

Delta Harmful Algal Blooms Workshop

Towards Developing a Community Monitoring Strategy

Information Sheet



Delta
Science
Program

DELTA STEWARDSHIP COUNCIL

Main Points

- **Harmful Algal Blooms (HABs) are algae or cyanobacteria growths that can cause serious harm to animals and people** by producing toxins that impact the water bodies California relies on for drinking water and recreational purposes.
- **HABs impact everyone in the Sacramento-San Joaquin Delta** and are expected to become more prevalent with climate change impacts fueling the development of blooms. Coordinated monitoring efforts across Delta organizations are needed to fill knowledge gaps and protect Delta communities from the effects of HABs.
- **The Delta Science Program is convening a November 8-9 public workshop** to facilitate discussions for developing a Delta regional monitoring strategy. The workshop will foster conversations on collaborative efforts for HABs monitoring, data collection and sharing, and communication strategies for community safety.

July 2022

Background

California relies on the water quality of the Delta. The Delta supplies a portion of the water used by two-thirds of Californians; that's more than 27 million people. With that in mind, the Delta's water quality conditions are a priority for multiple local, State, and federal agencies. Unfortunately, HABs, which occur when algal species rapidly grow and produce toxic or other harmful effects, detrimentally affect water quality. Their effect on water quality has large impacts on water supply, recreation, and other uses of Delta water.

HABs are caused by a combination of drivers including water temperature, salinity, irradiance (or water column illumination), nutrient abundance, and stagnant water conditions that lead to reduced stratification and longer residence times for harmful algae. These drivers appear in various combinations with localized effects that vary depending on environmental and driver conditions.

In the Delta, the most common HABs are cyanobacterial HABs (cyanoHABs) that may create toxins that are harmful to people, animals, and aquatic life. *Microcystis*, the most reported cyanoHAB in the Delta, produces a potent hepatotoxin (which harms the liver), microcystin. In addition to toxicity, cyanoHABs can disrupt various ecosystem functions like reducing water oxygen levels and causing fish kills.

To date, HABs in the Delta region have primarily been intermittently monitored with an unequal focus on the various types of HABs and toxins found in the region. Although multiple research groups and agencies collect data on Delta blooms, monitoring is often inconsistent and lacks a common approach. Research highlights that [HABs are persistent](#) in the Delta and are capable of traversing throughout the Delta ecosystem via natural and man-made waterways. Coordinated monitoring efforts across the Delta organizations are needed to fill knowledge gaps on HABs and protect Delta communities from HAB toxins.



Problem Statement

HAB monitoring efforts and targeted studies are growing in number and scope in the Delta, along with concerns that blooms will increase in frequency and severity. With the growing scientific and public attention on the issue, **there is a need for increased coordination amongst the many groups that work on HABs in the Delta.** This workshop's setting will (1) create an opportunity to identify nexuses where HAB monitoring and data collection and (2) inform the development of a Delta HABs Monitoring Strategy.

Workshop Goals

The goal of this workshop is to inform the development of a Delta-region specific Harmful Algal Blooms Monitoring Strategy that would serve as a framework for monitoring, modeling, and addressing current knowledge gaps.

The workshop will:

1. **Support the implementation of 2022-2026 Science Action Agenda Action 2B:** Develop a framework for monitoring, modeling, and information dissemination in support of operational forecasting and near real-time visualization of the extent, toxicity, and health impacts of HABs.
2. **Identify the objectives, challenges, and data synthesis needs** for HAB monitoring across multiple institutions, including both data collection done for permits and for special studies.
3. **Identify opportunities** for increased coordination in HAB data collection efforts.
4. **Provide a platform** for information sharing on HAB data collection and studies.

Long-Term Goal

The development of a Delta-region specific HABs Monitoring Strategy that serves as a framework for monitoring, modeling, and addressing current knowledge gaps.

Focus Areas

Workshop: November 8-9, 2022



- Facilitate high-level information sharing on current policies, practices, socioeconomic components, and knowledge gaps related to HAB monitoring
- Develop a framework for a comprehensive monitoring strategy including an implementation plan, and a communication strategy for relevant events and information

Focused Workshop Discussions



- Developing a monitoring strategy and creating recommendations to advance HAB monitoring
- Listing management questions relevant to a monitoring strategy
- Considering potential applications of the monitoring strategy for providing policy recommendations
- Coordinating lab and field methods among researchers
- Exploring a centralized information repository for HAB monitoring data
- Charting objectives and approaches needed for a successful coordinated monitoring program
- Identifying additional monitoring needed to enable synthesis projects that help determine the drivers, mechanisms, and impacts of HABs

Post-Workshop: December 2022 & Forwards



- Discuss workshop outcomes, lessons learned, and next steps
- Develop a list of variables/indicators that should be monitored to detect blooms and their health impacts in near real-time
- Distribute a refined monitoring strategy

Target Audience

This workshop is for the benefit of community members, scientists, and decision makers working in HAB data collection and monitoring. It seeks to dive into how

various community and agency groups can collaborate on the development of a regional monitoring strategy for HABs in the Delta.

Planning Committee

The Delta Science Program is leading this effort with assistance from a planning committee who serve as liaisons to their respective agencies or community constituencies to ensure that the workshop reflects the needs of the broader public.



Learn More

Pre-workshop materials were developed on HAB topics to provide attendees with a foundation for effective discussions; these materials are available on the Delta Stewardship Council's [events web page](https://deltacouncil.ca.gov/events) (deltacouncil.ca.gov/events).

For more information on this workshop, please email hello@deltacouncil.ca.gov.

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