

**Mike Milburn**  
Chair  
Montana

**Doug Grob**  
Montana

**Jeffery C. Allen**  
Idaho

**Ed Schriever**  
Idaho



# Northwest Power and Conservation Council

**Thomas L (Les) Purce**  
Vice Chair  
Washington

**KC Golden**  
Washington

**Margaret Hoffmann**  
Oregon

**Charles F. Sams III**  
Oregon

May 6, 2025

## MEMORANDUM

**TO:** Council Members

**FROM:** Stacy Horton, Washington Policy Analyst, Biologist

**SUBJECT:** Efforts of the Oregon and Washington Invasive Mussel Near-Term Action Working Group

## BACKGROUND:

**Presenters:** Justin Bush, Aquatic Invasive Species Division Manager, Washington Department of Fish and Wildlife, and Keith DeHart, Invasive Species and Wildlife Integrity Supervisor, Oregon Department of Fish and Wildlife.

**Summary:** The Oregon and Washington Departments of Fish and Wildlife convened a working group tasked to identify near-term actions and to assist with the development of findings and recommendations to prevent and prepare for invasive mussels in the shared waters of the Columbia River between Washington and Oregon.

The states of Oregon and Washington face an imminent threat from invasive mussels. Zebra, quagga, and golden mussels have a history of global invasion and successful establishment outside their native range. Routine early detection is key, with recent threats emanating from pathways like the detection of quagga mussels in Idaho in the Fall of 2023, the introduction of invasive mussels through contaminated Marimo moss balls in August of 2024, and an emerging threat from golden mussels, detected for the first time in California in October 2024.

Together, the joint working group identified the highest priority actions and needs to increase prevention and preparedness, functioning as a shared vision and

action plan for both jurisdictions. Justin Bush and Keith DeHart will update the Council on the working group findings and recommendations. Key takeaways from the working group reinforce the messages that prevention is paramount; rapid response is essential, partnerships are powerful, and that research and innovation are vital.

More info: Oregon and Washington Invasive Mussel Near-Term Action Working Group Findings and Near-Term Action Recommendations  
<https://wdfw.wa.gov/sites/default/files/2025-01/oregon-washington-invasive-mussel-findings-and-near-term-action-recommendations.pdf>

# Efforts of the Oregon and Washington Invasive Mussel Near-Term Action Working Group



May 13, 2025



Washington Department of  
**FISH & WILDLIFE**



1. Purpose
2. Members
3. Process
4. Findings
5. Near-Term Actions
6. Long-Term Actions
7. Implementation
  - A. Oregon
  - B. Washington
8. Discussion



Washington Department of  
**FISH & WILDLIFE**

# Purpose





# Purpose



## Quagga Mussels discovered in Twin Falls County: Centennial Park and Wilson Lake closed until further notice

Updated: Sep. 19, 2023 at 5:53 PM PDT



## More quagga mussels detected in Idaho's Snake River near Twin Falls

Invasive, nonnative species detected below popular Shoshone Falls, Idaho State Department of Agriculture announces

BY: CLARK CORBIN - SEPTEMBER 24, 2024 5:41 PM

# Purpose

Following a March 19, 2024, joint state meeting:

The State of Oregon and Washington Departments of Fish and Wildlife requested participation from organizations to join a joint state working group tasked to **identify near-term actions** and to assist with the **development of findings and recommendations to prevent and prepare for invasive quagga and zebra mussels in the shared waters of the Columbia River Basin between Washington and Oregon**. It was the intention of this working group to complete this task prior to December 2024, including the development of a finding and recommendations report.



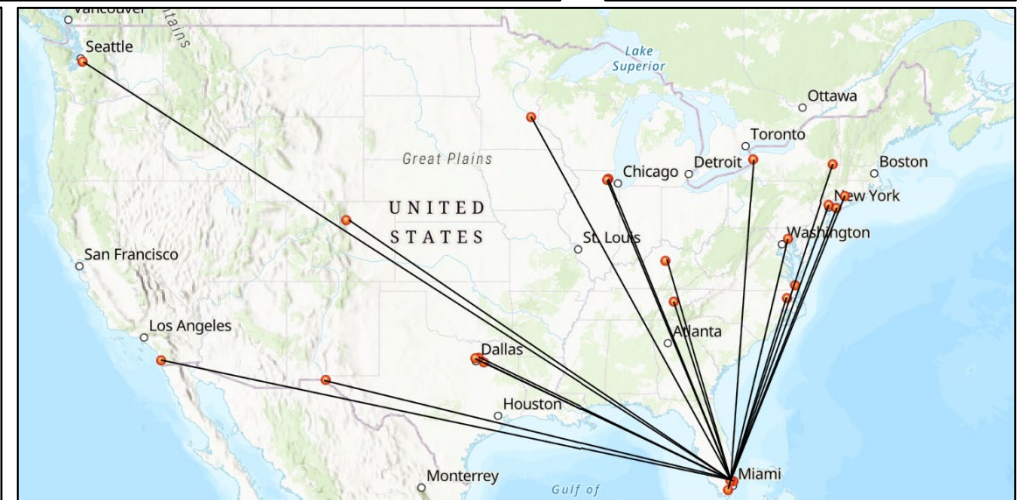
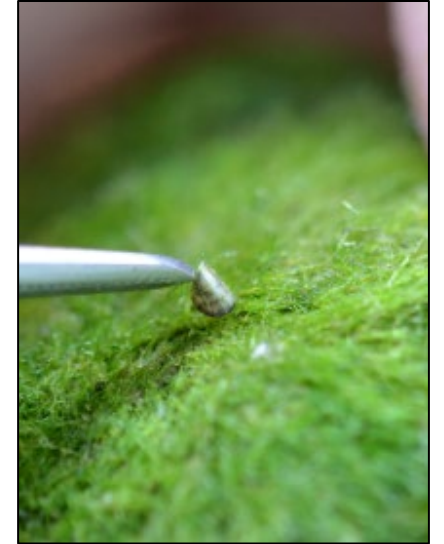
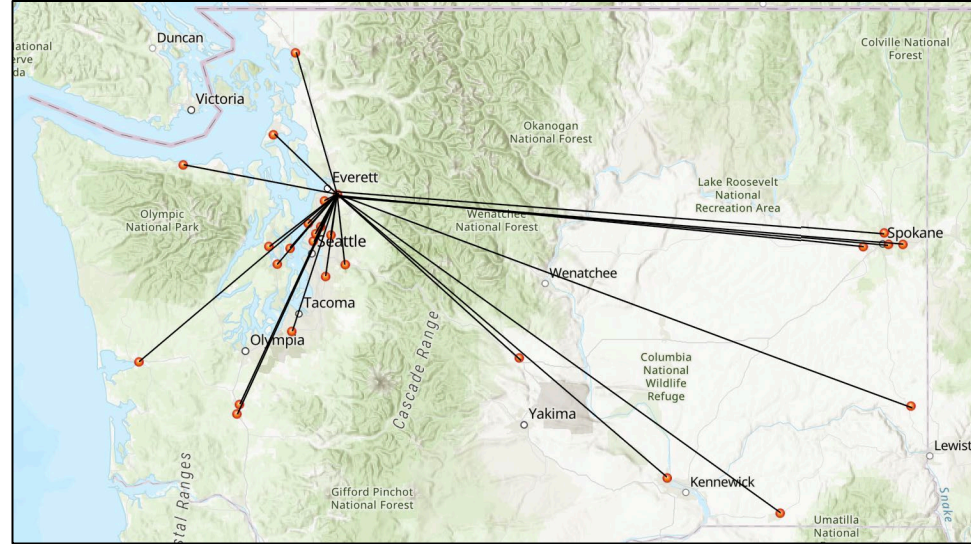


# Complications

## Zebra Mussel Contaminated Marimo Moss Balls



 &  Washington Department of Fish and Wildlife



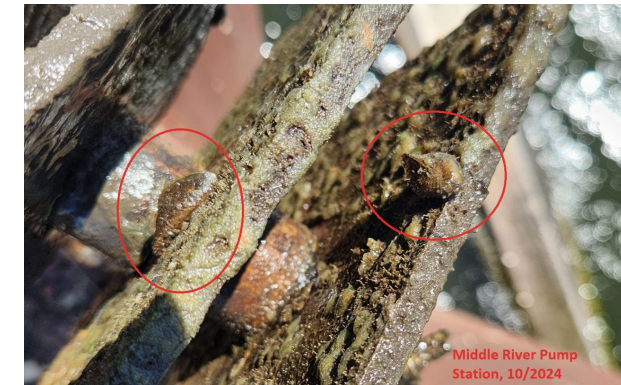


# Complications

## Golden Mussel First-in-the-Nation Detection

### *Limnoperna fortunei* (Dunker, 1857)

- Detected by California Department of Water Resources staff during routine operations.
- Announced by California Department of Fish and Wildlife November 6, 2024.
- First-in-the-nation detection. Suspected introduction by a ship traveling from an international port.
- Determining the infested area is ongoing, with occurrences expanding widely.
- Now found in the Governor Edmund G. Brown California Aqueduct.
- \$120 million in impacts estimated to Brazil's electricity sector were reported in 2018 (Rebello et al. 2018).

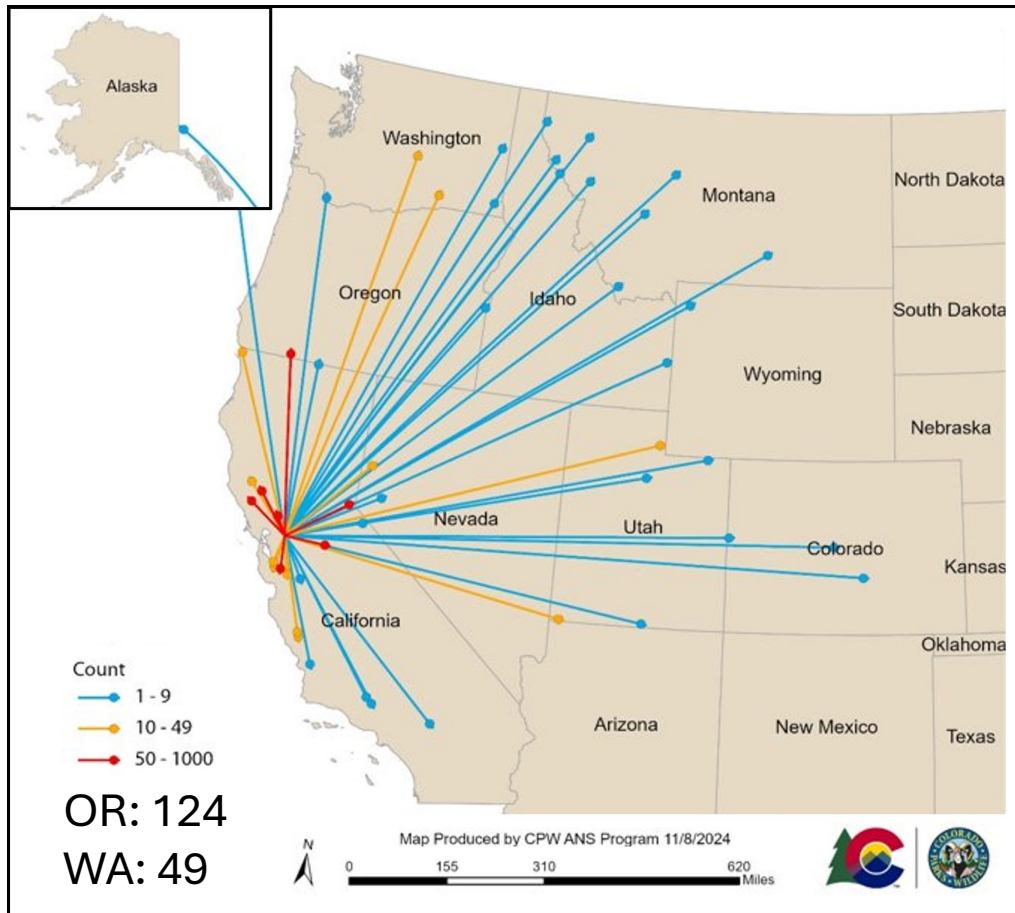


📷 : California Department of Fish and Wildlife

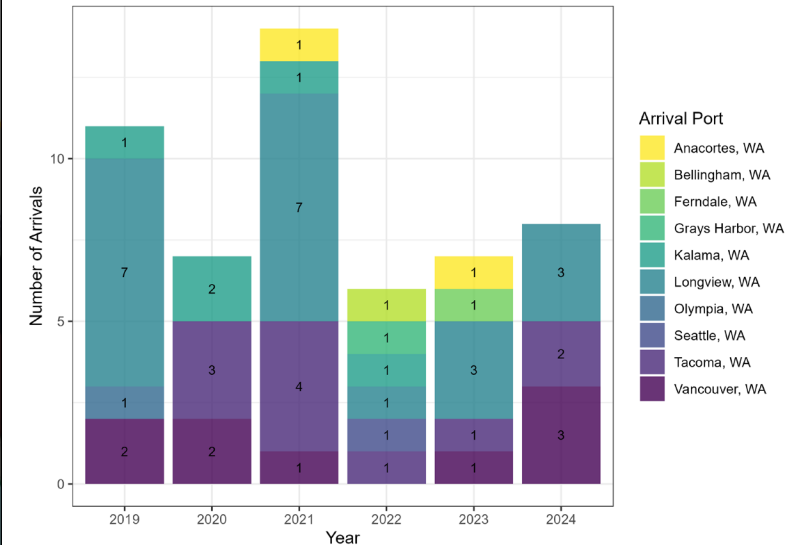
# Complications

## Golden Mussel First-in-the-Nation Detection

2024 Watercraft Inspections Where  
“California Delta” was Last Water Visited



Regulated commercial vessel arrivals from Stockton area, California to Washington ports 2019-2024.





Washington Department of  
**FISH & WILDLIFE**

# Members





# Members and Contributing Authors

Columbia River Inter-Tribal Fish Commission	Oregon State Water Resources Congress	U.S. Geological Survey
Northwest Power and Conservation Council	Pacific NorthWest Economic Region	Washington Department of Fish and Wildlife
Oregon Department of Environmental Quality	Pacific Northwest Waterways Association	Washington Invasive Species Council
Oregon Department of Fish and Wildlife	Pacific States Marine Fisheries Commission	Washington State Legislature
Oregon Invasive Species Council	Portland State University	Washington State University
Oregon State Legislature	U.S. Fish and Wildlife Service	Washington State Water Resources Association
Oregon State Patrol	U.S. Forest Service	



Washington Department of  
**FISH & WILDLIFE**

# Process



# Process and Timeline

March 19, 2024

Oregon and Washington Departments of Fish and Wildlife Joint Meeting (Ridgefield, WA)

May 29, 2024

Scoping meeting with Oregon and Washington Invasive Species Councils

September 2024

Joint Oregon and Washington Departments of Fish and Wildlife Director's Invitation Letter



Washington State  
Dept. of Fish and Wildlife  
Post Office Box 43200  
Olympia, WA 98504-3200  
Phone: (360) 902-2200



Oregon State  
Dept. of Fish and Wildlife  
4034 Fairview Industrial Dr. SE  
Salem, OR 97302  
Phone: (503) 947-6000

September 20, 2024

Aja DeCoteau  
Columbia River Inter-Tribal Fish Commission  
700 NE Multnomah St.  
Suite. 1200  
Portland OR 97232

**RE: Request to Participate in Oregon and Washington Quagga and Zebra Mussel Near-Term Action Working Group**

Executive Director DeCoteau:

The State of Oregon and Washington Departments of Fish and Wildlife request participation from your organization to join a joint state working group tasked to identify near-term actions and to assist with the development of findings and recommendations to prevent and prepare for invasive quagga and zebra mussels in the shared waters of the Columbia River Basin between Washington and Oregon. It is the intention of this working group to complete this task prior to December 2024, including the development of a finding and recommendations report.

In September of 2023, Idaho Governor Brad Little announced the presence of invasive freshwater quagga mussels in the Snake River, near Twin Falls, Idaho making the first established population in the Columbia River Basin after more than 20 years of prevention efforts by Western States and Provinces to prevent the introduction and establishment of invasive mussels. While Idaho State Department of Agriculture quickly executed a state rapid response plan, successful eradication is still uncertain.

What is not uncertain is the potential catastrophic economic and environmental effects that the establishment of quagga mussels means to the shared waters of the Columbia River, prompting both state agencies to increase efforts in prevention, readiness, and long-term management.

Sincerely,

Dr. Debbie Colbert, Director  
Oregon Department of Fish and Wildlife

Kelly Susewind, Director  
Washington Department of Fish and Wildlife



# Process and Timeline



October 30, 2024

Initial working group meeting

- History
- Threat assessment
- Readiness updates

November 19, 2024

Second working group meeting

- Golden mussels
- Survey results
- Discussion and Ranking

December 20, 2024

Final working group meeting

- Discussion and final review

## Oregon and Washington Invasive Mussel Near-Term Action Working Group

Findings and Near-Term Action Recommendations



Oregon Department  
of Fish and Wildlife

January 14, 2025





Washington Department of  
**FISH & WILDLIFE**

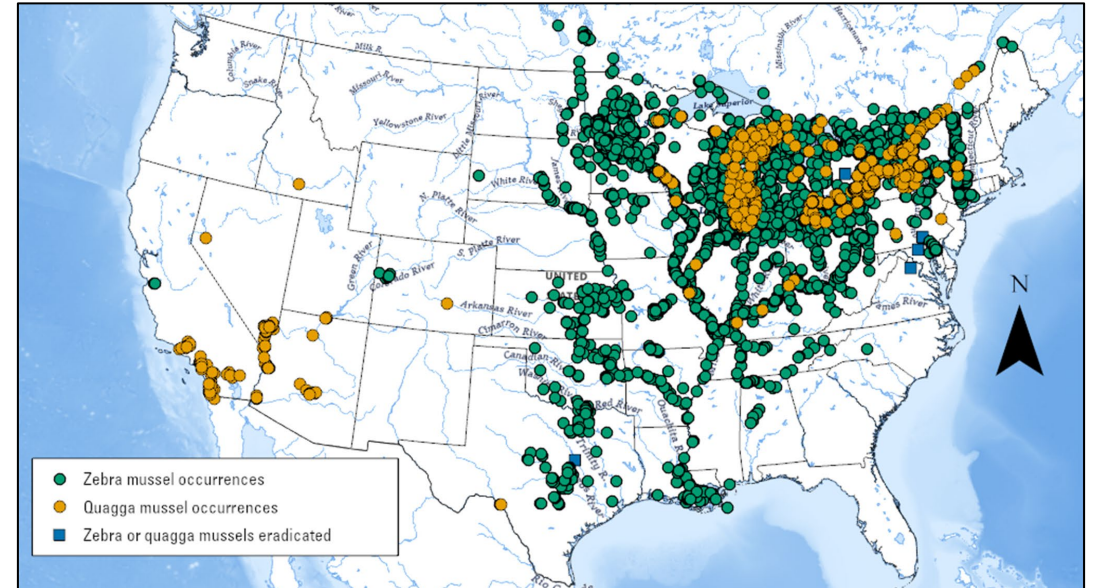
# Findings



# Findings

1. Background
2. Risk
3. Imminent Threat and Readiness
4. Oregon and Washington Working Group
5. Recommendations

“Together, the joint state working group identified highest priority actions and needs to increase prevention and preparedness, functioning as a shared vision and action plan for both jurisdictions.”



“The states of Oregon and Washington face a shared imminent threat.”





Washington Department of  
**FISH & WILDLIFE**

# Near-Term Actions



# Near-Term Actions

## Goals

1. Enhance prevention efforts
2. Coordinated public awareness
3. Ensure rapid response preparedness
4. Build partnerships and facilitate coordination
5. Invest in Research

## Example:

The states of Oregon and Washington should expand early detection monitoring efforts to identify new infestations of invasive mussels as early as possible for the purpose of initiating response actions.



# Near-Term Actions

## Goals

1. Enhance prevention efforts
2. Coordinated public awareness
3. Ensure rapid response preparedness
4. Build partnerships and facilitate coordination
5. Invest in Research

## Example:

The states of Oregon and Washington should develop a communications plan identifying key stakeholders, partners, policy makers and audiences; objectives and measurements for success; challenges; themes and messaging; and products and deliverables.



**Clean**

plants, animals, and mud  
from boat and gear



**Drain**

all water from boat  
and gear onto land



**Dry**

all parts of your boat  
and gear completely

The Clean/Drain/Dry method applies to all watercraft and gear including paddles, waders, shoes, life vests, nets, buckets, and trailers. If transporting your watercraft, pull the bilge plug during transit.

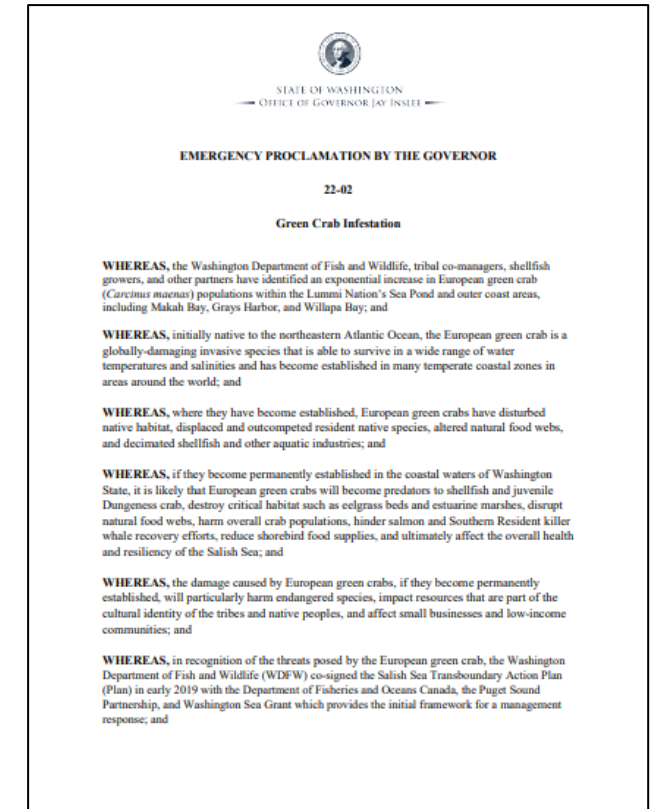
# Near-Term Actions

## Goals

1. Enhance prevention efforts
2. Coordinated public awareness
3. Ensure rapid response preparedness
4. Build partnerships and facilitate coordination
5. Invest in Research

## Example:

The states of Oregon and Washington should work with State Legislatures and Governor's Offices to develop a mutually agreeable process for declaring emergencies in shared waters of Washington and Oregon, that include decision support tools with criteria that need to be met for an invasive species emergency to be declared.



[European] Green Crab Emergency Proclamation by the Governor  
<https://governor.wa.gov/>



# Near-Term Actions

## Goals

1. Enhance prevention efforts
2. Coordinated public awareness
3. Ensure rapid response preparedness
4. Build partnerships and facilitate coordination
5. Invest in Research

## Example:

The states of Oregon and Washington should reaffirm a regional commitment to addressing invasive mussels through participation in updating of the *100th Meridian Initiative Columbia River Basin Interagency Invasive Species Response Plan: Dreissenid Mussels*, signed by state governors in 2008, updated in 2018.



<https://www.westernais.org/rapid-response>

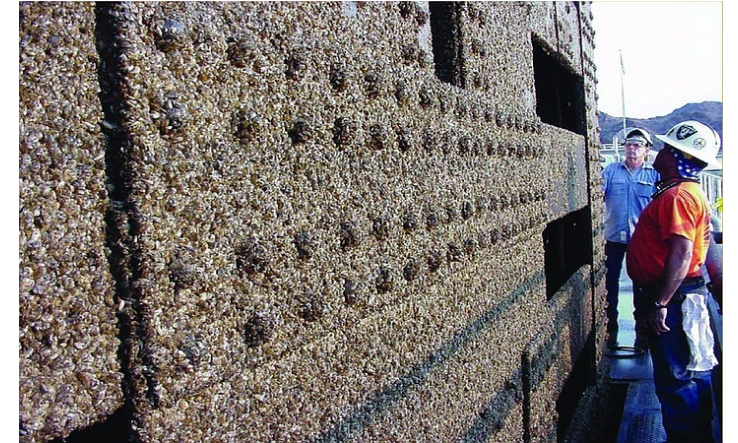
# Near-Term Actions

## Goals

1. Enhance prevention efforts
2. Coordinated public awareness
3. Ensure rapid response preparedness
4. Build partnerships and facilitate coordination
5. Invest in Research

## Example:

The states of Oregon and Washington should develop a model funding pathway, such as a grant program, to cost-share funding for installation and management of mitigation systems for consideration by state legislatures and federal funding agencies.



Invasive mussels fouling a penstock gate at Davis Dam.  
📷 : U.S. Bureau of Reclamation



Dense colonies of zebra mussels can clog intake pipes.  
📷 : Marrone Bio Innovations



Washington Department of  
**FISH & WILDLIFE**

# Long-Term Actions





# Long-Term Actions

## Goals

1. Enhance regulatory effort
2. Ensure rapid response readiness
3. Support long-term management
4. Invest in research

## Example:

The states of Oregon and Washington should increase law enforcement action at mandatory watercraft inspection stations, improving compliance with state laws and creating new partnerships with state and local law enforcement agencies as force multipliers.





# Long-Term Actions

## Goals

1. Enhance regulatory effort
2. Ensure rapid response readiness
3. Support long-term management
4. Invest in research



2019 Lake Roosevelt  
Rapid Response Exercise

## Example:

The states of Oregon and Washington should emphasize the need for and hold regular response exercises, of region, state, and site-specific response plans, in addition to holding training workshops and drills for functions and roles, such as Multi-Agency Coordination (MAC) Groups, containment systems, or mock treatments.

# Long-Term Actions

## Goals

1. Enhance regulatory effort
2. Ensure rapid response readiness
3. Support long-term management
4. Invest in research

## Example:

The states of Oregon and Washington should continue to support and/or develop new local funding programs to build and maintain capacity of key response partners, including tribal nations, local governments, or industry.



# Long-Term Actions

## Goals

1. Enhance regulatory effort
2. Ensure rapid response readiness
3. Support long-term management
4. Invest in research



## Example:

Economic impacts: An economic study would help emphasize the impacts of invasive mussels on shipping, recreation, agricultural production, food security, irrigation, navigational locks, fish passage, fish hatcheries and salmon recovery investments in the Columbia River. It would also help to understand the long-term costs of mitigation systems and ongoing maintenance and operations costs.



# Implementation



# Implementation in Oregon

## 1. House Bill (HB) 2170

Allows Oregon Department of Fish and Wildlife (ODFW), Oregon State Marine Board, or Oregon Department of Agriculture (ODA) to enter into an intergovernmental agreement with a local government, tribes, or a local service district to perform aquatic invasive species inspections at check stations.



## 2. HB 2982

Increases boating fees and deposits moneys into the Aquatic Invasive Species (AIS) Prevention Fund.



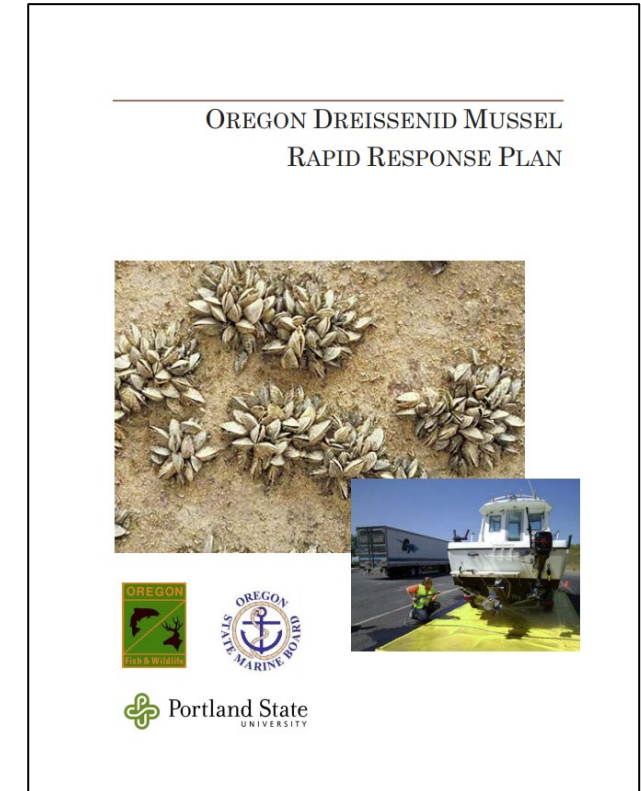
# Implementation in Oregon

## 3. HB 2981

- Proposal for general fund appropriation to four agencies to pay for steps that concern AIS (\$1,345,000):
  - \$175,000 to Oregon Department of Environmental Quality for ballast water vessel inspections.
  - \$800,000 to Portland State University Center for Lakes and Reservoirs to monitor for invasive mussels and other AIS.
  - \$200,000 to ODFW to update Oregon's waterbody vulnerability assessment for invasive mussels and other AIS.
  - \$150,000 to the Oregon Invasive Species Council (OISC) via ODA to facilitate rapid response exercises to increase states preparedness for invasive mussels.
  - \$20,000 to OISC via ODA to develop a framework for declaring emergencies in Oregon related to invasive mussels.

## 5. Policy Option Package (POP) – Proposed staffing increase of 4.77 FTE across 8 positions.

- Proposed prior to current legislative proposals as a net zero fund shift package.





Washington Department of  
**FISH & WILDLIFE**

# Implementation

# Implementation in Washington

## Quagga and Zebra

**Fiscal Summary**

**Total 2025-2027:**

- \$3.62 state legislative investment
- \$3.62 federal cost-share

**Budget Estimate:**

- Prevention: \$4,841,600
- Readiness: \$1,210,400
- Outreach, education, and public engagement: \$764,000
- Local government and tribal capacity building: \$424,000

Quagga and Zebra Mussels pose an imminent threat to Washington's health, economy, and environment. Long-term mitigation and management costs of infestation are expected to exceed \$100 million annually, disrupting hydropower production, agriculture, tourism, water supply, and fisheries including billions in investments in salmon recovery in the Columbia River Basin, freshwater ecosystems, and fish and wildlife resources. Recent discovery of quagga mussels in the Snake River underscores the urgent need to maintain current prevention measures, response planning, and readiness activities. Swift and decisive action is crucial to prevent invasive mussels from establishing in Washington.

**2025-2027 Funding Request**

**State investment: \$1.81 million annually [ongoing]**

**State dependent federal investment: \$1.81 million annually [ongoing]**

**Contact information:**  
**Justin Bush**  
Aquatic Invasive Species Policy Coordinator  
Justin.Bush@dfw.wa.gov

**Melena Thompson**  
Legislative Director  
Melena.Thompson@dfe.wa.gov

Request this information in an alternative format or language at [www.dfw.wa.gov/accessibility/](https://www.dfw.wa.gov/accessibility/) requests-accommodation, 833-885-1012, TTY (711), or [CivilRightsTeam@dfw.wa.gov](mailto:CivilRightsTeam@dfw.wa.gov).

Feb. 3, 2025

## Quagga and Zebra Mussel Prevention

**2025-2027 Funding Request**

**State investment: \$1.81 million annually [ongoing]**

**State dependent federal investment: \$1.81 million annually [ongoing]**

**Contact information:**  
**Justin Bush**  
Aquatic Invasive Species Policy Coordinator  
Justin.Bush@dfe.wa.gov

**Melena Thompson**  
Legislative Director  
Melena.Thompson@dfe.wa.gov

Request this information in an alternative format or language at [www.dfw.wa.gov/accessibility/](https://www.dfw.wa.gov/accessibility/) requests-accommodation, 833-885-1012, TTY (711), or [CivilRightsTeam@dfw.wa.gov](mailto:CivilRightsTeam@dfw.wa.gov).

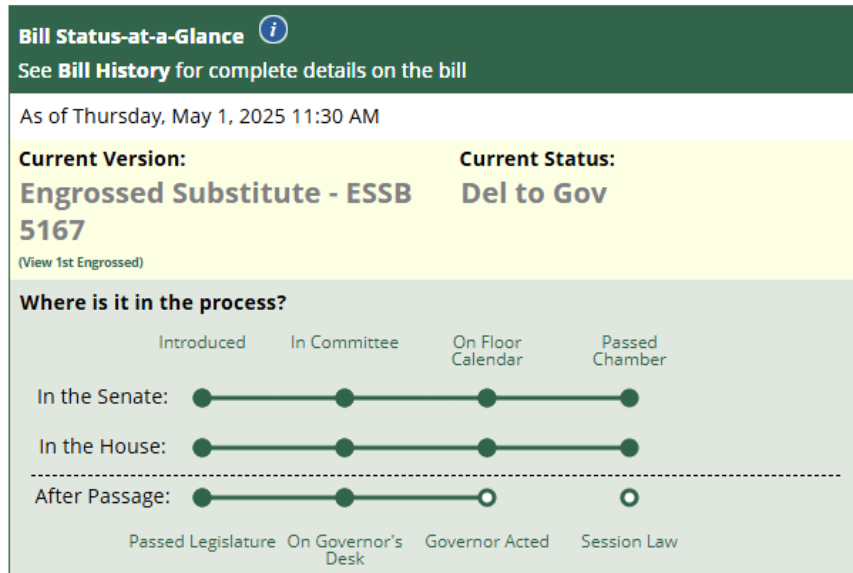
Feb. 3, 2025

Building on a Fiscal Year 2025 quagga mussel proviso of \$1.81 million in state general funds and leveraging \$1.81 million in federal funds, Washington Department of Fish and Wildlife (WDFW) will expand mussel activities including detection monitoring, implementing protections for habitat and infrastructure, and reducing impacts to our economy, environment, and species, including salmon and steelhead.

<https://wdfw.wa.gov/about/administration/budget/update#2025-27-operating>



# Implementation in Washington



Senate Bill 5167, 2025-2027 Biennium  
Conference Committee Operating  
Budget: Delivered to Governor  
Ferguson April 28, 2025

*\$1,810,000 of the general fund—state appropriation for fiscal year 2026, \$1,810,000 of the general fund—state appropriation for fiscal year 2027, and \$3,620,000 of the general fund—private/local appropriation are provided solely for monitoring and response efforts for invasive quagga mussels.*

*Possible 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.*



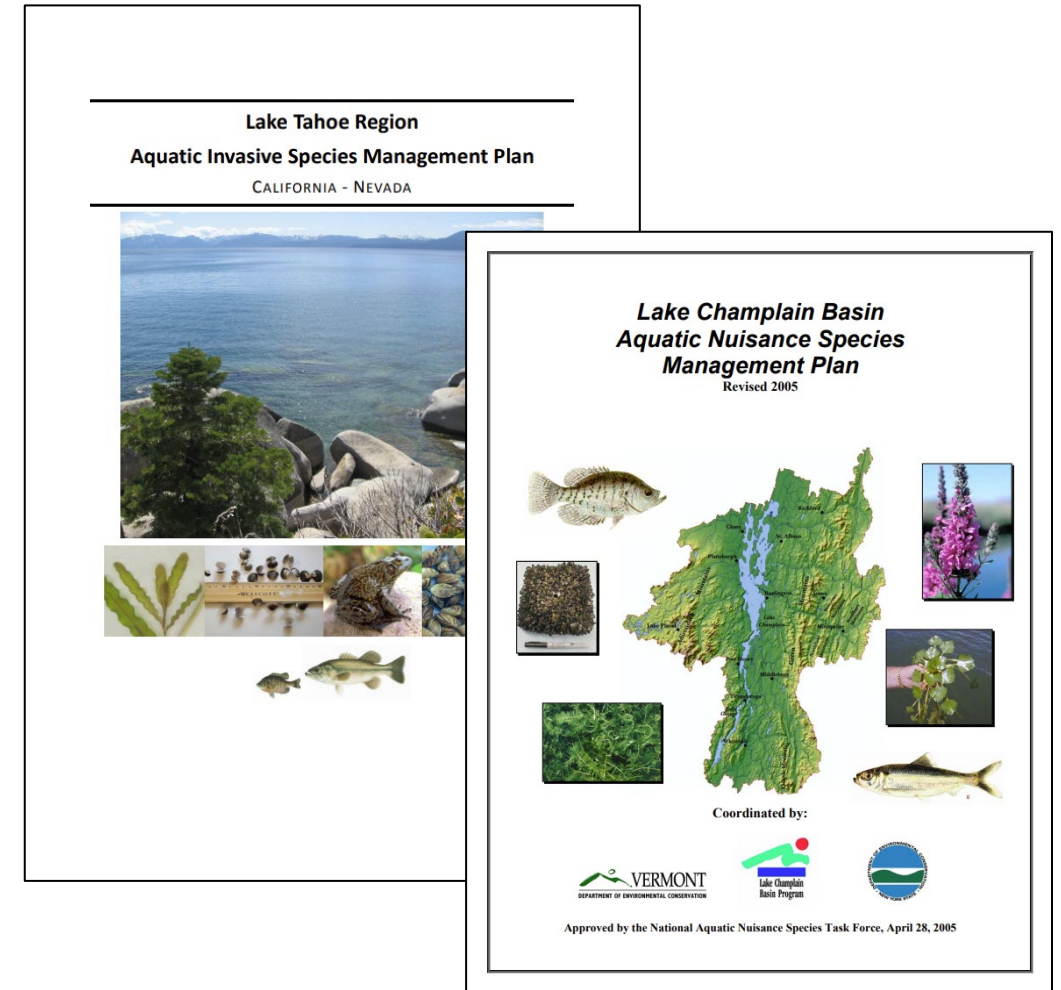
Washington Department of  
**FISH & WILDLIFE**

# Discussion



# Discussion

- Regional implementation mechanisms.
  - Connection to the Fish and Wildlife Program?
  - Connection to the Pacific NorthWest Economic Region Invasive Species Working Group, and others?
- A large shared problem, but not the only aquatic invasive species problem.
  - How to address other shared problems, including risks of new introductions through discharge of ballast water?
- Interstate Aquatic Nuisance [Invasive] Species Management Plan.
  - A potential solution?



<https://www.fws.gov/program/aquatic-nuisance-species-task-force/documents>



Oregon and Washington  
Invasive Mussel Near-Term Action Working Group  
Findings and Near-Term Action Recommendations Report



Washington Department of  
**FISH & WILDLIFE**

**Justin Bush**

Aquatic Invasive Species  
Division Manager  
564-669-9486  
[Justin.Bush@dfw.wa.gov](mailto:Justin.Bush@dfw.wa.gov)  
<https://dfw.wa.gov/ais>

**Keith DeHart**

Invasive Species and  
Wildlife Integrity Supervisor  
503-947-6308  
[keith.b.dehart@odfw.oregon.gov](mailto:keith.b.dehart@odfw.oregon.gov)  
<https://www.dfw.state.or.us>

