

Charter for: Interagency Ecological Program Zooplankton Project Work Team

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I. The Interagency Ecological Program (IEP)

IEP is a consortium of nine state and federal agencies that conducts research and monitoring in the San Francisco Estuary (SFE). For the past 40 years, IEP scientists and its partners (e.g., universities, NGOs) have worked to: 1) describe the status and trends of aquatic ecological factors of interest in the SFE; 2) develop an understanding of environmental factors that influence the resources of the SFE; and 3) provide information to support natural resource planning, management, and regulatory activities in the estuary. One of the most effective tools for IEP activities and collaboration has been the formation of Project Work Teams (PWTs) that focus on specific research and monitoring topics of interest. The purpose of the PWTs includes: organizing new studies, reviewing study plans and proposals, writing scientific papers and reports, promoting collaboration among different groups working on the topics of interest and conducting integrated analyses and synthesizing of SFE data sets. All IEP PWTs are open to the public. More information about IEP PWTs and a calendar with PWT meeting information is available at [IEP's website](#).

II. Relevance of Zooplankton to Bay-Delta Science and Management and to the IEP

Zooplankton are a critical component of aquatic communities, comprising a crucial link between primary production and upper trophic taxa of high management interest such as fishes. They are also indicator species for climate change (Richardson 2008) and can exert top-down control on primary production (Carpenter et al. 1985). In the San Francisco Estuary (SFE), most managed fish species rely on zooplankton at some point in their lifecycle and reduced zooplankton food supply has been implicated as a potential driver of the Pelagic Organism Decline (Winder and Jassby 2011; Brown et al. 2016). Because of their importance, zooplankton have been monitored in the SFE since 1972.

The zooplankton synthesis team formed as an IEP workplan element in 2019 to compare methods used by the zooplankton monitoring surveys in the upper SFE, integrate their data, and increase coordination among agencies and surveys working on zooplankton. The zooplankton synthesis team has achieved these objectives by 1) publishing an IEP technical report on zooplankton survey methodology with recommendations for future surveys (Kayfetz et al. 2020), 2) publishing an integrated dataset of 5 zooplankton monitoring surveys (Bashevkin et al. 2020) along with the accompanying code (Bashevkin 2020) and an [interactive application](#)

(<https://deltascience.shinyapps.io/ZoopSynth/>), 3) hosting a zooplankton taxonomy workshop in November 2019, and 4) hosting a [zooplankton ecology symposium](#) in October 2020 (You Tube) (https://www.youtube.com/playlist?list=PLqTHCliW1HhoSZmAYfGtnNoFH3GSw_k5O). These efforts have been communicated to the IEP stakeholders, Science Management Team, Estuarine Ecology Team, and IEP workshop. For ongoing efforts, the zooplankton synthesis team would benefit from conversion into a project work team, which would expand its membership and provide a long-term home for discussion and coordination of zooplankton monitoring and analysis.

III. Mission and Objectives for the Zooplankton PWT

The 2020-2024 IEP science strategy (Interagency Ecological Program 2019) recommends improved zooplankton monitoring as well as increased research into the growth, production, abundance, and biomass of zooplankton to restore food webs. Currently, there is no IEP forum for discussion and collaboration around issues of concern for zooplankton monitoring and research. The Zooplankton PWT will fill that gap by increasing coordination among zooplankton research and monitoring in the upper SFE. The zooplankton project work team will be a venue for:

- 1) discussion, evaluation, and recommendation of new monitoring technologies or database structures;
- 2) coordination of monitoring efforts and methods;
- 3) training in zooplankton taxonomy and ecology for the SFE science community;
- 4) maintenance and expansion of the zooplankton integrated dataset; and
- 5) discussion and collaboration on zooplankton analyses.

Traditionally, the Estuarine Ecology Team (EET) has been a venue for presentations on zooplankton research. This will not change with the creation of the Zooplankton PWT. While the EET is a venue for presentations on broad ecological topics for an interdisciplinary group, they explicitly withhold from making decisions or recommendations. The Zooplankton PWT will be focused more narrowly on zooplankton but have a broader set of goals where we are much more of an active work group that will make decisions, recommendations, and tangible products.

IV. Examples of PWT Activities

Activities of the Zooplankton project work team, with products in parentheses, will include:

- 1) Regular, monthly PWT meetings in which the following activities will be coordinated
- 2) Discussions and evaluations of new and existing zooplankton monitoring technologies, methods, and designs (recommendations)
- 3) Discussions and evaluations of database formats for zooplankton (recommendations)
- 4) Organization and hosting of zooplankton workshops and symposia such as the taxonomy training workshop (workshops)
- 5) Maintenance and expansion of the zooplankton integrated dataset (data publications)

6) Collaboration on zooplankton analyses in sub-teams (publications)

v. Literature cited

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