Interagency Ecological Program 2024 Work Plan Element
Suisun Marsh Salinity Control Gates Monitoring

Project Manager and Affiliation

Rosemary Hartman, DWR

Principal Investigator and Affiliation

Rosemary Hartman, DWR

Annual Cost (thousands) and Funding Sources

$300K DWR

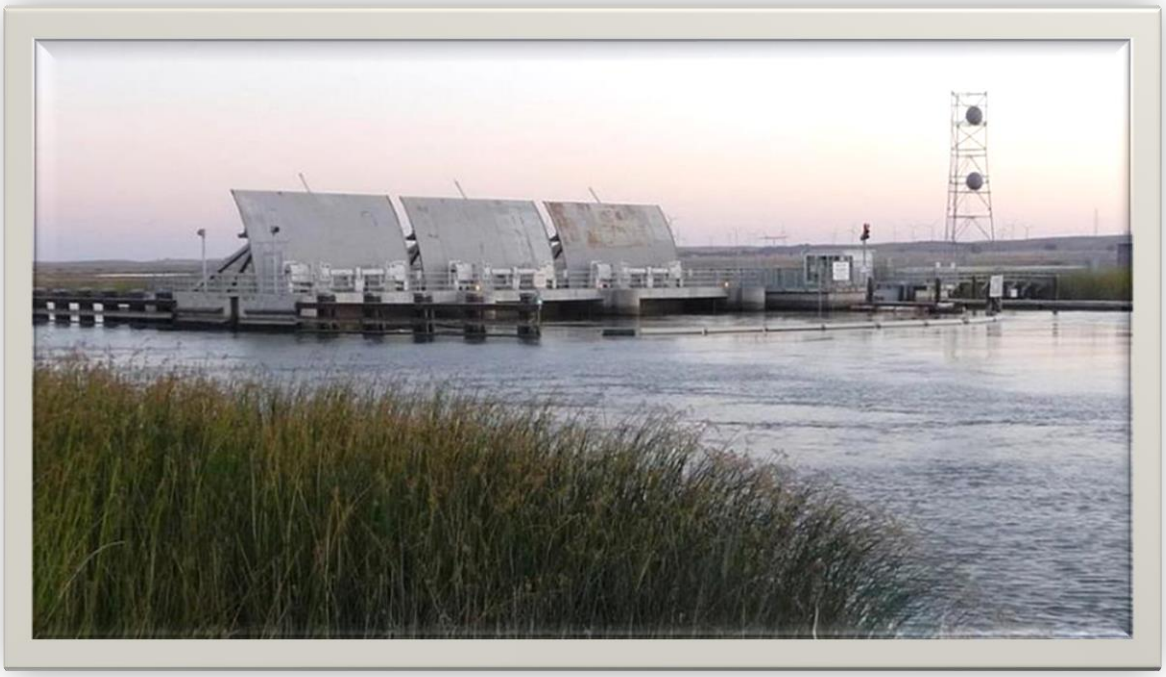

Figure: The Suisun Marsh Salinity Control gates are on the eastern end of Montezuma Slough.

Description

Suisun Bay and Marsh are a key part of the habitat for Delta Smelt, but during drier periods such as summer, Delta Smelt may be at least partially excluded from Suisun Marsh due to high salinities. This project provides scientific support for operation of the Suisun Marsh Salinity Control Gates (SMSCG) in the summer and fall to benefit smelt. This facility is currently to tidally pump water into the Marsh to improve fall and winter habitat conditions for waterfowl, but could also provide a tool to manage aquatic habitat

for Delta Smelt in other periods. We will use the SMSCGs to freshen the marsh and allow Delta Smelt access to this habitat during summer and fall of certain water year types as specified by environmental regulations and monitor the effectiveness of the action through analysis of long-term monitoring data and special studies.

Project Need

The status of Delta Smelt is dire. As part of the Resources Agency's Delta Smelt Resiliency Strategy, in August 2018 we conducted pilot operations of the SMSCG to support Delta Smelt, with promising results. Because of this success, operation of the SMSCGs in the summer and fall is specified as part of the Delta Smelt Summer-Fall Habitat Action in the 2020 DFW ITP and the 2019 USFWS Record of Decision on Reinitiation of Consultation for the State Water Project and Central Valley Project.

Project Objectives

The primary objective of this project is to evaluate the effectiveness of the SMSCG action. Questions to be addressed include:

- Did the action improve habitat conditions for Delta Smelt in the Suisun Region?
- Does the Suisun Region typically have better habitat and food web conditions than the upstream River Region?
- Do Delta Smelt respond favorably to the SMSCG flow action?

Schedule of Milestones

Feb-March: Planning for action

July -December: SMSCG Action (depending on water year type) and scientific monitoring.

December: Summer-Fall Habitat Action Report due

Project Reports and Publications

USBR and DWR. 2021. Delta Smelt Summer-Fall Habitat Seasonal Report for WY 2021. U.S. Bureau of Reclamation. Sacramento, CA. 98 pp.

USBR and DWR. 2022. Delta Smelt Summer-Fall Habitat Seasonal Report for WY 2022. U.S. Bureau of Reclamation. Sacramento, CA. 90 pp.

Sommer T, Hartman R, Koller M, Koohafkan M, Conrad JL, MacWilliams M, Bever A, Burdi C, Beakes MP. 2020. Evaluation of a large-scale flow manipulation to the upper San Francisco Estuary: Response of habitat conditions for an endangered native fish. Plos ONE. 15(10).[accessed 2023 Jan 4] doi:https://doi.org/10.1371/journal.pone.0234673.

Hartman, R.K., N. Rasmussen, E. Wells, A.J. Stewart, C.E. Burdi, S.M. Breining-Aday, and T. Sommer. 2022. Interagency Ecological Program: Monitoring of water quality, phytoplankton, zooplankton, clams, and fish to support the Summer-Fall Suisun Marsh Salinity Control Gates Action 2018-2021 ver 5. Environmental Data Initiative. https://doi.org/10.6073/pasta/58a263ef7926669926f9b0b4abf42868 (Accessed 2023-04-04).