

California Freshwater & Estuarine Harmful Algal Blooms



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. 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?

Often 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 growing on the bottom (benthic) forming mats¹³. Blooms can appear green, blue, yellow, red, or brown. Cyanotoxins, produced by cyanobacteria, cannot be visually detected in water or fish tissues. Several guidance documents are available to aid identification ([Quick Fact Sheet](#)¹ & [Visual Guide](#)²), and the [CA HAB Field Guide](#)³.

WHERE AND WHEN ARE HABs OCCURRING IN CALIFORNIA?

Suspected HABs are voluntarily reported to the state and are posted on the [HAB Reports Map](#)⁴. HABs have been increasing in incidence, duration, and toxicity statewide; as a result human, domestic animals (particularly dogs and livestock), and wildlife exposure health impacts are on the rise. Between 2021 - 2024 over 600 reports were received annually in drinking water and recreation-

al water bodies; demonstrating a 600% increase since tracking of reports began in 2016. 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 and duration of sunlight, and sustained high temperatures create the ideal conditions for

1— <https://mywaterquality.ca.gov/cyanohab/docs/printable-visual-guide-for-benthic-cyanobacteria.pdf>

2— <https://tinyurl.com/2ypk87ed>

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

4— <https://mywaterquality.ca.gov/habs/resources/reports-map/>

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

HABs. 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 recreation in water bodies affected by blooms. They can also accumulate in fish and shellfish to levels posing threats to people and wildlife.

Pets, especially dogs, are susceptible to HABs because they swallow more water while playing in the water, and are less deterred by smelly, discolored 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 expo-

sure, contact your [veterinarian](#)⁵ immediately.

Learn more about health impacts to [human health](#)⁶, [domestic animals](#)⁷, and [fish and wildlife](#)

⁸. If you suspect an [illness](#)⁹, contact the California Poison Control Center (1-800-222-1222).

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 voluntary [guidance for ad-](#)

[dressing health concerns for cyanotoxins in recreational waters](#)¹⁰. 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 water](#)¹¹.

WHAT CAN I DO?



[Report any suspected HAB or potential HAB-related illness impacting you, your family, animals, and wildlife.](#)¹²



[Help reduce nutrients in your local lake, rivers, and streams by modifying some daily activities.](#)¹³



[Practice Healthy Water Habits at your local lake, river, or stream!](#)¹⁴

- * Heed all instructions on posted advisories if present
- * Avoid algae and scum in the water and on shore
- * Keep an eye on children and pets (dogs)
- * If you think a HAB is present, do not let pets and other animals go into or drink the water, or eat scum and algal accumulations on the shore
- * If you think a HAB is present, reduce potential for inhalation of sprays or mists by avoiding areas downwind of the bloom, and activities near the bloom that could kick up spray, such as boating at higher speeds, water skiing, or splashing.
- * Don't drink the water or use it for cooking
- * Wash yourself, your family, and your pets with clean water after water play
- * If you catch fish, throw away guts and clean fillets with tap water or bottled water before cooking

CAUTION

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

You can swim in this water, but stay away from algae and scum in the water.	Do not let pets and other animals go into or drink the water, or eat scum on the shore.
Keep children away from algae in the water or on the shore.	Do not drink this water or use it for cooking.
For fish caught here, throw away guts and clean fillets with tap water or bottled water before cooking.	Do not eat shellfish from this water.

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: Enter your contact information in this text box

6—<https://mywaterquality.ca.gov/habs/resources/public-health.html>

7— <https://mywaterquality.ca.gov/habs/resources/domestic-animals.html>

8—<https://mywaterquality.ca.gov/habs/resources/fish-wildlife.html>

9—<https://mywaterquality.ca.gov/habs/resources/illness-tracking.html>

10— <https://mywaterquality.ca.gov/habs/resources/response-guidance.html>

11—<https://mywaterquality.ca.gov/habs/resources/drinking-water.html>

12— <https://mywaterquality.ca.gov/habs/bloom-report/>

13— <https://www.epa.gov/nutrientpollution/what-you-can-do>

14— <https://mywaterquality.ca.gov/habs/resources/healthy-water-habits.html>