



California Freshwater & Estuarine Harmful Algal Blooms (HABs)



WHAT ARE CYANOBACTERIA AND HARMFUL ALGAL BLOOMS?

Cyanobacteria (also known as blue-green algae) and algae occur in freshwater and estuarine waterbodies. Algae and cyanobacteria have been around for billions of years and are natural components of ecosystems. They perform many roles that are vital to our aquatic communities, by being a food source and producing oxygen. However, when certain conditions are favorable for these organisms, algae and cyanobacteria can rapidly grow causing “blooms.” Algae and cyanobacteria can produce harmful compounds, such as toxins and taste and odor compounds, that cause health risks to humans and animals. When blooms pose a risk to humans, animals, and the environment, they are referred to as harmful algal blooms (HABs).

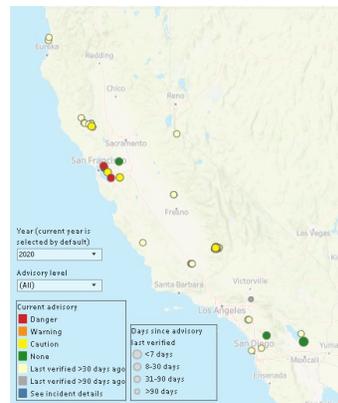
HOW DO I KNOW IF THERE IS A HAB IN THE WATER?

Sometimes the bloom is easily visible, forming a “scum” or discoloration on the water surface. Other times, it is less visible, floating beneath the surface or on the bottom of a water body (benthic). Blooms can appear green, blue, yellow, red, or brown. Cyanotoxins, produced by cyanobacteria, cannot be visually detected in water or tissues. Several guidance documents are available

to aid identification of algae and cyanobacteria ([Fact Sheet ¹](#) & [Visual Guide²](#)), and the [California Freshwater HAB Field Guide³](#) is available to assist in monitoring.

WHERE AND WHEN ARE HABs OCCURRING IN CALIFORNIA?

Voluntarily reported HABs are posted on the [HAB Reports Map⁴](#). In recent years, HABs have been increasing in incidence, duration, and toxicity



statewide, and as a result, human, domestic animal (dogs and livestock, in particular), and wildlife health impacts are on the rise. In 2019, 241 HABs were reported in drinking water and recreational water bodies; a increase of 26%

from the prior year. In some areas, the duration of HABs are increasing from predominantly summer blooms to year-round blooms in some areas.

WHAT CAUSES HABs?

Increased inputs of nutrients like nitrogen and phosphorus (from fertilizers and human or animal wastes), promote cyanobacterial growth and can lead to increased occurrences of HABs. Low flows, stagnant water, increased intensity

1— https://mywaterquality.ca.gov/habs/what/visualguide_fs.pdf

2— <https://drive.google.com/file/d/0B40pxPC5g-DOR2QtUVZhYzNlaXc/view>

3— <https://mywaterquality.ca.gov/habs/resources/field.html>

4— https://mywaterquality.ca.gov/habs/where/freshwater_events.html

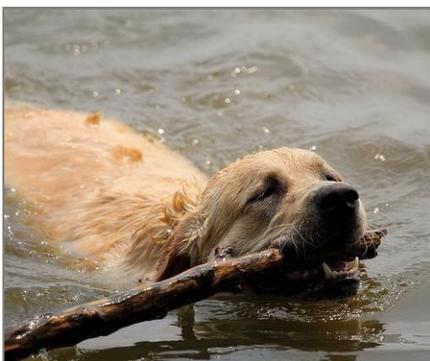
and duration of sunlight, and sustained high temperatures create the ideal conditions for HABs. Current research suggests that the rising temperatures and changing precipitation patterns caused by climate change are a catalyst for their growth.

WHAT ARE THE POSSIBLE HEALTH CONCERNS OF HABs?

Cyanotoxins and algal toxins pose risks to the health and safety of people and pets, drinking water, and recreating in water bodies affected by blooms. They can also accumulate in fish and shellfish to levels posing threats to people and wildlife. Symptoms of HAB-related illness⁵ in people and animals are available from the CA HABs Portal, and by contacting the California Poison Control Center (1-800-222-1222). Of the reported HAB-related incidents in 2019, there were 22 incidents of illnesses reported by the state⁶ to the Centers for Disease Control and Prevention.

CAN ANIMALS BE AFFECTED?

Pets, especially dogs, are susceptible to HABs because they swallow more water while swimming and playing in the water. They are also less deterred by green, smelly water that may contain HABs. Animals can experience symptoms within minutes of exposure to the toxins.



These symptoms include vomiting, diarrhea, weakness, difficulty breathing, and seizures. In

the worst cases, animals have died. If your pet experiences these symptoms after exposure, contact your veterinarian immediately. A veterinarian fact sheet⁷ and an outreach letter to veterinarians⁸ are available. For additional info refer to the Domestic Animals web page⁹.

WHAT GUIDELINES DOES CALIFORNIA USE FOR HABs?

Currently, there are no federal or state regulatory standards for cyanotoxins in recreational waters or drinking water. Participating state agencies have developed suggested guidelines for addressing health

CAUTION

Harmful algae may be present in this water.
For your family's safety:

<p> You can swim in this water, but stay away from algae and scum in the water.</p> <p> Keep children away from algae in the water or on the shore.</p> <p> For fish caught here, throw away guts and clean fillets with tap water or bottled water before cooking.</p>	<p> Do not let pets and other animals go into or drink the water, or eat scum on the shore.</p> <p> Do not drink this water or use it for cooking.</p> <p> Do not eat shellfish from this water.</p>
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Call your doctor or veterinarian if you or your pet get sick after going in the water.
For information on harmful algae, go to mywaterquality.ca.gov/monitoring_council/cyanohab_network
For local information, contact:

concerns for cyanotoxins in recreational waters¹⁰ The Department of Public Health, county health departments, and water body managers are encouraged to use this guidance for posting water bodies when HABs pose a health threat. Guidance is also available for addressing cyanotoxins in drinking water¹¹.

WHAT CAN I DO?

- Report any suspected HAB or potential HAB-related illness¹²
- Practice Healthy Water Habits at your local lake, river, or stream!¹³
- Help reduce nutrients in in your local lake, rivers, and streams by modifying some daily activities¹⁴

5— https://mywaterquality.ca.gov/habs/resources/human_health.html

6— https://mywaterquality.ca.gov/habs/hab-related_illness.html

7— <https://oehha.ca.gov/risk-assessment/fact-sheet/blue-green-algae-veterinarian-reference>

8— <https://oehha.ca.gov/risk-assessment/document/veterinarian-outreach-letter-interagency-working-group-harmful-algal-bloom>

9— https://mywaterquality.ca.gov/habs/resources/domestic_animals.html

10— https://mywaterquality.ca.gov/habs/resources/habs_response.html

11— <https://mywaterquality.ca.gov/habs/resources/index.html#drinking>

12— <https://mywaterquality.ca.gov/habs/do/bloomreport.html>