



Annual membership fees are due. Thanks to those who have already renewed or joined this year. Please support your lake association. We continue to work on your behalf during these unusual times. To renew your membership you can go to <https://www.leonardlake.net/> or mail/deliver to LLSA, c/o Bev Leabeter, 1128 Leonard Lake Rd #2, Bracebridge, ON P1L1W8

What's in the Water?

Leonard Lake is now in its 4th week of an unsightly and fishy smelling algal bloom. Since the first sighting, algal material has been on the move - collecting in bays or blowing across the lake with the wind, disappearing in a bay one day and back the next. The morning trip to the dock to assess the status of the bloom has brought fleeting joy some mornings and discouragement on others, but we are ever hopeful that this lake wide bloom will soon dissipate.

Shortly after the Victoria Day weekend, LLSA received numerous reports and observations from residents of an algal mass in the south, west and eastern parts of the lake, with various sightings that included the appearance of small beads suspended throughout the water; patterns of streamers just below the water surface; and slightly deeper cloudy masses with an extensive rock-like look.

On May 25th, the LLSA "Eyes on the Lake" water team extracted water samples and contacted the Ministry of the Environment, Conservation and Parks (MOECP) to report a potential bloom. On May 26th, an MOECP Officer visited Leonard Lake, picked up the LLSA water samples, and extracted additional samples for analysis.

MOECP provided two reports to Leonard Lake regarding the samples - the first on May 29th indicated that no blue-green algae bloom was present, and that toxicity reports measuring the microcystin and anatoxin-A results came back below the detection limit. The second report from MOECP on June 11th was at the prompting of our water team lead to request a re-examination and to have MOECP identify the prominent bloom type on Leonard Lake so that residents could be advised. MOECP clarified that there was (is) a bloom of golden-brown (G-B) algae (specifically: uroglena/uroglenopsis) and that “in freshwater environments, this type of algae is not known to produce toxins that harm humans, but blooms of some species can cause aesthetic or taste and odour issues”. The MOECP Officer advised at that time that the Leonard Lake report was recommended for closure because the suspect algae was determined not to be a cyanobacteria and that microcystin-LR levels were below the applicable standards.

Between the first and second MOECP reports, the water team lead consulted with water quality experts (Dr. Sue Watson and Taxonomist Hedy Kling) and sent several water samples and photographs of the Leonard Lake bloom to the taxonomy laboratory in Winnipeg for analysis - a laboratory used extensively by LLSA over the past several years. The following questions were discussed and the responses were based on expert opinion and not scientific study.

Is golden brown algae new to Leonard Lake?

No. The 2017 intensive study from May – October on Leonard Lake found substantial levels of chrysophyte and uroglena in the mix of plankton sampled. These species provide lipid rich grazing for other plankton and diatoms and are native to LL and part of the “web of life”.

What caused the bloom in the first place?

A factor which could have caused the bloom on Leonard Lake this year was the very cold spring in April, followed by a very hot period in May, causing an early steep temperature gradient in the water with a maximum concentration of chlorophyll (DCM), to occur. The frequent observations of the bloom as “stoney appearing just under the surface” support the possibility that the bloom proliferated in this close- to-the-surface DCM.

A similar uroglena bloom in an Alberta lake was thought, but not proven to be caused by increased bacteria levels from upstream development, which may have caused a sudden release of nutrients and phosphate into the lake. That

bloom disappeared after some time and has not been reported again.

How long will the bloom last and will a bloom return?

For a host of reasons, (such as nutritional strategies of chrysophyte species), it is difficult to predict when or if a chrysophyte (G-B) bloom will re-occur, however, it is known that G-B blooms do not reoccur as regularly as cyanobacteria blooms. That may or may not be good news!

Is there a toxicity concern with golden brown algae?

As noted above, MOECP has reported that “in freshwater environments this type of algae is not known to produce toxins that harm humans but blooms of some species can cause aesthetic or taste and odour issues.” Under very limited conditions, golden brown algae can produce a toxin (ichthyotoxin) associated with fish kill. Leonard Lake residents would see a proliferation of dead fish as an indicator if this toxin was present.

Is it safe to swim in the water?

Residents have been swimming in the lake with no reported problems. The fishy smell is not dead fish, but caused by certain compounds and the breaking down of cells. The algae samples were tested for toxicity and deemed below detection levels.

Is it safe to drink Leonard Lake water that has gone through a filtration system?

As prior to the bloom, residents should properly maintain their water treatment system and have their treated water tested regularly.

What does the Health Department have to say about the LL golden-brown algae bloom?

Neither Simcoe Health nor Public Health Ontario could provide new information regarding golden-brown algae. Both levels responded that there is no role for the Health Department at this time regarding Leonard Lake because there is no perceived health risk. No toxins have been detected in the LL water samples and golden-brown algae is not known to produce toxins that harm humans. The focus of Health Departments regarding algae is blue-green due to substantial toxicity risks.

What is the role of the Ministry of the Environment, Conservation and Parks?

When a bloom is suspected, MOECP is responsible for the collection, testing

and analysis of water samples. MOECP advises Simcoe Health when blue-green algae is confirmed and if sample results indicate toxins are present at detectable levels. MOECP is not responsible for advising lakes residents regarding water health aspects but is available for subsequent testing when the need is indicated.

What can we do as individuals or families to avoid contributing to algae growth in Leonard Lake?

See some best practices below. Thanks to Leonard Lake resident Eric Morgan for sharing the following article from Cottage Life Magazine.

Cottage Life Magazine - How to prevent algal blooms at your lake

Extracted from an article by Sara Laux (May 01, 2018)

Be careful with fertilizer - Sure, you want a nice green lawn and healthy plants — but that fertilizer you spread in your garden also encourages algae to bloom. It's best to avoid fertilizer altogether if you're close to a water source — plant native plants instead, which are well-adapted to the environment and don't require special maintenance. If you must fertilize, try and find a phosphorus-free product, and reduce run-off by applying it when there's no rain in the forecast.

And don't think natural fertilizer like manure or compost is any better than a chemical version, anything that's going to make your garden plants grow is going to make algae grow as well. It's best to avoid fertilizers generally.

Check your septic system - Just as manure encourages algae to grow, so does human sewage. (Plus, gross.) A leaky septic system can easily contaminate water sources, so make sure you keep your septic tank well maintained and be on the lookout for cracks and fissures.

It also goes without saying that you shouldn't, ahem, go number 2 anywhere close to a water source, and don't allow your pets to poop close to the water either. Even if you didn't run the risk of making people sick, you don't want to give algae any extra nutrients.

Don't use a garburator - Compost is great for gardens — which means it's great for algae, too. Garburators, or in-sink garbage disposals, deposit food waste into the water system, which can lead to "nutrient loading" into lakes through water treatment plants. Land composting is a much better option for kitchen waste.

Combat shoreline erosion - An eroded shoreline, meaning few plants or trees, means more run-off from the land into your lake. Make sure your shoreline is planted with native species to help keep its integrity intact and run-off out of the lake, and don't cut down vegetation that's already there.

Don't lather up near water sources - Even if you're using biodegradable or organic soap, it's best to keep it far from water sources. Use a bucket or other container for your wash water, then bury your rinse water so bacteria in the soil can break down any contaminants. It sounds like a pain, but it's better than washing in slimy, smelly algae.

Be careful with your detergents - Canada banned phosphates in household cleaning products in 2010, but if you're using an old bottle of dish detergent, you could still be dumping algae-feeding nutrients into your lake. Make sure you're using phosphate-free cleaners and soaps.

Minimize impervious surfaces close to the water where possible

The goal in preventing nutrient-rich runoff from making it into lakes and other water sources is making sure it's absorbed by the earth, which is a lot harder to do if you've paved right up to the edge of your shoreline. Ideally, you'll have a nice, natural shoreline, complete with plenty of native plants, around your lake to make sure run-off stays on land.

Moving your boat or watercraft from one body of water to another? To prevent the spread of golden algae, the following precautions should be taken:

- Before leaving a lake or other body of water, drain all water from the bilge, live wells, and any other water-holding device of your watercraft.

- Rinse out the boat, bilge, live wells, and equipment with fresh water and, if possible, allow the equipment to dry for two to three days before using it at another body of water.
- As an extra precaution, you can spray the surface of equipment with a 10% bleach solution, allowing a 15-minute contact time before rinsing the area with clean water free of algae and allowing it to dry.
- Never move water, live animals, or plants from one body of water to another because you may also transplant undesirable or toxic species.

If you have additional questions or a new water quality issue please contact us at leonardlakemuskoka@gmail.com. If possible, include a photograph of any water quality issues.

LEONARD LAKE PHOTOS

Thanks to those who have taken the time to share pictures and memories. There is much on all of our minds right now and a few smiles or laughs can be a welcomed diversion. We are always looking for lake pictures to share - people, scenery, times gone by, local flora and fauna, activities, etc. Any season will do! Send to leonardlakemuskoka@gmail.com



A young visitor exploring the Heeneman property.



Devon Galloway lands a pike. Devon also captured this fantastic aerial view of LL in full bloom June 4th.



A visiting loon,courtesy of Moni Heatlie. It's been many years since loons nested on Leonard Lake and the call of the Common Loon at dusk across the lake is missed.

*Best to you and your families,
Leonard Lake Stakeholders Association*



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