



## Interagency Ecological Program 2023 Work Plan Element Sampling Fish and Food-web Resources in Tidal Wetlands: Fish Restoration Program (FRP)

### Project Manager and Affiliation

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### Principal Investigator and Affiliation

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### Annual Costs (thousands) and Funding Sources

\$2,100 DWR (funded by State Water Contractors)

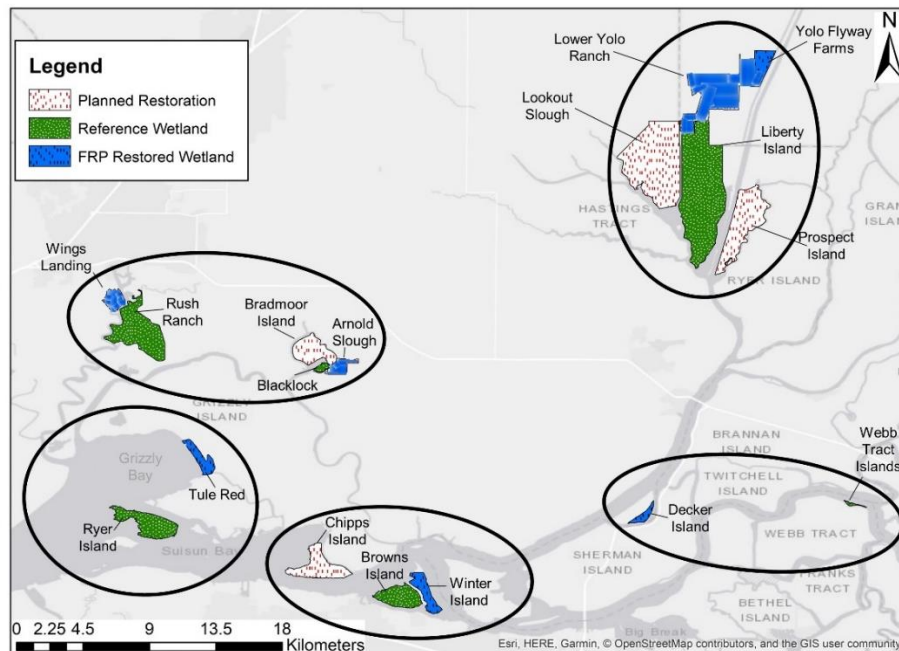


Figure: FRP restoration sites and associated reference sites in different regions of the estuary where sampling will occur in 2023. *Note: Potrero Marsh, in Suisun Marsh, is not pictured.*

### Description

The CDFW Fish Restoration Program will collect fish and invertebrate data near existing and planned tidal wetlands. These data will provide information on how fish and invertebrate communities change pre-/post-restoration. While collecting these data, the variability of invertebrate catches will be assessed for each gear type to determine the optimal number of samples per sampling site.

## **Need**

Under the 2008 and 2019 State Water Project/Central Valley Project Joint Operations Biological Opinion from United States Fish and Wildlife Service, 2009 and 2019 National Marine Fisheries Service, and 2009 and 2020 State Water Project Incidental Take Permit, Department of Water Resources (DWR) is required to restore >8,000 acres of tidal wetlands in the Sacramento-San Joaquin Delta (Delta) and Suisun Marsh to improve habitat and food web resources for threatened fishes. The Fish Restoration Program is responsible for biological monitoring in these restored tidal habitats to assess their success for providing habitat and food web benefits for at-risk native fishes.

## **Objectives**

- Assess the food web resources (nutrients, phytoplankton, zooplankton, and macroinvertebrates) associated with pre- and post-restoration tidal wetlands, as well as with existing reference wetlands
- Assess the fish community of restoring wetlands - use by rearing salmonids and characterization the predator and competitor communities
- Determine the level of spatial and temporal replication necessary to make sampling design recommendations for long-term monitoring, and develop newer methods for wetland restoration
- Synthesize existing data on submersed aquatic vegetation in these sites to refine our sampling procedures.

## **Schedule of Milestones**

January 2023: Project sampling begins

December 2023: Project sampling ends

September 2024: Annual Report finalized