Interagency Ecological Program 2024 Work Plan Element
San Francisco Bay Study (Fish and Crabs)

Project Manager and Affiliation

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Principal Investigator and Affiliation

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Costs (thousands) and Funding Sources

$582k DWR; $582k USBR

Figure: *Bay Study Sample Processing*

Description

The San Francisco Bay Study (Bay Study) started sampling in 1980, conducting monthly trawls from a research vessel. We currently sample 52 stations from South San Francisco Bay to the western Delta. Demersal fish, crabs, and shrimp are sampled with an otter trawl (OT) and pelagic fishes are sampled with a midwater trawl (MWT). The nets are designed to collect smaller age-0 fish and crabs and juvenile and adult shrimp. The primary objective of the Bay Study is to determine the effects of freshwater outflow and outflow related mechanisms on the abundance and distribution of estuarine and marine fishes, crabs, and shrimp. Note that bay shrimp are the subject of a separate, but complementary, IEP program element (2024-012).

Project Need

Provides data and knowledge used to inform and set water quality standards for the protection of fishes and invertebrates in the San Francisco Estuary, primarily downstream of the Delta. This study was mandated by State Water Resources Control Board's Water Rights Decisions 1485 and 1641. In addition, it may inform the 2020

CDFW Incidental Take Permit for Long-term Operation of the State Water Project (IEP Core Long-Term Monitoring Elements, Table 3.13.1).

Project Objectives

- What are the annual abundance trends and seasonal abundance patterns of the major fish and crab species in the estuary?
- How does distribution of the major fish and crab species change seasonally and annually?
- What are the changes in the estuary's fish and crab communities over time?
- How does freshwater outflow and outflow related mechanisms affect the abundance and distribution of fish and crab species and groups of species?
- How do other physical and biological factors, such as ocean temperature, upwelling, and ocean climate indices, affect the abundance and distribution of fish and crab species and groups of species?

Schedule of Milestones

• January to December 2024	Monthly sampling at 52 stations with an OT and MWT nets (2 tows per station); includes a salinity-temperature water column profile.
• January to June 2024	2023 data QAQC checked, entered, and finalized.
• June 2024	2023 fish abundance indices calculated.
• June 2024	Complete the Bay Study section of an upper estuary pelagic fishes Status and Trends Report (multi-study report), submitted to the IEP Newsletter.
• July 2024	1980-2023 fish and crab catch matrices completed and copied to the Bay Study FTP site.
• July 2024	2023 crab abundance indices calculated.
• August 2024	2023 fish data released to public (FTP site and EDI).
• September 2024	2023 crab data released to public (FTP site and EDI).
• Fall 2024	2023 Status and Trends reports (fish and crabs) completed, submitted to IEP Newsletter.
• January 2024 to March 2026	2024 data QAQC checked and edited, entry started.

Project Reports and Publications

2022 Upper Estuary Fishes Status and Trends Report (IEP Newsletter) submitted fall 2023.

2023 Upper Estuary Fishes Status and Trends Report (IEP Newsletter) submitted summer 2024.

2023 Bay Study Fishes Status and Trends Report (IEP Newsletter) in progress.

2023 Bay Study Crabs Status and Trends Report (IEP Newsletter) in progress.