Delta smelt conditions report

Appendix 1: Supplemental methods and data sources

# Methods

Data collected from 2002 - present within our regional strata were included in this report. We used regional strata from the Enhanced Delta Smelt Monitoring (EDSM) 2018-19 phase I strata. The Western Delta region was excluded because it is almost never occupied by Delta Smelt. Secchi depth, salinity, chlorophyll, phytoplankton, cyanobacteria, zooplankton, and bivalve data were first filtered to only include data within the season of interest. Monthly means were calculated for outflow and X2. Annual means for the selected season within each region were calculated for Secchi depth, salinity, chlorophyll, phytoplankton, cyanobacteria, zooplankton, and bivalve data. For temperature, we calculated the water temperatures of the hottest, average, and coldest months of the summer. The relative frequencies of *Microcystis* index values (1-5) in the summer were calculated for each year and region. Official Delta Smelt indices were used from the Fall Midwater Trawl (FMWT), Spring Kodiac Trawl (SKT), Summer Townet (STN), and 20-mm (20mm) surveys. Official abundance estimates from EDSM were averaged monthly within each region and confidence intervals were calculated based on the lognormal distribution as described in Polansky et al. (2019).

**Table 1.** Acronyms and responsible agencies for each dataset used in this report.

|  |  |  |
| --- | --- | --- |
| Source | Acronym | Agency |
| Environmental Monitoring Program | EMP | California Department of Fish and Wildlife, Department of Water Resources |
| Fall Midwater Trawl | FMWT | California Department of Fish and Wildlife |
| Summer Townet | STN | California Department of Fish and Wildlife |
| Enhanced Delta Smelt Monitoring | EDSM | United States Fish and Wildlife Service |
| Dayflow | Dayflow | Department of Water Resources |
| Spring Kodiak Trawl | SKT | California Department of Fish and Wildlife |
| 20 mm survey | 20mm | California Department of Fish and Wildlife |

# Data sources

Sources bolded below were used for those variables in the FLOAT MAST report. This section lists data sources available for the focal seasons used for each variable. For all data sources considered in the report, as well as sampling effort in each region, see the figure on page 3 of the main report.

## Abiotic variables

### Outflow

1. **Dayflow**

### X2

1. **Dayflow**

### Summer temperature

1. EMP
2. STN
3. EDSM

### Fall Secchi depth

1. EMP
2. **FMWT**
3. **EDSM**

### Fall salinity

1. EMP
2. FMWT

## Biotic variables

### Summer chlorophyll concentrations

1. **EMP**

### Summer phytoplankton composition

1. **EMP**

### Summer cyanobacteria

1. **EMP**

### Summer *Microcystis*

1. **EMP**
2. STN

### Fall zooplankton

1. **EMP**

### Fall invasive bivalve biomass

1. **EMP**

### Delta Smelt abundance

1. **FMWT**
2. **SKT**
3. **STN**
4. **20mm**
5. EDSM

# References