

BLUE-GREEN ALGAE

The blue-green algae found in our watercourses are microscopic organisms that go by the scientific name of Cyanobacteria. They are similar to bacteria, but share some of the features of algae. Where conditions are favourable, they are able to multiply and form blooms. These blooms are not flowers as such; they look more like paint spills, broccoli soup or a mixture of fine particles or very short fibres. They are visible to the naked eye and are usually green or blue-green, although they may sometimes have a reddish tint. The blooms produce toxins that can be harmful to human and animal health.

The proliferation of blue-green algae

Under some conditions, blue-green algae proliferate rapidly and form what is called a bloom. The name may seem somewhat poetic, but the phenomenon is actually quite unfortunate and bears no resemblance whatever to a flower! Algae blooms in fact, look more like a paint spill, or broccoli soup: a minute particle or very short strand slurry. Visible to the naked eye, they are often green or blue-green in colour, sometimes edging towards red. Near shorelines, blooms rise and amalgamate into surface scum and may emit an unpleasant odour. In addition to looking repulsive, algae blooms have the ability to produce toxins. The use that can be made of a body of water depends on the level of its contamination by these toxins.



The causes

Blue-green algae proliferation can be triggered by a variety of factors such as elevated water temperature, weak current or water stagnation. However the main guilty party in this story is phosphorus.

Phosphorus is an element that is essential to life. It forms part of the basic building blocks of our nutrition, just as it does for animals, plants, algae and even... bacteria! We use phosphorus to fertilise our lawns and gardens and it is employed in agriculture to stimulate crop growth. Phosphorus has a naturally occurring low presence in surface waters. However, many human activities can lead to higher P levels in aquatic environments. Excess phosphorus is found in domestic wastewater and drainage and runoff from deforested land or cultivated fields and shorelines that have been enriched with fertilisers, compost and solid or liquid manure. Eventually, the phosphorus finds its way into rivers and lakes. When present in excessive amounts it stimulates inordinate growth of certain organisms that are native to these bodies of water.

Some of these life forms are better than others at making use of this manna: this is the case for many aquatic plants and, unfortunately, for blue-green algae.

Recognise it, report it, prevent it

Learn to recognise it

Algae blooms may be difficult to distinguish from other aquatic phenomena. The [Ministère du Développement durable, de l'Environnement et Lutttes contre les changements climatiques](#) (MDDLCC) has produced a helpful guide to identify blue-green algae blooms. The French guide is available from your regional MDDLCC office or on-line at www.mddefp.gouv.qc.ca/eau/eco_aqua/cyanobacteries/guide-identif.pdf

Report it!

Do you believe you have witnessed a blue-green algae bloom? Report it! Talk to your regional MDDELCC office about what you saw. Has the bloom you noticed this morning already disappeared? Report it anyway, since blooms move around beneath the surface of the water and can reappear later on in the day or the next day.

If you wish to make your action even more efficient you can photograph the bloom and complete the French on-line form, *Constat visuel de la présence d'une fleur d'eau*, on the MDDLCC web site at www.mddep.gouv.qc.ca/eau/eco_aqua/cyanobacteries/formulaire/formulaire.asp

Prevention is the best remedy

It is not easy to overcome the phenomenon of blue-green algae proliferation, but the best way is to attack the source of the problem. Above all, we need to avoid an overabundance of phosphorus in our lakes and rivers and there exist simple and easily accessible ways achieve this goal. Here are a few:

- Restore shoreline vegetation or avoid clearing it away, because shoreline vegetation retains soil that is potentially rich in phosphorus and uses this fertilising element for growth.
- Limit the use of chemical fertilisers, compost and manure on lawns.
- Use phosphate-free soaps and cleaning products.
- Ensure proper functioning and regulatory compliance of septic tanks.

Preventing phosphorus overload in surface water and upstream watersheds remains the best way of countering blue-green algae proliferation. This preventive action requires collective efforts on the part of citizens, enterprises and municipal and provincial government authorities.

Who does what?

The MDDLCC confirms the presence of algae blooms in affected lakes and rivers, and takes samples and analyses them. It also informs public health authorities which then issue health advisories as necessary. These advisories allow for timely communication of specific recommendations for the affected bodies of water with respect to limits on water consumption.

For its part, the Ministère de la Santé et des Services sociaux (MSSS) makes general recommendations on drinking water, swimming and other aquatic and nautical activities available on its web site at www.msss.gouv.qc.ca.

For more information about blue-green algae:

Telephone:

Québec City region: 418-644-4545

Montréal region: 514-644-4545

Elsewhere in Québec: 1-877-644-4545

Internet:

www.mddep.gouv.qc.ca/index.asp

www.msss.gouv.qc.ca