



Interagency Ecological Program 2023 Work Plan Element Larval Smelt Entrainment Monitoring

Project Manager and Affiliation

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Costs (thousands) and Funding Sources

\$500 DWR; \$0 USBR



Research Vessel Beowulf underway in the San Francisco Estuary

Description

This project's primary purpose is to fulfill the 2020 Incidental Take Permit Condition of Approval (COA) 7.6.2, which states, "Permittee shall fund and implement a new Smelt Larval Entrainment Program to quantify larval DS and LFS entrainment into CCF." This COA calls for an interagency team to form to complete this work, a pilot study, multiple reporting and consultation requirements, and an on-going study beginning in 2024.

Need

Delta Smelt (*Hypomesus transpacificus*) and Longfin Smelt (*Spirinchus thaleichthys*) have been in decline for many decades and are both protected under the State Endangered Species Act. Water exports at the State Water Project (SWP) results in entrainment of fish and are a source of mortality, so their take is authorized by the 2020 Incidental Take Permit (ITP) for the Long-Term Operation of the SWP in the Sacramento-San Joaquin Delta (2081-2019-066-00). To date, only juvenile and adult smelt (>20 mm) loss has been quantified, but given continued declines, larval loss is also a concern. No quantitative larval Delta Smelt monitoring currently occurs at the salvage facilities, the sensitivity of existing larval smelt monitoring at the salvage

facilities is only appropriate for detecting presence. There has been an increasing need to predict and quantify entrainment of larval Osmerids into the south Delta and CCF, and this study proposes to fill that data gap.

Objectives

This project seeks to better understand larval Osmerid entrainment into CCF. Entrainment impacts to the larval life stages of Delta Smelt and Longfin Smelt at BPP have not been evaluated, therefore, in addition to meeting compliance with the ITP (COA 7.6.2), our project has three main objectives:

1. Develop quantitative estimates of Delta Smelt and Longfin Smelt entrainment into CCF.
2. Further our understanding of environmental conditions and hydrologic mechanisms leading to Delta Smelt and Longfin Smelt larval entrainment events.
3. Provide better resolution, in near-real-time, on magnitude and duration of Delta Smelt and Longfin Smelt larval entrainment events.

Schedule of Milestones

- January – March 2023 - Collect data. After processing is complete, results will be reported to the Smelt Working Group and other teams as appropriate.
- December 2023 – Verify data and make it publicly available on the CDFW FTP site or an online repository.