

WORCESTER CYANOBACTERIA MONITORING COLLABORATIVE

Monthly Report

April 2018



WCMC volunteers hard at work identifying plankton.

On Saturday, April 28th, the Worcester Cyanobacteria Monitoring Collaborative (WCMC) commenced its second season of lake monitoring. This year, we have expanded our focus from just cyanobacteria (the toxin producing “blue green algae”) to include green algae, diatoms, and zooplankton in order to gain a better understanding of plankton dynamics in our lakes and ponds. Additionally, we obtained new equipment, including two new microscopes. This allows us to more thoroughly examine samples, and gives volunteers a chance to really hunt down the organisms present in their water samples. This month, volunteers sampled from Indian Lake, Little Indian Lake, Kiver Pond, Cook Pond, Coes Reservoir, and Lake Quinsigamond.

Sampling Weather: A beautiful spring day! The air was about 53 degrees in the morning, with low cloud coverage. Over the previous 24 hours, about .33” of rain had fallen. Samples were collected between 8:30 and 10:15 am.

General Findings: This week we found no cyanobacteria, which is to be expected this early in the season, when the water temperature is still pretty low (~55 degrees). However, we did see plenty of diatoms, which are very common this time of year. Diatoms are algae with a cell walls made of silica, which gives them unique and beautiful geometric patterns. While we observed no green algae; however, we did see some golden algae.

In addition to diatoms and some golden algae, we observed some zooplankton. Unlike phytoplankton, which includes algae and cyanobacteria, zooplankton can’t perform photosynthesis to harness the sun’s energy for growth and reproduction. They rely on eating things like phytoplankton. These heterotrophs are therefore predators, and can keep algal populations in check.

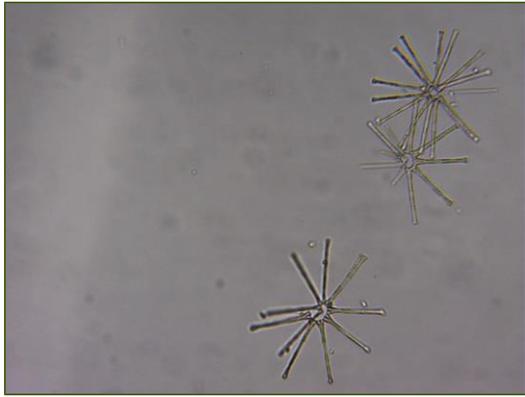
What it means: Our findings align with what we would expect to find in our waterways at this point in the season. Generally, the early spring phytoplankton population is dominated by diatoms. As the weather warms, this shifts to green algae and then cyanobacteria. It will be interesting to see when these shifts begin to occur.



Synura is a genus of golden algae that has silica scales, as seen in this high resolution, false color image. Shown is a single cell, although these phytoplankton tend to form tight colonies such as the ones found in Cooks Pond.

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

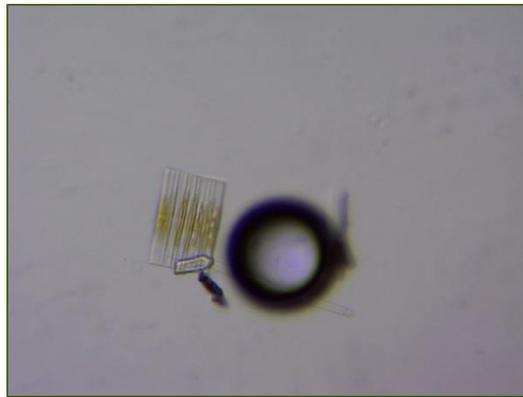
DIATOMS



Tabellaria at Lake Quinsigamond



Tabellaria at Lake Quinsigamond



Fragilaria at Cooks Pond

GOLDEN ALGAE



Synura at Cooks Pond



Dinobryon at Kiver Pond

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

GOLDEN ALGAE CONT.



Dinobryon at Coes Reservoir



Uroglenopsis at Coes Reservoir

ZOOPLANKTON



Copepod or *Calanoid nauplius* at Lake Quinsigamond



Copepod or *calanoida* at Lake Quinsigamond



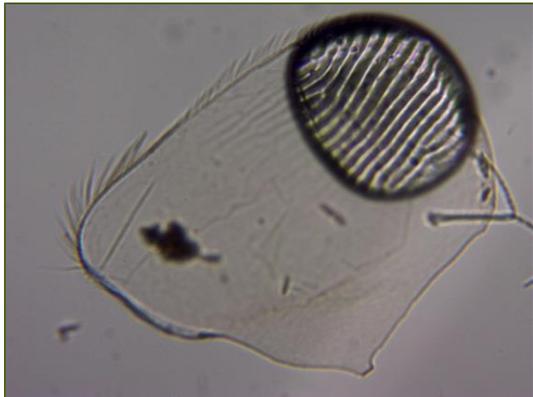
Bosminidae at Indian Lake



Close up of the *Bosminidae* at Indian Lake

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ZOOPLANKTON CONT.

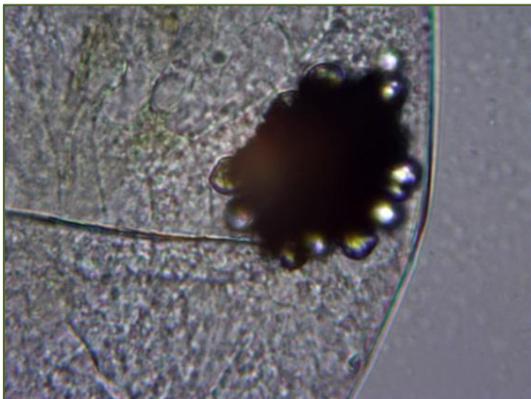


Paramecium or other zooplankton body part at Coes Reservoir



Paramecium or other zooplankton body part at Coes Reservoir

MISCELLANEOUS



Perhaps a *Synura* colony that was engulfed by the *Bosminidae* above



Trichome, a plant hair, at Cooks Pond

Thanks everyone!

Next Sampling date: May 26, 2018 @ 10 am

Interested in joining the WCMC? Contact burmeisterj@worcesterma.com to learn more!

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