

### Metadata for SMSCG Zooplankton Monitoring CPUE Matrix

Contact:	California Department of Fish and Wildlife
Phone:	Christina Burdi
Email:	209-234-3664
	Christina.Burdi@wildlife.ca.gov
Created:	2/25/2019 with sample data to monitor the effects of the Suisun Marsh Salinity Control Gate (SMSCG) Action starting in 2018.
Updates:	April 2020 (9/7 STN 411), August 2020 (2019 data, bottom temp to all years,) June 2021 (2020 data), Jan 2022 (2019 Mysid data, code for meter estimates for all years) Apr 2022 (2021 CB data)
Purpose:	<p>The following metadata describes the zooplankton catch matrices titled "SMSCG_CBNet_2018toXX" and SMSCG_MysidNetCPUE_2018toXX". Files include routine zooplankton monitoring at selected FMWT and STN stations in the SMSCG footprint, as well as additional samples at STN stations from Sept to October, and stations added in Honker Bay, Montezuma Slough and Grizzly Bay sampled July to October. Mysid samples specifically for SMSCG monitoring were not collected after 2019</p>

Zooplankton data from routine CB net sampling also located on the CDFW Region 3 ftp site, or the contact above. Mysid and Amphipod Data from FMWT stations that have been routinely monitored from 2007 to present is located in another spreadsheet on the CDFW Region 3 ftp site

Column headers	Column header content
Project	The project which the station is associated with. FMWT= Fall Midwater Trawl, STN= Summer Townet Survey.
Year	Year sample collected.
Survey	Survey number where sample collected.
Month	Month sample collected.
Date	Date sample collected.
Station	Station number where sample collected (see station lookup file and map for station location information, some stations with the same number have slightly different locations between projects).
Time	Time at start of tow at each station (24:00).
TowDuration	Number of minutes reported for tow.
Region	General geographic region of station in the San Francisco Estuary. See station lookup file for descriptions, some stations with the same number have different geographic region designations between projects, region designations in zooplankton matrices match those in the respective project's fish matrices.
TideCode	Tide code: 1 = high slack, 2 = ebb, 3 = low slack, 4 = flood.
DepthBottom	Depth of water (m).

CondSurf	The Specific Conductivity (EC at 25 degrees Celsius) of the first foot of water from the surface in micro-siemens per centimeter.
PPTSurf	Surface salinity based from EC at 25C; $PPT = ((0.36966 / (((CondSurf * 0.001)^{-1.07}) - 0.00074)) * 1.28156)$ .
CondBott	Bottom Specific Conductivity (EC at 25 degrees Celsius) in micro-siemens per centimeter.
PPTBott	Bottom salinity based from EC at 25C; $PPT = ((0.36966 / (((CondBott * 0.001)^{-1.07}) - 0.00074)) * 1.28156)$ .
TempSurf	Surface temperature (in degrees Celsius).
TempBottom	Bottom temperature (in degrees Celsius). Began measuring in 2011 by both FMWT and STN.
Secchi	Secchi disc reading for water transparency, measured in shade (cm).
Turbidity	NTUs per Hach Turbidity Device.
Microcystis	Microcystis code: 1 = absent, 2 = low, 3 = medium, 4 = high, 5 = very high, 6 = present in zooplankton or mysid cod end but not observed in the surface water (only used from 2012-2015, before and after a 2 is used to signify low presence).
TotalMeter	Total flow meter counts during tow, as measured by a General Oceanics flow meter mounted inside mouth of CB net.
MeterEstimate	Indicates if the total flow meter counts for the tow were estimated (Y/N).
Volume	Volume of water filtered through the net ( $m^3$ ) (where volume filtered is estimated by: $VolFiltered = (end\ meter - start\ meter) * 0.026873 * mouth\ area$ ). See Zoop_CPUE_Calculation file for specific mouth area values by gear.
CPUE	Catch-per-unit-effort for each CB species in number per cubic meter of water. See Zoop_CPUE_Calculation file for calculation information by gear.