

East Caroga Lake Questions and Answers, 2015 CSLAP

Q1. What is the condition of our lake this year?

A1. Water quality conditions in East Caroga Lake were slightly less favorable than usual in 2015- water clarity was slightly higher than normal, and nutrient and algae levels were slightly lower than normal. However, a small and short-lived shoreline blue green algae bloom was reported in late fall, a phenomenon observed in other years.

Q2. Is there anything new that showed up in the testing this year?

A2. Chloride sampling results were consistent with lakes exhibiting moderate impacts from road salt runoff, although actual impacts have not been observed. Most of the other results in 2015 were consistent with past results.

Q3. How does the condition of our lake this year compare with other lakes in the area?

A3. East Caroga Lake had slightly lower water clarity, but similar nutrient levels and slightly lower algae levels, than other Adirondack lakes. Shoreline blue green algae blooms did not occur in most other nearby lakes, although this may be infrequent and ephemeral in this lake. Aquatic plant coverage was slightly higher than in many nearby lakes.

Q4. Are there any trends in our lake’s condition?

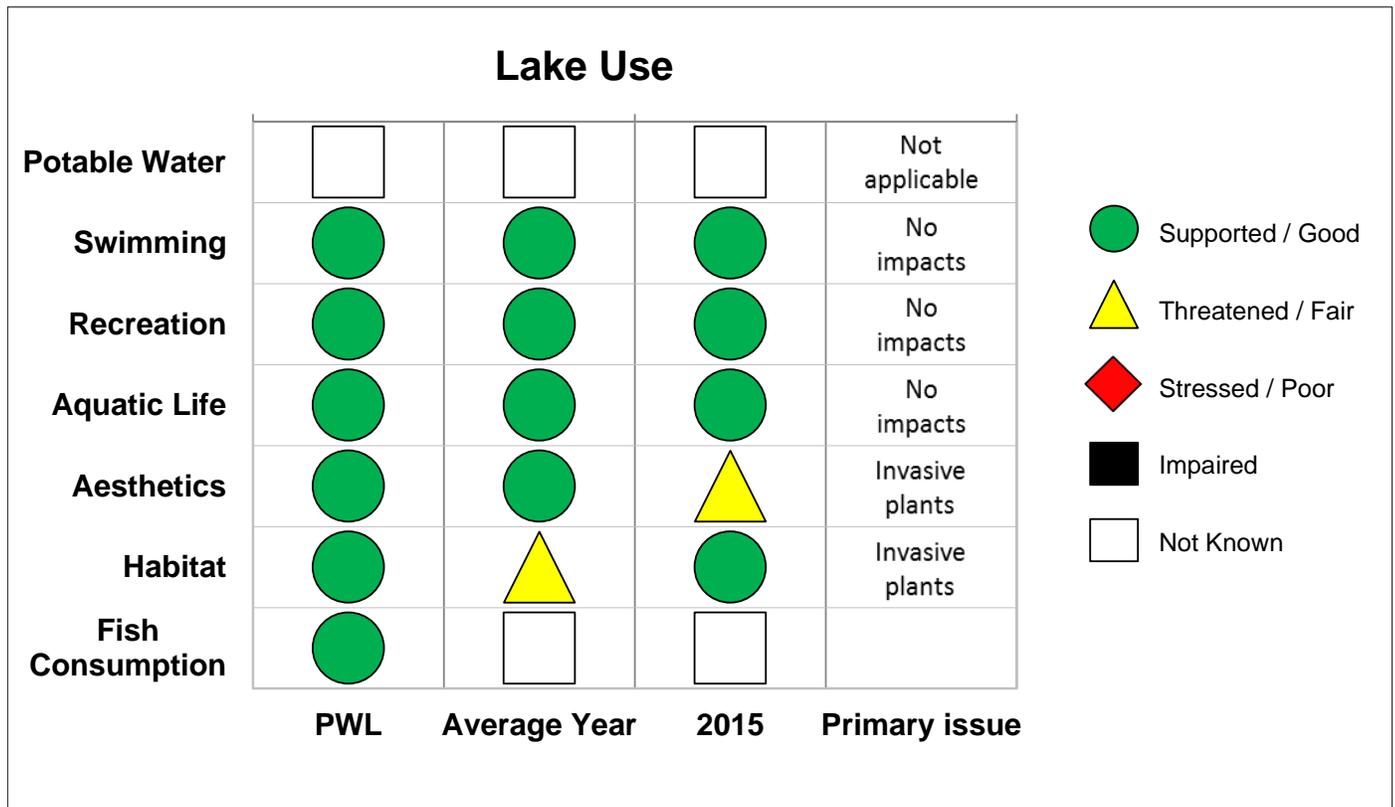
A4. Conductivity readings have increased over the last two decades in East Caroga Lake. This may be due to road salting or increased shoreline erosion, although impacts to other water quality indicators have not been documented.

Q5. Should we be concerned about the condition of our lake? Are we close to a tipping point?

A5. East Caroga Lake exhibited an “unexpected” shoreline blue green algae blooms in 2014 and 2015, despite low nutrient levels (and lower readings in 2015). It is not yet known why these small and ephemeral blooms have occurred, but any increase in phosphorus loading could increase susceptibility to blooms.

Q6. Are any actions indicated, based on the trends and this year’s results?

A6. Individual stewardship activities such as pumping your septic system, growing a buffer of native plants next to the water bodies, and reducing erosion from shoreline properties and runoff into the lake will help to maintain lake health by reducing nutrient and sediment loading to the lake. Any potential new sources of nutrients should be evaluated, given the recent increase in phosphorus and nitrogen in recent years. Visiting boats should be inspected to reduce the risk of new invasive species, since nearby lakes harbor several invasive plants not presently found in the lake.

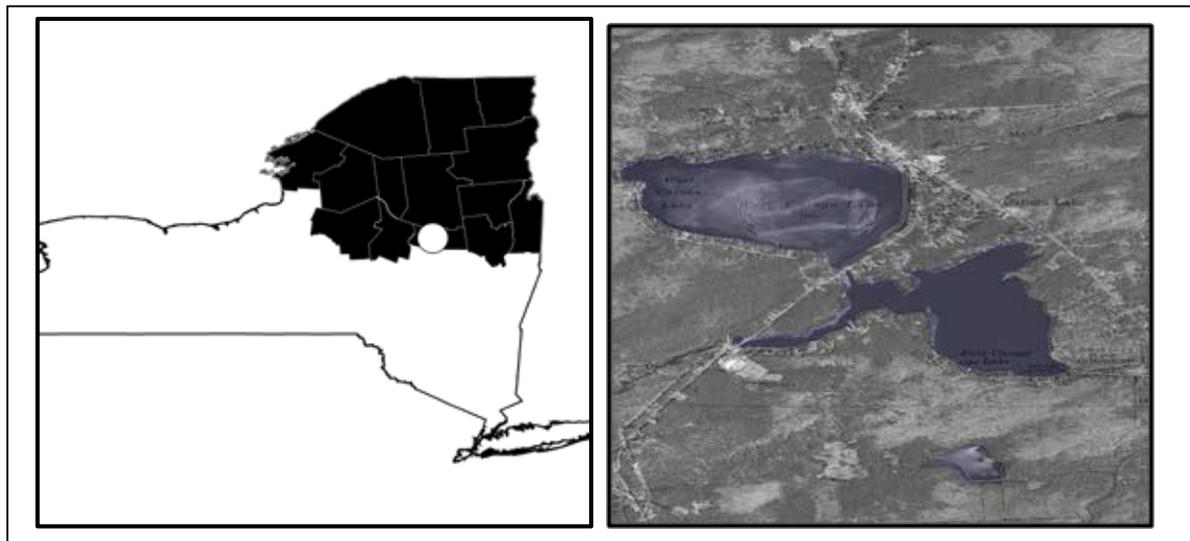


CSLAP 2015 Lake Water Quality Summary: East Caroga Lake

General Lake Information

Location	Town of Caroga
County	Fulton
Basin	Mohawk River
Size	139.9 hectares (345.6 acres)
Lake Origins	Augmented by 4ft by 200ft rockfill dam (1910)
Watershed Area	300 hectares (741 acres)
Retention Time	1.4 years
Mean Depth	3.9 meters
Sounding Depth	14 meters
Public Access?	DEC launch
Major Tributaries	Caroga Creek, West Caroga Lake
Lake Tributary To...	Caroga Creek to Mohawk River
WQ Classification	B (contact recreation = swimming)
Lake Outlet Latitude	43.125
Lake Outlet Longitude	-74.499
Sampling Years	1990-1995, 2000-2010, 2012-2015
2015 Samplers	Marc Platt
Main Contact	Marc Platt

Lake Map



Background

East Caroga Lake is a 345 acre, class B lake found in the Town of Caroga in Fulton County, in the southern Adirondack area of New York State. East Caroga Lake was first sampled as part of CSLAP in 1990.

It is one of eight CSLAP lakes among the nearly 200 lakes found in Fulton County, and one of 13 CSLAP lakes among the nearly 800 lakes and ponds in the Mohawk River drainage basin.

Lake Uses

East Caroga Lake is a Class B lake; this means that the best intended use for the lake is for contact recreation—swimming and bathing, non-contact recreation—boating and fishing, aquatic life, and aesthetics. The lake is used by lake residents and visitors (via a DEC launch site) for a variety of recreational purposes.

It is not known by the report authors if private stocking occurs in East Caroga Lake. Fish species in the lake include brown bullhead, chain pickerel, pumpkinseed sunfish, smallmouth bass, and yellow perch.

General statewide fishing regulations are applicable in East Caroga Lake. In addition, the open season on pickerel is the first Saturday in May through March 15th, with no size limit, but a daily take limit of five fish. The open season for smelt, suckers, alewives, and blueback herring lasts from April 1st through May 15th, using a dip net with a less than 14 inch diameter. The daily take limit from 5am to 10pm is eight quarts.

Historical Water Quality Data

CSLAP sampling was conducted on East Caroga Lake each year from 1990 to 1995, 2000 to 2010, and 2012 to 2015. The CSLAP reports for each of the past several years can be found on the NYSFOLA website at <http://nysfola.mylaketown.com>. The most recent CSLAP report for East Caroga Lake can also be found on the NYSDEC web page at <http://www.dec.ny.gov/lands/77870.html>.

East Caroga Lake was sampled as part of several major New York State water quality monitoring programs. It was sampled as part of the NYSDEC Lake Classification and Inventory Survey (LCI), the states ambient lake monitoring program, in 1982 and 1987. These data showed that phosphorus and algae levels were higher, but water transparency readings were similar, to those recorded via CSLAP. The steady increase in conductivity identified in CSLAP dated back at least to the LCI—these conductivity readings were lower than those measured 10-15 years later through CSLAP.

The lake was also sampled by the Conservation Department (the predecessor to the NYSDEC) as part of the Biological Survey of the Mohawk River basin in 1934. This program was intended to evaluate water quality conditions as they relate to fisheries management, so much of the information collected cannot be easily compared to the CSLAP dataset. The summary information for the lake included the following:

“East Caroga is a relatively shallow lake with one small area in which the water reaches a depth of 49 ft. The oxygen content of the water is excellent except in the deep hole. There are a fair number of weed beds... The water level is maintained by a dam in the outlet. The lake is connected to Caroga Lake by a channel deep enough to provide a highway for migrating fish.”

The lake was thermally stratified, with dissolved oxygen levels dropping below the state water quality standard (= 4 ppb) near a depth of about 30 feet, although oxygen was still measurable at the lake bottom.

East Caroga Lake was sampled as part of the DEC biomonitoring study in 2010. The water sampling data indicated conditions similar to those measured through CSLAP.

Neither Caroga Creek nor any outlet of the lake has been sampled as part of the state Rotating Intensive Basins (RIBS) stream chemistry or state macroinvertebrate biological monitoring program, although West Caroga Lake was sampled through CSLAP from 1997 to 2000, and in 2007.

Lake Association and Management History

East Caroga Lake is served by the East Caroga Lake Protective Association, which was founded in 1917. Some of the activities conducted by the lake association include:

- Fisheries management- Walleye pike stocking
- Suction harvesting of Eurasian watermilfoil—the Town Board serves as the lead agency, and the lake association is the applicant for the APA permit
- Soliciting funds for costs via weed fund
- Exotic plant surveillance through the Adirondack Park Invasive Plant Program (APIPP)
- Providing lifeguards for the beach (historically)

It is not known if the East Caroga Lake Protective Association maintains a website. However, the lake association maintains a Facebook page at <https://www.facebook.com/pages/East-Caroga-Lake-Protective-Association/136383709733439>.

Summary of 2015 CSLAP Sampling Results

Evaluation of 2015 Annual Results Relative to 1990-2014

The summer (mid-June through mid-September) average readings are compared to historical averages for all CSLAP sampling seasons in the “Lake Condition Summary” table, and are compared to individual historical CSLAP sampling seasons in the “Long Term Data Plots –East Caroga Lake” section in Appendix C.

Evaluation of Eutrophication Indicators

Algae (chlorophyll *a*) and nutrient (phosphorus) levels were lower than normal in 2015, and water clarity readings were slightly higher than normal. However, none of these trophic indicators has exhibited any clear long-term trends since 1990. These readings continue to vary slightly from year to year. A small algae bloom was observed in the fall of 2015, after lake turnover, but this was short-lived and limited spatially.

Lake productivity normally varies little or unpredictably during the summer, and this lack of consistent seasonal change was also apparent in 2015. Water clarity was lower in early summer and in the fall of 2015, in response to higher phosphorus and algae levels.

The lake continues to be characterized as *mesoligotrophic*, based on water clarity, chlorophyll *a* (both typical of *mesotrophic* lakes) and total phosphorus (typical of *oligotrophic* lakes), although chlorophyll *a* levels in 2015 were more typical of *oligotrophic* lakes. The trophic state indices (TSI) evaluation indicate that phosphorus readings are usually lower than expected given the chlorophyll *a* and Secchi disk transparency readings in East Caroga Lake. It may be that phosphorus levels in East Caroga Lake most years are comprised primarily of soluble phosphorus, the form available for algae growth. This may be triggering the periodic fall algae blooms, including those reported in 2015. Overall trophic conditions are summarized on the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Potable Water Indicators

Algae levels are too low to render the lake susceptible to taste and odor compounds or elevated DBP (disinfection by product) compounds that could affect the potability of the water, and the lake is not classified for this use. Deepwater ammonia readings are slightly higher than those measured at the lake surface (and higher than normal in 2015, after being lower than normal in 2015). Deepwater phosphorus levels continue to be low, though also higher than normal in 2015, and neither deepwater phosphorus nor ammonia were high enough to trigger any impacts for “unofficial” deep potable water intakes. Potable water conditions, at least as measurable through CSLAP, are summarized in the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Limnological Indicators

Conductivity readings have risen steadily since first evaluated in the early 1990s, and these readings were again much higher than normal in 2015 (although still typical of lakes with relatively soft water). Color readings have been higher since the early 2000s, but this appears to be due to the change in labs at that time. None of the other trophic indicators (NO_x, ammonia, total nitrogen, pH, or calcium) has exhibited any clear long-term trends, although pH and ammonia were slightly higher than normal in 2015 and total nitrogen was lower than normal in 2015.

Chloride levels in the 2015 samples, collected for the first time through CSLAP and cited in Appendix A, ranged from 24 to 27 mg/l. These values fall within the “moderate” road salt runoff levels cited by the New Hampshire DES. These readings are well below the state potable water quality standard of 250 mg/l and within than the range of values found in most NYS lakes. These readings suggest a moderate likelihood of biological impacts from road salt. Additional data will help to determine if these represent normal readings for the lake

Overall limnological conditions are summarized in the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Biological Condition

The fluoroprobe screening samples analyzed by SUNY ESF in the last few years found mostly low overall algal densities and low levels of blue green algae in the open water, with the algae community comprised mostly of green algae. A small shoreline bloom was reported in late summer of 2014 and the fall of 2015. Both blooms were comprised primarily of blue green algae, although neither the 2014 bloom sample nor any of the open water samples have exhibited high toxin levels. It is likely that these blooms are both ephemeral and limited in scope, but the occurrence of any shoreline algae blooms should continue to be documented.

The CSLAP macrophyte surveys show moderate diversity in the aquatic plant community, and identified 11 different aquatic plant species at the lake, including one exotic plant species (*Myriophyllum spicatum*, or Eurasian watermilfoil). The modified floristic quality index (FQI) indicates that the quality of the aquatic plant community is “fair,” although it is likely that additional aquatic plant species can also be found in the lake.

The 1992 zooplankton data showed a distribution of 45 percent rotifers, 36 percent Copepods, and 19 percent Cladoceras. This is probably consistent with the relatively high water clarity and suggests that rotifers are grazing on phytoplankton.

East Caroga Lake was sampled in 2010 by the NYSDEC as part of a biomonitoring survey of 12 CSLAP lakes each year. The macroinvertebrate analyses from this study will be completed with the rest of the 2008-12 study samples sometime in the near future.

There is only limited information about the fish community; three coolwater fish species are among the seven fish species reported at the lake.

Biological conditions in the lake are summarized in the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Lake Perception

Water quality and recreational assessments were slightly less favorable than normal in the last few years, despite slightly higher water clarity readings in 2015. Recreational assessments have degraded slightly over the last decade, but the less favorable assessments have been associated with poor weather or other (non water quality or plant) issues. Water quality assessments improve slightly over the course of a typical summer, though not in 2015, although aquatic plant coverage also appears to be increase over the summer. No clear seasonal trends were apparent in 2014 or 2015. Overall lake perception is summarized in the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Local Climate Change

Air temperature readings were lower than normal in 2015, part of a slight longer term decrease, but this did not appear to influence water temperature readings (which were slightly higher than usual in 2015). Neither air nor water temperature readings has exhibited any clear long-term trends, although deepwater temperatures have increased slightly over the last decade.

Evaluation of Algal Toxins

Algal toxin levels can vary significantly within blooms and from shoreline to lake, and the absence of toxins in a sample does not indicate safe swimming conditions. Fluoroprobe readings indicate blue green algae levels are well below the levels indicating susceptibility for harmful algal blooms (HABs). This is mostly consistent with low overall algae levels. An analysis of algae samples indicated microcystin readings in the open water and along the shoreline (within blooms) to be below levels needed to support safe swimming.

Lake Condition Summary

Category	Indicator	Min	Annual Avg	Max	2015 Avg	Classification	2015 Change?	Long-term Change?
Eutrophication Indicators	Water Clarity	2.10	3.64	9.75	3.91	Mesotrophic	Within Normal Range	No Change
	Chlorophyll <i>a</i>	0.05	3.35	19.10	1.39	Mesotrophic	Lower Than Normal	No Change
	Total Phosphorus	0.000	0.009	0.023	0.006	Oligotrophic	Lower Than Normal	No Change
Potable Water Indicators	Hypolimnetic Ammonia	0.02	0.18	0.49	0.06	Elevated Deepwater NH4	Lower Than Normal	Not known
	Hypolimnetic Arsenic							Not known
	Hypolimnetic Iron							Not known
	Hypolimnetic Manganese							Not known
Limnological Indicators	Hypolimnetic Phosphorus	0.000	0.013	0.191	0.047	Close to Surface TP Readings	Higher than Normal	Not known
	Nitrate + Nitrite	0.00	0.01	0.12	0.02	Low NOx	Within Normal Range	No Change
	Ammonia	0.00	0.02	0.19	0.04	Low Ammonia	Higher than Normal	No Change
	Total Nitrogen	0.09	0.39	4.02	0.29	Low Total Nitrogen	Within Normal Range	No Change
	pH	6.17	7.53	8.40	7.74	Alkaline	Higher than Normal	No Change
	Specific Conductance	60	103	163	127	Softwater	Higher than Normal	Increasing Significantly
	True Color	3	13	30	13	Intermediate Color	Within Normal Range	Increasing Slightly
	Calcium	3.4	8.8	12.2	8.6	Not Susceptible to Zebra Mussels	Within Normal Range	No Change
Lake Perception	WQ Assessment	1	1.9	3	2.5	Not Quite Crystal Clear	Less Favorable than Normal	No Change
	Aquatic Plant Coverage	1	2.8	3	2.8	Surface Plant Growth	Within Normal Range	No Change
	Recreational Assessment	1	2.0	4	2.0	Excellent	Within Normal Range	No Change
Biological Condition	Phytoplankton					Open water-low blue green algae biomass; Shoreline-high blue green algae in bloom	Not known	Not known
	Macrophytes					Excellent quality of aquatic plant community	Not known	Not known
	Zooplankton					Not measured through CSLAP	Not known	Not known
	Macroinvertebrates					Not yet evaluated	Not known	Not known
	Fish					Warmwater fisheries	Not known	Not known
	Invasive Species					Eurasian watermilfoil	Not known	Not known
Local Climate Change	Air Temperature	4	21.3	29	17.5		Lower Than Normal	Decreasing Slightly
	Water Temperature	9	22.0	27	23.0		Within Normal Range	No Change

Category	Indicator	Min	Annual Avg	Max	2015 Avg	Classification	2015 Change?	Long-term Change?
Harmful Algal Blooms	Open Water Phycocyanin	0	4	22	6	No readings indicate high risk of BGA	Not known	Not known
	Open Water FP Chl.a	1	2	4	2	No readings indicate high algae levels	Not known	Not known
	Open Water FP BG Chl.a	0	0	1	0	No readings indicate high BGA levels	Not known	Not known
	Open Water Microcystis	<DL	0.2	0.3	<DL	Mostly undetectable open water MC-LR	Not known	Not known
	Open Water Anatoxin a	<DL	<DL	0.1	<DL	Open water Anatoxin-a at times detectable	Not known	Not known
	Shoreline Phycocyanin					No shoreline blooms sampled for PC	Not known	Not known
	Shoreline FP Chl.a	8517	8517	8517		All readings indicate very high algae levels	Not known	Not known
	Shoreline FP BG Chl.a	8517	8517	8517		All readings indicate very high BGA levels	Not known	Not known
	Shoreline Microcystis	<DL	1.0	1.3		Mostly undetectable shoreline bloom MC-LR	Not known	Not known
	Shoreline Anatoxin a	<DL	<DL	<DL		Shoreline bloom Anatoxin-a consistently not detectable	Not known	Not known

Evaluation of Lake Condition Impacts to Lake Uses

East Caroga Lake is presently among the lakes listed on the 2003 Mohawk River Basin Priority Waterbody List (PWL), with recreation listed as *threatened* due to excessive weeds. The PWL listing is in Appendix B.

Potable Water (Drinking Water)

The CSLAP dataset at East Caroga Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, is inadequate to evaluate the use of the lake for potable water, and the lake is not classified for this use. The limited CSLAP data do not show any impacts to this use, but potable water intakes are not authorized in this lake.

Public Bathing

The CSLAP dataset at East Caroga Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggests that public bathing, if conducted at a public swimming beach, would be fully supported. This use may be *threatened* by the presence of a shoreline blue green algae bloom, although additional data will help to determine if this was a one-time phenomenon. Additional information about bacteria levels is needed to determine if pathogens impact swimming.

Recreation (Swimming and Non-Contact Uses)

The CSLAP dataset on East Caroga Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, indicate that recreation should be fully supported, although these uses may be eventually be *threatened* by excessive weeds (particularly if not actively managed).

Aquatic Life

The CSLAP dataset on East Caroga Lake, including water chemistry data and physical measurements, suggest that aquatic life may be *threatened* by road salt runoff, deepwater hypoxia and the presence of exotic plants. Additional data are needed to evaluate the food and habitat conditions for aquatic organisms in the lake.

Aesthetics and Habitat

The CSLAP dataset on East Caroga Lake, including volunteer samplers' perception data, suggest that aesthetics may be *threatened* by excessive weeds and shoreline algae blooms, and habitat may be *threatened* by invasive plants.

Fish Consumption

Fish consumption advisories are not posted for East Caroga Lake.

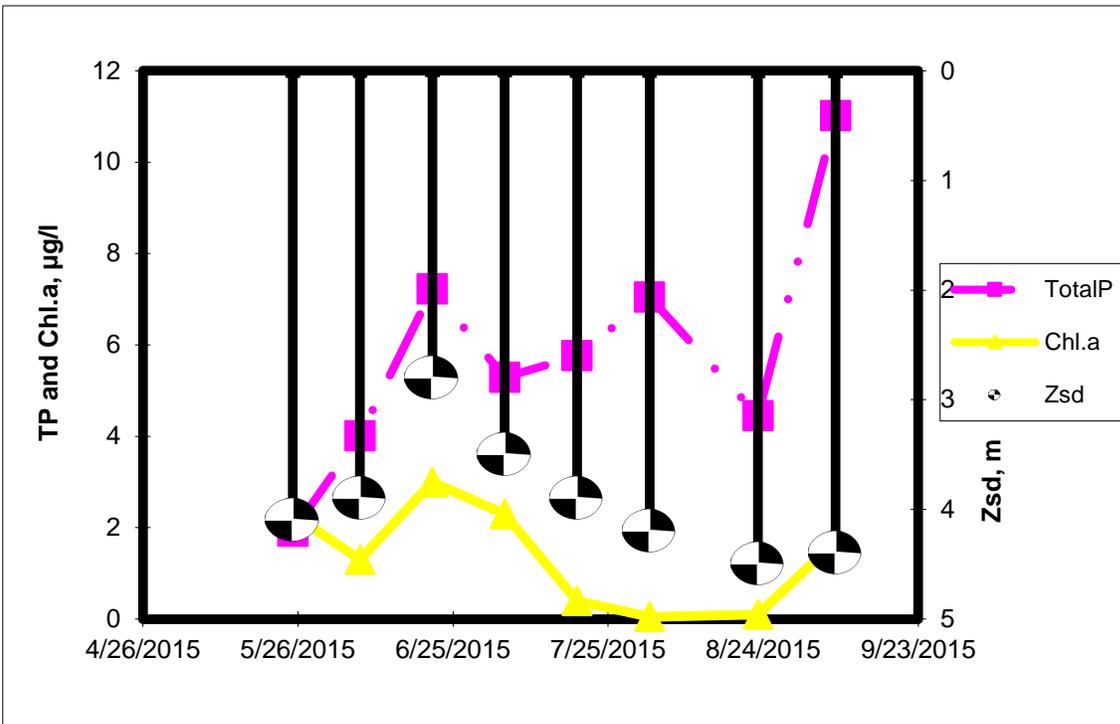
Additional Comments and Recommendations

Invasive species surveys should continue to be conducted at East Caroga Lake to determine if other invasive species, particularly spiny water flea migrating from Great Sacandaga Lake or Peck Lake and other new aquatic plant invaders, have migrated into the lake. Lake residents are advised to report any shoreline algae blooms, given the presence of a bloom in 2014 and 2015, and residents and their pets are advised to avoid exposure to shoreline blooms or discolored water.

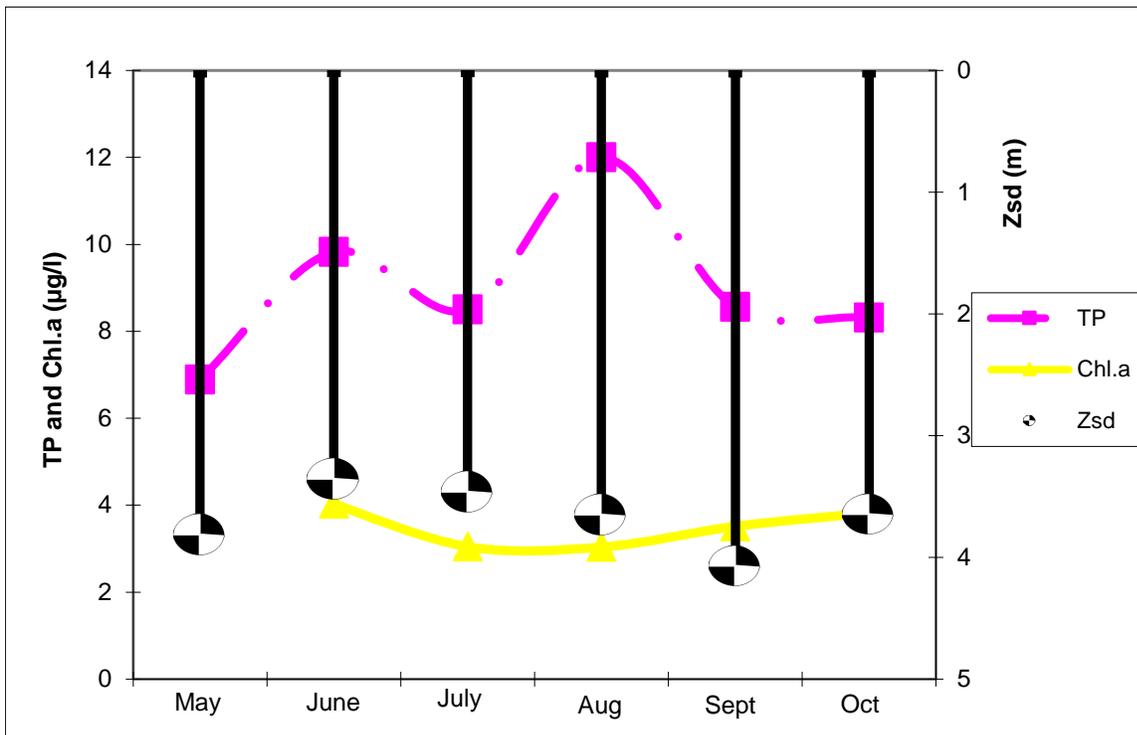
Aquatic Plant IDs-2015

None submitted for identification in 2015.

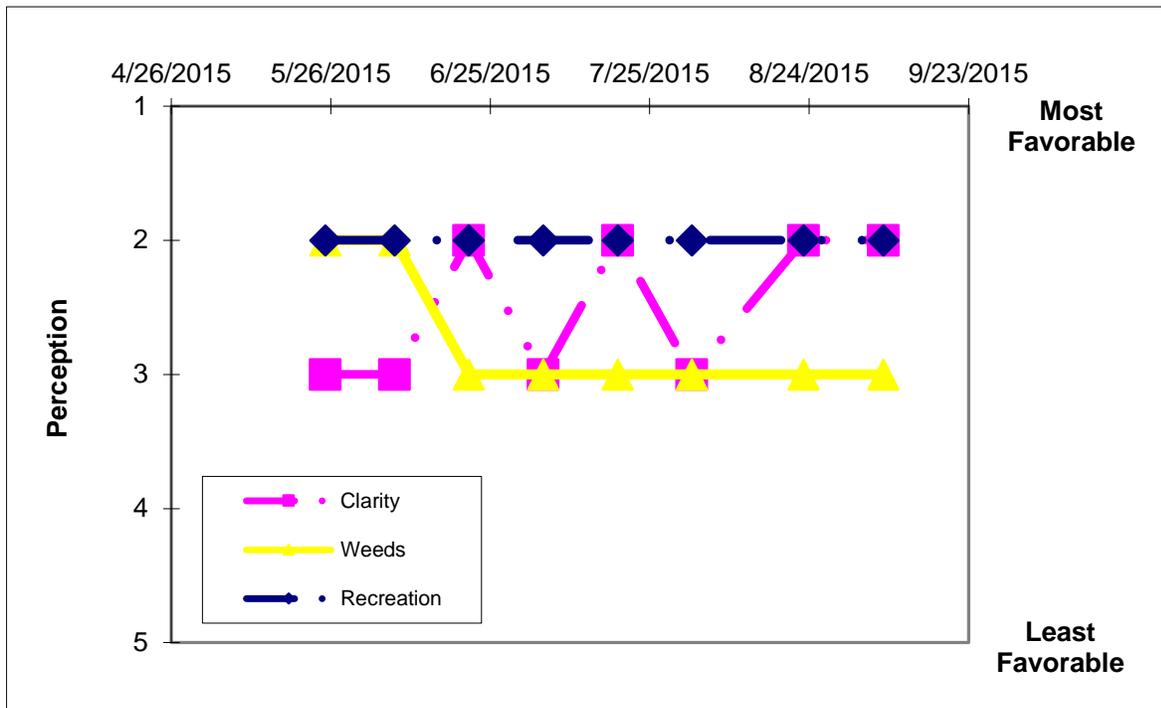
Time Series: Trophic Indicators, 2015



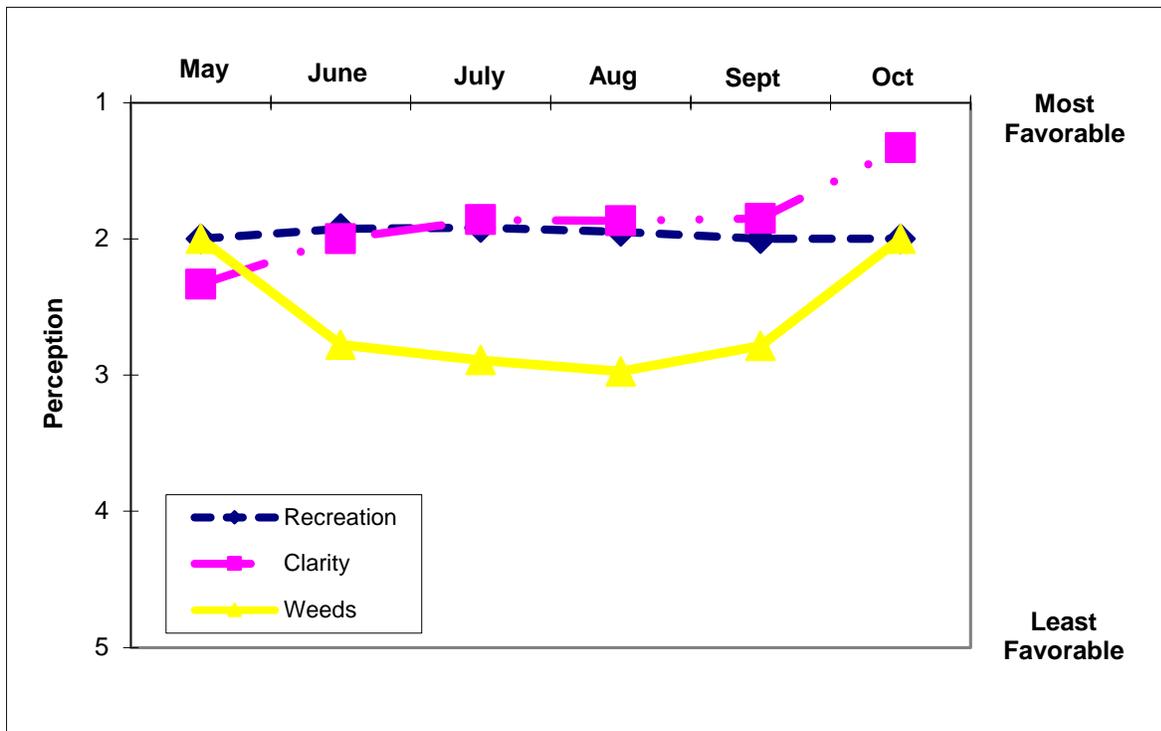
Time Series: Trophic Indicators, Typical Year (1990-2015)



Time Series: Lake Perception Indicators, 2015



Time Series: Lake Perception Indicators, Typical Year (1990-2015)



Appendix A- CSLAP Water Quality Sampling Results for East Caroga Lake

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
67	East Caroga L	7/7/1990	16.0	4.15	1.5	0.008	0.02				8	7.52	82		3.68	
67	East Caroga L	7/21/1990	13.3	2.90	1.5	0.009	0.01				8	7.76	82		4.01	
67	East Caroga L	8/5/1990	14.5	4.10	1.5	0.006	0.01					7.73	81		3.78	
67	East Caroga L	8/19/1990	10.6	3.50	1.5	0.018	0.01				10	7.68	60		4.37	
67	East Caroga L	9/2/1990	14.5	4.13	1.5		0.01				10	7.02	93		2.78	
67	East Caroga L	9/16/1990	14.5	3.50	1.5	0.007	0.01				10	7.76	85		3.46	
67	East Caroga L	9/30/1990	14.3	4.15	1.5	0.008	0.01				10	7.62	74		5.15	
67	East Caroga L	10/14/1990	12.7	3.60	1.5	0.009	0.01				18	6.82	80		8.58	
67	East Caroga L	6/24/1991	14.5	3.25	1.5	0.009	0.01				8	7.55	86		6.23	
67	East Caroga L	7/10/1991	15.0	3.40	1.5	0.009					8	7.15	67		2.96	
67	East Caroga L	7/16/1991	15.0	4.20	1.5	0.006	0.01				16	7.42	87		3.69	
67	East Caroga L	7/28/1991	14.8	2.85	1.5	0.005					6	7.68	87		3.95	
67	East Caroga L	8/12/1991	14.4	3.60	1.5	0.008	0.01				9	7.23	94		3.66	
67	East Caroga L	8/27/1991	14.3	3.00	1.5	0.008					8		87		2.57	
67	East Caroga L	9/9/1991	14.5	4.00	1.5	0.006	0.01				5	7.79	88		3.90	
67	East Caroga L	9/26/1991	14.5	4.00	1.5	0.006					8	7.25	80		2.53	
67	East Caroga L	6/4/1992	14.7	3.53	1.5	0.009	0.01				16	7.72	95		2.57	
67	East Caroga L	6/23/1992	14.8	2.68	1.5	0.008					9	7.62	86		2.76	
67	East Caroga L	7/2/1992	14.3	2.71	1.5	0.009	0.01				7	7.69	94		5.36	
67	East Caroga L	7/16/1992	14.7	2.83	1.5	0.011					9	7.68	92		5.18	
67	East Caroga L	8/2/1992	15.0	2.70	1.5	0.010	0.01				11	7.59	94		3.71	
67	East Caroga L	8/14/1992	14.1	2.80	1.5	0.009					12	7.10	76		3.93	
67	East Caroga L	8/27/1992				0.007	0.01				12	7.52	94		2.01	
67	East Caroga L	9/12/1992	14.5	3.38	1.5	0.008					16	7.42	89		14.90	
67	East Caroga L	7/6/1993	14.8	2.70	1.5	0.008	0.01				3	6.92	89		2.06	
67	East Caroga L	7/22/1993	14.8	3.50	1.5	0.007					7	7.60	88		2.26	
67	East Caroga L	8/3/1993	14.5	3.50	1.5	0.005	0.01				4	7.74	91		1.58	
67	East Caroga L	8/17/1993	14.5	3.88	1.5	0.009					6	7.64	92		1.32	
67	East Caroga L	9/1/1993	14.5	3.38	1.5	0.006	0.01				7	7.76	92		2.74	
67	East Caroga L	9/14/1993	14.5	3.88	1.5	0.010					8	7.70	91		1.70	
67	East Caroga L	9/28/1993	14.5	4.30	1.5	0.007	0.01				6	7.11	93		2.16	
67	East Caroga L	10/13/1993	13.8	4.30	1.5	0.008					9	7.74	96		2.16	
67	East Caroga L	6/14/1994	15.0	2.95		0.016	0.01				13	7.19	90		3.54	
67	East Caroga L	6/28/1994	15.0	2.33	1.5	0.008					7	7.34	90		5.65	
67	East Caroga L	7/12/1994	15.0	3.00	1.5	0.006	0.01				7	7.12	88		2.37	
67	East Caroga L	7/26/1994	14.8	2.75	1.5	0.006					17	7.47	91		2.92	
67	East Caroga L	8/7/1994	14.5	2.63	1.5	0.007	0.01				10	7.35	92		3.20	
67	East Caroga L	8/24/1994	14.8	2.95	1.5	0.007					14	7.67	89		3.47	
67	East Caroga L	9/6/1994	14.9	3.13	1.5	0.008	0.01				13	7.60	89		4.14	
67	East Caroga L	9/20/1994	14.1	2.65	1.5	0.007					9	7.58	88		5.65	
67	East Caroga L	7/10/2000	12.0	3.15	1.5	0.008	0.01				11	7.54	101		5.50	
67	East Caroga L	7/24/2000		2.80	1.5	0.010	0.01				17	7.61	99		0.43	
67	East Caroga L	8/7/2000	13.0	3.00	1.5	0.005	0.01				16	7.30	99		6.80	
67	East Caroga L	8/21/2000	13.4	2.60	1.5	0.011	0.01				13	7.10	101		6.25	
67	East Caroga L	9/4/2000	13.0	2.65		0.014	0.01				18	7.51	101		2.47	
67	East Caroga L	9/18/2000	12.8	4.00	1.5	0.014	0.01				15	7.47	102		3.53	
67	East Caroga L	10/1/2000	12.8	3.20		0.011	0.01				14	7.81	102		0.74	
67	East Caroga L	7/10/2001	12.8	3.40	1.5	0.012	0.01				13	7.86	107		5.85	
67	East Caroga L	7/23/2001	13.7	4.25	13.7	0.008	0.01				13	7.81	107		0.38	
67	East Caroga L	8/6/2001	13.4	3.40	13.4	0.011	0.01				9	7.45	111			
67	East Caroga L	8/20/2001	14.3	3.00	14.3	0.009	0.01				11	7.15	111		4.24	
67	East Caroga L	9/3/2001	14.0	3.30	1.5	0.010	0.01				7	7.01	112		2.65	
67	East Caroga L	9/17/2001	14.0	3.30	1.5	0.005	0.01				15	7.89	110		2.52	
67	East Caroga L	10/1/2001	13.4	3.50		0.005	0.01					6.99	110			
67	East Caroga L	05/27/02	13.1	3.10	1.5	0.008	0.01	0.05	0.34	43.26	15	7.86	107			
67	East Caroga L	06/09/02	14.0	2.70	1.5	0.010	0.05	0.08	0.49	47.47	16	7.15	107		4.28	
67	East Caroga L	06/23/02	14.0	3.40	1.5	0.011	0.00	0.01	0.43	39.84	12	7.47	104		1.79	
67	East Caroga L	07/08/02	14.0	3.60	3.5	0.007	0.00	0.07	0.37	49.68	14	7.40	103		2.64	
67	East Caroga L	07/23/02		3.40	3.5	0.009	0.05	0.11	0.53	56.77	14	7.45	104	3.44	1.89	
67	East Caroga L	08/05/02	14.0	3.00	3.5	0.009	0.00	0.02	0.38	41.94	12	7.55	107		2.71	

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
67	East Caroga L	08/19/02	13.0	4.00	1.5	0.007	0.00	0.03	0.51	68.22	7	7.58	107		3.74	
67	East Caroga L	09/02/02	13.5	4.10	1.5	0.011	0.00	0.01	0.40	36.61	9	7.41	106		4.93	
67	East Caroga L	6/22/2003	13.5	3.70	1.5	0.008	0.01	0.02	0.23	30.63	10	7.45	108	8.6	4.30	
67	East Caroga L	7/7/2003	13.5	3.50	1.5	0.011	0.00	0.00	0.21	18.48	11	7.43	118		3.23	
67	East Caroga L	7/20/2003	13.7	3.50	1.5	0.009	0.00	0.02	0.21	22.40	15	7.45	119		6.95	
67	East Caroga L	8/4/2003	13.5	3.35	1.5	0.011	0.00	0.02	0.22	20.56	15	7.30	114		4.97	
67	East Caroga L	8/17/2003	13.5	2.90	1.5	0.009	0.01	0.01	0.35	37.33	16	7.17	109	8.7	4.92	
67	East Caroga L	9/1/2003	13.5	3.80	1.5	0.008	0.00	0.01	0.37	45.95	16	7.27	113		5.40	
67	East Caroga L	9/14/2003	13.5	4.60	1.5	0.011	0.00	0.02	0.22	19.36	15	7.09	106		3.96	
67	East Caroga L	9/29/2003	15.0	4.50	1.5	0.006	0.01	0.00	0.59	92.22	13	7.48	113		1.99	
67	East Caroga L	6/13/2004	13.0	3.70	1.5	0.008					26	6.98	110		3.8	
67	East Caroga L	6/28/2004	14.0	3.65	1.5	0.011					19	6.50	106		4.5	
67	East Caroga L	7/12/2004	13.5	4.00	1.5	0.005					10	7.01	114		0.7	
67	East Caroga L	7/25/2004	14.0	4.80	1.5	0.010					10	7.08	127		1.4	
67	East Caroga L	8/9/2004	14.5	4.70	1.5	0.002										
67	East Caroga L	8/23/2004	14.0	4.60	1.5	0.005					7	7.43	98	12.2	1.3	
67	East Caroga L	9/6/2004	13.5	4.00	1.5	0.009					8	7.85	118		3.0	
67	East Caroga L	9/19/2004	14.0	4.70	1.5	0.007					26	7.85	75		3.4	
67	East Caroga L	6/18/2005	13.5	4.00	1.5	0.007	0.03	0.01	0.13	41.29	6	7.00	112	8.7		
67	East Caroga L	7/5/2005	13.5	2.80	1.5	0.007	0.01	0.01	0.22	70.69	13	7.37	112		4.5	
67	East Caroga L	7/18/2005	14.0	3.30	1.5	0.008	0.09	0.03	0.37	107.68	13	7.20	90		3.2	
67	East Caroga L	8/1/2005	14.0	4.20	1.5	0.006	0.03	0.01	0.32	112.52	9	7.63	84		3.2	
67	East Caroga L	8/15/2005	14.0	3.85	1.5	0.009	0.02	0.01	0.15	35.26	8	7.44	92	8.8	3.1	
67	East Caroga L	8/28/2005	14.0	3.00	1.5	0.012	0.01	0.01	0.16	28.41	9	8.03	106		5.0	
67	East Caroga L	9/11/2005	14.0	4.10	1.5	0.009	0.01	0.01	0.09	21.84	11	8.36	124		2.4	
67	East Caroga L	9/24/2005	13.4	4.40	1.5	0.009	0.01	0.01	0.16	39.18	7	7.63	114		1.4	
67	East Caroga L	6/11/2006	14.0	3.40	1.5	0.009	0.02	0.03	0.70	169.65	28		99	8.9	2.91	
67	East Caroga L	6/25/2006	14.5	3.50	1.5	0.016	0.02	0.01	0.42	59.81	18	7.61	127		4.35	
67	East Caroga L	7/10/2006	14.0	3.30	1.5	0.008	0.01	0.02	0.43	113.81	19	7.2	104		2.35	
67	East Caroga L	7/24/2006	14.5	2.50	1.5	0.011	0.02	0.03	0.74	149.73	27	7.78	93		2.85	
67	East Caroga L	8/7/2006	14.5	2.10	1.5	0.011	0.12	0.05	0.64	134.51	30	7.95	95	8.0	5.40	
67	East Caroga L	8/22/2006	14.0	2.80	1.5	0.012	0.02	0.07	0.50	91.18	13	7.47	101			
67	East Caroga L	9/3/2006	14.5	3.40	1.5	0.009			0.30	72.23	18	8.15			4.91	
67	East Caroga L	7/16/2007	14.0	3.60	1.50	0.010	0.01	0.02	0.35	81.9	11	7.5	84	9.1	2.99	
67	East Caroga L	7/30/2007	14.0	3.85	1.50	0.007	0.01	0.01	0.58	182.1	13	7.9	114		3.42	
67	East Caroga L	8/14/2007	14.5	3.50	1.50	0.009	0.02	0.02	0.75	184.9	12	8.1	129		1.87	
67	East Caroga L	8/26/2007	14.5	3.80	1.50	0.008	0.00	0.01	0.40	107.1	12	7.7	114		1.27	
67	East Caroga L	9/9/2007	14.0	3.40	1.50	0.008	0.00	0.01	0.53	153.0	6	7.2	98	9.6	1.88	
67	East Caroga L	6/1/2008	13.0	2.80	1.5	0.012	0.03	0.01	0.26	49.24	13	8.16	114	9.0	0.73	
67	East Caroga L	6/15/2008	13.5	4.20	1.5	0.011	0.01	0.02	0.47	90.09	10	7.87	129		2.02	
67	East Caroga L	6/30/2008	13.5	4.00	1.5	0.009	0.00	0.01	0.27	63.89	12	6.93	90		2.29	
67	East Caroga L	7/14/2008	14.0	3.80	1.5	0.012	0.04	0.02	0.23	42.72	15	7.48	110		10.35	
67	East Caroga L	7/27/2008	14.0	3.50	1.5	0.008	0.01	0.01	0.32	92.20	12	7.58	77	8.8	2.77	
67	East Caroga L	8/10/2008	13.5	4.20	1.5	0.008	0.01	0.01	0.38	101.13	11	7.61	96		1.70	
67	East Caroga L	8/24/2008	13.5	5.35	1.5	0.006	0.01	0.03	0.29	108.46	18	7.45	111		1.83	
67	East Caroga L	9/6/2008	13.5	4.90	1.5	0.006	0.00	0.01	0.33	130.43	12	8.30	116		1.92	
67	East Caroga L	06/21/2009	14.3	3.60	1.5	0.002	0.02	0.01	0.26		19	6.34	88	8.9	9.10	
67	East Caroga L	07/06/2009	14.0	3.70	1.5	0.008	0.07	0.02			18	7.28	93		4.58	
67	East Caroga L	07/19/2009	13.5	4.40	1.5	0.011	0.01	0.03			19	7.22	94		2.80	
67	East Caroga L	08/03/2009	13.5	4.00	1.5	0.000	0.01	0.02			20	7.87	102		2.15	
67	East Caroga L	08/16/2009	13.5	4.70	1.5	0.011	0.02	0.03			18	7.65	75	6.9	0.90	
67	East Caroga L	08/30/2009	13.5	4.00	1.5	0.012	0.01	0.02			22	7.43	102		2.10	
67	East Caroga L	09/25/2009	13.5	9.75		0.008	0.01	0.06			16	6.17	86			
67	East Caroga L	5/31/2010		4.25	1.5	0.011	0.02	0.03			11	7.52	137	9.9	1.00	
67	East Caroga L	6/13/2010		3.85	1.5	0.008	0.01	0.02			9	7.45	115		0.10	
67	East Caroga L	6/27/2010		3.80	1.5	0.006	0.01	0.02	0.39	152.04	15	8.04	112		2.70	
67	East Caroga L	7/11/2010		4.15	1.5	0.008	0.01	0.01	0.37	103.32	9	8.23			2.70	
67	East Caroga L	7/25/2010		3.50		0.008	0.03	0.02	0.47	135.76	12	7.49	111	10.1	2.50	
67	East Caroga L	8/10/2010		4.45	1.5	0.007	0.01	0.01			15	7.57	118		1.80	
67	East Caroga L	8/29/2010		4.15	1.5	0.005	0.01	0.02	0.37	170.96	17	8.26	123		3.30	
67	East Caroga L	9/12/2010		3.90	1.5	0.011	0.03	0.04	0.27	52.57	15	7.92	113		2.50	
67	East Caroga L	6/3/2012	14.3	3.35		0.012	0.02	0.02	0.38	69.85	16	8.17	114	9.3	19.10	
67	East Caroga L	6/17/2012	13.8	2.90	1.5	0.009	0.01	0.03	0.39	95.82	14	7.67	75		3.10	
67	East Caroga L	7/1/2012	13.7	3.60	1.5	0.009	0.02	0.03	0.24	56.81	20	7.58	87		2.00	
67	East Caroga L	7/13/2012	13.7	3.05	1.5	0.008	0.02	0.03	0.29	81.87	15	7.34	97		2.00	
67	East Caroga L	7/29/2012	12.3	3.95	1.5	0.005	0.02	0.03	0.39	160.23	11	7.63	107	9.3	3.60	

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
67	East Caroga L	7/29/2012			bloom											
67	East Caroga L	8/12/2012	12.4	4.20	1.5	0.006	0.01	0.01	0.25	85.25	12	7.39	110		3.20	
67	East Caroga L	8/26/2012	12.5	4.40	1.5	0.008	0.01	0.02	0.27	75.03	8	8.40	110		3.30	
67	East Caroga L	9/9/2012	12.5	4.70	1.5	0.008	0.01	0.05	0.22	58.05	11	7.96	111		5.00	
67	East Caroga L	6/9/2013	13.7	4.05	1.3	0.010	0.01	0.02	0.24	50.13	15	7.60	117		4.80	
67	East Caroga L	6/23/2013	13.7	2.90	1.5	0.008			0.47	135.62	20	7.75	115		4.10	
67	East Caroga L	7/14/2013	13.7	3.83	1.5	0.014	0.02	0.01	0.28	43.16	29	7.20	110		0.70	
67	East Caroga L	7/28/2013	13.7	4.05	1.5	0.008			0.42	111.58	15	7.27	112			
67	East Caroga L	8/11/2013	13.7	3.80	1.5	0.008	0.06	0.03	0.40	111.39	18	7.45	121		5.10	
67	East Caroga L	9/9/2013	13.7	3.87	1.5	0.009			0.42	108.19	15	7.63	114		3.30	
67	East Caroga L	9/29/2013	14.3	4.05	1.5	0.020	0.01	0.02	0.34	36.88	13	7.31	89		2.40	
67	East Caroga L	6/1/2014	13.7	3.15	1.5	0.008	0.04	0.03	0.28	77.00	22	7.25	132	9.15	4.00	
67	East Caroga L	6/15/2014	13.7	2.50	1.5	0.013			0.24	41.27	18	7.38	163		3.40	
67	East Caroga L	6/29/2014	13.7	3.40	1.5	0.017	0.02	0.03	0.24	31.56	22	7.56	129		2.40	
67	East Caroga L	7/13/2014	13.7	3.15	1.5	0.013			0.25	41.97	18	7.28	126		3.00	
67	East Caroga L	7/27/2014	13.7	2.75	1.5	0.023	0.01	0.01	0.26	24.50	16	7.46	124	8.21	1.40	
67	East Caroga L	8/10/2014	13.7	3.20	1.5	0.009			0.28	69.54	15	8.23	122		2.60	
67	East Caroga L	8/24/2014	13.7	4.10	1.5	0.015	0.02	0.01	0.34	49.95	17	7.33	123		2.00	
67	East Caroga L	9/1/2014			bloom											
67	East Caroga L	9/7/2014		3.95	1.5	0.010			4.02	903.12	13	7.60	119		2.40	
67	East Caroga L	5/25/2015	13.7	4.10	1.5	0.002	0.04	0.04	0.31	15.99	9	7.66	129	8.57	2.30	
67	East Caroga L	6/7/2015	13.7	3.90	1.5	0.004			0.27	67.08	13	7.38	145		1.30	
67	East Caroga L	6/21/2015	13.7	2.80	1.5	0.007	0.00	0.05	0.24	32.69	10	7.40	108		3.00	24.9
67	East Caroga L	7/5/2015	13.7	3.50	1.5	0.005			0.31	58.41	17	8.01	143		2.30	
67	East Caroga L	7/19/2015	12.0	3.90	1.5	0.006	0.01	0.03	0.32	55.38	17	7.41	107	8.65	0.40	
67	East Caroga L	8/2/2015	13.7	4.20	1.5	0.007			0.26	37.50		8.05	142		0.05	
67	East Caroga L	8/23/2015	13.7	4.50	1.5	0.004	0.01	0.02	0.36	81.80	16	8.03	145		0.10	26.5
67	East Caroga L	10/27/2015			bloom											
67	East Caroga L	9/7/2015	13.7	4.40	1.5	0.011			0.23	20.80	10	7.99	97		1.70	
67	East Caroga L	7/22/1993	14.8		12.5	0.009										
67	East Caroga L	8/17/1993	14.5		12.5	0.011										
67	East Caroga L	9/14/1993	14.5		13.5	0.010										
67	East Caroga L	10/13/1993	14.5		12.5	0.009										
67	East Caroga L	6/28/1994	15.0		14.0	0.013										
67	East Caroga L	7/26/1994	14.8		13.0	0.007										
67	East Caroga L	8/24/1994	14.8			0.011										
67	East Caroga L	9/20/1994	14.1		13.0	0.010										
67	East Caroga L	05/27/02	13.1			0.007	0.08	0.07	0.51	73.72						
67	East Caroga L	06/09/02	14.0			0.011	0.02	0.09	0.46	43.54						
67	East Caroga L	06/23/02	14.0			0.012	0.02	0.17	0.43	34.94						
67	East Caroga L	07/08/02	14.0			0.008	0.05	0.24	0.51	62.49						
67	East Caroga L	07/23/02				0.001	0.03	0.45	0.61	948.03						
67	East Caroga L	08/05/02	14.0			0.004	0.04	0.25	1.20	310.28						
67	East Caroga L	08/19/02	13.0			0.005	0.00	0.37	0.77	144.52						
67	East Caroga L	09/02/02	13.5			0.002	0.00	0.39	0.87	507.39						
67	East Caroga L	7/7/2003				0.009	0.220	0.110	0.40	44.22						
67	East Caroga L	7/20/2003				0.008	0.140	0.170	0.26	33.67						
67	East Caroga L	8/4/2003				0.008	0.075	0.160	0.31	38.50						
67	East Caroga L	8/17/2003				0.008	0.096	0.270	0.49	63.46						
67	East Caroga L	9/1/2003				0.015	0.003	0.350								
67	East Caroga L	9/14/2003				0.010	0.024	0.280	0.25	24.91						
67	East Caroga L	9/29/2003				0.191	0.033	0.019	0.14	0.73						
67	East Caroga L	6/13/2004	13.0		11.0	0.007					10	7.2	92.8		1.6	
67	East Caroga L	6/28/2004	14.0		12.0	0.006										
67	East Caroga L	7/12/2004	13.5		12.0	0.008										
67	East Caroga L	7/25/2004	14.0		12.0	0.004										
67	East Caroga L	8/9/2004	14.5		0.0	0.010										
67	East Caroga L	8/23/2004	14.0		12.0	0.005										
67	East Caroga L	9/6/2004	13.5		10.0	0.003										
67	East Caroga L	9/19/2004	14.0		11.0	0.002										
67	East Caroga L	6/18/2005			11.0	0.009										
67	East Caroga L	7/5/2005			11.0	0.007										
67	East Caroga L	7/18/2005			12.0	0.003										
67	East Caroga L	8/1/2005			13.0	0.006										
67	East Caroga L	8/15/2005			12.5	0.016										
67	East Caroga L	8/28/2005			12.0	0.003										

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
67	East Caroga L	9/11/2005			12.0	0.005										
67	East Caroga L	9/24/2005			9.0	0.011										
67	East Caroga L	6/25/2006	14.5		13.0	0.001										
67	East Caroga L	7/10/2006	14.0		12.0	0.006										
67	East Caroga L	7/24/2006	14.5		13.0	0.016										
67	East Caroga L	8/7/2006	14.5		13.0	0.016										
67	East Caroga L	8/22/2006	14.0			0.012										
67	East Caroga L	9/3/2006	14.5		12.0	0.023										
67	East Caroga L	9/16/2006	14.0		12.0	0.008										
67	East Caroga L	7/16/2007	14.0		11.0	0.005										
67	East Caroga L	8/14/2007	14.5		12.0	0.005										
67	East Caroga L	6/1/2008			11.0	0.008										
67	East Caroga L	6/15/2008			11.0	0.010										
67	East Caroga L	6/30/2008			11.5	0.006										
67	East Caroga L	7/14/2008			12.0	0.008										
67	East Caroga L	7/27/2008			12.0	0.007										
67	East Caroga L	8/10/2008			12.0	0.013										
67	East Caroga L	8/24/2008			12.5	0.020										
67	East Caroga L	9/6/2008			12.5	0.018										
67	East Caroga L	06/21/2009			13.0	0.009		0.29								
67	East Caroga L	07/06/2009			12.0	0.002										
67	East Caroga L	08/03/2009			12.5	0.013										
67	East Caroga L	08/16/2009			12.0	0.006		0.41								
67	East Caroga L	08/30/2009			12.0	0.015										
67	East Caroga L	09/25/2009			11.6	0.005		0.06								
67	East Caroga L	5/31/2010			5.0	0.012		0.02								
67	East Caroga L	6/27/2010			5.0	0.012		0.03								
67	East Caroga L	7/25/2010				0.010		0.11								
67	East Caroga L	8/29/2010			0.0	0.005		0.31								
67	East Caroga L	6/3/2012				0.008		0.02								
67	East Caroga L	7/1/2012			12.2	0.002		0.20								
67	East Caroga L	7/29/2012			12.3	0.001		0.25								
67	East Caroga L	8/26/2012			12.5	0.004		0.35								
67	East Caroga L	6/9/2013			4.0	0.010		0.05								
67	East Caroga L	7/14/2013			12.8	0.010		0.13								
67	East Caroga L	8/11/2013														
67	East Caroga L	9/29/2013			13.7	0.001		0.49								
67	East Caroga L	6/1/2014			10.2	0.021		0.15								
67	East Caroga L	6/15/2014			10.2	0.018										
67	East Caroga L	6/29/2014			10.2	0.012		0.10								
67	East Caroga L	7/13/2014			10.2	0.013										
67	East Caroga L	7/27/2014			10.2	0.008		0.19								
67	East Caroga L	8/10/2014			10.2	0.003										
67	East Caroga L	8/24/2014			10.2	0.001		0.12								
67	East Caroga L	9/7/2014			10	0.001										
67	East Caroga L	5/25/2015			10.2	0.043		0.06								
67	East Caroga L	6/7/2015			10	0.049										
67	East Caroga L	6/21/2015			10.2	0.052		0.06								
67	East Caroga L	7/5/2015			10.2	0.072										
67	East Caroga L	7/19/2015			10.2	0.075		0.05								
67	East Caroga L	8/2/2015			12.2	0.052										
67	East Caroga L	8/23/2015			12.2	0.014		0.05								
67	East Caroga L	9/7/2015			12.2	0.023										

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67	East Caroga L	7/7/1990	epi	24	22															
67	East Caroga L	7/21/1990	epi	28	24															
67	East Caroga L	8/5/1990	epi	29	25															
67	East Caroga L	8/19/1990	epi	14	21															
67	East Caroga L	9/2/1990	epi	29	26															
67	East Caroga L	9/16/1990	epi	16	19															
67	East Caroga L	9/30/1990	epi	18	15															
67	East Caroga L	10/14/1990	epi	15	15															
67	East Caroga L	6/24/1991	epi	22	22															
67	East Caroga L	7/10/1991	epi	24	23															
67	East Caroga L	7/16/1991	epi	23	24															
67	East Caroga L	7/28/1991	epi	24	25															
67	East Caroga L	8/12/1991	epi	27	24															
67	East Caroga L	8/27/1991	epi	29	23															
67	East Caroga L	9/9/1991	epi	23	21															
67	East Caroga L	9/26/1991	epi	18	15															
67	East Caroga L	6/4/1992	epi	25	18	2	3	2	5											
67	East Caroga L	6/23/1992	epi	18	18	2	3	2	5											
67	East Caroga L	7/2/1992	epi	23	23	2	3	2												
67	East Caroga L	7/16/1992	epi	23	22	2	3	2	6											
67	East Caroga L	8/2/1992	epi	20	19	2	3	2	5											
67	East Caroga L	8/14/1992	epi	15	19	1	3	4	5											
67	East Caroga L	8/27/1992	epi			2	3	1	6											
67	East Caroga L	9/12/1992	epi	24	19	1	3	4	5											
67	East Caroga L	7/6/1993	epi	28	23	1	3	1												
67	East Caroga L	7/22/1993	epi	23	20	2	3	3	5											
67	East Caroga L	8/3/1993	epi	26	24	2	3	4	23											
67	East Caroga L	8/17/1993	epi	22	23	2	3	4	5											
67	East Caroga L	9/1/1993	epi	20	26	2	3	4	5											
67	East Caroga L	9/14/1993	epi	24	21	2	3	1												
67	East Caroga L	9/28/1993	epi	14	14	2	3	2	5											
67	East Caroga L	10/13/1993	epi	4	9	2	3	4	5											
67	East Caroga L	6/14/1994	epi	27	24	2	3	2	6											
67	East Caroga L	6/28/1994	epi	21	21	2	3	2	5											
67	East Caroga L	7/12/1994	epi	24	24	1	3	1												
67	East Caroga L	7/26/1994	epi	26	27	2	3	1												
67	East Caroga L	8/7/1994	epi	23	24	2	3	1												
67	East Caroga L	8/24/1994	epi	26	22	2	3	1												
67	East Caroga L	9/6/1994	epi	21	18	2	3	1												
67	East Caroga L	9/20/1994	epi	13	16	2	3	2												
67	East Caroga L	7/10/2000	epi	24	22	2	3	3	25											
67	East Caroga L	7/24/2000	epi	23	23	2	3	3												
67	East Caroga L	8/7/2000	epi	23	22	2	3	3	5											
67	East Caroga L	8/21/2000	epi	23	21	2	3	3												
67	East Caroga L	9/4/2000	epi	22	23	2	3	3	5											
67	East Caroga L	9/18/2000	epi	19	20	2	3	2	5											
67	East Caroga L	10/1/2000	epi	10	14	1	2	1												
67	East Caroga L	7/10/2001	epi	28	23	2	3	2	2											
67	East Caroga L	7/23/2001	epi	28	24	2	3	3	2											
67	East Caroga L	8/6/2001	epi	29	26	2	3	3	0											
67	East Caroga L	8/20/2001	epi	23	24	2	3	3	25											
67	East Caroga L	9/3/2001	epi	27	23	2	2	3	6											
67	East Caroga L	9/17/2001	epi	17	17	1	1	1												
67	East Caroga L	10/1/2001	epi	13	14	1	1	1												
67	East Caroga L	05/27/02	epi	22	15	2	1	2												
67	East Caroga L	06/09/02	epi	23	20	2	3	2	5											
67	East Caroga L	06/23/02	epi	27	23	2	3	2	5											
67	East Caroga L	07/08/02	epi	25	23	2	3	2	8											
67	East Caroga L	07/23/02	epi	27	26	2	3	2	58											
67	East Caroga L	08/05/02	epi	26	26	2	3	2	5											
67	East Caroga L	08/19/02	epi	22	25	2	3	2	8											

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67	East Caroga L	09/02/02	epi	23	21															
67	East Caroga L	6/22/2003	epi	19	20	2	2	2	25											
67	East Caroga L	7/7/2003	epi	28	26	2	2	2	8											
67	East Caroga L	7/20/2003	epi	26	23	2	3	2												
67	East Caroga L	8/4/2003	epi	25	24	2	3	2	5											
67	East Caroga L	8/17/2003	epi	23	24	2	3	2	5											
67	East Caroga L	9/1/2003	epi	18	21	2	3	2	5											
67	East Caroga L	9/14/2003	epi	22	21	2	3	2	5											
67	East Caroga L	9/29/2003	epi	14	18	2	1	2	5											
67	East Caroga L	6/13/2004	epi	26	22	2	3	2	8											
67	East Caroga L	6/28/2004	epi	24	21	2	3	2	58											
67	East Caroga L	7/12/2004	epi	27	23	1	3	1	0											
67	East Caroga L	7/25/2004	epi	27	24	1	2	1	5											
67	East Caroga L	8/9/2004	epi	24	22	1	2	1	0											
67	East Caroga L	8/23/2004	epi	22	22	1	3	1	0											
67	East Caroga L	9/6/2004	epi	18	22	1	2	2	5											
67	East Caroga L	9/19/2004	epi	12	19		3	1	5											
67	East Caroga L	6/18/2005	epi	23	22	1	3	2	5											
67	East Caroga L	7/5/2005	epi	24	25	2	3	2	5											
67	East Caroga L	7/18/2005	epi	27	26	2	3	2	5											
67	East Caroga L	8/1/2005	epi	22	25	2	3	2	5											
67	East Caroga L	8/15/2005	epi	24	26	2	3	2	8											
67	East Caroga L	8/28/2005	epi	24	23	2	3	2	0											
67	East Caroga L	9/11/2005	epi	19	22	2	3	1	0											
67	East Caroga L	9/24/2005	epi	19	21	2	3	1	0											
67	East Caroga L	6/11/2006	epi	13	16	2	3	2	5											
67	East Caroga L	6/25/2006	epi	24	24	2	3	2	0											
67	East Caroga L	7/10/2006	epi	26	24	2	3	1	0											
67	East Caroga L	7/24/2006	epi	28	25		3	2	0											
67	East Caroga L	8/7/2006	epi	28	26	2	3	2	1											
67	East Caroga L	8/22/2006	epi	19	22	2	3	2	0											
67	East Caroga L	9/3/2006	epi	19	18	2	3	2	5											
67	East Caroga L	9/16/2006	epi	19	18	2	3	1	0											
67	East Caroga L	7/16/2007	epi	24	23	2	3	2	5											
67	East Caroga L	7/30/2007	epi	23	24	2	3	1	8											
67	East Caroga L	8/14/2007	epi	23	24	2	3	1	8											
67	East Caroga L	8/26/2007	epi	23	22	2	3	2	5											
67	East Caroga L	9/9/2007	epi	20	23	2	3	2	5											
67	East Caroga L	6/1/2008	epi	20	18	2	3	2	5											
67	East Caroga L	6/15/2008	epi	26	24	2	3	1	0											
67	East Caroga L	6/30/2008	epi	21	23	2	3	2	5											
67	East Caroga L	7/14/2008	epi	17	23	2	3	3	5											
67	East Caroga L	7/27/2008	epi	23	24	2	3	1	8											
67	East Caroga L	8/10/2008	epi	18	22	1	3	2	5											
67	East Caroga L	8/24/2008	epi	21	22	2	3	1	8											
67	East Caroga L	9/6/2008	epi	21	23	2	3	2	5											
67	East Caroga L	06/21/2009	epi	22	20	2	3	1	0											
67	East Caroga L	07/06/2009	epi	20	20	2	3	1	0											
67	East Caroga L	07/19/2009	epi	21	22	1	3	2	5											
67	East Caroga L	08/03/2009	epi	21	23	1	3	1	0											
67	East Caroga L	08/16/2009	epi	27	25	1	3	1	0											
67	East Caroga L	08/30/2009	epi	22	22	2	3	1	0											
67	East Caroga L	09/25/2009	epi	8	17	1	3	2	0			6.00								
67	East Caroga L	5/31/2010	epi	22	22	2	3	2	6	0	0									
67	East Caroga L	6/13/2010	epi	17	19	1	3	2	0	0	0									
67	East Caroga L	6/27/2010	epi	22	24	2	3	2	0	0	0									
67	East Caroga L	7/11/2010	epi	28	27	2	3	2	0	0	0									
67	East Caroga L	7/25/2010	epi	22	26	2	3	2	0	0	0									
67	East Caroga L	8/10/2010	epi	23	25	2	3	2	0	0	0									
67	East Caroga L	8/29/2010	epi	23	22	2	3	2	0	0	0									
67	East Caroga L	9/12/2010	epi	16	20	2	3	3	0	0	0									

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67	East Caroga L	6/3/2012	epi	23	22	2	2	2	0	0	0	6.10	0.80	<0.30	<0.417		1.26	0.67	I	
67	East Caroga L	6/17/2012	epi	21	24	2	3	2	0	0	0	0.40	0.70	<0.30	<0.413		1.03	0.55	I	
67	East Caroga L	7/1/2012	epi	24	24	2	3	2	0	0	0	6.30	0.40	<0.30	<0.410		1.06	0.24	I	
67	East Caroga L	7/13/2012	epi	24	27	2	1	2	8	0	0	3.00	0.60	<0.30	<0.423		2.12	0.82	I	
67	East Caroga L	7/29/2012	epi	20	26	2	3	2	8	4	4	3.70	0.90	<0.30	<0.292		3.57	0.29	H	
67	East Caroga L	7/29/2012	bloom											1.30	<0.299					
67	East Caroga L	8/12/2012	epi	17	26	2	3	2	8	0	0	6.60	1.30	<0.30	<0.537		3.37	0.61	I	
67	East Caroga L	8/26/2012	epi	22	25	2	3	2	8	0	0	3.10	0.80	<0.30	<0.551		2.20	1.46	I	
67	East Caroga L	9/9/2012	epi	16	23	2	3	2	8	0	0	5.40	1.10	<0.30	<0.725		2.64	0.65	I	
67	East Caroga L	6/9/2013	epi	17	17	2	1	2	0	0	0	3.80	1.50	<0.30	<0.420		1.50	0.00	I	I
67	East Caroga L	6/23/2013	epi	27	24	2	3	2	0	0	0	1.90	2.80	<0.30	<0.370		2.00	0.00	I	I
67	East Caroga L	7/14/2013	epi	23	25	1	3	2	0	0	0	1.50	2.20	<0.30	<0.370		1.50	0.00	I	I
67	East Caroga L	7/28/2013	epi	20	25	2	3	3	0	0	0	2.10	3.70	<0.30	<0.400		3.10	0.00	I	I
67	East Caroga L	8/11/2013	epi	13	23	2	3	2	0	0	0	3.70	3.70	<0.30	<0.380		3.70	0.50	I	I
67	East Caroga L	9/9/2013	epi	18	22	2	3	2	0	0	0	3.00	3.60	0.34	<19.130		2.80	0.00	I	I
67	East Caroga L	9/29/2013	epi	15	15	2	3	2	0	0	0	1.70	2.50	<0.30	<10.600		1.50	0.00	I	I
67	East Caroga L	6/1/2014	epi	13	20	2	2	2	0	0	0	0.10	1.30	<0.53	<0.40	<0.001	1.20	0.00		
67	East Caroga L	6/15/2014	epi	15	20	3	3	2	0	0	0	0.10	0.90	<0.61	<0.08	<0.002	1.30	0.00	I	
67	East Caroga L	6/29/2014	epi	18	25	2	3	2	0	0	0	0.70	0.50	<0.48	<0.48	<0.002	1.00	0.00	I	I
67	East Caroga L	7/13/2014	epi	22	25	2	3	2	0	0	0	2.70	0.50	<0.40	<0.21	<0.003	1.20	0.00	I	I
67	East Caroga L	7/27/2014	epi	18	25	2	3	2	0	0	0	2.10	0.50	<0.63	<0.03	<0.001	2.00	0.00	I	I
67	East Caroga L	8/10/2014	epi	15	24	2	3		0	0	0	1.50	0.50	<0.28	0.11	<0.001	1.40	0.00	I	I
67	East Caroga L	8/24/2014	epi	14	21	2	3	2	0	0	0	4.80	0.60	<0.26	<0.10	<0.002	2.20	0.00	I	
67	East Caroga L	9/1/2014	bloom											<1.27	<0.32	<0.004	8517	8517		
67	East Caroga L	9/7/2014	epi	15		2	3	2	0	0	0	2.50	0.50	<0.29	<0.14	<0.002	1.50	0.00	I	I
67	East Caroga L	5/25/2015	epi	16	18	3	2	2	0	0	0	4.40	0.80	<1.34	<0.032	<0.080	1.80	0.00	I	I
67	East Caroga L	6/7/2015	epi	9	21	3	2	2	0	0	0	4.10	0.60	<0.77	<0.126	<1.739	1.10	0.00	I	I
67	East Caroga L	6/21/2015	epi	22	23	2	3	2	0	0	0	5.60	0.90	<0.55	<0.004	<0.024	2.10	0.00	I	I
67	East Caroga L	7/5/2015	epi	17	22	3	3	2	0	0	0	3.50	0.60	<0.63	<0.010	<32.565	1.70	0.00	I	I
67	East Caroga L	7/19/2015	epi	22	25	2	3	2	0	0	0	1.80	1.00	<0.30	<0.009	<0.049	2.30	0.00	I	I
67	East Caroga L	8/2/2015	epi	18	25	3	3	2	0	0	0	3.91	0.44	<0.25	<0.004	<0.015	0.90	0.00	I	I
67	East Caroga L	8/23/2015	epi	16	25	2	3	2	0	0	0	21.50	1.70	<0.33	<0.006	<0.024	1.10	0.00	I	I
67	East Caroga L	10/27/2015	bloom																	
67	East Caroga L	9/7/2015	epi	20	25	2	3	2	0	0	0	2.70	0.50	<0.39	<0.004	<0.012	1.20	0.00	I	I
67	East Caroga L	7/22/1993	hypo	23	9															
67	East Caroga L	8/17/1993	hypo	22	8															
67	East Caroga L	9/14/1993	hypo	10	21															
67	East Caroga L	6/28/1994	hypo	21	11															
67	East Caroga L	7/26/1994	hypo	26	13															
67	East Caroga L	9/20/1994	hypo		10															
67	East Caroga L	6/13/2004	hypo		11															
67	East Caroga L	6/28/2004	hypo		12															
67	East Caroga L	7/12/2004	hypo		12															
67	East Caroga L	7/25/2004	hypo		12															
67	East Caroga L	8/23/2004	hypo		13															
67	East Caroga L	9/6/2004	hypo		12															
67	East Caroga L	9/19/2004	hypo		11															
67	East Caroga L	6/18/2005	hypo		8															
67	East Caroga L	7/5/2005	hypo		9															
67	East Caroga L	7/18/2005	hypo		10															
67	East Caroga L	8/1/2005	hypo		9															
67	East Caroga L	8/15/2005	hypo		9															
67	East Caroga L	8/28/2005	hypo		10															
67	East Caroga L	9/11/2005	hypo		9															
67	East Caroga L	9/24/2005	hypo		12															
67	East Caroga L	6/25/2006	hypo		13															
67	East Caroga L	7/10/2006	hypo		13															
67	East Caroga L	7/24/2006	hypo		13															
67	East Caroga L	8/7/2006	hypo		13															
67	East Caroga L	8/22/2006	hypo		12															
67	East Caroga L	9/3/2006	hypo		13															

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67	East Caroga L	9/16/2006	hypo		12															
67	East Caroga L	7/16/2007	hypo		11															
67	East Caroga L	7/30/2007	hypo		11															
67	East Caroga L	8/14/2007	hypo		12															
67	East Caroga L	8/26/2007	hypo		10															
67	East Caroga L	9/9/2007	hypo		10															
67	East Caroga L	6/1/2008	hypo		7															
67	East Caroga L	6/15/2008	hypo		7															
67	East Caroga L	6/30/2008	hypo		6															
67	East Caroga L	7/14/2008	hypo		7															
67	East Caroga L	7/27/2008	hypo		8															
67	East Caroga L	8/10/2008	hypo		7															
67	East Caroga L	8/24/2008	hypo		7															
67	East Caroga L	9/6/2008	hypo		8															
67	East Caroga L	06/21/2009	hypo		8															
67	East Caroga L	07/06/2009	hypo		9															
67	East Caroga L	08/03/2009	hypo		10															
67	East Caroga L	08/16/2009	hypo		10															
67	East Caroga L	08/30/2009	hypo		12															
67	East Caroga L	5/31/2010	hypo		16															
67	East Caroga L	6/27/2010	hypo		20															
67	East Caroga L	7/25/2010	hypo		16															
67	East Caroga L	8/29/2010	hypo		14															
67	East Caroga L	6/3/2012	hypo		19															
67	East Caroga L	7/1/2012	hypo		12															
67	East Caroga L	7/29/2012	hypo		11															
67	East Caroga L	8/26/2012	hypo		13															
67	East Caroga L	6/9/2013	hypo		13															
67	East Caroga L	7/14/2013	hypo		13															
67	East Caroga L	9/29/2013	hypo		10															
67	East Caroga L	6/1/2014	hypo		11															
67	East Caroga L	6/15/2014	hypo		14															
67	East Caroga L	6/29/2014	hypo		18															
67	East Caroga L	7/13/2014	hypo		15															
67	East Caroga L	7/27/2014	hypo		13															
67	East Caroga L	8/10/2014	hypo		15															
67	East Caroga L	8/24/2014	hypo		13															
67	East Caroga L	9/7/2014	hypo		13															
67	East Caroga L	5/25/2015	hypo		9															
67	East Caroga L	6/7/2015	hypo		9															
67	East Caroga L	6/21/2015	hypo		10															
67	East Caroga L	7/5/2015	hypo		22															
67	East Caroga L	7/19/2015	hypo		11															
67	East Caroga L	8/2/2015	hypo		13															
67	East Caroga L	8/23/2015	hypo		11															
67	East Caroga L	9/7/2015	hypo		12															

Legend Information

<i>Indicator</i>	<i>Description</i>	<i>Detection Limit</i>	<i>Standard (S) / Criteria (C)</i>
General Information			
Lnum	lake number (unique to CSLAP)		
Lname	name of lake (as it appears in the Gazetteer of NYS Lakes)		
Date	sampling date		
Field Parameters			
Zbot	lake depth at sampling point, meters (m)		
Zsd	Secchi disk transparency or clarity	0.1m	1.2m (C)
Zsamp	water sample depth (m) (epi = epilimnion or surface; bot = bottom)	0.1m	none
Tair	air temperature (C)	-10C	none
TH20	water temperature (C)	-10C	none
Laboratory Parameters			
Tot.P	total phosphorus (mg/l)	0.003 mg/l	0.020 mg/l (C)
NOx	nitrate + nitrite (mg/l)	0.01 mg/l	10 mg/l NO3 (S), 2 mg/l NO2 (S)
NH4	total ammonia (mg/l)	0.01 mg/l	2 mg/l NH4 (S)
TN	total nitrogen (mg/l)	0.01 mg/l	none
TN/TP	nitrogen to phosphorus (molar) ratio, = (TKN + NOx)*2.2/TP		none
TCOLOR	true (filtered) color (ptu, platinum color units)	1 ptu	none
pH	powers of hydrogen (S.U., standard pH units)	0.1 S.U.	6.5, 8.5 S.U. (S)
Cond25	specific conductance, corrected to 25C (umho/cm)	1 umho/cm	none
Ca, Cl	calcium, chloride (mg/l)	1 mg/l	none
Chl.a	chlorophyll a (ug/l)	0.01 ug/l	none
Fe	iron (mg/l)	0.1 mg/l	1.0 mg/l (S)
Mn	manganese (mg/l)	0.01 mg/l	0.3 mg/l (S)
As	arsenic (ug/l)	1 ug/l	10 ug/l (S)
AQ-PC	Phycocyanin (aquafior) (unitless)	1 unit	none
AQ-Chl	Chlorophyll a (aquafior) (ug/l)	1 ug/l	none
MC-LR	Microcystis-LR (ug/l)	0.01 ug/l	1 ug/l potable (C) 20 ug/l swimming (C)
Ana	Anatoxin-a (ug/l)	variable	none
Cyl	Cylindrospermopsin (ug/l)	0.1 ug/l	none
FP-Chl, FP-BG	Fluoroprobe total chlorophyll, fluoroprobe blue-green chlorophyll (ug/l)	0.1 ug/l	none
Lake Assessment			
QA	water quality assessment; 1 = crystal clear, 2 = not quite crystal clear, 3 = definite algae greenness, 4 = high algae levels, 5 = severely high algae levels		
QB	aquatic plant assessment; 1 = no plants visible, 2 = plants below surface, 3 = plants at surface, 4 = plants dense at surface, 5 = surface plant coverage		
QC	recreational assessment; 1 = could not be nicer, 2 = excellent, 3 = slightly impaired, 4 = substantially impaired, 5 = lake not usable		
QD	reasons for recreational assessment; 1 = poor water clarity, 2 = excessive weeds, 3 = too much algae, 4 = lake looks bad, 5 = poor weather, 6 = litter/surface debris, 7 = too many lake users, 8 = other		
QF, QG	Health and safety issues today (QF) and past week (QG); 0 = none, 1 = taste/odor, 2 = GI illness humans/animals, 3 = swimmers itch, 4 = algae blooms, 5 = dead fish, 6 = unusual animals, 7 = other		
HAB form, Shore HAB	HAB evaluation; A = spilled paint, B = pea soup, C = streaks, D = green dots, E = bubbling scum, F = green/brown tint, G = duckweed, H = other, I = no bloom		

Appendix B- Priority Waterbody Listing for East Caroga Lake

East Caroga Lake (1201-0046)

Threatened

Waterbody Location Information

Revised: 08/19/2002

Water Index No:	H-240-127-P697	Drain Basin:	Mohawk River
Hydro Unit Code:	02020004/230	Str Class:	B
Waterbody Type:	Lake (Mesotrophic)	Reg/County:	5/Fulton Co. (18)
Waterbody Size:	345.7 Acres	Quad Map:	CAROGA LAKE (I-23-1)
Seg Description:	entire lake		

Water Quality Problem/Issue Information (CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Recreation	Threatened	Known

Type of Pollutant(s)

Known: ---
Suspected: ALGAL/WEED GROWTH
Possible: Nutrients

Source(s) of Pollutant(s)

Known: ---
Suspected: FAILING ON-SITE SYST
Possible: Other Source (Nutrient Rich Sediment)

Resolution/Management Information

Issue Resolvability:	3 (Strategy Being Implemented)	
Verification Status:	5 (Management Strategy has been Developed)	
Lead Agency/Office:	ext/WQCC	Resolution Potential: Medium
TMDL/303d Status:	(TMDL Not Required (No Impairment))	

Further Details

Recreational uses in East Caroga Lake are considered to be threatened by impacts from aquatic weed growth. Though uses are fully supported and monitoring has indicated no water quality problems, the lack of use impairments associated with nuisance and invasive aquatic plant growth is likely predicated on the success of the aquatic plant management programs currently in place on the lake. On-site septic systems serving homes and camps along the shore and lawn runoff are a likely sources of nutrients to the lake.

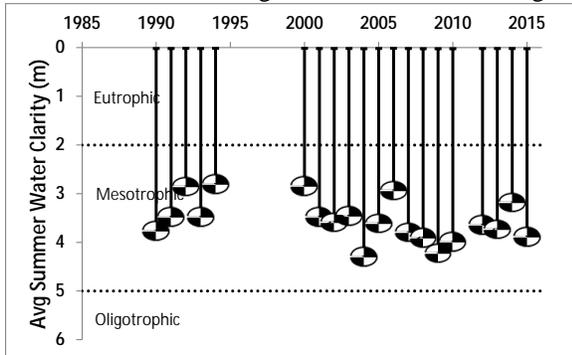
East Caroga Lake was included in a NYSDEC Citizen Statewide Lake Assessment Program (CSLAP) volunteer monitoring effort from 1990 through 2001. Results of this study found no evidence of water quality problems or impairment. (DEC/DOW, BWM/Lake Services, August 2002)

Local agencies conduct bacteriological monitoring and indicate that pathogens do not impact recreational uses. (DEC/DOW, Region 5, 1999)

Appendix C- Long Term Trends: East Caroga Lake

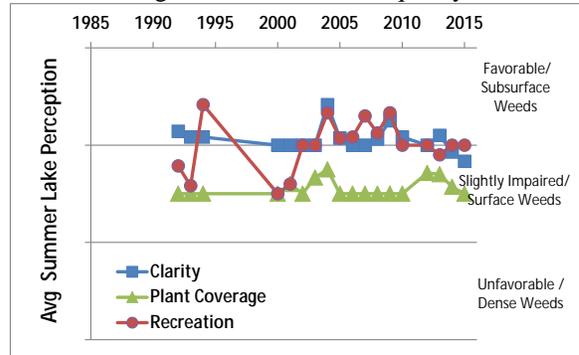
Long Term Trends: Water Clarity

- No trends; clarity slightly ↑ since early 00s
- Most readings typical of *mesotrophic* lakes, consistent w/algae, lower than TP readings



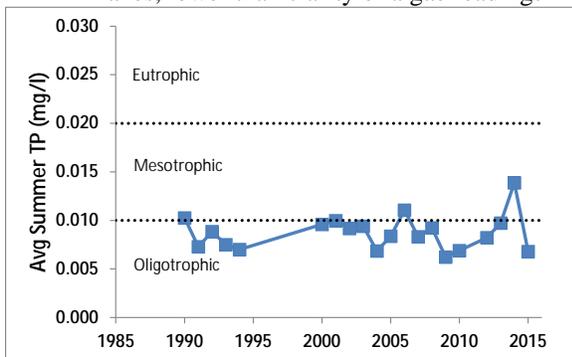
Long Term Trends: Lake Perception

- No trends apparent
- Recreational perception not closely linked to changes in weeds or water quality



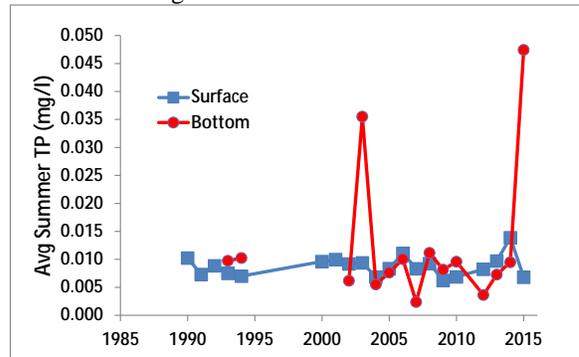
Long Term Trends: Phosphorus

- Recent ↑ trend did not continue 2015
- Most readings typical of *mesoligotrophic* lakes, lower than clarity or algae readings



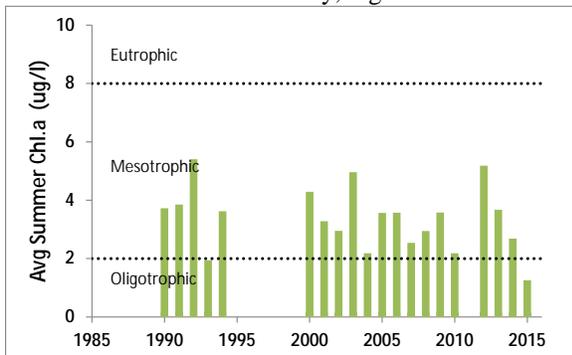
Long Term Trends: Bottom Phosphorus

- Some years with bottom P peaks
- Similar readings most yrs indicate low P loading from bottom to surface waters



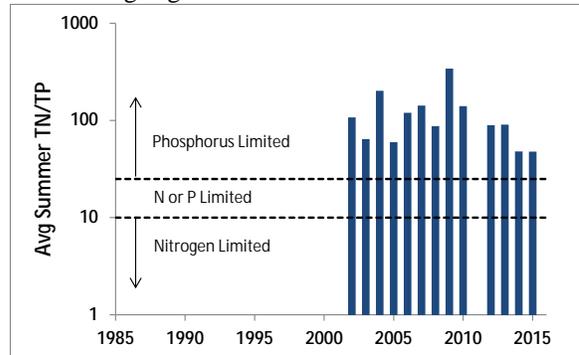
Long Term Trends: Chlorophyll a

- Recent drop chl.a, but no clear trends
- Most readings typical of *mesotrophic* lakes, consistent with clarity, higher than TP readings



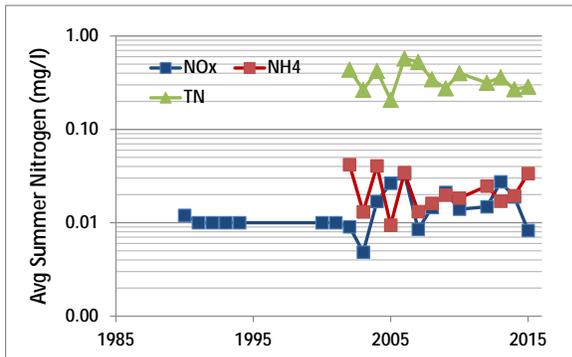
Long Term Trends: N:P Ratio

- Slight drop in ratio last few years
- Most readings indicate phosphorus limits algae growth



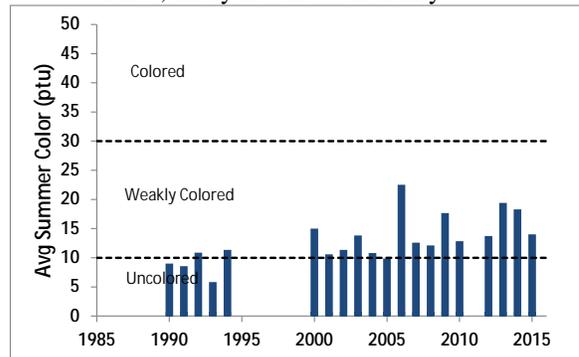
Long Term Trends: Nitrogen

- No trends apparent
- Low NOx, ammonia and TN readings



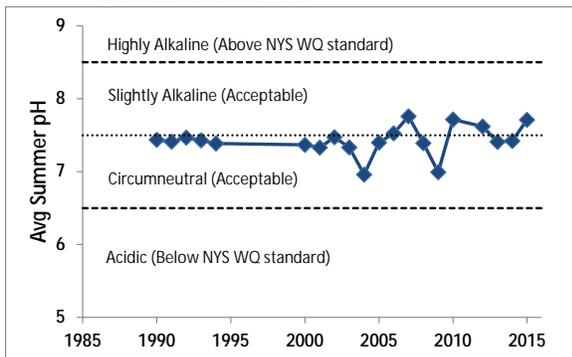
Long Term Trends: Color

- Slight post 2002 increase due to lab change
- Most readings typical of *weakly colored* lakes; likely no effect on clarity



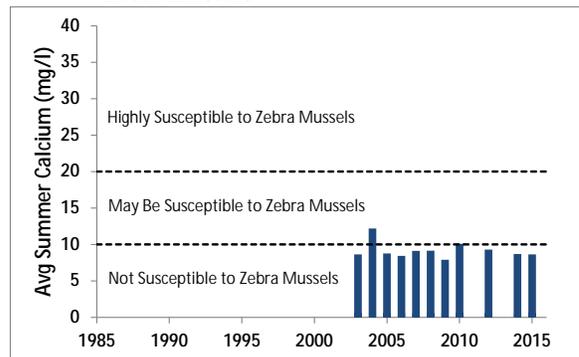
Long Term Trends: pH

- No trends apparent but lately more variable
- Most readings typical of *slightly alkaline* to *circumneutral* lakes



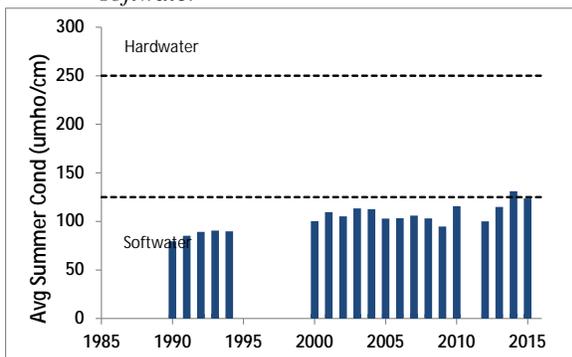
Long Term Trends: Calcium

- No trends apparent
- Most readings indicate low susceptibility to zebra mussels



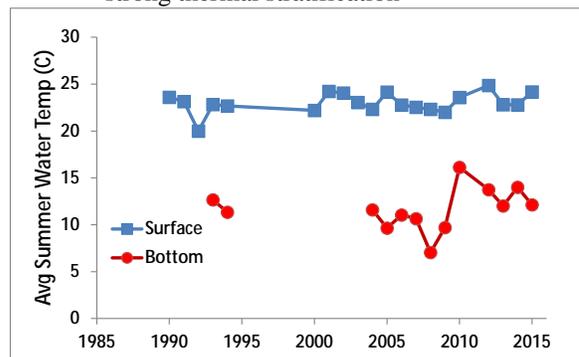
Long Term Trends: Conductivity

- Slight increase since early 1990s
- Most readings still typical of lakes with *softwater*



Long Term Trends: Water Temperature

- Bottom (surface?) temperatures increasing?
- Much lower bottom temperatures suggests strong thermal stratification



Appendix D: Algae Testing Results from SUNY ESF Study

Most algae are harmless, naturally present, and an important part of the food web. However excessive algae growth can cause health, recreational, and aesthetic problems. Some algae can produce toxins that can be harmful to people and animals. High quantities of these algae are called harmful algal blooms (HABs). CSLAP lakes have been sampled for a variety of HAB indicators since 2008. This was completed on selected lakes as part of a NYS DOH study from 2008-2010. In 2011, enhanced sampling on all CSLAP lakes was initiated through an EPA-funded project that has continued through the current sampling season. This study has evaluated a number of HAB indicators as follows:

- Algae types - blue green, green, diatoms, and "other"
- Algae densities
- Microscopic analysis of bloom samples
- Algal toxin analysis

Some of these results are reported in other portions of these reports. This appendix the seasonal change in blue green algae, other algae types, and the primary algal toxin (microcystin-LR, a liver toxin). Analysis was completed on open water samples and, for some lakes, shoreline samples that were collected when visual evidence of blooms were apparent. Results are compared to the DEC criteria of 25-30 ug/l blue green chlorophyll a and 20 ug/l microcystin-LR (based on the World Health Organization (WHO) threshold for unsafe swimming conditions) and the WHO provisional criteria for long-term protection of treated water supplies (= 1 ug/l microcystin-LR). The data for algae types are drawn from a high end fluorometer used by SUNY ESF. While these results are useful for timely approximation of lake conditions, they are not as accurate as the total chlorophyll results measured as a regular part of CSLAP since 1986 in all open water samples. Therefore these results are used judiciously in the assessment of sampled waterbodies.

Two separate samples are evaluated. A sample is taken at the CSLAP sample point at the deepest point of the lake at every sample session. In addition, shoreline samples can be taken when a bloom is visible. It should be noted that shoreline conditions can vary significantly over time and from one location to another. The shoreline bloom sampling results summarized below are not collected as routinely as open water samples, and therefore represent snapshots in time. It is assumed that sampling results showing high blue green algae and/or toxin levels indicate that algae blooms may be common and/or widespread on these lakes. However, the absence of elevated blue green algae and toxin levels does not assure the lack of shoreline blooms on these lakes. Elevated open water readings may indicate a higher likelihood of shoreline blooms, but in some lakes, these shoreline blooms have not been (well) documented.

The results from these samples are summarized within the CSLAP report for the lake.



Figure D1:
2013 Open Water Total and BGA Chl.a

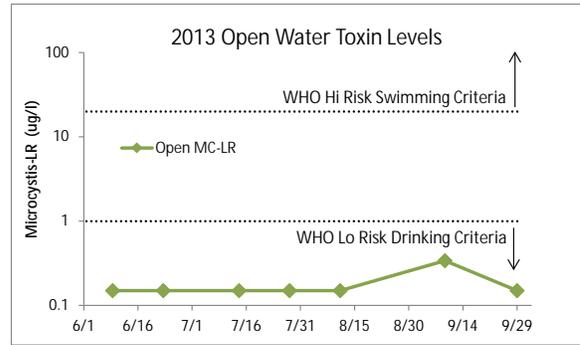


Figure D2:
2013 Open Water Microcystin-LR



Figure D3:
2013 Shoreline Total and BGA Chl.a



Figure D4:
2013 Shoreline Microcystin-LR

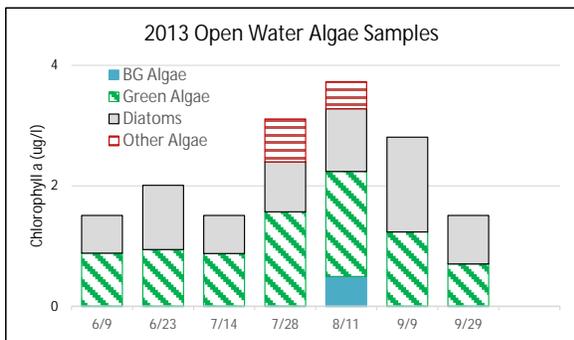


Figure D5:
2013 Open Water Algae Types

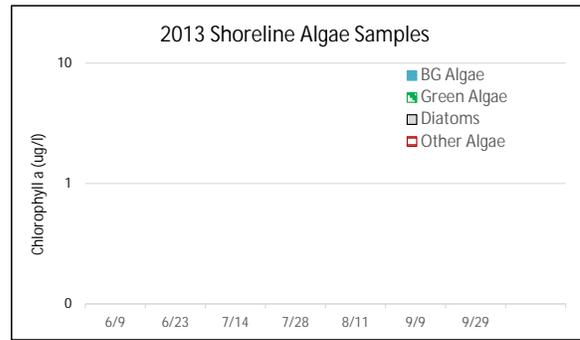


Figure D6:
2013 Shoreline Algae Types

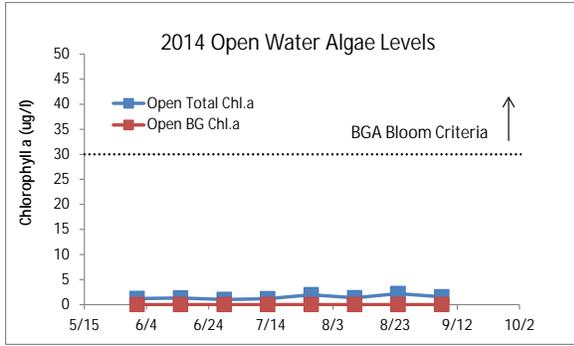


Figure D7:
2014 Open Water Total and BGA Chl.a

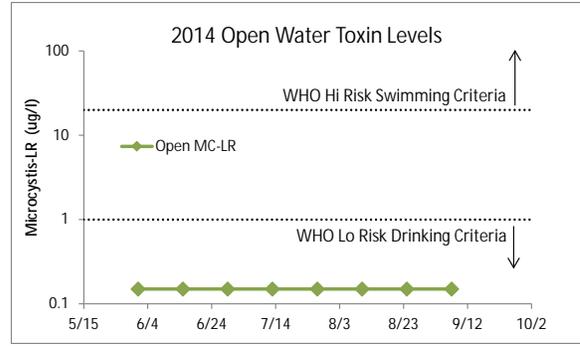


Figure D8:
2014 Open Water Microcystin-LR

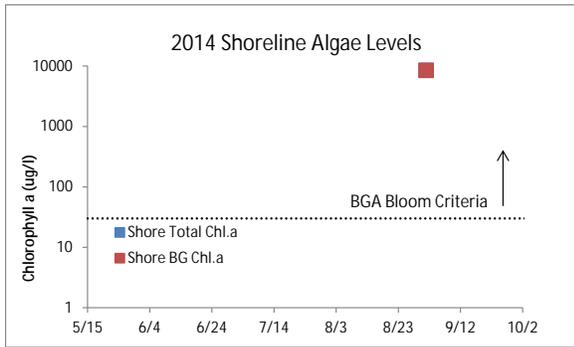


Figure D9:
2014 Shoreline Total and BGA Chl.a

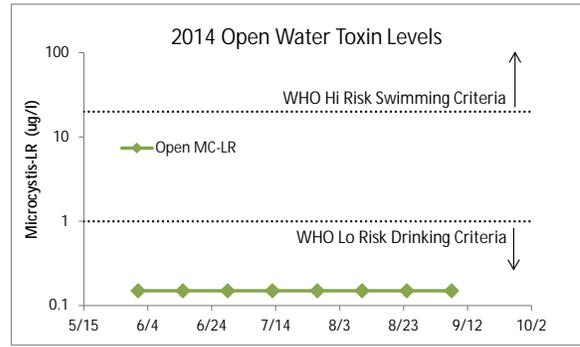


Figure D10:
2014 Shoreline Microcystin-LR

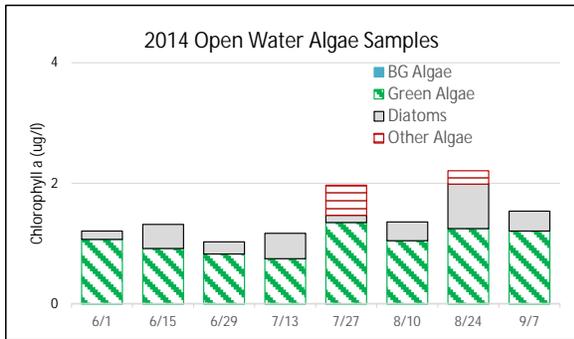


Figure D11:
2014 Open Water Algae Types

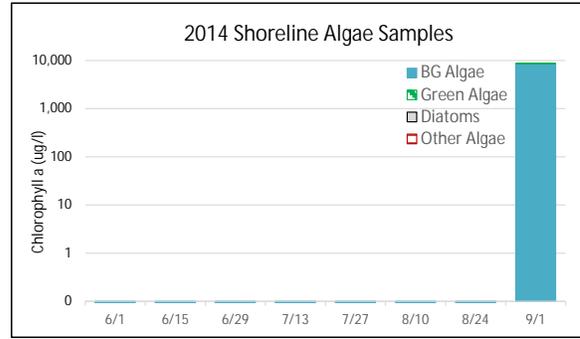


Figure D12:
2014 Shoreline Algae Types

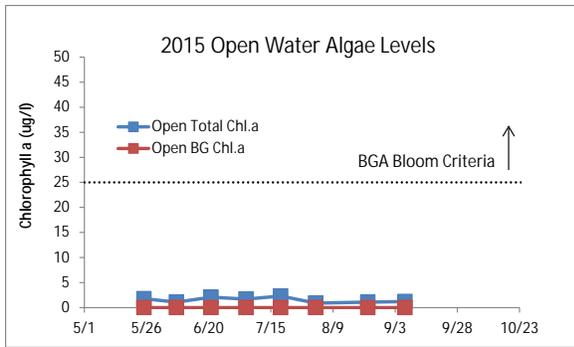


Figure D13:
2015 Open Water Total and BGA Chl.a

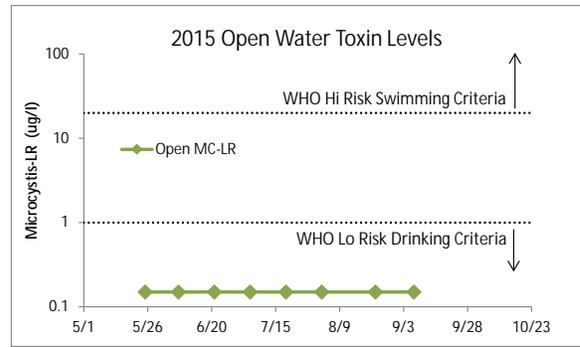


Figure D14:
2015 Open Water Microcystin-LR

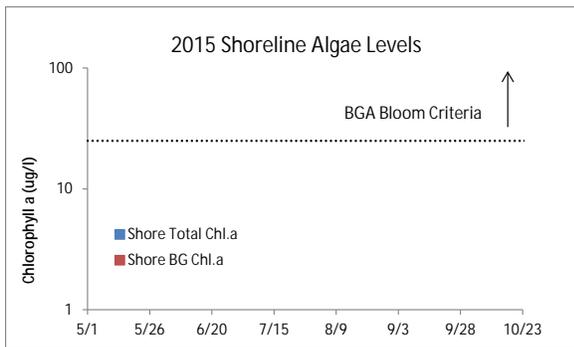


Figure D15:
2015 Shoreline Total and BGA Chl.a

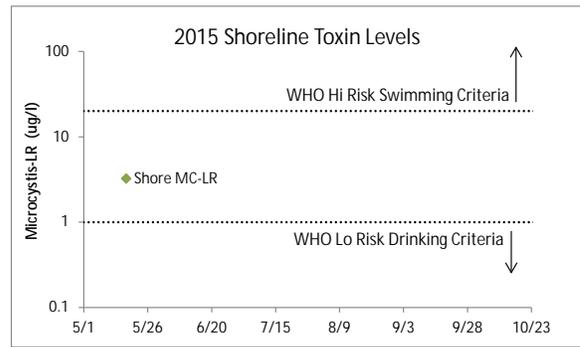


Figure D16:
2015 Shoreline Microcystin-LR

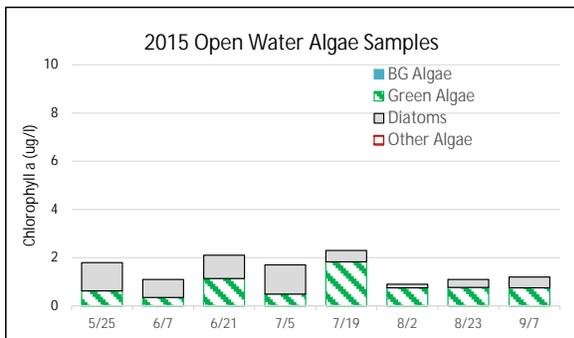


Figure D17:
2015 Open Water Algae Types

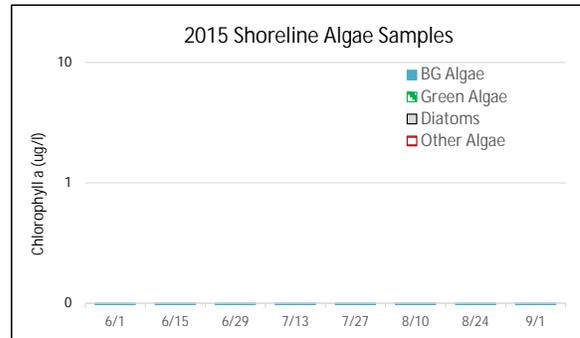


Figure D18:
2015 Shoreline Algae Types

Appendix E: AIS Species in Fulton County

The table below shows the invasive aquatic plants and animals that have been documented in Fulton County, as cited in either the iMapInvasives database (<http://www.imapinvasives.org/>) or in the NYSDEC Division of Water database. These databases may include some, but not all, non-native plants or animals that have not been identified as “Prohibited and Regulated Invasive Species” in New York state regulations (6 NYCRR Part 575; http://www.dec.ny.gov/docs/lands_forests_pdf/islist.pdf).

This list is not complete, but instead represents only those species that have been reported and verified within the county. If any additional aquatic invasive species (AIS) are known or suspected in these or other waterbodies in the county, this information should be reported through iMap invasives or by contacting NYSDEC at dowinfo@dec.ny.gov.

Aquatic Invasive Species – Fulton County			
Waterbody	Kingdom	Common name	Scientific name
Canada Lake	Plant	Brittle naiad	<i>Najas minor</i>
Caroga Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
East Caroga Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Great Sacandaga Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Great Sacandaga Lake	Plant	Brittle naiad	<i>Najas minor</i>
Great Sacandaga Lake	Plant	Curly leafed pondweed	<i>Potamogeton crispus</i>
Great Sacandaga Lake	Plant	Curly leafed pondweed	<i>Potamogeton crispus</i>
Kyser Lake	Plant	Curly leafed pondweed	<i>Potamogeton crispus</i>
Mayfield Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Mayfield Lake	Plant	Brittle naiad	<i>Najas minor</i>
Mayfield Lake	Plant	Curly leafed pondweed	<i>Potamogeton crispus</i>
Peck Lake	Animal	Spiny waterflea	<i>Bythotrephes longimanus</i>
Stewarts Landing	Plant	Brittle naiad	<i>Najas minor</i>
West Caroga Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>

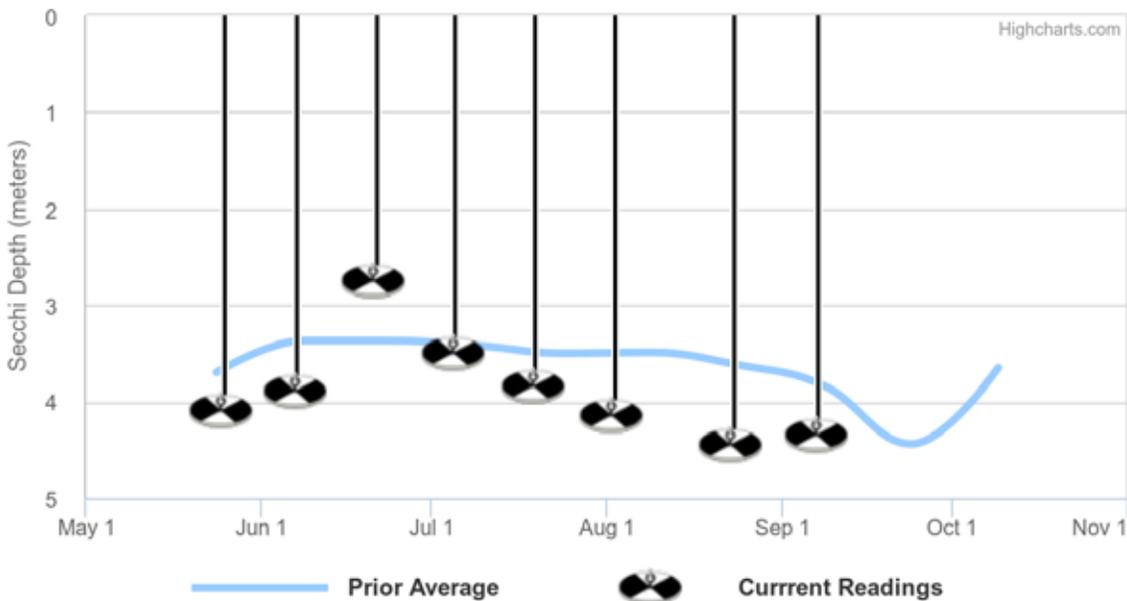
Appendix F: Current Year vs. Prior Averages for East Caroga Lake

Current Year Water Temperatures vs. Prior Average



This year's shallow water sample temperatures are tending to be higher than normal when compared to the average of readings collected from 1990 to 2014. This year's deep water sample temperatures are tending to be higher than normal when compared to the average of readings collected from 1993 to 2014.

Current Year Secchi Readings vs. Prior Average



This year's session Secchi readings are tending to be lower than normal when compared to the average of readings collected from 1990 to 2014

Appendix G: Watershed and Land Use Map for East Caroga Lake

This watershed and land use map was developed using USGS StreamStats and ESRI ArcGIS using the 2006 land use satellite imagery. The actual watershed map and present land uses within this watershed may be slightly different due to the age of the underlying data and some limits to the use of these tools in some geographic regions and under varying flow conditions. However, these maps are intended to show the approximate extent of the lake drainage basin and the major land uses found within the boundaries of the basin.

