IEP Data Management Plan

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Study Title

Dissolved Oxygen Monitoring in the Stockton Ship Channel

Principal Investigator

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Point of Contact

Same as above

Data Description

Dissolved oxygen (DO) in the Stockton Ship Channel is measured continuously (every 15 minutes) using telemetered EXO2 water quality sondes (YSI Inc., Yellow Springs, OH). Additional discrete monitoring by boat is initiated when the daily average DO concentration falls below a predetermined threshold. During a discrete sampling event, DO is measured at five stations along the San Joaquin River above and below the continuous monitoring station at Rough and Ready Island (RRI). DO is measured using an EXO2 at a depth of 1, 3, and 6 meters below the water's surface, along with water temperature, specific conductance, pH, turbidity, and chlorophyll a fluorescence. Historically as part of this project, 14 sites were sampled during summer and fall at low water slack tide, beginning at Prisoners Point in the central Delta and ending at the Stockton Turning Basin at the terminus of the channel.

Related Data

The continuous water quality station at RRI is incorporated into the analysis. IEP's Environmental Monitoring Program (EMP) point of contact for continuous monitoring is Scott Waller (scott.waller@water.ca.gov). The discrete station P8, located near RRI, is sampled monthly by EMP, which collects samples of water quality, phytoplankton, zooplankton, and benthic invertebrates. EMP's point of contact for discrete monitoring is Theodore Flynn (theodore.flynn@water.ca.gov).

Metadata

Meta data, including citation information, geographic scope, and QA/QC procedures is available online in Ecological Metadata Language and updated annually. URL: https://portal.edirepository.org/nis/mapbrowse?scope=edi&identifier=276&revision=2

Storage and Backup

Data is collected from the EXO2 sondes using a custom software platform “Moped” written using Microsoft Web Forms with C# as the backend. Following each discrete sampling event, Moped generates electronic field data sheets in PDF and CSV format that are stored both locally on the computer’s hard drive and as well as EMP’s secured SharePoint site. Backup copies of electronic field data sheets are stored on the Division of Integrate Science & Engineering (DISE) shared drive, which is backed up daily by DWR’s Division of Technology Services (DTS).

Archiving and Preservation

Data from this project is archived both on paper and digitally. Electronic field data sheets are printed out and filed at the EMP offices in West Sacramento. Digital records are permanently stored on DWR’s Water Data Library (WDL), an Oracle database managed by DTS. Annual updates are also posted to the cloud-hosted Environmental Data Initiative (EDI) data repository. DWR is a long-established agency with no anticipated end date of existence.

Format

Field data are documented using Microsoft Web Forms and exported into field sheets in PDF and CSV format. Data from 1997 – 2020 is 0.326 MB and data from 1968 – 1996 is 0.289 MB for a total of 0.615 MB.

Quality Assurance

The data is hand-verified by two individuals to ensure data accuracy. EXO2 sondes used to measure DO and other water quality parameters are calibrated before and after each field run following the manufacturer's recommendations. DO is calibrated using the air-saturated water method.

Access and Sharing

Discrete water quality data collected over the lifetime of the project (since 1968) is available through EDI. URL: https://portal.edirepository.org/nis/mapbrowse?scope=edi&identifier=276&revision=2 (DOI: 10/gfng). Summary reports are created after each discrete monitoring event, which are then distributed to an e-mail listserv within one week. Real-time dissolved oxygen data from RRI can be found at the California Data Exchange Center (CDEC) under station identifier SDO. Additional data requests can be directed to the Points of Contact named above.

Rights and Requirements

Data from this project is publicly available via EDI and may be used freely with attribution.