



Are We Loving our Lakes to Death?



Cyanobacteria blooms like this can be dangerous to your health, but may be preventable.
(Photo courtesy of New Hampshire Department of Environmental Services)

Did you know? While we live out our daily lives, we may be loving our lakes to death! The lakes in New Hampshire started out deep and clear when they were first formed by glaciers about 15,000 years ago. They are gradually accumulating and filling in with sediment, nutrients, and plants, and eventually, when they are entirely filled in, they will 'die.' Lake aging typically takes place in a geologic timescale, which is very long and passes extremely slowly compared to our human timescale. However, humans are accelerating the natural lake aging process by increasing the amount of nutrients (particularly phosphorus), sediment, and other material that flows into a lake from throughout its watershed (drainage area).

While the natural process of a lake aging is called 'eutrophication,' the human-induced aging of a lake is called 'cultural eutrophication.' Changes in how land is used changes how sediment and nutrients flow into surface waters, which changes the physical, chemical, and biological characteristics of lakes and rivers. Without careful management of land and water, especially in agricultural and developed settings, polluted water flowing off the landscape can cause cultural eutrophication of lakes and ponds, accelerating the onset of their death.'

Phosphorus is a nutrient that all aquatic plants and animals need in order to grow and be healthy, but, in excessive quantities, it can have serious negative impacts on lake quality. Excess phosphorus that ends up in a lake can come from the following: septic systems, lawn and garden fertilizers, washing cars and boats

near the lake, doing laundry or bathing in the lake, soil erosion, feeding waterfowl, and dumping leaves and yard clippings in or near the lake.

Excessive phosphorus over-fertilizes lakes and can cause nuisance algal and plant growth. Algae is not necessarily a problem, but severe algae blooms can cloud lake water, cause taste and odor issues, and block sunlight from reaching plants. Even though algae produce oxygen while alive, much more oxygen is used up when the algae die and are decomposed, thus depriving fish and other aquatic organisms of oxygen that they need to survive in the water.

Excessive phosphorus can also cause cyanobacteria (formerly referred to as blue-green algae) blooms in lakes. In large quantities, some types of cyanobacteria can be toxic to humans, pets, and to wildlife. Human exposure to cyanobacteria may result in symptoms such as nausea, vomiting, diarrhea, mild fever, skin rashes, eye and nose irritations, and general sickness. When toxin-producing cyanobacteria blooms occur in surface waters, the New Hampshire Department of Environmental Services (DES) will issue an advisory recommending that lake users avoid contact with the water in areas experiencing blooms.

(As a side note, while the water quality of New Hampshire's lakes is very good, lake water should not be consumed unless it is municipally treated. Neither in-home water treatment systems nor boiling the water will eliminate cyanobacteria toxins if they are present.)

Be on the look-out for algae and cyanobacteria blooms after periods of warm weather and heavy rainfall. The rainwater running off the landscape carries nutrients into lakes, and the sunlight and warm water allows algae and bacteria to flourish off of those incoming nutrients. If you see what looks like blue-paint chips in the water, or a green or blue-green scum on the water, contact DES at (603) 271-3414 or (603) 419-9229 to report a potential cyanobacteria bloom.

Any kind of algae or cyanobacteria bloom is probably a sign of excess phosphorus in the water, which may indicate a problem with how water is managed on the landscape, including in and around our own houses. By choosing soaps and detergents containing no phosphates, you will avoid adding excess phosphorus into wastewater, and ultimately into groundwater and surface waters. Also, composting kitchen and yard waste (away from the water) will help prevent nutrients from entering surface waters.

By being water- and nutrient-conscious in our own houses and yards, we can do a lot to prevent the cultural eutrophication of otherwise clean waterbodies.

NH LAKES is the only statewide, member-supported nonprofit organization working to keep New Hampshire's lakes clean and healthy, now and in the future. The organization works with partners, promotes clean water policies and responsible use, and inspires the public to care for our lakes. For information, visit www.nhlakes.org, email info@nhlakes.org, or call 603.226.0299.

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