

Fact sheet 1

Phosphorus and cyanobacteria



Foam of decomposing cyanobacteria

Is there a problem?

Excess phosphorus in water favors the growth of aquatic plants and cyanobacteria, especially if the water body is shallow and warm. When cyanobacteria become visible (water is green, turquoise or forms green layers), they are already too abundant. Many species release toxins which harm human health and aquatic ecosystems.

The only way of stopping the spread of cyanobacteria is to eliminate the accumulation of phosphorus in the Missisquoi Bay. The reduction goal set by the Québec-Vermont agreement aims at 70.1 tons of phosphorus per year by 2016. It is possible that this goal be reached by 2009 with the help of the accelerated program set up by Québec and Vermont officials. The Québec reduction represents 27.3 metric tons of phosphorus whereas Vermont's represents 42.8 mt.

What do cyanobacteria accumulations look like?

- ◇ The accumulations look like a large spill of paint in the water or a pea or broccoli soup depending on the species.
- ◇ The color varies between blue, turquoise, green and olive green.
- ◇ Cyanobacteria give off a smell of freshly-cut grass that becomes nauseating when they decompose by the water.
- ◇ It is important to distinguish cyanobacteria from the microscopic filamentous algae that stick to rocks or aquatic plants.

What to do if we see cyanobacteria?

- ◇ Avoid any direct contact with the water.
- ◇ Immediately wash your hands after contact with contaminated water.
- ◇ Immediately contact municipal authorities and the owner of the beach.
- ◇ Never use the water for domestic use (whether it be drinking, washing or cooking food). *Boiling the water will not render it safe.
- ◇ Do not eat fish that comes from contaminated water
- ◇ Do not use algacide, killing the cyanobacteria makes them release even more toxins.
- ◇ Do not use the water for the pool and for the shower.
- ◇ Consult a physician if you recognize one of the following symptoms: skin, nose, throat, or eye irritation (due to direct contact with contaminated water), stomach illness, diarrhea, vomiting, nausea (after consumption of contaminated water).

This research was conducted by
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a network for actions.**

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A beautiful sand beach without pea soup

Useful references

In the appearance of symptoms

Info-santé
(450) 248-4304 poste 1

Brome-Missisquoi-Perkins Hospital, 450, rue Principale
Cowansville
(450) 266-4342 # 4386
Infection Prevention Nurse

Haut-Richelieu Hospital
920, rue du Séminaire Nord
St-Jean-sur-le-Richelieu
(450) 359-5000 # 5650
Infection Prevention Nurse

There are solutions !

Let's change our habits

To avoid	Why	Our recommendations
Spreading commercial fertilizer or manure.	Commercial fertilizers and manure are very concentrated in phosphorus.	Spreading the compost (low in nitrogen and phosphorus but high in carbon), which will improve the texture of the ground and air it out.
Cutting the grass very short on the riparian buffer zones (10m from the shore)	When grass is long, it is healthy and filters phosphorus from the water that drains.	Avoid cutting your grass in the 10m zone, or at least reduce the frequency at which you cut it. We suggest a length of 8cm (3 inches).
Leaving cut grass on the ground, especially in the riparian buffer zone.	Cut grass is a natural manure which offers a high and undesirable contribution in phosphorus.	It is necessary to pick up the cut grass in the 10m zone that starts from the water-side.
Use detergents with phosphate.	Phosphate is a source of phosphorus that can be important (laundry detergent, dishwashers, for washing the car, etc.).	Using phosphate-free detergents and avoiding exterior washes near the water.
Leaving the shore naked, without vegetation.	The absence of vegetation brings about erosion, which increases the amount of sediments and phosphorus in the bay.	Reduce erosion by vegetating your shoreline with herbaceous plants and low shrubs
Having a faulty septic installation (tank or other) that does not abide by the new rules.	The discharged waste water contains phosphorus which spreads in underground and surface water..	Regularly verify your septic system or consider hooking up with a sewage system.
Navigating at high speeds near shorelines.	Waves caused by the boat cause shoreline erosion.	Reduce your navigation speed at 10 km/h when less than 50m from the shore.

To reduce phosphorus:

MDDEP action plan 2003-2007
About phosphorus reduction in Missisquoi Bay
MAPAQ Prime-Vert program

At home, use phosphate-free soap such as Biovert laundry detergent or the complet variety of cleaning products Seventh Generation.

Website about cyanobacteria

www.menv.gouv.qc.ca/eau/exo_aqua/cyanobacteries/index.htm

www.lcbp.org/bgalgae.htm

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