

IEP Data Management Plan

Basic Information

Year: 2020; PEN:072; Date Updated: 2019-05-29; Start Date: 2020-01-01

Study Title

Environmental Monitoring Program (EMP) – Continuous Real-time Water Quality

Principal Investigator

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

Scott Waller; California Department of Water Resources (DWR);
scott.waller@water.ca.gov; 916-376-9768

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.”

Mike Dempsey; California Department of Water Resources (DWR);
mike.dempsey@water.ca.gov; 916-376-9775

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 1983, the Interagency Ecological Program's (IEP) EMP has collected continuous real-time water quality data within the Sacramento-San Joaquin Delta and Suisun Bay. The number of stations monitored has varied over time in response to programmatic reviews and new water right decisions. The EMP monitors surface physical continuous real-time water quality constituents and chlorophyll at 15 fixed sites. Bottom specific conductance and water temperature values are also collected at four of those monitoring stations. Meteorological data is collected at ten stations in the existing continuous real-time monitoring network. Data is recorded every 15-minutes. The approximate size of the data is 14 GB.

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.

IEP's EMP is a comprehensive monitoring program in the San Francisco Bay-Delta Estuary that entails monthly sampling of benthos, phytoplankton, zooplankton, and

continuous and discrete water quality. Discrete water quality data is collected at the same time as phytoplankton and zooplankton. The zooplankton data is managed by the California Department of Fish and Wildlife (PEN: 077). Benthos and continuous water quality are sampled near some of the discrete water quality stations.

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).

Metadata was last updated online in 2015, but is currently under revision. DWR EMP staff follow the same metadata format for each data type. The Continuous Real-time Water Quality Metadata can be found by contacting mike.dempsey@water.ca.gov.

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.

Data is stored on hard copy visit sheets and electronically in the YSI data sondes. The electronic files are transferred monthly from the YSI data sondes in binary format to DWR's Division of Environmental Services (DES's) server that is stored and backed up daily by the DWR Division of Technology Services (DTS). The hard copy data and station visit sheets are compiled monthly to be scanned as a .pdf onto DES's server. Hard copies of field visit sheets are also stored at continuous real-time water quality field stations.

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 continuous real-time water quality data on WQP is stored permanently in a DTS-managed Oracle database that is backed up once a year. Hard copy visit sheets are scanned monthly and stored in a DES server that is managed by DTS and is backed-up daily. Historic reports are also scanned and stored on a DES server, while the hard copies are stored internally in the DWR/DES warehouse. 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.

Preliminary (subject to revision) continuous real-time water quality data is publicly available on [CDEC](#). Data is populated onto the CDEC data collection network once every 15 minutes and is readily available. Quality assured continuous real-time water quality data can be accessed by specific DWR personnel (only) from the DWR Water Quality Portal (WQP) Oracle database. Data requests can be sent to mike.dempsey@water.ca.gov.

In 2020, EMP plans to to publish annual continuous datasets on Environmental Data Initiative with DOIs. Once published, the data will be available, visualized, and summarized on the California estuary portal to meet annual reporting requirements.

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).

Quality assured continuous real-time water quality data can be accessed by specific DWR personnel (only) from the DWR Water Quality Portal (WQP) Oracle database. Data is populated into the WQP Oracle database once every 15 minutes. Data from the WQP Oracle database can be exported in MS Excel or text files, which can then be saved as different file formats including .xlsx, and .csv.

Preliminary (subject to revision) continuous real-time water quality data can be accessed from DWR's California Data Exchange Center (CDEC). Data is populated onto the CDEC data collection network once every 15 minutes. Data from CDEC can be exported in MS Excel or text files, which can then be saved as different file formats including html, .txt, .pdf, and others.

Quality Assurance

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

Continuous water quality data is populated into the WQP Oracle database every 15 minutes. EMP conducts a monthly check to ensure data completeness. EMP staff confirm that the data sheets properly match what was written on station visit sheets and investigates missing or incompleteness due to transcription error. A graphically editing program is used to determine outliers of the continuous real-time data stream. All errors are corrected in WQP Oracle database prior to making data public. A further QA/QC process is in the progress with the development of a Quality Assurance Project Plan. EMP is working with DWR's QA program to improve and build upon QA/QC 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.