

WORCESTER CYANOBACTERIA MONITORING COLLABORATIVE

Monthly Report

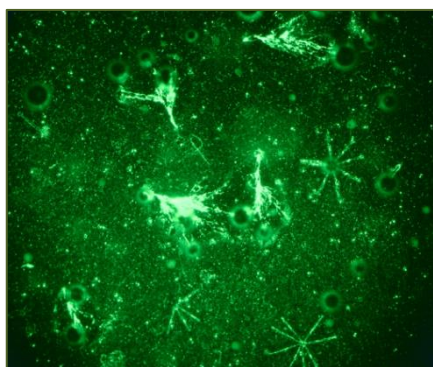
June 2019

On Saturday, June 15th, the Worcester Cyanobacteria Monitoring Collaborative came together for the second time this 2019 season, water samples in tow. With a month of sampling under their belt, they were ready to spot whatever algae and cyanobacteria the lakes brought their way. This month, volunteers participated from Burncoat Pond, Patch Reservoir, Bell Pond, Coes Reservoir, Crystal Pond, Cooks Pond, Indian Lake, and Lake Quinsigamond; in addition to Cedar Meadow Lake (Leicester), and Manchaug Pond (Sutton). After seeing mostly diatoms in May, the volunteers observed more instances of cyanobacteria in June, and in one case prompted the Lakes and Ponds program to take a closer look. Whether we like it or not, cyanobacteria season is upon us, but the WCMC team is keeping vigilant!



Citizen scientists of all ages brought examined water samples from their lakes and ponds this past June.

Sampling Weather: This Saturday was another beautiful day with few clouds in the sky, even as the beginning of the month had been rainy. All volunteer water samples were taken between 8:00 and 10:00 am. During this window, air temperature in the area ranged from around 56 degrees F to 77 degrees F. Surface water temperature was between 64 and 69 degrees F.



Sample stained for epifluorescence: A dye added to this sample from Crystal Pond binds to DNA and makes it glow so we see not just the big diatoms, but smaller bacteria as well.

Thanks for sharing, Emily Dart!

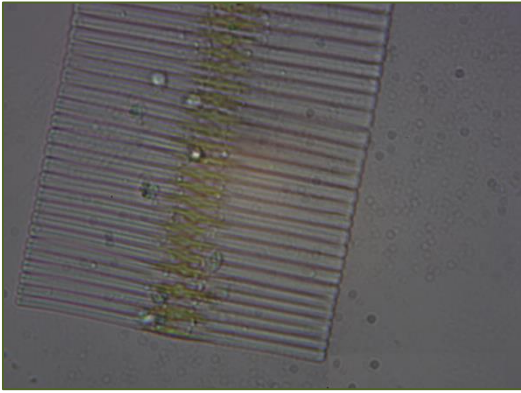
General Findings: This month, the largest group of organisms found was of cyanobacteria. We found three kinds of cyanobacteria across Patch Reservoir, Indian Lake, Manchaug Pond, and Coes Reservoir. While in the first three of these lakes organisms were not very dense, the sample taken from Coes Reservoir had a very high number of *Anabaena*, also known as *Dolichospermum*, cells in it. Because of this observation, the Lakes and Ponds program visited the reservoir just hours later, but found that the density had already fallen and few cyanobacteria were found.

What it means: This month, the Lakes and Ponds Program has responded to several observations of algae throughout the City, and has treated Indian Lake with an algicide. These observations have occurred earlier than they have in the past several years that the Lakes and Ponds Program has been in existence. This June was an

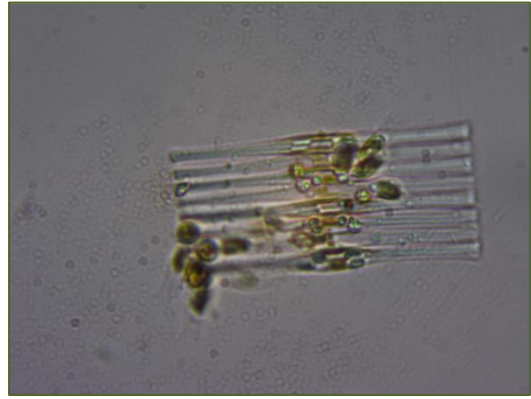
exceptionally rainy month in Central Massachusetts. That rain brought stormwater water containing nutrients, like phosphorus and nitrogen from, the land into our waterways. This could be responsible for promoting the growth of algae and cyanobacteria. However, several of the observations, like the one at Coes, were short lived, and did not seem to pose any threat to public health. But they further prove the value of having a team of citizen scientists looking over our waters!

Thanks again to Joy Trahan-Liptak, Emily Dart, and all the volunteers for their support!

DIATOMS



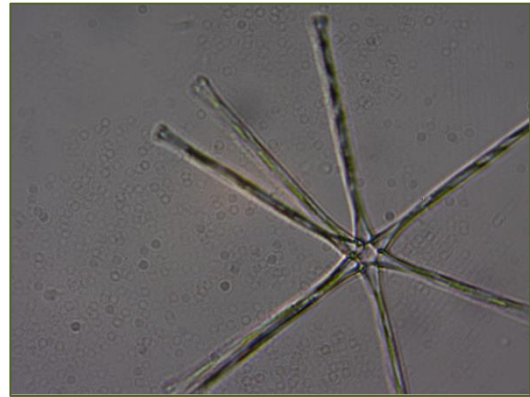
Fragilaria at Lake Quinsigamond (40x)



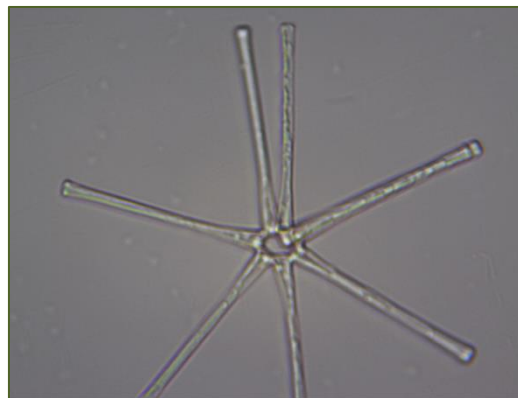
Fragilaria at Lake Quinsigamond (40x)



Asterionella at Patch Reservoir (10x)



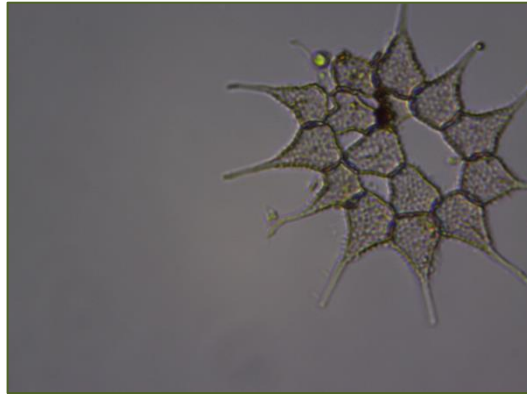
Asterionella at Patch Reservoir (40x)



Asterionella at Burncoat Pond (40x)

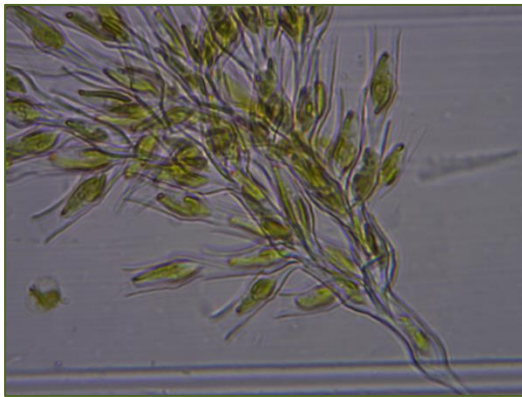
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GREEN ALGAE



Pediatrum at Burncoat Pond (40x)

GOLDEN ALGAE

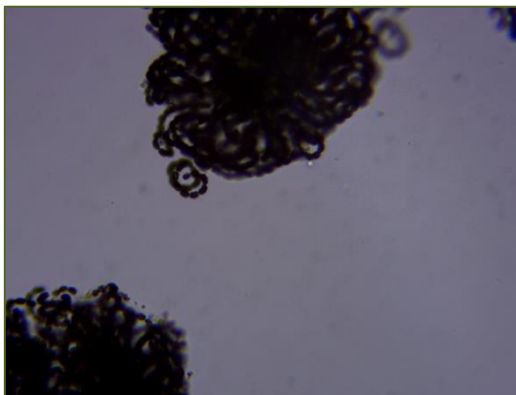


Dinobryan at Cooks Pond (40x)

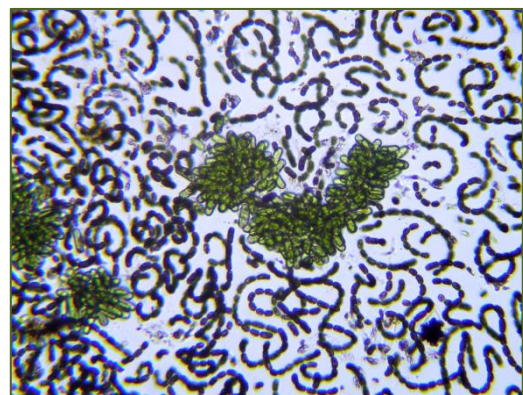


Dinobryan at Patch Reservoir (10x)

CYANOBACTERIA



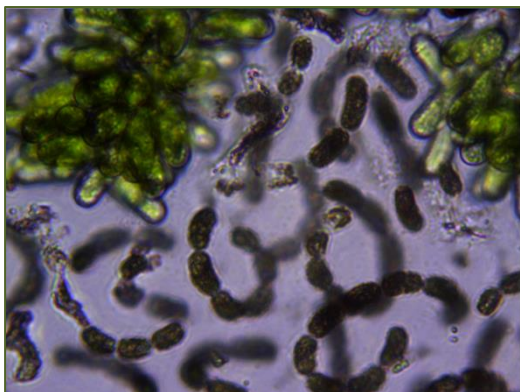
Dolichospermum at Coes Reservoir (10x)



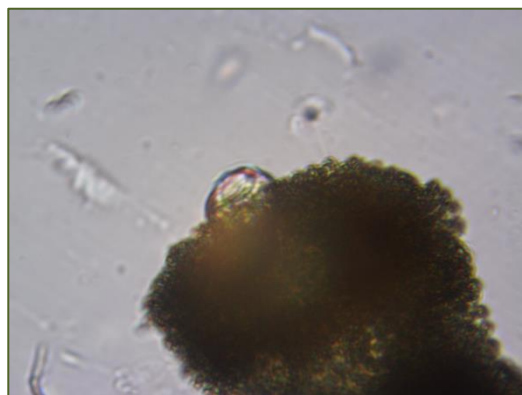
Dolichospermum and akinetes at Coes Reservoir (10x)

Thanks again to Joy Trahan-Liptak, Emily Dart, and all the volunteers for their support!

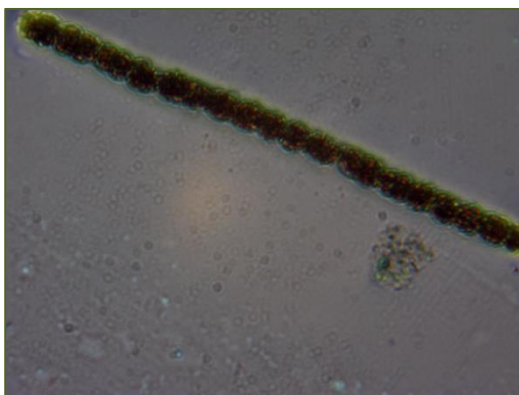
CYANOBACTERIA cont.



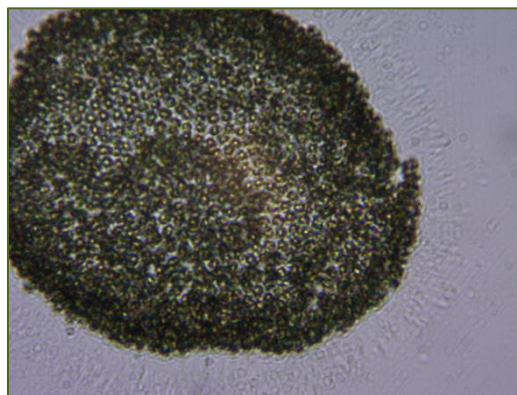
Dolichospermum and akinetes at Coes Reservoir (40x)



Microcystis at Indian Lake (40x)



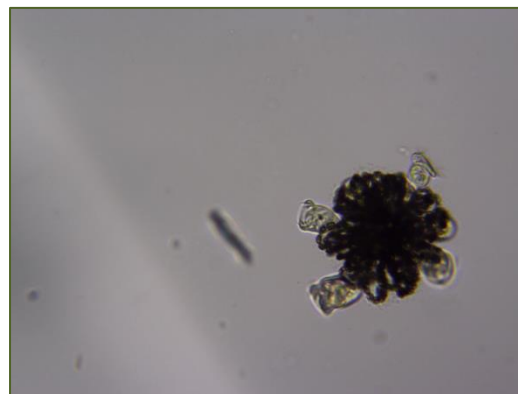
Dolichospermum at Indian Lake (40x)



Woronichinia at Patch Reservoir (40x)



Dolichospermum at Manchaug Pond (10x)



Dolichospermum with *Vorticella* at Manchaug Pond (10x)

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ZOOPLANKTON



Daphnia at Lake Quinsigamond (4x)

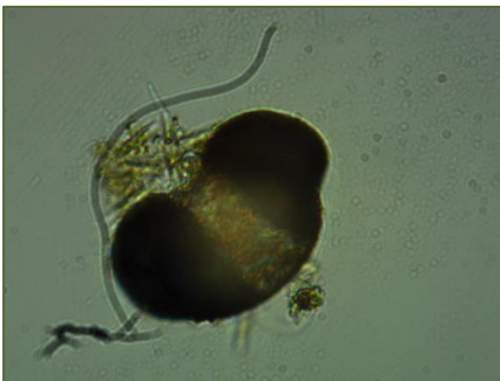
MISCELLANEOUS



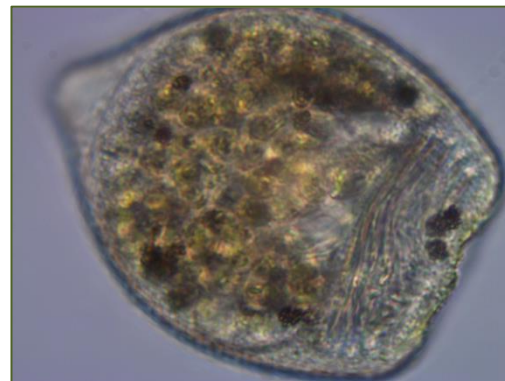
Trichome at Burncoat Pond (40x)



Ceratium, a dinoflagellate, at Burncoat Pond (40x)



Pollen at Lake Quinsigamond (40x)



Perhaps *Ophrydium versatile* at Lake Quinsigamond (40x)

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