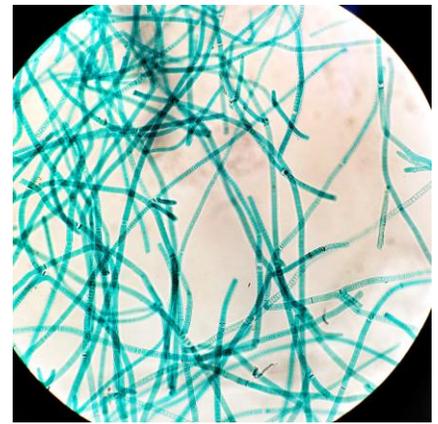


Cyanobacteria Monitoring & Bloom Watch

Background

- Cyanobacteria are bacteria that photosynthesize
- They are naturally occurring in all our lakes, generally in relatively low numbers.
- Capable of producing liver and neuro toxins which can affect human health when “in bloom” meaning forming a scum on the surface. Studies are investigating the possible link between cyanobacteria blooms and ALS. The neuro toxins have almost immediate effects when ingested. The liver toxins tend to act more slowly. Exposure to toxic cyanobacteria scums may cause various symptoms including nausea, vomiting, diarrhea, mild fever, skin rashes, eye and nose irritations, and general malaise.
- Abundance increases as nutrients increase. Current studies indicate that when total phosphorus levels are greater than 10 ppb the likelihood of toxicity increases greatly.
- Phosphorus, a naturally occurring element, is the limiting factor in freshwater ecosystems meaning that the level of phosphorus determines the productivity (growth) in the lake. High levels of phosphorus lead to excess algae, plant and cyanobacteria growth reducing water clarity and declining water quality.
- Phosphorus enters the lake through atmospheric deposition (we can’t do anything about that), septic leakage, excess fertilizer applications, and primarily attached to sediments that are washed into the lake with stormwater.
- Phosphorus pollution can be reduced by eliminating the human impacts that introduce it into the lake – lake friendly landscaping, properly functioning septic systems, road maintenance practices to enhance infiltration and minimize erosion.



Monitoring program

- Over the past couple of years the EPA New England Regional Laboratory convened a region-wide (including NY) cyanobacteria monitoring and bloom watch workgroup consisting of state environmental water quality and beach monitoring programs, departments of public health, tribes, public water suppliers, NGO’s, citizen monitoring groups and academics to establish a uniform and consistent approach to monitoring cyanobacteria.
- The first pilot season was in 2014 and the updated protocols have just been released.
- Citizen scientists throughout New England will measure the phycocyanin (cyanobacteria pigment) and chlorophyll (algae pigment) levels of the lake water using a handheld fluorometer to establish a dataset for cyanobacteria and algae levels.
- Using an inexpensive microscope and a smart phone, photos of cyanobacteria will be sent to UNH and EPA for species identification.
- Samples of zooplankton and phytoplankton will be analyzed for toxicity levels at the UNH Center for Freshwater Biology.

Contact AWWA if you suspect you see a bloom.