

MEMO

Date: July 24, 2018

To: Mr. Peter Neely and Mr. Carey Fiertz, Twin Lakes Association

From: Aquatic Ecosystem Research - 1204 Main St. #161; Branford, CT 06405

RE: Algal analysis summary for July

Dear Carey and Peter:

We have completed the analyses of the sample you collected on July 12th at East Twin Lake. The total algal cell concentration was low at 2,356 cells/mL. The dilute concentration was in concordance with the excellent Secchi transparency of 5 meters you measured during your sampling events.

The July algal community was fairly diverse with 19 genera identified in the count. Cyanobacteria comprised 32% of the community with *Microcystis spp.* and *Woronichinia spp.* the most abundant at 18 and 8%, respectively. These two genera can form blooms and synthesize toxins but the cell concentrations are not nearly high enough to pose a public health risk.

Diatoms (Bacillariophyceae) are still important at 36% but not as dominant as they were in June when the taxa comprised 70% of the algal community. Important July genera included *Fragilaria spp.* and *Cyclotella spp.*

Chrysophyta and Phaeothamniophyceae were not as abundant as Cyanophyta and Diatoms, but certainly important contributors to the algal community. Colonial Chrysophyta genera included *Uroglenopsis spp.* and *Dinobryon spp.* at 3.5 and 2.5%. The Phaeothamniophyceae genus, *Stichogloea spp.* comprised 17.5%. This genus was grouped with the Chrysophyta in the past, was reclassified because of unique auxiliary pigment combinations, and some phycologists still consider the new Family as "proposed" and retain the original classification.

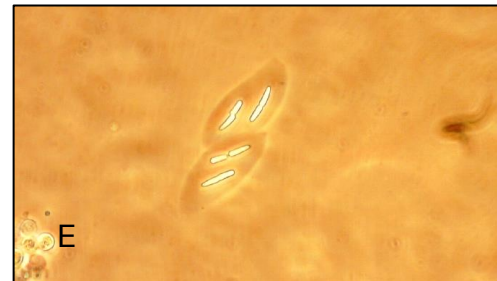
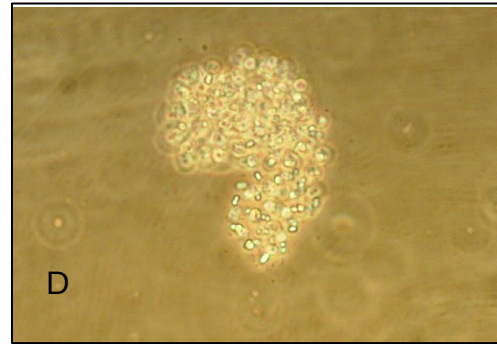
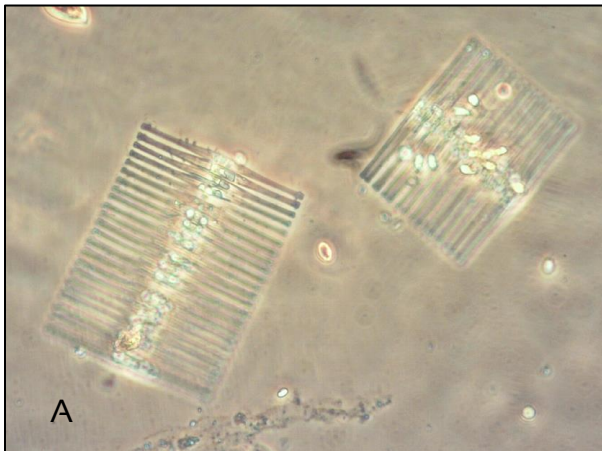
Kind regards,

AQUATIC ECOSYSTEM RESEARCH

Larry Marsicano
NALMS Certified Lake Manager

Table 1. Identifications, enumerations and relative abundances of important genera observed in the sample collected from East Twin Lake on July 12, 2018.

Taxa	Genus / species	Cells / mL	%	Taxa cells / mL	Taxa %
Cyanophyta	<i>Aphanizomenon sp.</i>	0	0.0	761	32.3
	<i>Chroococcus sp.</i>	120	5.1		
	<i>Dolichospermum sp.</i>	0	0.0		
	<i>Gomphosphaeria</i>	0	0.0		
	<i>Microcystis sp.</i>	431	18.3		
	<i>Rhabdoderma sp.</i>	25	1.0		
	<i>Woronichinia sp.</i>	185	7.8		
Chlorophyta	<i>Gloeocystis sp.</i>	12	0.5	46	2.0
	<i>Golenkinia radiata</i>	0	0.0		
	<i>Mougeotia sp.</i>	0	0.0		
	<i>Oocystis sp.</i>	34	1.4		
Charophyta	<i>Cosmarium sp.</i>	0	0.0	0	0.0
Chrysophyta	<i>Dinobryon sp.</i>	59	2.5	176	7.5
	<i>Mallomonas sp.</i>	3	0.1		
	<i>Synura sp.</i>	31	1.3		
	<i>Uroglenopsis sp.</i>	83	3.5		
Phaeothamniophyceae	<i>Stichogloea sp.</i>	413	17.5	413	17.5
Bacillariophyta	<i>Asterionella formosa</i>	43	1.8	856	36.3
	<i>Aulocoseria sp.</i>	0	0.0		
	<i>Cyclotella sp.</i>	203	8.6		
	<i>Fragilaria crotonensis</i>	598	25.4		
	<i>Synedra sp.</i>	3	0.1		
	<i>Tabellaria flocculosa</i>	9	0.4		
	<i>Pennate Diatom</i>	0	0.0		
Dinophyceae	<i>Ceratium hirundinella</i>	0	0.0	3	0.1
	<i>Glenodinium sp.</i>	3	0.1		
	<i>Peridinium sp.</i>	0	0.0		
Cryptophyceae	<i>Cryptomonas ovata</i>	6	0.3	43	1.8
	<i>Rhodomonas sp.</i>	37	1.6		
Euglenophyceae	<i>Euglena sp.</i>	0	0.0	0	0.0
	<i>Phacus sp.</i>	0	0.0		
	<i>Trachelomonas sp.</i>	0	0.0		
	Unknown	59	2.5	59	2.5
Taxa identified 19	Totals	2356	100	2356	100



Some of the important algal genera observed in the sample collected on July 12, 2018. These included the diatoms A) *Fragilaria spp.* and B) *Cyclotella spp.*, C) the Chrysochyta *Dinobryon spp.*, and the Cyanophyta D) *Microcystis spp.* and E) *Rhabdoderma spp.*