



GET THE FACTS & TAKE ACTION AGAINST ALGAL BLOOM

What Is an Algal Bloom?

An algal bloom is an [overgrowth of algae in water](#). The result is a scummy, often smelly mass that is green, blue, red or brown in color. Some blooms produce toxins that can harm or even kill plants and animals, including protected and endangered species. Algal blooms are a problem in all 50 states.

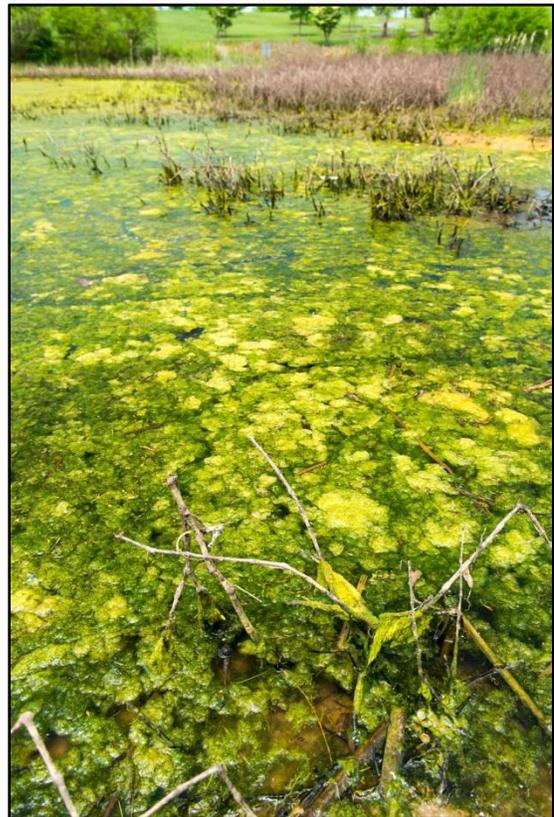
What Causes Algal Blooms?

Scientists say there is no single cause of algal blooms. Often [a complex mix of factors](#) is involved, such as:

- Warm water temperatures.
- Stable or stagnant water with minimal exposure to wind and turbulence.
- Intermittent periods of intense light.
- Phosphorus, nitrogen and other nutrients from a variety of sources, including fertilizer runoff from crop fields and lawns, soil erosion and sewer effluent.
- Low water turbidity, where suspended particles settle out of the water column and allow more light to penetrate.

Algal Blooms Can:

1. Degrade drinking water quality.
2. Be toxic to humans, pets, birds and other wildlife – causing rashes, stomach or liver illness, respiratory problems, neurological damage and even death.
3. Create a costly economic drain on recreation, tourism, fisheries, agriculture, real estate and other industries.
4. Cripple recreation areas by coating the water with an unappealing and often dangerous pungent mass.



An up-close look at a harmful algal bloom. Photo by Eric Vance, U.S. EPA

5. Clog hydropower turbines, flood control gates and crop irrigation equipment and canals.
6. Create hypoxic “dead zones” as dying and decomposing algae deplete oxygen – leaving fish and other oxygen-consuming water organisms unable to survive.

Examples of Algal Bloom Outbreaks

Almost any body of water can be at risk. Here are two high-profile examples:

In South Florida

- Toxic blue-green algae has contaminated [Lake Okeechobee](#), the nation’s third-largest freshwater lake.
- In 2016, [water was released](#) from Lake Okeechobee into the St. Lucie River to avoid a possible breach of a decades-old dike. Algae spread as the water was released, creating issues for communities downstream.
- Several popular Florida [beaches have been closed](#) during recent years to protect swimmers from harmful algal blooms.
- [The economic impact has been significant](#), including lost tourism revenues and the cost of beach clean-up following fish kills. In addition, state officials estimate that \$22 million is spent annually on medical care associated with exposure to these harmful algal blooms.



Algae covers the sand and surf at Henderson Beach State Park, Destin, Florida. Photo courtesy of Rebekah D. Wallace, University of Georgia, Buqwood.org

In Lake Erie

- [A 2014 algal bloom](#) left more than 400,000 people in Toledo, Ohio, and parts of Michigan without clean drinking water. An [economic study](#) showed the bloom produced a \$65 million drain on the economy, including \$18 million in reduced property values, \$20 million in reduced tourism, \$23 million in reduced recreation and \$4 million in increased water treatment costs.
- [A bloom occurring the following year](#) in western Lake Erie was the largest on record — covering an area the size of New York City.

Steps Communities Can Take to Prevent or Treat Algal Blooms

1. **Create site-specific action plans** *before* a problem develops so quick action can be taken to mitigate risks.
2. **Monitor bodies of water** for new blooms so affected areas can be treated while they are small and more readily manageable.
3. **Take steps to prevent nutrient pollution**, including the creation of buffer strips planted along bodies of water to trap eroded soil and nutrient-rich runoff and the development of effective educational programs.
4. **Use physical/mechanical controls where applicable**, such as mats to cover benthic algae, harvesters, track hoes and drag lines, aerators, mechanical mixers and ultrasound devices.
5. **Use chemical controls**, such as algaecides, that are approved by the US Environmental Protection Agency (EPA). Other approaches may be locally applicable if approved by regulatory agencies, including coagulants, flocculants and hypolimnetic oxygenation, as well as aluminum, iron salts or lime to counteract nutrients.
6. **Use biological controls where applicable**, such as floating artificial wetlands and organisms that feed on algae, including tilapia and other algae-eating fish. Check local regulations and scientific data to determine the efficacy of any control tactic under consideration.

How You Can Help

1. **Report algal bloom sightings** to the agency responsible for the body of water if known, or contact [state authorities](#).
2. **Take commonsense measures to keep from spreading algae to new locations**, including careful inspection and washing of boats and trailers, canoes, kayaks, jet skis, bait buckets and other water sports equipment.
3. **Encourage local, state and federal officials** to make protection and conservation of water resources a priority, including the effective monitoring and treatment of algal blooms.

To Find Out More

- The [Aquatic Plant Management Society](#) offers a variety of online [resources](#) and [links](#).
- The [Aquatic Ecosystem Restoration Foundation](#) offers a free best management practices manual on the [Biology and Control of Aquatic Plants](#), which includes two chapters dedicated to managing algae.
- The National Oceanic and Atmospheric Administration offers a [harmful algal bloom forecast system](#).
- The U.S. Environmental Protection Agency offers educational resources on [nutrient pollution and algal bloom](#).
- The U.S. Department of Agriculture has [released a new report](#) on how farm conservation practices are reducing the chances of harmful algal blooms in the Lake Erie basin.