



*Montana Fish,  
Wildlife & Parks*

# Case Study: Montana's First Detection of Dreissenid Mussels

# Mussel Detected in Montana 2016

- Dreissenid mussel veligers detected in Tiber Reservoir by BOR in November of 2016.
- Follow-up microscopy analysis on additional samples identified additional veligers in Tiber.
- Veliger also identified in Canyon Ferry Reservoir.



### Zebra and Quagga Mussel Sightings Distribution

*Dreissena polymorpha* and *D. rostriformis bugensis*



- Zebra mussel occurrences
- Quagga mussel occurrences
- Both species occurrences
- Zebra/Quagga mussels eradicated
- Zebra/Quagga mussels failed

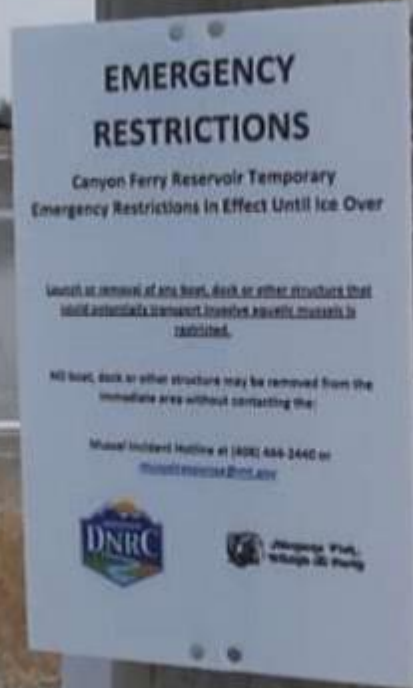
# Response

- Governor Bullock declares a Natural Resource Emergency.
- Incident Command put in place to support containment response and to elevate Montana's AIS program.
- Emergency funds made available.
- Emergency rules put into place.





# Natural Resource Emergency



# Program Building

- Emergency Rules:
  - Mandatory inspection / decontamination for watercraft leaving Tiber and Canyon Ferry Reservoirs.
  - Mandatory inspection for watercraft entering the state and crossing the Continental Divide.
- Funding Mechanisms identified:
  - \$13 million over 2 years.



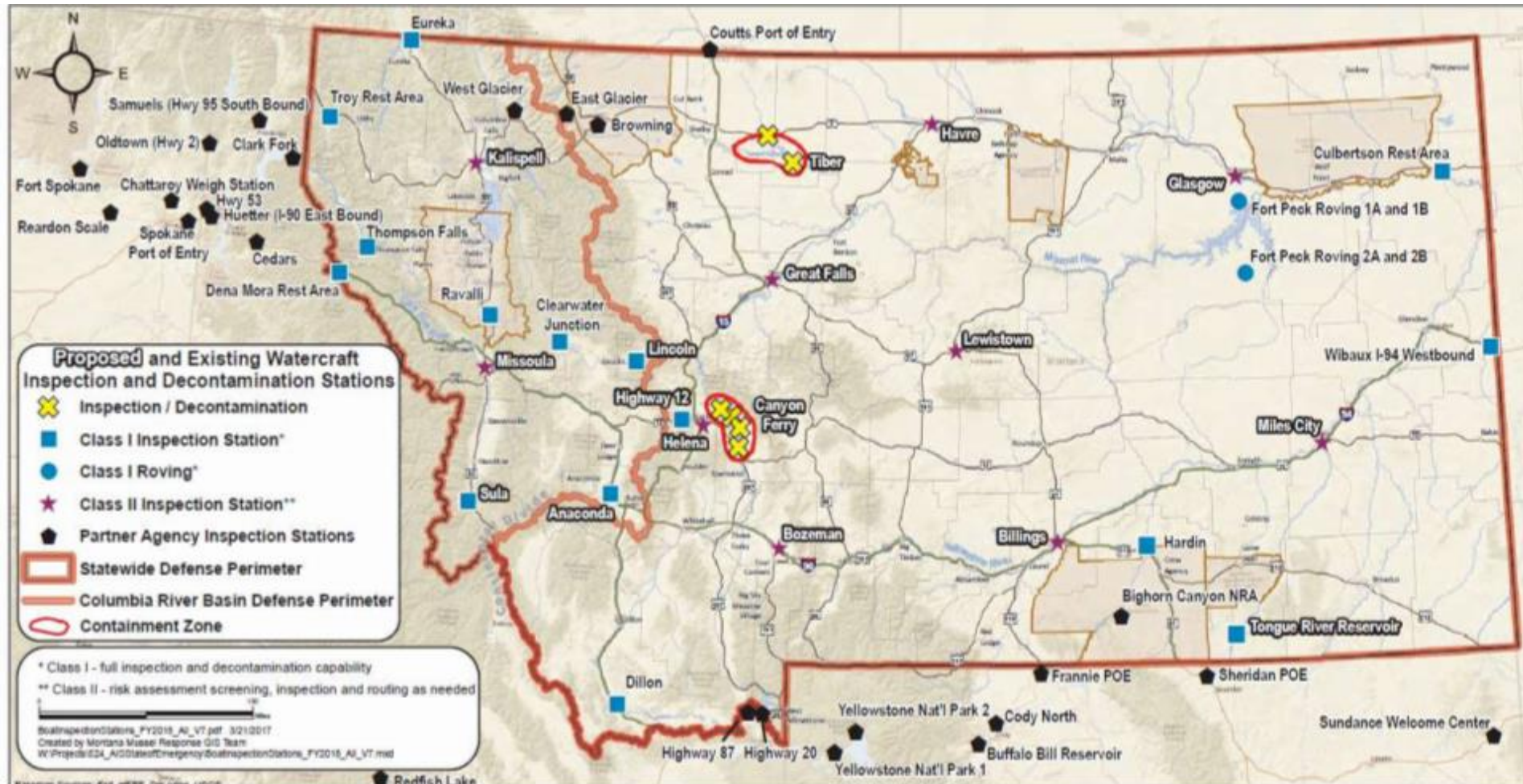
# Watercraft Inspection

- 35 FWP watercraft inspection stations.
  - Increased from 22 stations.
- 200+ seasonal staff.
- Extended season and hours.
- Partner inspection stations.





# Watercraft Inspection Stations - 2017





# Expanded Program

- Increased enforcement.
- Expanded AIS early detection survey.
- Targeted AIS outreach and education.
- Expanded partnerships.



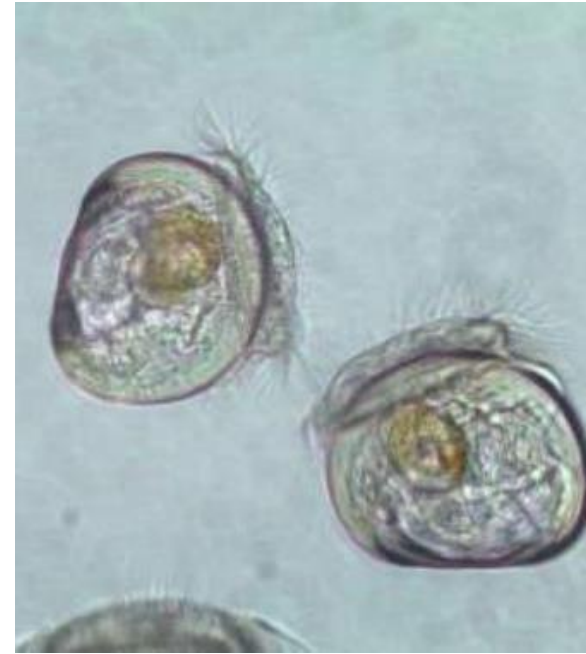
# Results From 2017

- 87,500 watercraft inspections.
- Surveys found no dreissenid adults or veligers.
  - 1,500 Plankton tow samples.
  - Diver/snorkeling surveys.
  - Substrates.
  - Shoreline surveys.
  - Mussel sniffing dogs.



# Environmental DNA

- In partnership with USGS, samples from Tiber Reservoir analyzed using various methods.
  - Dreissenid DNA detected.
- Many questions associated with the use of eDNA for dreissenid early detection.
- Convening a Science Advisory Panel to advise on the utility and limitations of the method.



# Lessons Learned

- Quick response.
- Elevated the issue with decision makers.
- Elevated the issue throughout the West.
- Involve partners.
- Engage and educate public.





# Plans for 2018

- Expanded Partner involvement.
- Evaluate prevention program: Better address risk.
- Electronic data.
- Expanded survey.





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