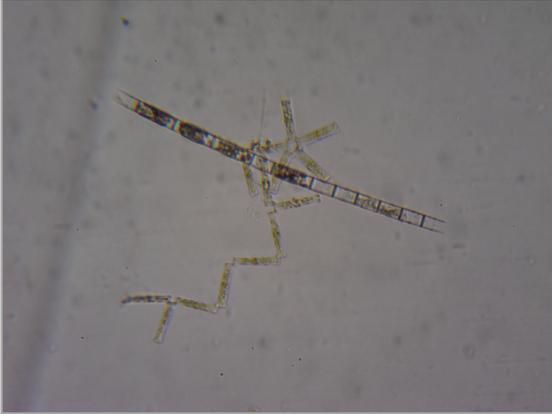# WORCESTER CYANOBACTERIA MONITORING COLLABORATIVE
Leesville Pond – October 2021

Sampling Conditions

October 16th was a partly cloudy Saturday at 70℉ with a light breeze. There was no rainfall the day before the sample was taken. The water was 68℉ and slightly turbid.

Microscopic Findings from the Plankton NET

Fragilaria Diatoms

FlowCam Findings from the GRAB Sample

The particle density at Leesville Pond was 380 cells/ml in October, down from 1,859 particles/ml in September, according to the FlowCam. Much like in September, the sample was made up of small particles including cryptomonads and circular diatoms, but there was also a lot of organic debris. No cyanobacteria were detected
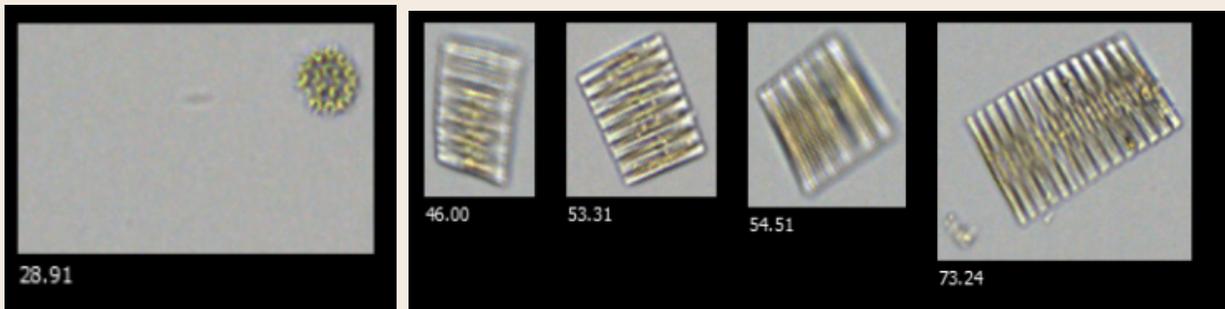
Pediastrum Green Algae   *Fragilaria* Diatoms

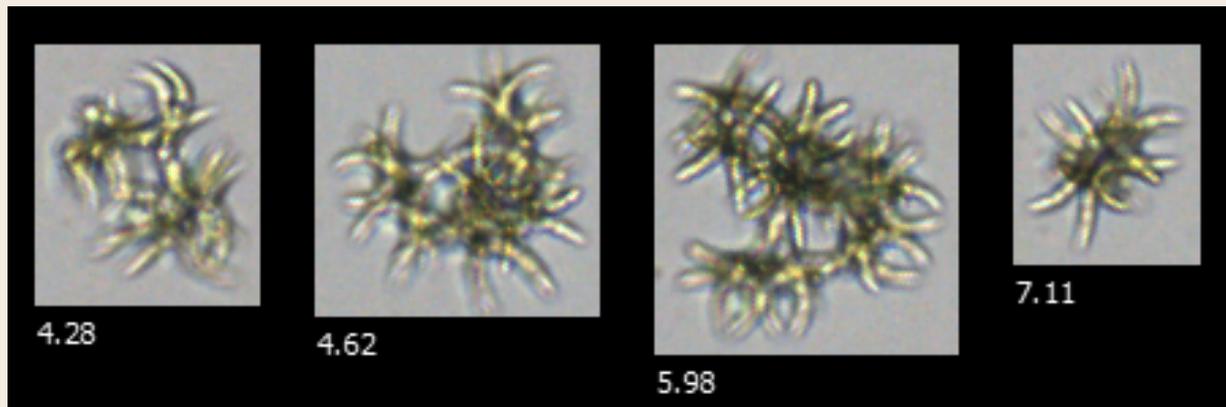Fluorimetry Data from the Integrated Tube Sample

We used the fluorometer to find the amount of phycocyanin in the sample, which we can use as an indicator of cyanobacteria. In October, Leesville Pond had undetectable levels of phycocyanin pigment, down from 12 Aus of pigment in September. A pond becomes at risk for a bloom when it is at levels above 50 Au.

WORCESTER CYANOBACTERIA MONITORING COLLABORATIVE
Leesville Pond – September 2021

<u>Sampling Conditions</u>

September 25th was a sunny Saturday at 65℉ with a light breeze. There were 0.34 inches of rain the day before the sample was taken. The water was 72℉ and slightly turbid. Turtles, birds, fish and plant material were observed along the shore.

Ankistrodesmus Green Algae

<u>FlowCam Findings from the GRAB Sample</u>

The particle density at Leeseville Pond was 1859 particles/ml in September, according to the FlowCam, which is higher than it was in August. No cyanobacteria cells were detected. The sample was made up of small particles including the green algae Ankistrodesmus, and circular diatoms, but there was also a lot of organic debris. .

<u>Fluorimetry Data from the Integrated Tube Sample</u>

We used the fluorometer to find the amount of phycocyanin in the sample, which we can use as an indicator of cyanobacteria. In September, Leeseville Pond had 12 Aus of phycocyanin pigment, which is relatively low compared to other lakes in the program, and about the same as it had in August. A pond becomes at risk for a bloom when it is at levels above 50 Au.

Leesville Pond – August 2021

Sampling Conditions

August 21st was a calm, mostly cloudy Saturday at 79℉. There were 3.2 inches of rainfall two days prior to the meeting.

Microscopic Findings from the Plankton NET

Detritus

Detritus

Trichrome

FlowCam Findings from the GRAB Sample

The particle density at Leeseville Pond was 107 particles/ml in August, according to the FlowCam, which is relatively low compared to other program lakes. The density was much lower than it was in July. No cyanobacteria cells were detected. The sample was made up primarily of the alga *Cryptomonas*, as well as some circular diatoms. Neither are known to produce toxins, though *Cryptomonas* has been known to form deep water blooms during winter months. Apart from these two organisms, there was also some organic debris.


Cryptomonas

Circular diatoms

Fluorimetry Data from the Integrated Tube Sample

Using the fluorometer to find phycocyanin levels, the following graph represents the relative cyanobacteria pigment in each pond. Leesville Pond rose from undetectable levels in the month of July to 11 Au in the month of August. A pond becomes at risk for a bloom when it is at levels above 50 Au.
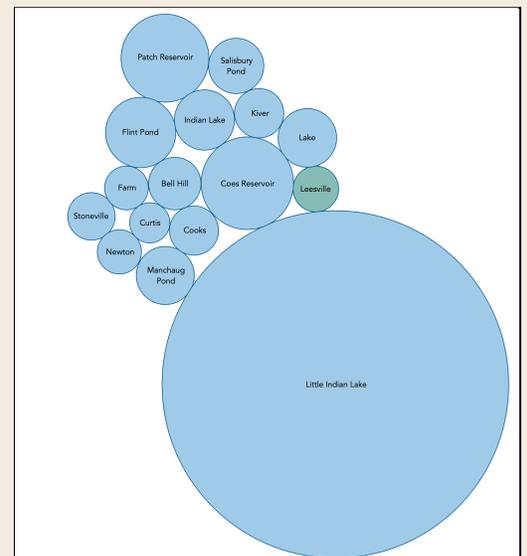
Leesville Pond – July 2021

Sampling Conditions

July 17th was a partly cloudy Saturday at 73℉ with a light breeze. There were .4 inches of rainfall the day before the sample was taken. The water was calm with little wave activity, and looked slightly turbid with a moderately fishy smell. Along the shore were birds, fish, turtles, and swans, as well as early morning walkers.

FlowCam Findings from the GRAB Sample

The FlowCam, an advanced microscopy technology, was run for all organisms in the water sample including green algae, golden algae, cyanobacteria, diatoms, and debris. The particle density at Leesville Pond was 2,195 particles/ml in July, which is a decrease from 5,221 particles/ml in June. The figure provides a snapshot of some of the images that were seen by the camera at this lake.
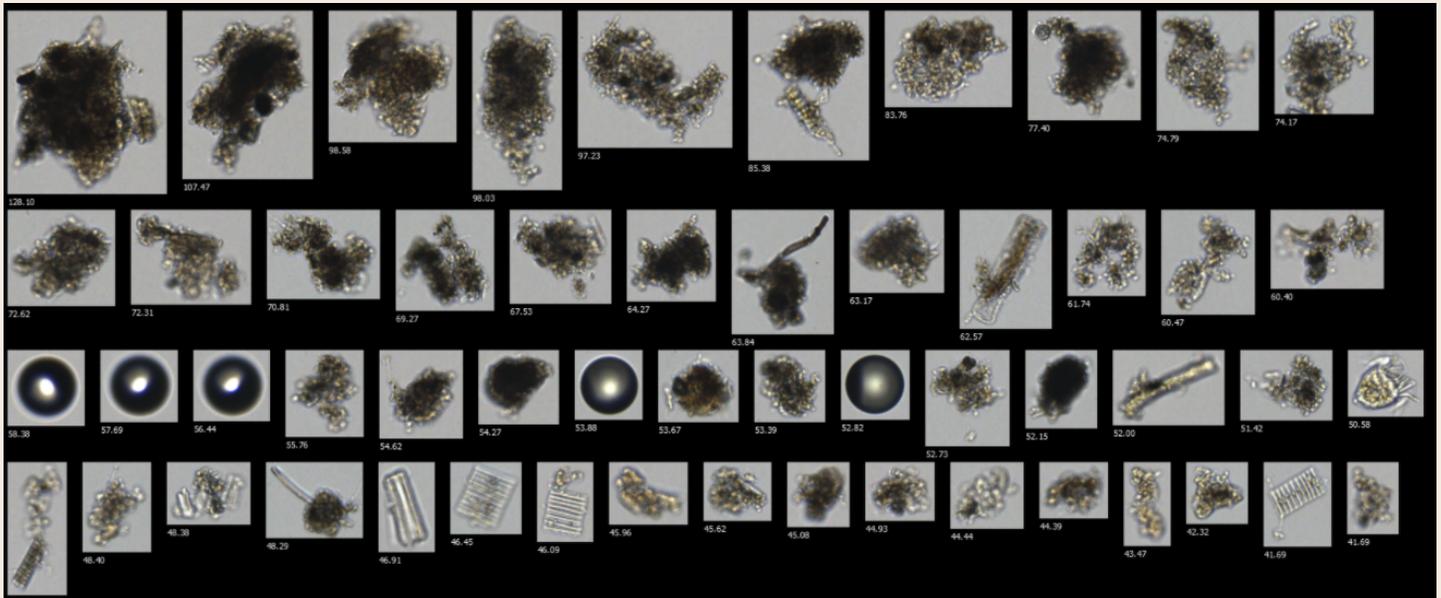
Fluorimetry Data from the Integrated Tube Sample

Using the fluorometer to find phycocyanin levels, the following graph represents the relative cyanobacteria pigment in each pond. Leesville Pond has remained at undetectable levels in the months of June and July. A pond becomes at risk for a bloom when levels rise above 50 Au.