



## Interagency Ecological Program 2024 Work Plan Element Environmental Monitoring Program

### **Project Manager and Affiliation**

Shaun Philippart, California Department of Water Resources

### **Principal Investigator and Affiliation**

Theodore Flynn, California Department of Water Resources

### **Annual Cost (thousands) and Funding Sources**

\$3,000 DWR; \$3,000 USBR



*The flagship vessel of the Environmental Monitoring Program, R/V Sentinel, collects monthly paired water quality and biological samples from across the San Francisco Bay-Delta estuary.*

### **Description**

The Environmental Monitoring Program (EMP) was created to fulfill monitoring mandates set out by the State Water Resources Control Board in Water Right Decision 1641 (D-1641) by monitoring of water quality and lower trophic biological communities

at stations across the San Francisco Bay-Delta estuary to ensure compliance with the stated water quality objectives. Since 1975, EMP scientists have worked to create one of the longest-running estuarine monitoring programs in the world, providing invaluable scientific assets to understanding the ecological challenges facing this critical nexus of food, water, and energy production. EMP scientists monitor water quality, phytoplankton, zooplankton, and benthic invertebrates throughout the estuary and make this data publicly available where it can be used by managers, researchers, and members of the public to better understand this key ecosystem.

### **Project Need**

Under D-1641, the permit holders (DWR and USBR) are mandated to conduct a comprehensive environmental monitoring program to determine compliance with the stated water quality standards. The EMP is also mandated as a key monitoring element in CDFW's Incidental Take Permit for operation of the State Water Project by DWR. To fulfill these mandates, the EMP monitors water quality, nutrients, phytoplankton, zooplankton, and benthic invertebrates throughout the estuary.

### **Project Objectives**

- Document compliance with Bay-Delta water quality objectives set forth in D-1641
- Maintain a long-term record of baseline conditions in the estuary and record long-term ecological trends with respect to water quality, phytoplankton, zooplankton, and benthic invertebrates
- Develop and improve predictive tools to assess changes to the status of these areas within the estuary
- Provide accurate, timely, and validated water quality information in a format appropriate for a variety of users
- Respond to the findings of ongoing monitoring, changing conditions within the Bay-Delta, and management needs (e.g., special studies)

### **Schedule of Milestones**

- End of Year: Make data publicly available through Environmental Data Initiative, Water Data Library, and Github reporting site.
- End of Year: Submit report for each program element to State Water Resources Control Board through public Github reporting site.
- Ongoing: Make continuous water quality data available through California Data Exchange Center (CDEC).

### **Project Products and Publications**

All of the EMP's annual reports are available on the [CA Department of Water Resources – Environmental Monitoring Github page](https://emp-des.github.io/emp-reports/). [https://emp-des.github.io/emp-reports/]

Brown, Tiffany and Perry, Sarah (2022) "EMP Annual Report – Phytoplankton, 2021" California Department of Water Resources.

Manning, Julianna L.; Richardson, Laurel; Perry, Sarah (2022) "EMP Annual Report – Discrete Water Quality, 2021" California Department of Water Resources.

Nelson, Michelle; Tran, Andrew; Neumeyr, Stephen (2022): "EMP Annual Report – Continuous Water Quality." California Department of Water Resources.

Wells, Elizabeth H.; Perry, Sarah; Klotz, Vivian (2022). "EMP Annual Report – Benthic Invertebrates, 2021." California Department of Water Resources.