



Interagency Ecological Program 2024 Work Plan Element Extracting better information from long-term monitoring data: estimating occupancy and abundance of near- shore fishes in the Sacramento-San Joaquin River Delta

Project Manager and Affiliation

Lori Smith (USFWS)

Principal Investigator and Affiliation

Adam Nanninga (USFWS)

Annual Cost (thousands) and Funding Sources

DWR \$378; USBR \$294



Figure: Boat Electrofishing

Description

The purpose of this study is to expand IEP monitoring and inference to other dominant near-shore, littoral habitats not sampled by beach seines through the use of boat electrofishing. To accomplish this, we will sample key littoral fish species across various near-shore habitats in order to determine how best to estimate abundance, occupancy, capture probabilities, and related environmental drivers.

Project Need

Expanding Delta Juvenile Fish Monitoring Program (DJFMP) sampling to other habitats throughout the Delta will allow our program to detect and monitor fishes and ecological trends through time, alleviating a recognized data gap. Current sampling relies on data collected through non-random fixed-point sampling of unobstructed habitats, which limits the utility of our data to inform management decision.

Project Objectives

- Design boat electrofishing survey methods to expand DJFMP's monitoring into habitats and locations not sampled by beach seining.
- Design and develop field and data analysis methods for estimating capture probability and abundance using boat electrofishing techniques.
- Predict spatio-temporal distribution of habitats occupied by key littoral species.

Schedule of Milestones

- Summer 2024 – 2023 Data updated on EDI
- Summer 2024 – 2023 Electrofishing Annual Report

Project Reports and Publications

2022:

- 2021 Annual Report on Electrofishing in the [Spring Volume 41, Issue 2, 2022 IEP Newsletter \(pdf\)](#).
- Interagency Ecological Program (IEP), McKenzie, R., Speegle, J., Nanninga, A., Holcombe, E., Stagg, J., Hagen, J., Huber, E., Steinhart, G., and Arrambide, A. 2022. Interagency Ecological Program: [USFWS Delta Boat Electrofishing Survey, 2018-2022 ver 3](#). Environmental Data Initiative. <https://doi.org/10.6073/pasta/4886dbb80cf709a4c6e5906ff94eacdc> (Accessed 2023-04-04).

2023:

- 2022 Annual Report on Electrofishing submitted to IEP newsletter for publication.