

# Harmful Algal Blooms (HABs)



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## Funding

This fact sheet was partially funded by a Great Lakes HABs Collaboratory grant, in partnership with the US Geological Survey and Great Lakes Research Initiative.  
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Ohio Sea Grant, based at The Ohio State University, is one of 34 state programs in the National Sea Grant College Program of the National Oceanic and Atmospheric Administration (NOAA), Department of Commerce. Ohio Sea Grant is supported by the Ohio Board of Regents, Ohio State University Extension, other universities, industries, and associations.

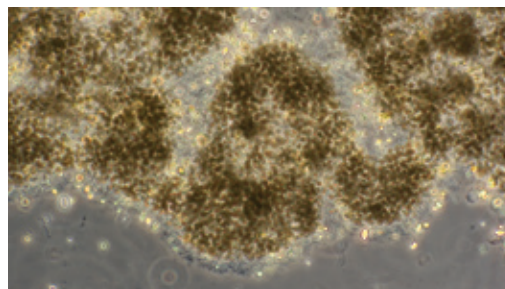
OHSU-FS-1507

## What Are Harmful Algal Blooms?

In freshwaters, a harmful algal bloom (HAB) is the explosive growth of cyanobacteria (also known as blue-green algae) in a body of water such as Lake Erie. Unlike green algae, which are basically aquatic plants, cyanobacteria have the ability to produce toxins that can cause illness or death in humans and pets who come in contact with contaminated water.

In Lake Erie, harmful algal blooms occur most often in the shallow, warm parts of the lake. Because western Lake Erie fits that description well, blooms typically begin to develop there in July, usually peak in mid-August to early September, and may last through mid-October, when the water gets cold again.

Some of the easiest ways to make sure you'll be able to enjoy the water when you're visiting Lake Erie are found online. A number of agencies provide information on Lake Erie water quality, including harmful algal blooms. Visit [go.osu.edu/facts](http://go.osu.edu/facts) for links to their websites.



*Microcystis* Colony





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### What can I do to help?

► Some suggestions for what people can do to help reduce or prevent harmful algal blooms are explained in the online version of this fact sheet, from being choosy about garden fertilizers to working as a community to address the causes of HABs. While this is a challenging problem, everyone can contribute to its solution in one way or another.

[go.osu.edu/facts](http://go.osu.edu/facts)

### Want to learn more?

► We've talked about the basics, but maybe you'd like to dive deeper? The online fact sheet hosts more detailed information about harmful algal blooms and their impacts, along with videos, documents and links to partner websites.

[go.osu.edu/facts](http://go.osu.edu/facts)

### Got questions?

► You can send questions to our panel of experts via the form on the online fact sheet. If your question is frequently asked, it will be posted on the website, otherwise you'll receive an email response.

[go.osu.edu/factsqa](http://go.osu.edu/factsqa)

### What causes HABs to form?

Harmful algal blooms can occur almost anywhere there's water, from retention ponds to Lake Erie. The blooms are fueled by excess phosphorus and nitrogen, two nutrients found in fertilizers and sewage treatment plant discharge, for example. Excessive amounts of nutrients in the water that runs from rivers into Lake Erie lead to excessive algal growth.

Unlike green algae, which prefer cooler water, cyanobacteria need warm water to grow, so most blooms show up in Lake Erie in July and continue through mid-October. The shallow waters in the western basin heat all the way from the surface to the bottom, giving the cyanobacteria plenty of room to grow.

The sediment runoff that brings excess nutrients into the lake also creates favorable conditions for *Microcystis*, the most common cyanobacterium in the open waters of Lake Erie. Because *Microcystis* can float to the surface when the water is calm, it still has access to the sunlight it needs to grow, while other algae sink to the bottom where the suspended sediments make the water too dark for them to thrive. In Sandusky Bay, where the cyanobacterium *Planktothrix* is more common, the suspended sediment creates the lower-light conditions that particular species prefers.

In western Lake Erie, excess nutrients, warm temperatures and calm waters combine into a "perfect storm" of favorable conditions for harmful algal blooms.



### What's the problem?

Algal blooms can cause taste and odor problems in drinking water, pollute beaches and harbors when large amounts of cyanobacteria form unsightly surface scums, and may produce toxins that can harm humans and pets.

These algal toxins can affect the liver, nervous system and skin. Water treatment plants can remove toxins from drinking water and perform regular testing to make sure the water they deliver is safe.

People who fish in Lake Erie may be concerned about how their catch is affected by these toxins, but recent research has shown that filets from Lake Erie walleye and yellow perch are safe to eat as long as consumption advisories from the Ohio EPA are followed.

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