

Interagency Ecological Program Water Quality and Phytoplankton Project Work Team Charter

October 2021

Co-Chairs: Jenna Rinde (CDFW), Janis Cooke (CVRWCB), and Keith Bouma-Gregson (USGS)

The Interagency Ecological Program

IEP is a consortium of nine state and federal agencies that conducts research and monitoring in the San Francisco estuary. For the past 40 years, IEP scientists and partners (e.g., universities, NGOs) have worked to: 1) describe the status and trends of aquatic ecological factors of interest in the estuary; 2) develop an understanding of environmental factors that influence the resources of the estuary; 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 has been the formation of Project Work Teams (PWTs) that focus on specific research and monitoring topics of interest. Examples of some of the current PWTs are available at [IEP's website](#). These teams are formed to organize new studies, to review study plans and proposals, to write scientific papers and reports, and to promote collaboration among different groups working on the topic of interest.

Background

Water Quality and Phytoplankton

Water quality, including nutrients, and phytoplankton monitoring have been foundational elements of aquatic research in the San Francisco Bay-Delta for many decades. The Interagency Ecological Program has monitored for water quality and phytoplankton in the Delta since the 1970s. Water quality monitoring programs, in addition to a suite of routine fish surveys, have identified large scale changes (e.g., Pelagic Organism Decline) in the ecosystem which are of management concern. Prior to and since the initiation of the long-term monitoring programs, there have been innumerable research studies in the Bay-Delta, most of which collect a suite of water quality parameters and phytoplankton. With many projects across numerous agencies and entities, it is important for scientists and managers to be aware of the phytoplankton and nutrient research occurring in the Bay-Delta, to advance new hypothesis and reduce inefficiencies. Therefore, a PWT for water quality and phytoplankton is needed to serve as a forum for scientists, managers, and policy makers to coordinate monitoring, research, and sample collection that will serve multiple management objectives.

Major management and other ecosystem-scale changes in the Delta have the potential to cause substantial alterations to water quality, nutrients, phytoplankton, and the aquatic food web across the Bay-Delta. Some recent or anticipated changes include the impact of the Sacramento Regional Sanitation District Treatment Plant upgrades, the Delta Conveyance, Emergency Drought Barrier, and effects of climate change. In addition to the ecosystem changes, policy changes, such as Water Rights Decision, water quality objectives for nutrients and

biostimulatory conditions, and HABs policies, are expected in the next five-ten years. The policy revisions may alter existing compliance monitoring programs (e.g., California Department of Water Resources Environmental Monitoring Program) which are of significant value to the science community. Preparing and managing such changes will require input from the experts in the science community to ensure a smooth transition between current and future compliance monitoring mandates.

Water Quality and Phytoplankton IEP Project Work Team Charge

The IEP Water Quality and Phytoplankton PWT will provide a venue for scientists from diverse agencies and groups to coordinate and synthesize findings, to inform future research and monitoring needs. Specific objectives of the group include:

- Encourage open science with sharing of data and methods to benefit development of formal synthesis or strategy documents;
- Discuss and plan for potential changes to the monitoring programs in the Bay-Delta to inform multiple management priorities, such as flow, fisheries, phytoplankton, and nutrients, in the most efficient way;
- Share and review research on water quality, nutrients, phytoplankton, flows, and fisheries and develop proposals for special studies to address knowledge gaps that are not being addressed by other groups;
- Provide review and input on new monitoring plans and special studies; and
- Reduce duplication of effort through sharing of water quality and phytoplankton monitoring plans and identification of opportunities to collect data more efficiently by coordinating across multiple monitoring programs.

The IEP PWT will not duplicate effort with existing groups such as the Bay and Delta Regional Monitoring Programs (RMPs) and their subgroups, San Francisco Bay Nutrient Management Strategy (SF Bay NMS), the Central Valley Regional Water Quality Control Board's Nutrient Research Plan Stakeholder and Technical Advisory Group (STAG), California Estuary Monitoring Workgroup, the California Cyanobacteria and Harmful Algal Bloom Network (CCHAB), and others. The Delta Nutrient STAG and SF Bay NMS will maintain their status as the principal venues for disseminating findings to engaged stakeholders and establishing program priorities for the Delta RMP and SF Bay NMS. Formal linkages between the PWT and these groups will be maintained by having members from each of these groups on the PWT. Additionally, the Water Quality and Nutrient PWT will coordinate with other IEP PWTs, including the Aquatic Vegetation PWT, Flow Alteration (FloAt) PWT, Contaminants PWT and the Data Utilization Work Group. Overlap in membership between existing groups and other PWTs will enhance communication and coordination of similar efforts across the San Francisco Bay-Estuary.

Table 1: Proposed membership and respective linkages

Proposed Members	Connections/Linkages
CA DWR	IEP SMT, IEP DUWG, CEMW, CCHAB Network
CDFW	CCHAB Network, HAB-related Illness Team, Freshwater HAB Program, Delta RMP
SFEI	Bay RMP, Delta RMP, NMS
CVRWQCB	CVRWQCB Nutrient Research Plan, Delta RMP, CCHAB Network, SWAMP.
SWRCB	IEP SMT, IEP CT, Water Rights, SWAMP, Freshwater HAB Program
USGS	Water quality monitoring stations funded by USBR, cyanotoxin sampling funded by Delta Science Program and RMP. Internally funded USGS HABs projects.

Duration and Meeting Frequency

The PWT is expected to meet at a minimum of twice per year after the charter is adopted. Specialized subcommittees will be formed to work on PWT activities and will meet as necessary to achieve desired goals. After two years, members of PWT will re-evaluate the progress and necessity of the group.

PWT Outcomes and Activities

Over the duration of this PWT the following outcomes, associated with those objectives identified above, shall be prioritized. Additional activities may be identified and added to this list, at the discretion of the PWT co-chairs. Proposed scientific topics may include:

- I. Data Synthesis and Monitoring Optimization
 - a. Facilitate the sharing and collaboration with monitoring equipment, methods, quality assurance, and reporting procedures are shared;
 - b. Where monitoring stations from the IEP, Bay RMP, Delta RMP, NMS and other efforts overlap spatially (i.e., between Rio Vista and Golden Gate), identify opportunities to reduce overlap in monitoring efforts;
 - c. Identify opportunities for more comprehensive or innovative approaches to data synthesis and answering unaddressed management questions with available data;
 - d. Identify opportunities to collaborate on survey cruises or fill station-specific data gaps to reduce costs and enhance monitoring capacity; and
 - e. Identify and prioritize monitoring to fill gaps in the monitoring networks named in 1.b

II. Communication and Coordination

- a. Develop a plan for the maintenance of state and federal funding for key monitoring programs and special studies;
- b. Brainstorm and document possible changes to IEP monitoring surveys to modernize data collection processes and enhance long-term monitoring efficiency throughout the San Francisco Bay-Delta;
- c. Develop a standard colonial scale of surface cyanobacteria presence as a method to be across monitoring programs; and
- d. Write articles, present at conferences, or use other science communication avenues to share information pertaining to water quality or phytoplankton efforts in the San Francisco Bay-Delta; and
- e. Provide recommendations on upcoming topics of concern (e.g., harmful algal blooms, benthic algae, invasive species) to research studies or long-term monitoring; and
- f. Brainstorm and document how are nutrients and phytoplankton change after management actions (e.g., Regional San upgrade, flow actions, drought barrier).

III. Project Development

- a. Review special studies for consideration by the IEP or other programs, identified through the Central Valley Regional Water Quality Control Board's Nutrient Research Plan, Bay and Delta Regional Monitoring Programs (RMPs), and the San Francisco Bay Nutrient Management Strategy; and b. Identify 'next-generation' studies to address knowledge gaps that are not being currently addressed;
- b. Provide specific recommendations to long-term monitoring surveys based on conclusions from research studies; and
- c. Develop a Delta-wide strategy for monitoring and special studies related to beneficial algae and/or harmful algal blooms.

PWT Decision-Making

As a voluntary partnership of diverse organizations, this PWT is not "consensus-based". The represented organizations do not necessarily have the authority to implement binding decisions. Therefore, the PWT is "consensus-seeking" wherein all participants take reasonable and appropriate steps to reach consensus and convey recommendations. While consensus should be sought, this PWT and its component teams may provide a range of recommendations to the IEP Science Management Team, agencies, or other institutes for final decision-making.