

Idaho Invasive Species Program 2026 Update



Invasive Species Program Areas

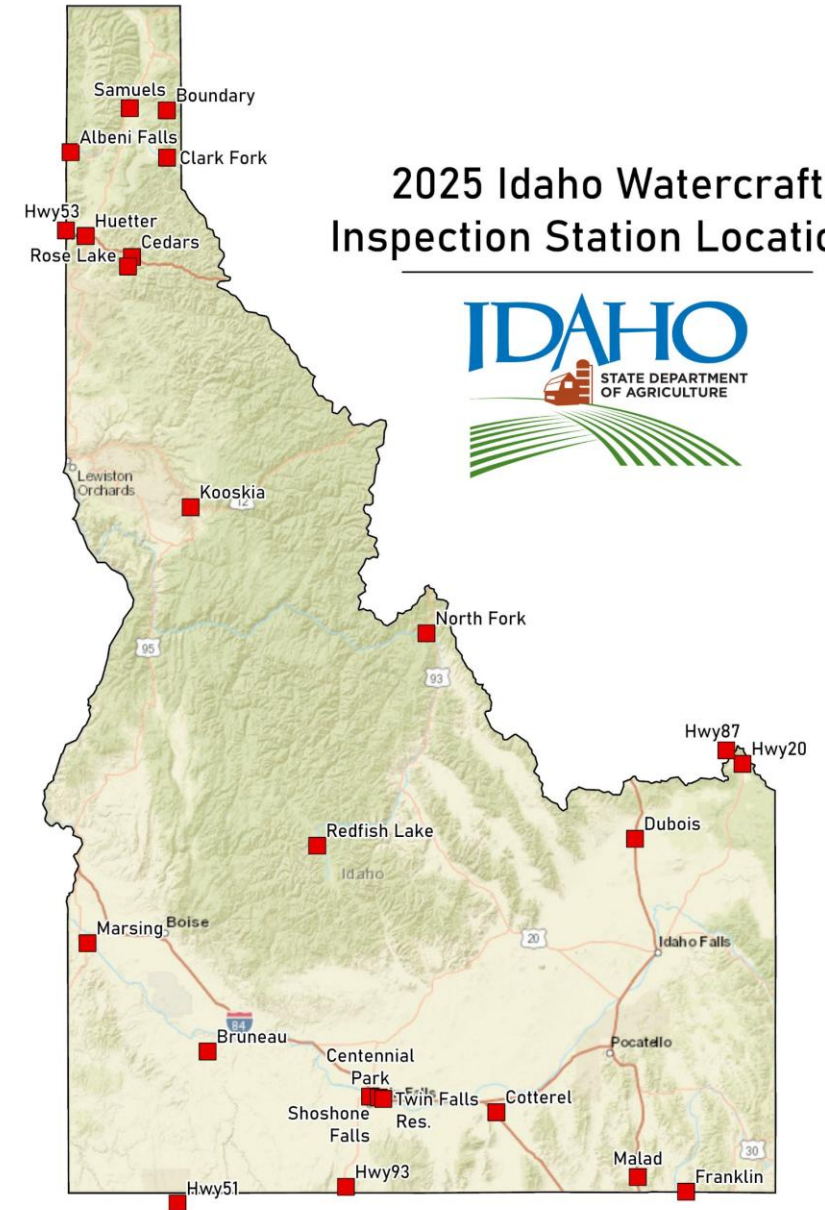
- Prevention
 - Watercraft Inspection
- Early Detection Monitoring
 - Plankton tow
 - Adult surveys
 - eDNA
- Management and Control
 - Mid-Snake Response
 - Active control programs
- Education and Outreach
 - Public campaigns
 - Partnerships



2025 Watercraft Inspection

- **17th** Year of the inspection program
 - ~173,000 in 2025 (20K increase from 2024)
 - **18** Mussel fouled watercraft
- 24 Inspection stations
 - 14 Local station cooperators
- **Mid-Snake Containment (year-round stations)**
 - **Twin Falls Park- Idaho Power**
 - **Shoshone Falls- City of Twin Falls**
 - **Centennial Park- Twin Falls County**
- Extended night operations
 - 18 Hour (6AM-midnight)
 - Malad (I-15 N), Cedars (I-90W), Jackpot (HWY 93 N)
 - 24 Hour
 - Cotterell (I-84W)
- Law enforcement support
 - Local County
 - Idaho State Police

2025 Idaho Watercraft Inspection Station Locations



Esri, HERE, Garmin, NGA, USGS, NPS



High-Risk Watercraft

11,100

Watercraft with Weeds

2,099

Law Enforcement Returned

1,351

From Infested Water

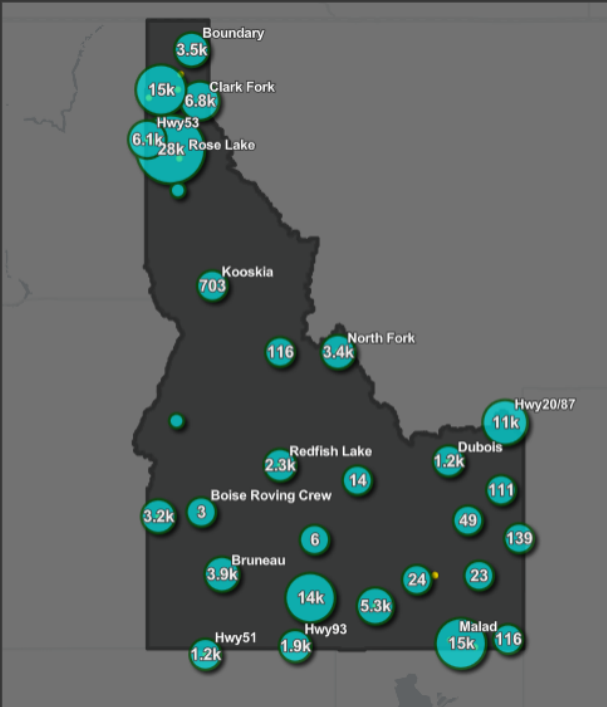
22,381

Number of Hotwashed Watercraft

10,028

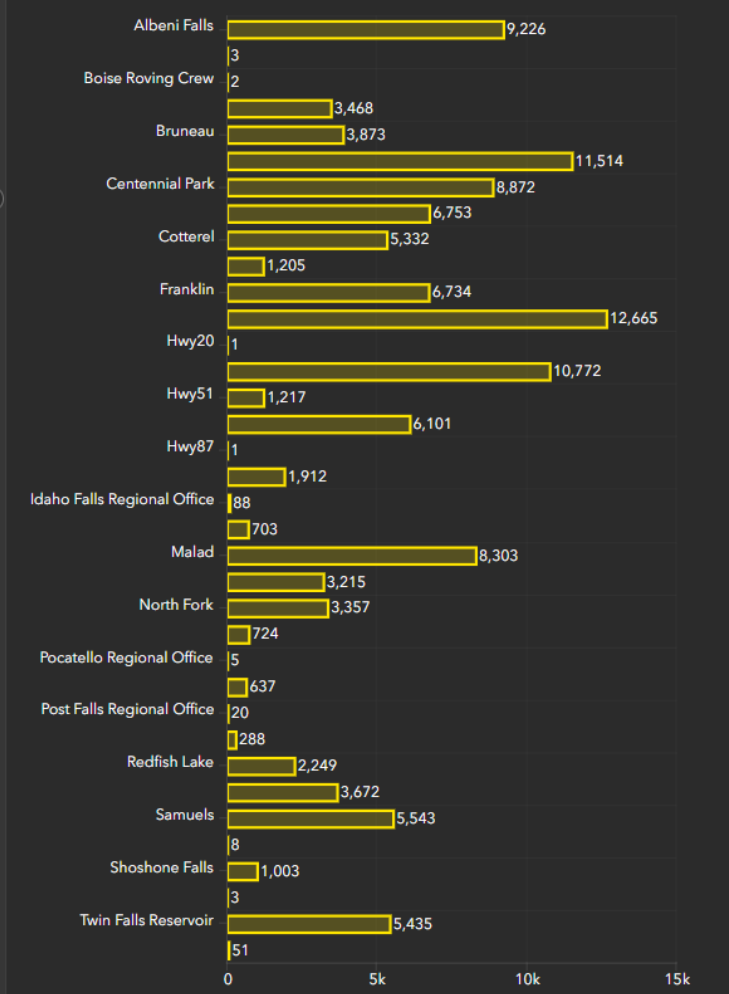
Number of Watercraft Inspected

173,854



Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS | Id... Powered by Esri

Inspections by Station



Inspections From Fouled Waters

Search...

Inspection Station = Centennial Park
 Date and Time = Sun Dec 14 2025 11:45:00 GMT-0800 (Pacific Standard Time)
 Watercraft Type = Kayak
 Inspection Type = Entrance
 Days in Water = 1
 Days out of Water = 3
 Name of Waterbody = Snake River - Centennial Waterfront Park Idaho
 Destination State = Idaho

Inspection Station = Centennial Park
 Date and Time = Sun Dec 14 2025 10:13:00 GMT-0800 (Pacific Standard Time)
 Watercraft Type = Kayak
 Inspection Type = Entrance
 Days in Water = 365
 Days out of Water = 0
 Name of Waterbody = Snake River - Centennial Waterfront Park Idaho
 Destination State = Idaho

Inspection Station = Centennial Park
 Date and Time = Sun Dec 14 2025 10:13:00 GMT-0800 (Pacific Standard Time)
 Watercraft Type = Kayak
 Inspection Type = Exit
 Days in Water = 1
 Days out of Water = 0
 Name of Waterbody = Snake River - Centennial Waterfront Park Idaho
 Destination State = Idaho

Inspection Station = Twin Falls Reservoir
 Date and Time = Sat Dec 13 2025 12:05:00 GMT-0800 (Pacific Standard Time)
 Watercraft Type = Kayak
 Inspection Type = Entrance
 Days in Water = 1

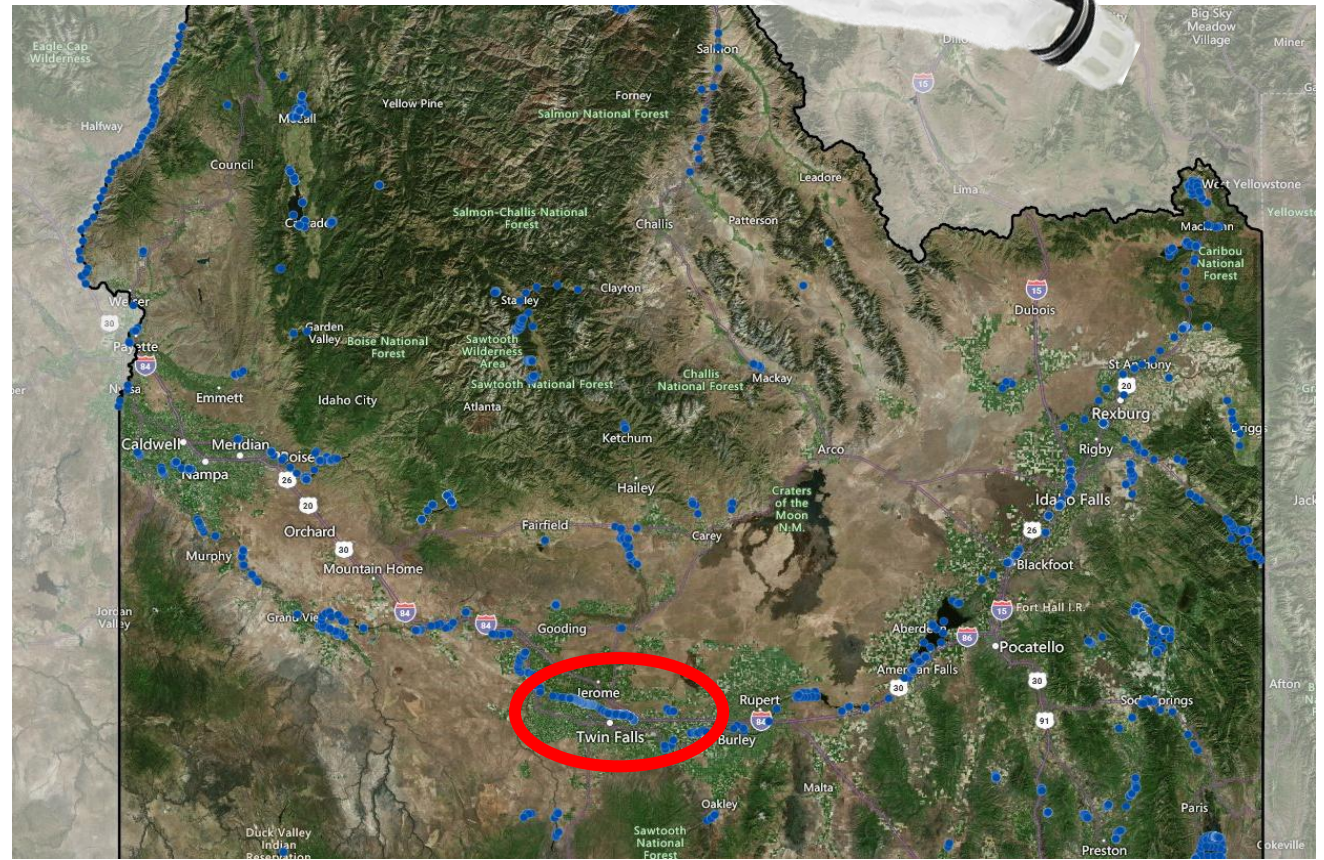
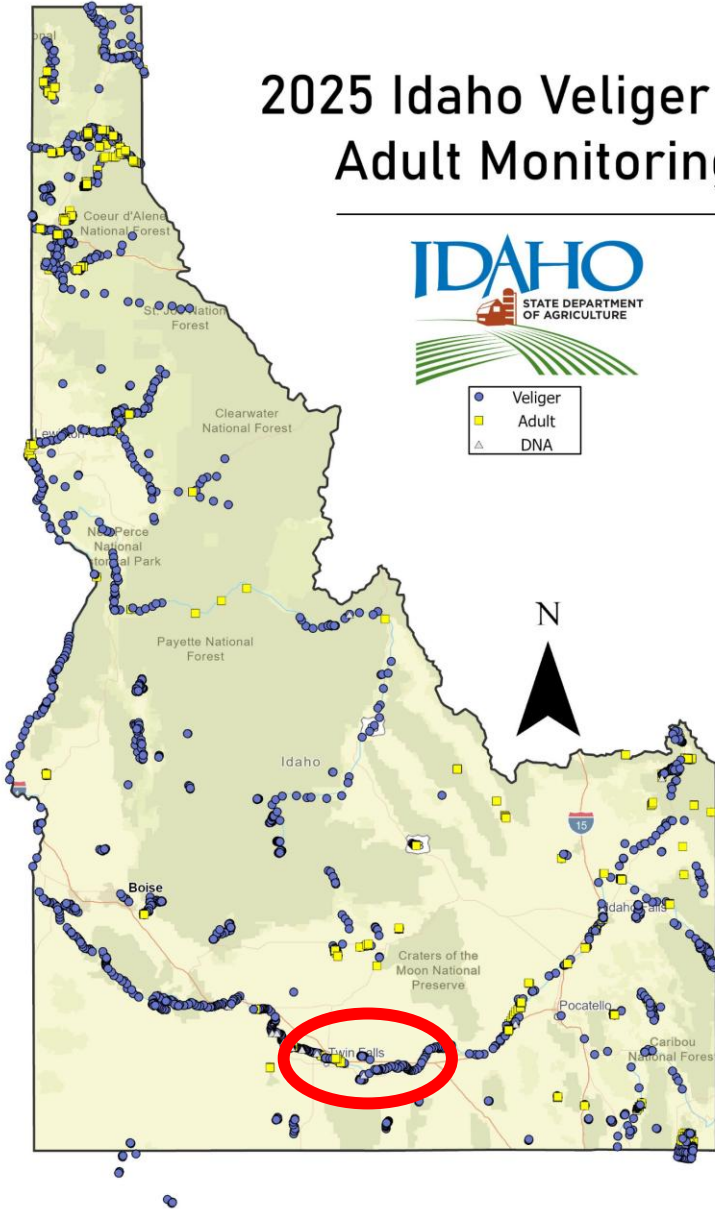
<https://idaho.maps.arcgis.com/apps/dashboards/98c394932ef34381b9e13318aa9d552b>



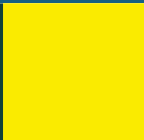
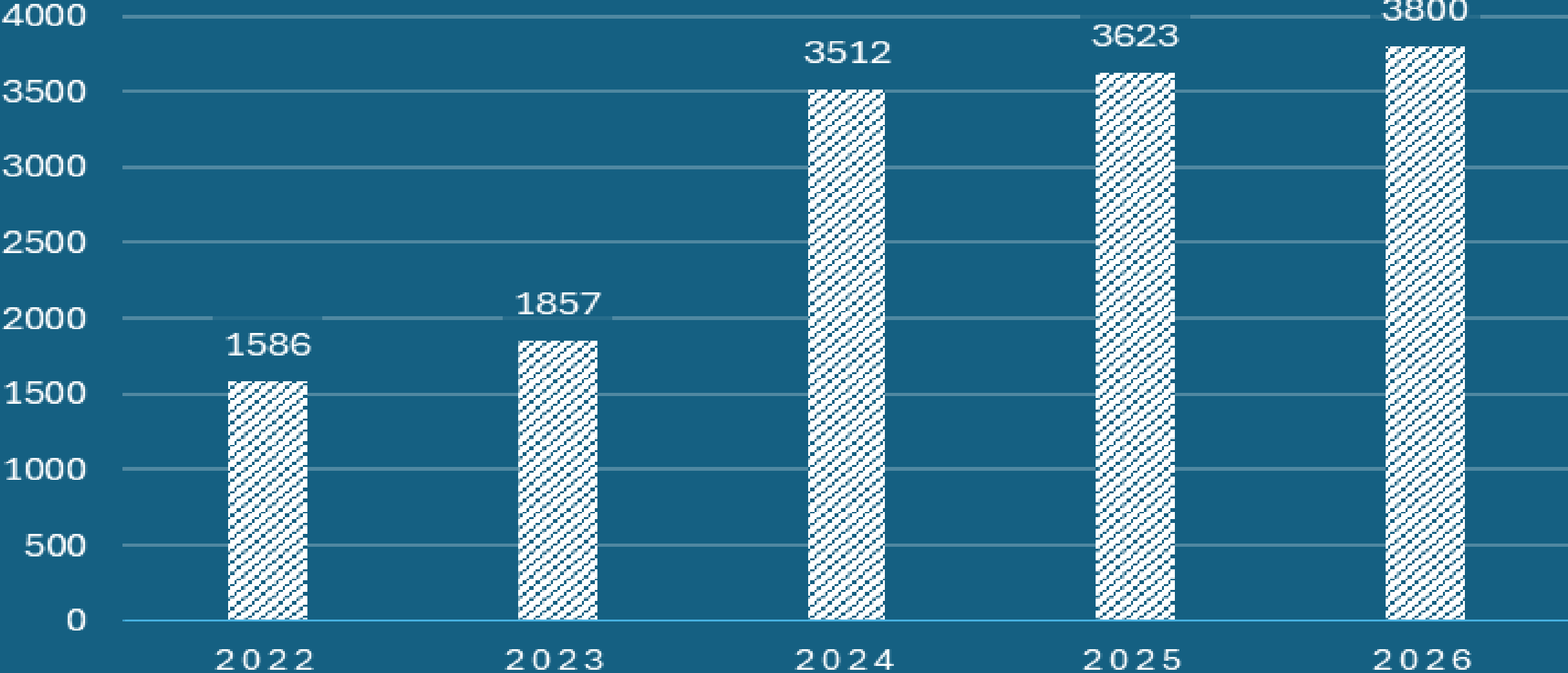
2025 Idaho Veliger and Adult Monitoring



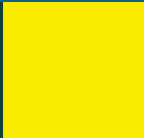
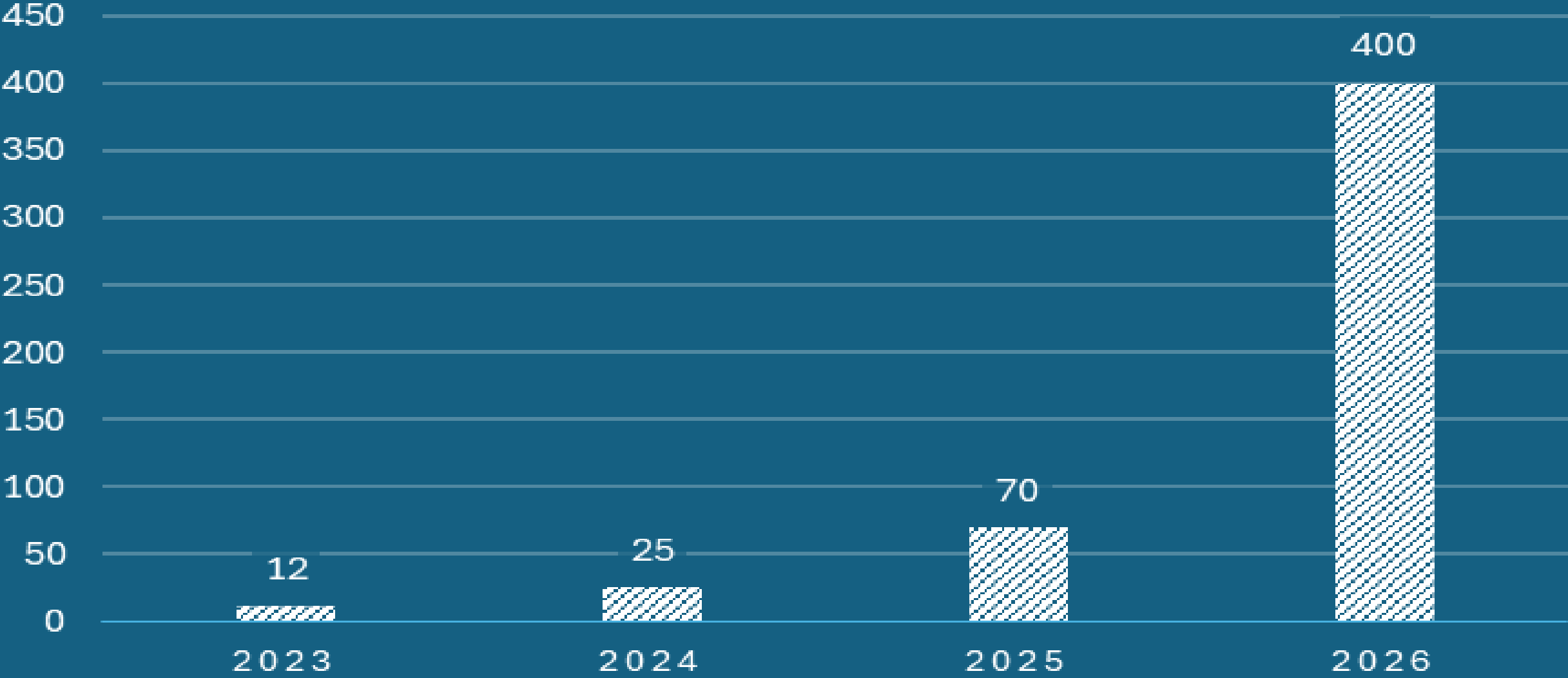
- Veliger
- Adult
- ▲ DNA



VELIGER MONITORING



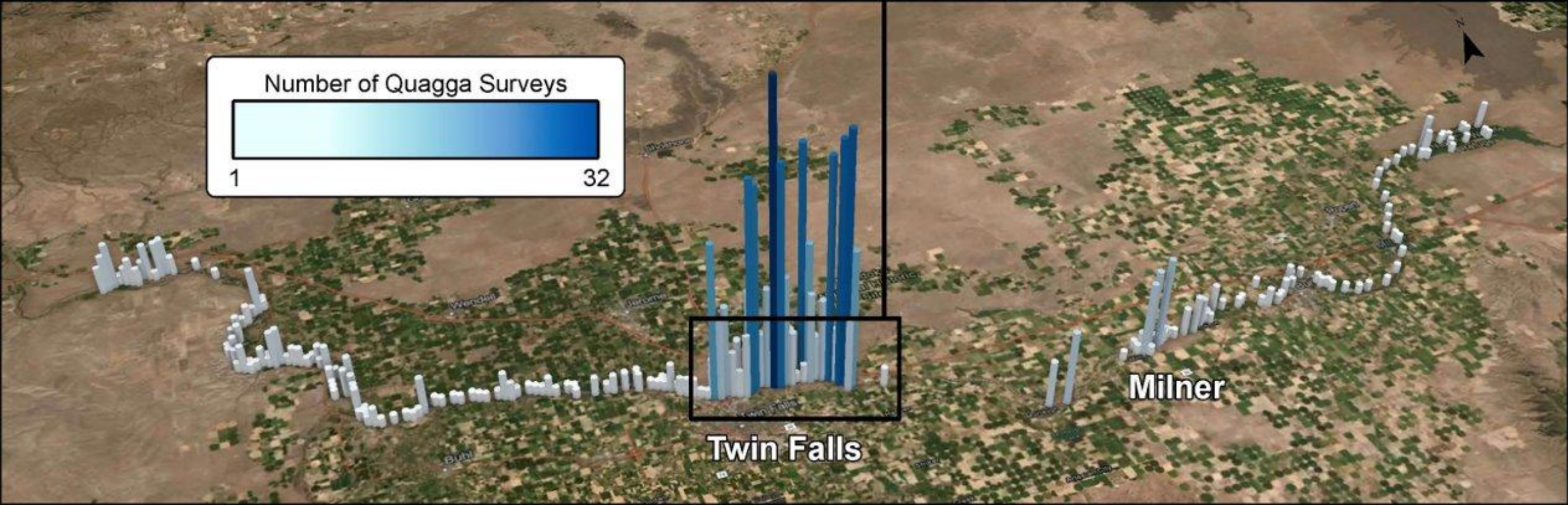
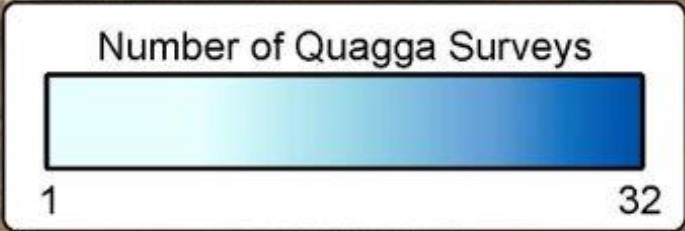
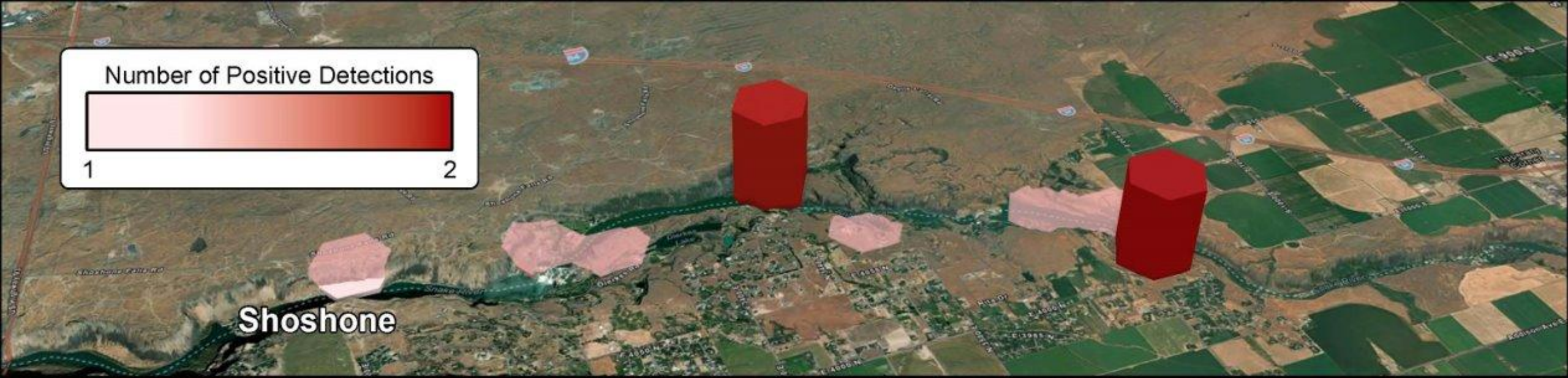
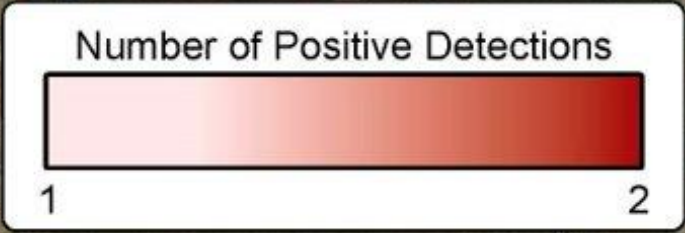
EDNA MONITORING



Expanded Lab Capacity in 2025

- Cross Polarized Light Microscopy (CPLM)
 - Aquaticus (Chiefland, Florida)
 - Eco Analyst (Moscow, Idaho)
 - **ISDA Bureau of Labs (Boise/Twin Falls, Idaho)- New for 2025**
- Visual confirmation
 - Multiple subject matter experts
- Molecular confirmation
 - Pisces Molecular (Boulder, Colorado)
- eDNA
 - Pisces Molecular (Boulder, Colorado)
 - University of Idaho Aquatic Research Institute (Hagerman, Idaho)

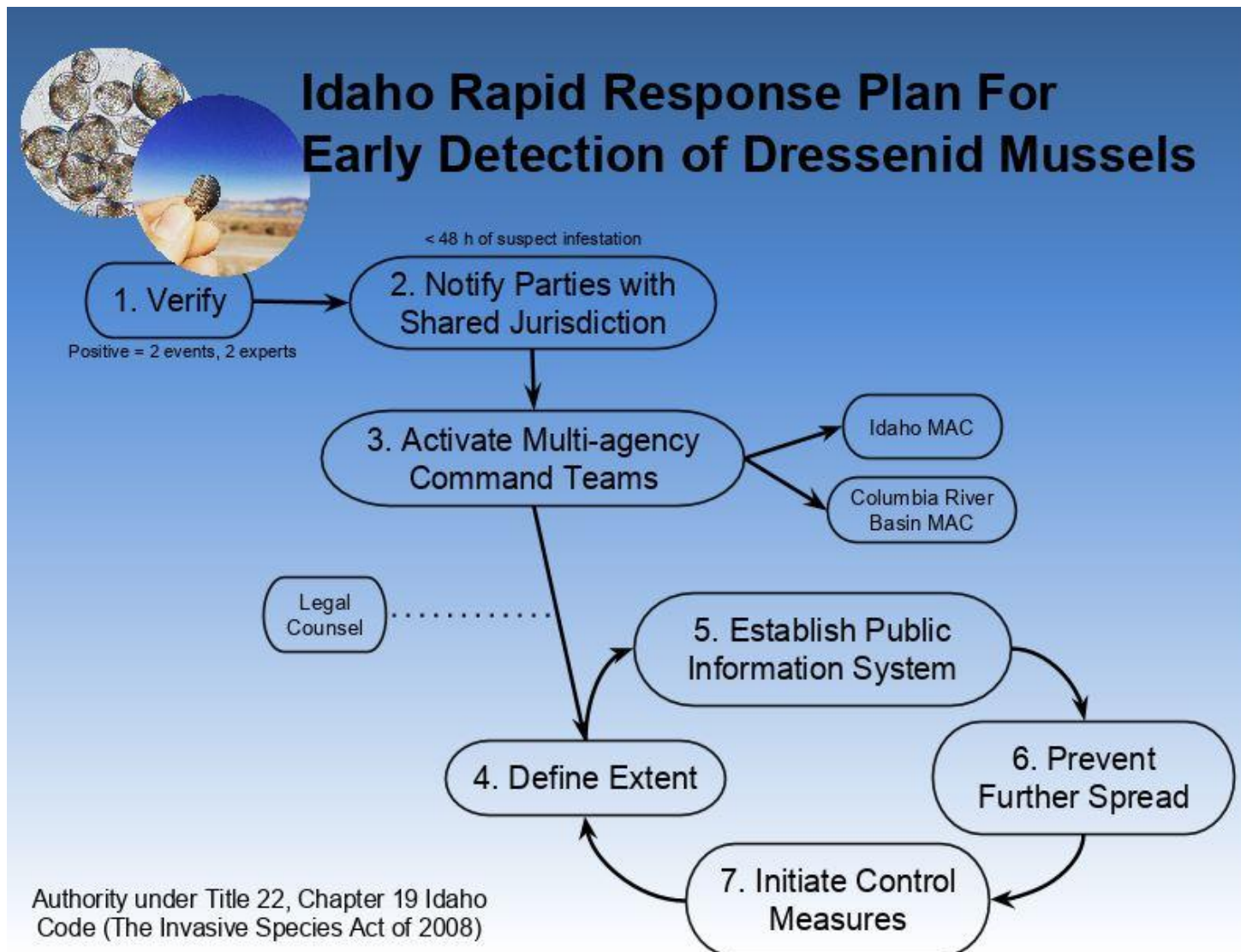
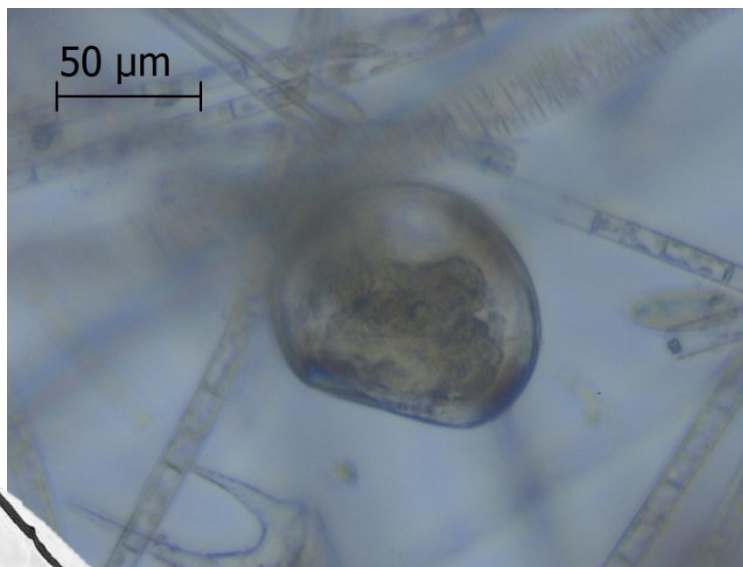




Detection Verification

Quagga Mussel veligers verified

- Multiple sample events
- Multiple specimens per sample
- qPCR genetic verification





Rapid Response Plan

- Developed and updated since 2009
- Outlines points for decision making to identify infested waterbodies and communicate to stakeholders
- DOES NOT contain the details of what a treatment would be

Delimiting Surveys

- Initial veliger plankton tow delimit from Twin Falls Reservoir to Centennial Park
 - Start upstream, new net, tow across flow
- Extended delimit upstream to American Falls
 - Is there anything upstream?
- Extended delimit downstream to CJ Strike
 - Downstream movement?



2024 Areas of Active Veliger Presence



Warm Creek

Centennial Park

Pillar Falls

Shoshone Falls

Twin Falls

Perrine Coulee

Twin Falls

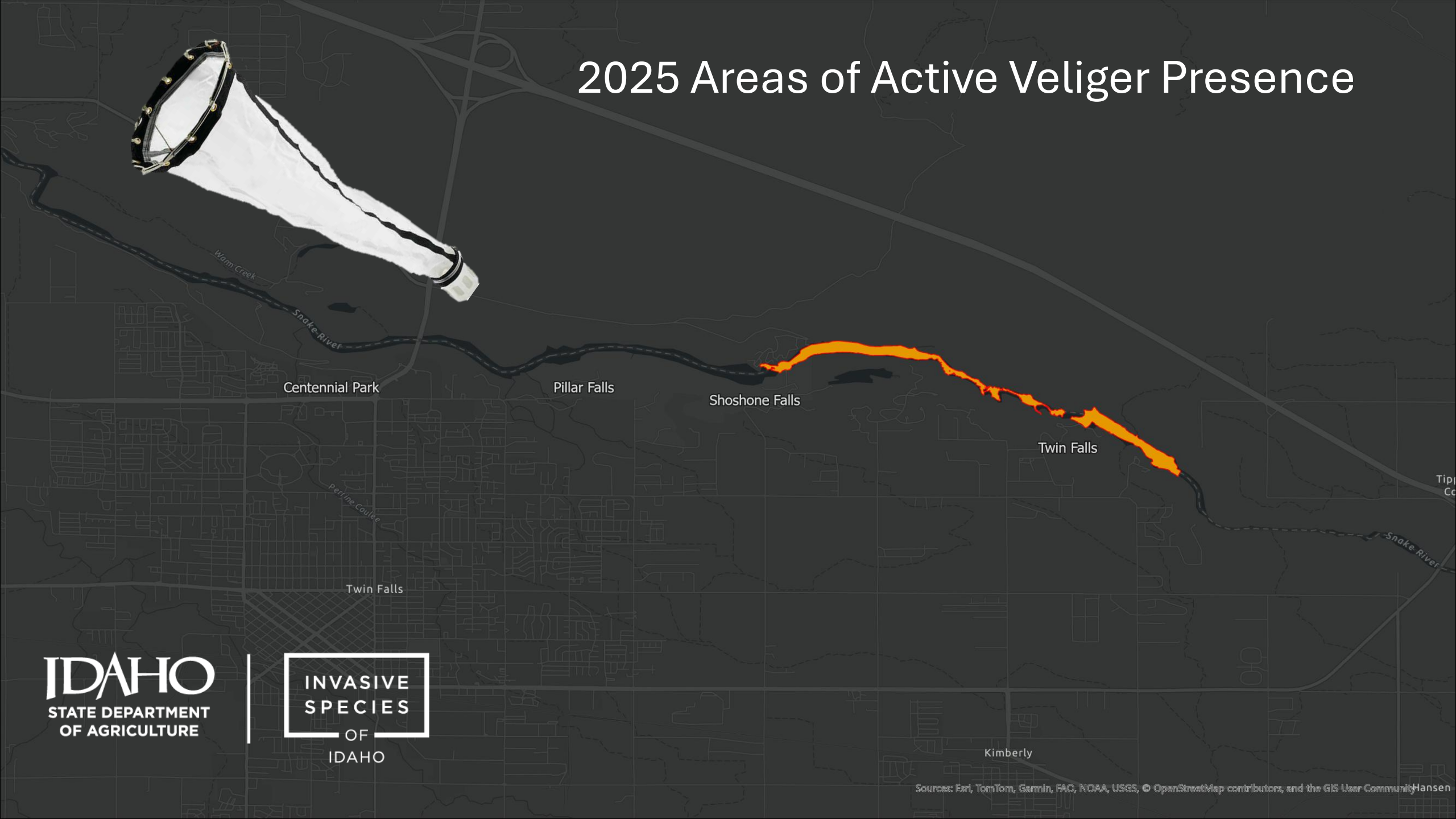
Snake River

IDAHO
STATE DEPARTMENT
OF AGRICULTURE

INVASIVE
SPECIES
OF
IDAHO

Kimberly

2025 Areas of Active Veliger Presence



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OF
IDAHO

2025 Treatment

- Detection: September 12th
- Treatment: September 30th - October 12th
- Reduced Treatment Area
 - 3.5 river miles (51% reduction in size)
- Chelated Copper, Natrix®
- 63,525 gallons of applied
- Target rate 1ppm for 200 hr treatment
- Labeled for use site
- Registered for use in Idaho
- Product manufacturing was available for the quantity needed



SePRO®
Specimen Label

Natrix®

For the control of mollusks in still or flowing aquatic sites including: golf course ponds, ornamental ponds, fish ponds, irrigation and fire ponds and aquaculture including fish and shrimp; fresh water lakes, ponds, and fish hatcheries; potable water reservoirs; and cropland irrigation and drainage systems (canals, laterals and ditches) and chemical systems.

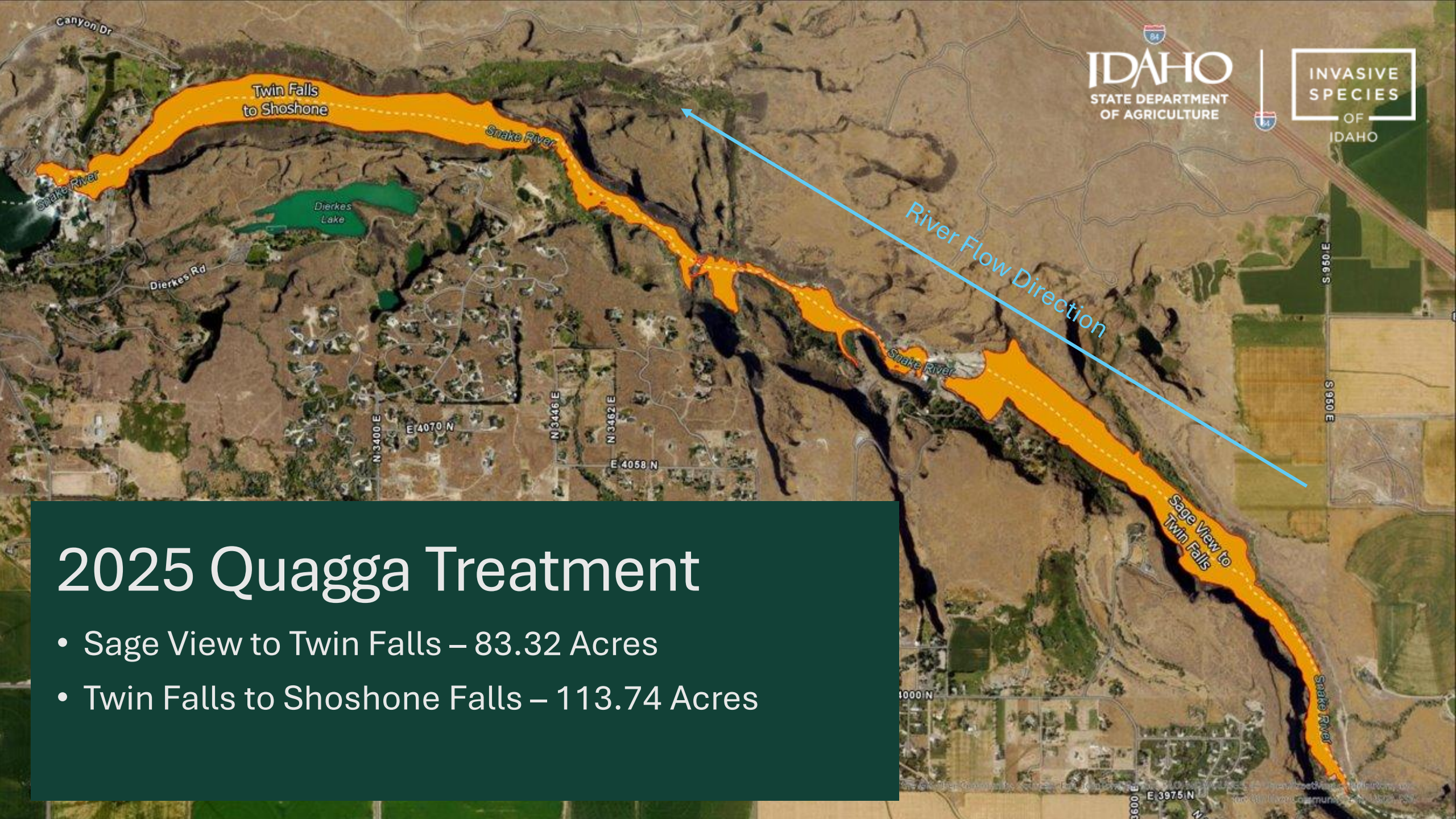
Active Ingredient
Copper Ethanolamine Complex† (Mixed CAS#s 82027-59-6 & 14215-52-2).....28.2%

Other Ingredients.....71.8%

TOTAL.....100.0%

†Metallic copper equivalent = 9.1%

KEEP OUT OF REACH OF CHILDREN
WARNING / AVISO
Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(do not understand the label, find someone to explain it to you in detail.)



2025 Quagga Treatment

- Sage View to Twin Falls – 83.32 Acres
- Twin Falls to Shoshone Falls – 113.74 Acres

Treatment Challenges

- Complex River System & Safe Harbors
 - Hydrology
 - Bathymetry & Deep Pools
 - Inflow Dilution
 - Organic Sediment Sorption
 - Isolated Pools
- Idaho Power Hydropower Facilities
- Sensitive Native Species (downstream)



Applicator Services

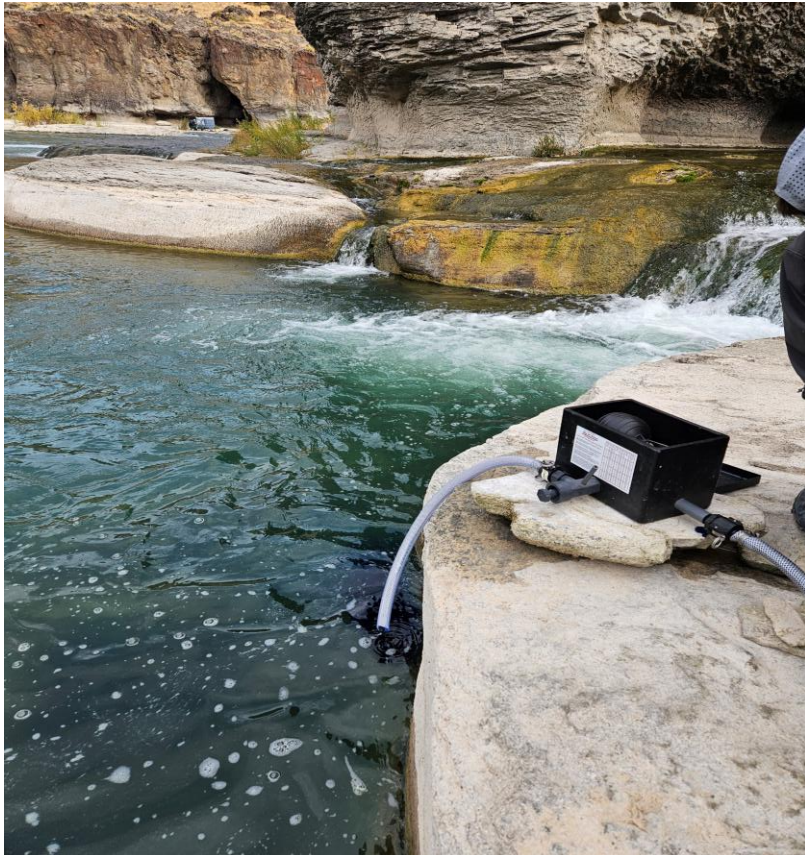
Clean Lakes Inc.

- Contracted for application of Natrix to treatment areas
- Responsible for:
 - Ordering and delivery of Natrix, to treatment areas
 - Application through metered totes or watercraft applications
 - Triple rinsing and coordination of recycling empty product totes
- Involved in the '23 &'24 quagga treatments

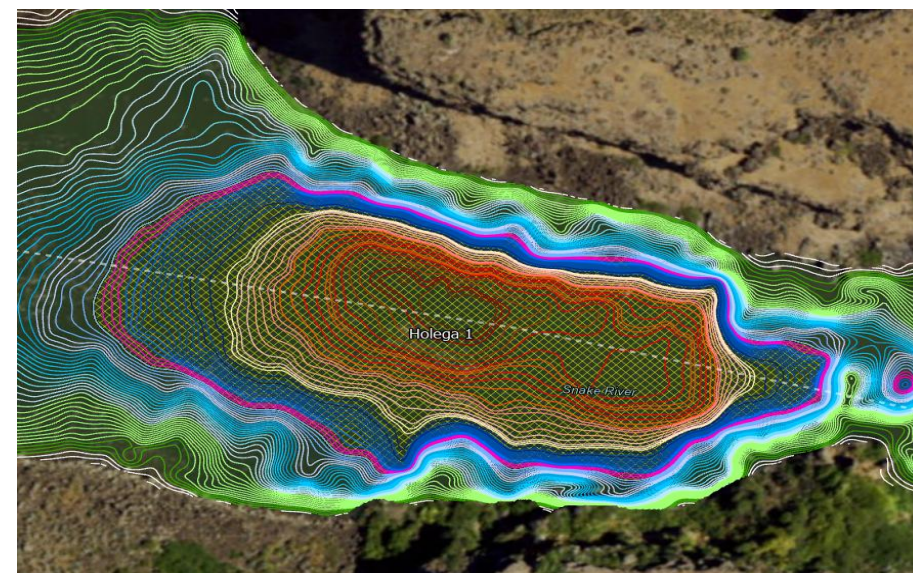
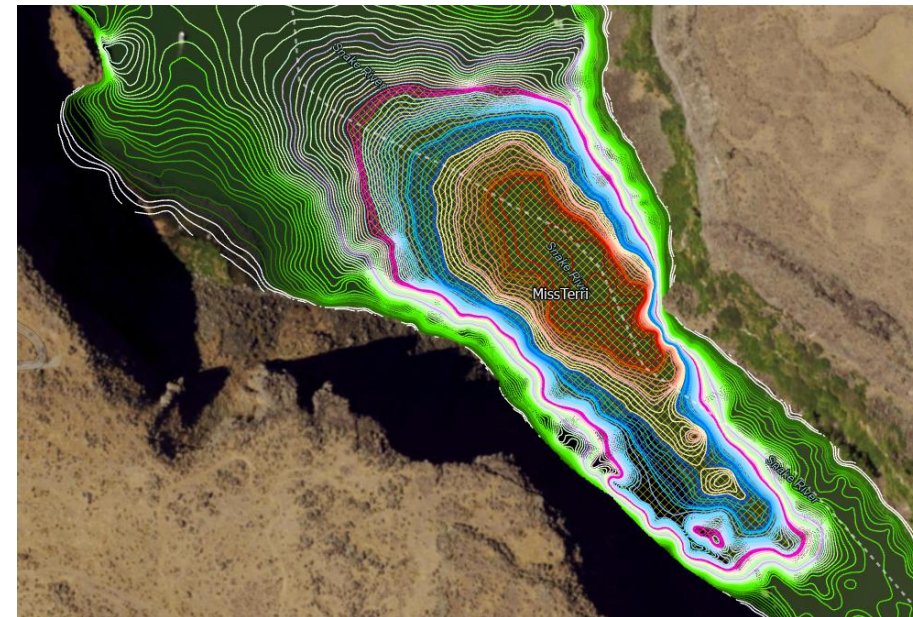
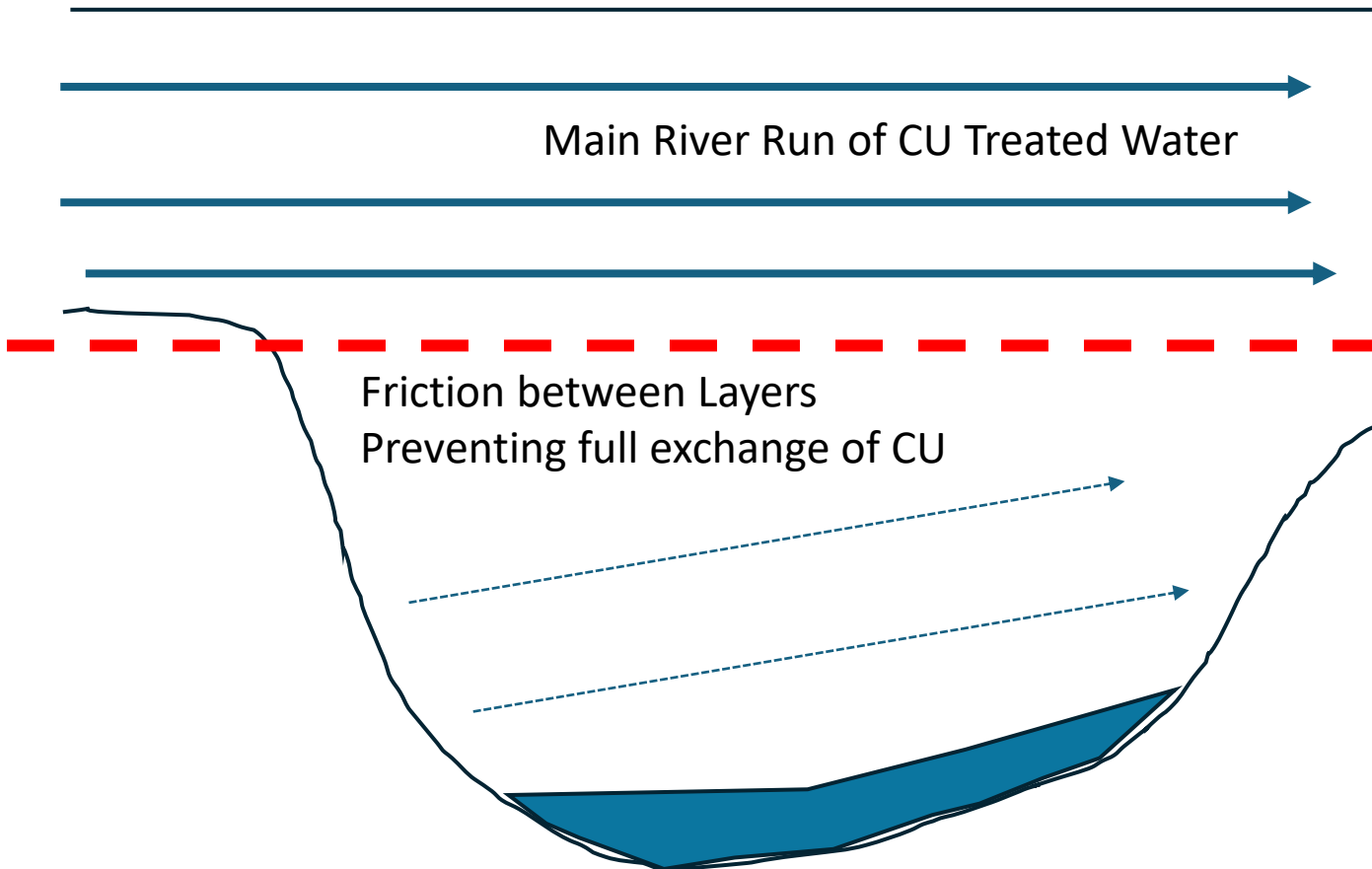


Application Methods

- Metered Tote Drip Boxes
- Watercraft- Deep hole and pre-treatment applications
- Deep hole Inject
- Pothole & Shoreline Applications



Laminar flow creating a friction layer not conducive to mixing with bottom bathymetry



Deep Hole Watercraft Treatments

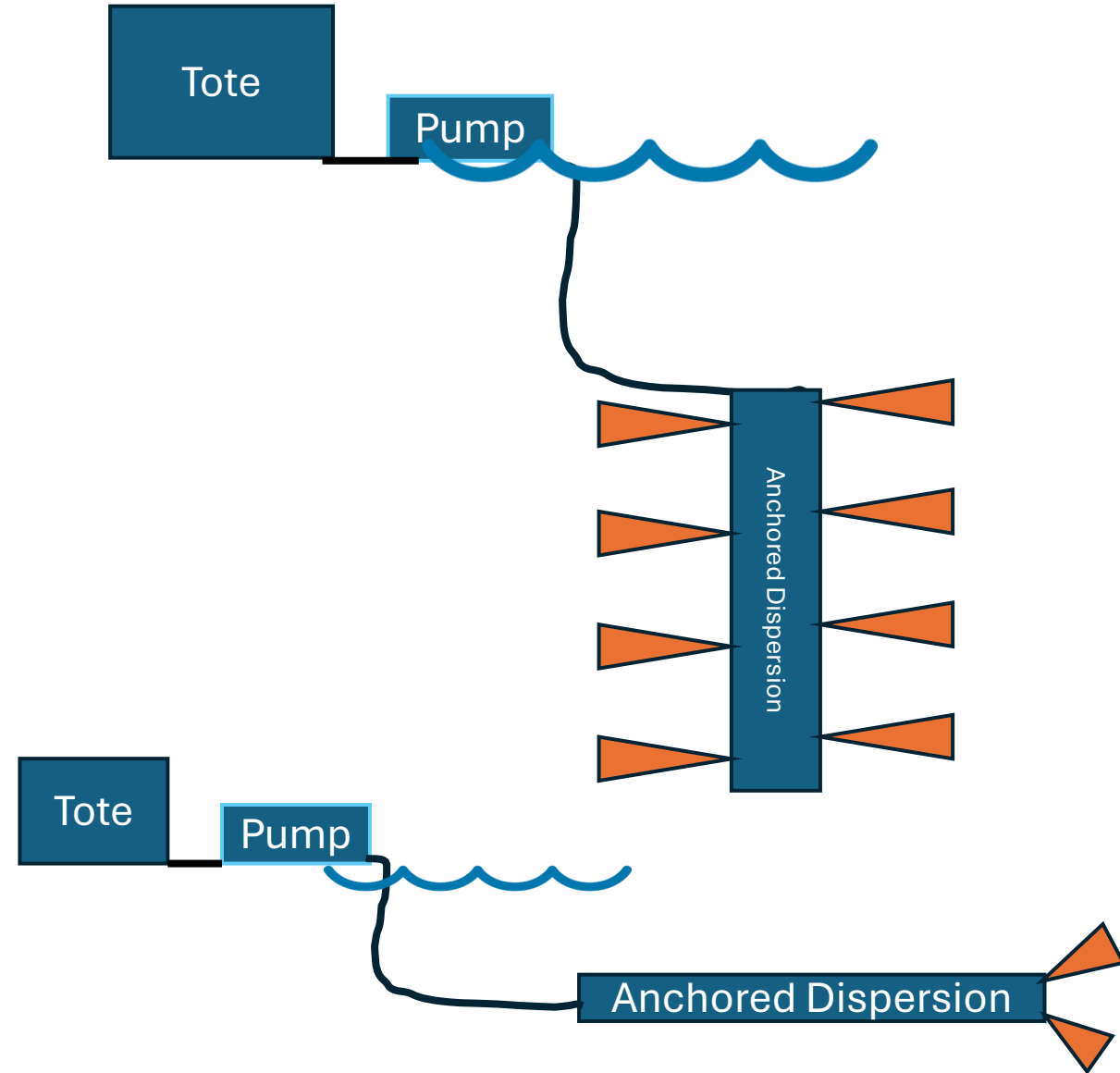
Deep hole treatment in anticipated high sorption/dilution areas

- 6-hour monitoring after initial treatment to evaluate the need for additional treatment.
- 24-hour monitoring interval throughout treatment.

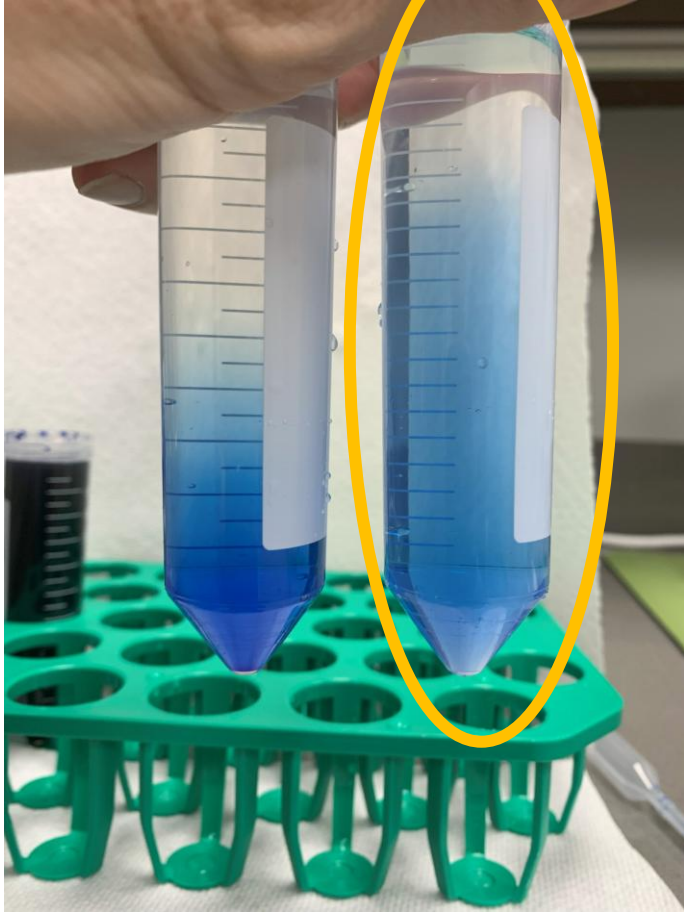


Deep Hole Pump Injection

- Application tote placement on shoreline
- A pump driven system to compensate for pressure differential, injecting product.
- An anchored Underwater Boom Sprayer to deliver to target band at a 50/50 mix of Natrix and water at a target depth.



Main river flow above 20 - 40ft



By using a 50/50 dilution injection through dispersion fan at depth, bioavailable copper will remain suspended in target area zone longer and account for spring inflow dilution to eliminate Safe Harbor site



Deep Hole water ~Stagnant Below 45ft



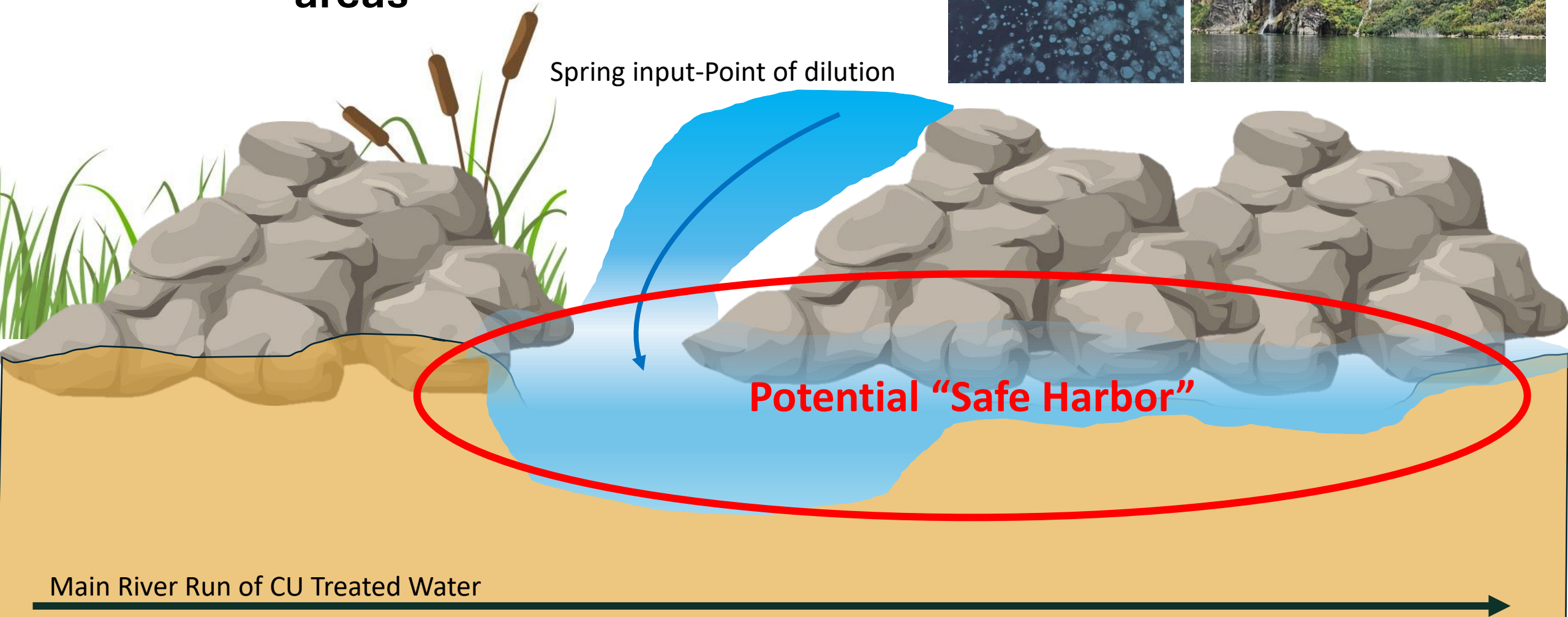
Spring Input Dilution



Safe Harbor

Organic Sediments

Springs above and below river's surface providing points of dilution in active treatment areas

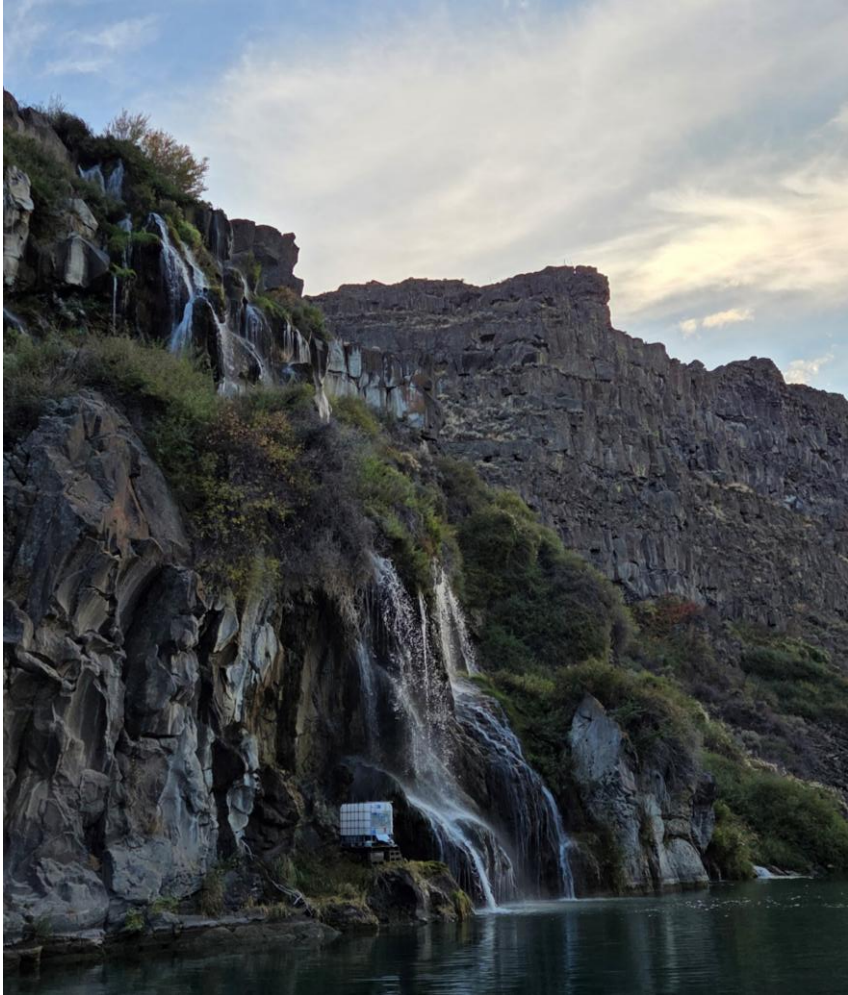


Spring input-Point of dilution

Potential "Safe Harbor"

Main River Run of CU Treated Water

Springs = Dilution



- 18 springs identified as potential sources of dilution for the treatment areas

- 3 Irrigation returns
- 1 Controlled spring
- 14 Natural springs



High Organic sediments able to sorb high volumes of CU

Main River Run of CU Treated Water

Organic Sediments

Potential "Safe Harbor"

Shoreline Treatments

- Shoreline treatment 24 hours after pre-treatment and initial turn on of metered drip totes.
- Bump shoreline treatments following copper monitoring
- Target treatment rate of 1ppm at 50/50 mix Natrix and Water.
- All applications below the highwater mark as an aquatic application.
- 2-part application process.
 - Directed application of 50/50 mix to Shoreline waters edge along rocks, cliffs, and organic vegetation
 - Flush of river water to just above the waterline to wash any overspray back into water to ensure all areas of low exchange receive targeted treatment to prevent additional “Safe harbors.”





Treatment Monitoring

- Target Concentration- 1 ppm
- Copper Sampling in Active Treatment Area
 - Run of River- 44 samples, every 24 hours
 - Deep hole sampling every 12 hours
 - Shoreline sampling every 24 hours
- Quagga Mussel Monitoring
- Downstream Copper Sampling for ESA

Sample Collection

Type

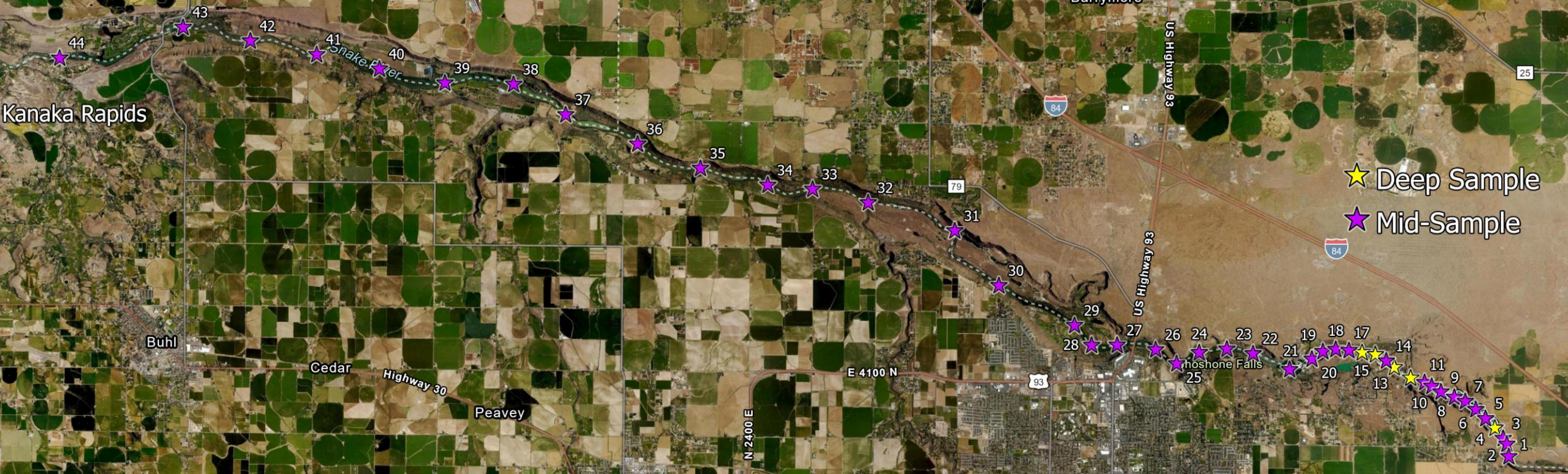
- Deep Hole Samples- Are samples within the treatment area only and require a minimum depth of 15 meters.
- Mid-Sample- Are mid-river, mid-depth at sample location.

Equipment

- Kemmerer- For use on deep holes or mid samples.
- Van Dorn- For use on mid-samples and shallower shoreline samples.
- ExTech DO700



Copper Monitoring Sites

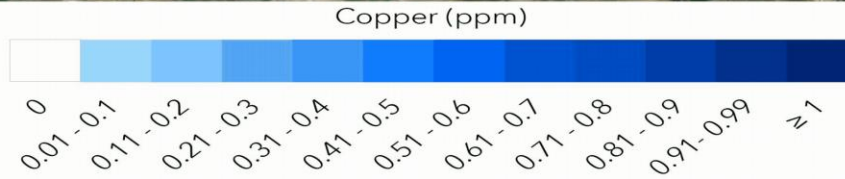


- ★ Deep Sample
- ★ Mid-Sample

Esri, Maxar, Earthstar Geographics, and the GIS User Community. Sources: Esri, DeLorme, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Esri, USDA, FSA

9/29/2025

River Flow Direction



Golden mussel

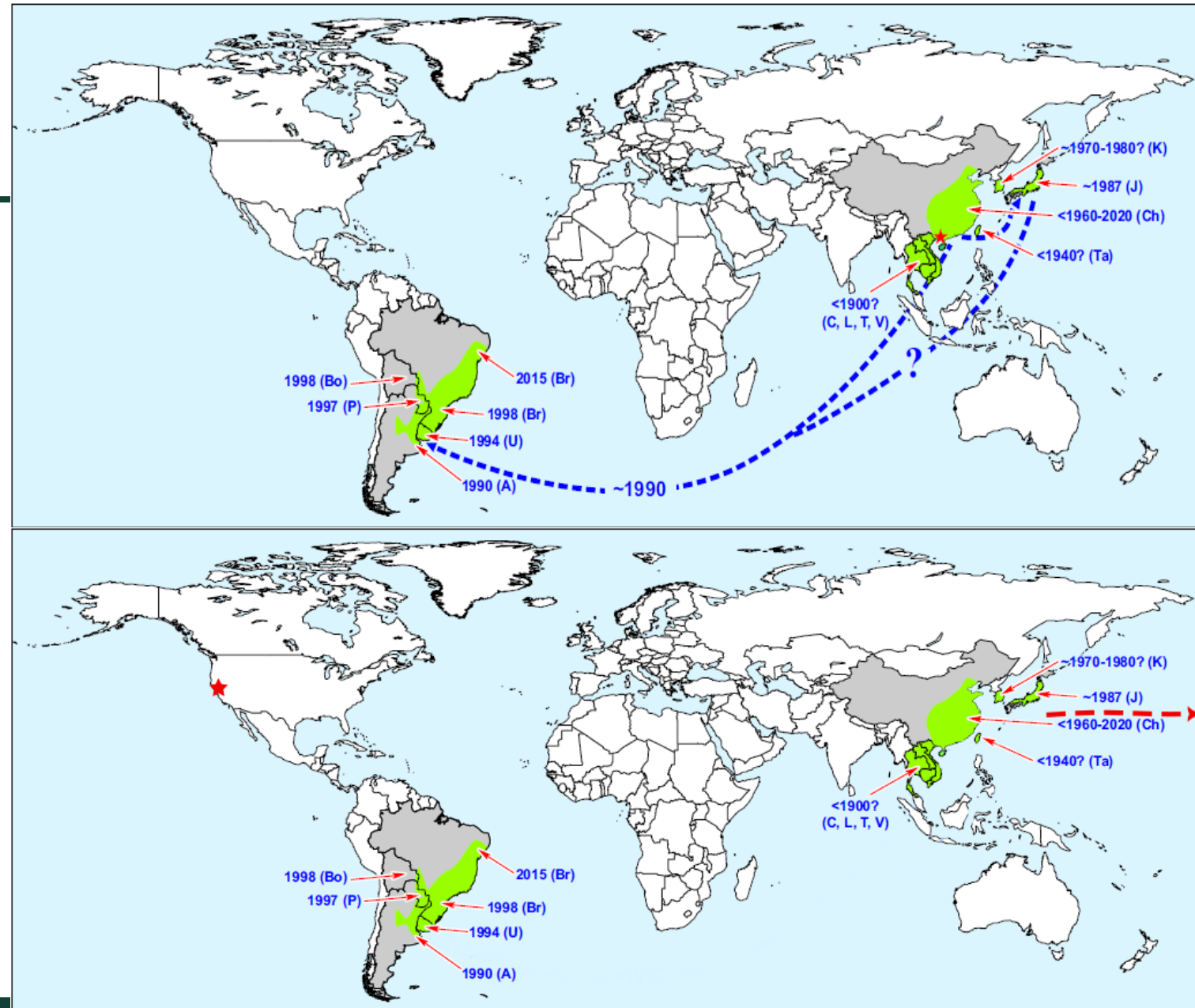
Limnoperna fortunei

- Similar morphology and life-history to quagga and zebra mussels
- Proposed IDAPA Rulemaking 02.06.09

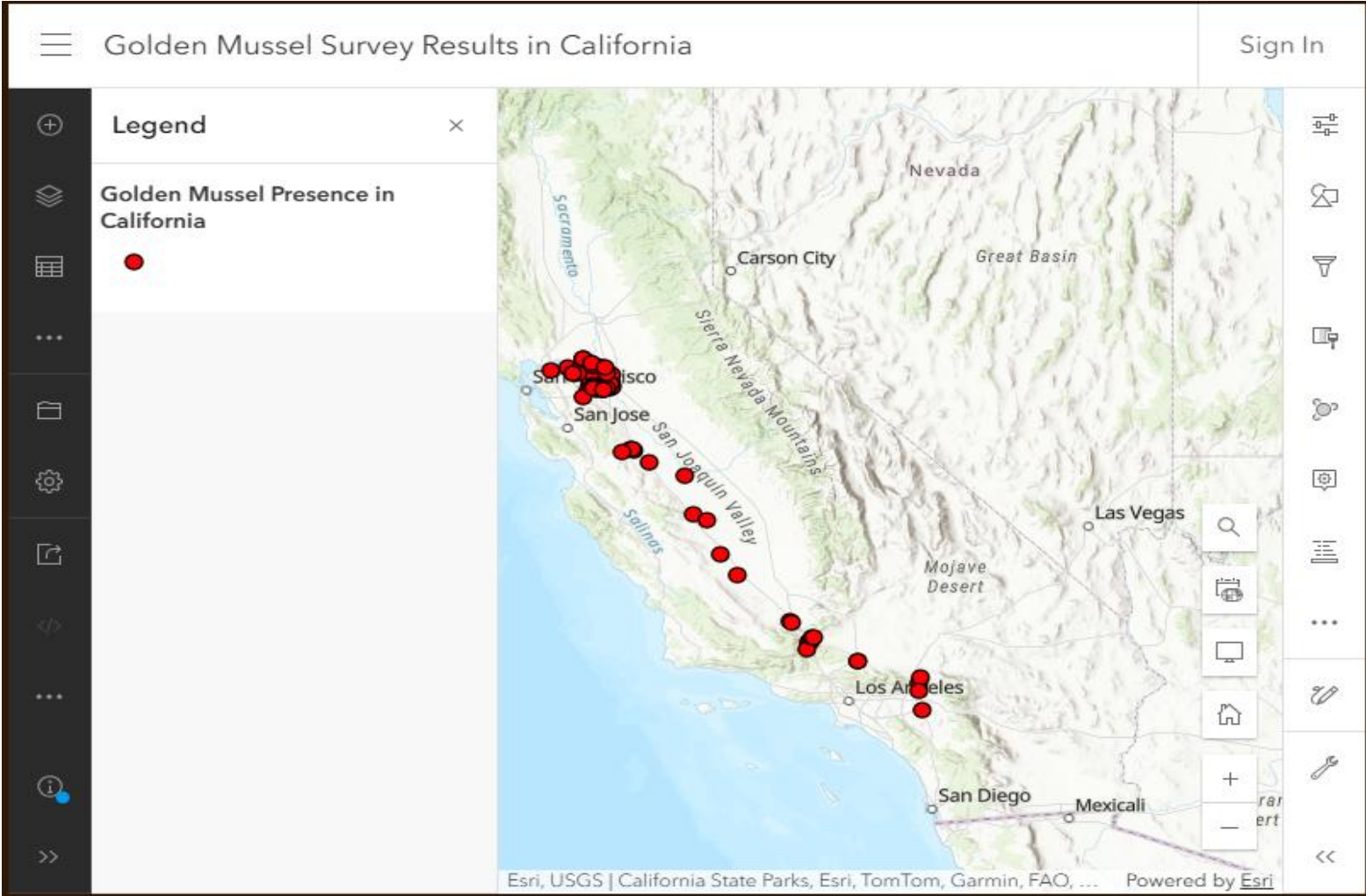


Golden mussel

- Native to SE China
- Invasive in
 - East Asia (1900's)
 - South America (1990)
- Discovery in CA in October 2024



Golden mussel Distribution (December 2025)



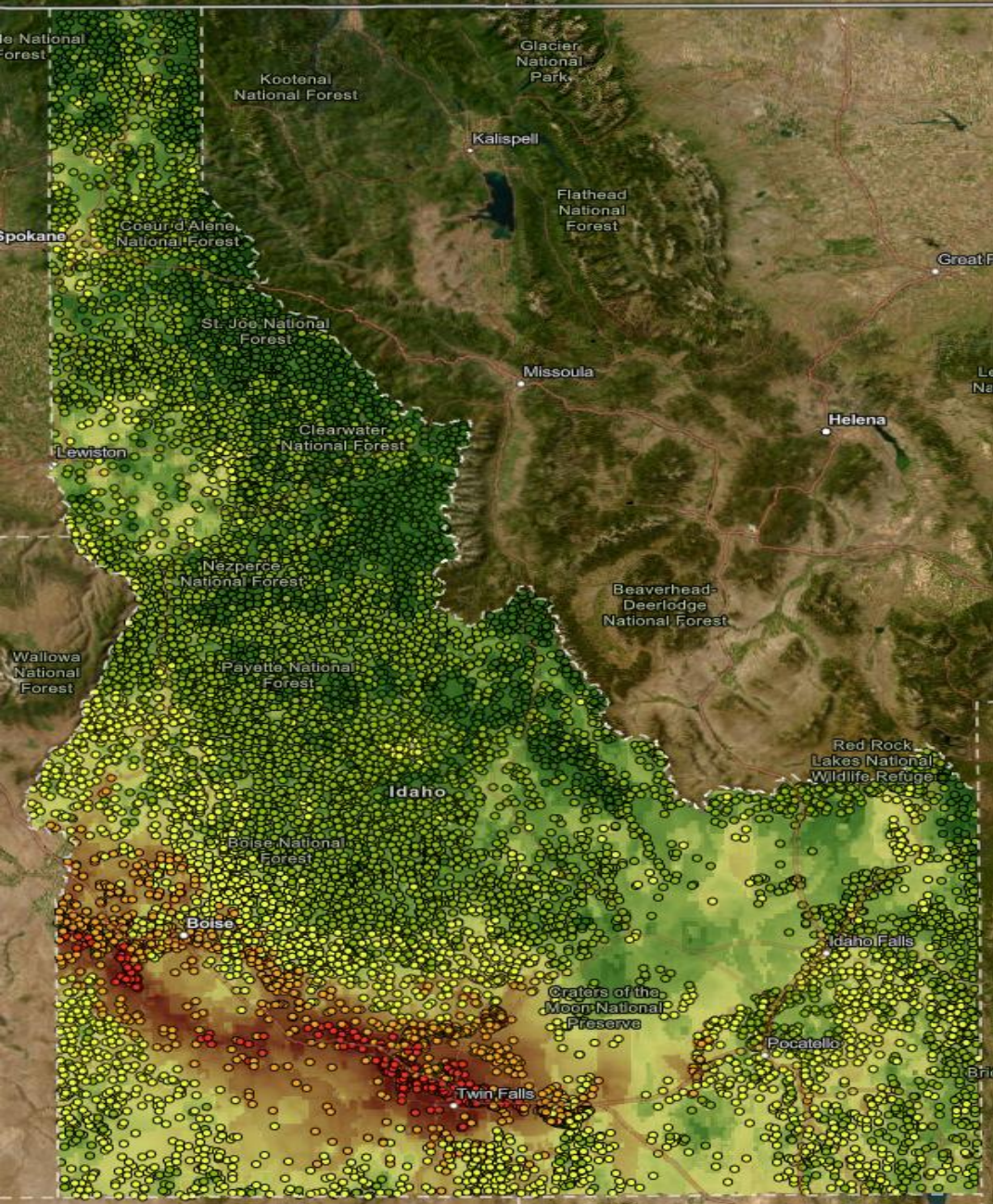
Golden mussel

- Habitat suitability
 - where could they spread?

Environmental parameter	Golden mussel	Quagga mussel	Zebra mussel
Calcium (mg/L)	1	<10	<8
Dissolved Oxygen (mg/L)	0.5	<4	<3
Temperature (°C) (lower, upper)	<5, >32	<2, >30	<3, >32

Risk Assessment

- Watercraft traffic
- Distance from Hydro-facilities
- Boat ramp density
- Distance from major roads
- Calcium
- DO
- pH
- Average Temp
- Distance from mid-snake (downstream/adjacent)



Golden mussel Monitoring

- Artificial substrates and visual surveys
- Microscopy
- Environmental DNA (eDNA)

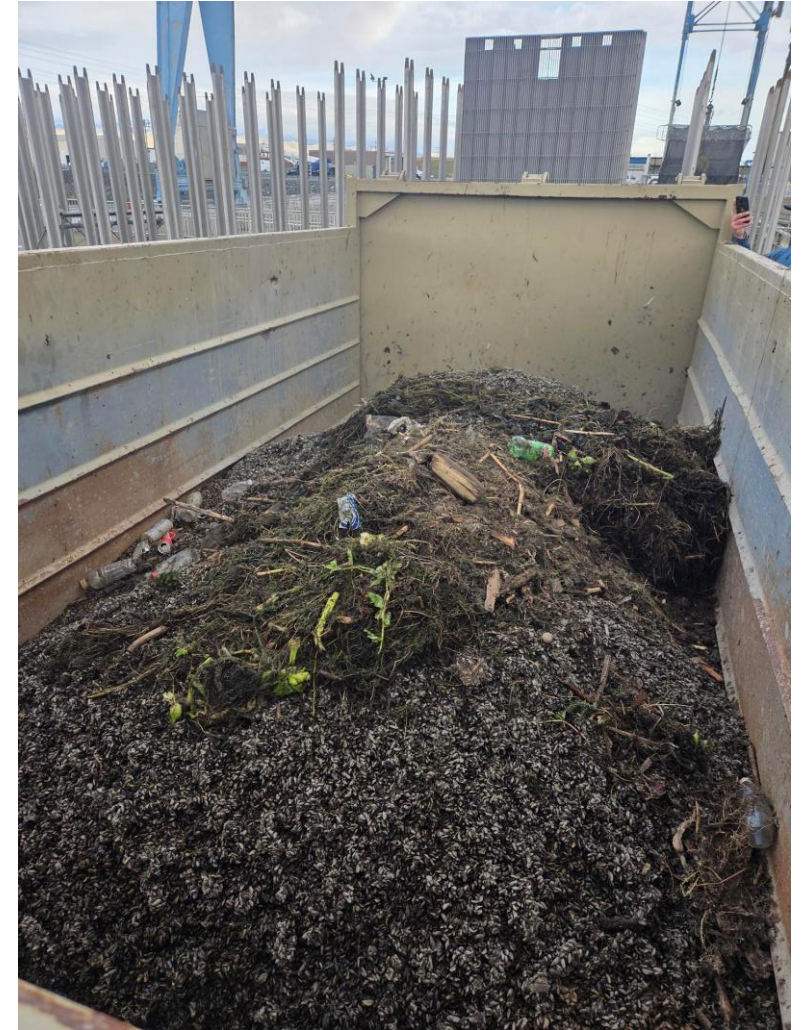


Golden mussel

- Infrastructure
 - Hydropower
 - Irrigation
 - Water delivery
- Ecological impacts
 - Toxic algae
 - Outcompete
 - Endangered species
 - Overgrowth
- Recreation



Golden mussel



Golden mussel



Education Campaign- Clean Drain Dry

- Revamp Website
- Revamp entire Clean, Drain, Dry campaign
 - Video
 - Radio
 - Social Media
 - Digital Display
 - Promotional Items
 - University Athletics
 - Outdoor Display
 - Billboard
 - Marina
 - Gas stations

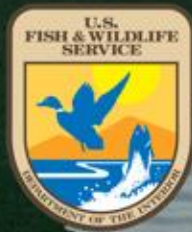




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STATE DEPARTMENT OF AGRICULTURE



US Army Corps of Engineers



BUREAU OF RECLAMATION

