Essex Region Conservation Authority

Blue-Green Algae Blooms Frequently Asked Questions (FAQ)

1. What are blue-green algae?

Blue-green algae are primitive, microscopic plants that live in fresh water. Their scientific name is Cyanobacteria but they are commonly known as 'pond scum'. Normally blue-green algae are barely visible. These algae thrive in areas where the water is shallow, slow moving, and warm, but they may also be present below the surface in deeper, cooler water.

2. What are algal blooms and why do they happen?

When certain conditions are present, such as warm weather, low winds and high levels of plant nutrients in the water, blue-green algae populations can very quickly increase to form a large mass called an algal bloom. The bloom can cause the water to have a foul odour and pea-soup colored foam, scum or mat appearance. Algal blooms can block sunlight that other organisms need to live. When the algal blooms start to die, the oxygen in the water starts to deplete. Blooms most commonly occur during the late summer and early fall.

Phosphorus and nitrogen are the main plant nutrients that all plant types, including algae, need to grow. These substances are present in household and agricultural fertilizers, industrial wastewater, sewage, waste management systems and septic systems. Plant nutrients are carried to water bodies through rain runoff or when snow melts, and become a source of food for algae and other plants. Phosphorus greatly influences the growth of algal blooms.

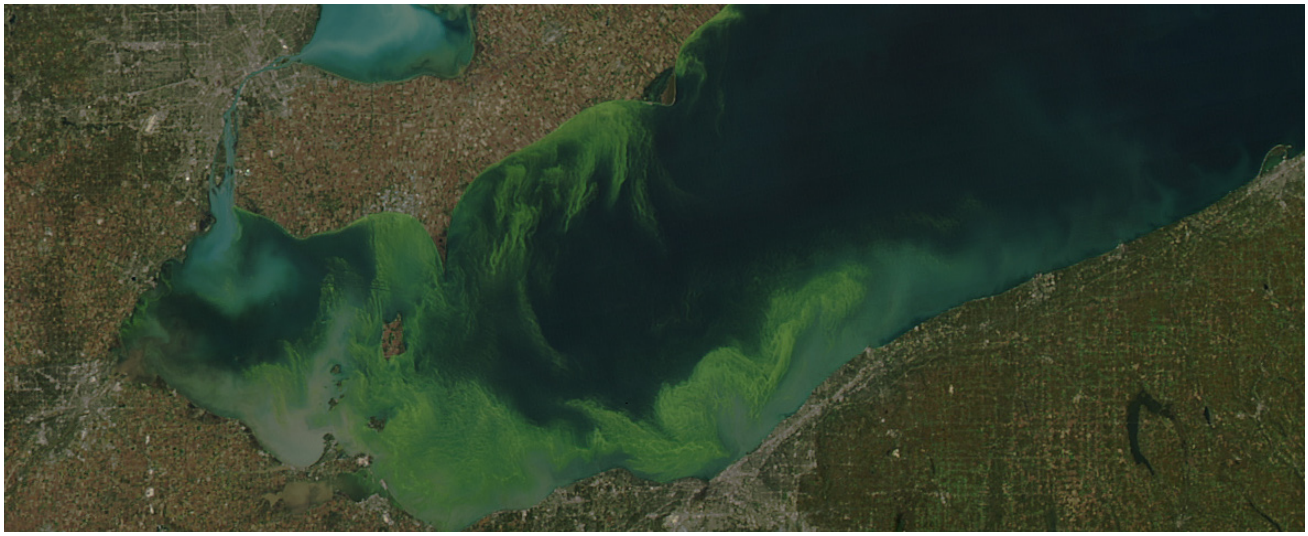
3. Are algal blooms poisonous?

Some algal blooms can produce toxins that are harmful to the health of people, animals, plants and the environment. The most common

Discover

Develop greater scientific knowledge of our region in order to adapt to climate change and respond to its impact on the safety, health, and economic well-being of our residents.

ERCA has developed a vast amount of scientific knowledge on our region's natural and cultural landscapes, shorelines, and watersheds. We know from our experience that our region is impacted by, habitat loss, coastal processes, and changing land use patterns. The ability of the region to adapt to changing climate conditions, unpredictable weather and associated flood threats directly impacts the safety, security and economic well-being of our residents.



Above: Blue-green algae blooms wash up on the shores of Kingsville, October 2011.

Left: A NASA satellite image of blue-green algae blooms in Lake Erie, October 2011.

toxins in blue-green algal blooms are called microcystins. These toxins are released to the water when the algae cell wall is broken. **As a precaution, any blue-green algal bloom should be regarded as being potentially toxic.**

Different blue-green algae toxins can irritate the skin or cause damage to the liver or nervous system. If you drink water or eat fish or blue-green algal products (such as health supplements) containing elevated levels of toxins, you may experience headaches, fever, diarrhoea, abdominal pain, nausea and vomiting. If you swim in contaminated water, you may get itchy and irritated eyes and skin, as well as other hay fever-like allergic reactions. Children are at greater risk if they swallow high levels of toxins, because of their comparatively lower body weight. Pets and other animals could also become extremely ill. If you suspect you might have come into contact with blue-green algae toxins and are experiencing any of the above symptoms, rinse any scum off your body and consult your physician immediately.

4. What happens if blue-green algae is in my drinking water?
In treated drinking water, if the toxin is found to be at levels higher than the respective treated drinking water standard, the Ministry of Environment (MOE) is notified. MOE then notifies the local Health Units, municipalities, Conservation Authorities and other stakeholders. Local Health Units notify the public.

5. Who do I call if I suspect the bloom is blue-green algae?
If you suspect a blue-green algae bloom, assume toxins are present. Avoid using the water for any purpose and call the Ministry of the Environment (MOE) Spills Action Centre (SAC) at **1-800-268-6060**.

6. What do I do if I see blue-green algae on my shoreline?
- Avoid all contact with the water
- Use alternate water sources as needed
- Keep children and pets away from the algae
- Do not use the water for drinking or any other purpose
  (note: countertop jug filtration systems do not properly remove the algae)
- Do not boil the water as this **may release more toxins**
- Do not add any chemicals to the water, as the use of herbicides, copper sulfate, other algaecides and disinfectants like chlorine **may also release more toxins**

7. How can blue-green algae be reduced or prevented?
Algae needs plant nutrients to grow. Reducing or eliminating the plant nutrient input to water bodies is key to reducing or preventing the growth of blue-green algae. Urban and rural best management practices such as using phosphate-free detergents, eliminating the use of fertilizers and maintaining naturalized shoreline on lakefront properties, proper maintenance of septic tanks and reducing agricultural runoff (for example, through crop rotation and cover crops) will all help reduce the nutrient input to water bodies.

8. What other testing for blue-green algae toxins in Lake Erie is being done?
- In 2012, the MOE is undertaking sampling in the western basin of Lake Erie and in the Lake St. Clair during the summer-fall months to test for the blue-green algae toxin, microcystins, in the nearshore waters. Test results will be shared with local Conservation Authorities and other organizations.

- The National Oceanic and Atmospheric Administration (NOAA) Center of Excellence for Great Lakes and Human Health located in Ann Arbor, Michigan, tests for microcystins weekly during warmer months as well, at several locations in the western basin of Lake Erie. http://www.glerl.noaa.gov/res/Centers/HABS/western_lake_erie.html.

- A Harmful Algal Bloom (HAB) Bulletin has been developed by NOAA to provide a weekly forecast for toxic algal blooms in western Lake Erie. When a harmful bloom is detected by the experimental system, scientists will issue the forecast bulletin. The bulletin depicts the HABs' current location and future movement, as well as categorizes its intensity on a weekly basis. http://www.glerl.noaa.gov/res/Centers/HABS/lake_erie_hab/lake_erie_hab.html

Resources/Links:

http://www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/std01_079455.pdf

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http://www.ec.gc.ca/inre-nwri/default.asp?lang=En&n=99B93178-1

http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/cyanobacter-eng.php

http://www.cdc.gov/nceh/hsb/hab/default.htm

http://www.glerl.noaa.gov/pubs/brochures/bluegreenalgae_factsheet.pdf

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