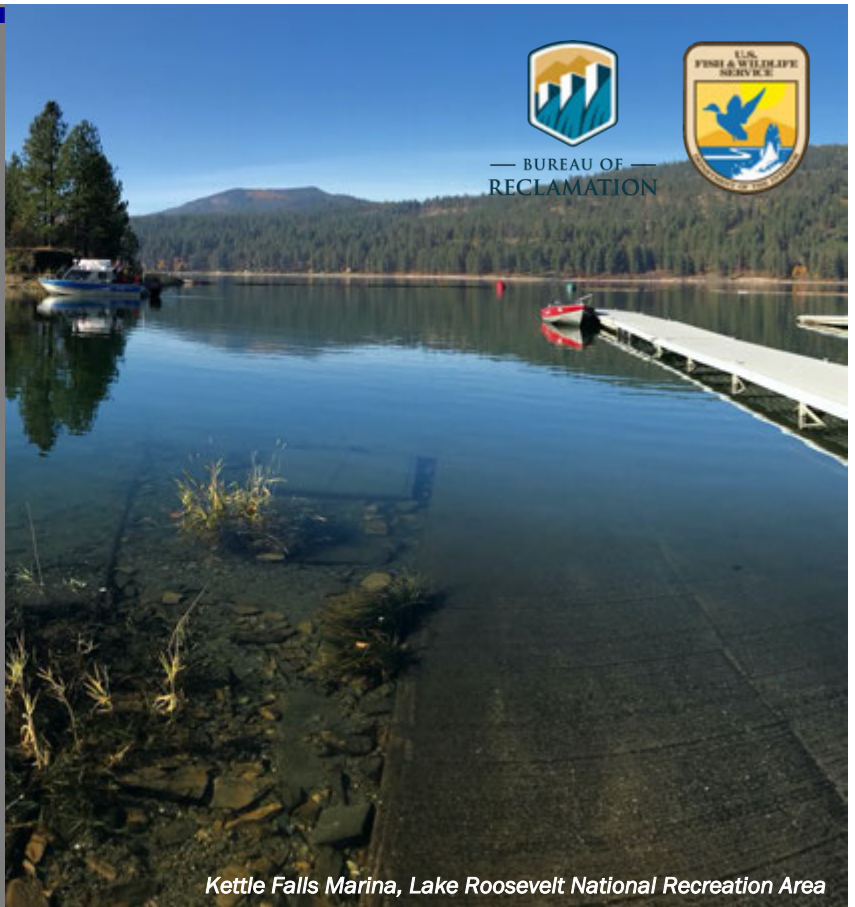
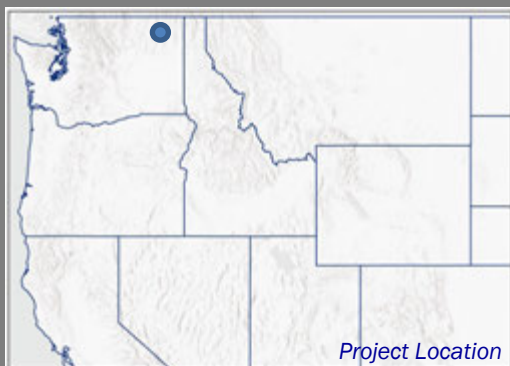


## ACTIONABLE SCIENCE

# Washington State's Lake Roosevelt National Recreation Area Freshwater Invasive Mussel Response Exercise



The Columbia River Basin is the last basin in the United States and Canada to remain free of invasive mussels. Yet, invasive mussels will likely establish in Washington given they have successfully invaded other U.S. water bodies. In 2019, the Washington Department of Fish and Wildlife, U.S. Bureau of Reclamation (Reclamation), National Park Service, Spokane Tribe of Indians, Colville Confederated Tribes, and Washington Invasive Species Council conducted a first-of-its-kind field exercise to an invasive mussels invasion in Washington's Lake Roosevelt National Recreation Area. Partners employed the Incident Command System, a hierarchical management system that is typically used to respond to all scales of emergencies.



Kettle Falls Marina, Lake Roosevelt National Recreation Area

## KEY ISSUES ADDRESSED

Quagga (*Dreissena bugensis*) and zebra mussels (*Dreissena polymorpha*) are destructive non-native freshwater mollusks. Once established, they can form thick colonies that can damage infrastructure, limit recreational opportunities, and threaten fisheries and other native species. Previous planning exercises that focused on discussions of field activities in tabletop-scenarios made it difficult for partners to anticipate all potential obstacles they could encounter in a field response. Further, there is no single recipe to successfully respond to invasive species detections as each waterbody has different environmental factors and legal jurisdictions. Therefore, there is a need to continually train, plan, and hold exercises to practice detection and eradication.

## PROJECT GOALS

- Perform and test the effectiveness of the Response Plan
- Provide Incident Command System training to all participants
- Develop short and long-term plans for infestation containment and eradication or long-term control

## STAYING PREPARED

The Washington Invasive Species Council has held several courses and workshops to build response skills, including a SCUBA Operations Workshop to cross-train regional dive teams.



Alberta Provincial Canine Team Searches for Mussels Along the Shore

## PROJECT HIGHLIGHTS

**Clear Command Structure:** The exercise planning team hosted multiple Incident Command System trainings and workshops. These sessions provided interagency responders with a clear command structure. For example, unified commanders and different chiefs were designated to oversee aspects like logistics and project finance.

**Delineation and Containment:** To test detection skills during the response exercise, the exercise team planted fake mussels along the shore of Lake Roosevelt and in recreational boats. Two canine survey teams sniffed out mussels along the shore, and divers conducted underwater searches for the mussels. The containment team successfully assembled a containment screen and treated the area with a biodegradable and non-toxic rhodamine dye to simulate a pesticide treatment.

**Infestation Prevention:** The project team members promoted and participated in the national campaign “Clean, Drain, Dry.” This encourages recreational watercraft owners to clean their boats, drain all the remaining water, and completely dry their equipment. During the response exercise, responders set up mandatory watercraft inspection and decontamination stations for cleaning fouled watercraft in order to prevent the infestation from being spread to new waterbodies.

## Collaborators

- Washington Invasive Species Council (WISC)
- See online for full list of collaborators

CCAST Author: Tam Luong, University of California, Los Angeles, July 2022.

Photos courtesy of WISC

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## LESSONS LEARNED

After a year of planning and training, the exercise team successfully executed the rapid response exercise with \$150,000 funding provided by an agreement with Reclamation. Throughout the exercise, all 59 participants communicated and operated using the Incident Command System’s structure to maintain a safe environment that resulted in zero injuries. All exercise objectives were achieved, and the response exercise successfully demonstrated a mock response to the detection of invasive mussels in Lake Roosevelt.

It is impossible to plan for everything from a meeting room. The process of holding a field-based exercise provided value and insight to planning field operations. There were many unforeseen learning moments and elements not covered in the state and regional plans that could have led to failure in response to a real invasive mussel detection. For example, some field equipment, such as the containment system, was difficult to deploy quickly. Hence, it needs to be used regularly by trained staff in order to be successfully deployed in an actual emergency.

## NEXT STEPS

- Develop more detailed response frameworks for every water body and improve regional and state response plans
- Conduct Incident Command System position-specific trainings and workshops to build field capabilities such as monitoring and containment
- Continue educating the public about the threat of invasive species and how to prevent their spread

For more information on this project, visit: <https://invasivespecies.wa.gov/projects/kettle-falls-rapid-response-exercise/>



Testing Water Quality to Determine Efficacy of Containment System