



Northeast Aquatic Research, LLC

www.northeastaquaticresearch.net

74 Higgins Highway

Mansfield Center, CT 06250

August 3, 2022



TO: Residents of East Hampton, CT
ATTN: Jeremy Hall, Parks and Recreation Director
Town of East Hampton Conservation Lake Commission
FROM: Hillary Kenyon, Limnologist & Certified Lake Manager

RE: Pocotopaug Nutrient Monitoring Results Mid-Season Review & August Profile Data Overview

In June and July 2022, Lake Pocotopaug experienced increasing phytoplankton algae and cyanobacteria in the water column, despite earlier BioBlast microbial treatments. The Lake Advisory Committee jointly decided to proceed with a copper sulfate treatment. The goal of the copper treatment was to kill existing cyanobacteria in the water column in order to prevent a surface cyanobacteria bloom and to keep the beaches open for swimming. This was the first formal algaecide treatment on record at Lake Pocotopaug, and the treatment was permitted through CT DEEP. CT-licensed aquatic algaecide applicator, Pond and Lake Connection, performed the copper treatment on July 29, 2022. The northwestern half of the lake was treated.

Northeast Aquatic Research performed follow-up water quality monitoring four days after copper treatment on August 2, 2022. Monitoring revealed that the lake experienced nearly a 2ft improvement in water clarity lake-wide as a result of the copper treatment. The lake looked generally clearer, and free from cyanobacteria blooms in open water and along the western shore. Cyanobacteria were still present in a calm cove off O'Neil Lane, towards the southwestern part of the lake. The lake did have a measurable reduction in dissolved oxygen saturation, but open water monitoring stations all maintained roughly 80% dissolved oxygen saturation or higher. The lowest surface dissolved oxygen concentration was measured to be 6.2mg/L at Oakwood station. It is expected that the lake will recover dissolved oxygen fairly quickly in the next few days, with the aid of the circulation aeration system in place.

The following data summary provides water quality profile data collected from August 2nd, as well as all laboratory nutrient concentration results reported from April through July 2022. August samples were collected and sent to the UCONN CESE lab for analysis. August nutrient results are expected in approximately six weeks.

Markham Station (41.59949, -72.49493)

Sampling Date: 08/02/2022

Water clarity: 1.8 meters

Water depth: 8.2 meters

Weather: Sunny/bright, breezy

Depth (m)	Temp (°C)	Oxygen (mg/L)	Oxygen Saturation %
0	27.1	6.7	86
1	27.2	6.8	88
2	27.2	6.9	88
3	27.2	6.8	88
4	27.2	6.8	88
5	27.2	6.7	87
6	27.2	6.5	84
7	27.2	6.5	83
8	27.1	6.0	78

Island Station (41.59668722, -72.50117)

Sampling Date: 08/02/2022

Water clarity: 1.6 meters

Water depth: 6.0 meters

Weather: Sunny/bright, breezy

Depth (m)	Temp (°C)	Oxygen (mg/L)	Oxygen Saturation %
0	26.9	6.4	82
1	26.8	6.2	80
2	26.8	6.2	79
3	26.8	6.1	79
4	26.7	6.2	79
5	26.7	6.3	81
6	26.6	6.4	81

Oakwood Station (41.59758, -72.50849)

Sampling Date: 08/02/2022

Water clarity: 2.0 meters

Water depth: 10 meters

Weather: Bright/bright, windy

Depth (m)	Temp (°C)	Oxygen (mg/L)	Oxygen Saturation %
0	27.0	6.2	80
1	27.1	6.1	79
2	27.0	6.2	79
3	27.0	6.2	80
4	26.9	6.4	82
5	27.0	6.2	80
6	26.9	6.3	81
7	26.8	6.4	81
8	26.8	6.3	81
9	26.8	6.1	78
9.8	26.7	6.0	76

South/Outlet Station (41.587383, -72.501875)

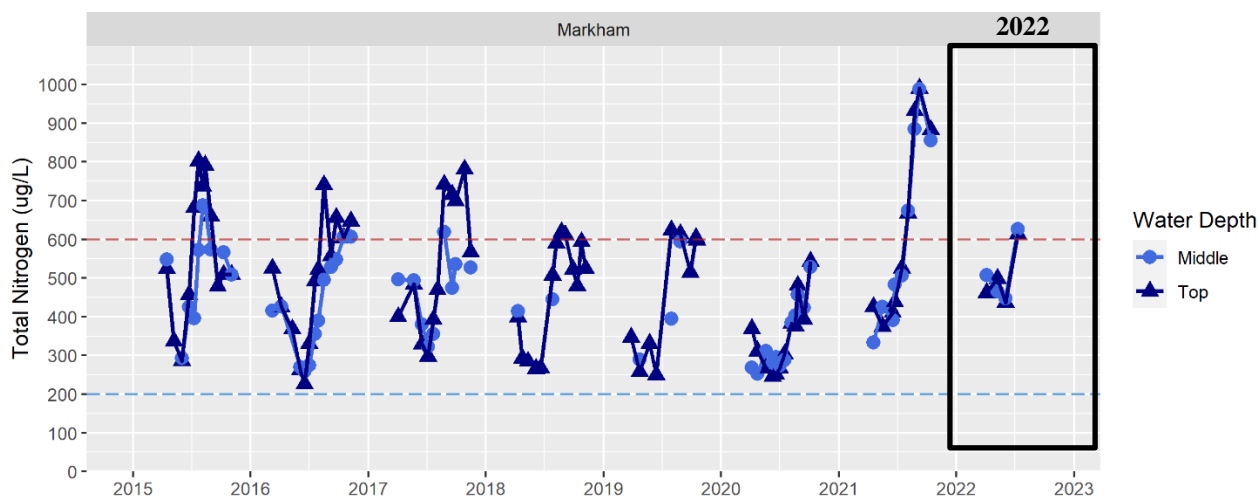
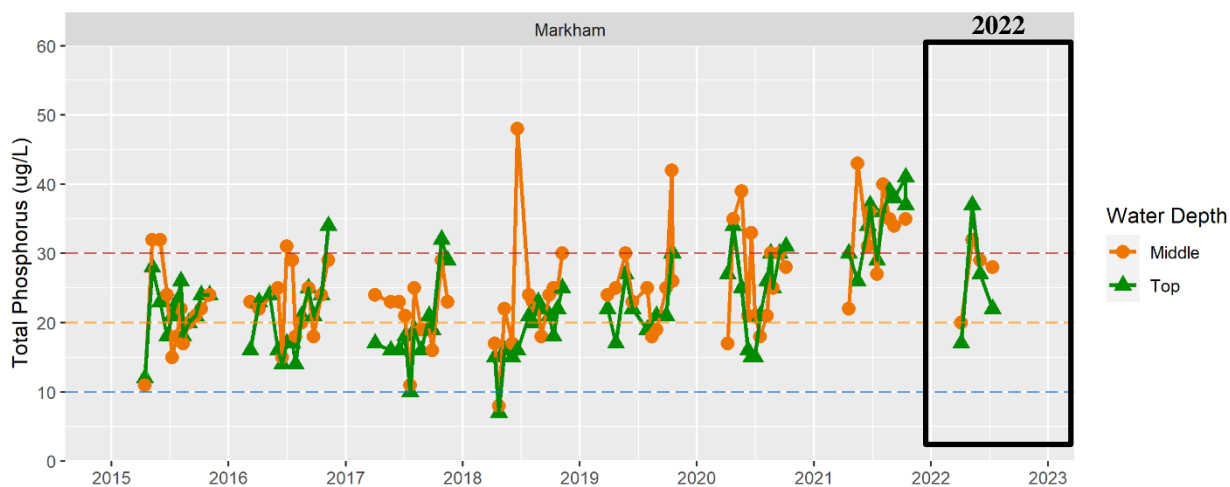
Sampling Date: 06/02/2022

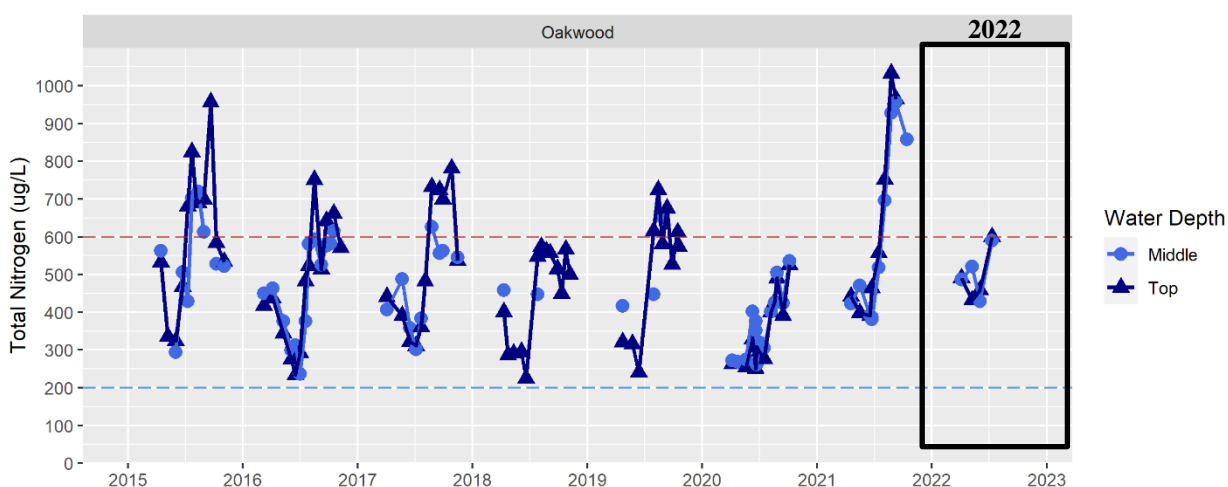
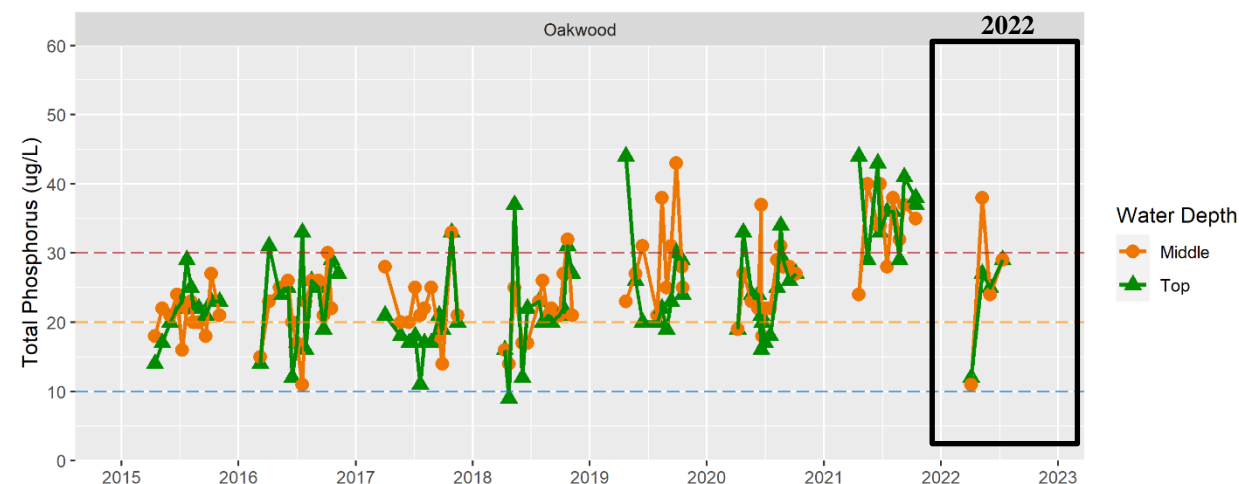
Water clarity: 1.6 meters

Water depth: 3.5 meters

Weather: Sunny/bright, light breeze

Depth (m)	Temp (°C)	Oxygen (mg/L)	Oxygen Saturation %
0	27.0	7.0	90
1	26.8	6.7	85
2	26.6	5.4	68
3	26.5	5.7	73
3.5	26.2	0.6	9

Nutrient Concentrations, Historical Compared to 2022 Results (2022 results outlined in black rectangle)



Raw Nutrient Data Tables 2022: April-July

Units	µg/L	µg/L	µg/L	µg/L	µg/L
EPA Method #	350.1	353.2	353.2	445	365.4
Practical Quantitation Limit (PQL)	10	10	50	0.3	10
Method Detection Limit (MDL)	3	3	8	0.1	1
Collection date	4/5/2022	4/5/2022	4/5/2022	4/5/2022	4/5/2022
	Ammonia Nitrogen	Nitrate+Nitrite Nitrogen	Total Nitrogen	Chlorophyll-a	Total Phosphorus
	NH3	NOX	TN	Chla	TP
Pocotopaug Markham 1 m	6	79	462	4.3	17
Pocotopaug Markham 5 m	12	85	508	NSS	20
Pocotopaug Markham 8.5 m	16	88	458	NSS	20
Pocotopaug Oakwood 1 m (duplicate averaged)	9	76	491	NSS	12
Pocotopaug Oakwood 5 m	11	81	487	NSS	11
Pocotopaug Oakwood 9 m	16	85	494	NSS	22
Pocotopaug Island 1 m	6	74	465	7.1	19
Pocotopaug South 1 m	7	72	508	5.6	18

Collection date	5/9/2022	5/9/2022	5/9/2022	5/9/2022	5/9/2022
	Ammonia Nitrogen	Nitrate+Nitrite Nitrogen	Total Nitrogen	Chlorophyll-a	Total Phosphorus
	NH3	NOX	TN	Chla	TP
Pocotopaug Markham 1 m	94	23	499	4.7	37
Pocotopaug Markham 5 m	NSS	NSS	466	NSS	32
Pocotopaug Markham 7.5 m	93	17	491	NSS	40
Pocotopaug Oakwood 1 m (duplicate averaged)	NR	NR	432	5.4	27
Pocotopaug Oakwood 5 m	NSS	NSS	521	NSS	38
Pocotopaug Oakwood 9 m	NR	NR	457	NSS	29
Pocotopaug Island 1 m	NSS	NSS	438	4.8	21
Pocotopaug South 1 m	NSS	NSS	483	4.3	28

NR indicates Not Reported by lab yet. May data is provisional from UCONN CESE.

Collection date	6/2/2022	6/2/2022	6/2/2022	6/2/2022	6/2/2022
	Ammonia Nitrogen	Nitrate+Nitrite Nitrogen	Total Nitrogen	Chlorophyll-a	Total Phosphorus
	NH3	NOX	TN	Chla	TP
Pocotopaug Markham 1 m	13	16	437	10.7	27
Pocotopaug Markham 4 m	NSS	NSS	448	NSS	29
Pocotopaug Markham 7.2 m	57	16	451	NSS	42
Pocotopaug Oakwood 1 m (duplicate averaged)	28	18	459	6.5	25
Pocotopaug Oakwood 5 m	NSS	NSS	429	NSS	24
Pocotopaug Oakwood 8.8 m	219	24	489	NSS	26
Pocotopaug Island 1 m	NSS	NSS	422	6.5	24
Pocotopaug South 1 m	NSS	NSS	NSS	12.8	26

Collection date	7/11/2022	7/11/2022	7/11/2022	7/11/2022	7/11/2022
	Ammonia Nitrogen	Nitrate+Nitrite Nitrogen	Total Nitrogen	Chlorophyll-a	Total Phosphorus
	NH3	NOX	TN	Chla	TP
Pocotopaug Markham 1 m	ND	ND	614	23.7	22
Pocotopaug Markham 5 m	NSS	NSS	627	NSS	28
Pocotopaug Markham 7.5 m	ND	8	602	NSS	26
Pocotopaug Oakwood 1 m (duplicate averaged)	ND	ND	600	25.0	29
Pocotopaug Oakwood 5 m	NSS	NSS	590	NSS	29
Pocotopaug Oakwood 9 m	31	ND	610	NSS	30
Pocotopaug Island 1 m	NSS	NSS	603	26.0	24
Pocotopaug South 1 m	NSS	NSS	598	24.7	26

ND = Not Detected

NSS = No Sample Sent (not part of the scope of services)