



Protect OUR RESERVOIRS
Golden mussels threaten local recreation. Boaters and anglers: Clean. Drain. Dry.

NO WET LIVE BAIT

STOP THE SPREAD: CLEAN. DRAIN. DRY.

Learn more at ValleyWater.org/GoldenMussels

SANTA CLARA COUNTY PARKS Valley Water

Golden mussels at O'Neil Forebay - Courtesy of DWR

Update on Golden Mussel Detection in California and Valley Water's Response

Presented by: Atlasi Daneshvar, Ph.D., Senior Water Resources Specialist

May 26, 2026



GOLDEN MUSSEL DISCOVERY

- Detected in October 2024
- Sacramento-San Joaquin Delta- Port of Stockton
- First North American detection
- Native to China and Southeast Asia
- Likely introduced via international shipping



Courtesy of DWR



Figure 1. Known global distribution of *Limnoperna fortunei*. Observations are reported from China, Japan, Republic of Korea, Taiwan, Thailand, Vietnam, Cambodia, Lao People's Democratic Republic, Brazil, Uruguay, Bolivia, Paraguay, and Argentina. Map from GBIF Secretariat (2023).

GOLDEN MUSSEL IMPACTS

- Ecological
- Recreational
- Infrastructural
- Economical



Live golden mussels in fish in Brazil



O'Neil Forebay - 2024
Courtesy of DWR



Buoy at O'Neil Forebay - 2024
Courtesy of DWR



Golden Mussels colonizing a water pipe at a hydroelectric plant in Brazil (Mountinho, 2021).



Flowmeter at San Joaquin - 2025
Courtesy of DWR

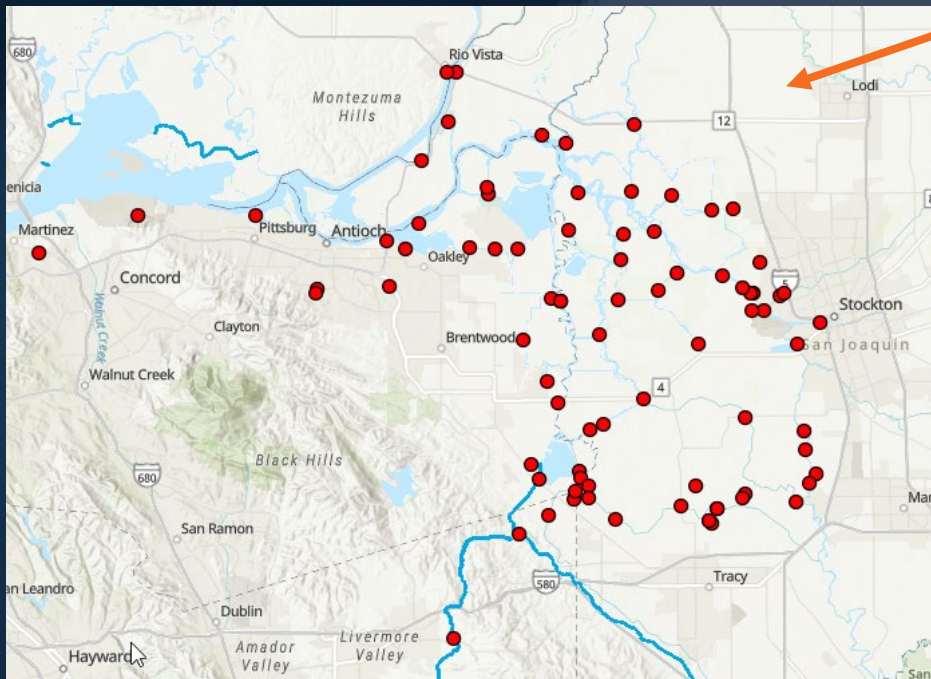


Skinner Fish Facility Louvers - 2025
Courtesy of DWR

GOLDEN MUSSEL INFESTATION MAP

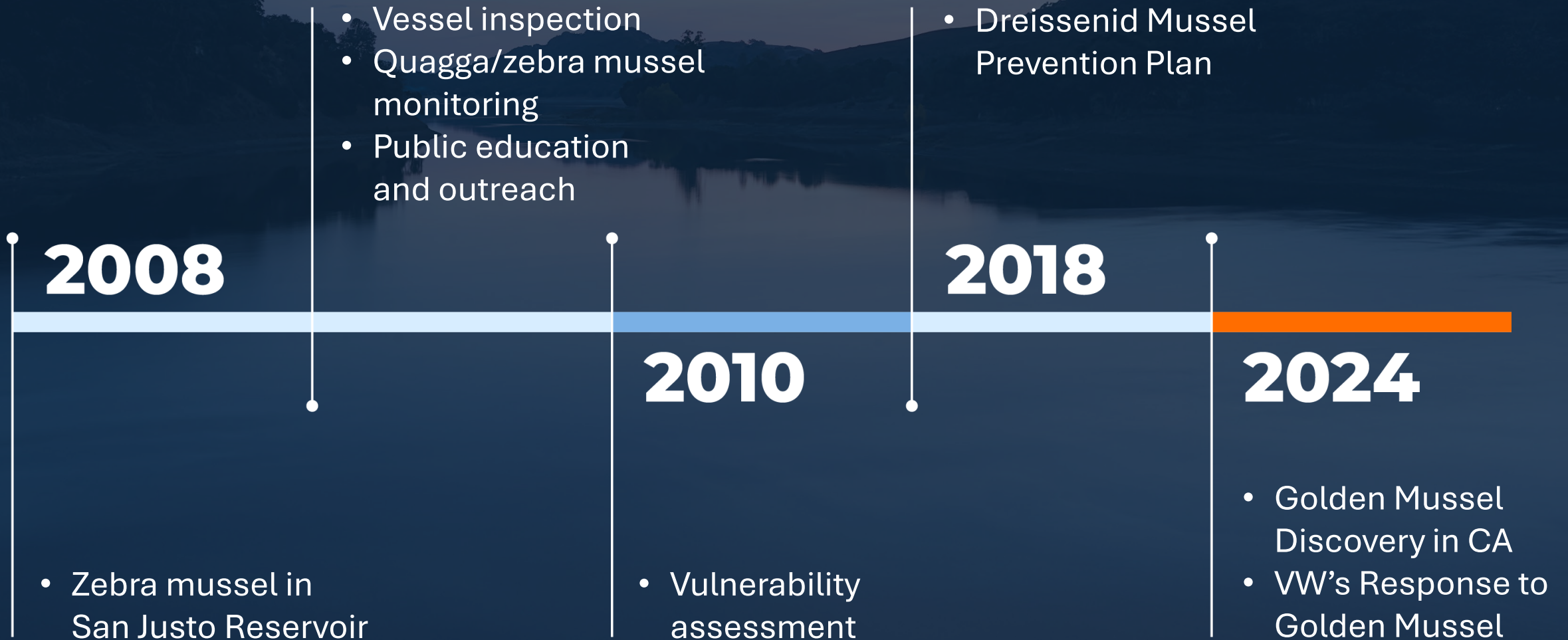
- Sacramento-San Joaquin Delta
- Federal Water Project
- State Water Project

Golden Mussel Confirmed Detections as of 4/1/2026



<https://wildlife.ca.gov/Conservation/Invasives/Species/Golden-Mussel>

VALLEY WATER'S PREVENTION PROGRAM – SINCE 2008



PROTECT LOCAL RESERVOIRS

- **Limited water transfer**
 - San Luis Reservoir to Calero Reservoir
- **Enhanced existing inspection**
 - Voluntarily exit inspection at Calero and Coyote reservoirs
- **Assessed decontamination process**
 - California Department of Fish and Wildlife (CDFW) grant
 - Quagga/Zebra grant



Courtesy of Santa Clara County Parks



Calero Reservoir

MONITORING FREQUENCY AND RESULTS

Local Reservoirs

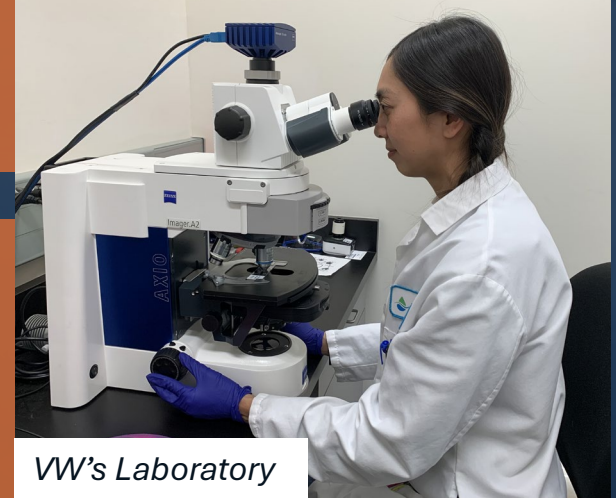
- Monthly (year-round)
- Microscopy, eDNA, artificial substrate, shoreline survey
- **Non-detect**

WTPs Raw

- Monthly (year-round)
- Microscopy, eDNA, Biobox
- **Golden mussel detected – April 2026**

San Luis Reservoir

- Monthly (year-round) – Valley Water and DWR
- Microscopy, eDNA, Biobox, artificial substrate
- **Golden mussel detected – September 2025**



EDUCATION AND OUTREACH CAMPAIGN



NO WET LIVE BAIT

Help prevent the spread of invasive mussels. Please avoid transferring bait or water to another waterbody. Wet live bait like crawfish or minnows can lead to invasive mussel infestation.

Use dry live bait like locally sourced worms, night crawlers, fish eggs or treated/processed foods.

No usar cebo vivo mojado.
Không sử dụng mồi cá tươi sống.
请不要使用湿的活饵。

parkhere.org
(408) 355-2200

CLEAN DRAIN DRY

Invasive mussels are a threat to our waters, recreational opportunities and the health of the environment.

You could unknowingly be carrying them on your watercraft and gear. Take action to protect California waters.

CLEAN your gear, boat and trailer before leaving the area. Remove plants, animals and mud. Dispose of unwanted bait and debris in the trash.

DRAIN bilge, ballast, wells, and buckets before you leave the parking area, and never drain back into the waterway.

DRY equipment before launching into another body of water. Waiting periods can vary - check with your local waterbody authority.

Display your **DWR Registration and Manual Fee Stickers** on the hull.

To learn more about invasive mussels and other species, visit wdfwlife.ca.gov/invasives

Valley Water

For Residents | Your Water | Learning Center | News & Events | About Valley Water | Services and Support

Golden Mussels Campaign Partner Toolkit

Golden Mussels Webpage

We invite you to visit our webpage to learn more about our Golden Mussels Campaign and how to protect our reservoirs here in Santa Clara County.

Learn more on our website

Social Media Messages

We invite you to download multilingual social media graphics and animations to share awareness of the

Protect OUR RESERVOIRS

Golden mussels threaten local recreation. Boaters and anglers: Clean. Drain. Dry. No wet live bait.

Valley Water

WHAT ARE GOLDEN MUSSELS?

Golden mussels are an invasive freshwater mollusk native to Asia. They were first discovered in North America in October 2024. These tiny, fast-spreading creatures attach to hard surfaces, such as boat hulls, watercraft, pipes, and rocks, forming dense colonies. The species poses a threat to the natural ecosystems, water conveyance systems, infrastructure, and water quality. Golden mussels can survive for over a week out of water, making it easier for them to spread to new habitats.

WHY ARE GOLDEN MUSSELS AN ISSUE FOR SANTA CLARA COUNTY?

Golden mussels have invaded California's Delta, threatening water infrastructure and agriculture, and they've been detected in Santa Clara County.

About 50% of the local water supply comes from outside the county, including water that flows through the Sacramento-San Joaquin River Delta, where golden mussels were first spotted in October 2024.

532 Likes

scvwd Golden mussels are an invasive freshwater mollusk native to Asia. They were first discovered in North America in October 2024. These tiny, fast-...

WHAT IS VALLEY WATER DOING TO PROTECT AGAINST GOLDEN MUSSELS?

We're working with state and regional partners to prevent golden mussels from reaching uninfected water bodies, including our local reservoirs. These efforts include increased vessel inspections, enhanced monitoring, and coordinated containment strategies to help protect our water systems.

WHAT CAN I DO TO HELP PROTECT OUR WATER SYSTEMS?

Anglers are advised to avoid using wet live bait and avoid transferring bait or water to another waterbody.

Follow posted signage and comply with local inspection and containment protocols to help stop the spread of invasive mussels.

Boaters are urged to clean, drain and dry their vessels and equipment before moving between waterbodies.

calmatters.org/environment/water/2025/11/tiny-invaders-golden-mussels-delta/?mc_cid=5a621dac64&mc_eid=066b1258f6

keepthoebloeblog.org/news/golden-mussels-too-close-for-comfort/

<https://ValleyWater.org/GoldenMussels>

INTERNAL AND EXTERNAL COLLABORATION

- VW's Golden mussel workgroup
- CDFW golden mussel task force
- Golden mussel water agency coordination
- Workshops
- Presentations

Workshop 2: Invasive Species Threatening Infrastructure: Assessing the Level of Threat and the Level of Resources to Address It

Conference Room II

Zebra, quagga, and the golden mussels are aquatic nuisance species (ANS) that can have significant impacts to water infrastructure and delivery systems. Colorado has recently experienced a dramatic increase in zebra mussel positive waters in western Colorado. While a large majority of the State is not currently dealing with mussel infestations, aquatic nuisance species are an ongoing concern for all surface waters in Colorado. In 2025, several adult mussel settlements were discovered in Mesa, Garfield, and Eagle Counties, including the Colorado River from its confluence with the Eagle River downstream to the Utah state line. This workshop panel will discuss what the Colorado Parks and Wildlife Aquatic Nuisance Species Program is doing to locate, mitigate, and contain mussel settlements, as well as efforts by other western states to avoid future infestation.

Moderator: Dave Payne, Assistant General Manager, Ute Water Conservancy District

Speakers: Justin Bush, Aquatic Invasive Species Division Manager, Washington Department of Fish and Wildlife
Atlasi Daneshvar, Senior Water Resources Specialist, Valley Water California

Melissa Panella, Natural Resource Specialist, Bureau of Reclamation

Sherri Pucherelli, Biologist, Bureau of Reclamation

Ethan Scott, Land and Recreation Division, Bureau of Reclamation

Robert Walters, Invasive Species Program Manager, Colorado Parks and Wildlife

The poster features the WCVW logo in large blue letters with a wavy green and blue background. Below the logo, it reads 'WATER CONFERENCE of the WEST'. The main title is 'THURSDAY WORKSHOP GOLDEN MUSSELS'. A list of topics is provided, including Golden Mussel Background, Early Detection Monitoring, Review of Vulnerability, Aquatic Animal Invasive Species Control, Golden Mussel Mitigation, Golden Mussel Detection and Utility Response, Metropolitan's Invasive Mussel Response, Lake Berryessa Golden Mussel Prevention Framework, and a Regional 3-Pronged Approach. The date and time are 'April 9, 2026' and '8:35AM - 3:50PM'. The location is 'Town & Country, San Diego | Room: Sunset 1 & 2'.

WCVW
WATER CONFERENCE of the WEST

THURSDAY WORKSHOP
GOLDEN MUSSELS

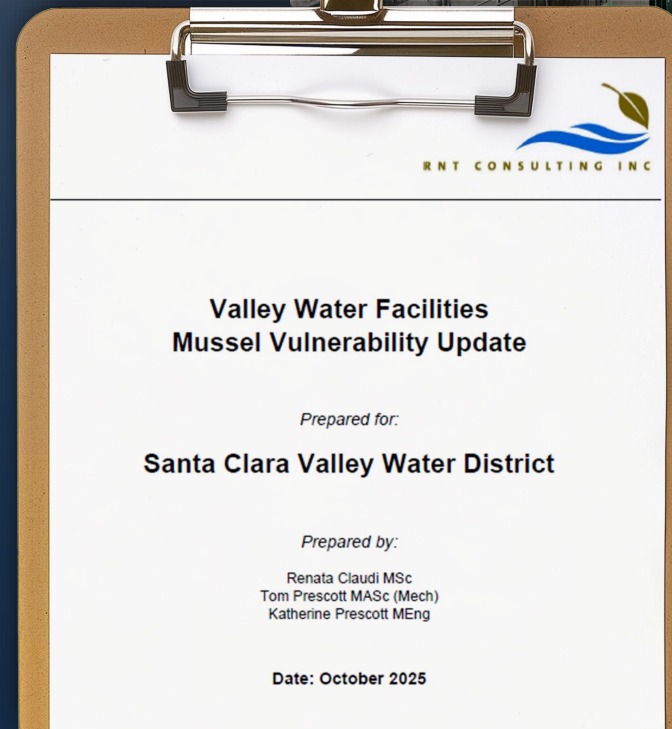
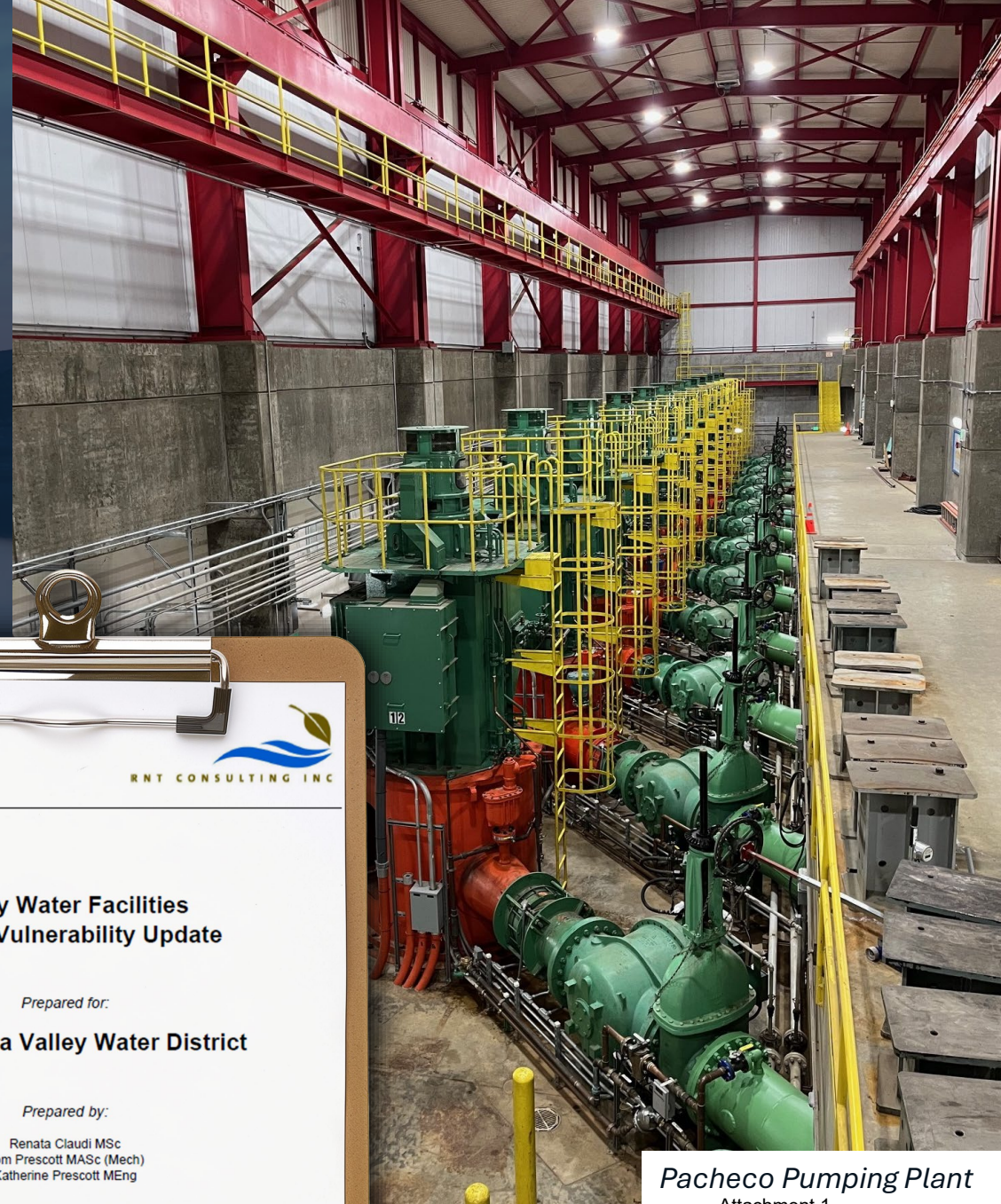
- Golden Mussel Background, Biology, and California's Response
- Early Detection Monitoring for the Presence of Golden Mussel
- Review of the Vulnerability of Facilities to Invasive Mussel Invasion and Tools Available for Mitigation
- Aquatic Animal Invasive Species Control Permit & Molluscicides
- Golden Mussel Mitigation in the State Water Project
- Golden Mussel Detection and Utility Response: Proactive Measures to Protect Water Supplies and Infrastructures
- Metropolitan's Invasive Mussel Response
- Lake Berryessa Golden Mussel Prevention Framework and Management Strategy
- A Regional 3-Pronged Approach to Golden Mussels
- Panel Discussion

April 9, 2026 | **8:35AM - 3:50PM**

Town & Country, San Diego | Room: Sunset 1 & 2

VULNERABILITY ASSESSMENT

- Vulnerability assessment – Oct. 2025
- Pumping plant's cooling water, service water, and fire water systems are vulnerable to mussel infestation
- Minor impacts anticipated at water treatment plants
- Potential infestation of reservoirs, ponds, and creeks

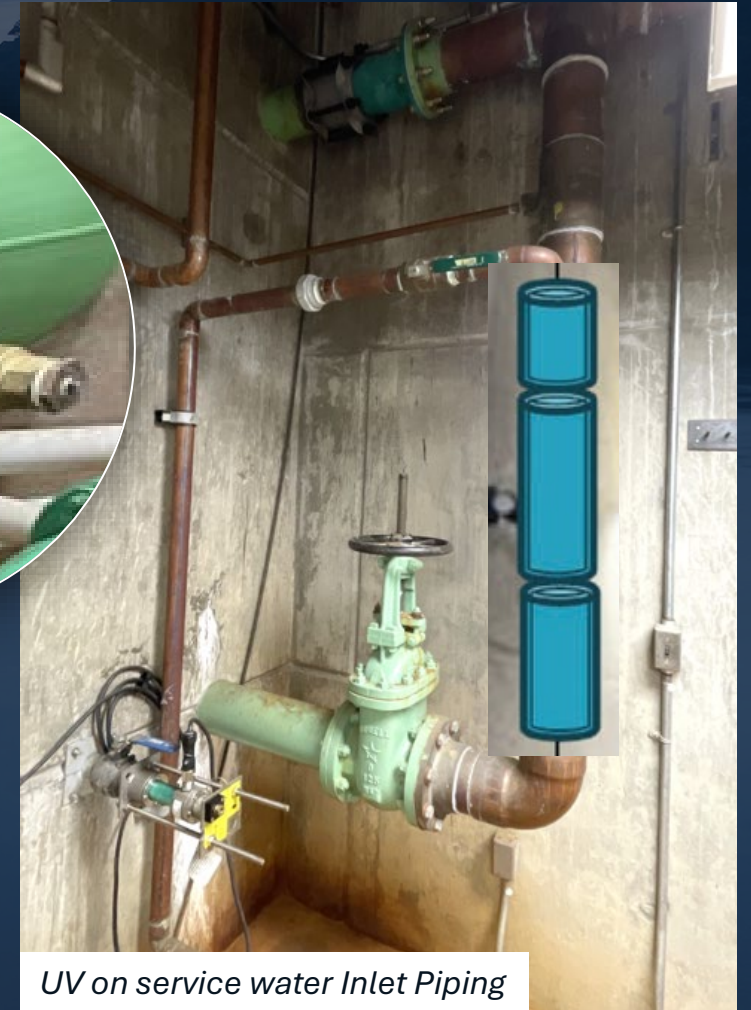


MITIGATION STRATEGIES

- **Pumping Plants - Near/Mid-Term Mitigation**
 - Routine inspection
 - Hot water injection – Injection ports installed
 - Filter/medium-pressure UV systems – UV purchased
- **Reservoirs**
 - Oxygen deprivation
 - Chemical applications
- **Percolation Ponds**
 - Desiccation



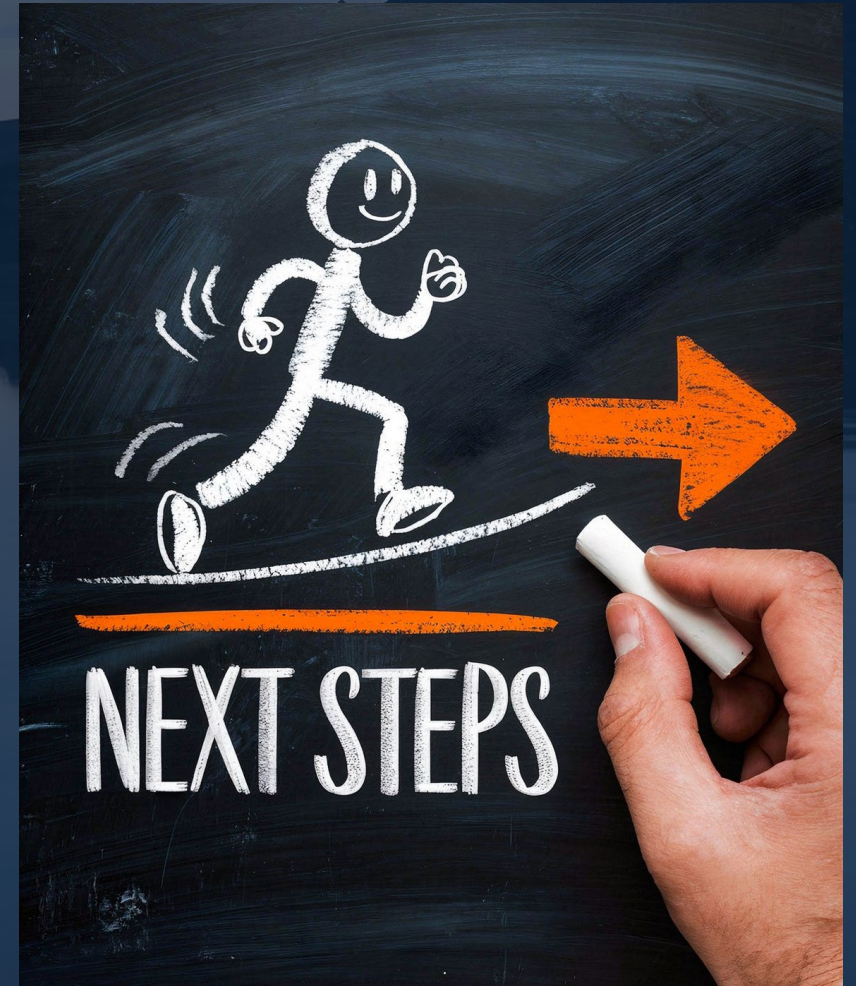
Ports on cooling water lines



UV on service water Inlet Piping

NEXT STEPS

- Continue implementation of mitigation strategies
- Initiate the National Pollutant Discharge Elimination System (NPDES) permit application process
- Implement decontamination process (County Parks)
- Complete the Control Plan



QUESTIONS



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