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**Macroinvertebrate Metadata Readme**

**CEDEN Benthic Data**

<https://ceden.waterboards.ca.gov/AdvancedQueryTool>

I downloaded the CEDEN Benthic data with the following parameters:

Region selection by County: Contra Costa, Sacramento, San Joaquin, Solano, Yolo

Date Range: 1/1/2010 to 6/19/2019 (latest available date).

CEDEN data file: ceden\_data\_2020101063643.xls

**EMP Benthic Invertebrate Study**

[https://emp.baydeltalive.com/projects/11280](https://nam03.safelinks.protection.outlook.com/?url=https%3A%2F%2Femp.baydeltalive.com%2Fprojects%2F11280&data=02%7C01%7Clawrene2%40wwu.edu%7Cc00b3b0c6a5a4da20c2c08d83f02b617%7Cdc46140ce26f43efb0ae00f257f478ff%7C0%7C0%7C637328628373897406&sdata=w7Z9YXCqArQlqn4Erg5WjHBcgpWsrNlhSgW8pc2iWI0%3D&reserved=0)

EMP data files:

2007-2010CPUE.csv

2011-2018CPUE.csv

Data are a count matrix with site and date in records and individual taxa as columns. I downloaded the 2007 - 2010 and 2011 – 2018 spreadsheets.

A write up on the data is available at the link above. Some of the metadata has broken links, such as the Benthic Taxonomic Dictionary. The spatial data for the sampling sites along with any environmental measurements and unavailable. The lat and long can be recorded from the interactive map from the website. I will email the contact email to ask questions about the metadata.

**ZoopSynth – Zooplankton Database**

<https://deltascience.shinyapps.io/ZoopSynth/>

zooplankton taxa download: data-\_V1.1.0\_2020-09-09.csv

I included EMP, FRP, FMWT, STN, and 20mm in the data sources to include. Size classes included Meso and Macro invertebrates. Dates were filtered from Jan 1, 1999 to Present.

Meta data graphs: TaxaSamples2020-09-09.png

**ZoopSynth Data Sources:**

***FRP***: Fish Restoration Monitoring Program

*California Department of Fish and Wildlife, R. Hartman, S. Sherman, D. Contreras, and D. Ellis. 2019. Fish catch, invertebrate catch, and water quality data from the Sacramento-San Joaquin Delta collected by the Fish Restoration Monitoring Program, 2015-2017. ver 2. Environmental Data Initiative. https://doi.org/10.6073/pasta/86810e72766ad19fccb1b9dd3955bdf8 (Accessed 2020-09-09).*

Metadata: https://portal.edirepository.org/nis/metadataviewer?packageid=edi.269.2

Has environmental measurements!

***20mm***: Part of the 20-mm Delta Smelt Survey by the Dept of Fish and Wildlife. They attached a Clarke-Bumpus (CB) net to the top of the 20-mm net to collect zooplankton samples (120 um mesh).

ftp://ftp.wildlife.ca.gov/Delta%20Smelt/

***EMP***: The Zooplankton Study is one element of the Environmental Monitoring Program (EMP) conducted under the Interagency Ecological Program (IEP) umbrella. The EMP also includes monitoring of water quality, benthos, and phytoplankton. [Copied from metadata file: ZooplanktonMetadataAug2020.pdf]

<ftp://ftp.dfg.ca.gov/IEP_Zooplankton>

***FMWT:*** Fall Midwinter Trawl Survey

<ftp://ftp.dfg.ca.gov/TownetFallMidwaterTrawl/FMWT%20Data/>

ftp://ftp.dfg.ca.gov/TownetFallMidwaterTrawl/Zoopl\_TownetFMWT/

***TNS:*** California Dept. of Fish and Wildlife (CDFW) Summer Townet Survey

ftp://ftp.dfg.ca.gov/TownetFallMidwaterTrawl/TNS%20MS%20Access%20Data/TNS%20data/

https://wildlife.ca.gov/Conservation/Delta/Townet-Survey