

Interagency Ecological Program 2023 Work Plan Element Drought Ecosystem Monitoring and Synthesis

Project Manager and Affiliation

Rosemary Hartman, California Department of Water Resources

Principal Investigator and Affiliation

Rosemary Hartman, California Department of Water Resources

Costs (thousands) and Funding Sources

\$550 – California Department of Water Resources

In-kind support in the form of staff time provided by NMFS, USFWS, CDFW, USBR, USGS, and the Delta Science Program

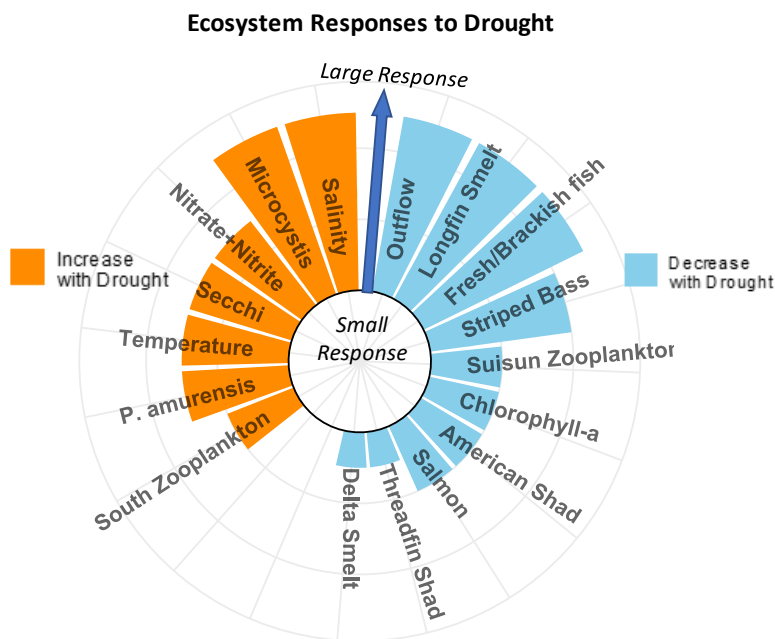


Figure: *Qualitative assessment of responses of various ecosystem responses to drought conditions in the Delta.*

Description

California experiences high inter-annual variability in precipitation leading to frequent floods and multi-year droughts. These droughts cause large year-to-year changes in the aquatic community. Currently, California is facing a multi-year drought starting in 2020. The Drought Ecosystem Monitoring and Synthesis project will evaluate ecosystem responses to this current drought in the Sacramento-San Joaquin Delta and Suisun Marsh, as well as the impacts of the Emergency Drought Barrier (which was installed in

False River 2021-2022) and the Temporary Urgency Change Petitions which modified Delta outflow standards in the summer of 2021 and spring of 2022. Data collection will rely primarily on existing monitoring, with the addition of a few special studies to assess the effect of the Drought Barrier on flow, harmful algal blooms, and weeds. Data from the current drought will be integrated and compared to previous droughts and wet periods to detect ecosystem changes. The team working on this effort contains members from NMFS, DWR, DSP, USBR, CDFW, USFWS, and USGS. The project started in March 2021 and is projected to conclude in June 2023.

Need

The 2020 Incidental Take Permit for the SWP includes several drought provisions. Specifically, it includes a Drought Toolkit, containing voluntary actions which may help counteract the impact of dry conditions, and a Drought Contingency Plan, containing specific actions to be undertaken in a drought year. Both the Drought Toolkit and the Drought Contingency Plan include ecosystem monitoring to assess the impact of drought and drought actions. This project seeks to better understand the ecosystem responses to the current multi-year drought and the drought actions in the Sacramento-San Joaquin Delta and Suisun Marsh. Any observed ecosystem responses to the drought and impacts of management responses to the drought will allow managers to further develop potential management actions in the Drought Toolkit and to inform Drought Contingency Plans for future dry years.

Objectives

- What is the aquatic ecosystem response to multi-year droughts in the Sacramento-San Joaquin Delta and Suisun Marsh?
- What are the ecosystem conditions during the 2020-2022 drought?
- What are the ecosystem responses to the 2021 TUCP, 2022 TUCP and Drought Barrier?

Schedule of Milestones

June-December 2021 – Data collection and processing

February 2022 – [Annual summary report and recommendations for future dry years](#).
Draft of study plan for 2022.

May 2022 – Finalization of study plan for 2022

June-December 2022 – Data Collection and Processing

February 2023 – Annual summary report for 2022 and recommendations for future dry years.

June 2023 – Final full synthesis report completed. Manuscripts for journal publications drafted.