

Worcester Cyanobacteria Monitoring Collaborative

Monthly Report

July 2017

On Saturday, July 29th, members of the Worcester Cyanobacteria Monitoring Collaborative (WCMC) returned to their lakes to gather their second plankton net sample. Volunteers from Patch Reservoir, Coes Reservoir, and Lake Quinsigamond brought water samples to Regatta Point to be examined for cyanobacteria. New glass slides and coverslips allowed for increased clarity under the microscope, and with several weeks of experience behind them, the volunteers were more quickly able to focus in on microscopic critters.

Sampling Weather: Colder this week than last month; the air was about 62 degrees in the morning, with full cloud coverage. Over the past 24 hours, <0.1" of rain had fallen. Samples were collected between 9 and 10 am.

General Findings: This week we saw a greater diversity of cyanobacteria, algae, and diatoms. *Anabaena*, a cyanobacterium, was found in all three waterbodies, while *Microcystis* was found only in Lake Quinsigamond (note: Indian Lake, where *Microcystis* was found in June, did not participate in the July sampling).

In addition to cyanobacteria, we saw some other interesting creatures. We encountered stalked ciliate protozoan at work filtering feeding. They created currents by beating their hair-like cilia to bring their food, bacteria, closer to them. These creatures commonly attach themselves to colonies of cyanobacteria to anchor themselves as they move their cilia, and take advantage of the buoyancy of the colony to bring them to the upper portions of the lake. Additionally, we found some spidery-looking forms, which were confirmed to be trichomes, or broken-off plant hairs. They are neither alive nor threatening, but look rather cool!

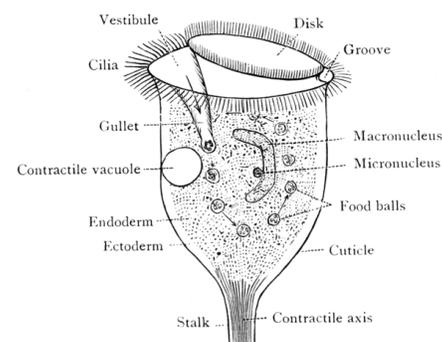
What it means: There is still no need for alarm at the density of the cyanobacteria; they are naturally occurring, and are present at a rate that is non-threatening to humans or other mammals. What we are seeing is a possible shift in the diversity of those that are present, as we now see more *Anabaena* than *Microcystis*, and across all lakes sampled. It will be interesting to see if these populations change next month!

Other notes: It is important to remember that these tests are not quantitative, and can only confirm the presence of the organisms that we observe. However, as our scope skills improve, we can gain more confidence that we are not seeing a certain group of organisms. That's more reason to keep practicing!

Thanks again to Regatta Point Sailing, DCR, Dr. Fucikova, Joy Trahan-Liptak, and the volunteers for their support!

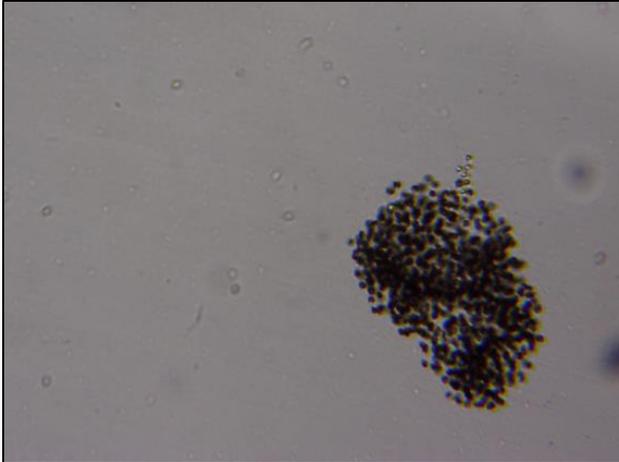


Volunteers drag plankton nets vertically or horizontally through the water and slow and steady pace, being careful not to hit the bottom of the lake

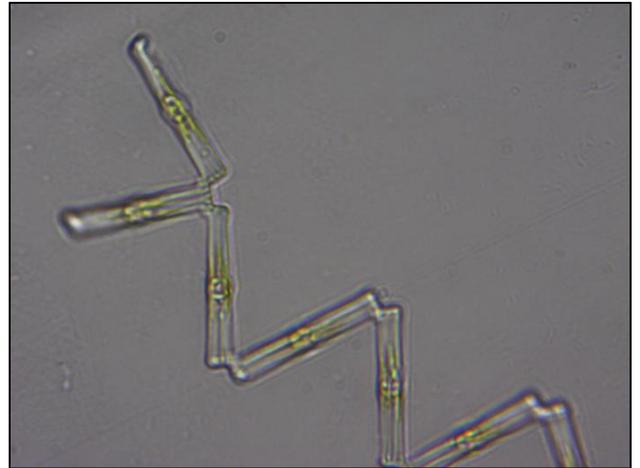


Vorticella, a stalked ciliate, was found on several cyanobacteria colonies. These protozoans use fine hairs called "cilia" to create currents to trap their food in their bell-shaped mouth.

Highlights: Lake Quinsigamond



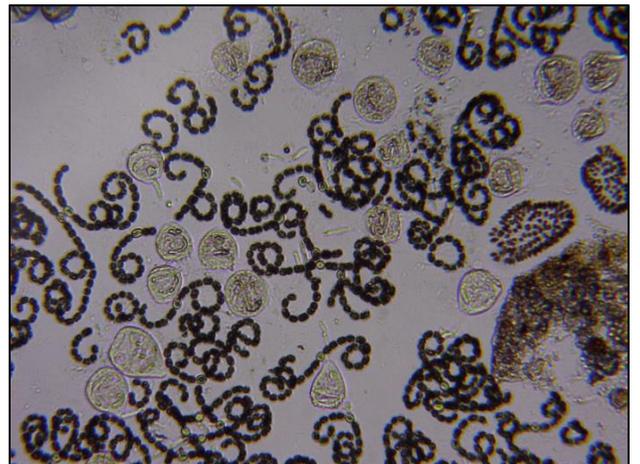
Microcystis- A common cyanobacterium.



Tabellaria diatom- a unicellular algae with siliceous cell walls.



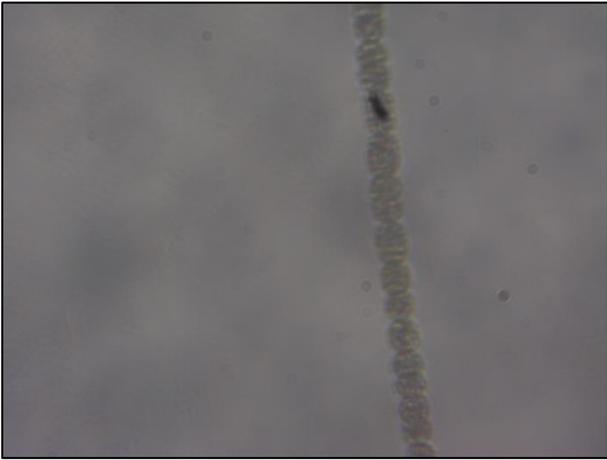
Vorticella ciliates attached to a colony of *Anabaena* cyanobacteria.



Vorticella ciliates attached to *Anabaena* and *Microcystis* cyanobacteria.

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Coes Reservoir



Anabaena- A common cyanobacterium.

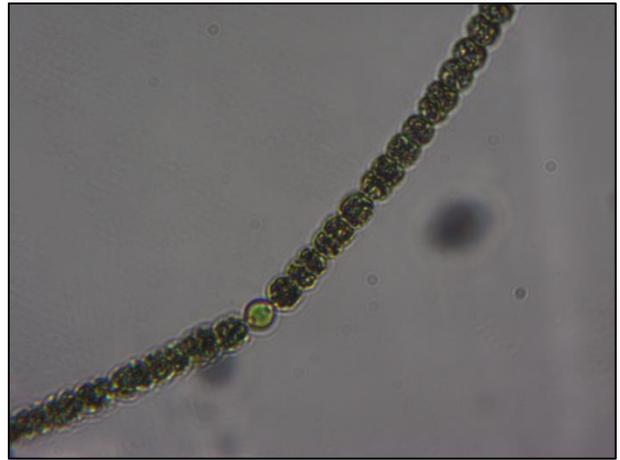


Anabaena- A common cyanobacterium.



Anabaena- A common cyanobacterium.

Patch Reservoir



Anabaena- A common cyanobacterium.



Spidery-like trichome, or plant hair.



Spidery-like trichome, or plant hair.

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