



**Bureau of  
Environmental Health  
Health Assessment Section**

"To protect and improve the health of all Ohioans"

# Harmful Algal Bloom (HABs) Ohio's Campground Operators and Privately-Owned Lakes and Ponds

## What are Blue-Green Algae?

Cyanobacteria, often called blue-green algae, are bacteria that are naturally found in Ohio lakes, ponds, and slow-moving streams. Although many species of algae do not produce toxins, some species of blue-green algae can cause Harmful Algal Blooms (HABs). HABs can produce neurotoxins (affecting the nervous system), hepatotoxins (affecting the liver) and dermatotoxins (affecting the skin). These toxins can potentially impact the health of people and pets that come into contact with water where HABs are present in high numbers.

## Can you get sick from exposure to Blue-Green Algae (cyanobacteria toxins)?

Yes, you can get sick from exposure to cyanobacteria toxins. But getting sick will depend on the type of cyanobacteria, the levels in the water and the type of contact you had with this "algae."

## What types of health problems can people and pets experience from exposure to HABs?

- **Skin contact:** Contact with the skin may cause rashes, hives, or skin blisters (especially on the lips and under swimsuits).
- **Inhalation of (breathing) water droplets:** Breathing aerosolized (suspended water droplets) mist from the lake water-related recreational activities and/or lawn irrigation can cause runny eyes and noses, a sore throat, asthma-like symptoms, or allergic reactions.
- **Swallowing water:** Swallowing HAB-contaminated water can cause:
  - Acute (immediate), severe diarrhea and vomiting
  - Liver toxicity (abnormal liver function, abdominal pain, diarrhea and vomiting)
  - Kidney toxicity
  - Neurotoxicity (weakness, salivation, tingy fingers, numbness, dizziness,
  - Difficulties breathing, death

To read more about Cyanobacteria Harmful Algal Bloom (HABs) and how they impact health, visit the ODH home page at [www.odh.ohio.gov](http://www.odh.ohio.gov) and select "Harmful Algal Blooms."



## How do you know if you have a cyanobacteria (HAB) bloom or a harmless algae/aquatic plant bloom?

Algae blooms can look like foam, scum, or mats on the surface of fresh water lakes and ponds. They can also make the water look green, blue-green without a scum. However, HAB blooms can be blue, blue/green, bright green, brown, or red and may look like paint floating on the water.

To see the photographic difference between HABs and non-toxic common algae blooms, visit the ODH home page and select the "Photos of Algae Blooms" document.

## How do I report a HAB?

Ohio EPA is collecting reports of algal blooms in Ohio waters. The Ohio EPA HAB report form is available at: [www.epa.ohio.gov/dsw/HAB.aspx](http://www.epa.ohio.gov/dsw/HAB.aspx).

Note you will need Microsoft Excel to complete the electronic form. If you do not have Excel or if you have any questions about reporting an algal bloom, please contact the Ohio EPA Public Information Center at (614) 644-2160.

## When should you sample?

Privately-owned lakes and ponds should sample their water if they meet the following criteria:

- The private body of water is used for swimming, boating or fishing.
- The private body of water is used as a drinking water source for people or livestock.
- The private body of water located in a residential camp or a licensed campground.

## **Who conducts sampling? What is the sampling protocol/safety procedures?**

The private owner/operator can either hire a consultant or conduct the sampling themselves. If you decide you want to conduct the sampling yourself, it is very important you do it in accordance with the sampling protocol established by the Ohio EPA. When sampling, use appropriate safety precautions including wearing rubber gloves and avoid contact with the water and/or scum. For information regarding the Ohio EPA sampling protocol, contact Ohio EPA HAB Coordinator Linda Merchant-Masonbrink at (614) 644-2135 or 644-2001.

## **Who pays for the sampling?**

All costs associated with the testing of a privately-owned lake/pond would be incurred by the owner/operator. Costs may range from \$45 to \$250 per sample depending upon the type of test.

## **What should you test for?**

The water sample should be tested for the following:

- Identification (ID) of the type of cyanobacteria present (genera).
- The type of cyanotoxin produced by the type of cyanobacteria identified (microcystin, anatoxin-a, cylindrospermopsin and saxitoxin).

## **What laboratories are available to conduct the analysis?**

When choosing a laboratory, it is important to make sure the lab can identify the different genera of cyanobacteria present and provide an analysis of the individual cyanotoxins detected. The below list of labs are currently used by the Ohio EPA. Please note that the below list is not a comprehensive listing of the available labs and that the Ohio EPA does not offer an endorsement of any particular lab.

BSA Environmental Services, Inc. (Dr. John Beaver)  
23400 Mercantile Rd. Suite 8  
Beachwood, OH 44122  
(216) 765-0582  
(Algae ID and toxin analyses, not anatoxin-a)

Green Water Laboratories/CyanoLab (Dr. Mark Aubel)  
205 Zeagler Dr., Suite 302  
Palatka, Florida 32177  
386-328-0882  
(Algae ID and toxin analyses, including anatoxin-a)

Celina Utilities-Water Department (Mike Sudman)  
714 S. Sugar Street  
Celina, OH  
(419) 586-2270  
(microcystin analysis)

## **Should you post a caution or warning sign?**

ODH is recommending that public access waters in Ohio be posted with a caution sign as soon as there is visual evidence of a HAB. ODH recommends that a sign be posted which alerts swimmers/boaters/fishers to "avoid contact with the water." For examples of signs, please contact ODH at (614) 466-1390.

## **Is it safe to eat fish caught from HAB-contaminated water?**

Some studies have shown that cyanotoxins can accumulate in fish in waters with very high toxin levels. While there have been no confirmed reports of cyanotoxin-related human health effects related to fish consumption, there are few data on cyanotoxins on which to base judgments about health risk. Should you decide to consume fish from HAB-contaminated waters, you would do so at your own risk, and should remove internal organs, fat and skin, consuming only the fillet.

## **For additional information:**

This fact sheet is intended to provide basic HAB information to Ohio's Campground Operators and to Landowners of Privately-Owned Lakes and Ponds. For a more detailed discussion of HABs and their impact to public health, visit the hyperlinked references listed below.

Ohio Department of Health  
Bureau of Environmental Health  
246 N. High Street  
Columbus, Ohio 43215  
Phone: (614) 466-1390



## **References:**

Ohio Department of Health Blue-Green Algae /Cyanobacteria HABs (electronic August, 2010)  
[www.odh.ohio.gov/odhPrograms/eh/hlth\\_as/chemfs1.aspx](http://www.odh.ohio.gov/odhPrograms/eh/hlth_as/chemfs1.aspx)  
Ohio Department of Health HAB Provider Reference (electronic August, 2010)  
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Ohio Department of Health Photos of Algae Blooms (electronic August, 2010)  
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[www.epa.state.oh.us/dsw/HAB.aspx](http://www.epa.state.oh.us/dsw/HAB.aspx)  
Ohio Department of Natural Resources (ODNR) HAB Website (electronic July, 2010)  
<http://www.ohiodnr.com/tabid/22957/Default.aspx>  
CDC Facts About Cyanobacteria and Cyanobacterial Harmful Algal Blooms (electronic July, 2010)  
[www.cdc.gov/hab/cyanobacteria/pdfs/facts.pdf](http://www.cdc.gov/hab/cyanobacteria/pdfs/facts.pdf)