IEP Data Management Plan

Project Element Number:

2026-077

Year:

2026

Date Updated:

 2025-05-09

Start Date:

2026-01-01

Study Title

Upper Estuary Zooplankton Sampling

Principal Investigator

C. Tracy Shaw, California Department of Fish and Wildlife,
Caroline.Shaw@wildlife.ca.gov, (209) 234-3665

Point of Contact

Same as above

Data Description

The Zooplankton Study monitors zooplankton abundance and community composition in the Upper San Francisco Estuary. Zooplankton samples are collected monthly at 19 stations from mid San Pablo Bay upstream into the Delta in conjunction with DWR's Environmental Monitoring Program (EMP) water quality sampling. Zooplankton are sampled using three gear types (a pump sampler, CB net, and mysid net), each targeting a different size range of organisms. Field data are recorded on paper datasheets and entered into a MS Access database after each survey. Zooplankton samples are processed in the laboratory using microscopes to identify, count, and measure organisms. Laboratory data are entered directly into a MS Access database using X-keys. Field and lab data are QAQC checked and catch-per-unit-effort (CPUE, number of organisms per cubic meter of water) data are made available in three flat file matrices (one matrix per gear type). At the end of each year, the data from that year are appended to a separate "long-term" database containing all the catch and field data since the inception of the study. The file size of the long-term database is approximately 265 MB.

Related Data

EMP Discrete Water Quality and Phytoplankton data: Environmental Data Initiative (EDI) (edirepository.org)

Fall Midwater Trawl and Summer Townet Survey Zooplankton data available at the link shown: https://filelib.wildlife.ca.gov/Public/TownetFallMidwaterTrawl/

[20-mm Survey Zooplankton data](#) available at the link shown below:
https://filelib.wildlife.ca.gov/Public/Delta%20Smelt/

IEP Fish Diet and Condition: Nene Ugbah, CDFW (Nene.Ugbah@wildlife.ca.gov)

Metadata

Metadata for each data matrix file is on the first spreadsheet of each Excel file on the [CDFW FTP site](#) (https://filelib.wildlife.ca.gov/Public/IEP_Zooplankton/). Additional metadata are available on the [IEP Survey Data page](#) (link shown below): https://iep.ca.gov/Data/IEP-Survey-Data#96238-data-access and from the [Environmental Data Initiative portal](#) (link shown below): https://portal.edirepository.org/nis/metadataviewer?packageid=edi.522.11

Storage and Backup

Historical field and lab datasheets are stored in plastic bins in the warehouse at the Stockton office. Original field sheets are filed in the Stockton office and copies are filed in the Stockton lab. Field datasheets from 1991to present are scanned and stored on the Stockton Primary Share (U) drive.

Laboratory data are entered on the network server in Stockton, which is backed up several times a day offsite. In addition, serial backup files are made any day when data has been entered; these files are saved in another folder on the Stockton server. Annually, data are quality checked and uploaded to the Tier 3 server for permanent storage as mandated by AB2408 (not available for public download). Serial backups of the quality-checked and edited data are maintained on-site in the Stockton office.

Archiving and Preservation

The long-term dataset is permanently archived and stored on a Tier 3 server in Sacramento.

Format

Field data are recorded on paper data sheets and entered monthly into a MS Access 2016 database (.accdb) for the calendar year. Sample data is entered into the same MS Access database when the samples are processed in the laboratory. After sample and data QAQC checks and edits are completed, the annual data are appended to a MS Access database that contains the long-term dataset (1972 to current). Catch per unit effort matrices for each gear type are made in Excel (.xlsx) using data from this long-term database. The quality-checked data are also uploaded into a SQL database on the Tier 3 server. Data for the Environmental Data Initiative are in .csv format.

Quality Assurance

Field data are line-by-line checked for entry errors each month and the MS Access database edited if needed. After the annual data set is complete, field data are checked for outliers in environmental data (conductivity, temperature, Secchi, chl-a). Flowmeter counts are checked monthly for outliers and replaced with estimated counts as appropriate. Annual zooplankton sample data are analyzed for outliers and entry errors

using a combination of Access queries, Excel pivot tables, and Excel figures. QC scripts in R that identify outliers in both field and laboratory data are also available.

Access and Sharing

Data matrices are updated annually and are publicly available on our FTP site (https://filelib.wildlife.ca.gov/Public/IEP_Zooplankton/) and the EDI portal (Data Portal - Data Package Summary | Environmental Data Initiative (EDI) (edirepository.org)). Data from the prior year are usually available by June, depending on when sample processing and sample and data QAQC checks and edits are completed.

The IEP Zooplankton Project Work Team is notified when new data are posted or when existing data are edited.

Rights and Requirements

We ask of data users: If you use any of these data in a paper, report, or presentation, please acknowledge CDFW's Zooplankton Study and the Interagency Ecological Program for the San Francisco Estuary.