Lower Thames Valley Conservation Authority

Rural Best Management Practice Factsheet

Harmful Algae Blooms and Lake Erie

What are Harmful Algae Blooms (HABs)?

Algae blooms are the overgrowth of algae in water. Not all algae blooms are harmful, but what makes some algae blooms harmful are the toxins which they can produce. These toxins can have deadly consequences for drinking water supply, tourism opportunities and aquatic life.


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Blue-green algae closes nearly all Chatham-Kent beaches

Chatham-Kent Public Health Unit says there is 'intense green water along the shores of Lake Erie and Lake St. Clair'

CBC News Posted: Jul 17, 2013 8:13 AM ET | Last Updated: Jul 17, 2013 1:40 PM ET

Blue-green algae can produce toxins that are harmful to the health of people and animals. (Canadian Press File Photo)

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News clip from July 17, 2013 advising of the closures of Chatham Kent beaches.

What causes Harmful Algae Blooms (HABs)?

A variety of factors influence the growth of algae which include: sunlight, nutrients (such as phosphorus) and slower moving water. The growth of algae is also influenced by warm water temperatures. Through a process called eutrophication, sunlight, nutrients and slow moving water influence the growth of algae.

Why was Toledo, Ohio's water supply shut off in early August 2014?

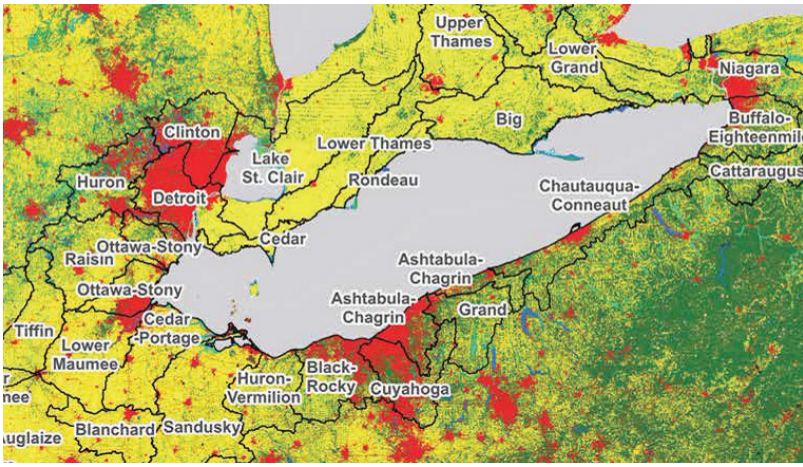
The tap water ban in Toledo, Ohio lasted from August 2 - August 4 of 2014 when close to half a million people were told not to use water for drinking, cooking or bathing. This was because a Harmful Algae Bloom was surrounding the water intake pipes. The water supply was shut off due to the harmful toxins that were found in the water supply.

Why are algae blooms talked about more in Lake Erie than other Great Lakes?

The Lake Erie Watershed drains a total of 58,800 kilometers squared and is the most densely populated Great Lakes basin, with a population of 11.6 million people. Lake Erie is also the smallest and shallowest of the Great Lakes, at an average depth of 19 meters (62 feet) which means water is able to warm more quickly.

Why are the harmful algae blooms only on the west side of Lake Erie?

The western basin of Lake Erie is the far west side of the lake. Harmful Algae Blooms occur more often due to a lot of different variables. The western basin is shallow with average depth of 4.26 meters (24 feet). Almost 90% of all water flowing into Lake Erie enters through the western basin. The western basin is one of the most populated areas with metropolitan Detroit located here.



Land Uses in Lake Erie Watershed: Red - urban land use, yellow - agricultural land use, green - natural cover (LEEP, 2014).

Where does the Phosphorus originate?

Rural Residential/Urban Sources:

- Discharge from wastewater treatment plants
- Discharge from cottages along lakefront via septic tanks
- Construction activities
- Storm water runoff
- Lawn and garden activities

Agricultural Sources:

- Runoff of fertilizer and manure application during spring snowmelt and heavy rains
- Soluble Phosphorus through tile drainage system

Detroit Wastewater Treatment Plant — In 2012, the plant was responsible for 7.8 billion gallons of untreated or partially treated sewage into the Detroit River.

Farmer spreading manure onto his field.

Who is to blame for Phosphorus entering Lake Erie?

Not one sector can be held completely responsible! Ultimately, nutrients entering Lake Erie are not an urban based issue or agricultural based issue— it is a broader societal issue.

What can I do to prevent nutrients from entering Lake Erie?

Rural Residential/Urban:

If you have concerns with your septic tank being faulty, an inspection of the tank is recommended. This will determine if it is functioning correctly or leaching nutrients into surface water.

Urban Best Management Practices (BMP's) can be implemented to help reduce lawn and garden fertilizers. Try urban storm water management and better management of lawn and garden wastes.

Agriculture:

To assist in preventing erosion and nutrient run-off, Agricultural Best Management Practices (BMP's) can be implemented on your property such as buffer strips, cover crops etc. Grant opportunities may be available to help nutrient loss reduction and prevent nutrients from entering Lake Erie. For more information visit the Lower Thames Valley Conservation Authority website at www.ltvca.ca or call 519-354-7310.

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