BUREAU OF RECLAMATION

Invasive Mussels Program

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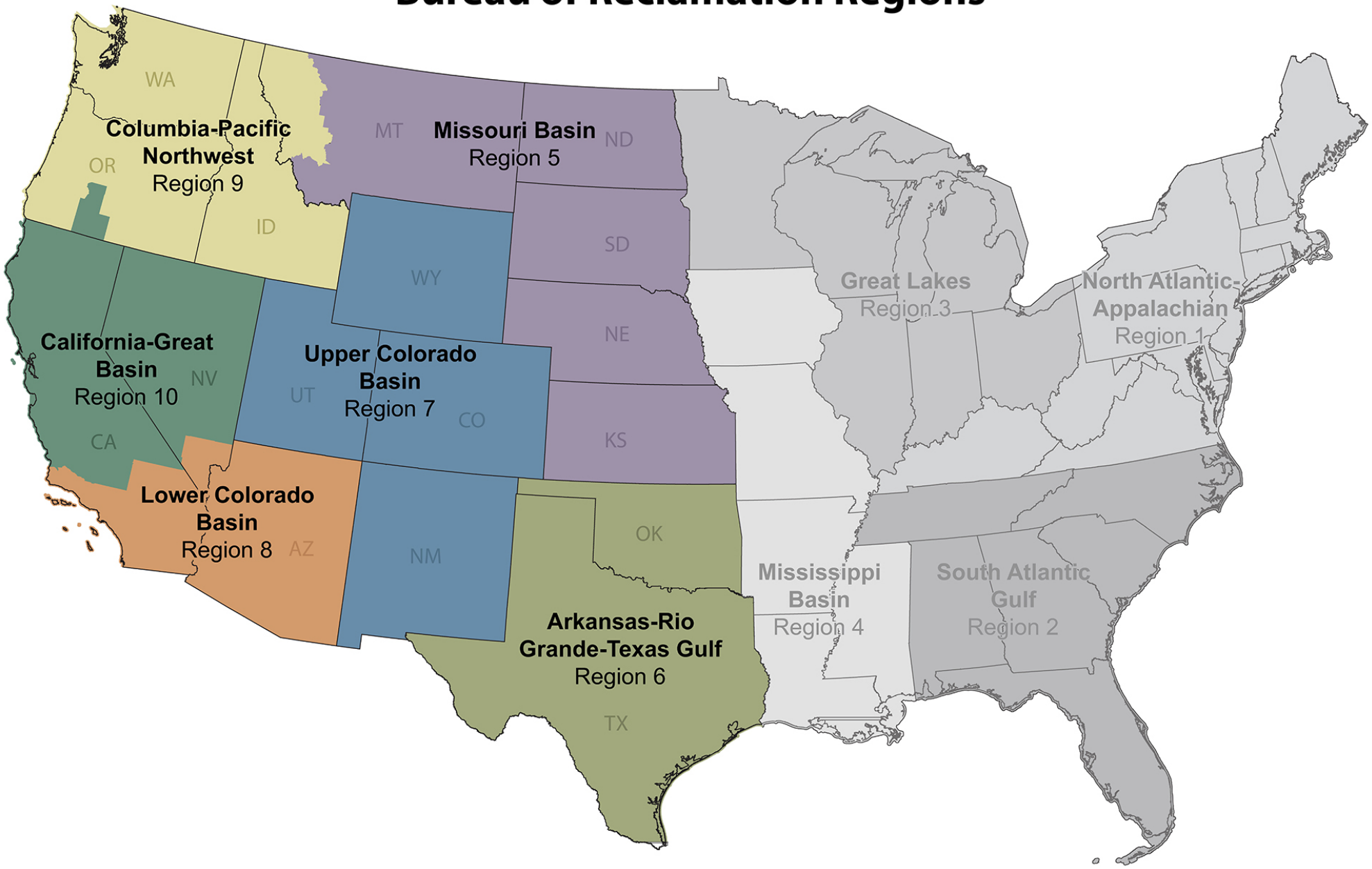
RECLAMATION

Bureau of Reclamation Regions

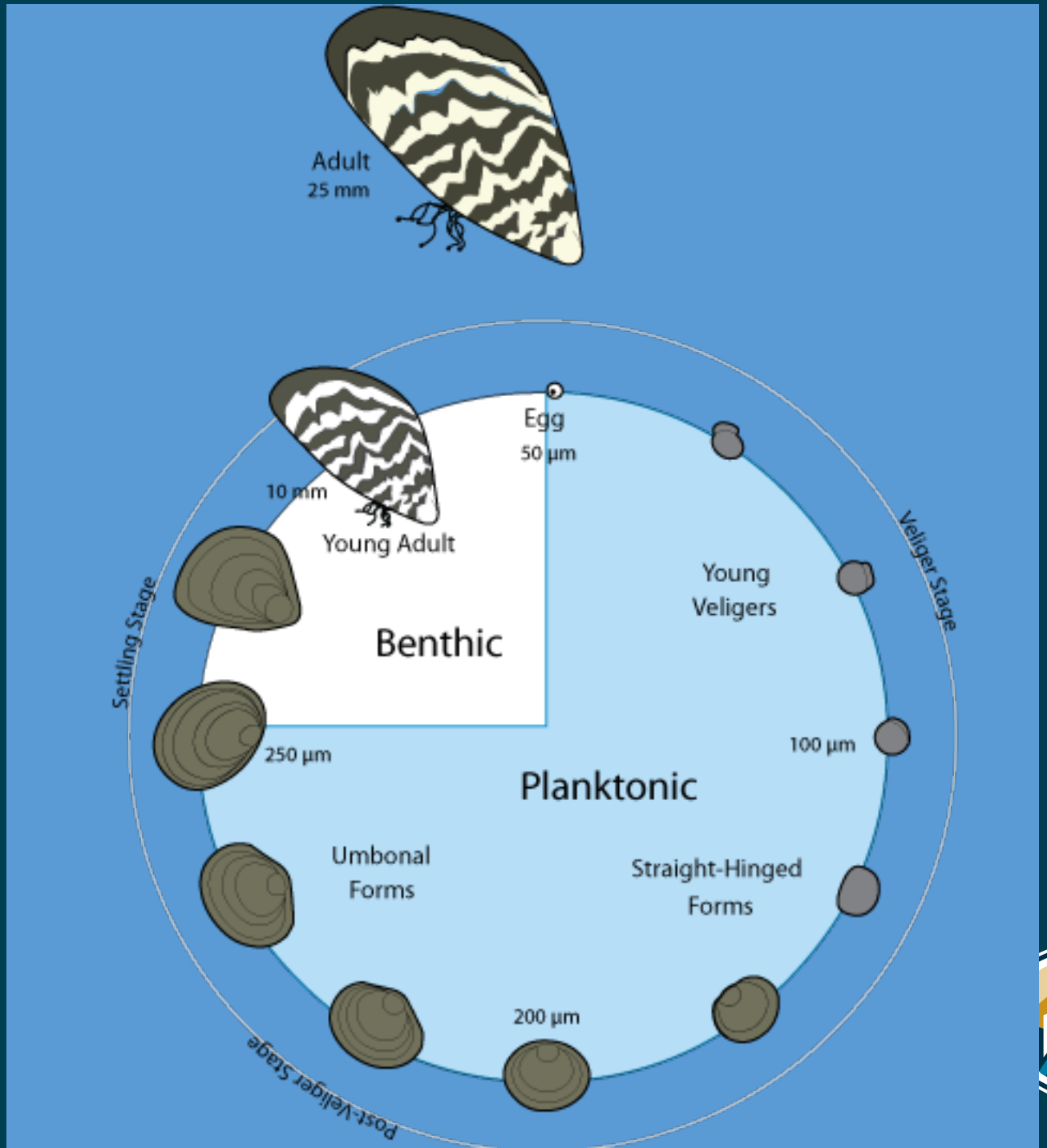


Zebra Mussel

Dreissena polymorpha

Quagga Mussel

Dreissena rostriformis bugensis




SIZE COMPARISON BETWEEN ZEBRA AND QUAGGA MUSSELS VERSUS NATIVE MUSSELS:
ZEBRA AND QUAGGA MUSSELS
NATIVE MUSSELS

Zebra and Quagga Mussel Sightings Distribution

Dreissena polymorpha and D. rostriformis bugensis

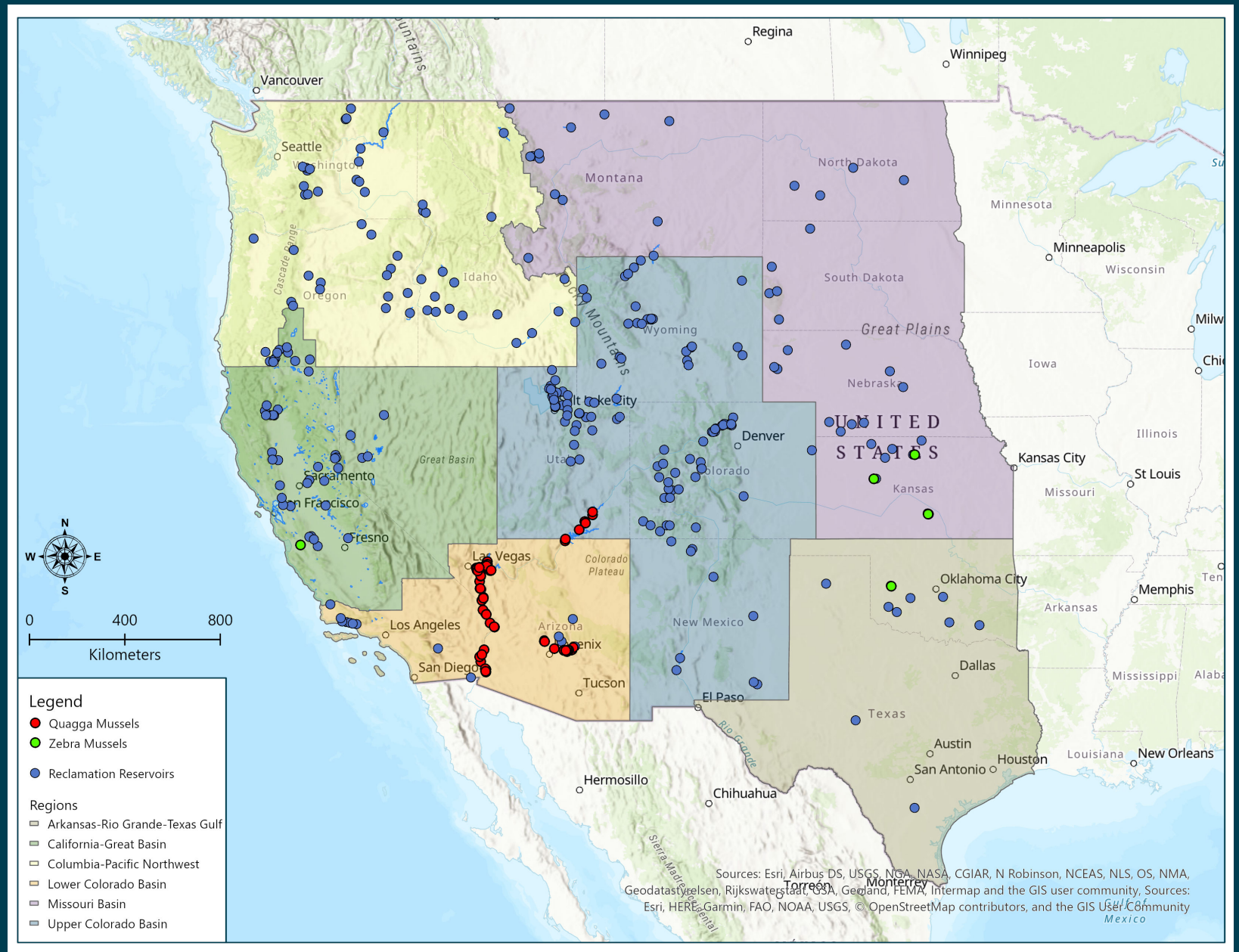
STATUS

- Infested
- Positive
- Suspect
- Eradicated
- Delisted
- Failed

USGS science for a changing world

Map produced by the U.S. Geological Survey
Nonindigenous Aquatic Species Database, September 8, 2020.

Reclamation Reservoirs with Mussels



Impacts at Reclamation

- Quagga mussels detected in Lake Mead in 2007
- Operational impacts to hydropower facilities along CO River
  - Increased maintenance
  - Overheating/ head loss
  - Unplanned outages

Mussel Impacts on Hydropower

Mussel settlement and shells increase maintenance at hydropower plants in the following structures and systems:

- Intakes and penstocks
- Gates and valves
- Bypasses and air vents
- Cooling water systems
- Raw water fire protection systems
- Service and domestic water systems
- Instrumentation
- Drainage and unwatering systems

Davis Dam Spillway Bulkhead

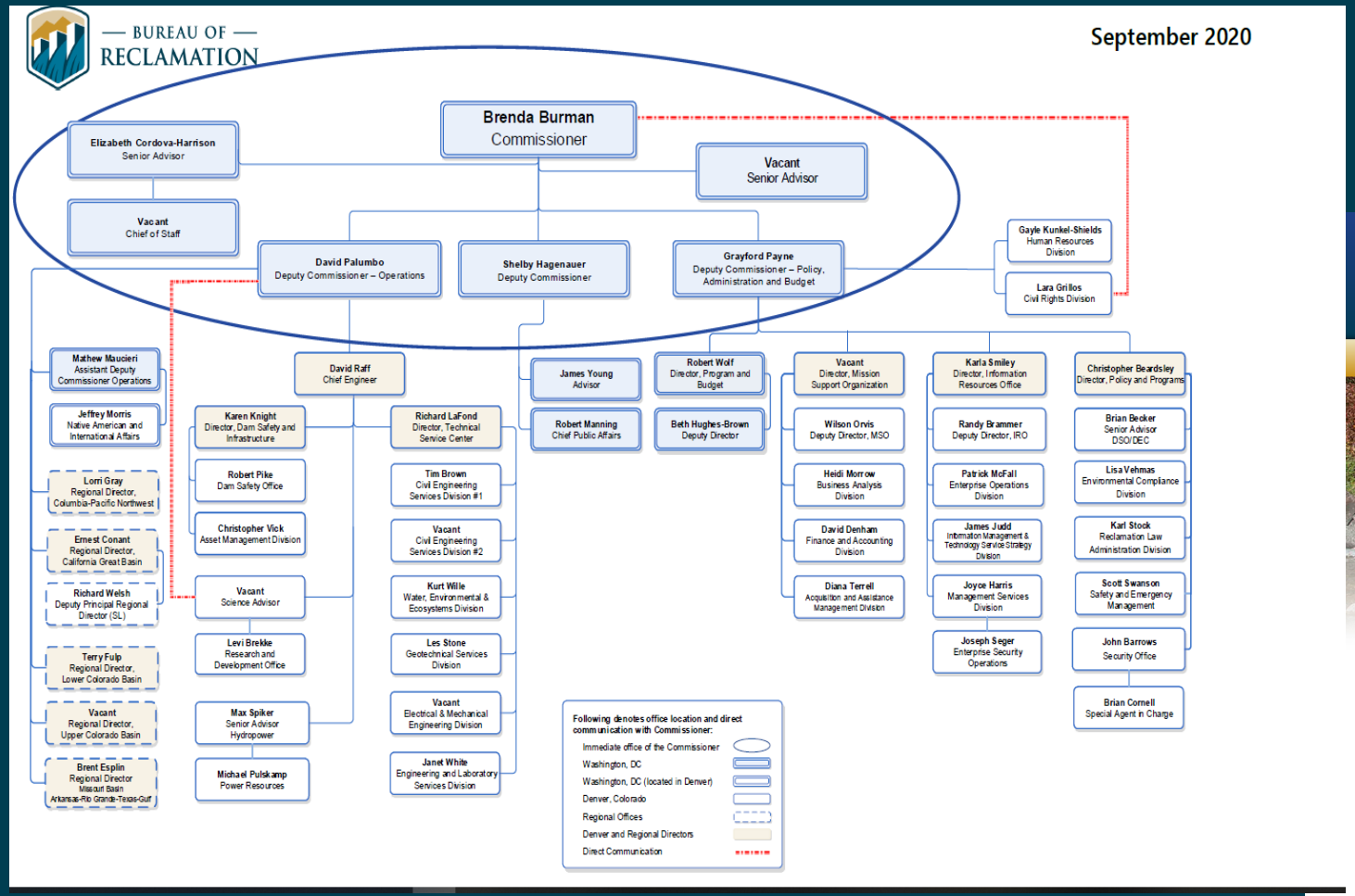
Fouled trashrack

Intake screen

What is Reclamation doing?

- Creation of a Corporate Mussel Task Force
- Facility vulnerability assessments
- Support for watercraft inspection and decontamination through partnerships
- Continued outreach and education regarding the impacts of mussels
- Water sampling and analysis for early detection of mussels
- Research

Reclamation Corporate Mussels Task Force

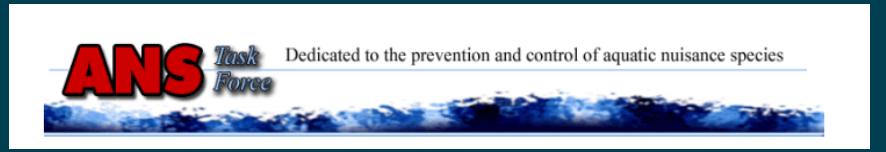


https://www.usbr.gov/mussels/

Reclamation is connected to the broader AIS Community

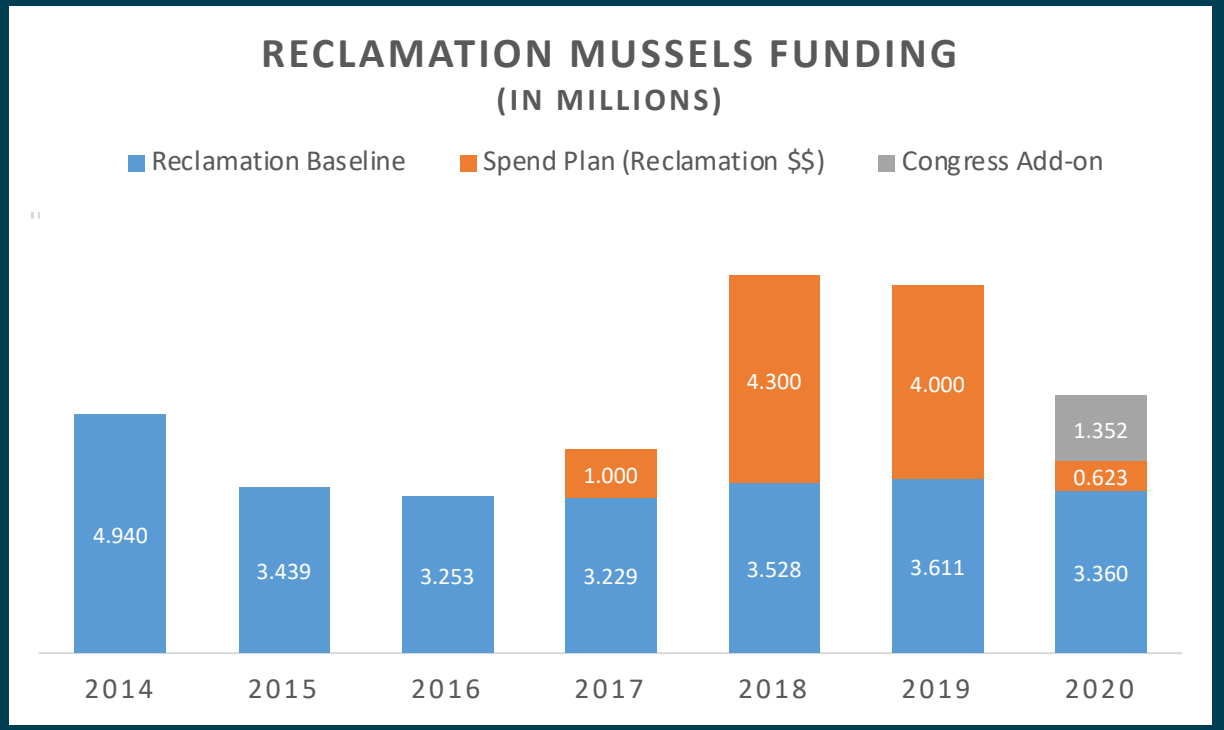
- Member of :
  - Aquatic Nuisance Species (ANS) Task Force
  - Western Regional Panel on ANS and ad hoc workgroups
  - Invasive Mussel Collaborative (IMC)
  - DOI Invasive Species Task Force

- Participate in various National Invasive Species Council (NISC) ad hoc workgroups



- Safeguarding the West Initiative

- Reclamation's Mussel Spend Plan



$$ for Watercraft Inspection/Decontamination

- Reclamation provides substantial resources for State, Tribal and other Federal Partners for watercraft inspection and decontamination programs

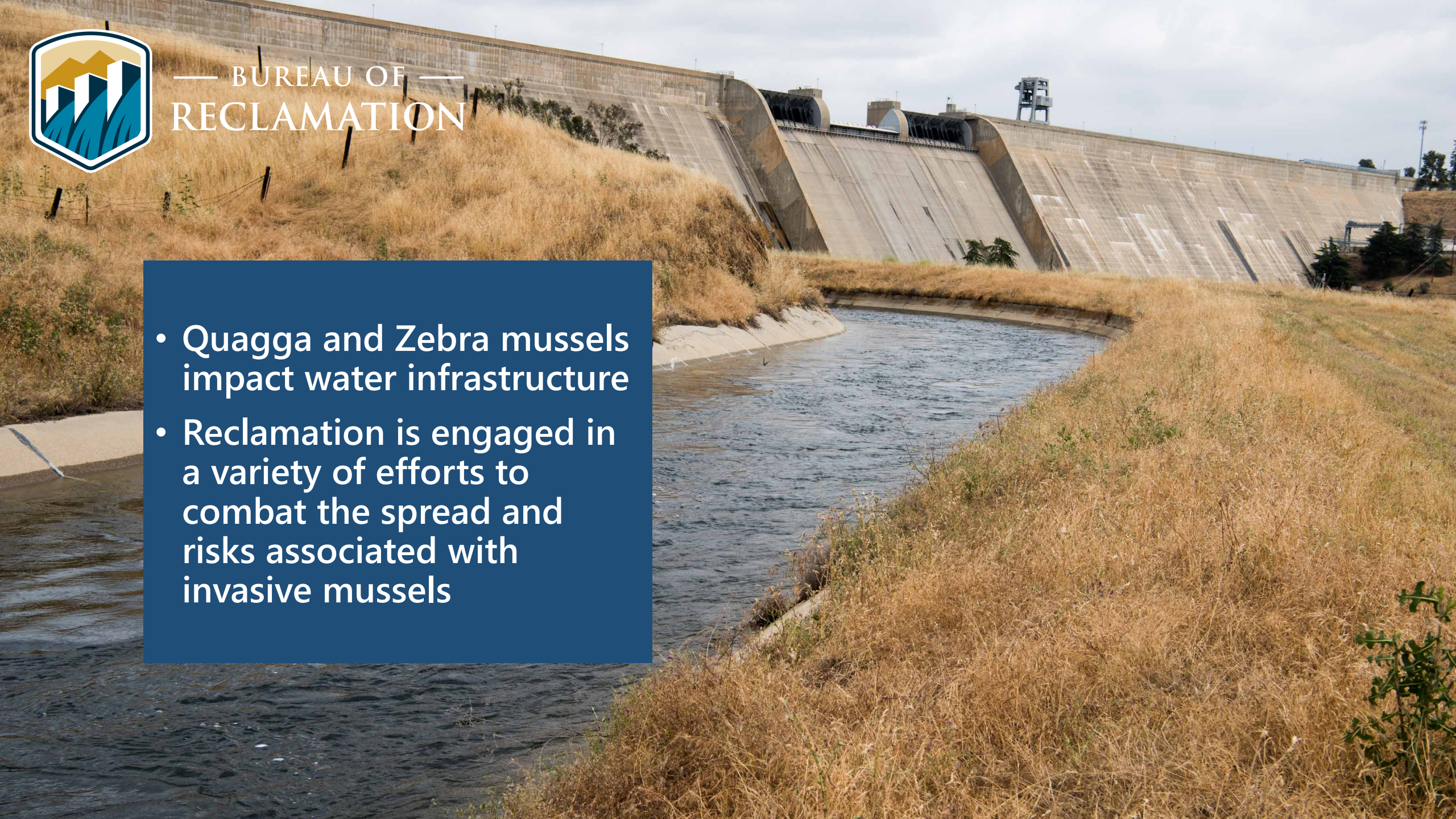
Facility Vulnerability Assessments

- Conducted at sites prior to mussel detection for planning purposes
- Identify potential impacts at Reclamation hydropower plants and dams
- Actual impacts will depend on the systems operation and levels of infestation
- Approximately 100 FVAs completed Reclamation-wide

Education and Outreach

- Reclamation has previously provided Stop Aquatic Hitchhiker signs to its regional and area offices

- Partners with State, Tribal and other Federal agencies on various education campaigns



- Quagga and Zebra mussels impact water infrastructure
- Reclamation is engaged in a variety of efforts to combat the spread and risks associated with invasive mussels