

# IEP Data Management Plan

## Basic Information

Year: 2020; PEN:072; Date Updated: 2019-05-23; Start Date: 2020-01-01

## Study Title

Environmental Monitoring Program (EMP) – Benthic

## Principal Investigator

*Individual(s) responsible for the project. Include name, agency, e-mail, & phone.*

Sarah Lesmeister; California Department of Water Resources (DWR);  
Sarah.Lesmeister@water.ca.gov; (916) 376-9741

## Point of Contact

*Individuals who data users should contact for access to the data or questions about the data. Include name, agency, e-mail, & phone number or write “same as above.”*

Betsy Wells, DWR; Elizabeth.Wells@water.ca.gov; 916-376-9821

## Data Description

*A very brief description of the information to be gathered; the nature and scale of the data that will be generated or collected. Include approximate size (in MB) of the resulting data set.*

Since 1975, EMP has collected benthic data within the Sacramento-San Joaquin Delta, Suisun Bay, and San Pablo Bay as part of discrete water quality monitoring. The number of stations monitored has varied over time in response to programmatic reviews and new water right decisions. The EMP currently monitors the benthos at 10 fixed sites. The approximate size of the data is 620 MB. Data is stored in an Access database kept on an EMP data server.

## Related Data

*Optional. Existing datasets that you incorporate into analysis and reporting for this program element, existing data that are relevant to your study, or data that are collected simultaneously.*

Benthic monitoring stations are near some of the continuous and discrete water quality stations. Continuous water quality data is stored on an Oracle database. Discrete water quality data is stored on an Oracle database, [Water Data Library](#), Phytoplankton data (DWR, Access database) and zooplankton data (California Fish and Wildlife, PEN:077) are collected at the same time as discrete water quality data.

## Metadata

*A description of the metadata to be provided along with the generated data, including the metadata standards used. Provide the file name and information on how users can access the metadata (e.g., a link).*

[Benthic metadata](#) can be accessed from the California Estuary Portal:

Data is entered into DWR's Field and Laboratory Information Management System (FLIMS) using MS Access 2016 software and then imported into WDL, an Oracle database. Data from WDL can be exported in MS Excel, HTML format or text files, which can then be saved as different file formats like .xlsx, .csv, .pdf, and others.

## Storage and Backup

*A description of the short-term storage methods and backup procedures for the data, including the physical and electronic resources to be used for the short-term storage of the data.*

Digital data, both sediment and biological, is stored in an MS Access database (.mdb format) on a server dedicated to EMP data, which is managed by the Division of Technology Services (DTS) and backed up daily. Sediment reports from Bryte Laboratory (.pdf format) and field notes (.doc or .docx) are stored on the Division of Environmental Sciences (DES's) server, which is managed by DTS and is backed up daily. The original paper copies of taxonomic data are stored in the DWR/DES warehouse.

## Archiving and Preservation

*The procedures for long-term archiving and preservation of the data, including succession plans for the data should the expected archiving entity go out of existence.*

The benthic digital data (taxonomic and sediment) is stored permanently in a Microsoft Access database that is backed up daily by DTS. Original paper datasheets with taxonomic are stored internally in the DWR/DES warehouse. Original sediment reports and field notes are stored on DTS servers. The DWR is a long-established agency with no anticipated end date of existence.

## Access and Sharing

*A description of how data will be shared. Include (1) access procedures, (2) embargo periods, (3) technical mechanisms for dissemination (e.g., website addresses, listserv information), (3) whether access will be open or granted only to specific user groups, and (4) a timeframe for data sharing and publishing.*

Data from 1975-2018 is available at the California Estuaries Portal <https://emp.baydeltalive.com/projects/11280/object-page>. There is always at least an approximately two month delay between sampling date and any data availability, to allow time for samples to be analyzed by the taxonomist and the data to be entered and

undergo QA/QC. All mandated data is publicly available, and special datasets that would be tedious to create using the flat files (e.g. all instances of a single species across the entire period of record) are performed upon request to [elizabeth.wells@water.ca.gov](mailto:elizabeth.wells@water.ca.gov).

## Format

*Formats in which the data will be generated, maintained, and made available. Include BOTH general data type (e.g., spreadsheet, relational database) and file format (extension).*

Data received in hard copies on paper from Hydrozoology (taxonomic contractor, analyzing biological data) and as .pdf's from the Bryte Soils and Concrete Laboratory (sediment data) is entered into the benthic database using MS Access 2003 software(.mdb file format). Data produced by queries in MS Access can be saved as different file formats (.xlsx, .csv, .pdf and others). Field notes are written in MS Word documents.

## Quality Assurance

*Brief description of procedures for ensuring data quality. Provide links to Quality Assurance Project Plan and/or QA/QC Standard Operating Procedures.*

DWR Soils Laboratory employs sieve-testing (as per ASTM D-422) to assure consistency in grain size testing, and the lab is accredited through the American Association of State Highway and Transportation officials (AASHTO), which does quality audits and inspects the facilities, worksheets, and reporting documents are accurate and results are repeatable. Hydrozoology manages the QA for the taxonomic identification by employing the recognized taxonomic expert in this region, who consults with subject matter experts when necessary. When reports are received from either the Soils Lab or Hydrozoology, EMP conducts a monthly check to ensure data completeness. After an EMP staff member enters data into the benthic database, another staff member double-checks the data entry as QC; data entry and data check are initialed. Any discrepancies are resolved using original data sheets, in consultation with either the Soils Lab or Hydrozoology if necessary. A further QA/QC process is in the progress with the development of a Quality Assurance Project Plan. The EMP is working with DWR's QA Program to improve and build upon QA methods and documentation.

## Rights and Requirements

*A link to or instructions to locate the agency's rights and requirements for data use.*

Currently none. However, users should provide citation and credit to the EMP when using EMP data. Reference DOIs when datasets are formally published.