

# IDAHO



**STATE DEPARTMENT  
OF AGRICULTURE**

## **Quagga Mussel Rapid Response Mid-Snake River, Idaho**

**Alberta Invasive Species Conference**

# Invasive Species Program Areas

- Prevention & Containment
  - Watercraft Inspection
  - Product Inspection
- **Early Detection Monitoring**
  - Plankton tow
  - Adult surveys
- **Management and Control**
  - Active control programs
  - Rapid response planning
- Education and Outreach
  - Public campaigns
  - Partnerships







**Quagga Mussels on ABS**  
From Lake Mead - 16 months in water





# Early Detection Monitoring

14<sup>th</sup> year of Monitoring

Veliger Monitoring (microscopy)

- **1,650** plankton samples collected from **80** waterbodies)
  - Multiple sample events, bi-weekly, per waterbody
  - Priority overnight shipment
  - 2 week turnaround for lab analysis

Adult Monitoring (visual)

- **~1,500** surveys conducted
- Reservoir drawdown, substrate and benthic grab sampling

Exploring other monitoring methods

- eDNA

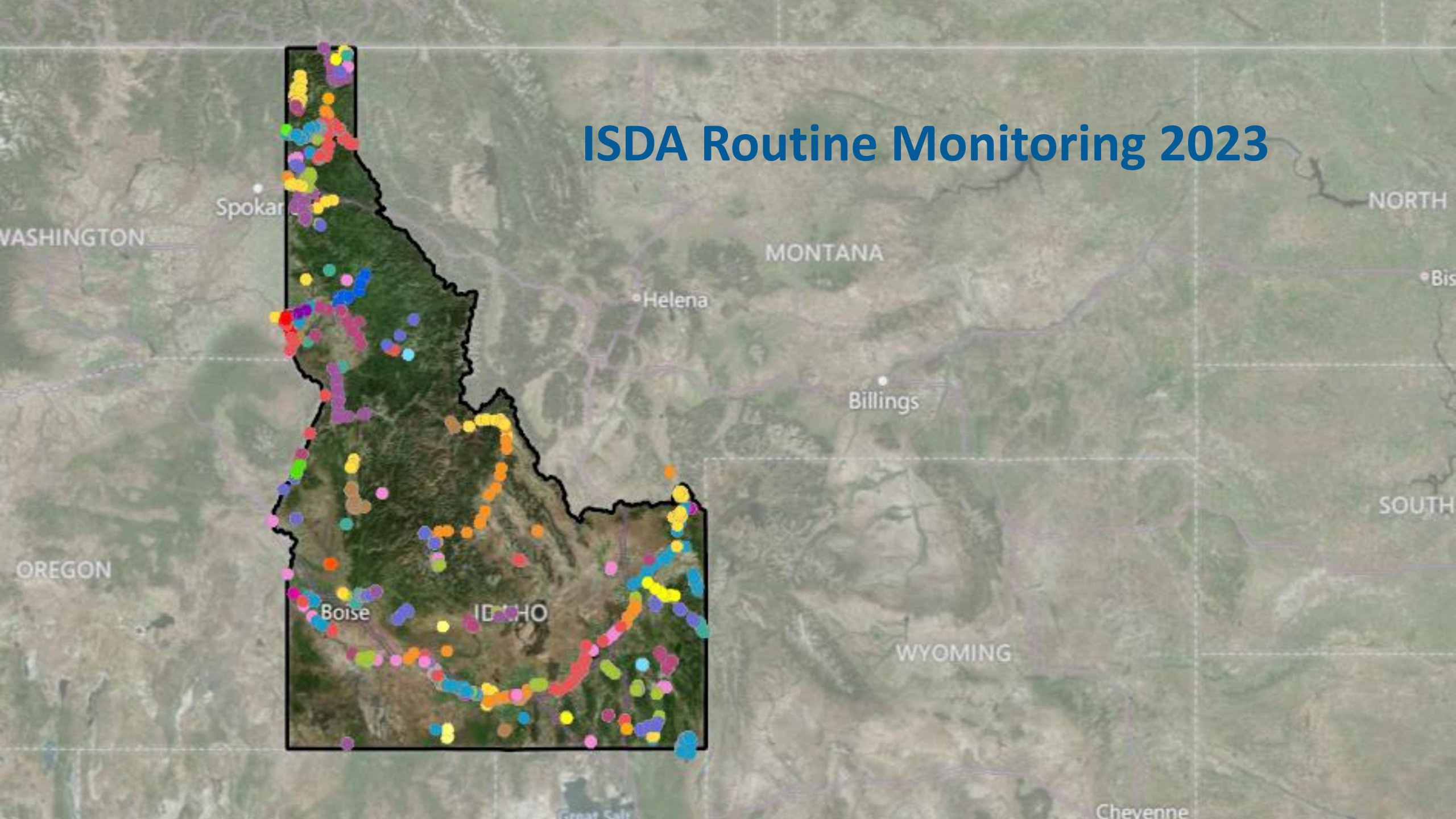


Idaho Waterways Survey  
A Standard Operating Procedure for Aquatic Plants & Invasive Species





# ISDA Routine Monitoring 2023

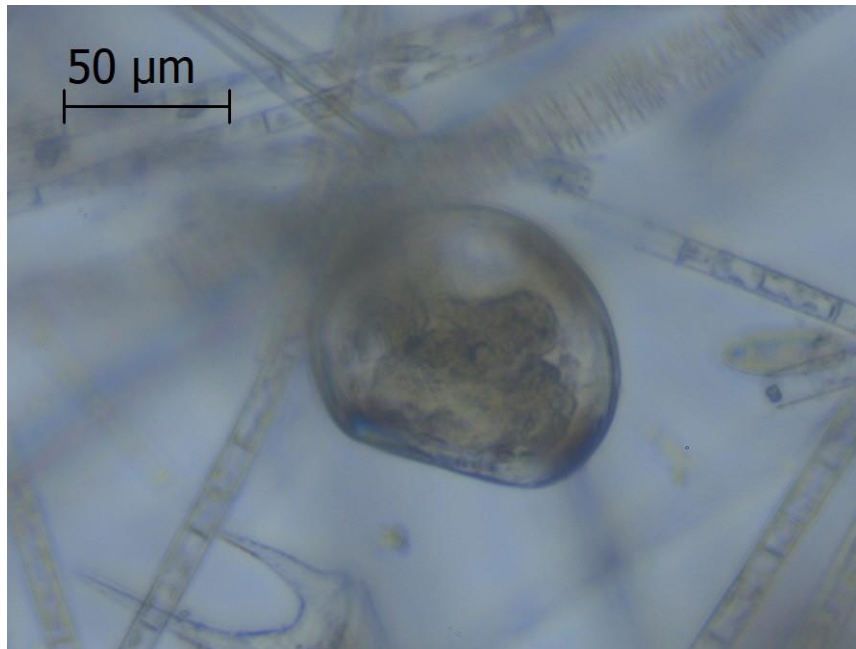




# Detection Verification

Sept 18<sup>th</sup> Quagga Mussel Veligers verified

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





# ISDA's Rapid Response Plan

Notify impacted entities.

Implement containment measures.

Conduct delimiting surveys.

Explore treatment options.





# Notify Impacted Entities

- Establish communications team
- Media releases
- Create webpage
- IS Hotline
- Adjust message as response progressed



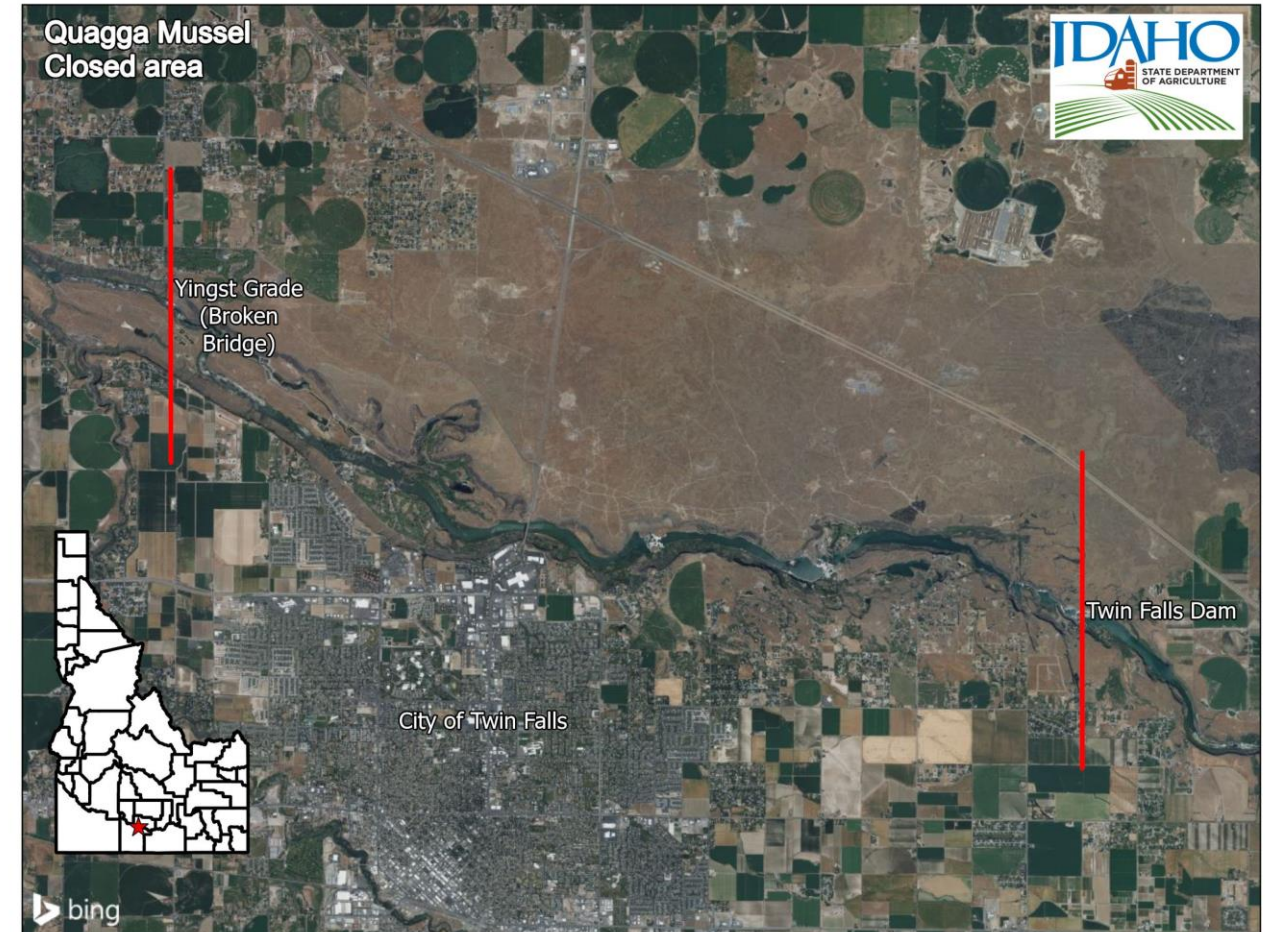
MEDIA ADVISORY – Press Conference Tuesday September 19, 2023 at 1:00 p.m.

Governor Brad Little and Idaho State Department of Agriculture Director Chanel Tewalt will be addressing the confirmed presence of quagga mussel veligers in the Centennial Waterfront Park area of the Snake River near Twin Falls. The press conference will provide more details on ISDA's rapid response plan to the aquatic invasive species.



# Implement Containment Measures

- Waterbody closures (IDAPA 02.06.09.135)
- Mandatory decontamination for exiting watercraft
- Public outreach for watercraft recently visiting Mid-Snake area in previous 30 days























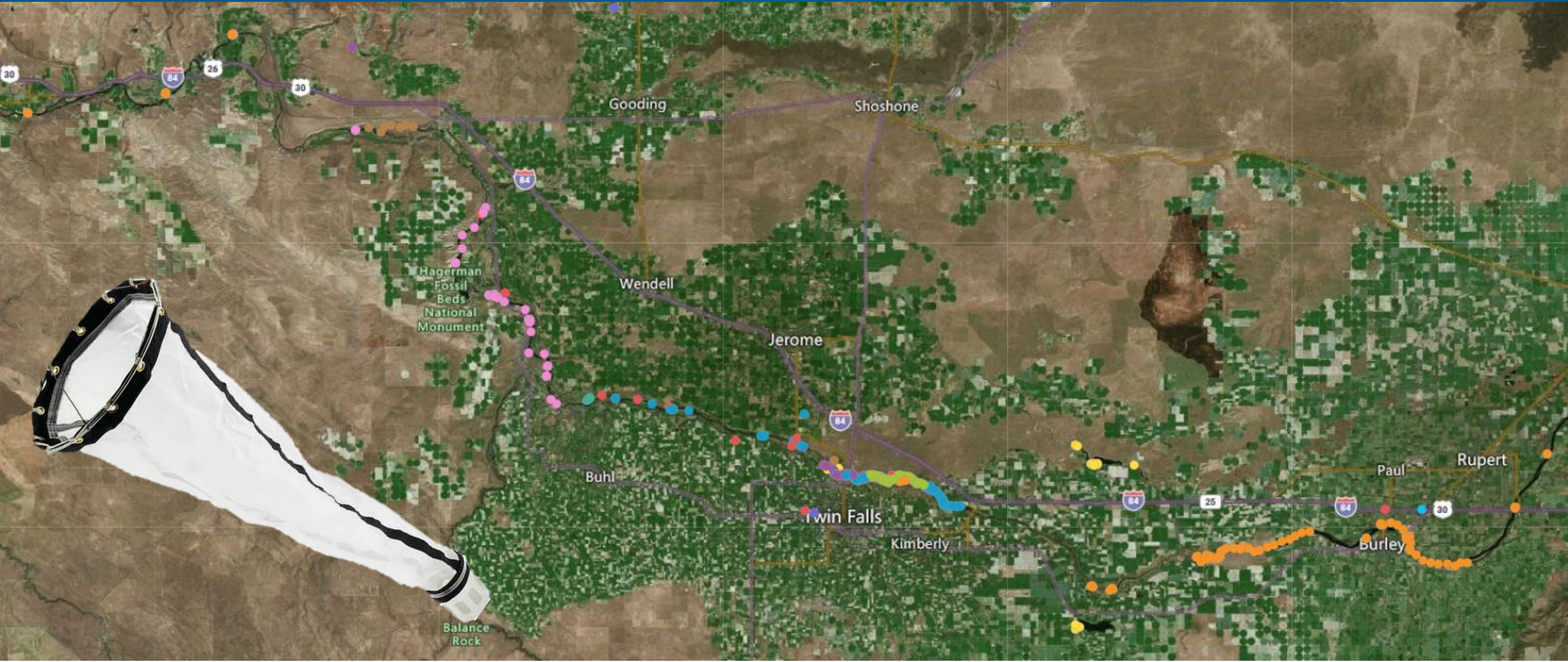


# Conduct Delimiting Surveys

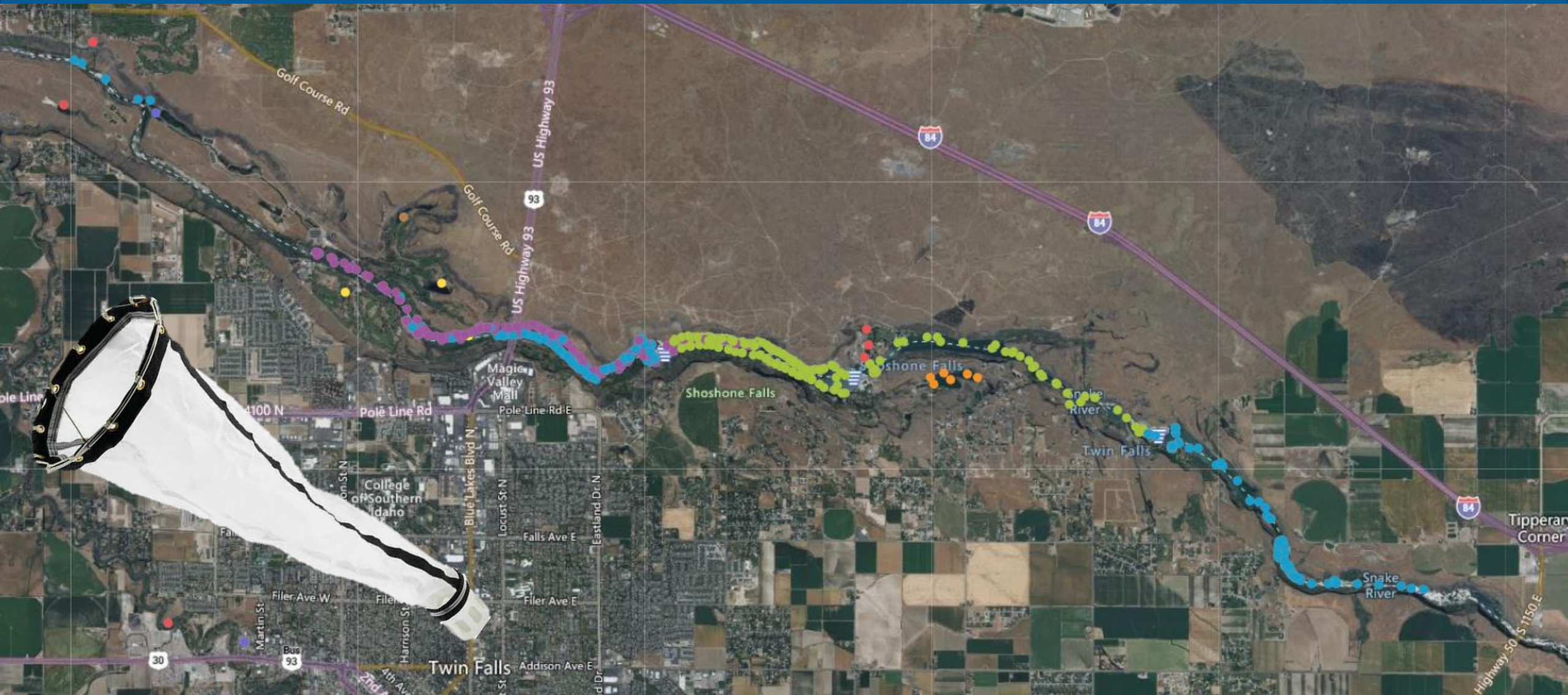
- Initial veliger plankton tow delimit from Twin Falls Reservoir to Centennial Park
  - Start upstream, new net, tow across flow
- Extended delimit upstream to American Falls
  - Is there anything upstream?
- Extended delimit downstream to CJ Strike
  - Downstream movement?















# Quagga Mussel Veliger presence September 27, 2023



## Legend

Number of Veligers







# What Treatment Options are viable for Quagga Mussels





# What Treatment Options are viable for Quagga Mussels

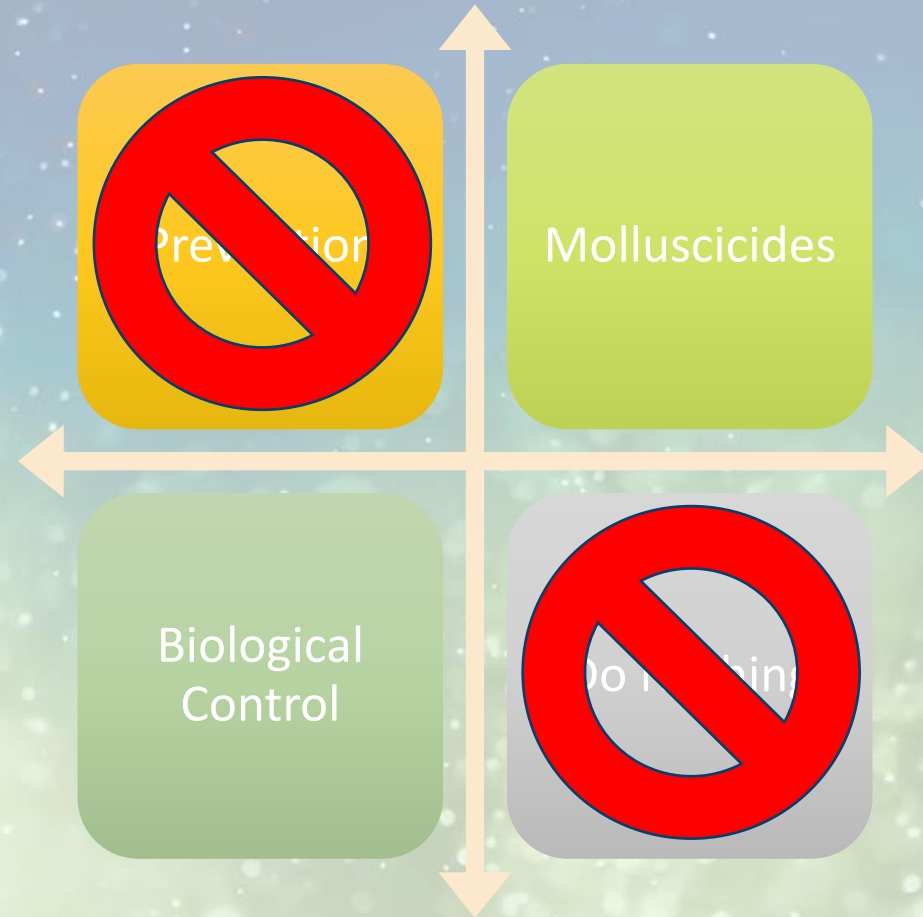


Not the best option as the current infestation poses considerable crisis to the entire Columbia River Basin System, Not just Idaho



# What Treatment Options are viable for Quagga Mussels

Prevention will still be the best options for all Idaho waterbodies outside of the Snake River





# What Treatment Options are viable for Quagga Mussels

Although Biological Control is a good option for established infestations, it is not the choice for eradication type control





# What Treatment Options are viable for Quagga Mussels



Molluscicides present the best options for eradicating current adult infestation. Though there are several variables that need to be considered when employing this tool



# Considerations for choosing the best option

- Water depth, flow, turbidity, & PH
- Access for equipment and materials
- Public drinking water systems
- Aquaculture facilities
- ESA listed species
- Irrigation
- Permitting and regulations
- Article review on previous Quagga mussel treatments (success and failure)



# Product Selection

- Natrix (Chelated Copper)
  - Labeled for use site
  - Registered for use in Idaho
  - Product manufacturing was available for the quantity needed



## 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 non-crop 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. (If you do not understand the label, find someone to explain it to you in detail.)





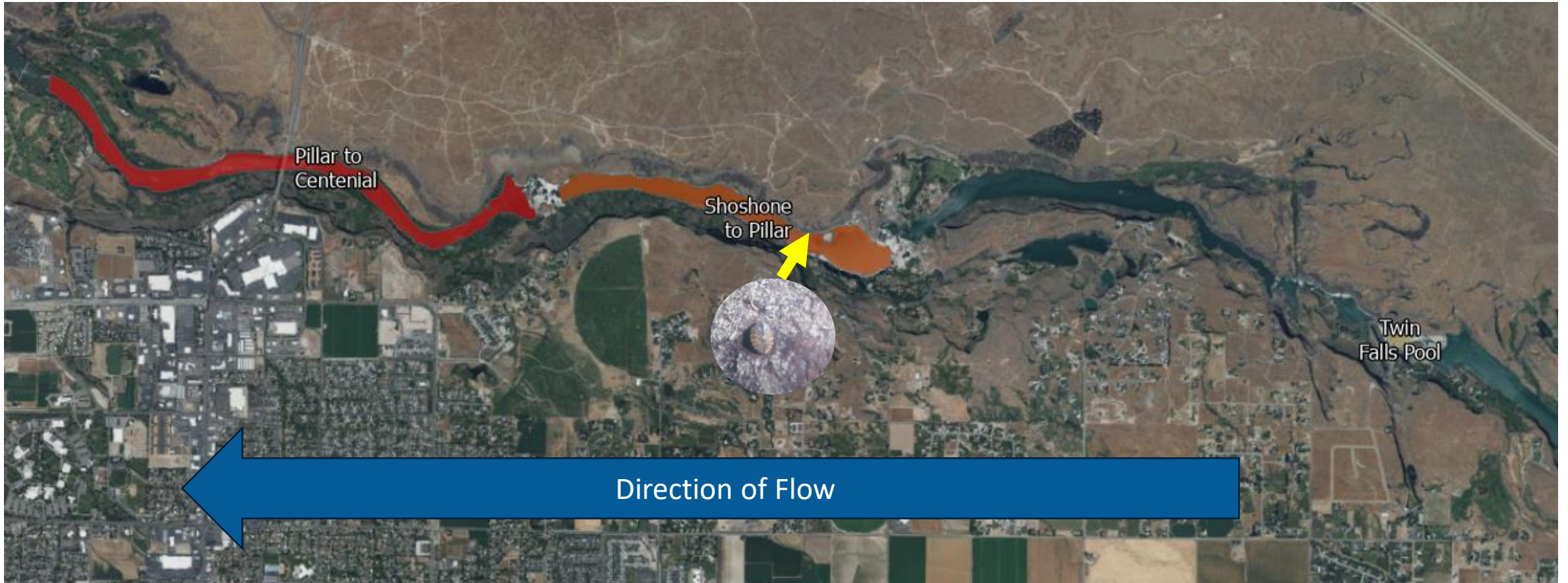
# Quagga Mussel Veliger presence September 27, 2023



## Legend

Number of Veligers







# EPA Doublecheck for Labeling and Use

## US EPA

RE: Crisis Exemption 40 CFR part 166, subpart C

The Idaho State Department of Agriculture is requesting consideration of a crisis exemption for the treatment of the first discovered infestation of Quagga Mussel, *Dreissena bugensis*, near Twin Falls Idaho, on a dam-controlled section of the Snake River. Between the upstream edge of Shoshone Falls to downstream mitigation area of Niagara Springs.

Immediate control of the Quagga mussel is needed due to the ecological, environmental, and real-world financial impacts this species will cause to the Snake River and Columbia River Basin if left unchecked. The Project of controlling these mussels during the initial stages of infestation are imperative to stop and stop any further spread. Idaho has spent more than 20 years and millions of dollars to keep this organism out of Idaho and unfortunately it has found a way in. It is necessary to have a response time to enact control on the mussels due to their ability to reproduce rapidly. The treatment is needed to stop any further spread of the mussels. The crisis exemption is due to the fact that although the mussels are not yet established, they have clearly defined Rivers or reservoirs.

The Plan ISDA has submitted to the EPA for review. The Plan ISDA has submitted to the EPA for review. The Plan ISDA has submitted to the EPA for review.

For the purpose of this crisis exemption, use section 166.16 of the Code of Federal Regulations on ISDA's proposed project.

The following waters, use section 166.16 of the Code of Federal Regulations on ISDA's proposed project.

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- Flow rate of 300 CFS
- One (1) treatment using Matrix®
  - Treatment 1- Target Rate of 1ppm for a duration of 96 hours as per the label



ISDA plans to incorporate two (methods) of applying the Matrix® to the water. First, using 275 Gallon totes of product with a metered control box to drip in the product at water mix points at a rate of 1.25 gallons per minute (75 gallons per hour) for the duration of the 96 hour treatment. This method is to maintain the labeled 1 part per million (ppm) through out the duration of the treatment time. The Second Method is to utilize an application watercraft with a weighted hose to apply Matrix into existing deeper water areas that area present in the bathymetry. There are five (5) of these areas. Two (2) are in the Shoshone to Pillar area, and 3 are in the Pillar to Centennial Park area. By treating these standing deep pools it will allow ISDA to more accurately maintain the 1 ppm target rate by bringing these large areas of potential dilution up to target rates.







Briefing every Local, State, & Federal  
Partner on the Treatment Plan

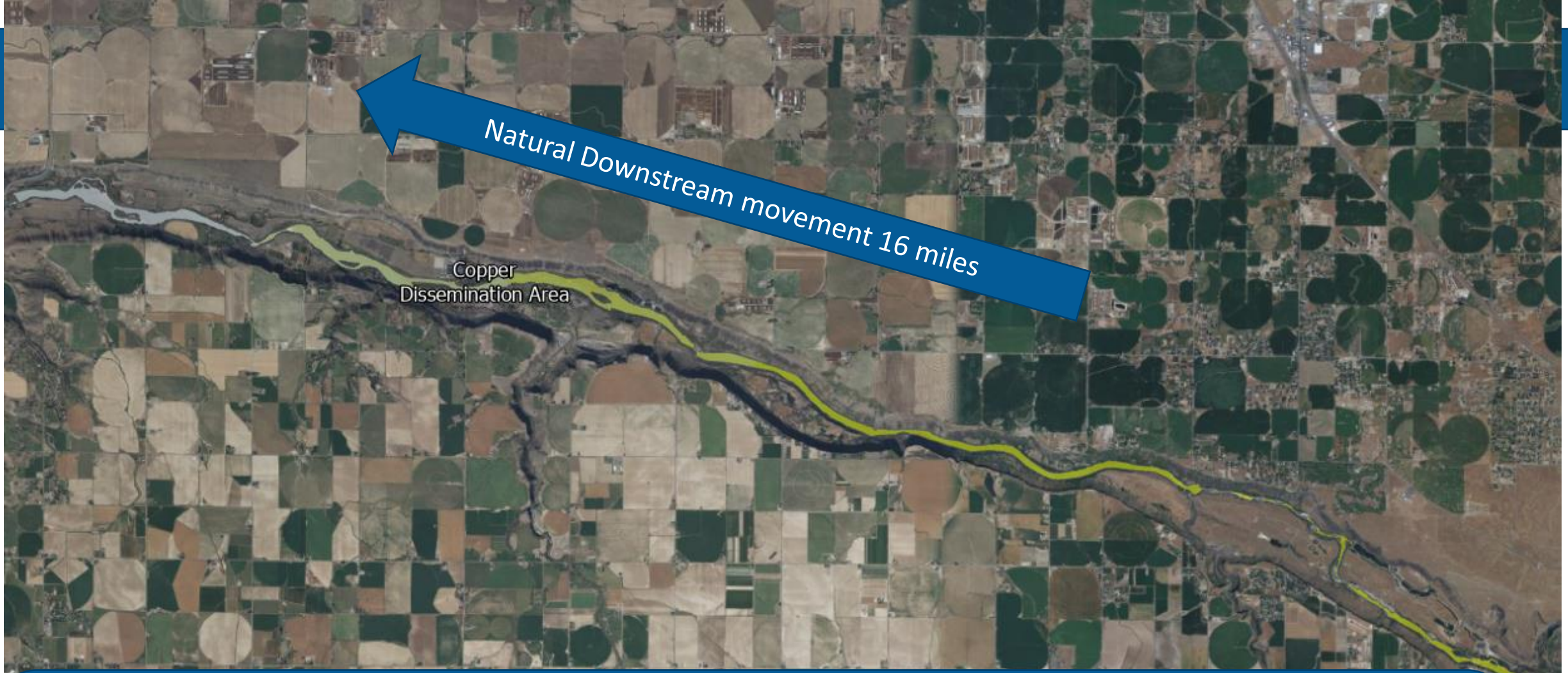


# Treatment Notifications

- Worker Protection Standard bilingual warning signage
- Message boards
- Paid advertisements (radio, Facebook, Instagram and Nextdoor)
- Coordination with HOAs with private docks
- Door-knocking to stakeholders with water-front access
- Public Treatment Town Hall Briefing







## **Targeted Downstream Copper treatment area.**

No additional introduction of copper, however letting it free flow to dissipate gradually with the intent of providing a lethal dose for any present free-floating Veligers.





**Due to the downstream movement ISDA staff conducted a survey in this area looking for points of concern: at direct water exchange at downstream aquaculture sites, stock water, or irrigation intakes for the potential needed use of Activated Charcoal waddles. Additional Surveys were conducted by OSC and DEQ staff for Sites with TNE species located further downstream**



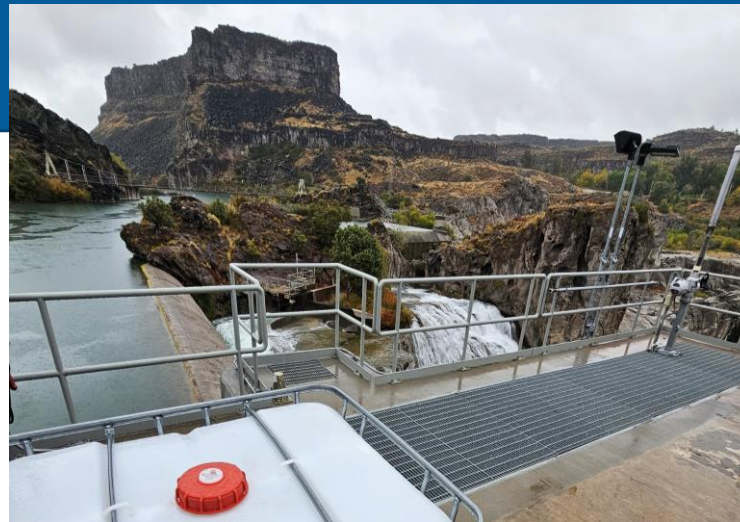
# Staging Equipment



Each of the three treatment areas required a unique approach for:

- Mix site locations
- Staging locations
- Flow rate calculations
- Access to sites
- Treatment monitoring
- Staffing requirements











# Treatment

- Treatment Started on October 3
- Treatment continuous for 192 hours
- Treatment ended on October 13
- 46,475 Gallons of Natrix® applied
- Copper actively monitored until recorded as back to base levels on October 18, 2023























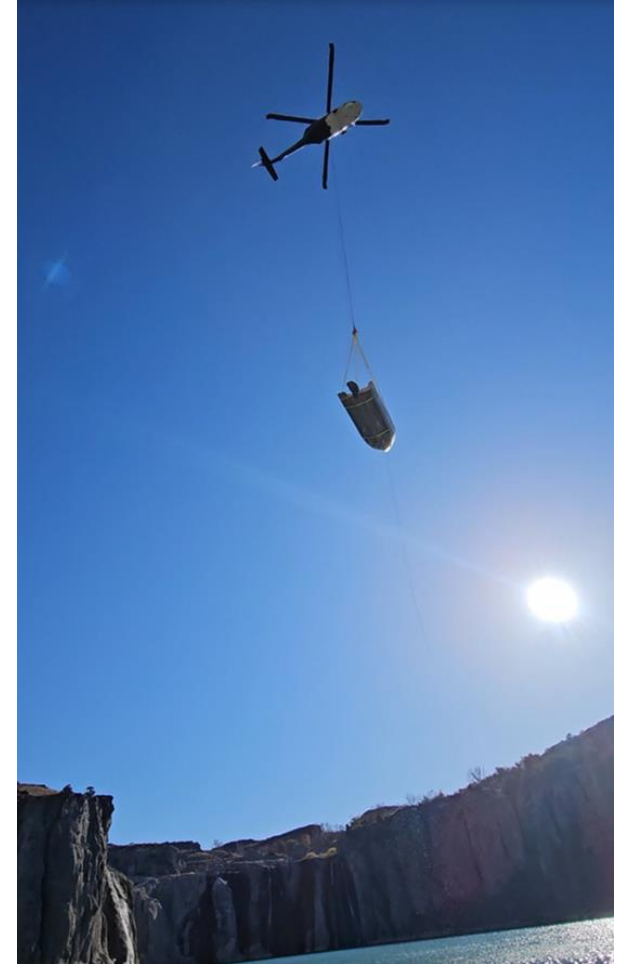






# Demobilize Equipment

- Triple rinse all containers and application equipment
- Decontaminate all watercraft or water related equipment
- All equipment removed by November 8<sup>th</sup>





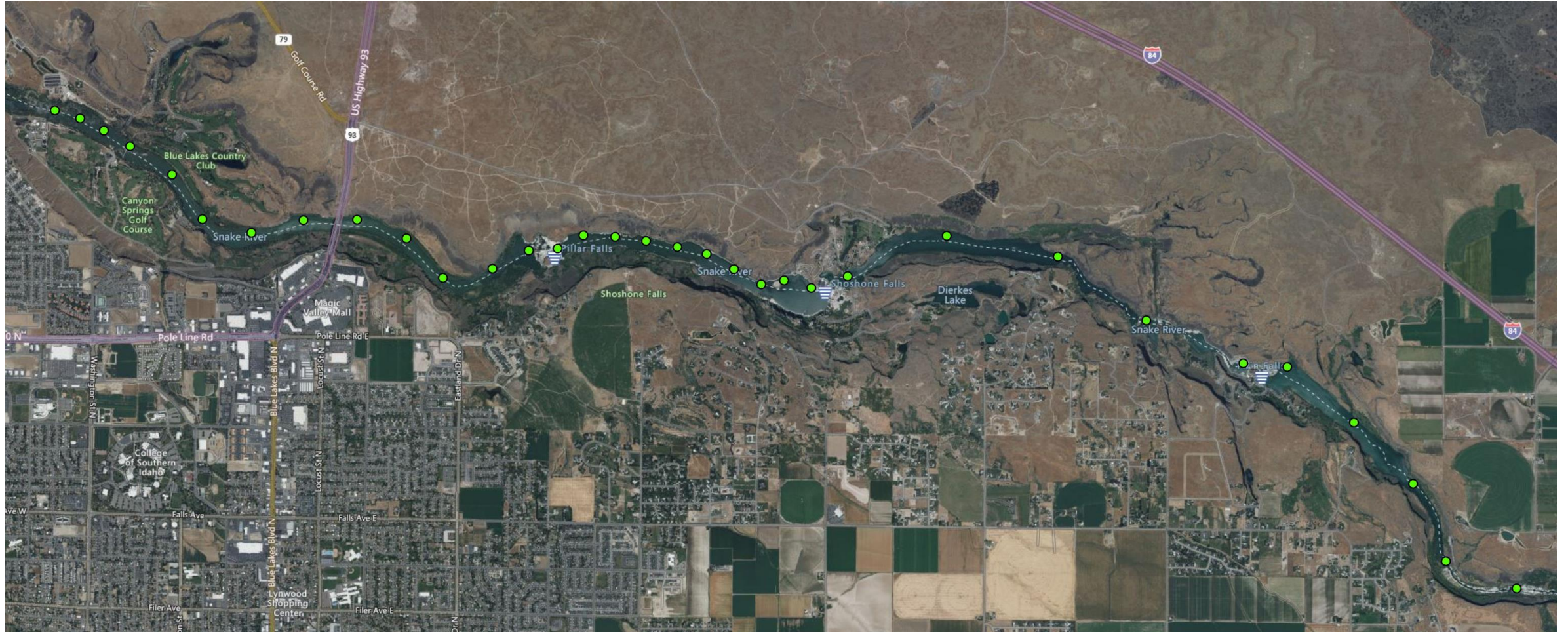
# Post-Treatment Monitoring

- Treatment did impact the adult mussel and sentinel species
- Preliminary sample results indicating that treatment has impacted veliger populations
- Veliger sampling until water gets below 10° C.





# Post-Treatment Veliger Sampling





# Future Efforts Moving Forward

- Program shifting from prevention state to prevention/containment state
- Mandatory inspection and decontamination for the Mid-Snake
  - Centennial Park (Closure lifted, decon open when park is open)
  - Shoshone Falls (Closure in effect, decon site open when park reopens Spring 2024)
- Aggressive monitoring for the Mid-Snake
- Expanded monitoring statewide
- Expanded outreach and education







# IDAHO



US Army Corps  
of Engineers®



— BUREAU OF —  
RECLAMATION

