



Algae Quick Guide

Algae are simple, typically small aquatic organisms. They range in structure from unicellular (a single cell that is microscopic) to multicellular and some form colonies that are visible to the naked eye.

Algae can be found attached to various substrates (as periphyton) or free-floating in lakes and rivers (as phytoplankton).

Algae form the base of most lake food webs and are valuable and critical components of a healthy aquatic environment.

Algae are always present in lakes and rivers. When conditions are favourable, certain populations of algae can increase to levels that result in poor water quality and an algal bloom or scum may form.

Bloom-forming conditions often include:

- sufficiently high levels of nutrients (phosphorus and, to a lesser extent, nitrogen) in the water or sediments
- calm weather
- strong sunlight
- high air & surface water temperatures

You can help Ontario track the incidences of algal blooms!

Please report sightings of algal blooms, especially cyanobacterial blooms, to the Ontario Ministry of the Environment and Climate Change's (MOECC) **Spills Action Centre** at:

1-800-268-6060

Depending on the type of bloom suspected, MOECC staff may collect samples for analysis in the lab. If a cyanobacterial bloom is confirmed, MOECC will notify the local Health Unit, who may issue an official water-use warning and will recommend the most appropriate action to take.

Mistaken Identity Algal bloom or something else?



Pollen In the spring and early summer, pollen can collect on the surface of the water in a greenish-yellow hue, looking somewhat similar to blue-green algae. It usually appears dust-like and floats mainly on the surface, but can also form clumps. Over time, the pollen will become water logged and sink from sight.



Duckweed There are several small floating plants, such as duckweed, that can make slow moving water appear bright green. Duckweed is a small (2-5 cm long), disc-like plant with short hair-like roots on the underside. It can form a thick, green blanket on the water surface, looking similar to an algal bloom.

Algal Blooms in Muskoka

There are 3 main types of algae that may potentially bloom in the Muskoka area:
• Filamentous Green Algae • Chrysophytes • Cyanobacteria (Blue-Green Algae)

Filamentous Green Algae

Description: are unicellular or multicellular and may form filaments that range from several millimetres to a metre in length. They can be found free-floating in shallow water on the bottom near shore or attached to submerged objects like rocks. They are typically green in colour, but can vary in shade depending on age and nutrient content. Some species form colonies that appear as cottony clumps, while others form thready, silky, slippery masses that are slimy to the touch.

Blooms: usually occur in the spring after heavy runoff or in the summer following hot spells and may appear as clumps or dense mats that float on or just beneath the surface of the water. Blooms can be a nuisance as they may produce a grassy or unpleasant odour and/or impede recreational activities.

Bloom-forming filamentous green algae commonly found in Muskoka:

Spyrogyra, Zygnema, Mougeotia, Cladophora



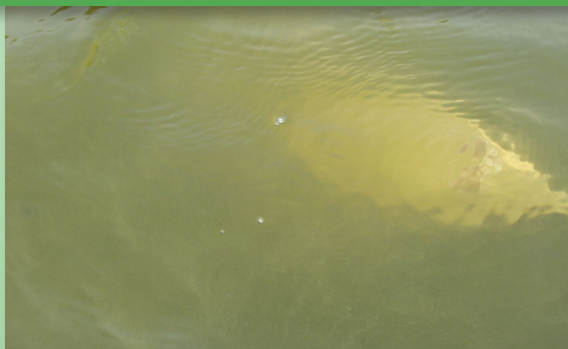
Chrysophytes

Description: most are unicellular with a few species forming colonies. They are generally found in low-nutrient lakes and some can move vertically through the water column.

Blooms: usually occur in spring or early summer. Colonial species may form a bloom below the thermocline in stratified lakes and the water may appear cloudy or coloured. Other species may form a yellowish-green bloom in the upper layers of the lake that is highly visible. Blooms may produce taste-and-odour compounds often described as fishy, musty, or earthy.

Bloom-forming chrysophytes commonly found in Muskoka: *Uroglena, Synura*

Photo credit: Andrew Paterson



Cyanobacteria

Description: are actually bacteria, but have features in common with algae. Most are unicellular and often blue-green in colour. Some species can control their buoyancy to move vertically through the water column and position themselves for optimal light and temperature. Some species have the ability to produce toxins, making humans and animals sick if exposed to high concentrations.

Blooms: most commonly occur in late summer and early fall in areas where the water is shallow, slow moving and warm, but may also be present in deeper, cooler water. Blooms typically look like pea soup or spilt paint with a bluish or greenish colour. Fresh blooms often smell like freshly mowed grass, while older blooms may smell like rotting garbage. *Gloeotrichia*, which appears as "fuzz-balls" about 2 mm in diameter floating in the water column, may resemble tapioca on the lake surface when blooming.

Bloom-forming cyanobacteria commonly found in Muskoka: *Anabaena, Aphanizomenon, Gloeotrichia*

Photo credit: Alison Lake



* If you suspect a blue-green algae bloom is occurring...

...avoid contact with the water. Do not drink from it, cook with it, shower in it, or swim in it, and keep your pets away.



Muskoka
WATERSHED COUNCIL

www.muskokawatershed.org
www.muskokawaterweb.ca

50 Shades of GREEN
Muskoka Stewardship Conference