

Picture Courtesy of MOECC

# Blue-Green Algae

*Teresa Clow, Public Health Inspector*



# Blue-Green Algae



Leeds, Grenville & Lanark District

**HEALTH UNIT**

Photo Courtesy of MOLCC

# What is Blue-Green Algae?

- Blue- green algae is the common name for *Cyanobacteria*
- They are microscopic organisms (not a true algae)
- While they may be new to your lake, they have existed for billions of years
- These bacteria have characteristics that are common with algae
- They can be blue-green, olive-green to red
- Some blue-green algae produce toxins



# What conditions are needed?

- Blooms typically occur in warm water
- They appear in late summer and early fall
- Shallow, slow moving water is more vulnerable (shallow bays and around docks)
- Blue- green algae can still be present in deeper cooler water
- Nutrients in the water such as *phosphorus* and nitrogen support the growth of blue- green algae





Blue-green algae thrives in warm, shallow, slow-moving water. Blooms are commonly found near docks and shoreline areas.



Picture courtesy of MOECC

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# Recognizing Blue-Green Algae?

- Blue-green algae are usually not visible in the water
- In favourable conditions, they multiply and can cover a large area in the water with scum (bloom)
- Ponds, rivers, lakes and streams are vulnerable
- Sometimes seem to appear overnight- blooms may be suspended at different depths and sink or rise to move to where nutrient and light levels are the highest



# Recognizing Blue-Green Algae?



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# Recognizing Blue-Green Algae?

- Dense blooms may make the water appear bluish- green or they may look like:
  - Pea soup
  - Turquoise paint
  - Spilled paint with various swirls
  - Solid in consistency
  - Fresh blooms may smell like freshly mowed grass
  - Degrading blooms may smell like rotting garbage





# Recognizing Blue-Green Algae?



Photo Provided to Health Unit by Upper Rideau Lakes Assoc.

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# Is a Blue-Green Algae Bloom harmful?

- Blue green algae blooms cause aesthetic concerns
- Some blooms may produce toxins
- Toxins are released when the blue-green algae cell walls break down (cell death, damage by chemicals)
- Toxins can be harmful to humans and animals
- Levels of toxin may be higher when a bloom is concentrated in an area
- You cannot visually tell if a blue-green algae bloom is producing toxins or not and at what levels - *use caution*



# Risk: Health

## *Toxins can cause:*

- Itchy and irritated eyes and skin, hay fever-like allergic reactions if you swim or bathe in contaminated water
- Headaches, fever, abdominal pain, nausea and vomiting, if ingested i.e., drinking water or consuming fish
- Liver and brain problems (in higher concentrations)
- Children are at greater risk because of lower body weight
- Pets and livestock could become very ill or die



# Risk: Drinking Water



- Surface water is never a safe source of drinking water without effective treatment
- Surface water and shore wells may be at risk
- Common treatment systems such as UV light, chlorination, boiling are ***not effective***
- Consult a water treatment company if you use surface water for drinking
- Use an alternate safe source –
  - ***Do not boil; do not cook or wash with it***



# Risk: Recreational Water

Avoid recreational activities that increase exposure to toxins produced by blue-green algae

*The following factors may help you decide when to resume normal activities:*

- Faster moving water will dilute and move toxins out more quickly, than stagnant slow moving areas (assess your local conditions)
- Skin irritation indicates level of toxins is significant, (so if this happens rinse off and stay out of the water a few more days and reassess)
- Surface water has the potential to be contaminated with other micro-organisms that can affect health so avoid swallowing



# Risk: Consumption of fish

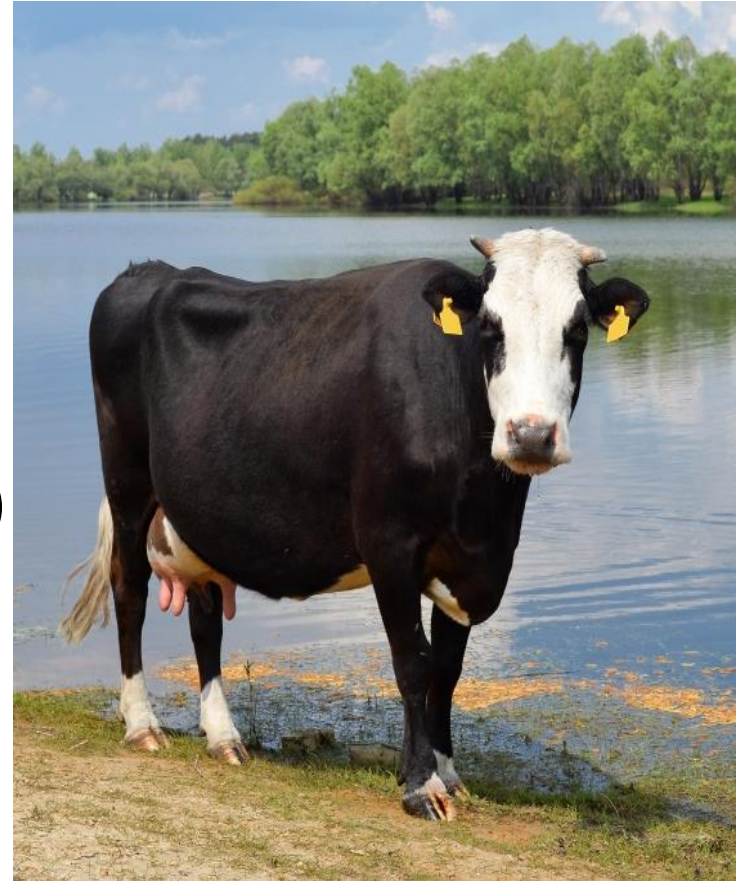
- Be cautious about consuming fish caught in water where a blue-green algae bloom has occurred
- If toxins are present they are concentrated in the liver
- Avoid consumption of liver, kidneys and other organs of fish
- Avoid consuming fish for at least 2 weeks after the bloom is gone



# What can I do to reduce algae blooms?

## *Control nutrient levels by:*

- ✓ Avoiding the use of household fertilizers on waterfront properties
- ✓ Reducing agricultural runoff (by planting or maintaining vegetation)
- ✓ Preventing access of farm animals to surface water



# What can I do to reduce algae blooms?

- ✓ Use phosphate free products i.e., detergents/cleaners, personal care products
- ✓ Maintain a natural shoreline
- ✓ Ensure your septic system is far enough away from the lake and is operating properly and maintained as needed





# What do I do if I suspect a blue-green algae bloom?

- ✓ Use the precautionary principle, assume toxin is present and avoid exposure to the water (human and animal)
- ✓ Call the **Spills Action Centre** to report the sighting

**1-800-268-6060**

- ✓ Ministry of Environment and Climate Change will access and determine if samples will be taken - they are the lead agency on blue-green algae
- ✓ Inform your lake association/neighbours so they can take precautions



# Limitations of testing

- The only way to confirm if toxins are present is through sampling
- Grab samples are not representative of a body of water, they provide information on the water where the sample was taken at that particular point in time
- They provide limited value in declaring an area safe
- Users must become informed on conditions that impact a bloom to make informed decisions on when to resume recreational activities



# Getting the word out

- The Health Unit would like to collaborate with local lake associations in getting the message out to residents and visitors of lakes within Leeds, Grenville and Lanark that are affected by blue-green algae
- There are many challenges in ensuring all those who need to know get the message in a timely manner (distance, topography, staffing).
- Use of newspaper and may be limited in effectiveness



# To Sum Up...

- Learn about blue green algae and the health risks
- Recognize blue green algae blooms
- Know What to do:
  - Contact Spills Action Centre
  - Notify your neighbours and lake association
  - Avoid contact with the water
  - Know the symptoms of exposure
  - Monitor the bloom and local conditions





**Acknowledgements: Thanks to the Ministry of the Environment and Climate Change , Health Canada and the Florida State Department of the Environment**

**Visit our website:**

**[www.healthunit.org](http://www.healthunit.org)**

**Email us at:**

**[contact@healthunit.org](mailto:contact@healthunit.org)**

**Call the Health ACTION Line:**

**1-800-660-5853**

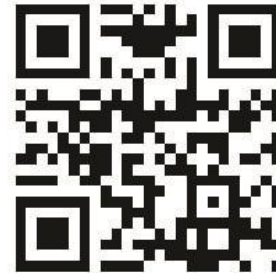
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