



Algae has been a long-term issue in Grand Lake St. Marys, Mercer County, Ohio. (Photo by Linda Merchant-Masonbrink, Ohio EPA-DSW)

How can I keep my family, pets and livestock safe?

- Keep people, pets and livestock out of water with algal blooms. *"When in doubt, keep them out."*
- Keep livestock fenced out of water with algae blooms.
- If your pets do enter the water, be sure to rinse them off well so they do not lick algae off their fur or skin as toxins may still be present.
- Do not let your pet eat algae off the beach as toxins may still be present.

How can I help prevent HABs?

- Use fertilizer sparingly.
- Check and maintain septic systems.
- Prevent runoff from agricultural and livestock areas to any surface water.
- Establish maintenance-free native plants along the shoreline to filter nutrients and to deter geese.
- Do not treat established blooms with algaecide because that may release toxins into the water and result in high toxin levels.
- Install a bottom aeration system in small ponds to minimize nutrient recycling.

- Fence livestock to keep them out of streams and ponds with algae blooms and prevent manure runoff from entering streams and lakes.
- Report manure runoff to Ohio EPA by calling the Division of Surface Water at (614) 644-2001 or the Emergency Response Hotline at (800) 282-9378. You may also contact your local soil and water conservation district.
- Work with watershed coordinators to coordinate larger-scale efforts to minimize nutrient runoff. (See <http://ohiowatersheds.osu.edu/groups/>.)

Where should I report HABs or HAB-related illnesses?

Report Blooms

- Ohio EPA HAB coordinator, (614) 644-2001

Report Illnesses (after immediate treatment)

- For animals: State veterinarian (614) 728-6220 or (800) 300-9755
- For humans: Ohio Department of Health, Bureau of Environmental Health, (614) 466-1390

How can I get more information?

Visit Ohio EPA's inland lakes Web site at www.epa.ohio.gov/dsw/inland_lakes/index.aspx.



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Cover image: Tributary to Muddy Creek in Warren County, Ohio, 2009. (Photo by Dale Farmer, Ohio EPA-DERR)



Environmental
Protection Agency

Harmful Algal Blooms – Protect Your Pets and Livestock



*When in doubt,
keep them out*

What are harmful algal blooms?

Harmful algal blooms (HAB) include blue-green algae, which are actually a type of photosynthesizing bacteria called **cyanobacteria**.

These organisms may produce a number of types of toxins, including nerve toxins, liver toxins and skin irritants that can cause illness, irritation or even death to pets, livestock and people.

What causes HABs?

HABs occur when excess nitrogen and phosphorus are present in lakes and streams. Such nutrients can come from runoff of over-fertilized fields and lawns, from malfunctioning septic systems and from livestock pens.

Why should I be concerned?

Blue-green algae are natural inhabitants of most surface waters. However, when conditions are right, they produce large blooms (excessive growth) and may contain toxins.

Many dogs and livestock have died from ingesting HAB toxins. In addition, there have been many documented human illnesses attributed to HABs.

Routes of exposure to HAB toxins are primarily through ingestion, skin contact and inhalation.



Not all algae blooms look alike. A bloom in a tributary to Warren County's Muddy Creek, left, was thick and slimy, like paint. A bloom in the Ohio River in Cincinnati, right, appears as colonies or ribbons in the water. (Photos by Dale Farmer and Jim Crawford, Ohio EPA-DERR)

How do I know if algal toxins are present?

Algal toxins cannot be seen, smelled or tasted and can persist well after the disappearance of an algae bloom. Algal toxins are not always present in algal blooms, but when they are, they are usually most concentrated in scums.

How can I identify a HAB?

Nobody can visually distinguish a toxic algal bloom from a non-toxic algal bloom. If you see a large growth of algae, keep people, pets and livestock out of the water. HABs can distribute throughout the water or present as surface scums. Scum color varies and includes white, brown, purple, blue-green and black. Some scums may appear to be green paint spills, green globs or dots in the water. Sometimes there is a foul odor.

What should I do if my family, pets or livestock become ill?

For humans, contact a doctor right away. For pets and livestock, immediately take your pet to the vet, or contact a veterinarian about livestock illness. Indicate that your animal was in water containing an algal bloom and was drinking the water; eating algae off the beach; or licking algae off its fur/skin while self-grooming. Time can be critical because, according to Dr. Carlson, some exposures to HABs can produce life-threatening illnesses within a half-hour of ingestion, while other symptoms may take several hours to days to emerge.

What are the symptoms?

Humans: Numbness of lips, tingling in fingers and toes, dizziness, headache, rash or skin irritation, abdominal pain, diarrhea, vomiting and death. Also, volatilized toxins can cause respiratory distress such as that experienced by those near the coast during red tide events (caused by another HAB organism).

Pets and livestock: According to Dr. Michael Carlson, diagnostic toxicologist with the UNL Veterinary Diagnostic Center at the University of Nebraska, liver toxins such as microcystin can cause lethargy, vomiting, diarrhea, weakness, pale mucous membranes and death.

Animals suffering from the nerve toxin, anatoxin-a poisoning, can experience muscle tremors, rigidity, lethargy, respiratory distress, convulsions and death. Victims of the nerve toxin anatoxin-a(s) poisoning can experience salivation, urination, defecation, secretion of tears, tremors, shortness of breath, convulsions and death.

This NASA/Landsat image of Lake Erie shows a large algae bloom in the western basin stretching from Toledo to Sandusky.



A boat sits in the algae-laden water in Lake Erie near South Bass Island. (Photo by Melinda Huntley, Ohio Sea Grant)

