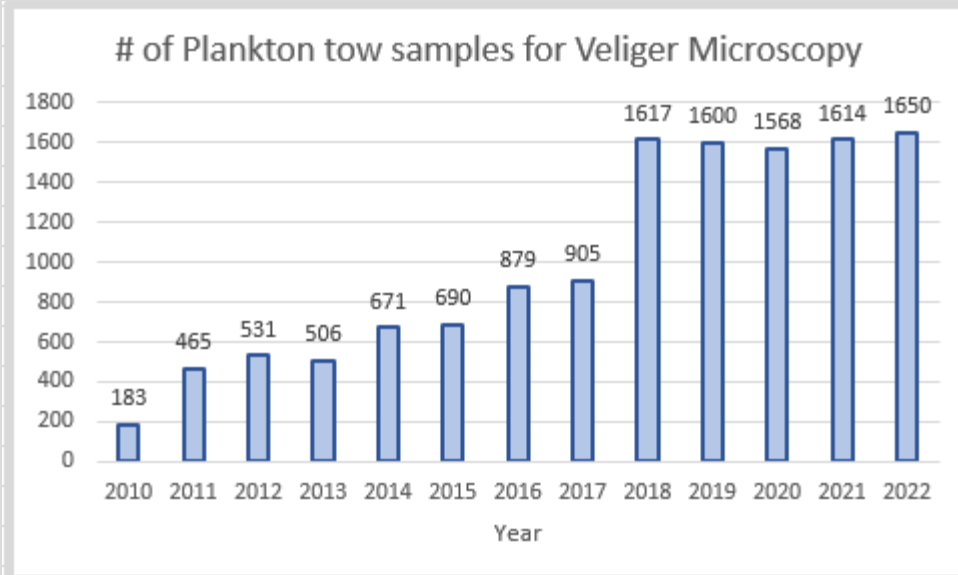


Zebra and Quagga Mussel Sightings



Idaho's Veliger Monitoring Program

- Monitoring starts in late spring
- All Negative -until
- September 9, 2023 –Positive
 - Confirmed with 2nd and 3rd Microscopy
 - PCR
 - Independent Labs



Idaho's Timetable for ED/RR

June & July	Standard Veliger Monitoring - No veligers detected
Mid-August	Standard Veliger Monitoring
9/9/23	Veligers confirmed in samples taken below and above Shoshone Falls. <ul style="list-style-type: none">• Confirmed by microcopy.<ul style="list-style-type: none">○ two independent labs.• Confirmed with PCR
9/18/23	1 – Adult quagga mussel found below Shoshone Falls (est. age 2 years)
9/21/23	16 miles of Snake River area closed
10/3/23	1 st Treatment started. <ul style="list-style-type: none">• 1 ppm -Chelated copper “Natrix”• Treated for 96 hrs.• 6 miles of treatment
10/7/23	1 st Treatment ended - 48 hrs.
10/9/23	2 nd Treatment started. <ul style="list-style-type: none">• 1 ppm -Chelated copper “Natrix”• Treated for 96 hrs.
10/13/23	2 nd Treatment ended
10/17/23	Post treatment veliger sampling
10/20/23	Copper levels at Centennial Park 0.3 ppm



Quagga Mussel

Closed area

Niagara Springs

Twin Falls

City of Twin Falls



Tour of Discovery and Treatment Area

Twin Falls



Upstream from Shoshone Falls



Shoshone Falls



Downstream from Shoshone Falls



Pillar Falls



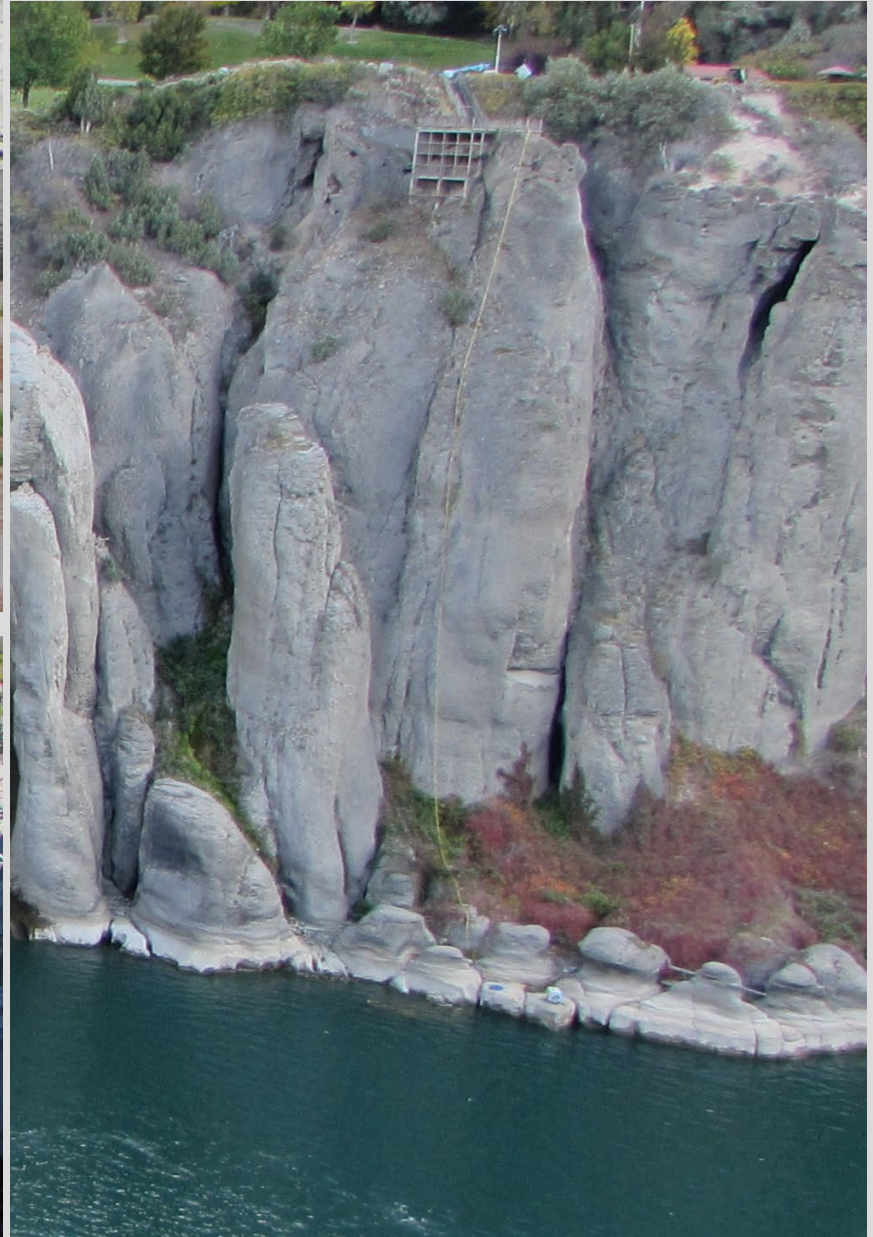
Centennial Waterfront Park



Treatment

Mixed at Idaho Power Stations







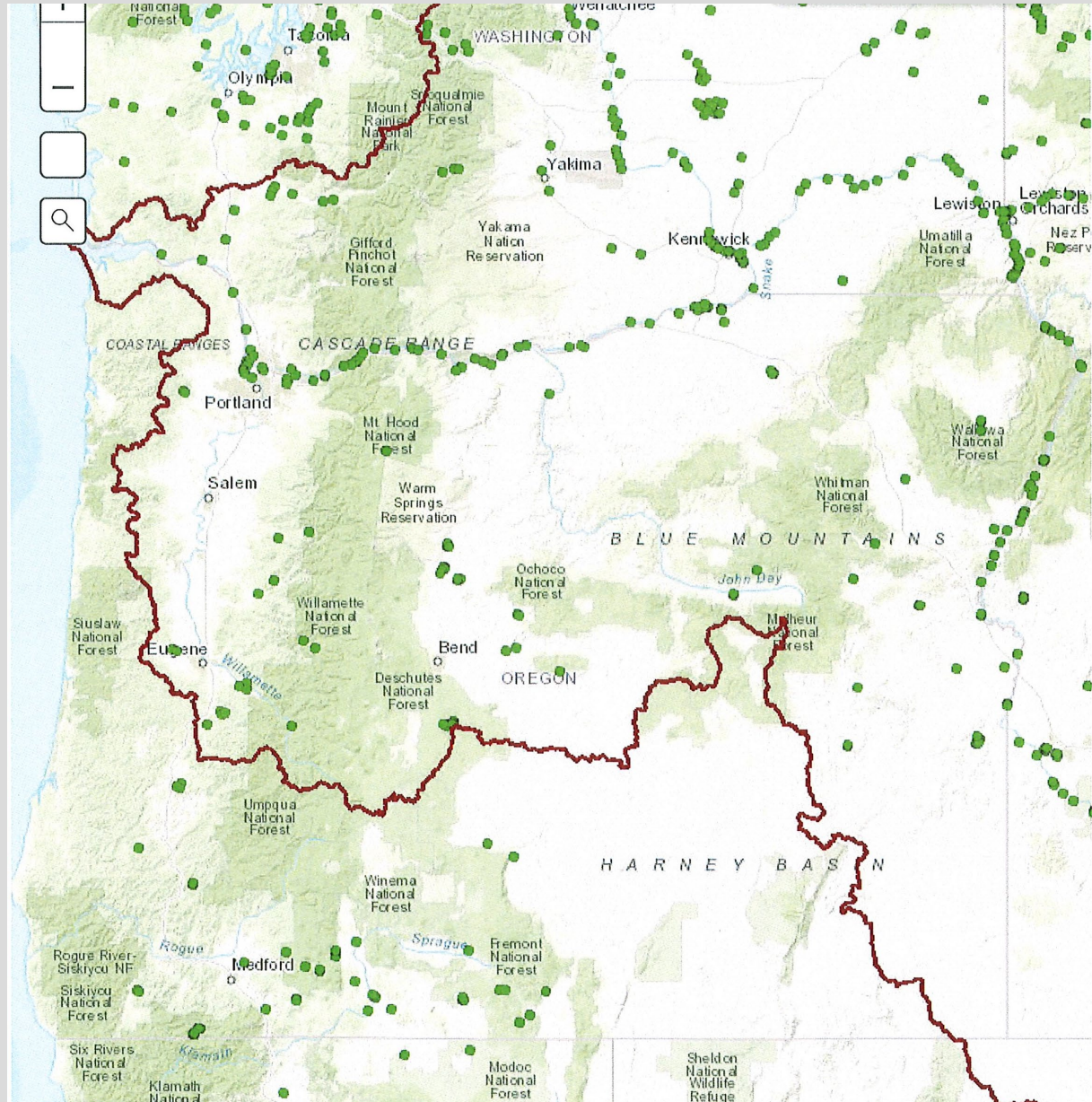
Treatment Results

- Able to keep contact at 1 ppm during 96 hrs. treatment.
 - 159 totes of Natrix = ~43,725 gal.
- Sentinel species -100% kill after 48 hrs.
 - Quagga mussel
 - Asian Clam
 - Western Ridged mussels
- October 17th
 - Copper level at Centennial Park - 0.8ppm
 - 16 miles downstream –not detected.
 - Post treatment Veliger sampling starts.
- October 20th
 - Copper level at Centennial Park - .03ppm
- November 1
 - Copper levels back to background levels
- Cost ~\$3 million

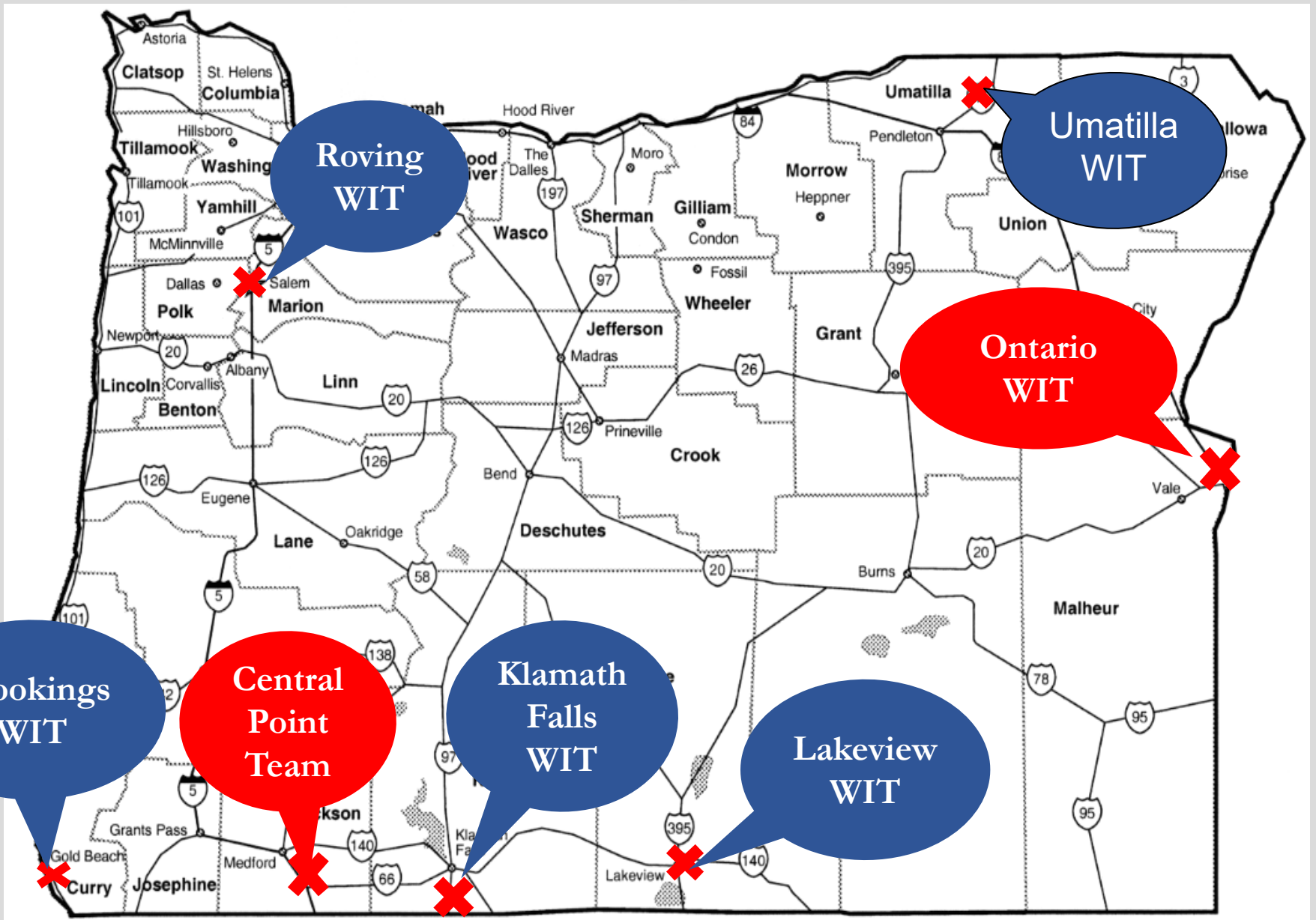
Oregon's Next Steps

Veliger Monitoring In Oregon

- PSU Center for Lakes and Reservoirs
- Idaho Power
- USGS
- BOR
- NOAA
- WDFG
- UW



2024 Watercraft Inspections Stations



Watercraft Inspection Stations

- Ontario Rest Area –
Open Year Around
(Daylight hours)
- 2-Roving Stations?
 - Fruitland – NW
16th/E. Idaho Ave
 - Payette Bridge,
Hwy 52
 - Adrian - Hwy 452
 - Nyssa – Hwy 26
 - Weiser Bridge



Questions?



More Information

- <https://agri.idaho.gov/main/plants/snake-river-quagga-mussel-veligers/>
- <https://www.arcgis.com/apps/dashboards/12114e0841684808be2575b92fd79855>