What are Harmful Algal Blooms?

Cyanobacteria (cy·a·no·bac·te·ri·a), also known as blue-green algae, are a natural part of lakes, rivers and ponds. Unfortunately, some cyanobacteria can produce toxins, called cyanotoxins (cy·a·no·tox·ins), that can make people and animals sick. When conditions are right, these organisms can rapidly increase to form cyanobacterial blooms—or Harmful Algal Blooms (HABs). These blooms can last a few days, weeks, or longer, and are considered harmful because they may contain cyanotoxins. A bloom can start out small, become very large in size, and may give off a bad odor.

What does a harmful algal bloom look like?

Not all algal blooms have cyanotoxins, so it is difficult to tell if it is harmful by looking at it. HABs can be a variety of colors such as green, blue-green, blue, brown, yellow, white, purple, or red. HABs can look like scums in the water and may have small flecks, foams, or sometimes globs and mats floating in it. The water can also look like it has spilled paint or a green sheen on the surface.

What causes a HAB?

A HAB can happen when the water temperature is warm, the lake is calm, and there is a high level of nutrients, like phosphorus or nitrogen, in it. High levels of nutrients can come from pollution such as lawn and farm fertilizers, malfunctioning septic systems, animal manure, storm water runoff, and sewage treatment plant discharges. Invasive zebra and quagga mussels help make water conditions right for HABs. They eat other algae but release cyanobacteria back into the water.

When do HABs happen?

HABs typically occur in Michigan during the summer months and into the fall. A bloom can last days to months. Blooms can change in size, severity, and location within the same day. Blooms may disappear on a waterbody but then form again weeks later.

What should I do if I think I've found a HAB?

You cannot tell if an algal bloom is harmful just by looking at it. Stay out of the water and do not let children or pets play in the water or near the shoreline where you suspect a HAB may be present. Unless the bloom covers a large part of the lake, people can limit their risk of contact with it by using an unaffected part of the lake.

If advisories, signs, or closings are posted about the possibility or the presence of a HAB, pay attention to the advisory or warning about using the water.

You may also see advisories or closings issued for some beaches for coliform bacteria, such as E. coli, and should pay attention to those warnings. More information on this monitoring can be found at EGLE.state.mi.us/beach.

Who should I contact if I think I've found a HAB?

Always report suspicious-looking algae to the Michigan Department of Environment, Great Lakes, and Energy (EGLE) by visiting Michigan.gov/HABs and clicking the "Report It to EGLE" button. When filling our the form, please include photo(s) of what you see. You can also make a report by calling the Environmental Assistance Center at 800-662-9278.

Do not try to treat the water to kill the HAB because this may release cyanotoxins into the open water.

What are the health effects in people?

Skin contact with HABs may cause irritation such as rashes, hives, or skin blisters. It may also cause runny eyes and nose or asthma-like symptoms. Thoroughly rinse off with fresh water if the skin comes into contact with a HAB.

Recreational water sports like boating and jet skiing may create water spray into the air. If HABs are present, contact with the airborne cyanotoxins in the spray may cause skin, eye, nose, or throat irritation.

Swallowing large amounts of water having cyanotoxins in it may cause stomach pain, vomiting, diarrhea, weakness, numbness, headaches, dizziness, or difficulty breathing. Frequently swallowing or swallowing large amounts of cyanotoxins can harm the liver or kidneys.

Symptoms of illness from cyanotoxins may appear within hours to days. If symptoms do appear, the severity will depend on the type of cyanotoxins with which the person had contact, how the person had contact (touching, swallowing), and how long the contact lasted.

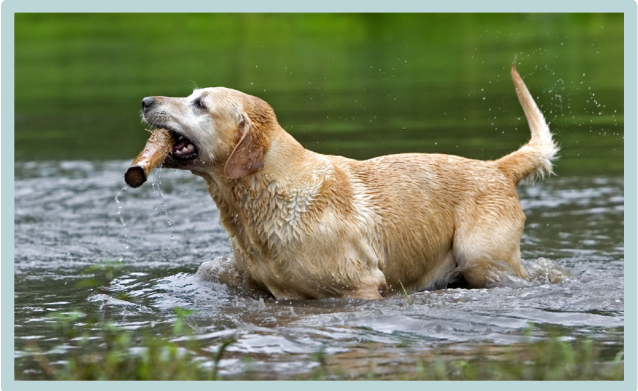
If you may have had contact with or swallowed water containing cyanotoxins, and have any of the symptoms listed above, talk to your doctor or call Poison Control at 800-222-1222.

If symptoms are severe, get emergency medical attention as soon as possible.

What are the health effects on pets or livestock?

If you see a possible HAB, do not allow your pets or livestock to come into contact with it—especially dogs. Dogs are more likely than people to drink scummy water and can swallow a lot of water for their size.

Because dogs can swallow cyanotoxins when they groom or lick themselves, it's important to rinse them off with fresh water after contact with water that may have had a HAB.



Symptoms of illness from cyanotoxins often appear quicker in animals than in people—sometimes in minutes to a few hours. Symptoms in animals can include: vomiting, diarrhea, fatigue, staggered walking, excessive drooling, and convulsions. Deaths can occur.

Contact a veterinarian immediately if pets or livestock have had contact with a HAB or are showing signs of illness.

If you think your pet or livestock is ill due to a HAB, report it to the Michigan Department of Agriculture and Rural Development, Animal Industry Division (AID), at 800-292-3939. The AID is attempting to track HABs to help protect pets and livestock.

Can I swim, fish, or go boating if I suspect a HAB may be present?

It is best to not swim, wade, or touch the water where harmful algae may be present. Algae can thickly cover the surface of the water making it difficult to see underneath to tell how deep the water might be or see rocks in the water. Trying to wade or swim through thick algae could be dangerous.

Unless a HAB covers a large part of the lake, people can lower their risk of contact with harmful algae by using an unaffected part of the lake. People and pets should be rinsed thoroughly in fresh water if there has been any skin contact with a HAB.

People and pets should avoid the water entirely, including fishing and boating activities, if there is a large HAB spread out across the waterbody.

Can I eat fish if HABs are in the water?

When a HAB is present, the meat of fish (the filet), and especially the guts and organs (liver, kidney, etc.) may have small amounts of cyanotoxins. The amount of cyanotoxins found in fish depends on several factors, including how badly and for how long the cyanobacteria has been blooming in the area where the fish are caught.

Following the Eat Safe Fish waterbody-specific guidelines, or Statewide Safe Fish Guidelines, and eating only the filets (and not the guts) lowers the potential health risk of eating fish from areas affected by HABs and from other chemicals that might be found in them. The guts should be thrown away and filets should be rinsed with fresh water before cooking.

What is the State doing to protect the public?

EGLE is testing for HABs in waterbodies across Michigan, but many areas affected by HABs go unnoticed. It is also important to learn what HABs look like. Be alert and report suspicious algal blooms.

When possible, EGLE collects water samples to test for HABs. EGLE notifies other state departments and the local health department of the lab results. These departments work together to determine the safety of the water for people and animals.

Health departments may issue advisories by posting signs or sending out notices to the public. Public health advisories may say there is a need to avoid areas with harmful algae, specific beaches, or the whole waterbody. Look for and follow those advisories.

What can people do to help prevent HABs from occurring?

Learning about nutrient pollution, such as too much nitrogen and phosphorus, can help to reduce or prevent HABs from happening in waterbodies. High levels of nutrients may come from agricultural fertilizer, lawn fertilizer, detergents, sewers, and malfunctioning septic systems.

People can help reduce HABs in the environment by doing simple actions, like:

- using phosphate-free detergents,
- removing pet waste from lawns,
- applying fertilizers only when necessary and at the recommended amount,
- taking care to not spread aquatic invasive species to waterbodies while boating and fishing; and
- volunteering in local watershed protection efforts.

In some areas, people can take part in monitoring programs that test and assess local water quality. Contact MiCorps (MICorps.net), nearby lake associations, the local watershed council, or the local water resources commissioner's office for opportunities in your area.

Agency Contacts for HABs Questions

MDHHS Michigan Department of Health & Human Services

For more information about HABs and your health, contact MDHHS at 800-648-6942.

Michigan Department of Agriculture & Rural Development

For more information about HABs and pets and livestock, contact MDARD at 800-292-3939.

EGLE Michigan Department of Environment, Great Lakes, and Energy

For more information about HABs and the environment, contact EGLE at 800-662-9278.

More information can be found at Michigan.gov/HABs.

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