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A Joint Powers Public Agency

Information on Algae Bloom in San Francisco Bay

A harmful algae bloom event has been occurring in San Francisco Bay and Lake Merritt over the past several weeks. Discolored waters in the Oakland estuary served as an early indication of the event, and the algae species was identified as *Heterosigma akashiwo*. The bloom subsequently expanded to portions of the South Bay. As of September 6, the bloom is still on-going but is showing signs of dissipation.

Heterosigma akashiwo has been observed intermittently in various locations around the Bay over the past 20 years, after first being detected here in 2002. *Heterosigma akashiwo* can be toxic to fish, likely causing the fish kills that have been observed at Lake Merritt and areas of the Bay, although the nature of that toxicity is not well understood. While toxicity to humans or pets has not been documented in the scientific literature, some local jurisdictions are warning residents to avoid water contact on a precautionary basis.

Studying what's happening today will help us prevent this from happening again. Local scientists from the San Francisco Estuary Institute, USGS, Baykeeper, and UC Santa Cruz have been actively monitoring water quality related to the current bloom. Within the bloom, very high concentrations of the algae are being detected. By August 31, the algae levels in South Bay had decreased substantially (compared to the prior week), and were accompanied by substantial decreases in dissolved oxygen levels. As algae stop growing, they begin to biodegrade, a process which consumes oxygen. A significant fish die-off has also been observed in multiple locations around the Bay. The science teams are investigating the causes of the fish mortality. Monitoring work is continuing, and the science teams are providing periodic updates to regulators and other stakeholders. Scientists are also collecting information gathered by citizen scientists. Please record your observations at this website: <https://www.sfei.org/content/harmful-algal-bloom-fish-mortality>

Nutrients from wastewater treatment plants are one contributor to algal blooms, but the trigger for this specific event is not known. Although we don't fully understand the causes of blooms like this, EBDA and other public wastewater utilities in the Bay Area are funding ongoing scientific studies to better characterize how specific conditions, such as weather and hydrologic patterns, climate change, nutrient concentrations, and other factors, can initiate and sustain algal blooms. Wastewater is a byproduct of human society – we all flush – but there are ways we can do more to treat it to remove nutrients and to reuse it, particularly in times of drought. EBDA's member agencies all have projects recently completed or underway to upgrade our wastewater treatment plants for these purposes. It takes time and money, but progress is being made.

Lake Merritt is being carefully monitored by the City of Oakland, and they are the best source of information on the latest conditions and investigations there. Their efforts can be tracked on their website here: <https://www.oaklandca.gov/news/2022/community-update-lake-merritt-water-discoloration-near-lakeshore-avenue>

EBDA staff and our counterparts at wastewater agencies around the Bay have been working closely with scientists to monitor and study what's going on to better understand it, identify any ways to improve the current situation, and to prevent it from happening again. We look forward to continued partnership with the community to improve water quality in the Bay.