



Marimo Moss Ball Zebra Mussel Rapid Response After Action Report

Project Update for Columbia River Basin AIS Task Force
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**Imported Marimo
moss balls infested
w/Zebra mussels
discovered by
employee at Seattle
pet store in 2021**



Marimo Moss Balls are Popular in Aquariums and Home Decor





Invasive Zebra Mussels Found in Moss Balls

<https://www.fws.gov/story/invasive-zebra-mussels-found-moss-balls#:~:text=But%20%2D%20Place%20the%20moss%20ball,white%20vinegar%20for%2020%20minutes>

Invasive Zebra Mussels Found in Moss Balls

Consumers urged to destroy and dispose of them safely.

Invasive zebra mussels have been found in "moss balls," a plant product sold at aquarium and pet supply stores, garden centers, florist shops, and online retailers. Zebra mussels are regarded as one of the most destructive invasive species in North America and there is concern that live mussels from moss balls could be released into a storm drain or flushed into a waterway and cause significant damage.

Dispose of Moss Balls Safely; "Destroy, Don't Dump!"

Interdisciplinary team (students and faculty mentors) spanning legal and policy aspects of invasive species biology/prevention/management.

Goal:

- Project enables state and federal agencies and industry partners with tools to better coordinate efforts to prevent the introduction of future aquatic invasive species in trade.
- Project synergistic with larger OIT effort led by DeBruckere, Elwell and Otts



Project Objectives:



Objective 1: Develop a comprehensive, non-biased after response report that describes and evaluates the interagency and industry response to the discovery of moss balls contaminated with zebra mussels in February 2021.

Objective 2: Describe existing policies, laws, regulations, statutes, recommendations, and template language for model authorities (e.g. emergency actions like restricting the import of AIS infested organisms in trade).

Objective 3: Develop solutions that are collaboratively based and leverage existing relationships with partners in the aquatic pet trade pathway, including regulatory agencies, educational institutions, the pet industry, and networks of independent retailers

Objective 4: Recommend educational, policy, and regulatory actions and opportunities to mitigate further risk from aquarium, water garden, pet, native source pets, and horticulture industries and as such improve our preparedness for future unforeseen introductions.

Research Approach:

- Utilize a SWOT analysis framework
- Develop state-level case studies
- Form a team of policy and law students to:
 - Research actions taken, policies and authorities applied
 - Identify strengths and gaps in response, communications, policies and authorities
 - Propose possible legal and policy solutions
- IRB reviewed protocols to interview selected “Key Informants” regarding their role and perceptions of SWOT from the Marimo Moss ball incident



Learning from key Informants: state and federal agencies, extension educators, and importers and retailers

Federal	State	Regional	Industry	Extension
USDA APHIS	Departments of Agriculture	ANS Task Force	Local pet store retailers	Sea Grant
Customs and Border Protection	Departments of Fish and Game	Regional ANS Panels	Ornamental Fish International	Master Gardeners
US Geological Survey	Invasive Species Councils		Pet Advisory Network	Cooperative Extension
Fisheries and Ocean Canada			National Retailers (Petco)	

State Case Studies:

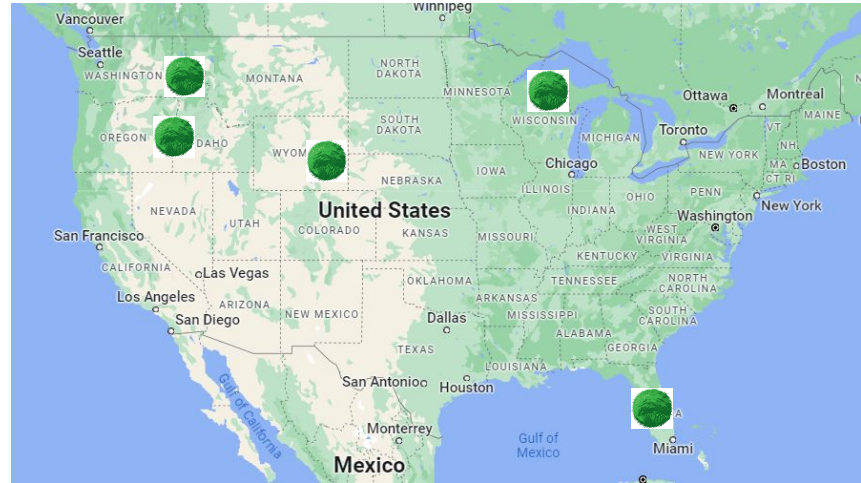
Oregon

Washington

Wyoming

Wisconsin

Florida (maybe)



Criteria for selecting states included: presence of zebra mussels in-state, robustness of AIS staff/funding, regional geography, use of quarantine orders, etc.

Does anyone in the audience have suggestions for other states that would make good case studies?

Current Progress

Interviewed 15 people from federal and state agencies. (Plan to interview 30-40)

Developed survey tool to allow people to submit written responses

Goal is to finish collecting data by end of June

Complete first draft by Aug 1

Final report by Sept 31



Preliminary findings

Federal findings -

- Importance of informal communication networks informal communication networks.
- We are finding agency gaps rather than overlap (for example: USDA does not have mandatory reporting back to USFWS)
- Have a central goto space for all the regulations and how they vary from state to state

State findings -

- Rapid Response plans around zebra mussels help guide how state-level actors actually responded to the moss ball incidents.
- Important to have a pre-established incident command structures (ICS) in place so that lines of communication and authority are already in place.
- Both national and state-level actors noted having flexibility in a response is important, and cautioned against over-planning at a species-by-species level.

Synergies with other efforts

Aquatic Invasive Species In Commerce Project

Don't Let it Loose Campaign - developing contacts with pet stores

National Invasive Species Council - AIS Ports of Entry Task Team

Western Regional Panel on Aquatic Nuisance Species

AIS Organisms in Trade Hitchhiker Working Group

Oregon Policy Analysis Lab (at OSU)



Contact Information

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Questions/Feedback