Delta Cyanobacterial Harmful Algal Blooms Monitoring Strategy

Information Sheet

Main Points

- **Harmful Algal Blooms (HABs) are algae or cyanobacteria growths that can impact water bodies and cause serious harm to people, animals, and aquatic life** that contact or ingest water containing HABs.
- **HABs impact people and resources throughout 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 develop mitigation strategies to protect Delta communities from the effects of HABs.
- **At the request of the Central Valley Regional Water Board and California Department of Fish and Wildlife, the Delta Science Program facilitated the development of a cyanobacterial HABs (CHABs) monitoring strategy in partnership with other government agencies, and interested parties, including Tribes** to create a community-oriented approach to better monitor and understand HABs in the Delta. The monitoring strategy development is led by Dr. Ellen Preece (Department of Water Resources), Dr. Mine Berg (Environmental Science Associates), Tricia Lee (Delta Stewardship Council), Dr. Karen Odkins (California Department of Fish and Wildlife), and Jenna Rinde (California Department of Fish and Wildlife).

Background

California relies on the water quality of the Delta. The Delta supports a community of almost 800,000 people, many of whom recreate and fish in the Delta waterways. It also supplies a portion of the water used by more than 27 million Californians. With that in mind, the Delta's water quality conditions are a priority for multiple local, State, and federal agencies. CHABs, which occur when algal species rapidly grow and produce toxic or other harmful effects, detrimentally affect water quality.

CHABs are caused by a combination of drivers such as water temperature, salinity, nutrient abundance, and stagnant water conditions. These drivers appear in various combinations with localized effects that vary depending on environmental and driver conditions. The specific ways in which these drivers interact to create CHABs in the Delta, however, are not well understood.

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

To date, CHABs in the Delta region have primarily been intermittently monitored. Although multiple research groups and agencies collect data on Delta blooms, monitoring is often inconsistent and lacks a standardized approach. Research highlights that HABs are persistent in the Delta and are capable of spreading throughout the Delta ecosystem. Coordinated monitoring efforts across Delta agencies and organizations are needed to fill knowledge gaps on CHABs and develop mitigation strategies to protect Delta communities from CHABs.

Delta Cyanobacterial HABs Monitoring Strategy

The Delta Science Program was approached by the Central Valley Regional Water Board and the California Department of Fish and Wildlife to facilitate a community

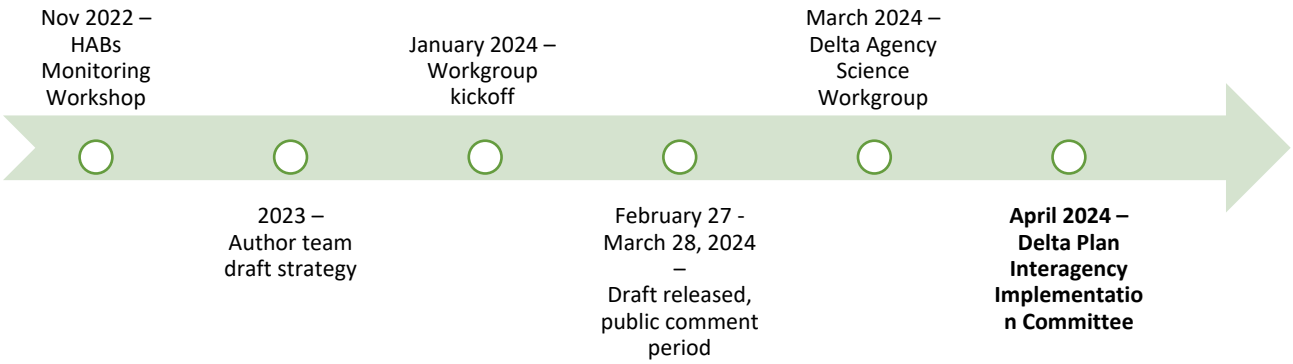
developed CHABs monitoring workshop and ultimately the development of a framework that would prioritize steps for agencies, community organizations, and Tribes to take to improve our understanding of status and trends for CHABs and mitigation options. Many groups were involved in this process, including state and federal agency representatives, Tribes, academic partners, community-based organizations, and consultants.

The Delta cyanobacterial HABs Monitoring Strategy (Strategy) is intended to inform the development of a coordinated Delta-wide cyanobacterial HAB monitoring program that could improve understanding of HABs and help identify possible management and mitigation measures.

- Goal 1: Develop a framework to support Delta cyanobacterial HAB collaboration
- Goal 2: Prioritize management questions and develop monitoring goals and objectives
- Goal 3: Develop a cyanobacterial HAB monitoring program
- Goal 4: Define collaborative reporting protocols
- Goal 5: Utilize a data sharing platform

Next Steps

The authorship team hosted a workshop in January 2024 to hear from interested parties on the goals and objectives of the strategy. The draft Strategy was then posted for a 30-day public comment period and the Delta Agency Science Workgroup, a subcommittee of the Delta Plan Interagency Implementation Committee (DPIIC), met on March 19th to learn more about the strategy and share feedback.



Questions?

You can find more information, including the draft Delta cyanobacterial HABs Monitoring Strategy on the Delta Stewardship Council's Collaborative Science website (https://deltacouncil.ca.gov/delta-science-program/collaborative-science) under the "Leadership in Collaborative Science" dropdown.

If you would like to receive updates on the Delta cyanobacterial HABs Monitoring Strategy, or if you have any other questions on this project, please reach out at CollaborativeScience@deltacouncil.ca.gov.