



LAKE CHELAN AQUATIC INVASIVE SPECIES SUBCOMMITTEE

MEETING 2

MARCH 11, 2026

10 AM – 12 PM

Meeting Objectives

- AIS Subcommittee workplan overview and key upcoming dates
- Learn from out-of-basin organizations on their respective AIS management programs to facilitate group discussions and inform the Lake Chelan AIS Watercraft Inspection Program Plan.
- Learn about the Chelan County Noxious Weed Control Board and their ongoing work related to riparian and wetland noxious weed management within the Lake Chelan Watershed.

Meeting Agenda

Agenda Item

Welcome and Overview

AIS Subcommittee Workplan/Key Dates

AIS Perspectives and Projects from the Lake Chelan Basin
Adam Pfleger, Chelan County Noxious Weed Control Board

Whatcom County AIS Prevention Program Overview and Lessons Learned
Chloe Dodd, Whatcom County AIS Prevention Program

Lessons learned from the Skagit Hydroelectric Project
Leska Fore, Seattle City Light

Invasive QZM detection, eradication, and ongoing prevention
Michael Stephenson, Idaho Power

AIS Subcommittee Workplan and Schedule

NATE HOUGH-SNEE, MEADOW RUN

AIS Subcommittee Overview

Subcommittee Composition

Chelan County Noxious Weed Control Board
Chelan PUD
WDFW
State Parks
Lake Chelan Research Institute
National Park Service
Chelan County Commissioner
Chelan Basin Conservancy
Chelan County Natural Resources Department
US Bureau of Reclamation
Resident
All Things Lake Chelan
Department of Ecology
Douglas PUD

Subcommittee Goal:

Make recommendations to the Lake Chelan Collaborative regarding development of a Lake Chelan AIS Management Plan for adoption as a part of the Lake Chelan Watershed Restoration Plan.

Comprehensive planning for AIS prevention, detection, and management

The LCC identified AIS as the #1 priority issue to be addressed by the watershed plan.

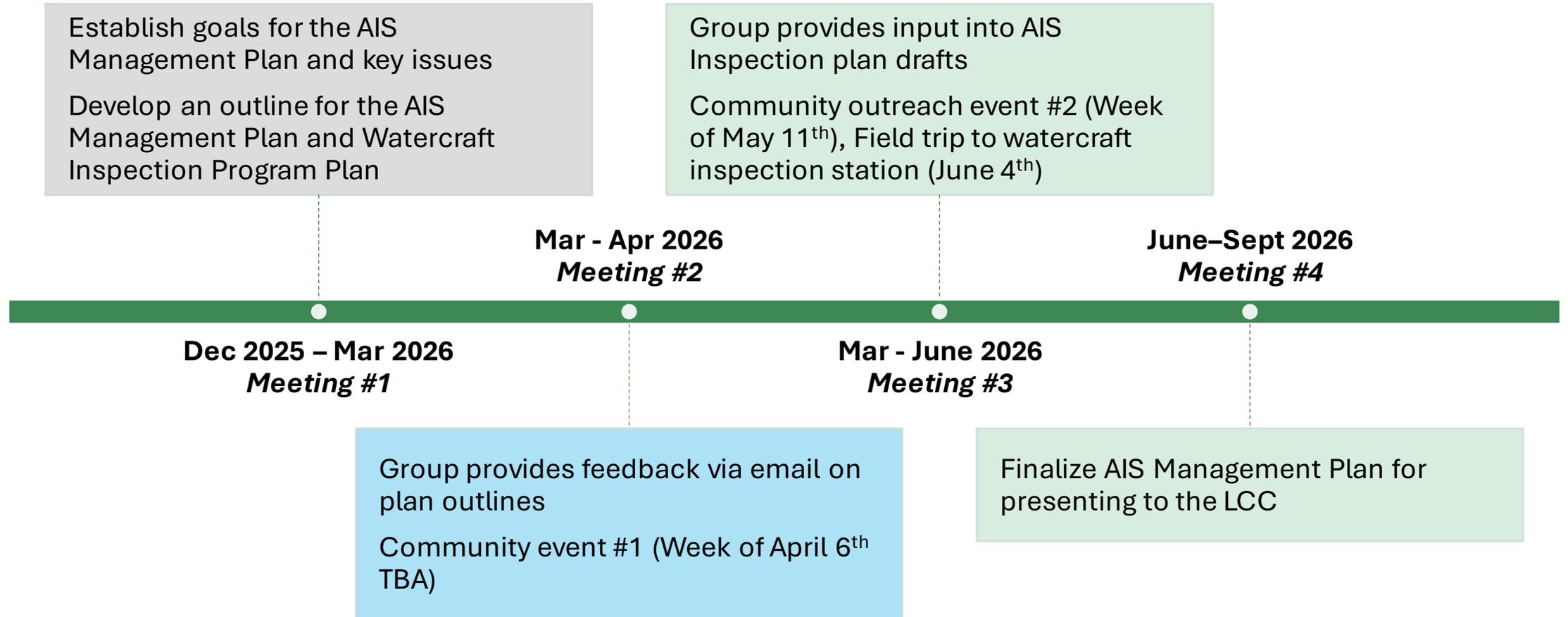
AIS Deliverables Overview

**Lake Chelan Watershed
Restoration Plan**

AIS Management Plan

AIS Watercraft Inspection Plan

Workplan Overview



Lessons Learned from AIS Management in the PNW

MULTIPLE SPEAKERS

Speakers

Panel 1: Perspectives from Whatcom and Chelan County

AIS Perspectives and Projects from the Lake Chelan Basin

Adam Pfleeger, Chelan County Noxious Weed Control Board

Whatcom County AIS Prevention Program Overview and Lessons Learned

Chloe Dodd, Whatcom County AIS Prevention Program

Questions and Discussion

Panel 2: Perspectives from Dam Operators

Lessons learned from the Skagit Hydroelectric Project

Leska Fore, Seattle City Light

Invasive QZM detection, eradication, and ongoing prevention

Michael Stephenson, Idaho Power

Questions and Discussion



Presentations

Aquatic weeds in the Chelan watershed

ADAM PFLEGER – COORDINATOR
CHELAN COUNTY NOXIOUS WEED
CONTROL BOARD



Who are we?

- We are the Noxious Weed Control Board!
- One of 38 Noxious Weed Control Boards in the State
- Douglas County has a weed task force
- We have a staff of four
- We operate on an annual benefit assessment
- We work under the direction of a 5 member board, currently have one position open!



What do we do?

-Our Mission Statement

“It is the mission of the Chelan County Noxious Weed Control Board to promote compliance with the Washington State Noxious Weed Laws RCW 17.10 and WAC 16-750 through education, technical assistance, and enforcement, when necessary, to protect the agricultural lands and natural resources of Chelan County.”

-Site visits to help county residents with weed identification

-Notify landowners of noxious weed infestations (3,759 known sites); (1,000 Goatheads), (1,300 Tree of heaven)

-Weed management plans

-Publications and workshops

-Annual roadside surveys for early detection

What Are Noxious Weeds?

- Non-Native - introduced by humans
 - Aggressive Growth
 - Lack of Natural Enemies
 - Highly Destructive, Competitive, or Difficult to Control
-
- Defined by State Law (RCW 17-10 & WAC 16-750)



WAC 16-750 - The weed list

- Class A Weeds:
Eradicate
- Class B Weeds:
Designated Control
- Class C Weeds:
Control if on
County Weed List



**“Control” means
to prevent all
seed production and
spread**

Class A Noxious Weeds

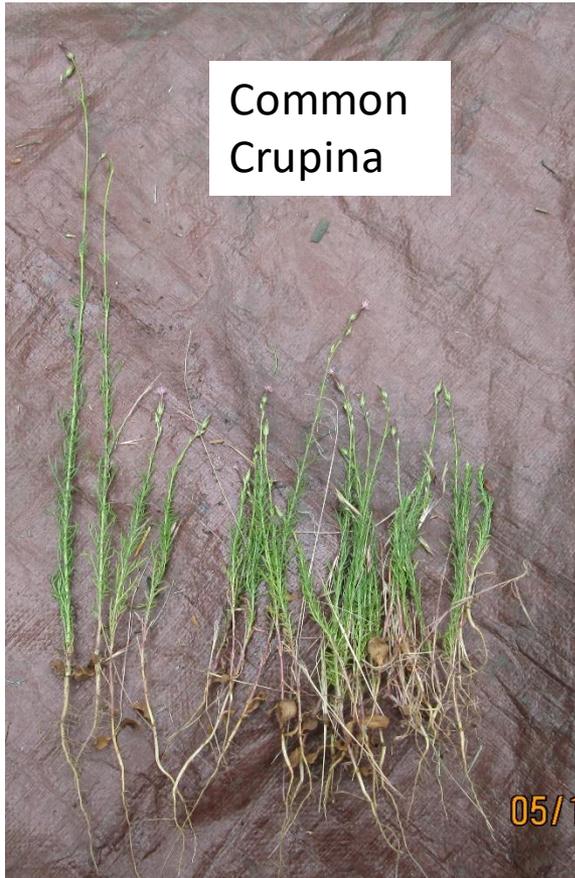
- Non-native species whose distribution in Washington is still limited
- Eradication and prevention
- Grant funding can be available as control can be difficult

The following list has been adopted from the Washington State Noxious Weed List contained in WAC 16-750.

CLASS A - Eradication Required	
COMMON NAME	SCIENTIFIC NAME
common crupina	<i>Crupina vulgaris</i>
cordgrass, common	<i>Spartina anglica</i>
cordgrass, dense-flowered	<i>Spartina densiflora</i>
cordgrass, saltmeadow	<i>Spartina patens</i>
cordgrass, smooth	<i>Spartina alterniflora</i>
dyer's woad	<i>Isatis tinctoria</i>
eggleaf spurge	<i>Euphorbia oblongata</i>
false brome	<i>Brachypodium sylvaticum</i>
flowering primrose-willow	<i>Ludivigia palustris</i>
flowering rush	<i>Butomus umbellatus</i>
French broom	<i>Genista tinctoria</i>
garlic mustard	<i>Alliaria petiolata</i>
giant hogweed	<i>Heracleum mantegazzianum</i>
goatsrue	<i>Galega officinalis</i>
hydrilla	<i>Hydrilla verticillata</i>
Johnsongrass	<i>Sorghum halepense</i>
knapweed, bighead	<i>Centaurea macrocephala</i>
knapweed, Vochin	<i>Centaurea nigrescens</i>
kudzu	<i>Pueraria montana var. lobata</i>
meadow clary	<i>Salvia pratensis</i>
oriental clematis	<i>Clematis orientalis</i>
purple starthistle	<i>Centaurea calcitrapa</i>
reed sweetgrass	<i>Glyceria maxima</i>
ricefield bulrush	<i>Schoenoplectus mucronatus</i>
sage, clary	<i>Salvia sclarea</i>
sage, Mediterranean	<i>Salvia aethiops</i>
silverleaf nightshade	<i>Solanum elaeagnifolium</i>
small-flowered jewelweed	<i>Impatiens parviflora</i>
South American spongeplant	<i>Limnium laevigatum</i>
Spanish broom	<i>Spartium junceum</i>
Syrian beancaper	<i>Zygophyllum fabago</i>
Texas blueweed	<i>Helianthus ciliaris</i>
thistle, Italian	<i>Carduus pycnocephalus</i>
thistle, milk	<i>Silybum marianum</i>
thistle, Turkish	<i>Carduus cinereus</i>
thistle, slenderflower	<i>Carduus tenuiflorus</i>
variable leaf mirror	<i>Myriophyllum heterophyllum</i>
wild four-o'clock	<i>Mirabilis nyctaginea</i>

Class A Noxious Weeds

Common
Crupina



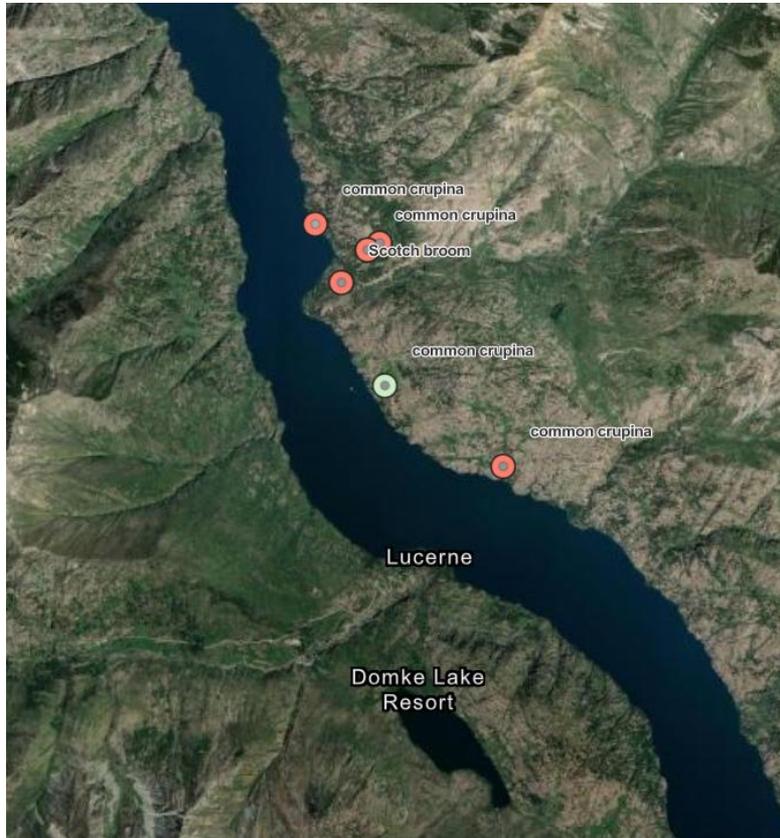
Wild Four
O'clock



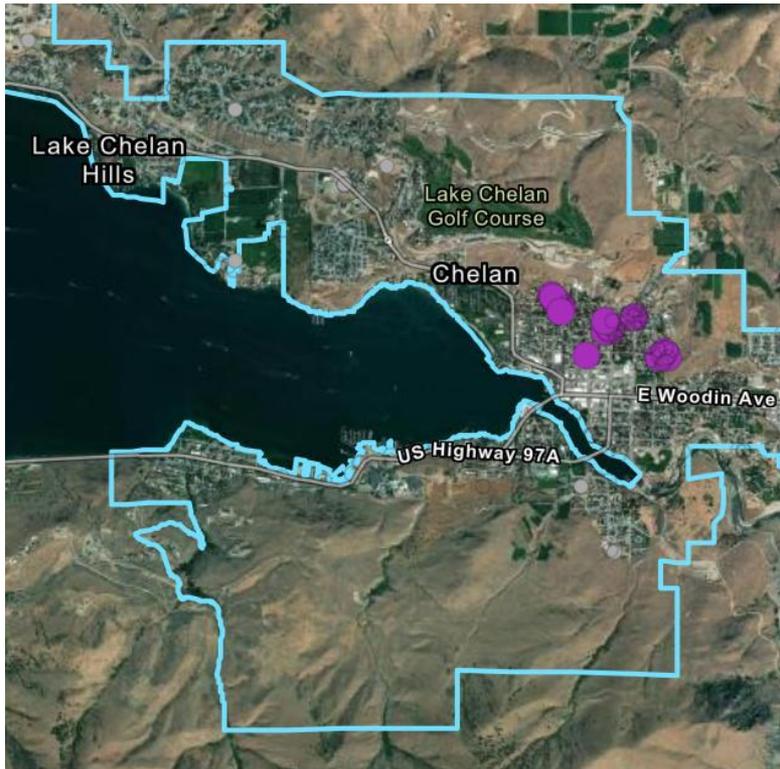
Flowering
Rush



Common Crupina

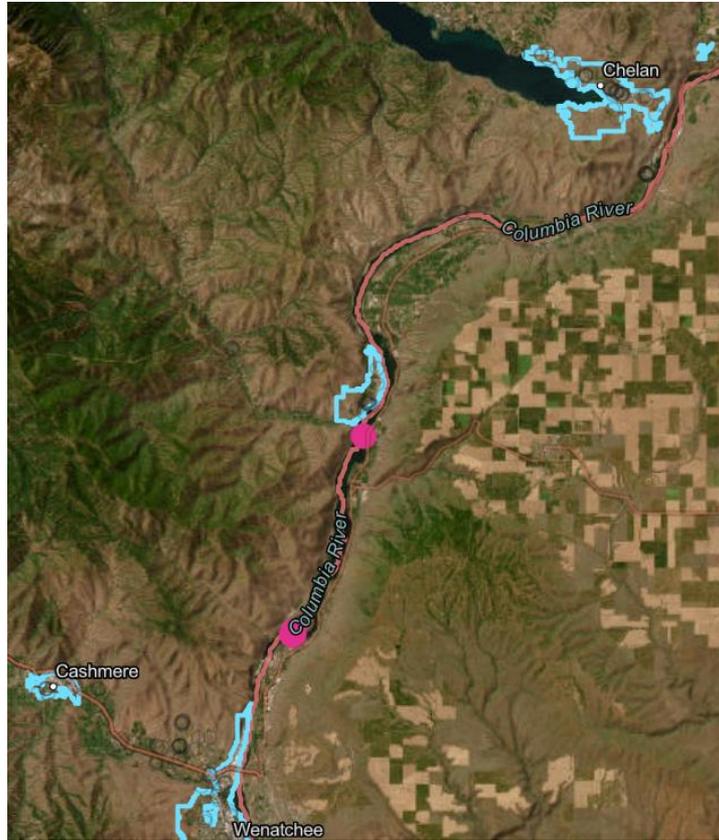


Wild Four O'clock

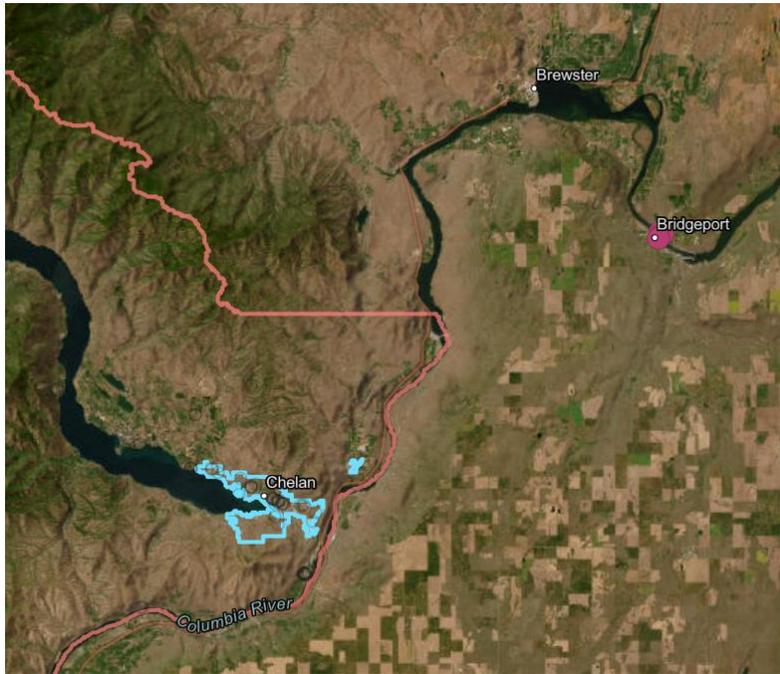


Jennifer Andreas, WSU Extension

Flowering Rush



Round Leaf Bittersweet



Class B Noxious Weeds

- Designated for mandatory control in regions where they are not yet widespread
- Non-designated class B weed, control is decided at the local level
- Containment is a goal

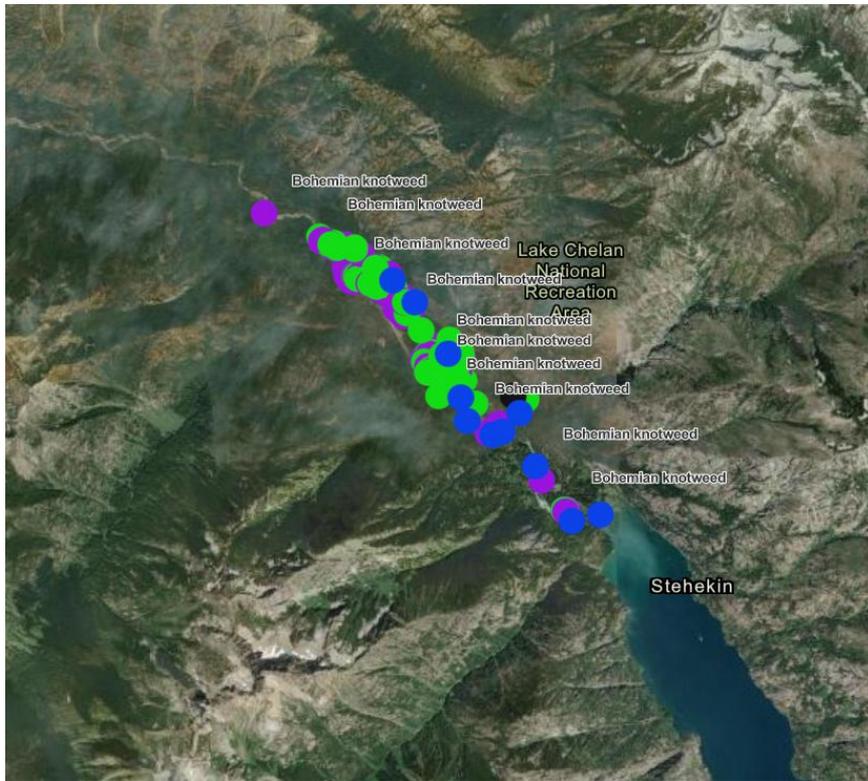
CLASS B DESIGNATED - Control Required for Chelan County	
blueweed	<i>Echium vulgare</i>
Brazilian elodea	<i>Egeria densa</i>
bugloss, annual	<i>Lycopsis arvensis</i>
bugloss, common	<i>Anchusa officinalis</i>
camelthorn	<i>Alhagi maurorum</i>
common fennel, (except bulbing fennel)	<i>Foeniculum vulgare</i> (except <i>F. vulgare</i> var. <i>azoricum</i>)
common reed (nonnative genotypes only)	<i>Phragmites australis</i>
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
European coltsfoot	<i>Tussilago farfara</i>
fanwort	<i>Cabomba caroliniana</i>
gorse	<i>Ulex europaeus</i>
grass-leaved arrowhead	<i>Sagittaria graminea</i>
hairy willowherb	<i>Epilobium hirsutum</i>
hanging sedge	<i>Carex pendula</i> incl. <i>subsp. pendula</i> & <i>agastachys</i>
hawkweed oxtongue	<i>Picris hieracioides</i>
hawkweed, orange	<i>Hieracium aurantiacum</i>
hawkweeds: All nonnative species and hybrids of the meadow subgenus	<i>Hieracium</i> , subgenus <i>Pilosella</i>
hawkweeds: All nonnative species and hybrids of the wall subgenus	<i>Hieracium</i> , subgenus <i>Hieracium</i>
herb-Robert	<i>Geranium robertianum</i>
hoary alyssum	<i>Berteroa incana</i>
houndstongue	<i>Cynoglossum officinale</i>
indigobush	<i>Amorpha fruticosa</i>
knapweed, black	<i>Centaurea nigra</i>
knapweed, brown	<i>Centaurea jacea</i>
knapweed, meadow	<i>Centaurea x gerstlaueri</i>
knotweed, Bohemian	<i>Fallopia x bohemica</i>
knotweed, giant	<i>Fallopia sachalinensis</i>
knotweed, Himalayan	<i>Persicaria wallichii</i>
knotweed, Japanese	<i>Fallopia japonica</i>
lesser celandine	<i>Ficaria verna</i>
loosestrife, garden	<i>Lysimachia vulgaris</i>
loosestrife, purple	<i>Lythrum salicaria</i>
loosestrife, wand	<i>Lythrum virgatum</i>
Malta starthistle	<i>Centaurea melitensis</i>
parrotfeather	<i>Myriophyllum aquaticum</i>
perennial pepperweed	<i>Lepidium latifolium</i>

Class B DESIGNATED - Continued	
saltcedar	<i>Tamarix ramosissima</i>
poison hemlock	<i>Conium maculatum</i>
policeman's helmet	<i>Impatiens glandulifera</i>
Ravenna grass	<i>Triplidium ravennae</i>
rough chervil	<i>Chaerophyllum temulum</i>
rush skeletonweed	<i>Chondrilla juncea</i>
Scotch broom	<i>Cytisus scoparius</i>
shiny geranium	<i>Geranium lucidum</i>
spurge flax	<i>Thymelaea passerina</i>
spurge laurel	<i>Daphne laureola</i>
spurge, leafy	<i>Euphorbia virgata</i>
spurge, myrtle	<i>Euphorbia myrsinites</i>
tansy ragwort	<i>Jacobaea vulgaris</i>
thistle, musk	<i>Carduus nutans</i>
thistle, plumeless	<i>Carduus acanthoides</i>
thistle, Scotch	<i>Onopordum acanthium</i>
velvetleaf	<i>Abutilon theophrasti</i>
water primrose	<i>Ludwigia hexapetala</i>
white bryony	<i>Bryonia alba</i>
wild basil	<i>Clinopodium vulgare</i>
wild chervil	<i>Anthriscus sylvestris</i>
yellow archangel	<i>Lamiastrum galeobdolon</i>
yellow floatingheart	<i>Nymphoides peltata</i>
yellow nutsedge	<i>Cyperus esculentus</i>
yellow starthistle	<i>Centaurea solstitialis</i>
Class B & C Selected - Control Required for Chelan County	
*Class B non-designate selected for control in Chelan County	
**Class C selected for control in Chelan County	
Babysbreath**	<i>Gypsophila paniculata</i>
Canada thistle**	<i>Cirsium arvense</i>
Common St. Johnswort **	<i>Hypericum perforatum</i>
common tansy*	<i>Tanacetum vulgare</i>
Dalmation toadflax*	<i>Linaria dalmatica</i>
green alkanet**	<i>Pentaglottis sempervirens</i>
hoary cross**	<i>Lepidium draba</i>
knapweed, diffuse*	<i>Centaurea diffusa</i>
knapweed, Russian*	<i>Rhaponticum repens++</i>
knapweed, spotted*	<i>Centaurea stoebe</i>
Kochia*	<i>Bassia scoparia++</i>
Oxeye daisy**	<i>Leucanthemum vulgare</i>
Medusahead grass**	<i>Taeniatherum caput-medusae</i>
puncturevine*	<i>Tribulus terrestris</i>
Ventenata grass**	<i>Ventenata dubia</i>
wild carrot**	<i>Daucus carota</i>

Weeds in bold are those known to occur in Chelan County.

Class B Noxious Weeds

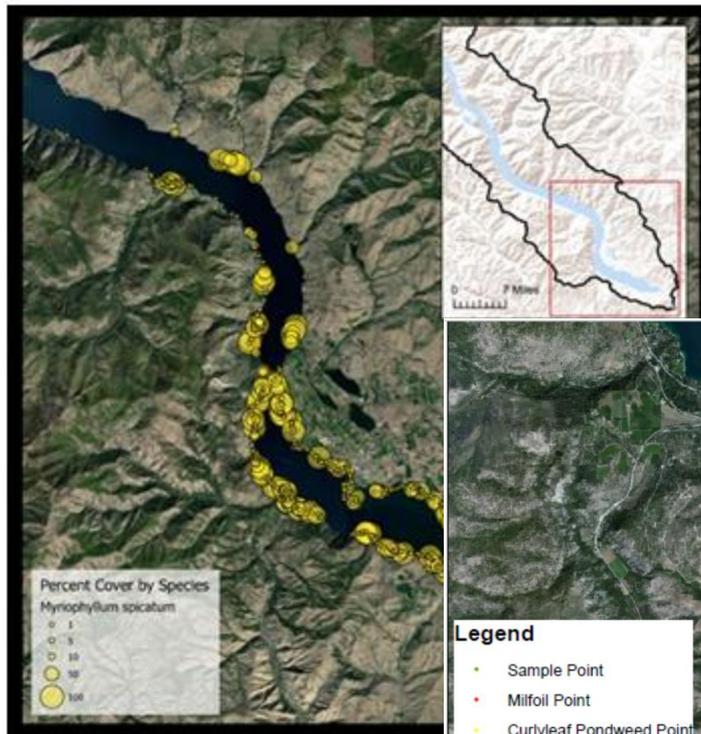
Bohemian Knotweed



~85 known patches, 2025

Class B Noxious Weeds

Eurasian Watermilfoil

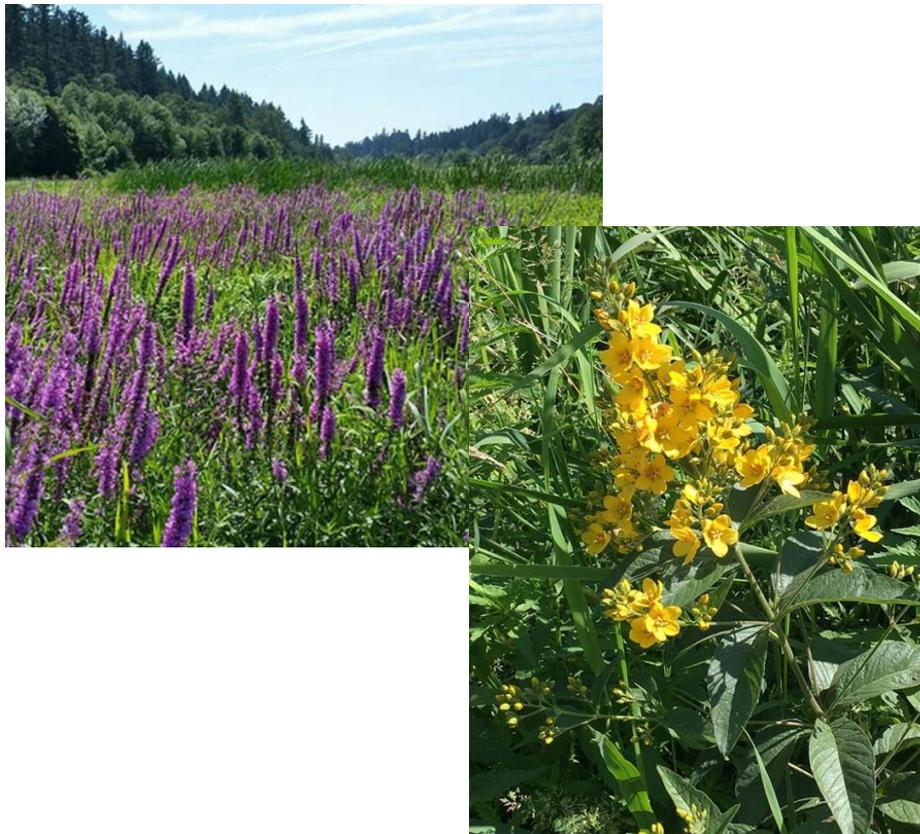


Surveys conducted in
2014 and 2021



Class B Noxious Weeds

Garden and Purple Loosestrife



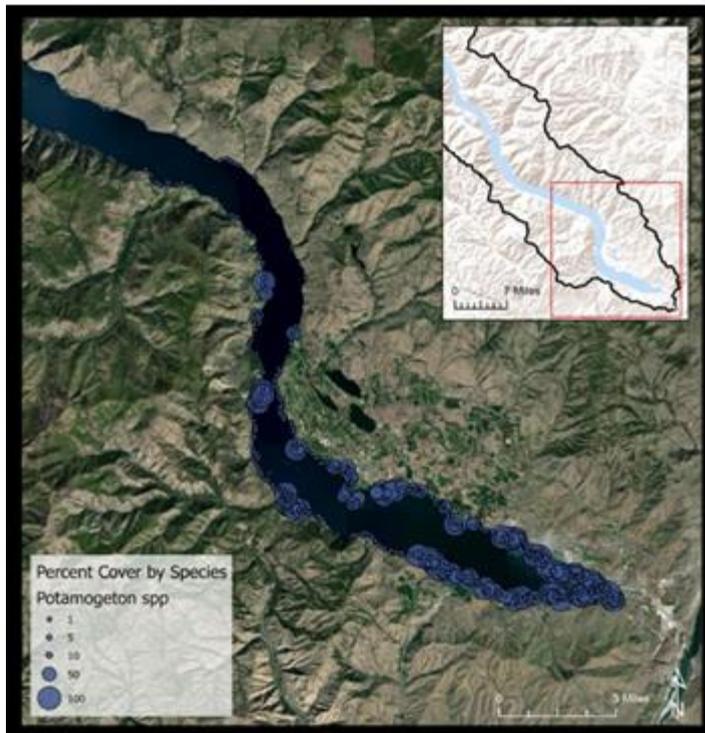
Chelan County Selected Class C & B Weed List

- Already widespread in WA or are of special interest to the agricultural
- Counties can select and enforce control if it is beneficial to that county
- Or provide education or technical support for the removal or control

Class B and C Selected - Control Required for Chelan County	
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**Class C selected for control in Chelan County	
Babysbreath**	<i>Gypsophila paniculata</i>
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Dalmatian toadflax*	<i>Linaria dalmatica</i>
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Oxeye daisy**	<i>Leucanthemum vulgare</i>
Medusahead grass**	<i>Taeniatherum caput-medusae</i>
Puncturevine*	<i>Tribulus terrestris</i>
Ventenata grass**	<i>Ventenata dubia</i>
wild carrot**	<i>Daucus carota</i>

Class C Noxious Weeds Not Selected in Chelan County

Curlyleaf Pondweed



Class C Noxious Weeds Not Selected in Chelan County

Yellow Flag Iris



Class C Noxious Weeds Not Selected in Chelan County

Eurasian watermilfoil hybrid



Identification of the hybrid requires morphological and genetic analysis due to its intermediate characteristics.

Thanks

Chelan County Noxious Weed Department:

<http://www.co.chelan.wa.us/noxious-weed>

Adam Pfleeger

Coordinator

Chelan County Noxious Weeds

Adam.Pfleeger@co.chelan.wa.us

509-667-6669





Aquatic Invasive Species: Program Overview

Chelan AIS Subcommittee

March 11, 2026

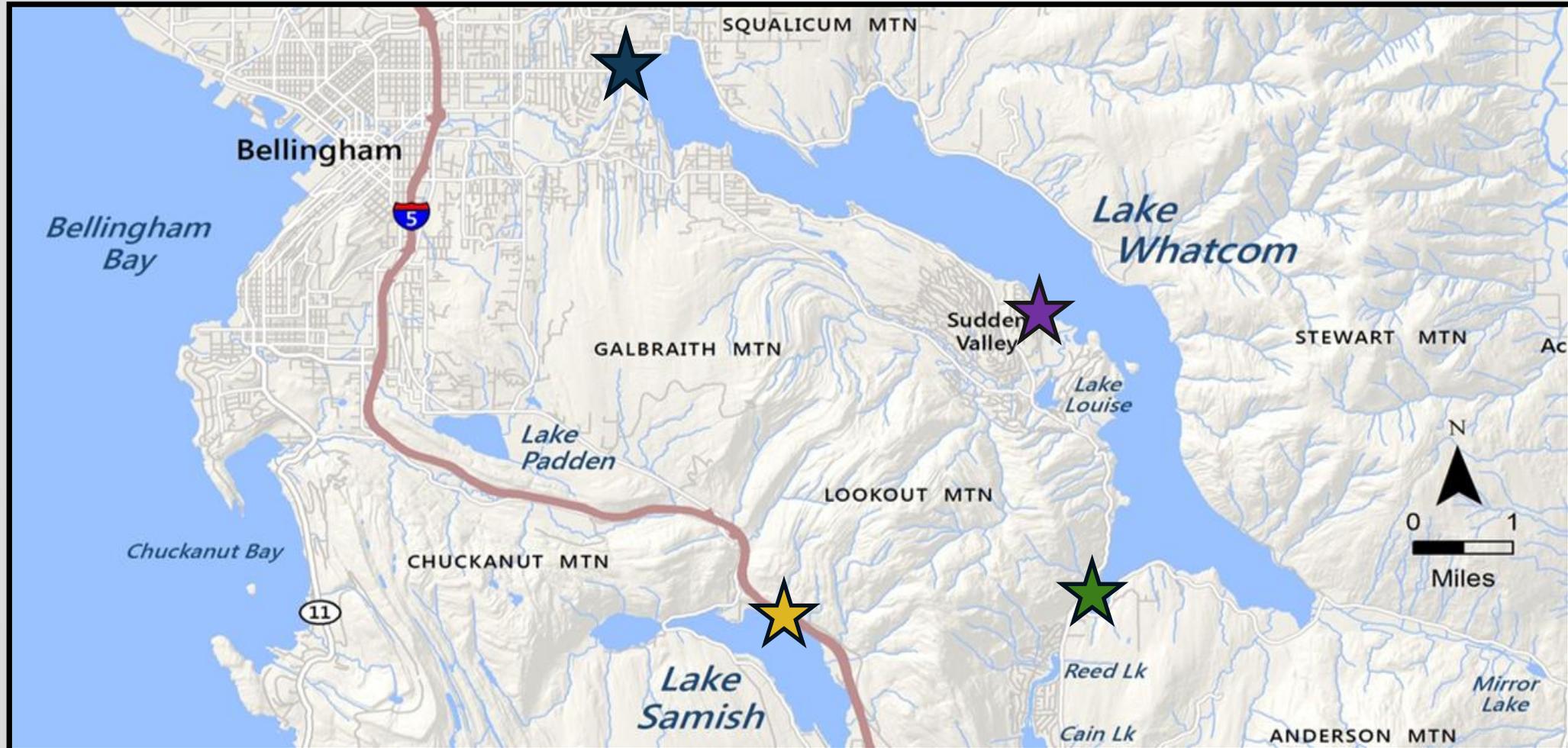


Overview

- Prevention
- Monitoring
- Response



Inspection Locations



2025 Inspection Data

- 15,572 total incoming interactions (new permits, re-inspections, and wire seal removals)
- 991 (6%) boats required additional attention

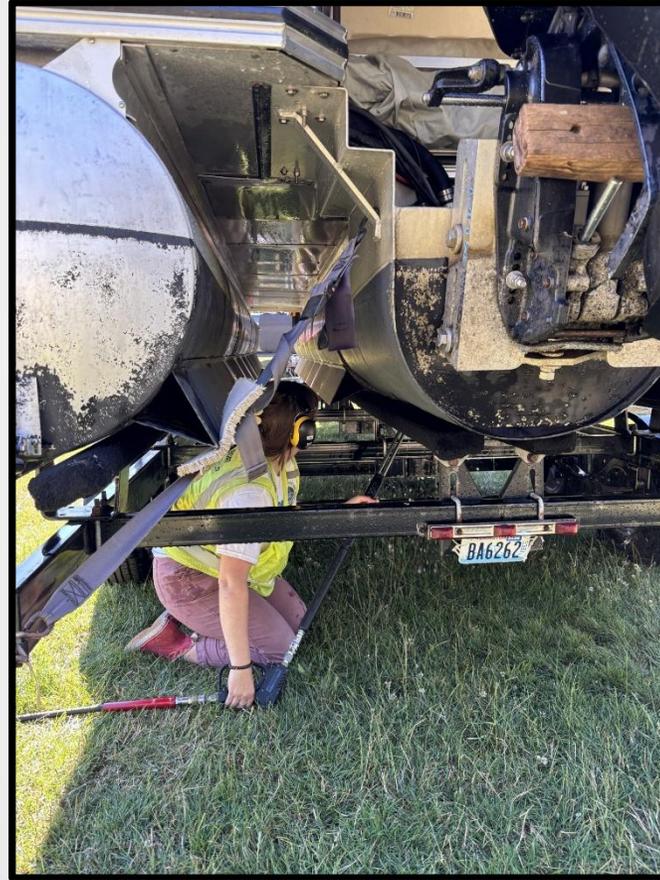


Off-Site Inspections

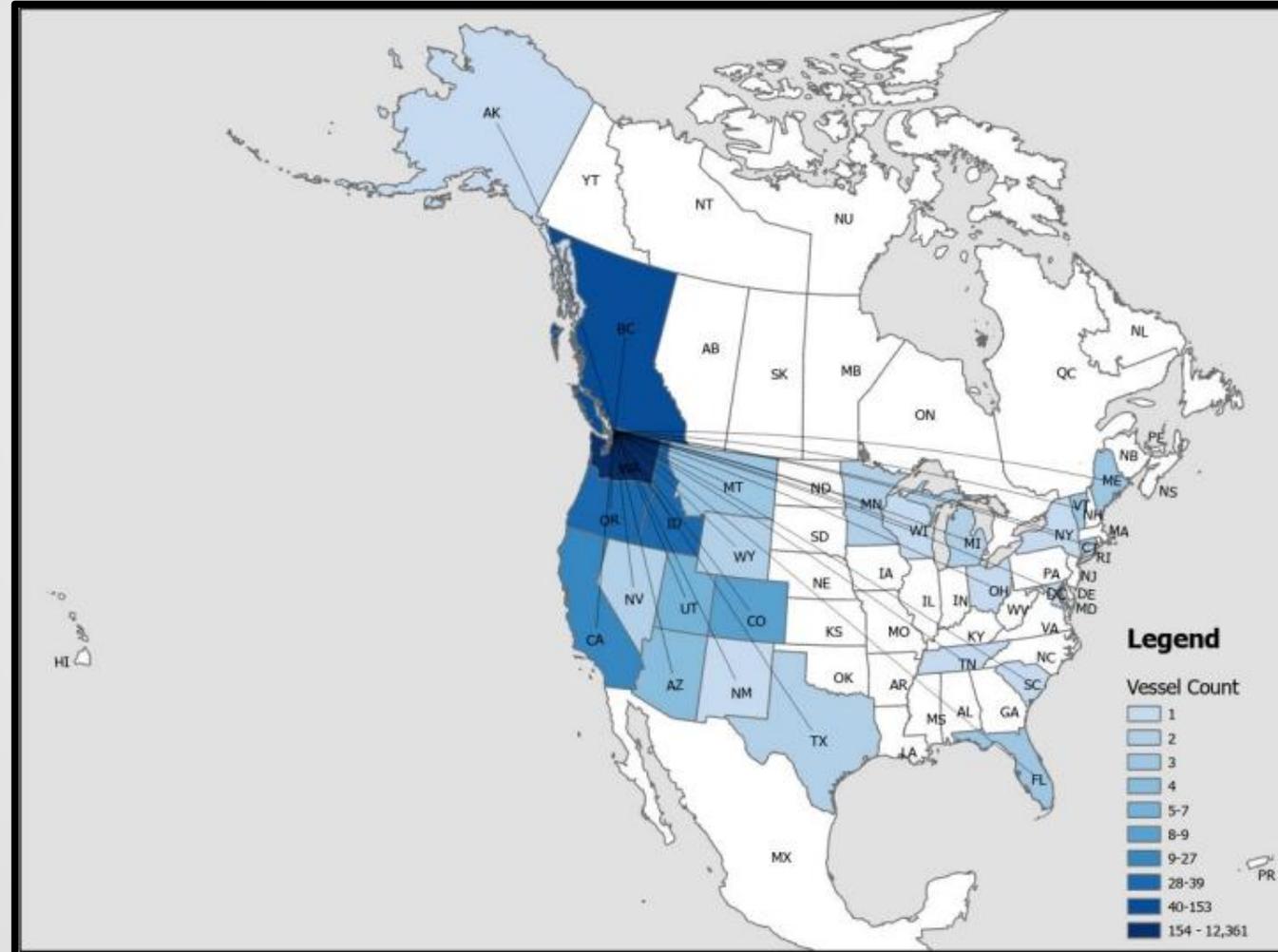
- 1,556 boats received permits at 323 off-site locations
- New online scheduling system in place prior to start of 2026 season



2025 Decontaminations Performed



2025 Waterbody Frequency Map



Municipal Codes

- BMC 12.12.280
 - “The city of Bellingham may establish and operate AIS check stations at public access points to public water bodies” ... “and require owners and operators to submit their watercraft to inspection as a condition of launching from a public launch.”
- WCC 2.27A
 - “Whatcom County may enter into cooperative agreements with persons and entities, including but not limited to homeowners' associations, condominium associations, civic groups and governmental entities, to adopt and execute plans, which may be implemented inside or outside Whatcom County, to detect and prevent the transport and release of aquatic invasive species in public water bodies.”

AIS Enforcement Patrol

- 775 vessels were contacted
- 593 written inspections issued
- 24 AIS violations located, and boaters sent to inspection station
- No duplicate AIS violators



Gate Installation

- Installed in late August
- Launch closed for season November 4th
- Standby schedule
 - 104 post-season inspections at gate in 2025



Permit Fee Restructure

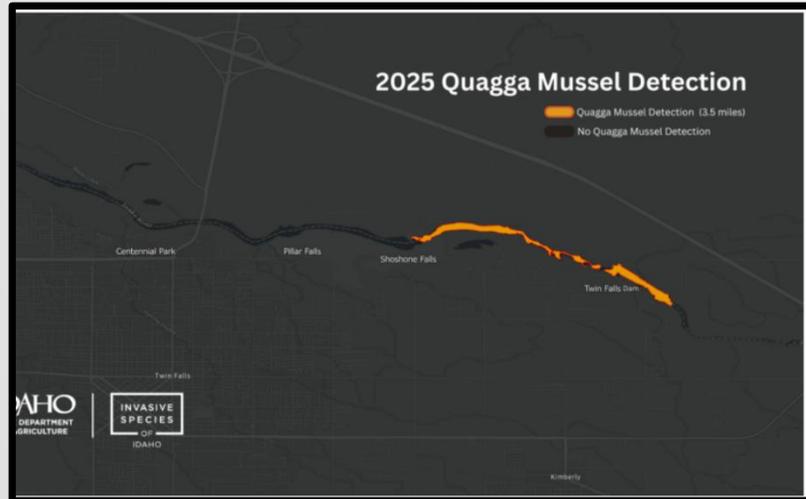
- \$64,607 increase in revenue for program
- Expect additional revenue increase in 2026
 - Fee in place all calendar year
 - Gate requires boaters who used to launch pre-season to contact AIS staff for access the first time

Vessel Type	Tier (Risk Level)	Time to Inspect (Minutes)	Current 1-Day/3-Day Pass Permit Fees (\$)	New 1-Day Pass Fee (\$)	New 3-Day Pass Fees (\$)
Registered Vessel – Class A	Tier 1 - Resides in Whatcom County	10	10/20	20	40
Small Vessel- Class B		7	10/20	15	30
Registered Vessel – Class A	Tier 2 - Resides in WA State	20	10/20	30	55
Small Vessel- Class B		10	10/20	25	45
Registered Vessel – Class A	Tier 3 - Resides Outside of WA State	30	10/20	50	70
Small Vessel- Class B		20	10/20	35	60

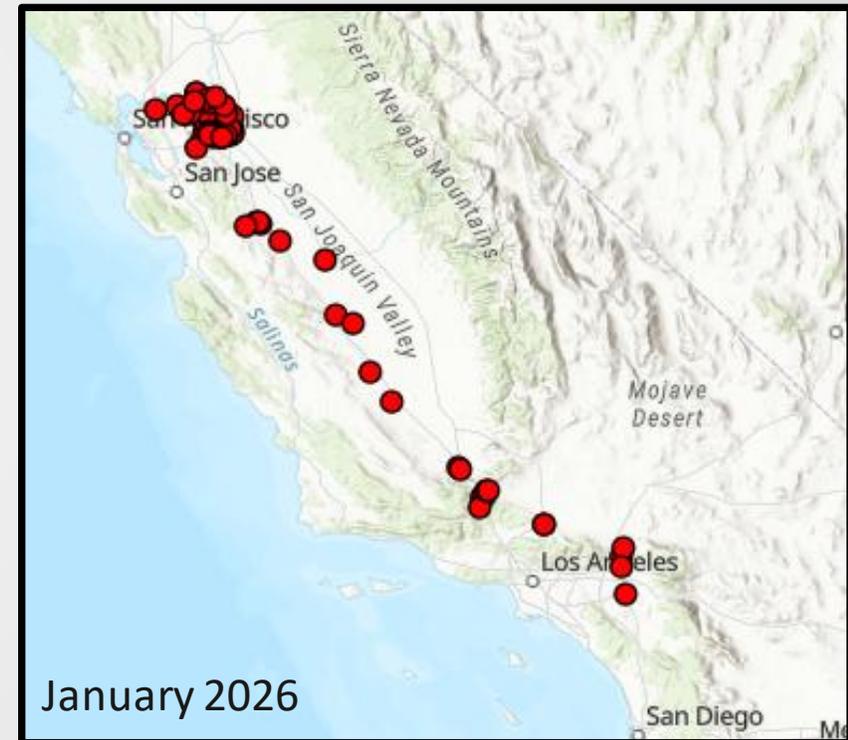
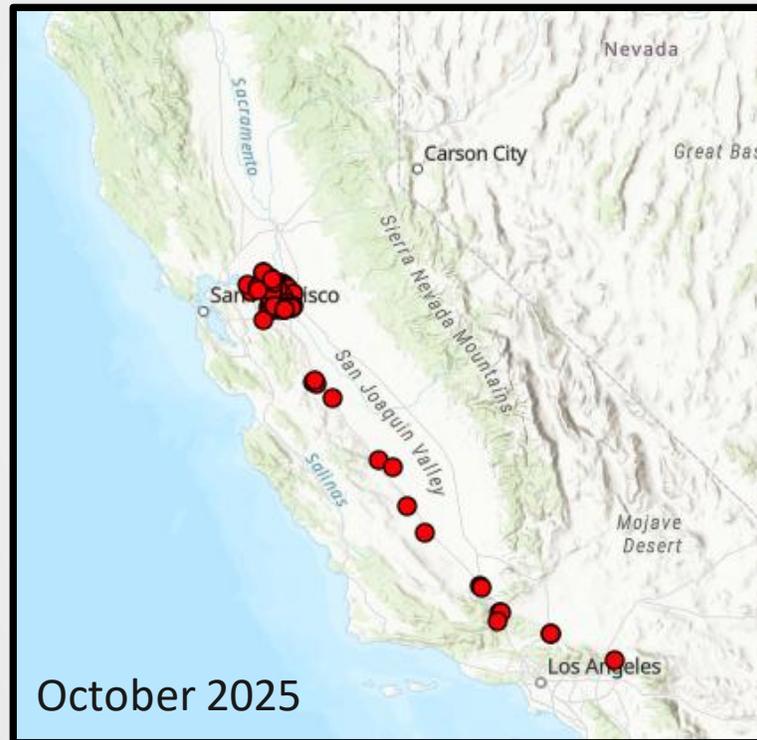
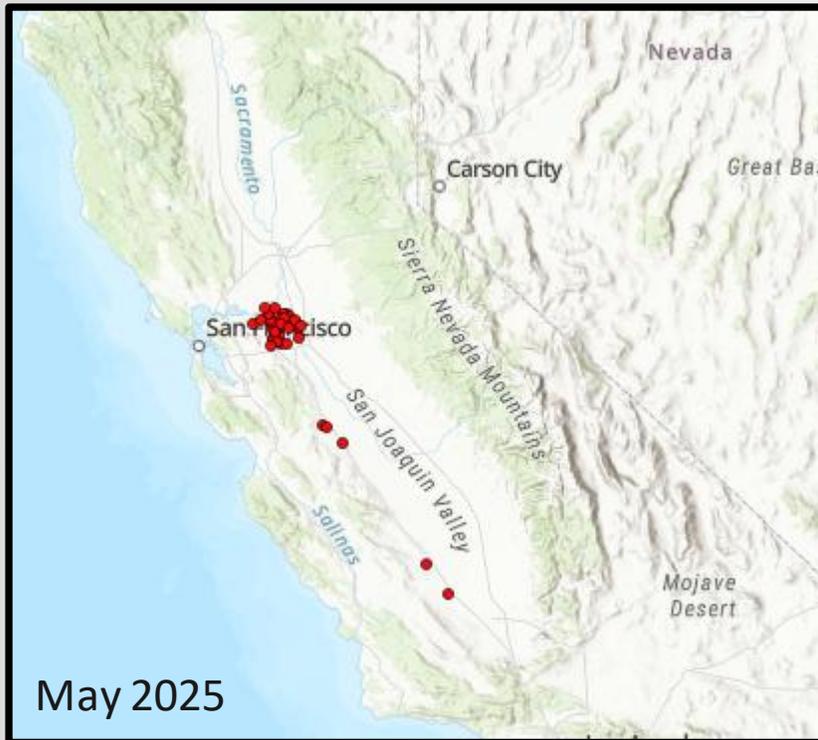
2016 Interlocal Agreement

- In 2016, an interlocal agreement was established with Lake Whatcom Water and Sewer District and Whatcom County for funding of the AIS program. Lake Whatcom Water and Sewer District reimburses 1/5 of our total program costs, while Whatcom County pays 2/5 of total program costs. This allows us to keep up with program growth and continuous and new AIS threats.

Snake River Update



Golden Mussel Update



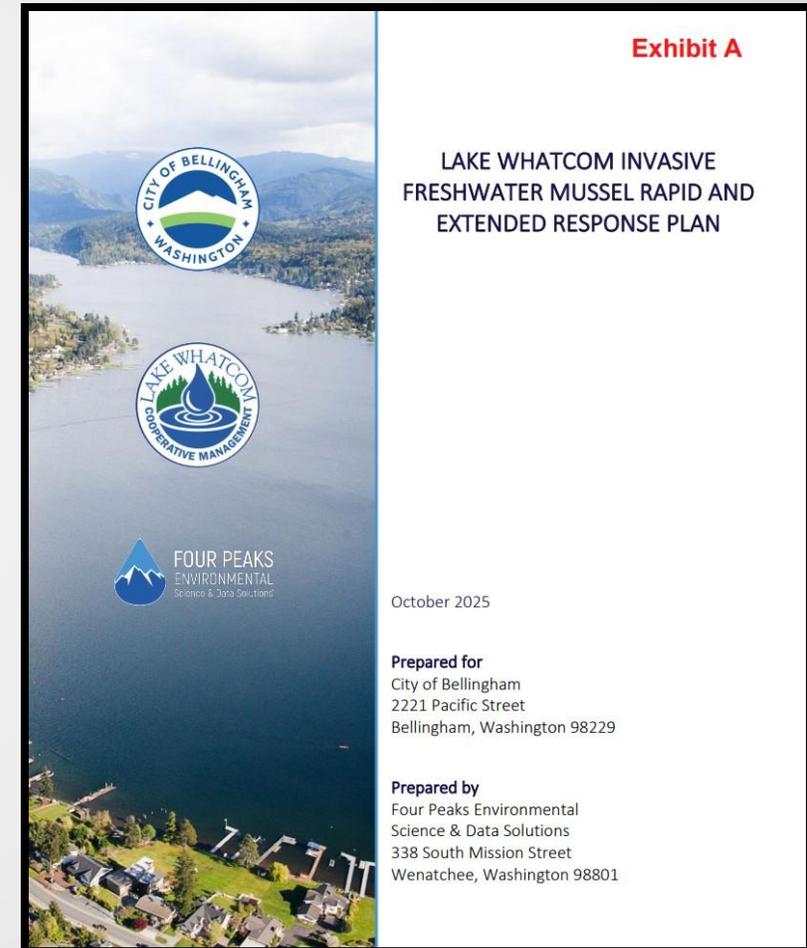
Early Detection Monitoring

- Targeted early detection monitoring to supplement efforts by WDFW
- Plankton Tows
 - May, July, Sep, Nov
- eDNA (new in 2025)
 - June, July, Aug, Sep, Oct



Rapid Response Plan Adopted

- Rapid Response plan for detection of zebra, quagga, and golden mussels adopted by local partners with support of lead AIS agency, Washington Department of Fish and Wildlife.
- Ready to be pulled off the shelf in the event of a detection
- Staff researching permitting requirements, pre-filling out applications



2026 Plans

- Permitting of private boat launches
- Increasing coverage at South Bay after reviewing pilot camera data



Whatcom Boat Inspections: Program Overview

Presented by: City of Bellingham Aquatic Invasive Species Team
Aquatic Invasive Species Coordinator, Natural Resources Operations
360.778.7972 mrbugaj@cob.org





Seattle City Light Management of Aquatic Invasive Species at Hydroelectric Facilities

Leska Fore
Aquatic Resources Strategic Advisor
Science Policy Unit, City Light

March 11, 2026



Seattle City Light

SEATTLE CITY LIGHT Hydroelectric Projects

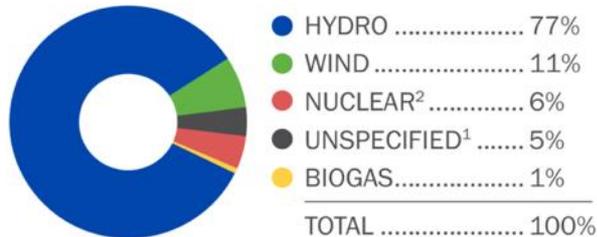
City Light Energy Resources



Map Key:

- City Light owned hydropower
- Treaty rights from British Columbia
- Long-term hydropower contracts (CBH is Columbia Basin Hydropower)
- Other long-term contracts
- Bonneville Power Authority (Federal Columbia River Power System)

Where Does Your Power Come From?



FERC Licenses for:

Boundary Hydroelectric Project
Skagit River Hydroelectric Project

AIS Control & Prevention

- Mussels & Snails

- Quagga & zebra (*Dreissenid*)
- Golden mussel (*Limnoperna*)
- NZ mudsnail
- Corbicula, basket clam (asian clam)
- Radix snail



- Macrophytes

- Milfoil
- Pondweed
- Flowering rush



Invasive Plants in Boundary Reservoir

- Eurasian watermilfoil
(*Myriophyllum spicatum*)
- Hybrid milfoil
(*M. spicatum* x *M. sibiricum*)
- Curly leaf pondweed
(*Potamogeton crispus*)
- Flowering rush
(*Butomus umbellatus*)



Effectiveness of Macrophyte Suppression

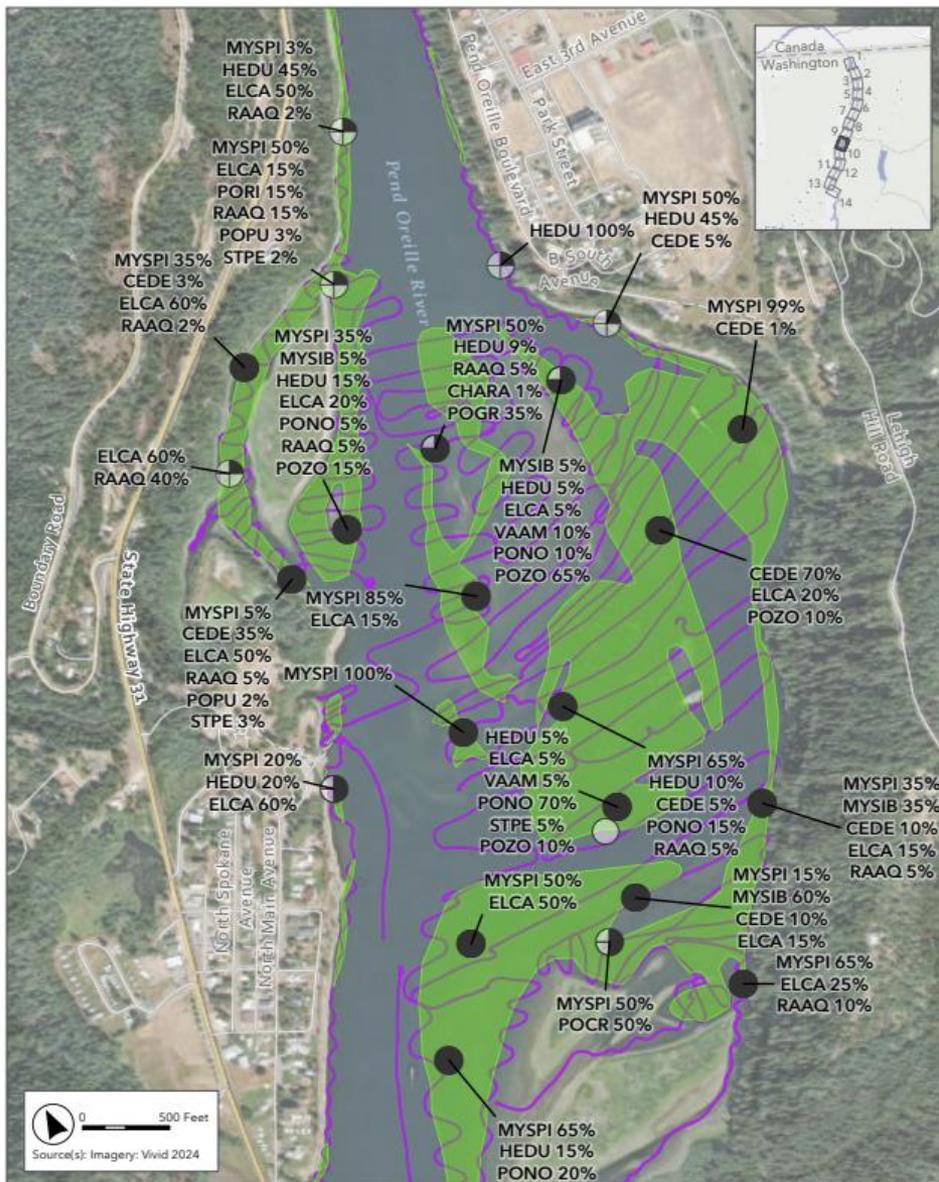
Forebay Boat Launch Area – Light areas show where 6,945 pounds of plant material removed.



Macrophyte Surveys

Hydroacoustic surveys

- Collection paths
- Delineation of aquatic plant beds
- Rake fullness (density), and
- Percent composition



Quagga, Zebra, and Golden Mussels

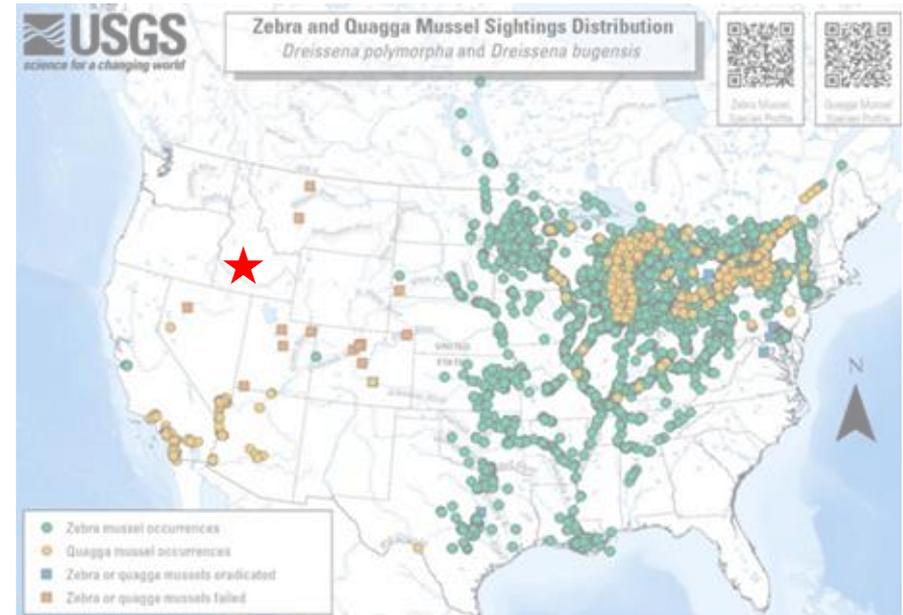
Regional update:

No detections in the Pend Oreille Basin

Twin Falls, Snake River – treated for 3 years, quagga area reduced by ~50%

Colorado River – zebra mussels expanded to 100 miles of river

California – Golden mussels spreading quickly into irrigation infrastructure





Economic Risk

- \$100 million annual hydroelectric mitigation and maintenance.
- Anticipated similar mitigation and maintenance costs for:
 - Fish Hatcheries
 - Fish Passage Infrastructure
 - Agricultural Irrigation Systems
 - Drinking and Wastewater Systems
 - Legacy Data Centers
 - Navigational Locks



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**



Environmental Risk



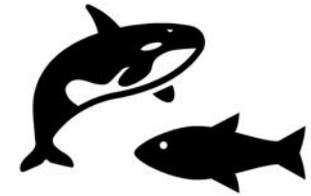
Aquatic habitat

- Reduce available habitat for native species
- Loss of native filtering and cleaning species
- Increases water transparency and aquatic weeds



Water quality and pollution

- Filter feeding impacts phytoplankton structures and increases bacteria
- Reduce dissolved oxygen
- Bioaccumulate pollutants, increasing native species exposure



Native species

- Habitat loss leads to decreased populations of native species including salmon and steelhead
- Decreased salmon populations impact Southern Resident killer whale recovery



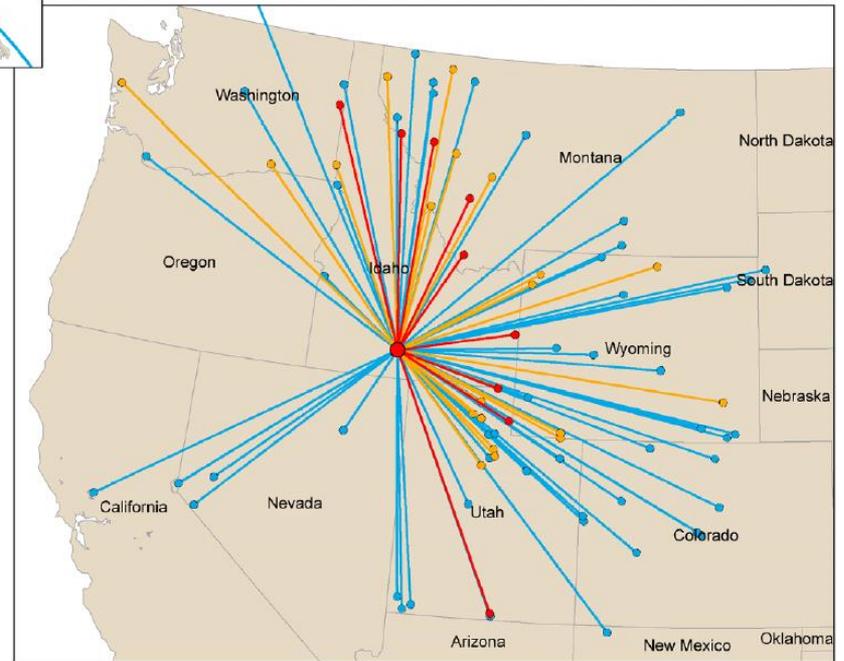
Quagga and Zebra Mussel Prevention



Boat Inspections Where Snake River Was Last Water Visited: 2022 - 2023

- Snake River
- Number of Boats:
- 1 - 9
- 10 - 49
- 50 - 279

Location	State	Count
Dillon	MT	279
Evanston POE	WY	279
Hwy 89 Garden City	UT	161
Spokane	WA	104
Ravalli	MT	86
Anaconda	MT	83
Alpine POE	WY	66
Lake Powell	UT	60
St. Regis	MT	57
Sula	MT	46
Cleanwater Junction	MT	43
Bear Lake	UT	40
Flaming Gorge	UT	36
Pasco	WA	35
Pineview Reservoir	UT	33
Grant	WY	28
Glacier National Park	MT	26
Troy Rest Area	MT	23
Bridge Bay	WY	21
Hwy 40 Daniels POE	UT	20
Clarkston	WA	17
Cle Elum Eastbound	WA	17
Helena Highway 12	MT	14
Hyrum Reservoir	UT	14
Utah Lake	UT	13
Jordanelle Reservoir	UT	12
Willard Bay	UT	12
Lewis Lake	WY	11
Sheridan Rest Area	WY	10
Anvil Draw	WY	10



Map Produced by CPWANS Program
9/29/2023



Washington
Department of
**FISH &
WILDLIFE**

SCL's Management of Invasive Mussels

- **Risk** – Assess vulnerability to the establishment of invasive mussels at CL hydro facilities and salmon restoration projects.
- **Prevention** – Training staff to inspect and decontaminate watercraft. Support legislation to fund inspection stations.
- **Detection** – eDNA and tow net sampling.
- **Response** – Build regional relationships to plan ahead. Logistics, communication, timing, and permitting.
- **Engineering solutions** – Evaluate chemical, UV, and mechanical options.
- **Planning** – Long timelines. Start now.



Risk to Skagit and Boundary Hydro Projects



Assessment of the Vulnerability of Skagit River Hydroelectric Project to Invasive Mussels

Prepared for: Seattle City Light

Prepared by:
Renata Claudi MSc, Tom Prescott MASC (Mech), & Katherine Prescott, MEng



Assessment of the Vulnerability of Boundary Dam, Washington State to Invasive Mussels

Prepared for: Seattle City Light

Prepared by:
Renata Claudi MSc, Tom Prescott MASC (Mech) & Katherine Prescott, MEng

Date: October 3, 2025

Invasive Mussels need:

- Calcium & pH for shell building
- Food (Chl a)
- Right temperature
- Right Habitat



Prevention of Invasive Mussels



CL hydro operator staff trained in watercraft inspection and decontamination



Detection of Invasive Mussels

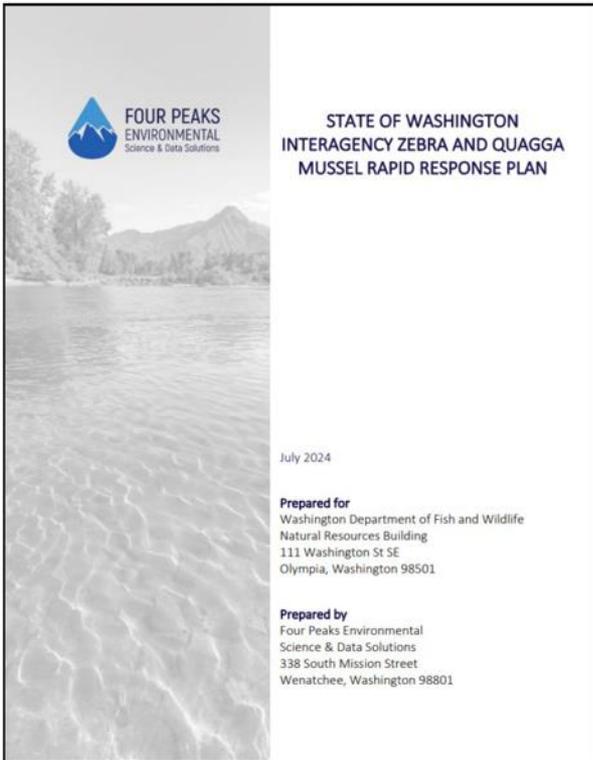
- Annual Monitoring, Boundary Reservoir
 - 3 times/year
 - Visual surveys, plant rakes, sediment grab samples, surface sampling, plankton tows, and hard substrates
 - eDNA – for invasive mussels, N = 75 samples



Arick Rouhe, Portland State University &
Rich Miller, Environmental Science Associates

Response to Invasive Mussels

Response Readiness



 **FOUR PEAKS ENVIRONMENTAL**
Science & Data Solutions

**STATE OF WASHINGTON
INTERAGENCY ZEBRA AND QUAGGA
MUSSEL RAPID RESPONSE PLAN**

July 2024

Prepared for
Washington Department of Fish and Wildlife
Natural Resources Building
111 Washington St SE
Olympia, Washington 98501

Prepared by
Four Peaks Environmental
Science & Data Solutions
338 South Mission Street
Wenatchee, Washington 98801



Engineering solutions

Invasive Mussel Control at Hydropower Facilities An Update

This document produced for the
Engineering Solutions for Invasive Mussels in
Raw Water Infrastructure Working Group by
Creative Resource Strategies, LLC

1 August 2025



- Hydro-optic UV light
- Filtration
- Anti-fouling coatings
- Chemical – Chlorine, Zequanox, Copper
- Potash



Chlorination at Gavins Point, MO





Thank you!

Leska Fore
Aquatic Resources Strategic Advisor
Science Policy Unit, City Light



Seattle City Light

Quagga Mussels and Idaho Power

Snake River Quagga Mussels

Michael Stephenson

March 11, 2026



Guide to this talk

- Why does Idaho Power Company care?
- IPC's Invasive Species Program & Initial Preparation
- What's next for Idaho Power Company?
- How can the Lake Chelan Collaborative prepare?



Dreissenid Mussels and Hydropower





Dreissenid Mussels on Trash Racks





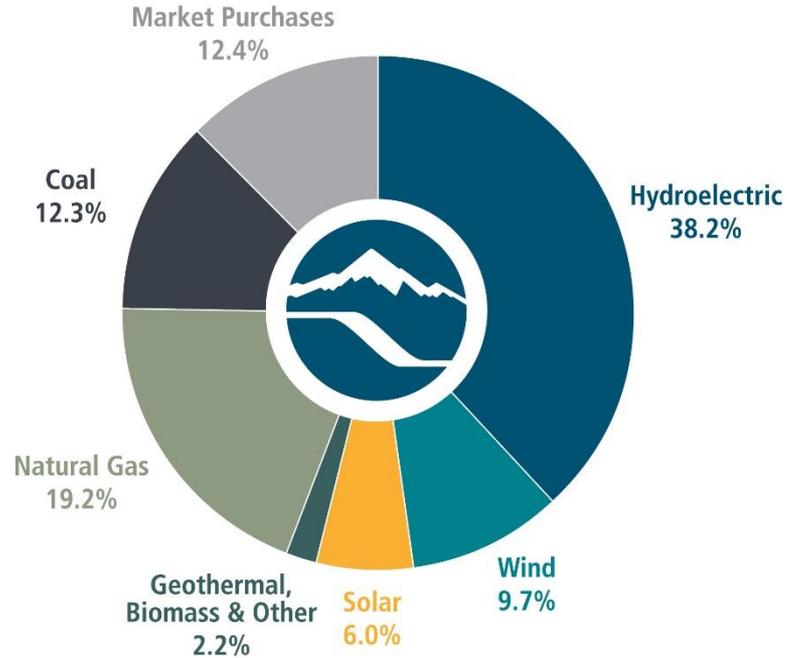
- 1** Hells Canyon 391,500 kW
- 2** Oxbow 190,000 kW
- 3** Brownlee 675,000 kW
- 4** Cascade 12,420 kW
- 5** Swan Falls 27,170 kW
- 6** C.J. Strike 82,800 kW
- 7** Bliss 75,038 kW
- 8** Lower Malad 13,500 kW
- 9** Upper Malad 8,270 kW
- 10** Lower Salmon 60,000 kW
- 11** Upper Salmon 34,500 kW
- 12** Thousand Springs 6,800 kW
- 13** Clear Lake 2,500 kW
- 14** Shoshone Falls 14,729 kW
- 15** Twin Falls 52,898 kW
- 16** Milner 59,448 kW
- 17** American Falls 92,340 kW



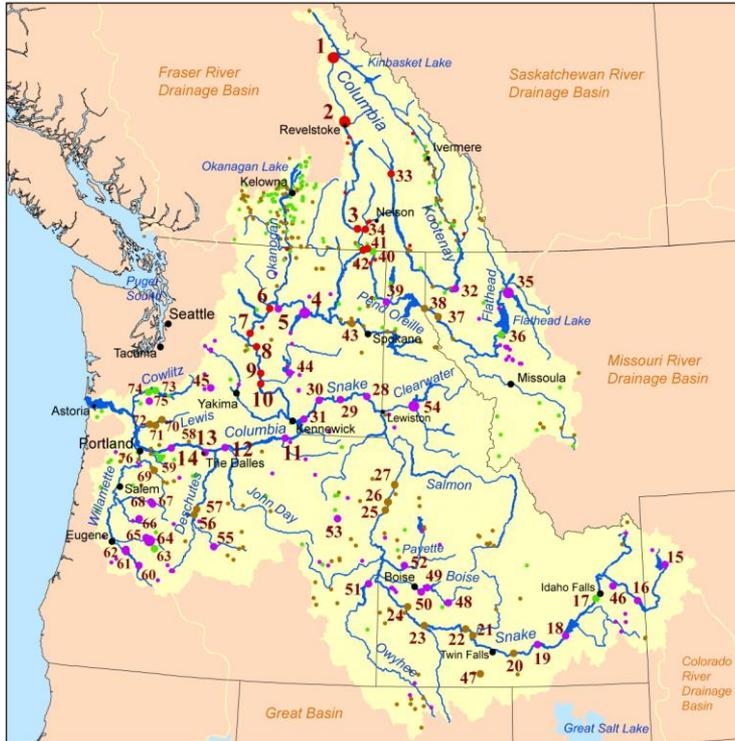
Wyoming
Jim Bridger

Clean Energy

2025 Energy Mix



Hydropower in the Pacific Northwest



NWHA Website –Facilities by State

- Alaska 54
 - Washington 97
 - Oregon 97
 - Idaho 94
 - Montana 41
 - California 390
 - British Columbia 121
 - Yukon Territory 4
- 898 Total**

Idaho Power Company's License Compliance Concerns

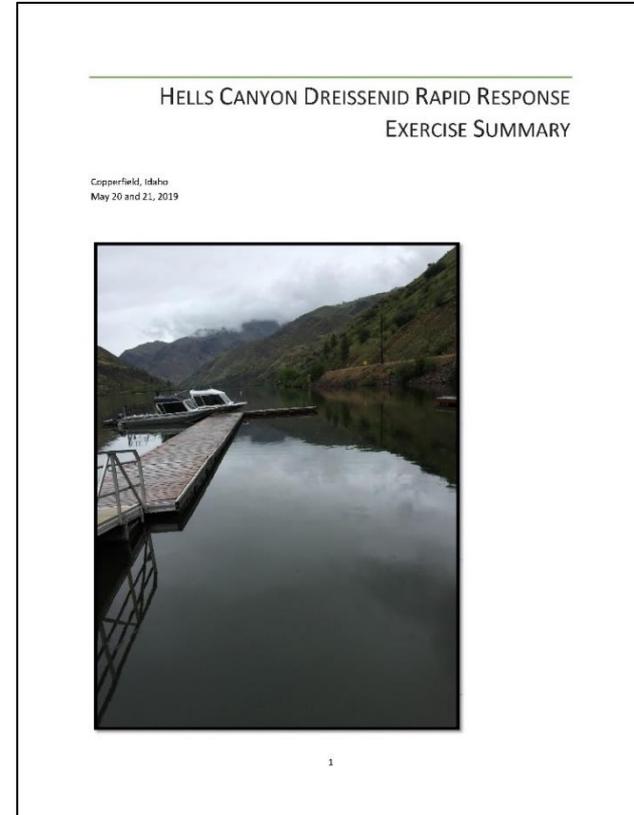
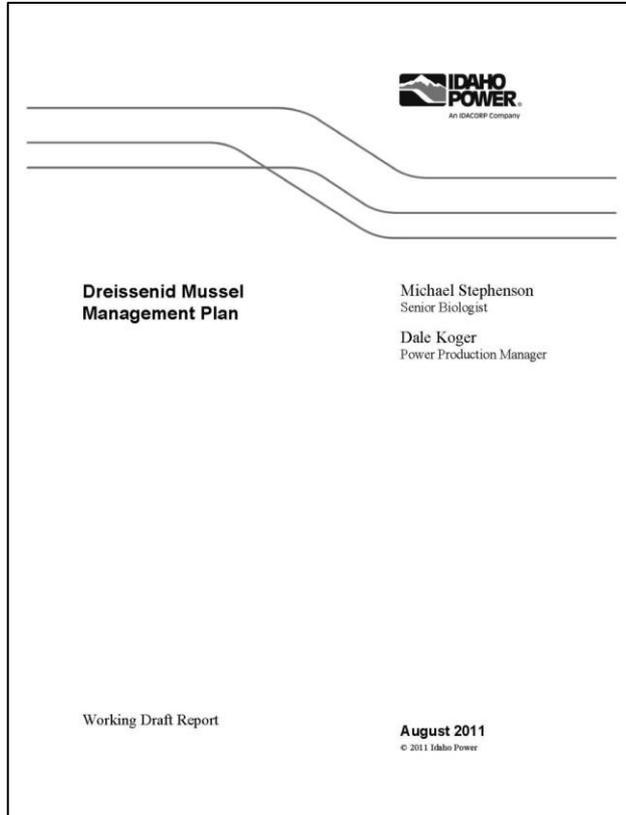




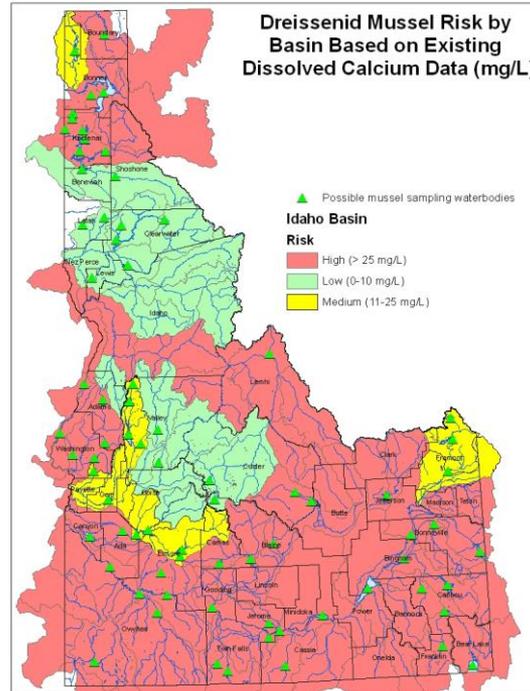
Idaho Power Company Preparations

- Joined the Idaho Invasive Species Council.
- Joined regional Columbia River Basin Team.
- Joined Western Regional Panel.
- Vulnerability Assessments on IPC hydroelectric plants.
- Hosted Rapid Response Exercise in Hells Canyon 2019.

Contingency Planning



State of Idaho Dreissenid Risk



2023 Quagga Mussel Treatment

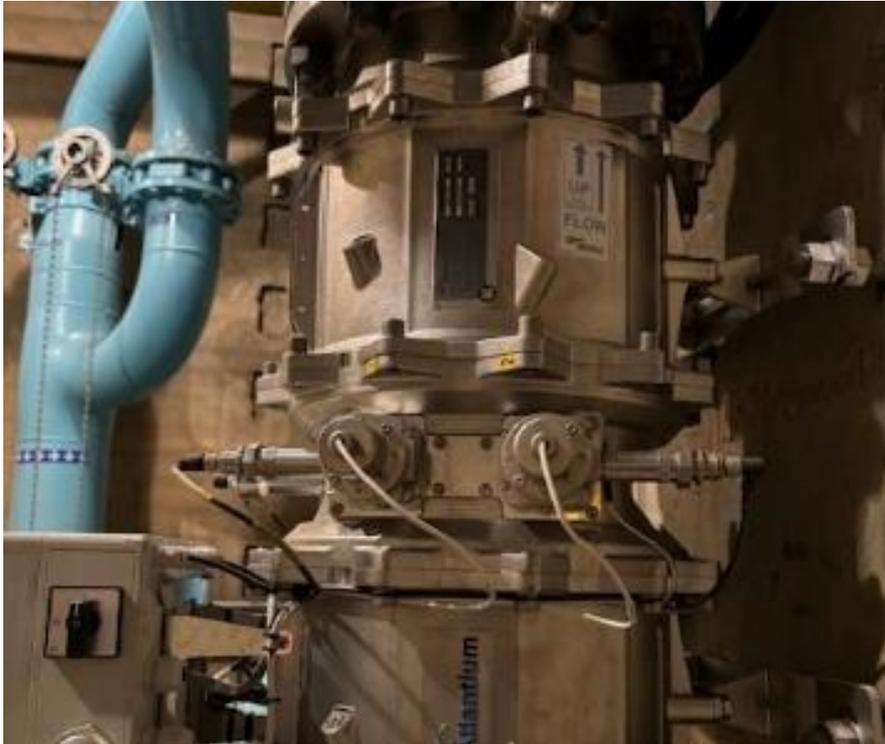


2024 IPC Hoover Dam Tour



Hoover Dam.SUPERJOSEPH / SHUTTERSTOCK

2024 Hoover Dam Tour Quagga Mussel Mitigation



Idaho Power 2024- What did we do?

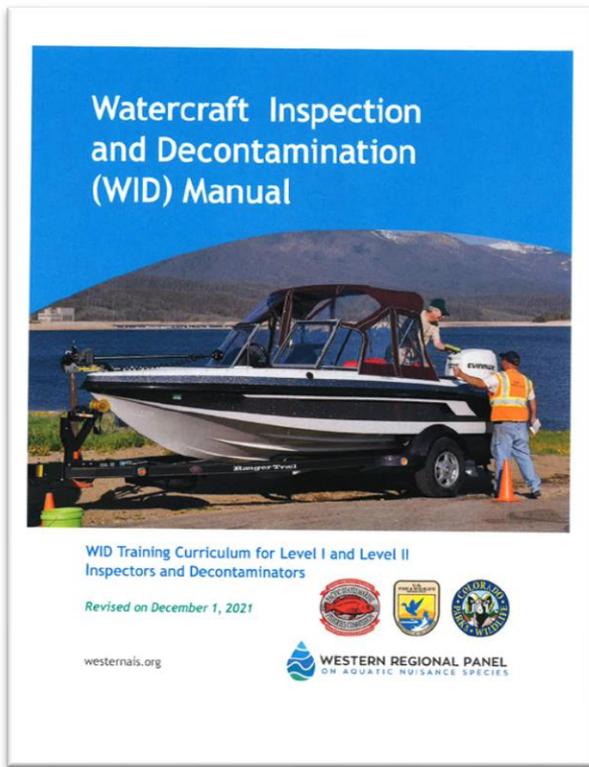


- Hosted a boat decontamination training put by Idaho State Department of Agriculture.
- Implemented mandatory decontamination of IPC boats moving between reaches of the Snake River.
- Created an internal “Lock Out” protocol to alert IPC boat operators if a boat has not been decontaminated (returning to same reach of the river).

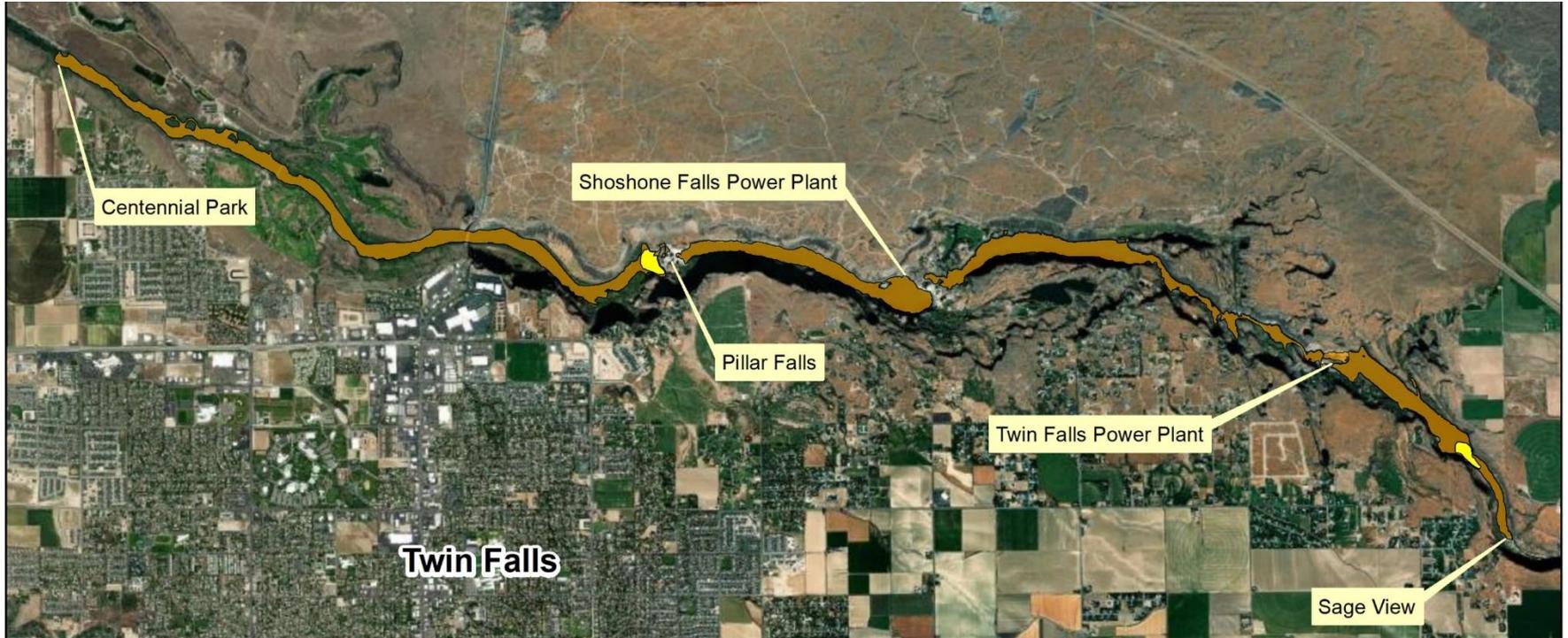
2024 Decontamination Training



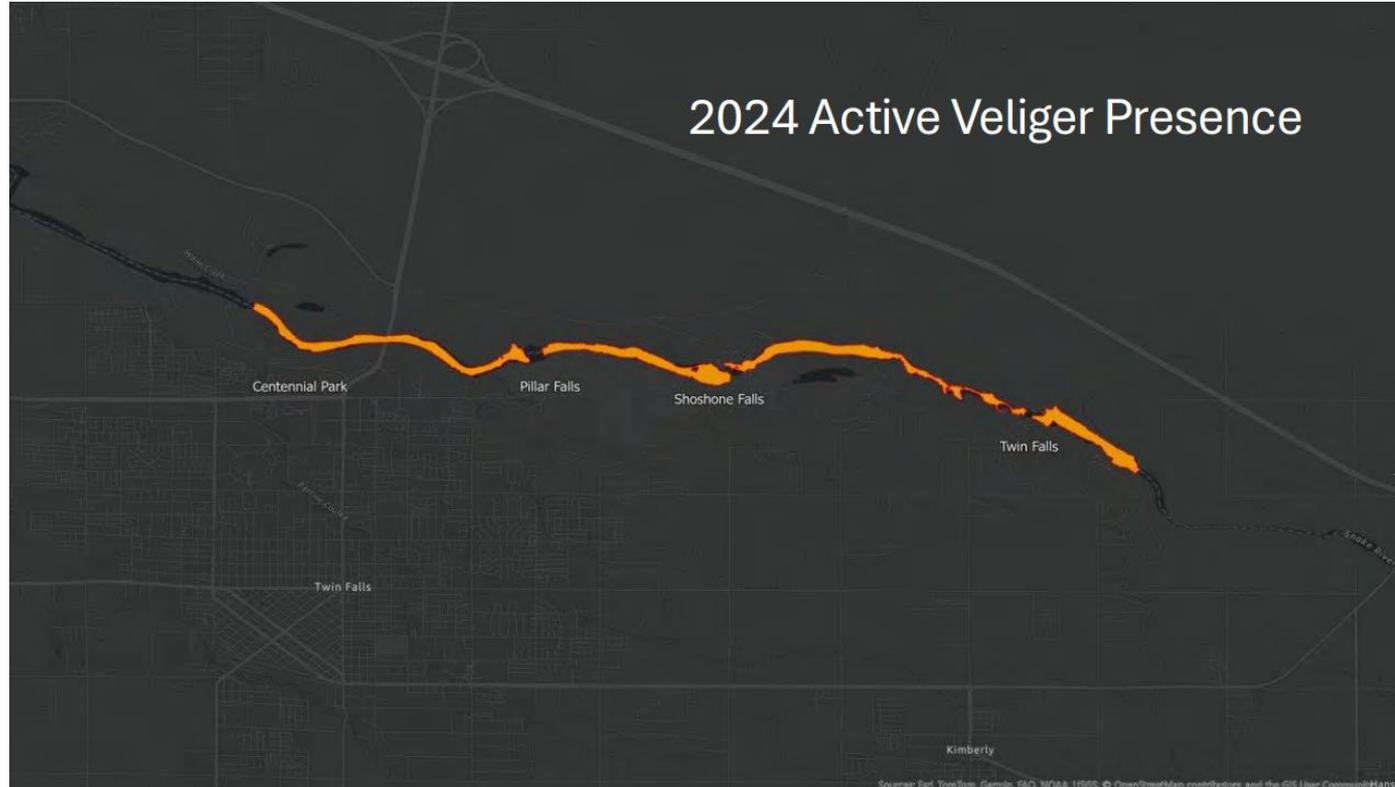
2024 Staff Decontamination Training



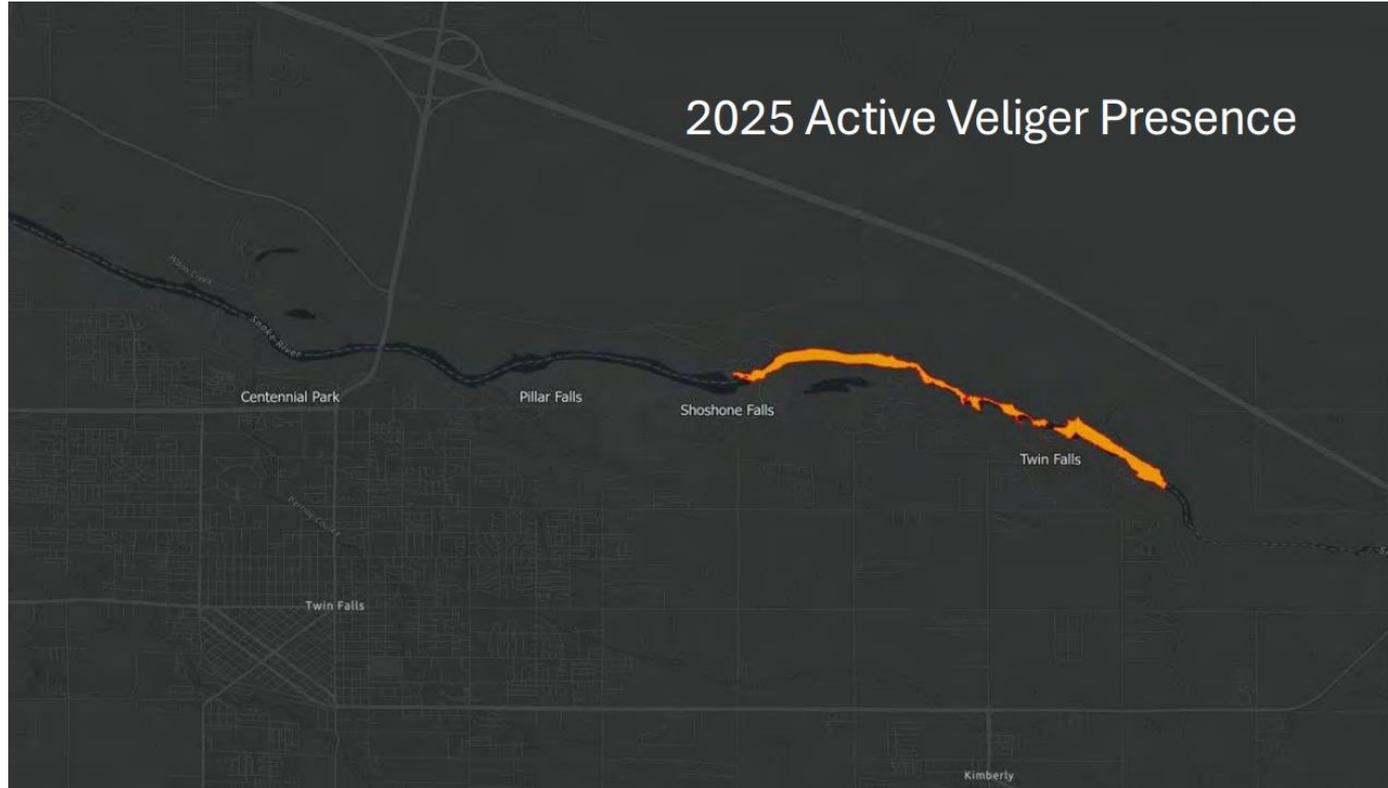
Twin Falls Treatment Area October 2024



2024 Quagga Mussel Veliger Locations



2025 Quagga Mussel Veliger Locations



Quagga Mussel Treatments and Idaho Power Company



- Treatments implemented by Idaho State Department of Agriculture and their contractors.
- [Treatment Plan — Invasive Species of Idaho](#)
- Physical security concerns. FERC project boundaries.
- IPC safety concerns for personnel.
- Communication Planning.
- Logistics.
- Safety!



Idaho Power Company and Quagga Mussel Treatments



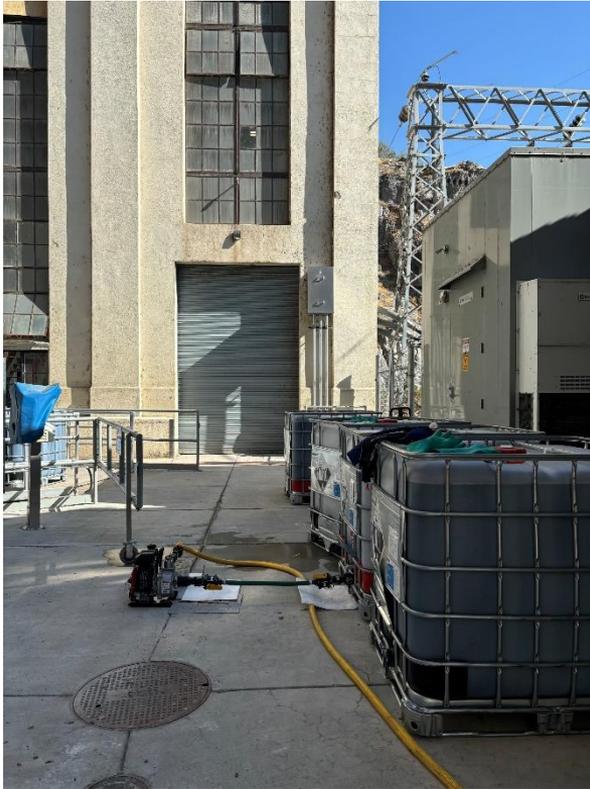
Physical security requires facilities to be staffed 24/7

1. Increased labor costs
2. Staffing concerns
3. Increased coordination with ISDA and their contractors
4. Problem solving to facilitate safe transfer of treatment chemicals
5. Trouble shooting to ensure all parts of the plants are treated

Shoshone Falls Treatment-2024



Shoshone Falls Staging and Chemical Transfer-2024



Twin Falls Intake- 2025



Idaho Power Company Recreation Facilities



FERC License Compliance Challenges



- Access to IPC Parks- closed for park upgrades in 2024 & 2025.
- Idaho Power unable to collect water quality compliance data and maintain stream gage during treatment.
- Scenic flows at Twin Falls.

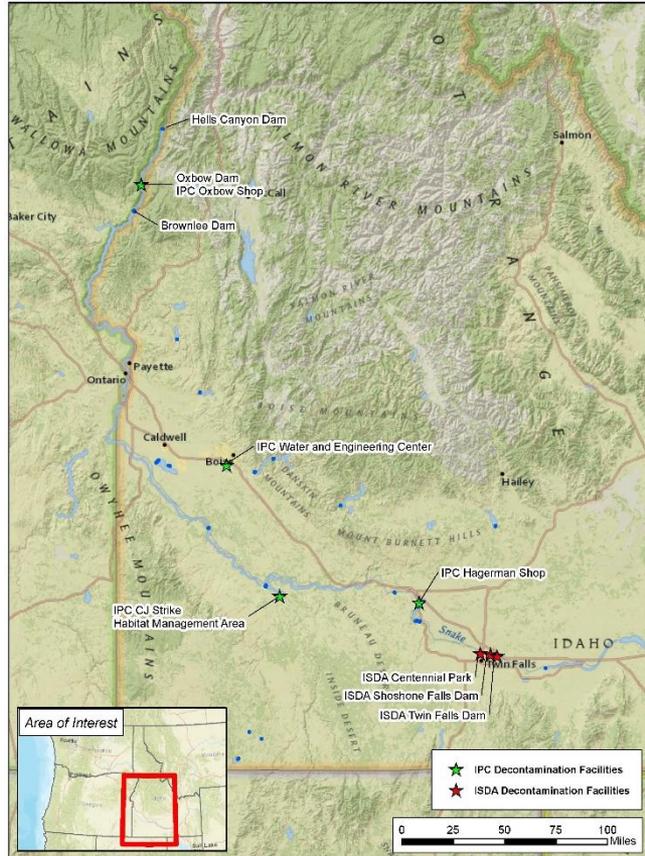




Idaho Power 2025-2026

- Presented at Northwest Hydroelectric Association meeting.
- September 2025- IPC hosted Association of Power Biologists in Hells Canyon.
- Created internal IPC training videos - how to decontaminate a boat and how to safely use a hot pressure washer.
- Power plants currently budgeting for improvements to plant infrastructure-redundant equipment and anti-fouling coatings.
- Networking with other utilities.
- Scoping UV Treatment System upgrades and filtration.

Idaho Power Decontamination Locations





What's next?

- Purchasing 3 additional hot pressure washers. Including a new location in Lewiston, ID.
- Preparing for possible future treatments.
- Contingency Planning updates.





What can Lake Chelan Collaborative members do?

- Cross your fingers!
- Prepare.
- Network.



Questions?



Michael Stephenson
Mstephenson@idahopower.com
208 388 2930

Next Steps and Wrap Up

- LCC meeting this afternoon, Nate will provide update to the group on the work the Subcommittee has been doing
- Next AIS Subcommittee meeting June 3rd 10 AM – 12PM
- Group action items between now and June:
 - Review and provide input on Watercraft Inspection Program Plan and Watershed Management Plan outline via email to Nate or Stephen (sent with pre-meeting packet)
 - Attend field trip and community events (for locals)

Key Upcoming Dates

- Community events for Watercraft inspection program:
 - Week of April 6th, 2026
 - Week of May 11th, 2026
- Field trip to County watercraft inspection station:
 - Thursday June 4th, 2026
- Provide feedback via email on:
 - Watercraft Inspection Program Plan Outline by March 20th, 2026
 - Watershed AIS Plan Outline by March 20th, 2026