

## Forest Lake Questions and Answers, 2015 CSLAP

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

A1. Water quality conditions in Forest Lake were again favorable in 2015. Algae levels were lower than normal, water clarity was close to normal, and no shoreline blooms or invasive species were reported. The phosphorus testing results were very limited due to a bottle contamination (likely at the manufacturer) issue, but these were probably similar to those in previous years.

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

A2. Chloride testing results were typical of lakes with no impacts from road salt runoff, and no biological impacts were measured or reported..

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

A3. Forest Lake has slightly higher water clarity, and lower algae and nutrient levels, than most lakes in the area, and shoreline blooms are not regularly reported in the lake. Plants regularly grow to the surface, although lake use impacts do not appear to be significant (perhaps due to the lack of invasive plants).

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

A4. Ammonia levels have increased slightly (but are still low), and recreational assessments have improved slightly.

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

A5. Forest Lake does not appear to be susceptible to algae blooms or other water quality problems. However, the slight long term increase in algae levels (and decrease in clarity) might indicate less favorable conditions in the future. Any sources of nutrients should be addressed before the lake approaches a tipping point. .

**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 should be continued to maintain water quality by reducing nutrient and sediment loading to the lake. 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.

Lake Use				
	PWL	Average Year	2015	Primary issue
Potable Water				Algae levels
Swimming				No impacts
Recreation				No impacts
Aquatic Life				No impacts
Aesthetics				Poor perception
Habitat				No impacts
Fish Consumption				

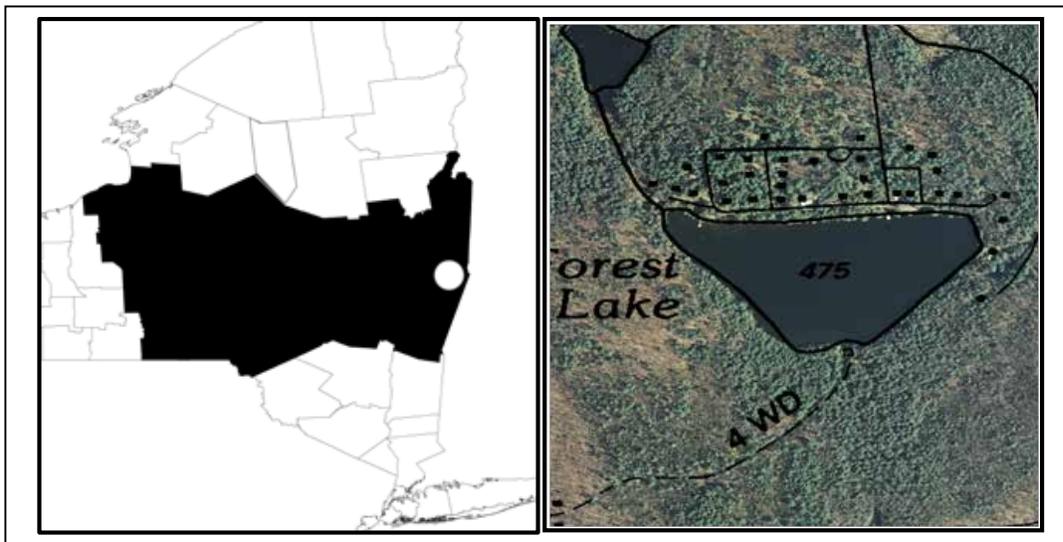
 Supported / Good  
 Threatened / Fair  
 Stressed / Poor  
 Impaired  
 Not Known

## CSLAP 2015 Lake Water Quality Summary: Forest Lake

### General Lake Information

<b>Location</b>	Town of Grafton
<b>County</b>	Rensselaer
<b>Basin</b>	Lower Hudson River
<b>Size</b>	7.8 hectares (19.3 acres)
<b>Lake Origins</b>	Natural
<b>Watershed Area</b>	84.5 hectares (208.9 acres)
<b>Retention Time</b>	0.4 years
<b>Mean Depth</b>	2.2 meters
<b>Sounding Depth</b>	4.6 meters
<b>Public Access?</b>	no
<b>Major Tributaries</b>	no named tribs
<b>Lake Tributary To...</b>	Bonesteel Creek to Poesten Kill to Hudson River
<b>WQ Classification</b>	A (potable water)
<b>Lake Outlet Latitude</b>	42.733
<b>Lake Outlet Longitude</b>	-73.767
<b>Sampling Years</b>	2003-2011, 2013-2015
<b>2015 Samplers</b>	David A. Bruso
<b>Main Contact</b>	David A. Bruso

### Lake Map



## **Background**

Forest Lake is a 19 acre, class A lake found in the Town of Grafton in Rensselaer County, in the Capital District region of New York State. It was first sampled as part of CSLAP in 2003.

It is one of 15 CSLAP lakes among the more than 370 lakes and ponds found in Rensselaer County, and one of 32 CSLAP lakes among the more than 1370 lakes and ponds in the Lower Hudson River drainage basin.

## **Lake Uses**

Forest Lake is a Class A lake; this means that the best intended use for the lake is for potable water intake, contact recreation—swimming and bathing, non-contact recreation—fishing and boating, aquatic life and aesthetics. The lake is used by lake residents and invited guests for swimming and non-power boating—the lake has no public access.

The state does not stock Forest Lake; it is not known if any private stocking occurs.

General statewide fishing regulations are applicable in Forest Lake.

## **Historical Water Quality Data**

CSLAP sampling was conducted on Forest Lake from 2003 to 2011, and 2013 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 reports for Forest Lake can also be found on the NYSDEC web page at <http://www.dec.ny.gov/lands/77846.html>.

Forest Lake was not sampled by the NYSDEC as part of any statewide monitoring programs prior to CSLAP. It is not known if the lake has been sampled by the regional fisheries staff as part of fisheries management activities on the lake, or through any local monitoring programs or activities.

None of the unnamed ephemeral tributaries to the lake, nor the outlet of the lake (Bonesteel Creek) have been monitored through the NYSDEC Rotating Intensive Basins (RIBS) program or the state stream macroinvertebrate monitoring program. The lake was not sampled by DEC fisheries staff in support of fish stocking activities or resource management.

## **Lake Association and Management History**

Forest Lake is represented by the Forest Lake Park Club. It is not known to what extent the Club is actively involved in lake management or if they maintain a website.

## **Summary of 2015 CSLAP Sampling Results**

### **Evaluation of 2015 Annual Results Relative to 2003-2014**

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 – Forest Lake” section in Appendix C.

## **Evaluation of Eutrophication Indicators**

Algae levels in Forest Lake were slightly lower than usual in 2015, despite a slight increase in chlorophyll *a* from the early 2000s to 2014. However, water clarity was close to normal (despite a small decrease in clarity over the last decade), and phosphorus readings have been close to normal in most CSLAP sampling seasons. The 2015 phosphorus readings were substantially higher than usual, and were not consistent with any other data, suggesting that the phosphorus bottles were contaminated (a manufacturing problem seen in a few other CSLAP lakes). It is anticipated that these readings would have been close to normal.

Lake productivity generally increases from May through September, as manifested in increasing nutrient and algae levels and decreasing water clarity, although productivity does decrease in cooler weather in the fall. No clear seasonal changes were apparent in 2015, despite a slight increase in water clarity in late summer into the fall.

The lake continues to be characterized as *mesoligotrophic*, based on water clarity, chlorophyll *a* (both typical of *mesotrophic* lakes), and total phosphorus readings (typical of *oligotrophic* lakes). The trophic state indices (TSI) evaluation suggests that phosphorus levels are usually lower than expected given the algae and water clarity readings in the lake. This suggests that the lake may be susceptible to small changes in phosphorus. Overall trophic conditions are summarized on the Lake Scorecard and Lake Condition Summary Table.

## **Evaluation of Potable Water Indicators**

Algae levels are usually not high enough 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 classified for this purpose. Potable water conditions, at least as measurable through CSLAP, are summarized in the Lake Scorecard and Lake Condition Summary Table.

## **Evaluation of Limnological Indicators**

Ammonia levels were higher than normal in 2014 and 2015, and have increased slightly over the last decade. TN and pH readings have increased over the last decade, but these readings were close to the long-term average for the lake in 2015. It is likely that the small changes in most of the other limnological indicators from year to year represent normal variability.

Chloride levels in the 2015 samples, conducted for the first time through CSLAP and cited in Appendix A, averaged 5 mg/l. These values are within the lower end of the range of “low” to “moderate” road salt” runoff levels cited by the New Hampshire DES, although they are well below the state potable water quality standard of 250 mg/l and below range of values found in a number of NYS lakes.

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

## **Evaluation of Biological Condition**

Macrophyte surveys conducted through the ALSC study of the lake in 1987 identified at least 12 aquatic plant species, none of which appear to be protected or exotic plant species (although none of these plants were identified to species level). The modified floristic quality index (FQI) for the lake suggests that the quality of the aquatic plant community is “excellent.”

An incomplete inventory of the fish community includes at least four warmwater fish species and at least two coolwater fish species, suggesting that Forest Lake supports a warmwater fishery. The ALSC study indicated a fish community that would be identified as “good” using the Minnesota fish index for biotic integrity.

The macroinvertebrate survey from the ALSC study found a high percentage of intolerant macroinvertebrates, typical of a favorable benthic community.

The fluoroprobe data analyzed by SUNY ESF in the last few years showed very low blue green algae levels in the open water, even when overall algae levels were slightly elevated in the fall. These data show that the algal community is comprised of green algae and a mix of other algae species. No shoreline blooms have been reported or sampled from the lake, and no blooms were reported in 2015.

### **Evaluation of Lake Perception**

Recreational perception of the lake has improved slightly over the last decade, despite relatively stable water quality assessments and slightly increasing algae levels. These recreational assessments were more favorable than usual in 2015. Aquatic plants typically grow to the lake surface, but no invasive plants have been reported at the lake, and plant coverage was close to normal in 2015. Water quality assessments usually degrade slightly during the summer, coincident with slight seasonal increases in aquatic plant coverage), but no seasonal changes were apparent in 2015. None of these indicators has exhibited any long-term changes. Overall lake perception is summarized on the Lake Scorecard and Lake Condition Summary Table.

### **Evaluation of Local Climate Change**

Water temperature readings were higher than normal in 2015, but it is not yet known if this is an indication of a permanent or long-term change.

### **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 have been below the threshold for harmful algal blooms (HABs) in open water samples. An analysis of algae samples in the open water indicates microcystin levels below the levels needed to support safe swimming and protect potable water. No shoreline algal blooms have been reported at any time.

## Lake Condition Summary

Category	Indicator	Min	Annual Avg	Max	2015 Avg	Classification	2015 Change?	Long-term Change?
Eutrophication Indicators	Water Clarity	1.05	3.40	4.90	3.40	Mesotrophic	Within Normal Range	No Change
	Chlorophyll <i>a</i>	0.40	5.66	42.70	3.89	Mesotrophic	Within Normal Range	No Change
	Total Phosphorus	0.002	0.010	0.029	0.009	Oligotrophic	Within Normal Range	No Change
Potable Water Indicators	Hypolimnetic Ammonia							Not known
	Hypolimnetic Arsenic							Not known
	Hypolimnetic Iron							Not known
	Hypolimnetic Manganese							Not known
Limnological Indicators	Hypolimnetic Phosphorus							Not known
	Nitrate + Nitrite	0.00	0.02	0.19	0.01	Low NOx	Within Normal Range	No Change
	Ammonia	0.00	0.02	0.16	0.06	Low Ammonia	Higher than Normal	Increasing Slightly
	Total Nitrogen	0.07	0.35	1.21	0.35	Low Total Nitrogen	Within Normal Range	No Change
	pH	5.57	7.34	8.59	7.53	Circumneutral	Within Normal Range	No Change
	Specific Conductance	20	30	178	30	Softwater	Within Normal Range	No Change
	True Color	1	11	33	10	Intermediate Color	Within Normal Range	No Change
	Calcium	2.0	3.0	3.9	3.4	Not Susceptible to Zebra Mussels	Higher than Normal	No Change
Lake Perception	WQ Assessment	1	2.3	4	2.1	Not Quite Crystal Clear	Within Normal Range	No Change
	Aquatic Plant Coverage	1	2.9	3	3.0	Surface Plant Growth	Within Normal Range	No Change
	Recreational Assessment	1	2.3	4	1.3	Excellent	More Favorable Than Normal	Highly Improving
Biological Condition	Phytoplankton					Open water-low blue green algae biomass	Not known	Not known
	Macrophytes					Excellent quality of the aquatic plant community	Not known	Not known
	Zooplankton					Not measured through CSLAP	Not known	Not known
	Macroinvertebrates					Not measured through CSLAP	Not known	Not known
	Fish					Warmwater fishery	Not known	Not known
	Invasive Species					None observed	Not known	Not known
Local Climate Change	Air Temperature	8	20.3	31	25.3		Higher Than Normal	No Change
	Water Temperature	8	21.0	27	25.1		Higher Than Normal	No Change
Harmful Algal Blooms	Open Water Phycocyanin	0	13	157	3	Most readings indicate low risk of BGA	Not known	Not known
	Open Water FP Chl.a	1	3	10	2	No readings indicate high algae levels	Not known	Not known
	Open Water FP BG Chl.a	0	0	0	0	No readings indicate high BGA levels	Not known	Not known
	Open Water Microcystis	<DL	<DL	1.0	<DL	Low to undetectable open water microcystins	Not known	Not known
	Open Water Anatoxin a	<DL	<DL	<DL	<DL	Open water Anatoxin-a consistently not detectable	Not known	Not known
	Shoreline Phycocyanin					No shoreline blooms sampled for PC	Not known	Not known
	Screening FP Chl.a					No shoreline blooms sampled for FP	Not known	Not known
	Screening FP BG Chl.a					No shoreline blooms sampled for FP	Not known	Not known
	Shoreline Microcystis					No shoreline bloom MC-LR data	Not known	Not known
	Shoreline Anatoxin a					No shoreline bloom anatoxin data	Not known	Not known

## **Evaluation of Lake Condition Impacts to Lake Uses**

Forest Lake is presently among the lakes listed on the Lower Hudson River drainage basin Priority Waterbody List (PWL); the lake is listed as having “no use impairments.” The 2008 PWL listing for the lake is shown in Appendix B.

### **Potable Water (Drinking Water)**

The CSLAP dataset at Forest Lake, including water chemistry data, physical measurements, and volunteer samplers’ perception data, is inadequate to evaluate the use of the lake for potable water, although the lake is classified for this use. These data suggest that any use of the lake for potable water may be supported, although algae levels in some years are high enough to *threaten* potable water use.

### **Public Bathing**

The CSLAP dataset at Forest Lake, including water chemistry data, physical measurements, and volunteer samplers’ perception data, suggests that public bathing, if conducted at a public swimming beach, should be supported, although this use at times may be *threatened* by poor recreational assessments. Bacterial data are needed to evaluate the safety of the lake for swimming.

### **Recreation (Swimming and Non-Contact Uses)**

The CSLAP dataset on Forest Lake, including water chemistry data, physical measurements, and volunteer samplers’ perception data, suggest that recreation should be supported, although at times this use may be *threatened* by excessive weeds.

### **Aquatic Life**

The CSLAP dataset on Forest Lake, including water chemistry data, physical measurements, and volunteer samplers’ perception data, suggest that aquatic life should be supported, although additional data are needed to evaluate the food and habitat conditions for aquatic organisms in the lake.

### **Aesthetics and Habitat**

The CSLAP dataset on Forest Lake, including water chemistry data, physical measurements, and volunteer samplers’ perception data, suggest that aesthetics may at times be only *fair* due to poor perception from excessive weeds. Habitat appears to be *good*.

### **Fish Consumption**

There is no fish consumption advisories posted for Forest Lake.

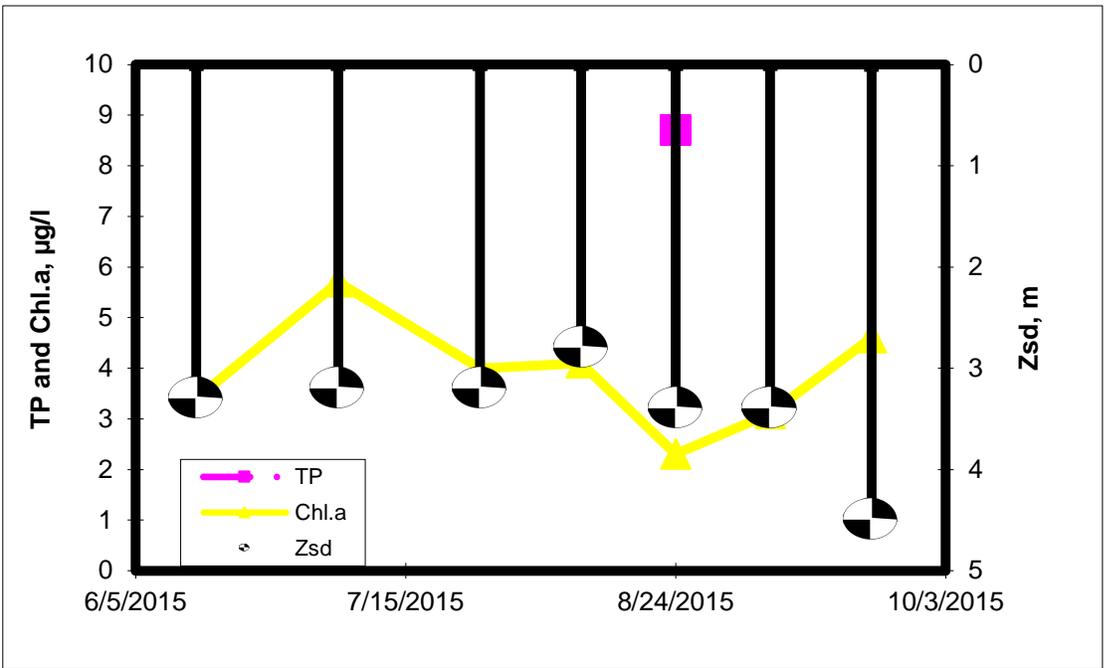
### **Additional Comments and Recommendations**

An updated aquatic plant inventory would help to evaluate whether exotic plant species are found in the lake and the extent to which rooted plants influence the biological condition of the lake. The potential for any runoff problems or watershed sources of nutrients, as a trigger for increasing algae growth in the lake, should continue to be evaluated.

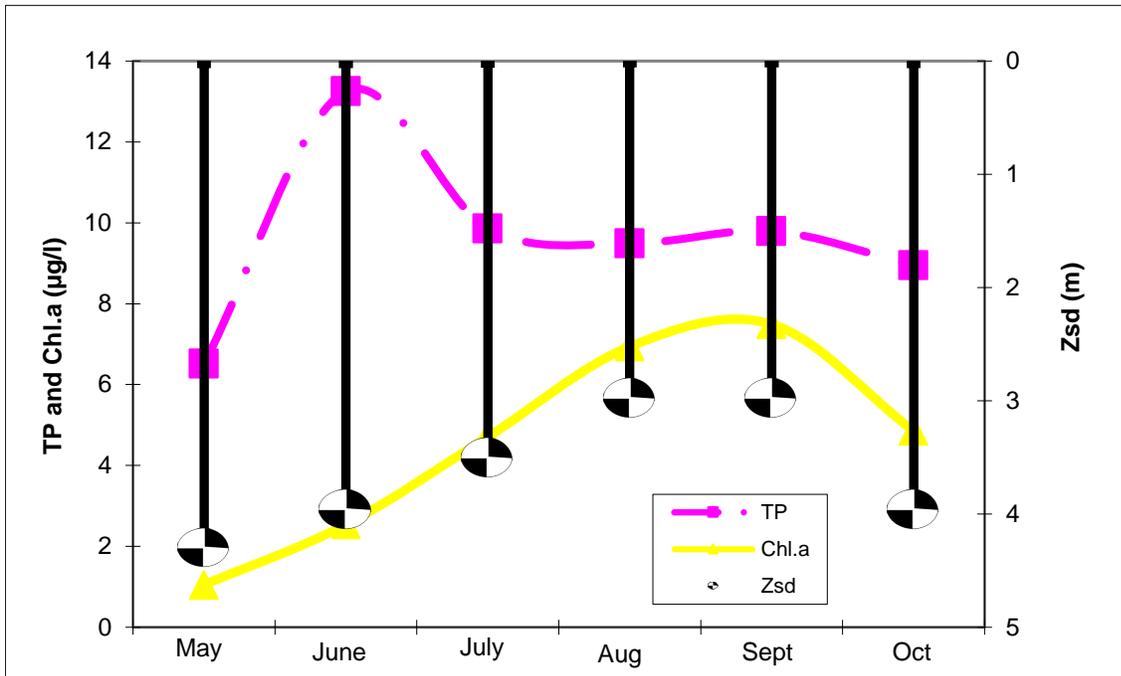
### **Aquatic Plant IDs-2015**

None submitted for identification in 2015.

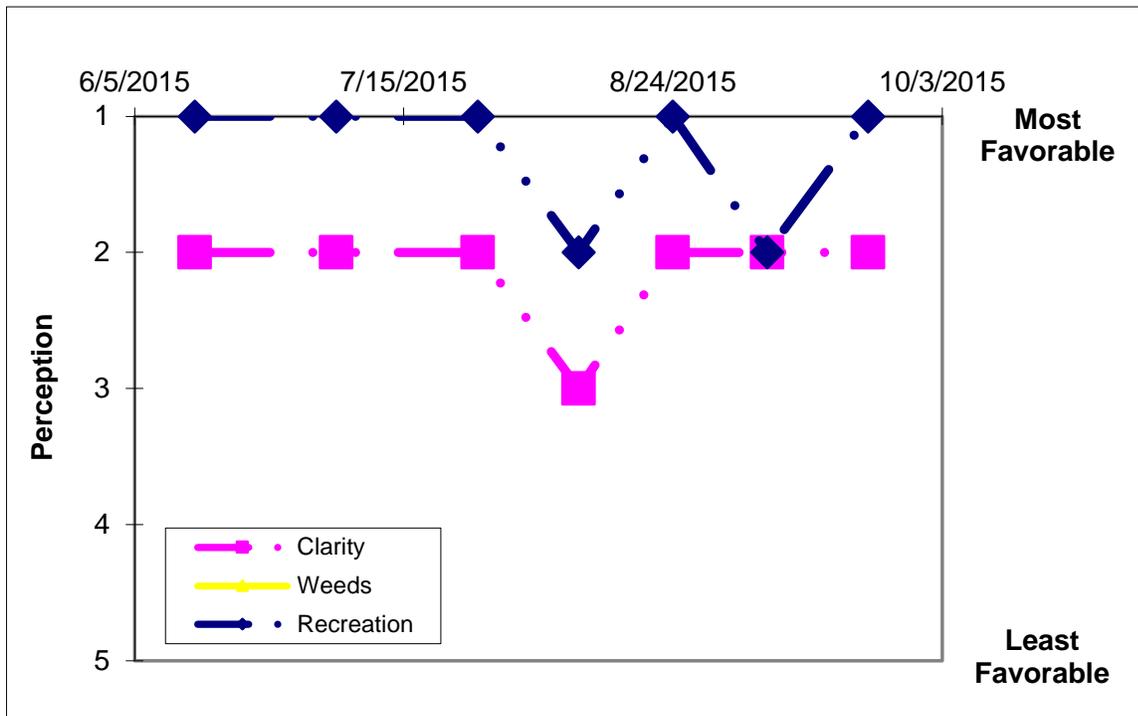
### Time Series: Trophic Indicators, 2015



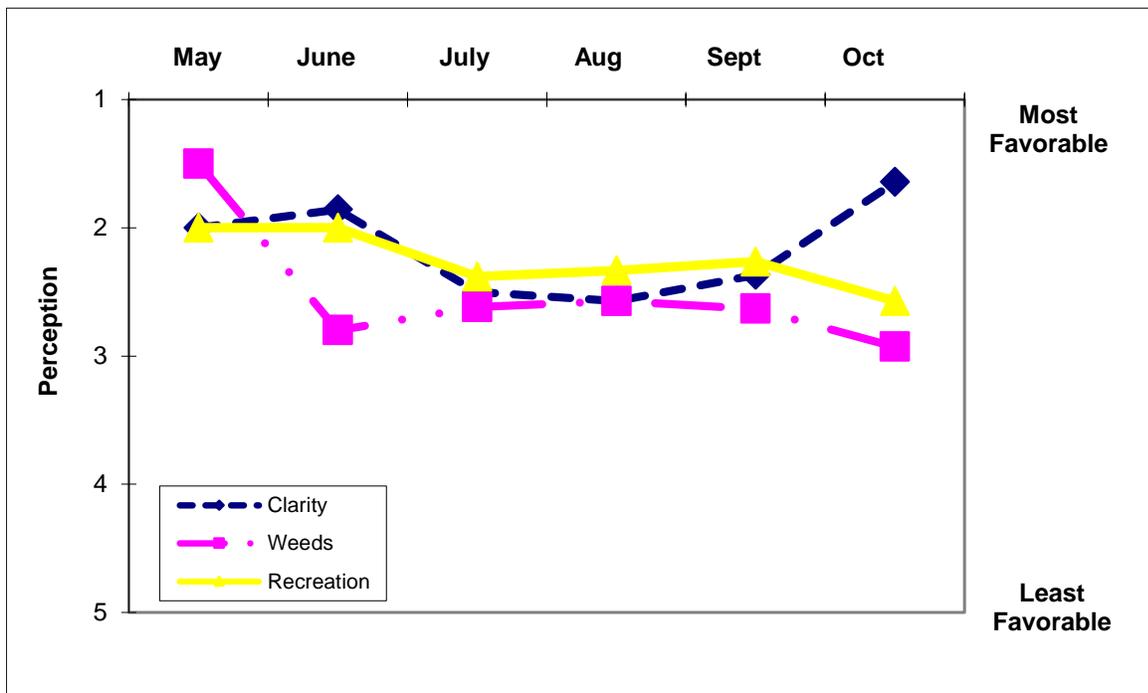
### Time Series: Trophic Indicators, Typical Year (2003-2015)



## Time Series: Lake Perception Indicators, 2015



## Time Series: Lake Perception Indicators, Typical Year (2003-2015)



## Appendix A- CSLAP Water Quality Sampling Results for Forest Lake

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
183	Forest L-R	5/8/2003	4.3	<b>4.30</b>	1.5	0.010	0.01	0.02			10	6.41	32	3.00	1.05	
183	Forest L-R	5/25/2003	4.3		1.5	0.003	0.06	0.06	0.22	150.78	24	6.59	30			
183	Forest L-R	6/22/2003	4.4	4.20	1.5		0.03	0.00	0.18		11	6.90	29		0.88	
183	Forest L-R	7/13/2003	4.3	4.30	1.5	0.007	0.00	0.00	0.23	74.92	19	6.97	30		3.64	
183	Forest L-R	7/27/2003	4.3	3.80	1.5	0.009	0.01	0.00	0.14	32.73	18	6.93	29	3.40	0.40	
183	Forest L-R	8/10/2003	4.2	3.20	1.5	0.008	0.00	0.00	0.39	107.11	13	6.96	29		5.94	
183	Forest L-R	8/24/2003	4.2	3.30	1.5	0.009	0.00	0.01	0.21	53.28	7	6.69	29		3.86	
183	Forest L-R	10/6/2003	4.6	<b>4.60</b>	1.5	0.004	0.01	0.02	0.23	134.40	16	6.83	28		1.78	
183	Forest L-R	6/20/2004	4.3	3.80	1.5	0.009	0.02	0.01	0.27	63.65	12	5.57	28		1.60	
183	Forest L-R	7/11/2004	4.5	4.05	1.5	0.006	0.19	0.02	0.61	233.94	9	6.93	31		3.00	
183	Forest L-R	7/25/2004	4.5	4.35	1.5	0.013	0.01	0.01	0.36	61.08	11	7.41	32		1.90	
183	Forest L-R	8/8/2004	4.4	<b>4.40</b>	1.5	0.009	0.02	0.03	0.38	98.22	5	7.31	29		3.30	
183	Forest L-R	8/24/2004	4.5	4.00	1.5	0.007	0.01	0.03	0.48	146.57	31	7.26		3.20	1.50	
183	Forest L-R	9/6/2004	4.3	3.95	1.5	0.010					11	8.03	25			
183	Forest L-R	10/5/2004	4.6	4.40	1.5	0.007	0.01	0.02	0.32	99.68	9	7.82	24			
183	Forest L-R	10/26/2004	1.6	4.60	1.5	0.017	0.01	0.05	0.29	37.58	8	6.16				
183	Forest L-R	7/19/2005	3.7	2.90	1.5	0.009		0.02	0.39	99.24	4	7.57	26	3.1	9.4	
183	Forest L-R	7/31/2005	4.2	2.80	1.5	0.008	0.08	0.01	0.38	103.63	8	7.05	28		5.8	
183	Forest L-R	8/8/2005	4.2	2.90	1.5	0.012	0.01	0.01	0.32	61.08	5	7.23	29		5.0	
183	Forest L-R	8/20/2005	4.5	2.80	1.5	0.008	0.01	0.01	0.16	45.16	5	7.33	40		3.8	
183	Forest L-R	9/4/2005	4.3	3.75	1.5	0.008	0.01	0.01	0.15	39.74	6	6.87	36	3.7	1.7	
183	Forest L-R	9/18/2005	4.2	3.85	1.5	0.011	0.02	0.01	0.18	37.29	3	6.96	28		2.3	
183	Forest L-R	10/10/05	4.5	4.50	1.5	0.009	0.01	0.01	0.32	79.08	11	7.84	28		2.8	
183	Forest L-R	10/31/05	4.9	<b>4.90</b>	1.5	0.008	0.02	0.03	0.07	17.75					1.5	
183	Forest L-R	7/9/2006	4.7	3.60	1.5	0.017	0.01	0.01	0.56	72.27	16	7.28	27	2.0	4.32	
183	Forest L-R	7/22/2006	4.6	3.60	1.5	0.002	0.02	0.02	0.52	548.39	5	8.07	28		7.96	
183	Forest L-R	7/29/2006	4.6	3.40	1.5	0.015	0.01	0.01	0.55	82.21	12	7.41	23		6.26	
183	Forest L-R	8/5/2006	4.7	3.35	1.5	0.009	0.01	0.02	0.50	118.67	5	7.26	27		5.21	
183	Forest L-R	8/13/2006	4.6	2.35	1.5	0.015	0.01	0.01	0.42	60.65	2	7.67	27	2.6	8.36	
183	Forest L-R	9/4/2006	4.7	2.55	1.5	0.010			0.40	86.74	1	6.97	26		7.90	
183	Forest L-R	10/8/2006	4.6	3.10	1.5	0.015	0.02	0.01	0.65	98.85	2	7.60	25		4.81	
183	Forest L-R	10/14/2006	4.6	3.10	1.5	0.009	0.02	0.04	0.55	133.34	10	8.22	46		9.55	
183	Forest L-R	7/8/2008	4.5	3.45	1.5	0.009	0.08	0.02	0.41	103.74	9	6.20	31	2.5	2.77	
183	Forest L-R	7/20/2008	4.5	3.65		0.007	0.01	0.04	0.26	88.79	16	8.43	21		2.17	
183	Forest L-R	8/5/2008	4.5	2.80	2.5	0.009	0.00	0.01	0.30	77.89	8	6.84	25		6.47	
183	Forest L-R	8/17/2008	4.5	3.25	2.5	0.009	0.00	0.06			11	7.01	29		4.64	
183	Forest L-R	9/1/2008	4.5	3.60	2.5	0.008	0.01	0.00	0.27	76.20	6	6.61	21	3.0	4.48	
183	Forest L-R	9/14/2008	4.5	3.75	1.5	0.006	0.01	0.01	0.28	105.40	6	7.10	25		4.62	
183	Forest L-R	10/4/2008	4.5	4.50	1.5	0.002	0.02	0.01	0.17	229.84	7	6.32	24		2.21	
183	Forest L-R	10/18/2008	4.6	4.60	1.5	0.002	0.02	0.01	0.26	304.76		7.89	34		4.22	
183	Forest L-R	06/07/2009	4.4	4.40	1.5	0.029	0.01	0.02	0.29	21.81	7	7.95	32	2.1	3.99	
183	Forest L-R	07/13/2009	4.5	4.50	1.5	0.012	0.00	0.01	0.38	70.81	15	7.38	21		3.78	
183	Forest L-R	07/27/2009	4.5	3.95	1.5	0.007	0.01	0.01	0.21	64.17	8	7.77	20		3.86	
183	Forest L-R	08/10/2009	4.6	3.95	1.5	0.007	0.01	0.01	0.22	69.51	12	7.75	29		2.80	
183	Forest L-R	08/24/2009	4.6	4.05	1.5	0.006	0.01	0.01	0.25	87.31	22	8.35	20	2.7	3.30	
183	Forest L-R	09/06/2009	4.6	4.15	1.5	0.008	0.01	0.01	0.23	66.86	14	8.59	29		3.10	
183	Forest L-R	09/21/2009	4.7	4.70	1.5	0.007	0.02	0.01	0.26	82.03	16	7.27	20		2.90	
183	Forest L-R	10/17/2009	4.8	4.80	1.5	0.005	0.02	0.09	0.34	138.52	13	7.77	26		1.70	
183	Forest L-R	6/8/2010	4.6	4.25	1.5	0.010	0.11	0.05			1	7.39	26	2.5	0.60	
183	Forest L-R	7/6/2010	4.6	4.55	1.5	0.003	0.01	0.01	0.27	219.19	8	7.27	27		3.00	
183	Forest L-R	7/31/2010	4.6	2.35	1.5	0.021	0.02	0.03			11	7.78	29		5.90	
183	Forest L-R	8/15/2010	4.6	2.35	1.5	0.010	0.01	0.01	0.33	72.60	17	7.27	30		6.10	
183	Forest L-R	9/8/2010	4.6	1.85	1.5	0.009	0.01	0.02	0.20	46.81	15	7.06	30	3.0	7.30	
183	Forest L-R	9/20/2010	4.6	2.45	1.5	0.011	0.02	0.02	0.40	82.24	7		30		7.20	
183	Forest L-R	10/3/2010	4.6	4.48	1.5	0.009	0.02	0.03	0.31	77.38	7	7.38	30		2.60	
183	Forest L-R	10/17/2010	4.6	4.70	1.5	0.003	0.03	0.02	0.43	316.80	8	7.00	29		2.70	
183	Forest L-R	7/9/2011	4.6	3.70	1.5	0.010	0.01	0.02	0.33	71.50	5	8.54	43	3.8	4.10	
183	Forest L-R	7/27/2011		3.80	1.5	0.012	0.01	0.04	0.28	49.50	1	8.01	22		6.60	
183	Forest L-R	8/7/2011	4.6	2.10	1.5	0.014	0.07	0.03	0.25	38.78	22	7.80	29		10.70	
183	Forest L-R	8/22/2011	4.6	1.65	1.5	0.010	0.03	0.02	0.33	74.48	7	8.10	23		7.30	
183	Forest L-R	9/6/2011	4.7	1.25	1.5	0.016	0.01	0.02	0.55	77.99	16	7.39	23	3.6	29.10	
183	Forest L-R	9/19/2011	4.6	1.05	1.5	0.015	0.03	0.02	0.37	54.34	18	8.02	28		18.20	
183	Forest L-R	9/29/2011	4.6	1.55	1.5	0.012	0.02	0.02	0.34	60.99	30	7.07	25		13.90	

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
183	Forest L-R	10/16/2011	4.6	1.35	1.5	0.021	0.01	0.02	0.78	81.40	22	7.05	34		16.60	
183	Forest L-R	7/8/2013	4.0	3.55	1.5	0.016	0.01	0.02	0.19	26.59	16	6.71	25		6.80	
183	Forest L-R	7/23/2013	4.6	2.75	1.5	0.010			0.34	75.57	14	7.33	25		4.60	
183	Forest L-R	8/4/2013	4.6	2.55	1.5	0.014	0.01	0.02	0.29	46.73	13	7.25	26		6.40	
183	Forest L-R	8/18/2013	4.4	2.30	1.5	0.010			0.41	88.41	16	7.55	28		7.30	
183	Forest L-R	9/2/2013	4.6	2.65	1.5	0.008	0.01	0.02	0.34	95.09	23	7.50	26		4.40	
183	Forest L-R	9/15/2013	4.6	2.25	1.5	0.010			0.40	89.03	14	7.18	27		9.80	
183	Forest L-R	9/29/2013	4.6	2.15	1.5	0.011	0.01	0.02	0.39	81.81	7	6.50	25		5.60	
183	Forest L-R	10/14/2013	4.6	3.50	1.5	0.007			0.41	129.77	13	7.03	26		7.30	
183	Forest L-R	6/2/2014	4.5	4.15	1.5	0.008	0.01	0.02	0.28	75.78	16	7.72	24	2.6	3.70	
183	Forest L-R	6/21/2014	4.6	3.65	1.5	0.009			0.40	97.67	4	7.15	26		3.60	
183	Forest L-R	7/13/2014	4.6	2.55	1.5	0.008	0.02	0.04	0.27	72.98	9	7.50	26		6.30	
183	Forest L-R	7/27/2014	4.7	2.65	1.5	0.008			0.33	91.95	9	6.86	30		6.10	
183	Forest L-R	8/10/2014	4.6	2.55	1.5	0.008	0.01	0.02	0.31	87.43	8	7.04	29	3.2	4.70	
183	Forest L-R	8/26/2014	4.6	2.55	1.5	0.009			1.21	310.30	33	8.46	178		42.70	
183	Forest L-R	9/15/2014	4.5	3.25	1.5	0.008	0.01	0.03	0.23	63.22	6	7.41	29		4.70	
183	Forest L-R	10/8/2014	4.6	2.98	1.5	0.010			0.36	75.83	12	7.91	27		4.70	
183	Forest L-R	6/14/2015	4.6	3.30	1.5		0.01	0.03	0.35		8	7.55	28	2.8	3.40	
183	Forest L-R	7/5/2015	4.7	3.20	1.5				0.50		11	7.55	24		5.70	
183	Forest L-R	7/26/2015	4.7	3.20	1.5		0.00	0.03	0.36		14	7.60	27		4.00	5.0
183	Forest L-R	8/10/2015	4.6	2.80	1.5				0.31		13	7.53	33		4.10	
183	Forest L-R	8/24/2015	4.6	3.40	1.5	0.009	0.00	0.16	0.34	38.62	10	7.73	46	3.9	2.30	
183	Forest L-R	9/7/2015	4.6	3.40	1.5				0.23		9	7.51	27		3.10	
183	Forest L-R	9/22/2015	4.6	4.50	1.5		0.00	0.04	0.36		4	7.21	28		4.60	5.0

LNum	LName	Date	Type	TAir	TH2O	QA	QB	QC	QD	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cyl	FP-Chl	FP-BG	HAB-form	Shore HAB
183	Forest L-R	5/8/2003	epi	14	13	2	2	2	5											
183	Forest L-R	5/25/2003	epi	16	14	2	1	2	5											
183	Forest L-R	6/22/2003	epi	17	19	2	2	2	58											
183	Forest L-R	7/13/2003	epi	18	24	2	2	2	5											
183	Forest L-R	7/27/2003	epi	23	23	2	2	2	5											
183	Forest L-R	8/10/2003	epi	23	24	2	2	3	5											
183	Forest L-R	8/24/2003	epi	18	23	2	2	2	0											
183	Forest L-R	10/6/2003	epi	8	12	1	2	4	5											
183	Forest L-R	6/20/2004	epi	16	22	2	3	3	5											
183	Forest L-R	7/11/2004	epi	21	23	2	3	3	8											
183	Forest L-R	7/25/2004	epi	22	23	3	3	3	123											
183	Forest L-R	8/8/2004	epi	21	22	2	3	3	25											
183	Forest L-R	8/24/2004	epi	21	23	3	3	2	2											
183	Forest L-R	9/6/2004	epi	25	23	3	3	3	2											
183	Forest L-R	10/5/2004	epi	12	16	1	3	3	5											
183	Forest L-R	10/26/2004	epi	11	10	1	3	2	5											
183	Forest L-R	7/19/2005	epi	31	26	3	3	3	158											
183	Forest L-R	7/31/2005	epi	29	26	3	3	3	35											
183	Forest L-R	8/8/2005	epi	27	27	3	3	3	13											
183	Forest L-R	8/20/2005	epi	23	24	2	3	3	1											
183	Forest L-R	9/4/2005	epi	27	27	2	3	3	1											
183	Forest L-R	9/18/2005	epi	18	22	2	3	3	1											
183	Forest L-R	10/10/05	epi	13	16	2	3	3	5											
183	Forest L-R	10/31/05	epi	12	8	1	3	2	5											
183	Forest L-R	7/9/2006	epi	28	24	3	3	3	123											
183	Forest L-R	7/22/2006	epi	24	26	4	3	3	2345											
183	Forest L-R	7/29/2006	epi	27	26	3	3	4	1238											
183	Forest L-R	8/5/2006	epi	29	27	3	3	3	123											
183	Forest L-R	8/13/2006	epi	22	25	4	3	3	128											
183	Forest L-R	9/4/2006	epi	21	19	4	3	3	12345											
183	Forest L-R	10/8/2006	epi	21	16	3	3	3	1235											
183	Forest L-R	10/14/2006	epi	12	14	3	3	3	5											
183	Forest L-R	7/8/2008	epi	26			3	2	2											
183	Forest L-R	7/20/2008	epi		24	3	3	3	5											
183	Forest L-R	8/5/2008	epi	24		3	3	2	1											
183	Forest L-R	8/17/2008	epi	22	23	2	2	3	25											

LNum	LName	Date	Type	TAir	TH2O	QA	QB	QC	QD	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cyl	FP-Chl	FP-BG	HAB-form	Shore HAB
183	Forest L-R	9/1/2008	epi	23	22	2	3	2	1											
183	Forest L-R	9/14/2008	epi	21	20	2	3	2	0											
183	Forest L-R	10/4/2008	epi	15	15	1	3	2	5											
183	Forest L-R	10/18/2008	epi	13	12	1	3	2	5											
183	Forest L-R	06/07/2009	epi	15	19	1	3	2	0											
183	Forest L-R	07/13/2009	epi	18	22	2	3	2	5											
183	Forest L-R	07/27/2009	epi	26	24	2	3	2	0											
183	Forest L-R	08/10/2009	epi	26	24	3	3	2	0					0.00						
183	Forest L-R	08/24/2009	epi	24	25	2	3	2	0											
183	Forest L-R	09/06/2009	epi	21	22	2	3	2	0			13.51								
183	Forest L-R	09/21/2009	epi	21	18	1	3	1	0			8.428		0.00						
183	Forest L-R	10/17/2009	epi	9	9	1	3	2	0					0.00						
183	Forest L-R	6/8/2010	epi	28	25	2	3	2	12	0	0									
183	Forest L-R	7/6/2010	epi	21	25	3	3	2	0	0	0									
183	Forest L-R	7/31/2010	epi	23	24	3	3	3	1	0	0									
183	Forest L-R	8/15/2010	epi	22	22	3	3	2	1	0	0	14.00		0.08						
183	Forest L-R	9/8/2010	epi	17	18	3	3	2	15	0	0									
183	Forest L-R	9/20/2010	epi	10	17	1	3	2	5	0	0	75.00		0.00						
183	Forest L-R	10/3/2010	epi	12	12	1	3	2	5	0	0									
183	Forest L-R	10/17/2010	epi	16	22	1	3	2	1	0	0	40.00		0.00						
183	Forest L-R	7/9/2011	epi	23	25							3.20	1.80							
183	Forest L-R	7/27/2011	epi	25	26	2	3	2	0	0	0	5.70	4.40							
183	Forest L-R	8/7/2011	epi	25	25	2	3	2	0	0	0	15.10	13.80	0.58	<0.5	<0.1				
183	Forest L-R	8/22/2011	epi	18	23	3	3	2	1	0	0	10.20	9.40							
183	Forest L-R	9/6/2011	epi	16	21	3	3	2	15	0	0	26.10	29.70							
183	Forest L-R	9/19/2011	epi	15	18	3	3	3	1	0	0	27.00	36.70							
183	Forest L-R	9/29/2011	epi	19	19	3	3	3	15	0	0	19.50	22.30							
183	Forest L-R	10/16/2011	epi	10	15	2	3	2	5			14.30	15.50							
183	Forest L-R	7/8/2013	epi	22	25	2	3	2	0	0	0	1.00	2.20	<0.30	<0.510		2.90	0.40	I	
183	Forest L-R	7/23/2013	epi	25	27	2	3	2	0	0	0	2.60	5.10	<0.30	<0.370		3.90	0.00	I	
183	Forest L-R	8/4/2013	epi	17	23	2	3	2	0	0	0	1.40	4.00	0.99	<0.390		3.80	0.00	I	
183	Forest L-R	8/18/2013	epi	21	22	2	3	2	5	0	0	2.70	6.80	<0.30	<0.390		5.50	0.00	I	
183	Forest L-R	9/2/2013	epi	25	24	2	3	2	5	0	0	1.40	4.30	<0.30	<1.100		3.60	0.00	I	I
183	Forest L-R	9/15/2013	epi	18	19	3	3	3	0	0	0	1.80	9.30	<0.30	<1.240		9.50	0.00	I	
183	Forest L-R	9/29/2013	epi	21	16	3	3	2	1	0	0	1.40	5.30	<0.30	<0.050		4.50	0.00	I	
183	Forest L-R	10/14/2013	epi	18	16	3	3	3	1	0	0	2.90	4.80	<0.30	<0.090		4.30	0.00	I	
183	Forest L-R	6/2/2014	epi	25	20	2		2	0	0	0			<0.37	<0.09	<0.001				
183	Forest L-R	6/21/2014	epi	21	22	2	3	2	0	0	0	0.90	0.30	<0.58	<0.44	<0.002	0.60	0.00	i	i
183	Forest L-R	7/13/2014	epi	23	23	2	3	2	5	0	0	0.30	0.50	<0.39	<0.21	<0.003	2.20	0.00	i	i
183	Forest L-R	7/27/2014	epi	22	25	2	3	2	5	0	0	1.40	0.90	<0.63	<0.03	<0.001	3.50	0.00	i	i
183	Forest L-R	8/10/2014	epi	20	24	3	3	2	1	0	0	0.30	0.80	<0.28	<0.05	<0.001	2.50	0.00	i	i
183	Forest L-R	8/26/2014	epi	18	22	3	3	3	0	0	0	156.90	1.00	<0.29	<0.14	<0.002	1.00	0.00	i	i
183	Forest L-R	9/15/2014	epi	20	19	2	2	2	0	0	0	2.60	0.50	<0.24	<0.03	<0.001	2.30	0.00	i	i
183	Forest L-R	10/8/2014	epi	15	16	2	3	3	5	0	0	2.00	0.30	<0.73	<0.06	<0.001	1.40	0.00	i	i
183	Forest L-R	6/14/2015	epi	27	22	2	3	1	0	0	0	4.20	0.20	<0.55	<0.018	<0.139	1.45	0.00	I	I
183	Forest L-R	7/5/2015	epi	27	24	2	3	1	0	0	0	1.40	0.40	<1.01	<0.003	<0.011	1.08	0.00	I	I
183	Forest L-R	7/26/2015	epi	28	27	2	3	1	0	0	0	2.30	0.60	<0.19	<0.002	<0.014	1.83	0.00	I	I
183	Forest L-R	8/10/2015	epi	26	27	3	3	2	0	0	0	4.20	1.00	<0.44	<0.002	<0.014	2.70	0.00	I	I
183	Forest L-R	8/24/2015	epi	24	27	2	3	1	0	0	0	3.60	0.30	<0.21	<0.003	<0.010	1.24	0.00	I	I
183	Forest L-R	9/7/2015	epi	25	27	2	3	2	0	0	0	0.05	0.50	<0.39	<0.004	<0.012	1.78	0.00	I	I
183	Forest L-R	9/22/2015	epi	20	22	2	3	1	0	0	0	2.10	0.60	<0.30	<0.007	<0.035	1.95	0.00	I	I

## Legend Information

<i>Indicator</i>	<i>Description</i>	<i>Detection Limit</i>	<i>Standard (S) / Criteria (C)</i>
<b>General Information</b>			
Lnum	lake number (unique to CSLAP)		
Lname	name of lake (as it appears in the Gazetteer of NYS Lakes)		
Date	sampling date		
<b>Field Parameters</b>			
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
<b>Laboratory Parameters</b>			
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)	0.3 ug/l	none
Cyl	Cylindrospermopsin (ug/l)	0.1 ug/l	none
<b>Lake Assessment</b>			
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 Forest Lake

**Forest Lake ( 1301-0267)**

**NoKnownImpct**

**Waterbody Location Information**

Revised: 04/25/2008

<b>Water Index No:</b> H-236-22-11-P441	<b>Drain Basin:</b> Lower Hudson River
<b>Hydro Unit Code:</b>	<b>Str Class:</b> A
<b>Waterbody Type:</b> Lake	<b>Reg/County:</b> 4/Rensselaer Co. (42)
<b>Waterbody Size:</b> 18.9 Acres	<b>Quad Map:</b> TABORTON (K-27-1)
<b>Seg Description:</b> entire lake	

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

Use(s) Impacted	Severity	Problem Documentation
NO USE IMPAIRMNT		

**Type of Pollutant(s)**

Known: ---  
 Suspected: ---  
 Possible: ---

**Source(s) of Pollutant(s)**

Known: ---  
 Suspected: ---  
 Possible: ---

**Resolution/Management Information**

<b>Issue Resolvability:</b> 8 (No Known Use Impairment)	
<b>Verification Status:</b> (Not Applicable for Selected RESOLVABILITY)	
<b>Lead Agency/Office:</b> n/a	<b>Resolution Potential:</b> n/a
<b>TMDL/303d Status:</b> n/a	

**Further Details**

**Water Quality Sampling**

Forest Lake has been sampled as part of the NYSDEC Citizen Statewide Lake Assessment Program (CSLAP) beginning in 2003 and continuing through 2005. An Interpretive Summary report of the findings of this sampling was published in 2006. These data indicate that the lake continues to be best characterized as mesoligotrophic, or moderately unproductive. Phosphorus levels in the lake are consistently below the state guidance values indicating impacted/stressed recreational uses. Corresponding transparency measurements meet what is the recommended minimum for swimming beaches. Measurements of pH occasionally fall below the state water quality range of 6.5 to 8.5, but are adequate to support aquatic life. The lake water is weakly colored, but color does not limit water transparency. (DEC/DOW, BWAM/CSLAP, February 2006)

**Recreational Assessment**

Public perception of the lake and its uses is also evaluated as part of the CSLAP program. This assessment indicates recreational suitability of the lake to be generally favorable, although less favorable in more recent years. The recreational suitability of the lake is described most frequently as "excellent" to "slightly" impacted in recent years. The lake itself is most often described as "not quite crystal clear" to having "definite algal greenness." These assessments are somewhat less favorable given measured water quality characteristics of the lake. Assessments have noted increasing

aquatic plants, but were not identified as growing densely at the lake surface. (DEC/DOW, BWAM/CSLAP, February 2006)

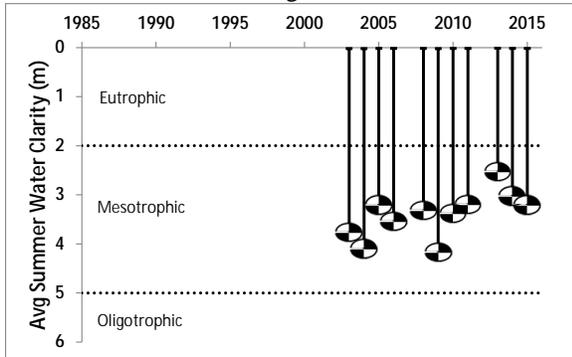
#### Lake Uses

This lake waterbody is designated class A, suitable for use as a water supply, public bathing beach, general recreation and aquatic life support. Water quality monitoring by NYSDEC focuses primarily on support of general recreation and aquatic life. Samples to evaluate the bacteriological condition and bathing use of the lake or to evaluate contamination from organic compounds, metals or other inorganic pollutants have not been collected as part of the CSLAP monitoring program. Monitoring to assess potable water supply and public bathing use is generally the responsibility of state and/or local health departments.

## Appendix C- Long Term Trends: Forest Lake

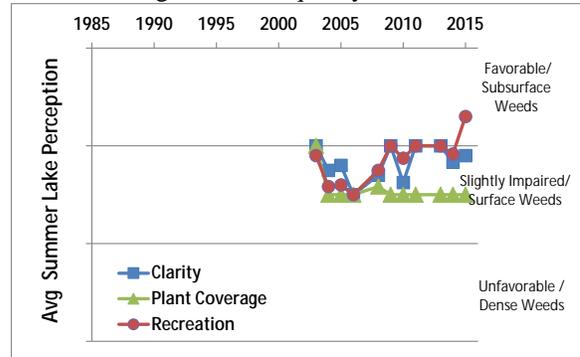
### Long Term Trends: Water Clarity

- ↓ water clarity over last decade
- Most readings typical of *mesotrophic* lakes, consistent with algae levels and TP



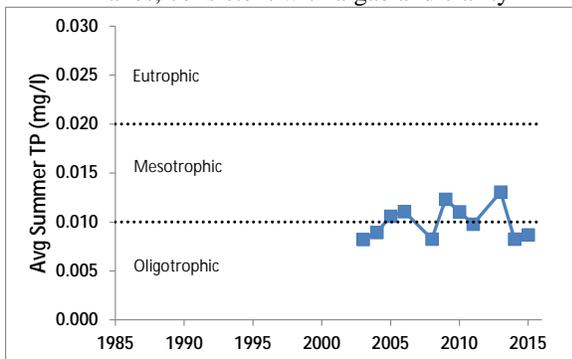
### Long Term Trends: Lake Perception

- ↑ recreational/water quality assessments
- Recreational perception not closely linked to changes in water quality or weeds



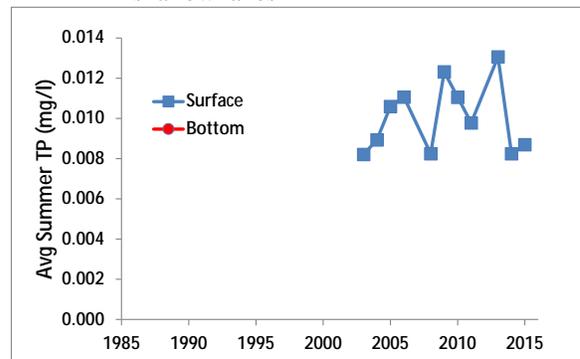
### Long Term Trends: Phosphorus

- No trends apparent
- Most readings typical of *mesoligotrophic* lakes, consistent with algae and clarity



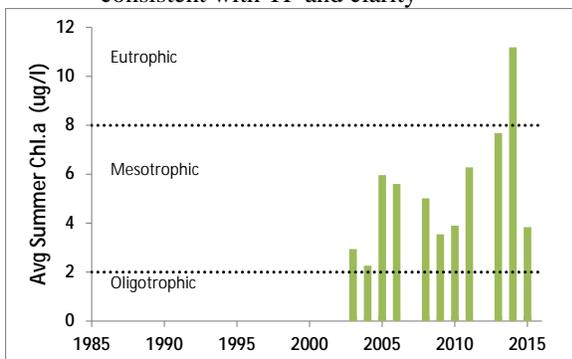
### Long Term Trends: Bottom Phosphorus

- No bottom TP data
- Surface and bottom TP usually very similar in shallow lakes



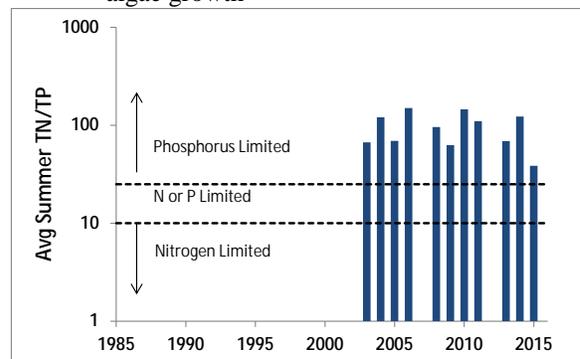
### Long Term Trends: Chlorophyll a

- Algae slightly ↑ in recent years, but not '15
- Most readings typical of *mesotrophic* lakes, consistent with TP and clarity



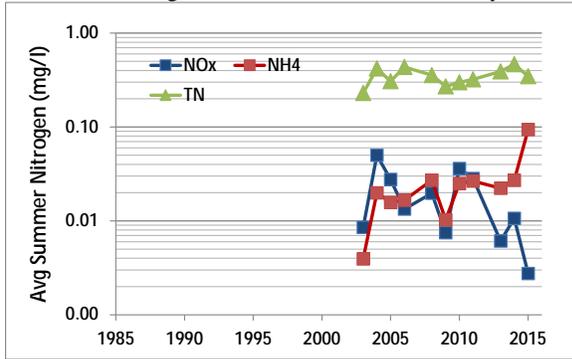
### Long Term Trends: N:P Ratio

- No trends apparent; lower in 2015
- Most readings indicate phosphorus limits algae growth



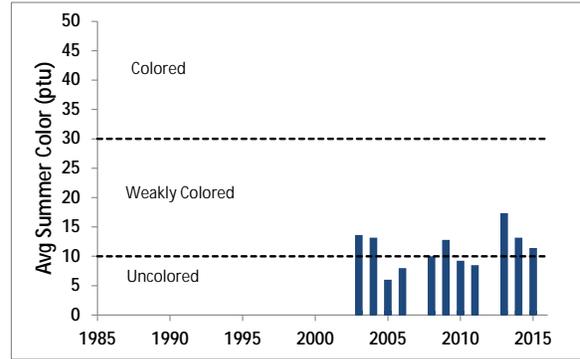
### Long Term Trends: Nitrogen

- TN & NH4 slight increase over last decade
- Low nitrate, ammonia and total nitrogen readings with some natural variability



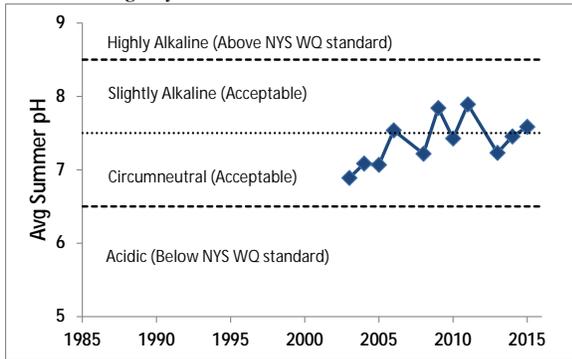
### Long Term Trends: Color

- No trend apparent
- Most readings typical of *uncolored to weakly colored* lakes



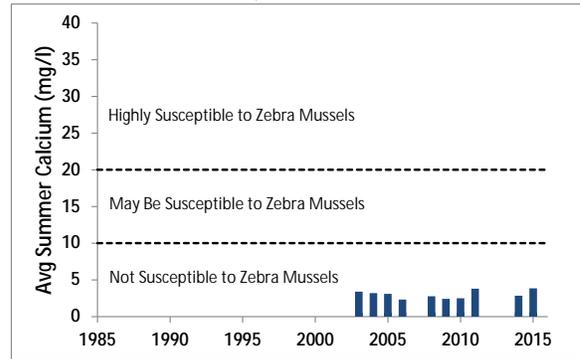
### Long Term Trends: pH

- pH increasing, but trend not significant
- Most readings typical of *circumneutral to slightly alkaline* lakes



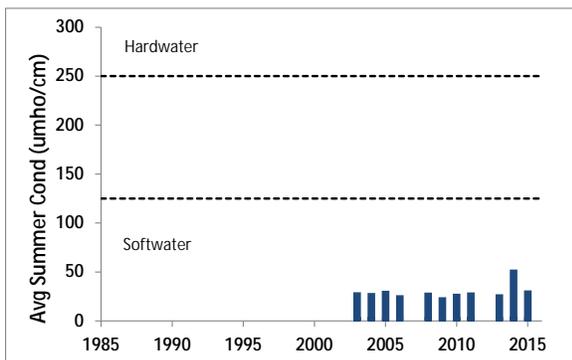
### Long Term Trends: Calcium

- No trends apparent
- All readings indicate low susceptibility to zebra mussels, which are not found in lake



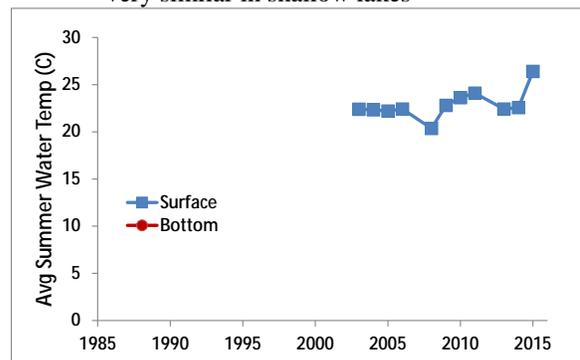
### Long Term Trends: Conductivity

- Conductivity stable/low w/no clear trend
- All readings typical of lakes with *soft water*



### Long Term Trends: Water Temperature

- No trends apparent, but much higher 2015
- Surface and bottom temperatures usually very similar in shallow lakes



## **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

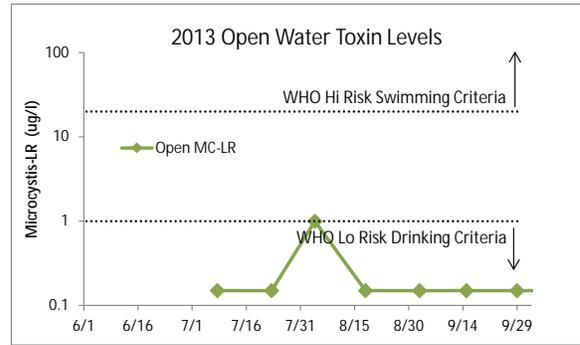
Some of these results are reported in other portions of these reports. This appendix the seasonal change in blue green algae, other algae types, and the primary algal toxin (microcystin-LR, a liver toxin). Analysis was completed on open water samples and, for some lakes, shoreline samples that were collected 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.



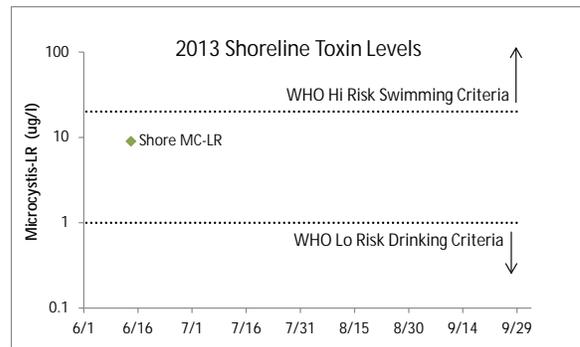
**Figure D1:**  
2013 Open Water Total and BGA Chl.a



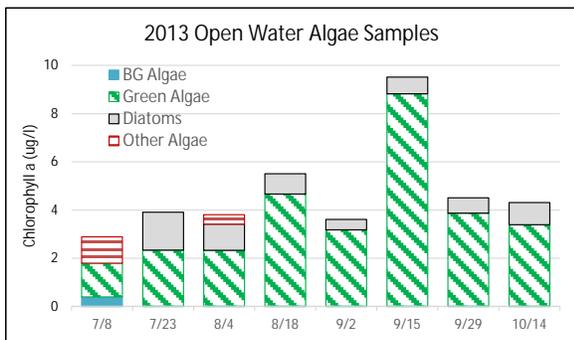
**Figure D2:**  
2013 Open Water Microcystin-LR



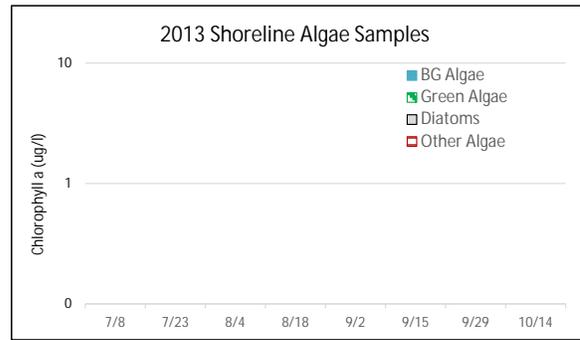
**Figure D3:**  
2013 Shoreline Total and BGA Chl.a



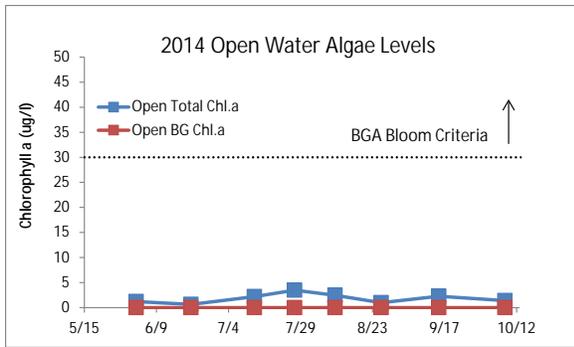
**Figure D4:**  
2013 Shoreline Microcystin-LR



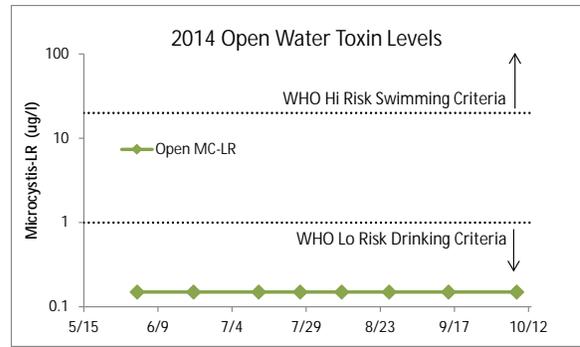
**Figure D5:**  
2013 Open Water Algae Types



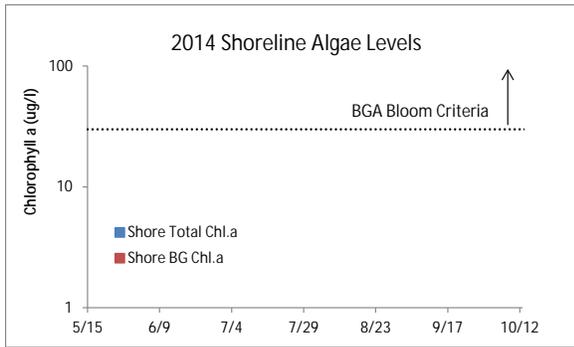
**Figure D6:**  
2013 Shoreline Algae Types



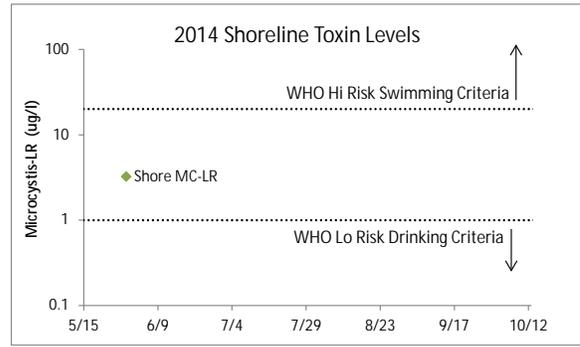
**Figure D7:**  
2014 Open Water Total and BGA Chl.a



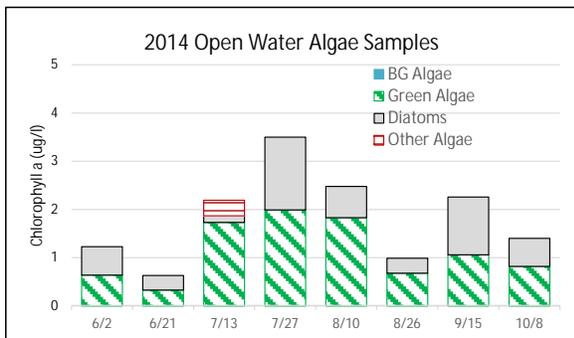
**Figure D8:**  
2014 Open Water Microcystin-LR



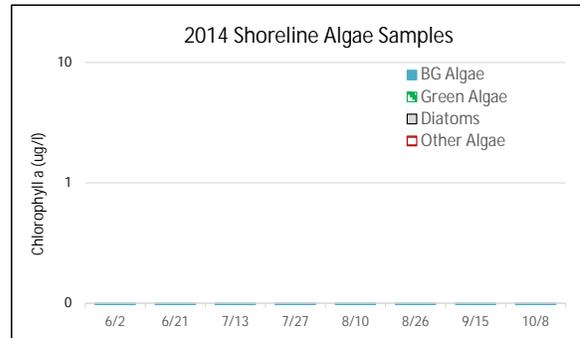
**Figure D9:**  
2014 Shoreline Total and BGA Chl.a



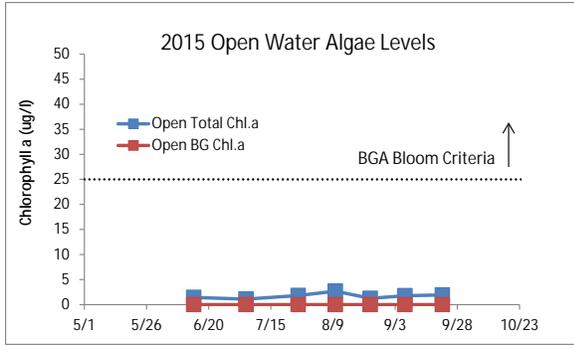
**Figure D10:**  
2014 Shoreline Microcystin-LR



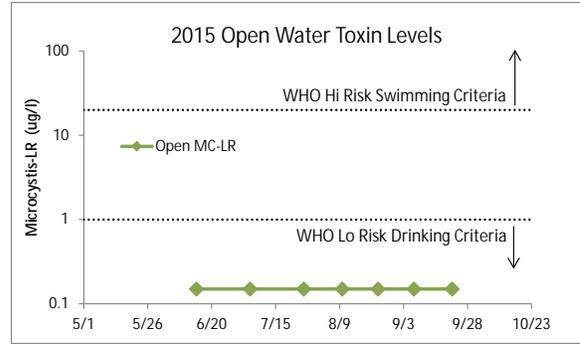
**Figure D11:**  
2014 Open Water Algae Types



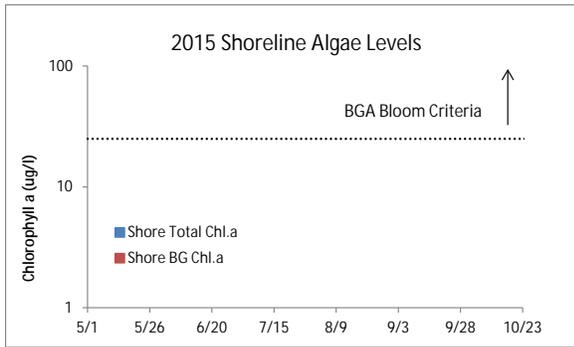
**Figure D12:**  
2014 Shoreline Algae Types



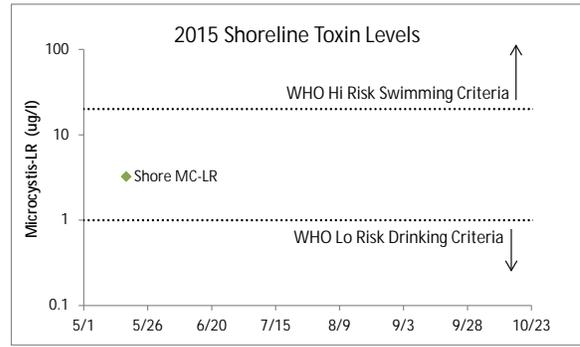
**Figure D13:**  
2015 Open Water Total and BGA Chl.a



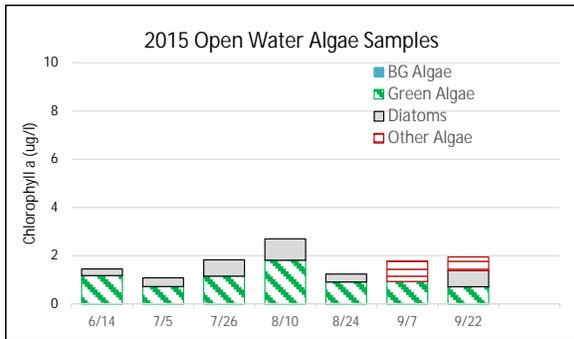
**Figure D14:**  
2015 Open Water Microcystin-LR



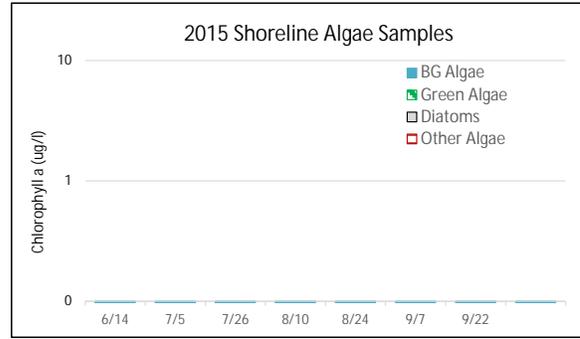
**Figure D15:**  
2015 Shoreline Total and BGA Chl.a



**Figure D16:**  
2015 Shoreline Microcystin-LR



**Figure D17:**  
2015 Open Water Algae Types



**Figure D18:**  
2015 Shoreline Algae Types

## Appendix E: AIS Species in Rensselaer County

The table below shows the invasive aquatic plants and animals that have been documented in Rensselaer 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](http://www.dec.ny.gov/docs/lands_forests_pdf/islist.pdf)).

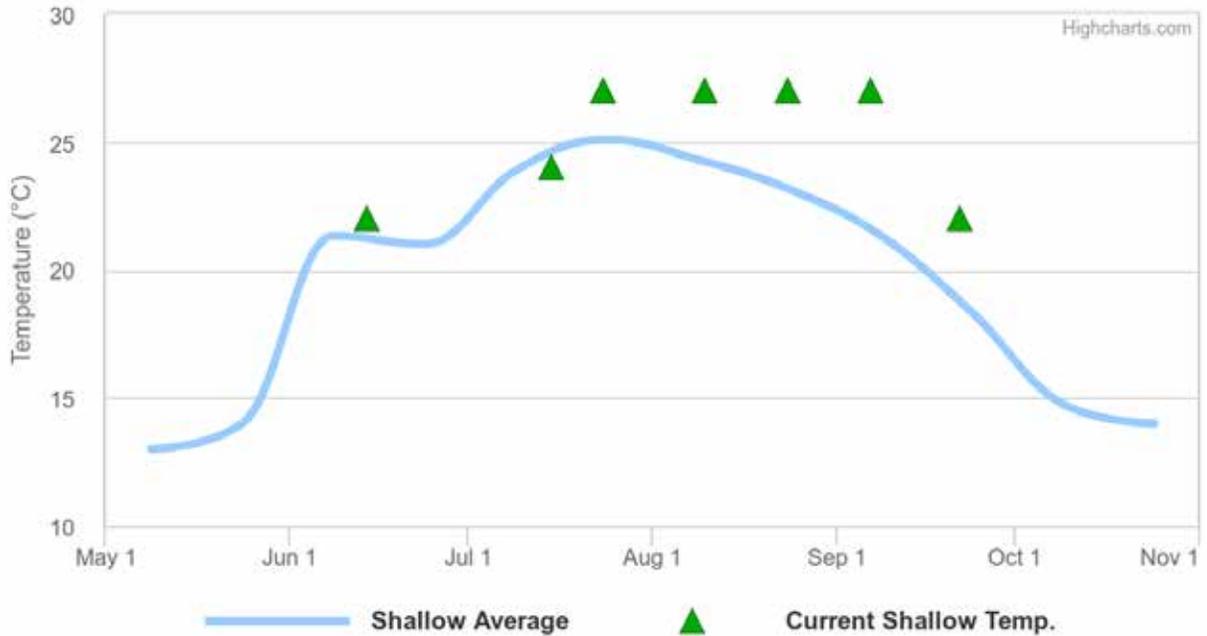
This list is not complete, but instead represents only those species that have been reported and verified within the county. If any additional aquatic invasive species (AIS) are known or suspected in these or other waterbodies in the county, this information should be reported through iMap invasives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

<b>Aquatic Invasive Species – Rensselaer County</b>			
<b>Waterbody</b>	<b>Kingdom</b>	<b>Common name</b>	<b>Scientific name</b>
Burden Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Burden Lake	Animal	Virile crayfish	<i>Orconectes virilis</i>
Burden Lake	Plant	Curly leafed pondweed	<i>Potamogeton crispus</i>
Burden Lake	Plant	Water chestnut	<i>Trapa natans</i>
Burden First Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Burden First Lake	Plant	Water chestnut	<i>Trapa natans</i>
Burden Second Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Burden Second Lake	Plant	Curly leafed pondweed	<i>Potamogeton crispus</i>
Burden Third Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Burden Third Lake	Plant	Curly leafed pondweed	<i>Potamogeton crispus</i>
Castleton Reservoir	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Coopers Pond	Plant	Curly leafed pondweed	<i>Potamogeton crispus</i>
Crooked Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Crystal Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Crystal Lake	Animal	Virile crayfish	<i>Orconectes virilis</i>
Glass Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Glass Lake	Animal	Virile crayfish	<i>Orconectes virilis</i>
Golden Pond	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Golden Pond	Plant	Water chestnut	<i>Trapa natans</i>
Hampton Manor Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Hampton Manor Lake	Plant	Curly leafed pondweed	<i>Potamogeton crispus</i>
Hampton Manor Lake	Plant	Water chestnut	<i>Trapa natans</i>
Hudson River	Animal	Zebra mussel	<i>Dreissena polymorpha</i>
Hudson River	Plant	Water chestnut	<i>Trapa natans</i>

<b>Waterbody</b>	<b>Kingdom</b>	<b>Common name</b>	<b>Scientific name</b>
Hudson River (Schodack Island Park)	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Johnsonville Reservoir	Plant	Water chestnut	<i>Trapa natans</i>
<b>Johnsonville Reservoir</b>	<b>Plant</b>	<b>Eurasian watermilfoil</b>	<b><i>Myriophyllum spicatum</i></b>
Links Pond	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Links Pond	Plant	Water chestnut	<i>Trapa natans</i>
Long Pond	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Mill Pond	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Nassau Lake	Plant	Curly leafed pondweed	<i>Potamogeton crispus</i>
Nassau Lake	Plant	Water chestnut	<i>Trapa natans</i>
Pine Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
<b>Pine Lake</b>	<b>Plant</b>	<b>Water chestnut</b>	<b><i>Trapa natans</i></b>
Racquet Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Red Pond	Animal	Virile crayfish	<i>Orconectes virilis</i>
Reichards Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Second Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Shaver Pond	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Snyders Lake	Animal	Zebra mussel	<i>Dreissena polymorpha</i>
Snyders Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Snyders Lake	Plant	Brittle naiad	<i>Najas minor</i>
Snyders Lake	Plant	Curly leafed pondweed	<i>Potamogeton crispus</i>
Tamarack Pond	Plant	Water chestnut	<i>Trapa natans</i>
Tomhannock Lake	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Troy Reservoir	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Vanderhyden Reservoir	Plant	Eurasian watermilfoil	<i>Myriophyllum spicatum</i>

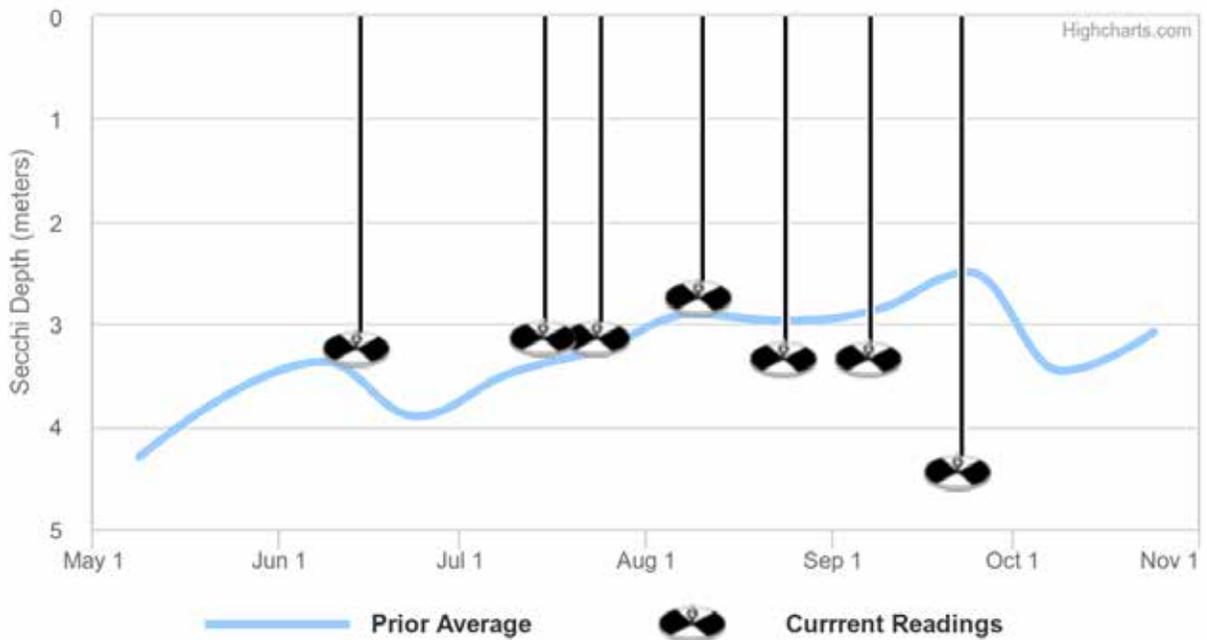
## Appendix F: Current Year vs. Prior Averages for Forest Lake-R

### 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 2003 to 2014.

### Current Year Secchi Readings vs. Prior Average



This year's session Secchi readings are tending to be higher than normal when compared to the average of readings collected from 2003 to 2014

## Appendix G: Watershed and Land Use Map for Forest 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.

