

Regional Water Quality Control Board
North Coast Region

Executive Officer's Summary Report
Thursday, February 6, 2020
Regional Water Board Office
Santa Rosa, California

ITEM: 6

SUBJECT: Overview of the State and Regional Freshwater Cyanobacteria Harmful Algal Bloom Monitoring and Response Programs (*Katharine Carter, Rich Fadness, North Coast Water Board, Keith Bouma-Gregson and Marisa VanDyke, State Water Board, Office of Information Management and Analysis*)

BOARD ACTION: This is an informational item only. No action will be taken by the Regional Water Board.

BACKGROUND: Cyanobacteria, commonly known as blue green algae, are natural components of healthy marine and freshwater ecosystems. Under various water quality conditions cyanobacteria can rapidly multiply, causing nuisance "blooms."

Not all blooms include toxin-producing cyanobacteria; however, a number of cyanobacteria species are capable of producing toxins that can be harmful to animals and humans. These blooms of toxin-producing species are called cyanobacteria harmful algal blooms (CyanoHABs) and are of special concern because of their potential impacts to drinking water, recreation in lakes and rivers, and effects on fish, domesticated animals and wildlife.

In recent years, there has been an increase in frequency and severity of CyanoHABs around the world, including the North Coast Region. Annually, the North Coast Regional Water Quality Control Board (Regional Water Board) receives reports of nuisance blooms and algal scums, animal illnesses and deaths, and on rare occasions, human health impacts have occurred within the North Coast Region.

There are two types of CyanoHABs: 1) planktonic, wherein the cyanobacteria grow and drift in the open water; and 2) benthic, wherein cyanobacteria are attached to the bottom of a body of water or other surfaces. Planktonic cyanobacteria can appear as green or blue-green specks in the water column or as scums and streaks on the water surface that resemble spilled paint when a bloom becomes large. Benthic blooms can appear as green, brown, yellow, or even black growths on the bottom of lakes and streams and rarely affect the appearance of the surface water. Though planktonic cyanobacteria blooms have been documented throughout the North Coast Region, all the reported animal deaths in the Region have been related to benthic blooms.

Risk factors believed to contribute to CyanoHABs and nuisance blooms are related to climate change and include warm water temperatures, low flows (which allow more sunlight to penetrate the water column), and in the case of some types of cyanobacteria, nutrient (phosphorus and nitrogen) enriched waters. The Regional Water Board is working to reduce these risk factors through its water quality improvement and protection programs

in collaboration with the various counties and other federal, state, tribal, and local agencies.

DISCUSSION: At the February 2020 Board Meeting, staff will be presenting an overview of the State and Regional CyanoHAB programs and a synopsis of Assembly Bill 834 which mandates the State Water Board to establish a freshwater and estuarine harmful algal bloom program.

In January 2016, the Surface Water Ambient Monitoring Program of the State Water Resources Control Board released the California Freshwater Harmful Algal Bloom Assessment and Support Strategy (Strategy), which provides a long-term plan to assess, communicate, and manage CyanoHABs and the toxins they produce. The Assessment and Support Strategy framework focuses on three major areas: 1) event response, 2) ambient monitoring, and 3) risk assessment. The Strategy has resulted in the creation of a Freshwater Harmful Algal Bloom (FHAB) workgroup, which has accomplished several key organizational and coordination milestones since 2016. State Water Board staff will discuss the Strategy, the FHAB workgroup, and the tools that have been developed to support the State's Freshwater Harmful Algal Bloom program.

In June 2016, the North Coast Regional Water Board established a regional Cyanobacteria Harmful Algal Bloom Monitoring and Response Program (Program) to facilitate collaboration and partnerships on monitoring, assessment, response, and outreach in the North Coast Region. Utilizing the tools developed through the state's Assessment and Support Strategy, the Program has grown since its establishment and focuses on those areas that regularly experience CyanoHABs in the North Coast Region, including the Klamath River, Russian River, and South Fork Eel River. Regional Water Board staff will discuss how implementation of the Program occurs in these areas and how these efforts have been tailored in each waterbody to accommodate the varying levels of staffing and resources available.

Resources to support staff participating in the FHAB workgroup currently come from Surface Water Ambient Monitoring Program (SWAMP) funds, resulting in a diversion from other SWAMP program goals, an issue that is growing as the prevalence of CyanoHAB events grows. In September 2019, AB 834 was approved by the Governor mandating the establishment of a formal freshwater and estuarine HABs program at the State Water Board to protect water quality and public health from harmful algal blooms. The legislation requires that the State and Regional Water Boards continue with their current efforts and requires additional monitoring, risk assessment, research, and tool development. Based on the fiscal impact the State Water Board is hopeful that new staff positions will be granted to implement the requirements of the approved legislation.

SUPPORTING MATERIALS:

[Assembly Bill No. 384 Freshwater and Estuarine Harmful Algal Bloom Program \(Full Text\)](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200AB834)
(https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200AB834)

[California Freshwater Harmful Algal Bloom Assessment and Support Strategy](https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/SWAMP/HABstrategy_phase%201.pdf)
(https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/SWAMP/HABstrategy_phase%201.pdf)

Cyanobacteria and Harmful Algal Bloom Network of the California Water Quality Monitoring Council webpage: [My Water Quality: Are harmful algal blooms affecting our waters?](https://mywaterquality.ca.gov/habs/index.html) (<https://mywaterquality.ca.gov/habs/index.html>)

[California Cyanobacteria and Harmful Algal Bloom Network](https://mywaterquality.ca.gov/monitoring_council/cyanohab_network/index.html) webpage
(https://mywaterquality.ca.gov/monitoring_council/cyanohab_network/index.html)

Klamath Basin Monitoring Program [Blue-Green Algae Tracker](http://kbmp.net/bga) webpage
(<http://kbmp.net/bga>)

Sonoma County Department of Health Services [Blue-Green Algae \(Cyanobacteria\)](http://sonomacounty.ca.gov/Health/Environmental-Health/Water-Quality/Blue-Green-Algae/)
webpage (<http://sonomacounty.ca.gov/Health/Environmental-Health/Water-Quality/Blue-Green-Algae/>)