



Columbia River Basin 100<sup>th</sup>  
Meridian Team Meeting  
Helena, Montana  
June 28, 2017

# **ALS in the Pacific Northwest: Collaborative Efforts and Assessments**

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Vulnerability Assessments Completed in the  
Columbia River Basin as of January 2017

 Vulnerability Assessments Completed  
 Vulnerability Assessments Planned


# Pacific Northwest Reservoir System

**Legend**


**Storage**

-  Corps of Engineers
-  Bureau of Reclamation
-  Other

**Run of River**

-  Corps of Engineers
-  Bureau of Reclamation
-  Other

**Gages**

- 

# PSMFC Columbia River Basin Vulnerability Assessment Status





# [www.westernais.org](http://www.westernais.org)

- Photo and video gallery
- Watercraft inspection and decontamination database
- Monitoring database





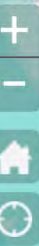


# Western Aquatic Invasive Species Photo and Video Gallery

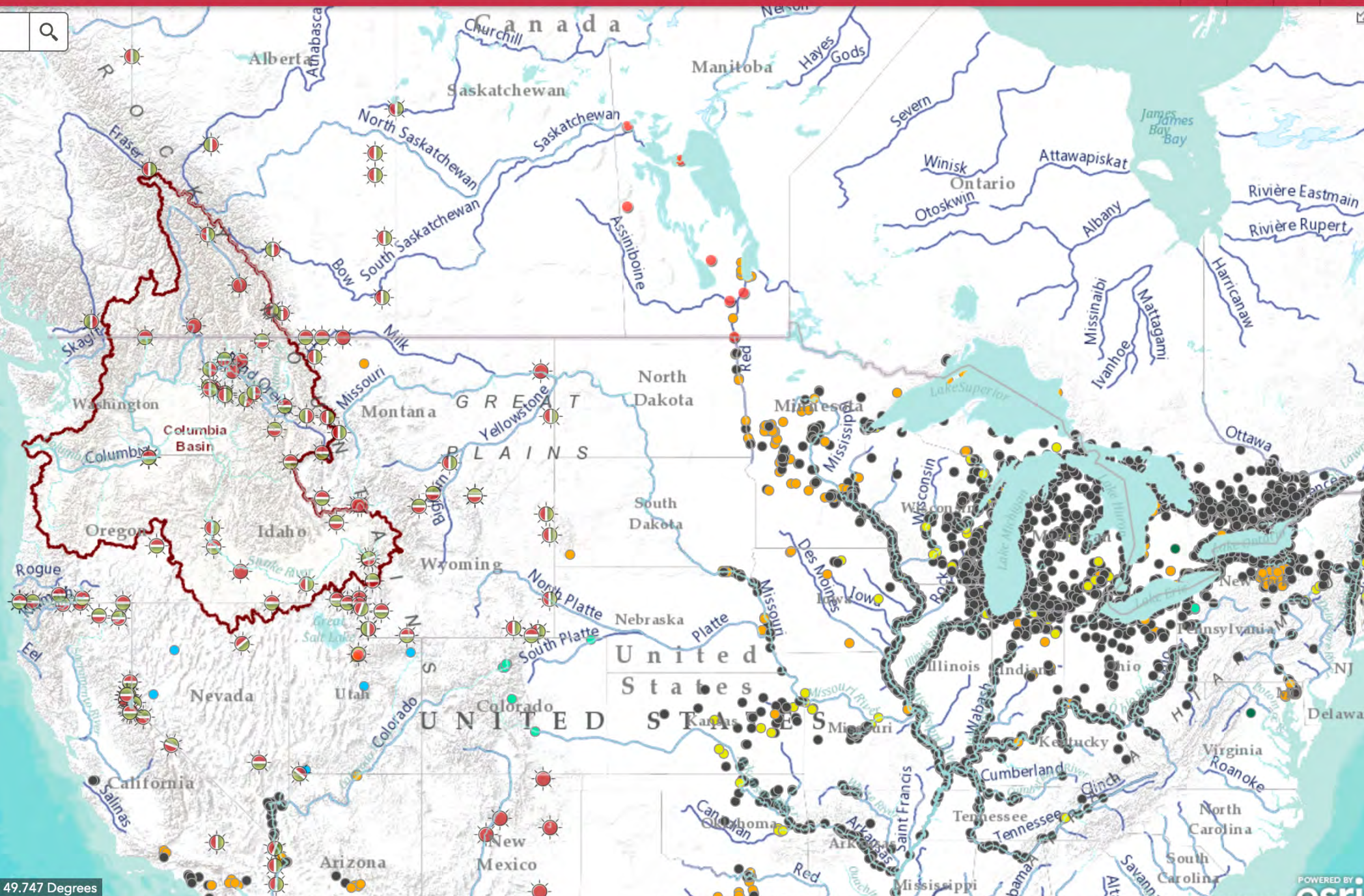
[HOME](#) | [WATERCRAFT](#) | [AMPHIBIANS](#) | [INVERTEBRATES](#) | [PLANTS](#) | [MONITORING](#) | [GRAPHICS](#) | [VIDEOS](#) | [SEARCH](#)







Esri World Geocoder



-88.876 49.747 Degrees



# Zebra and Quagga Mussel Monitoring

Protecting the West



Overview

2010

2011

2012

2013

2014

2015

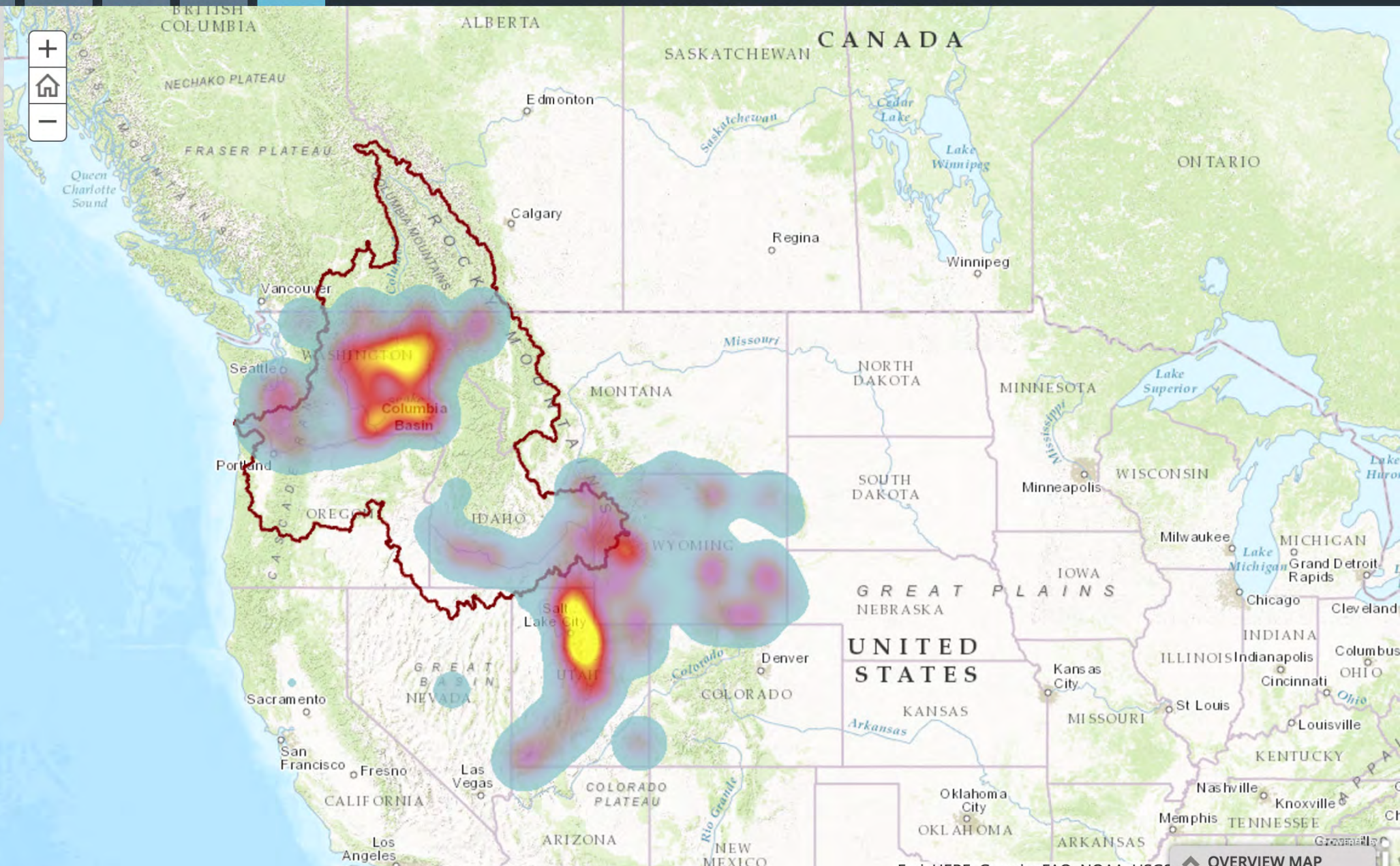
2016

2016 ZQ Monitoring Activity



Columbia Basin Watershed Boundary

Columbia Basin Boundary



OVERVIEW MAP



# Vulnerability and Habitat Suitability of Fort Peck Lake Recreation, Irrigation, Water Supply, and Fish and Wildlife Features to Invasive Mussel Impacts (for USACE)



- BOR - conducting a VA at the Fort Peck Power plant in 2017.
- USACE seeks to extend assessment beyond powerhouse facility to incorporate other authorized purposes - recreation, irrigation, water supply, and fish and wildlife to anticipate and plan for a QZ infestation.
- Compiling information on the quantity, type, intended purpose, and locations of **water intakes**; quantity, location and type of **aquatic-related recreational facilities**; quantity, location and type of **water overflow pipes**; **water quality** data; lake elevation history, and other pertinent information to inform the vulnerability and habitat suitability of facility features to invasive mussel impacts.





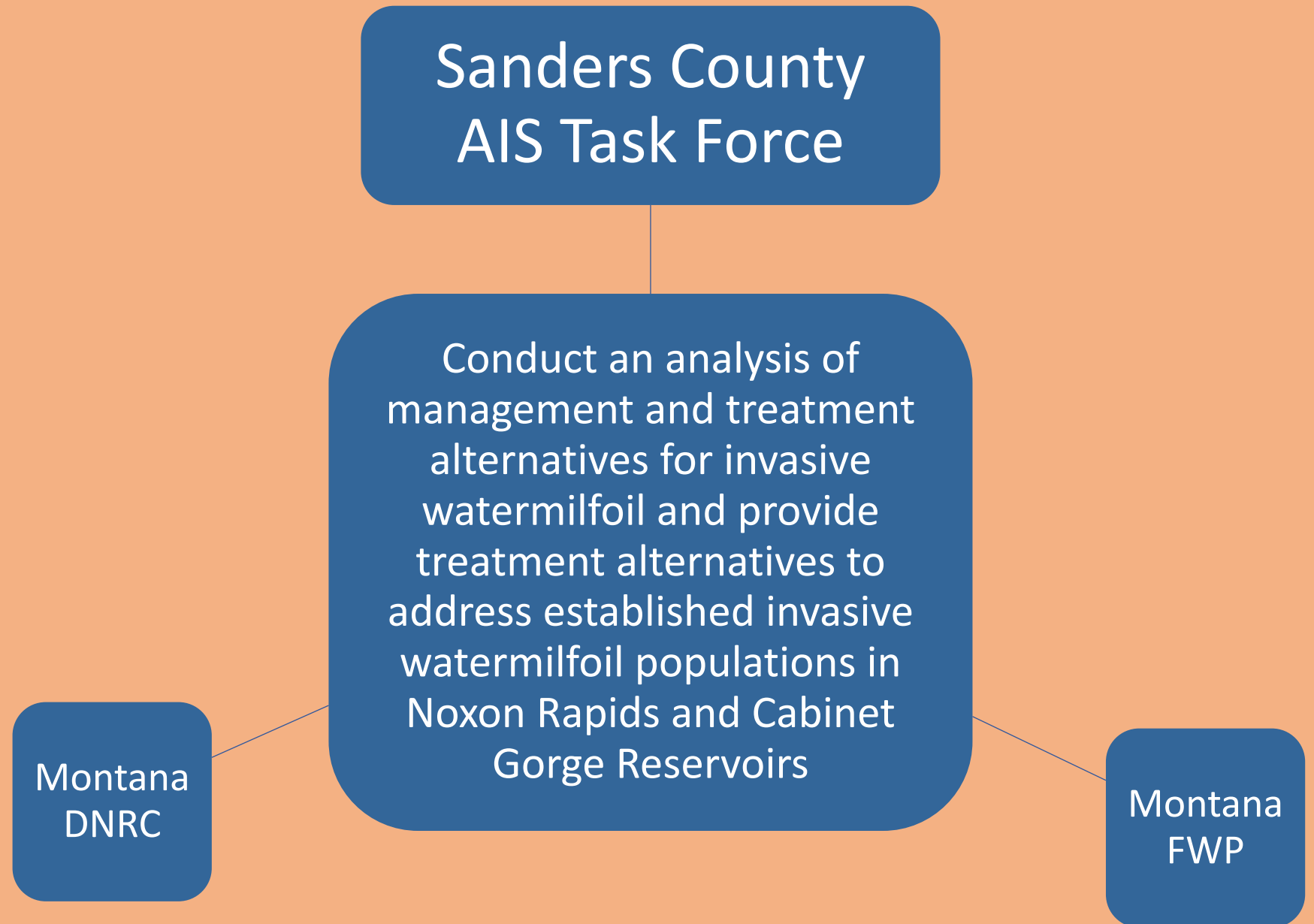
# Facilities

- FWP Hatchery
- USACE Interpretive Center
- Irrigation and water updates downstream of dam
- . . . .



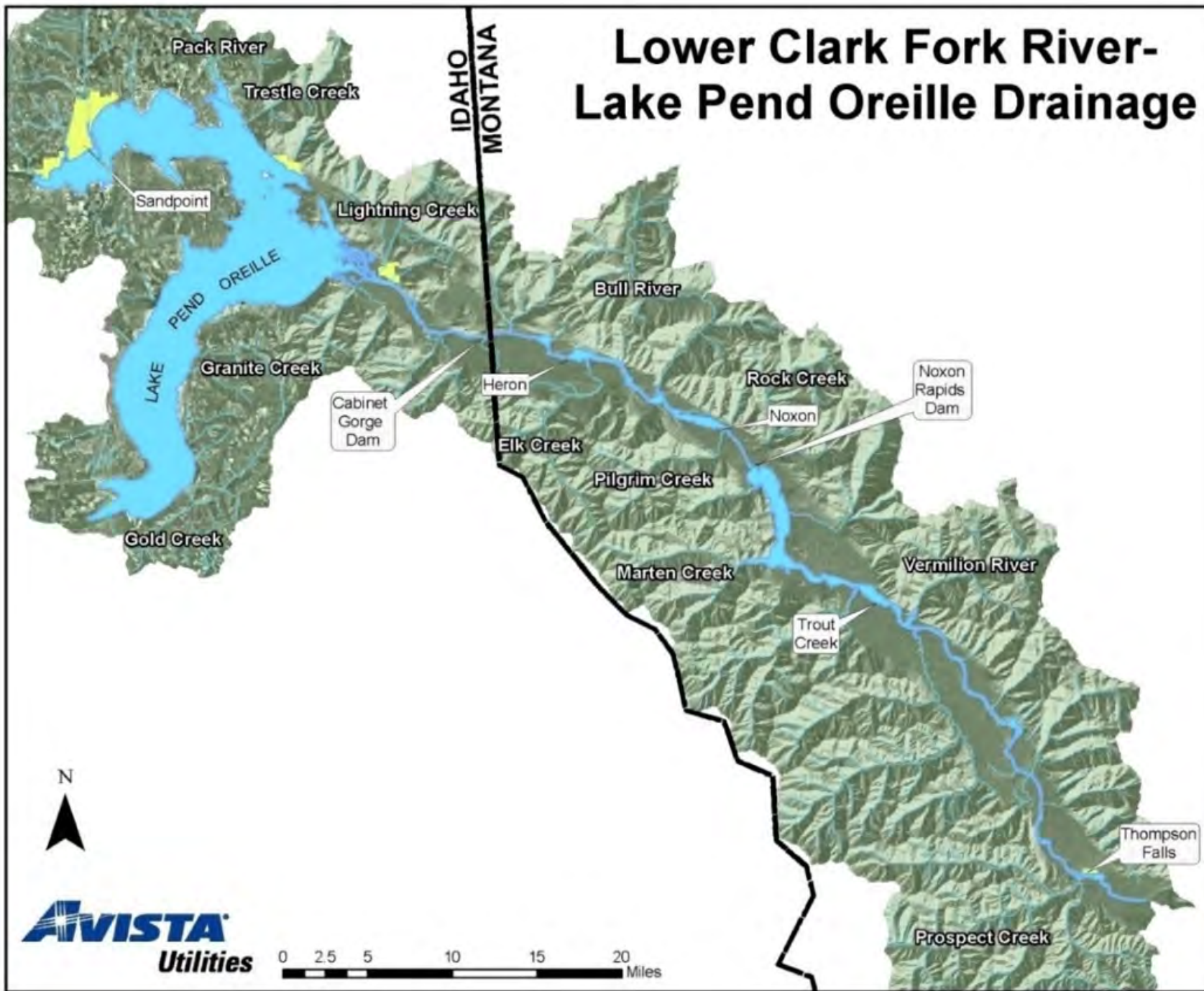


# Analysis of Treatment Alternatives for Invasive Watermilfoil in Noxon Rapids and Cabinet Gorge Reservoirs (for Sanders County, Montana)





# Lower Clark Fork River- Lake Pend Oreille Drainage





# Process

- Compile information on:
  - Reservoir management purposes and priorities, water quality, trends in aquatic invasive species through time, and public and private access;
  - Fisheries priorities for the reservoirs;
  - Association between macrophyte biomass and fish;
  - Management goals for EWM in the region, state, county, and reservoirs;
  - Federal policies and plans associated with the prevention and introduction of invasive species;
  - Permitting requirements associated with different treatment options;
  - Physical, mechanical, biological, and chemical methods used to control EWM - costs, advantages, and disadvantages of each approach and most appropriate locations and scenarios for each application;
  - A summary of control efforts and funds expended to date to address invasive watermilfoil;
- Outcomes from a survey of and workshop with Task Force members; and
- Consequences/outcomes of a No Action versus an Adaptive Management Action option.



# Consensus and Recommendations

- Define and measure success
  - Contain and control
- Prioritize treatments annually
  - Public use and access sites
  - Large, high invasive plant density, shallow access areas with significant boat traffic
- Creation of a Scientific Advisory Committee to make initial recommendations to Sanders County AIS Task Force
- Annual Surveys
  - Annual boat launch and public access site surveys
  - Biannual whole lake surveys.
- Avista to explore raking EWM for residents
- Funding Committee to ensure long-term funding to contain AIS within the system





# Model Quagga/Zebra Mussel Reciprocal Vessel Certification Program for Clear Lake, California and Neighboring Lakes (for Clear Lake County, California)

County of Clear Lake seeks to work with relevant resource agencies, jurisdictions and partners that manage lakes Berryessa, Mendocino, Sonoma, and Clear Lake to understand and assess **similarities and differences** among their mussel prevention programs, develop a **draft model reciprocal vessel program** based on the *UMPS* (2016), and **work with regional managers to finalize the plan**, including developing associated policy documents.





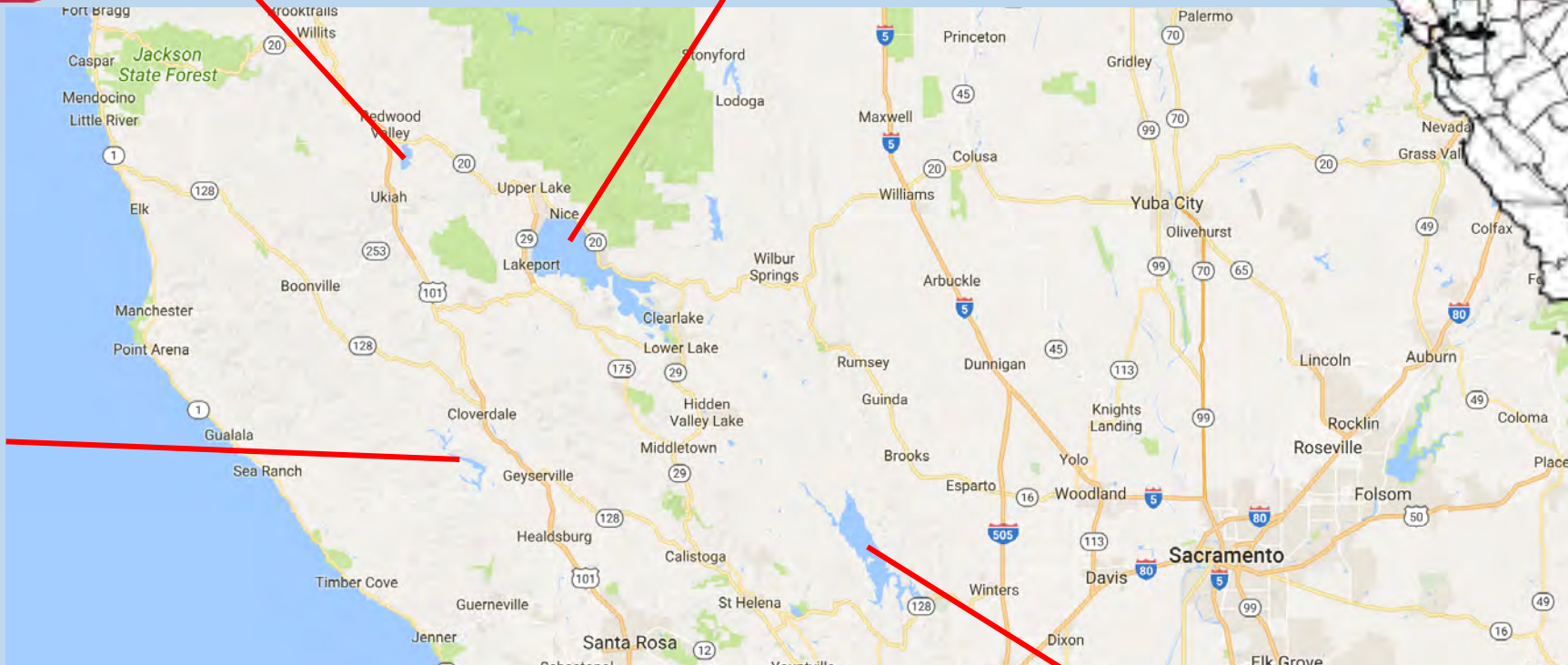


Lake  
Mendocino

Clear Lake



Lake Sonoma



Lake Berryessa

**RECLAMATION**

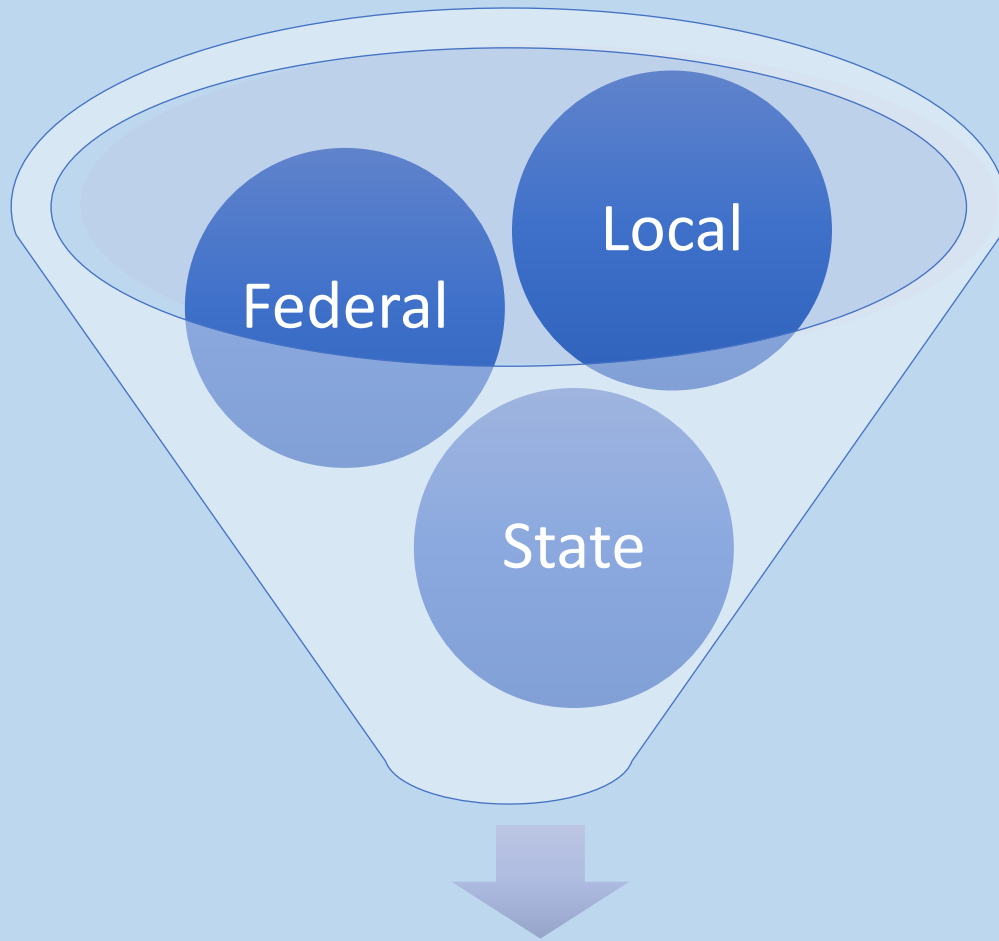
*Managing Water in the West*



# North Coast Zebra and Quagga Mussel Consortium

- Humboldt County
- Mendocino County
- Napa County
- Sonoma County
- Humboldt Bay Municipal Water District
- Marin Municipal Water District
- Sonoma County Water Agency
- Redwood Valley County Water District
- Russian River Flood Control and Water Conservation Improvement District
- North Marin Water District





**Reciprocity**

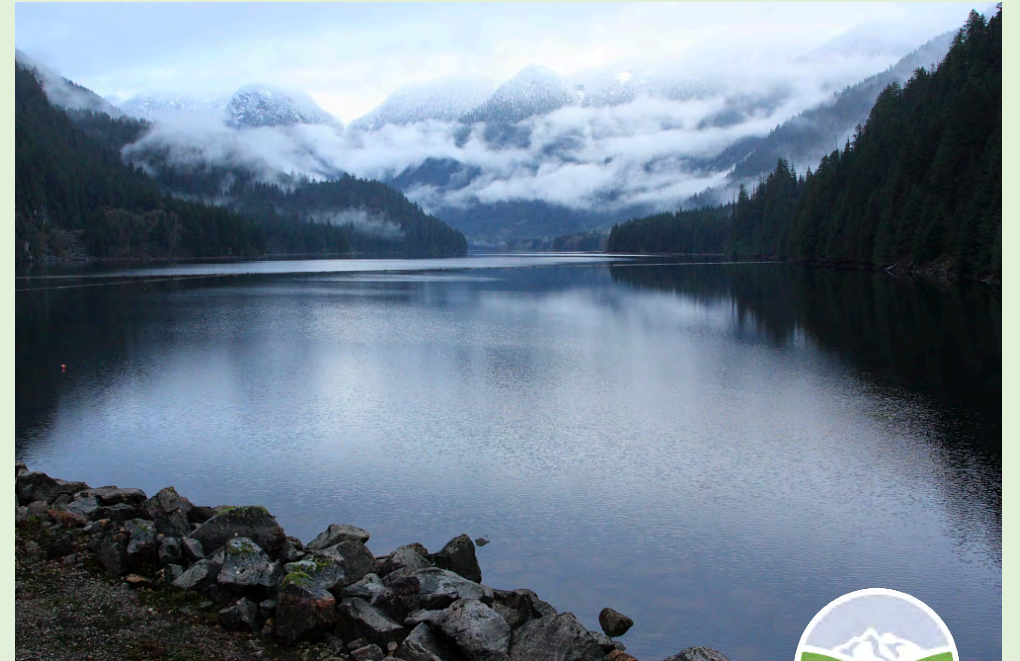
Reciprocity is “a mutual exchange of privileges,” and specifically, “a recognition by one of two countries or institutions of the validity of licenses or privileges granted by the other” (Merriam-Webster 1999).

The recognition of a watercraft inspection or decontamination certificate issued by another entity, if that entity adheres to minimum standards for inspection and decontamination (Otts and Nanjappa 2014).



# Metro Vancouver Biosecurity Watershed Analysis – Terrestrial and Aquatic Invasive Species

- Metro Vancouver's Water Services Department (Watershed/Environmental Management & Quality Control Division) (WEMQC) requested a biosecurity analysis
  - Assess procedures associated with preventing the introduction and spread of aquatic and terrestrial invasive species throughout its jurisdiction.
  - Review of existing WEMQC best management practices and strategies compared to practices and protocols employed by other water delivery providers, states, and provinces.



# Issue

- Knotweed and other terrestrial invasive infestations
- Little to no ability to control using herbicides because of drinking water watershed protections





# Recommendations

- Prevention
  - Risk assessments and species watch lists
  - Contractor contracts
  - Vehicle and equipment sanitation and BMPs (e.g., firefighting, felt-soled waders, procedures)
  - Native plant and seed procurement and use
  - Watershed roadside vegetation management
  - Recreation
- Control
  - Allow use of glyphosate and impazapyr in off-drainage areas
- Outreach and Education
- Monitoring

