

## Pleasant Lake Questions and Answers, 2015 CSLAP

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

A1. Conditions in Pleasant Lake were close to normal (for the lake) in 2014 and 2015, and water quality conditions have been fairly stable.

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

A2. Chloride sampling results were typical of lakes with few impacts from road salt runoff, and no impacts have been measured or reported.

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

A3. Pleasant Lake had higher water clarity, and lower algae and nutrient readings, than the typical nearby lake. Plant coverage was lower than in many nearby lakes in 2015.

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

A4. pH has increased over the last decade, although this does not appear to have otherwise affected the lake. Water clarity has decreased slightly and phosphorus levels and plant coverage have increased slightly over the last fifteen years, but none of these changes have been statistically significant.

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

A5. Pleasant Lake does not appear to be susceptible to shoreline blue green algae blooms, but may be susceptible to small increases in phosphorus levels. Any nutrient sources along the shoreline or in the watershed (eroding shorelines, sediment,...) should be identified and reduced working with local agencies.

**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. Visiting boats should be inspected to reduce the risk of new invasive species, since nearby lakes harbor several invasive plants and animals not presently found in the lake.

<b>Lake Use</b>				
	PWL	Average Year	2015	Primary issue
<b>Potable Water</b>				Not applicable
<b>Swimming</b>				Not applicable
<b>Recreation</b>				No impacts
<b>Aquatic Life</b>				Low pH
<b>Aesthetics</b>				Poor perception
<b>Habitat</b>				No impacts
<b>Fish Consumption</b>				

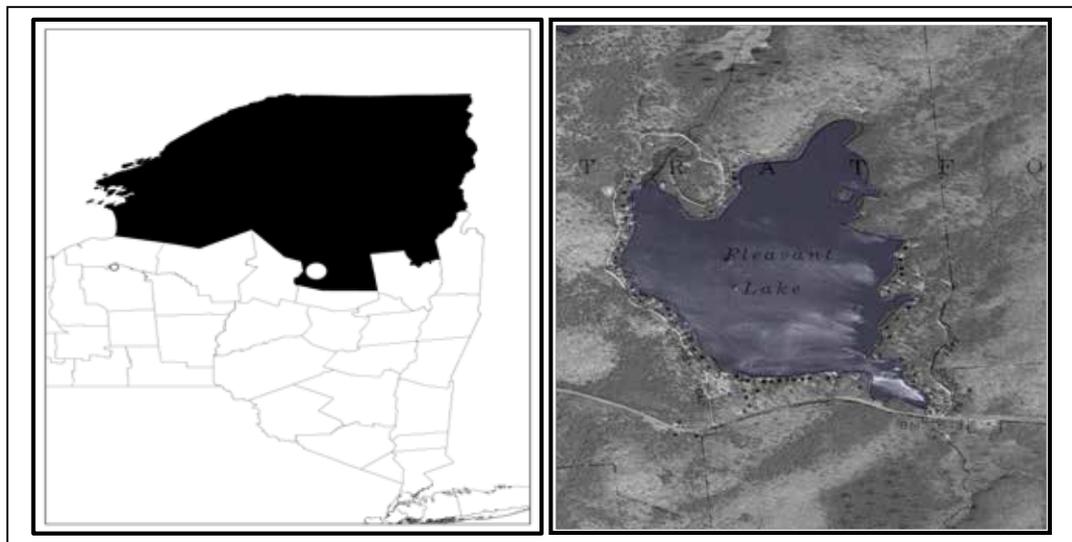
 Supported / Good  
 Threatened / Fair  
 Stressed / Poor  
 Impaired  
 Not Known

## CSLAP 2015 Lake Water Quality Summary: Pleasant Lake

### General Lake Information

<b>Location</b>	Town of Stratford
<b>County</b>	Fulton
<b>Basin</b>	Mohawk River
<b>Size</b>	98.4 hectares (243.0 acres)
<b>Lake Origins</b>	Natural
<b>Watershed Area</b>	340.3 hectares (840.5 acres)
<b>Retention Time</b>	2.6 years
<b>Mean Depth</b>	6.7 meters
<b>Sounding Depth</b>	14.3 meters
<b>Public Access?</b>	DEC cartop launch
<b>Major Tributaries</b>	no named tribs
<b>Lake Tributary To...</b>	unnamed outlet to Ayers Creek to East Canada Creek to Mohawk River
<b>WQ Classification</b>	B (contact recreation = swimming)
<b>Lake Outlet Latitude</b>	43.182
<b>Lake Outlet Longitude</b>	-74.593
<b>Sampling Years</b>	2000-2001, 2003-2011, 2013-2015
<b>2015 Samplers</b>	Bob Vaniglia
<b>Main Contact</b>	Bob Vaniglia

### Lake Map



## **Background**

Pleasant Lake is a 243 acre, class B lake found in the Town of Stratford in Fulton County, in the southern Adirondack region of New York State. It was sampled as part of CSLAP for the first time in 2000.

It is one of eight CSLAP lakes among the nearly 200 lakes and ponds 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**

Pleasant 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—fishing and boating, aquatic life, and aesthetics. The lake is used by lake residents for swimming, boating and other recreation via shoreline properties; the public can access the lake via a cartop launch.

It is not known by the report authors if Pleasant Lake has been stocked by lake residents or municipal officials. Fish species in the lake include brown bullhead, chain pickerel, pumpkinseed sunfish, rock bass, smallmouth bass, and yellow perch.

General statewide fishing regulations are applicable in Pleasant Lake. In addition, the open season for chain pickerel lasts from the 1<sup>st</sup> Saturday in May through March 15<sup>th</sup>, with no size limits but a daily take limit of five fish. Open season for trout is from April 1<sup>st</sup> through October 15<sup>th</sup>, with no size limit but a daily take limit of five fish and five brook trout less than eight inches in length.

Statewide fish consumption advisories apply to Pleasant Lake—no site-specific advisories have been issued for the lake.

## **Historical Water Quality Data**

CSLAP sampling was conducted on Pleasant Lake from 2000 to 2001, 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 Pleasant Lake can also be found on the NYSDEC web page at <http://www.dec.ny.gov/lands/77870.html>.

Pleasant Lake was sampled by New York State Conservation Department (the predecessor to the NYSDEC) in 1934 as part of the Biological Survey of the Mohawk River basin. Most of the water quality parameters measured in CSLAP were not evaluated in this survey. These data indicate that water quality conditions were probably similar in 1934 to those measured through CSLAP, based on water clarity readings. pH was slightly higher in 1934, but deepwater oxygen levels were only slightly depressed in 1934, consistent with the present-day expectations based on the surface and deepwater nutrient readings (as discussed later in this report).

None of the Pleasant Lake tributaries are named or have been monitored through the NYSDEC Rotating Intensive Basins (RIBS) program. No sites have been sampled through the state stream macroinvertebrate monitoring program, or are included in the state fisheries (water quality) database.

## **Lake Association and Management History**

Pleasant Lake is served by the Stratford Pleasant Lake Club. It is not known if the lake association is actively involved in management, or if the Club maintains a website.

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

### **Evaluation of 2015 Annual Results Relative to 2000-2014**

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 – Pleasant Lake” section in Appendix C.

### **Evaluation of Eutrophication Indicators**

Trophic conditions in Pleasant Lake were close to normal in 2015. Phosphorus readings were higher than normal, but algae levels were lower than normal, and water clarity was close to normal. This suggests that the small changes in each of these indicators was within the normal range of variability for the lake.

Water clarity increases slightly from May through September in the typical summer. Phosphorus readings typically drop in early summer, but increase in late summer, while algae levels do not change in any predictable way. Phosphorus and algae levels decreased slightly during the summer in 2015, and water clarity increased slightly over the same period.

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), although all indicators were more typical of *mesotrophic* lakes in 2015. The trophic state indices (TSI) evaluation suggests that phosphorus levels are slightly lower than expected given the algae and water clarity readings in the lake. This suggests that small increases in phosphorus readings will result in large changes in algae levels or water clarity. Overall trophic conditions are summarized on the Lake Scorecard and Lake Condition Summary Table.

### **Evaluation of Potable Water Indicators**

Algae levels are probably 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 use for potable water. Hypolimnetic phosphorus readings in Pleasant Lake are similar to those at the lake surface, and deepwater ammonia readings are only slightly elevated. This suggests that deepwater intakes should not be compromised. Potable water conditions, at least as measurable through CSLAP, are summarized in the Lake Scorecard and Lake Condition Summary Table.

### **Evaluation of Limnological Indicators**

pH readings were slightly higher than normal in 2014 and 2015, and these readings have increased slightly since the early 2000s. Ammonia readings were slightly higher than normal in 2015, but these readings have not exhibited any long-term changes. Each of the other water

quality indicators (NO<sub>x</sub>, total nitrogen, conductivity, color and calcium) was close to normal in 2015. Except for pH, none of these indicators has exhibited a clear long-term change.

Chloride levels in the 2015 samples, collected for the first time through CSLAP and cited in Appendix A, were approximately 5 mg/l. These values fall within the low end of the range of “minor” 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 well below the range of values found in most NYS lakes. These readings suggest a low 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.

### **Evaluation of Biological Condition**

The limited CSLAP macrophyte data indicate only a few native plant species; there is insufficient information to calculate a floristic quality index (FQI) to evaluate the quality of the aquatic plant community. The limited information about the fish community in the lake is comprised of a mix of coolwater (at least two species) and warmwater (at least four species) fish; it is not known if the lake also supports coldwater fish species.

Zooplankton and macroinvertebrate surveys have not been conducted through CSLAP at Pleasant Lake. The fluoroprobe screening samples analyzed by SUNY ESF in the last few years showed very low total algae levels and very low blue green algae levels in the lake. Slightly higher total and blue green algae levels were apparent at the end of October in 2014, but not in 2015, and most algae samples from the CSLAP site are comprised of a mix of algae species. No shoreline blooms have been reported or sampled.

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

### **Evaluation of Lake Perception**

Recreational assessments were slightly more favorable than normal in 2014 and 2015, despite water quality conditions and assessments that were close to normal. Aquatic plant coverage has increased slightly over the last decade; it is not known if this is due to native or invasive plants. Recreational conditions are more affected by poor weather than by water quality or aquatic plant coverage. Recreational assessments typically improve in early summer and degrade in late summer; the former is coincident with (but probably not connected to) a steady increase in plant coverage during the summer. Overall lake perception is summarized on the Lake Scorecard and Lake Condition Summary Table.

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

Water temperature readings in the summer index period were higher than normal in 2015, and has not changed significantly in the last decade. It is not known if this is indicative of a lack of local climate change in the lake or if these readings are not adequate to evaluate these changes. Deepwater temperatures have decreased slightly in the last decade, but with only limited data, it is not clear if this is part of a trend.

## 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 well below the thresholds associated with harmful algal blooms (HABs). Algal toxins levels have been extremely low in all open water samples; no shoreline blooms were reported or sampled.

## Lake Condition Summary

Category	Indicator	Min	Overall Avg	Max	2015 Avg	Classification	2015 Change?	Long-term Change?
Eutrophication Indicators	Water Clarity	3.10	4.35	5.85	4.30	Mesotrophic	Within Normal Range	No Change
	Chlorophyll <i>a</i>	0.71	2.70	9.80	2.17	Mesotrophic	Within Normal Range	No Change
	Total Phosphorus	0.003	0.007	0.019	0.010	Oligotrophic	Higher than Normal	No Change
Potable Water Indicators	Hypolimnetic Ammonia	0.03	0.15	0.33	0.12	Elevated Deepwater NH4	Within Normal Range	Not known
	Hypolimnetic Arsenic							Not known
	Hypolimnetic Iron							Not known
	Hypolimnetic Manganese							Not known
Limnological Indicators	Hypolimnetic Phosphorus	0.005	0.012	0.035	0.014	Close to Surface TP Readings	Within Normal Range	Not known
	Nitrate + Nitrite	0.00	0.03	0.18	0.03	Low NOx	Within Normal Range	No Change
	Ammonia	0.00	0.03	0.23	0.04	Low Ammonia	Higher than Normal	No Change
	Total Nitrogen	0.10	0.35	1.30	0.32	Low Total Nitrogen	Within Normal Range	No Change
	pH	5.82	7.26	8.93	7.47	Circumneutral	Within Normal Range	Increasing Slightly
	Specific Conductance	18	38	100	44	Softwater	Within Normal Range	No Change
	True Color	3	19	57	22	Intermediate Color	Within Normal Range	No Change
	Calcium	1.8	3.5	9.8	3.3	Not Susceptible to Zebra Mussels	Within Normal Range	No Change
Lake Perception	WQ Assessment	1	2.0	2	2.0	Not Quite Crystal Clear	Within Normal Range	No Change
	Aquatic Plant Coverage	1	2.8	3	2.7	Surface Plant Growth	Within Normal Range	Slightly Degrading
	Recreational Assessment	1	2.3	5	1.7	Excellent	More Favorable Than Normal	No Change
Biological Condition	Phytoplankton					Open water-low blue green algae biomass	Not known	Not known
	Macrophytes					Survey data too limited to evaluate	Not known	Not known
	Zooplankton					Not measured through CSLAP	Not known	Not known
	Macroinvertebrates					Not measured through CSLAP	Not known	Not known
	Fish					Coolwater fishery	Not known	Not known
	Invasive Species					None observed	Not known	Not known
Local Climate Change	Air Temperature	6	18.7	29	20.5		Higher Than Normal	No Change
	Water Temperature	11	20.3	26	22.3		Higher Than Normal	No Change

Category	Indicator	Min	Overall Avg	Max	2015 Avg	Classification	2015 Change?	Long-term Change?
Harmful Algal Blooms	Open Water Phycocyanin	2	7	38	17	No readings indicate high risk of BGA	Not known	Not known
	Open Water FP Chl.a	0	1	6	1	No readings indicate high algae levels	Not known	Not known
	Open Water FP BG Chl.a	0	1	3	1	No readings indicate high BGA levels	Not known	Not known
	Open Water Microcystis	<DL	0.5	4.6	<DL	Mostly undetectable open water MC-LR	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
	Shoreline FP Chl.a					No shoreline blooms sampled for FP	Not known	Not known
	Shoreline 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

The 2003 NYSDEC Priority Waterbody Listings (PWL) for the Mohawk River drainage basin indicate that Pleasant Lake has *no known impairments*. The PWL listing for Pleasant Lake is shown in Appendix B.

### Potable Water (Drinking Water)

The CSLAP dataset at Pleasant 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 used for this purpose. The limited CSLAP data available to evaluate this use do not show any potential impacts to "unofficial" use of the lake for this purpose.

### Public Bathing

The CSLAP dataset at Pleasant 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 fully supported, although additional information about bacterial levels is needed to evaluate the safety of the water for swimming.

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

The CSLAP dataset on Pleasant Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that recreation should be fully supported.

### Aquatic Life

The CSLAP dataset on Pleasant Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that aquatic life are fully supported, although this use may be *threatened* at times by low pH and *threatened* by spiny waterflea found in nearby lakes. No impacts were apparent in 2015. Additional data are needed to evaluate the food and habitat conditions for aquatic organisms in the lake.

### **Aesthetics and Habitat**

The CSLAP dataset on Pleasant Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that aesthetics should be fully supported, although this use may be *threatened* by poor lake perception (which might not be related to water quality).

### **Fish Consumption**

There are no fish consumption advisories posted for Pleasant Lake.

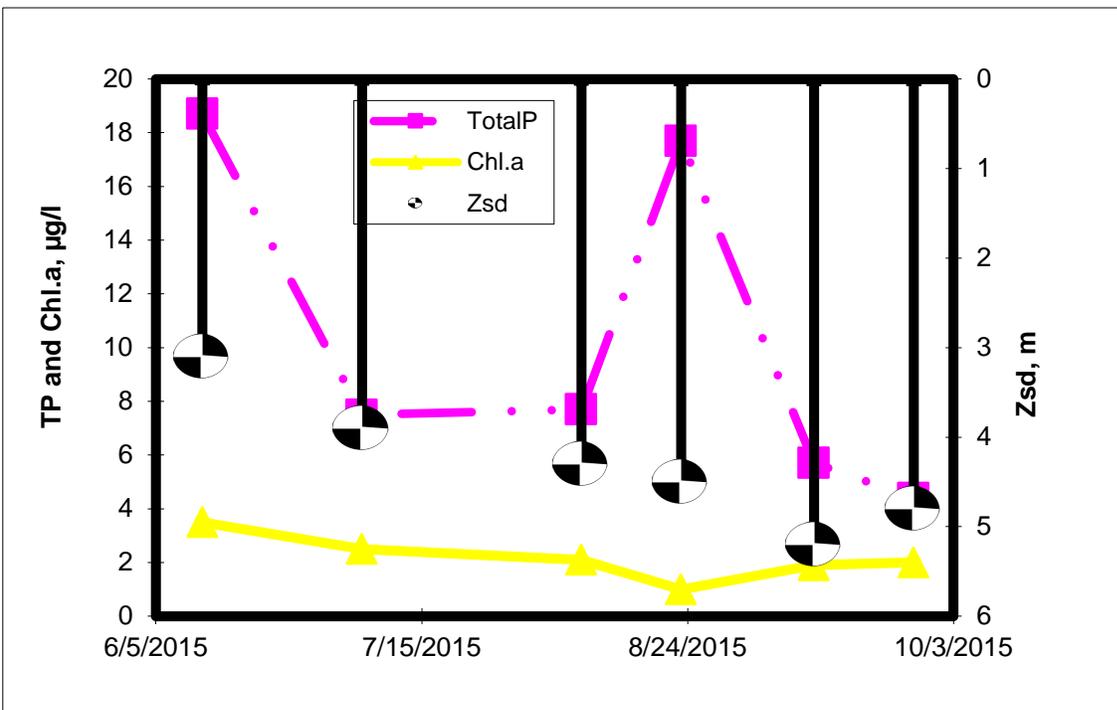
### **Additional Comments and Recommendations**

Additional plant survey data should be collected to determine the extent to which increased coverage of aquatic plants may reflect a change in biological or recreational conditions, or if this increase is due to native or invasive plants.

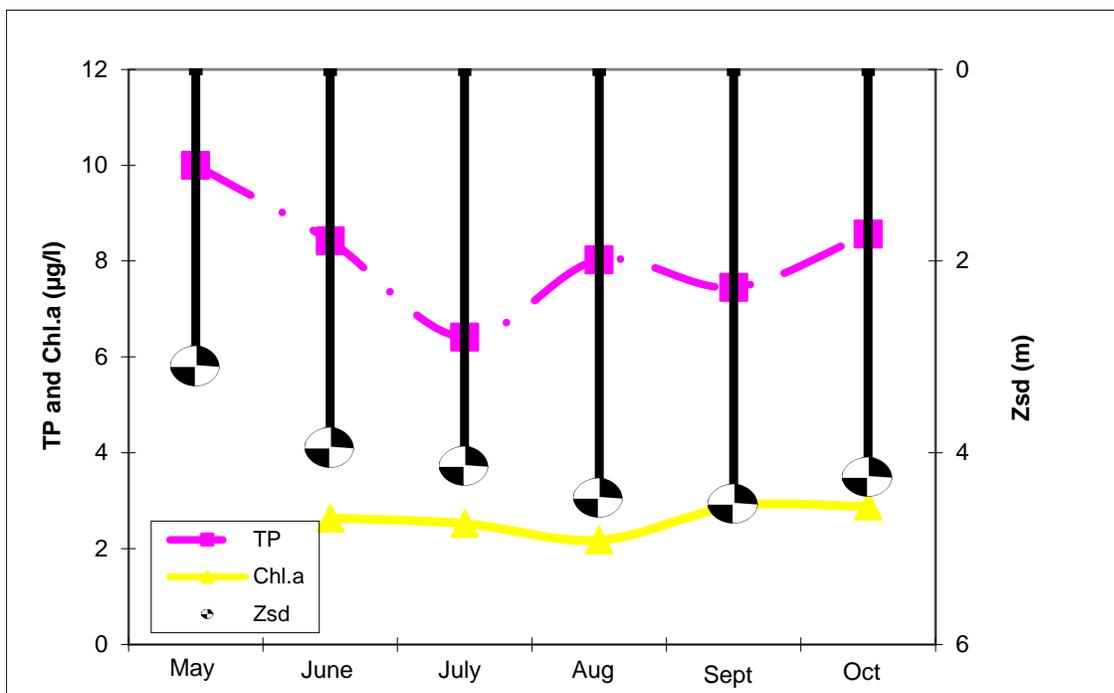
### **Aquatic Plant IDs-2015**

None submitted for identification in 2015.

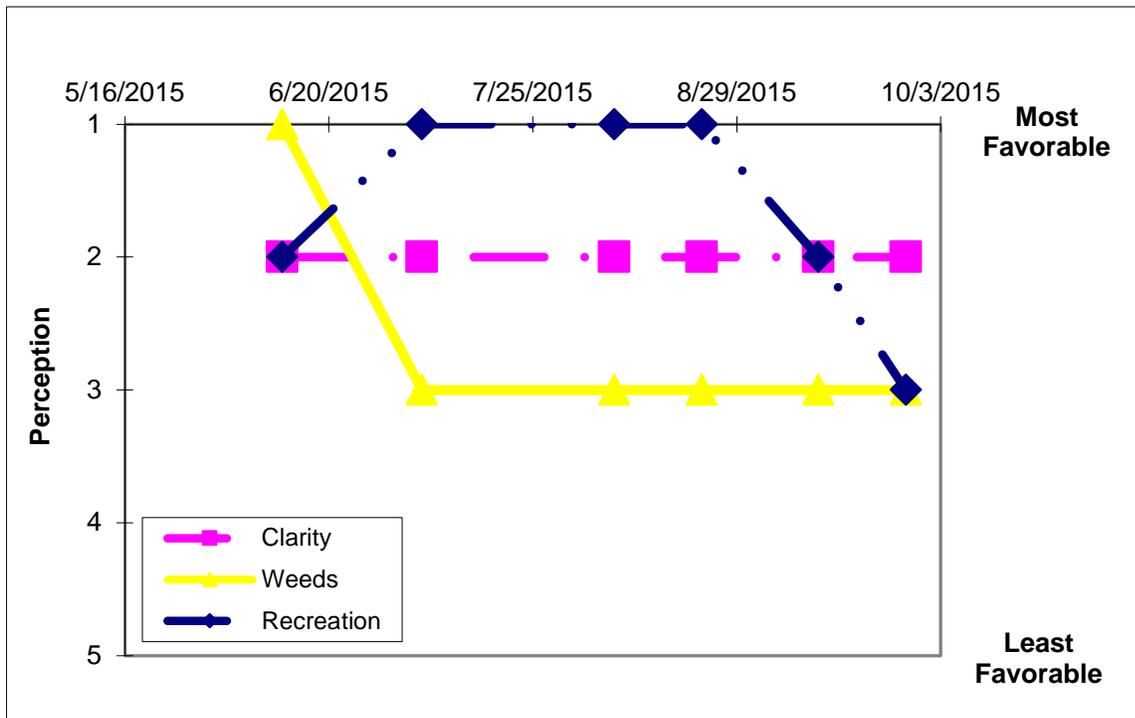
## Time Series: Trophic Indicators, 2015



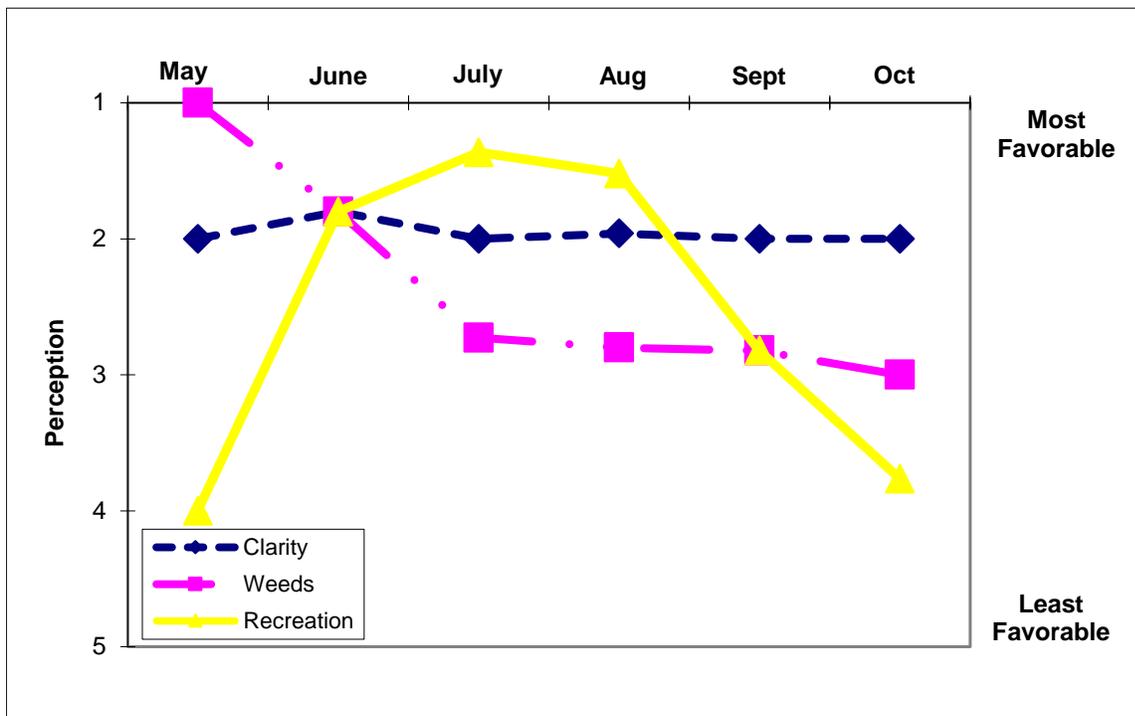
## Time Series: Trophic Indicators, Typical Year (2000-2015)



## Time Series: Lake Perception Indicators, 2015



## Time Series: Lake Perception Indicators, Typical Year (2000-2015)



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

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
174	Pleasant L-F	5/27/2000	14.9	3.10	1.5	0.010	0.10				18	6.85	35		9.80	
174	Pleasant L-F	6/10/2000	13.9	4.25	1.5	0.003	0.07				17	6.45	33		2.76	
174	Pleasant L-F	6/24/2000	14.4	4.85	1.5	0.005	0.06				18	7.51	33		3.24	
174	Pleasant L-F	7/8/2000	13.9	4.15	1.5	0.004	0.02				16	6.83	34		5.50	
174	Pleasant L-F	7/22/2000	14.9	3.90	1.5	0.004	0.01				17				4.80	
174	Pleasant L-F	8/5/2000	15.0	4.95	1.5	0.006	0.01				16	7.44	33		2.38	
174	Pleasant L-F	8/19/2000	14.8	4.65	1.5	0.007	0.01				22	5.82	34		3.14	
174	Pleasant L-F	9/4/2000	14.7	5.25	1.5	0.005	0.01				16	6.17	34		2.23	
174	Pleasant L-F	7/22/2001	13.9	4.90	1.5	0.003	0.03				11	7.15	34		2.95	
174	Pleasant L-F	8/4/2001	13.3	5.10	1.5	0.008	0.01				9	7.10	35		2.36	
174	Pleasant L-F	8/18/2001	13.4	4.65	1.5	0.004	0.01				9	6.67	34		2.72	
174	Pleasant L-F	9/1/2001	14.8	3.80	1.5	0.005	0.01				7	7.74	34		2.13	
174	Pleasant L-F	9/15/2001	14.1	3.90	1.5	0.006	0.01				9	6.17	35			
174	Pleasant L-F	9/29/2001	14.3	4.10	1.5	0.010	0.01				8	6.12	34			
174	Pleasant L-F	10/13/2001	14.0	4.05	1.5	0.005	0.01				8	6.48	35			
174	Pleasant L-F	10/27/2001	14.0	3.85	1.5		0.01				10	6.43	36		2.93	
174	Pleasant L-F	7/27/2003	14.2	3.35	1.5	0.007	0.04	0.00	0.18	52.64	15	6.67	37	2.7	0.71	
174	Pleasant L-F	8/4/2003	14.6	3.30	1.5	0.007	0.01	0.01	0.12	41.17	15	6.53	37		1.44	
174	Pleasant L-F	8/10/2003	14.9	3.25	1.5	0.007	0.02	0.04	0.23	72.06	41	6.64	36		2.16	
174	Pleasant L-F	8/31/2003	14.9	5.75	1.5	0.011	0.01	0.01	0.33	63.90	18	6.33	38		2.35	
174	Pleasant L-F	9/6/2003	14.6	4.80	1.5	0.007	0.02	0.01			19	6.60	38	2.5	2.12	
174	Pleasant L-F	9/13/2003	14.6	4.35	1.5		0.00	0.01	0.17		16	6.57	36		1.45	
174	Pleasant L-F	10/5/2003	14.6	4.15	1.5	0.007	0.01	0.02	0.14	42.58	26	6.65	38		4.37	
174	Pleasant L-F	10/11/2003	14.0	4.30		0.006	0.00	0.03	0.24	88.49	14	6.45	38		2.39	
174	Pleasant L-F	7/18/2004	14.6	3.95	1.5				1.30		14	6.28	41	3.2	1.10	
174	Pleasant L-F	7/25/2004	14.6	4.00	1.5	0.006			0.30	104.58	3	7.72	45		4.30	
174	Pleasant L-F	8/17/2004	14.3	4.95	1.5	0.006			0.29	115.67	16	6.68	39		2.50	
174	Pleasant L-F	8/31/2004	14.6	4.35	1.5	0.005			0.34	136.19	16	8.40	30		1.70	
174	Pleasant L-F	9/11/2004	14.6	4.95	1.5	0.006			0.10	35.65	30	7.84	34	3.1	2.50	
174	Pleasant L-F	9/21/2004	14.6	4.60	1.5	0.006			0.36	145.08	16	7.17	34		1.84	
174	Pleasant L-F	7/3/2005	14.6	3.35	1.5	0.005	0.01	0.02	0.24	100.60	5	7.70	41	2.8	0.9	
174	Pleasant L-F	7/17/2005	14.6	3.95	1.5	0.005	0.01	0.02	0.79	377.33	16	7.80	35		2.6	
174	Pleasant L-F	8/1/2005	14.3	3.90	1.5	0.005	0.01	0.01	0.12	55.01	6	7.43	44		2.0	
174	Pleasant L-F	8/28/2005	14.3	5.45	1.5	0.005	0.01	0.01	0.19	90.74	11	7.64	35		1.2	
174	Pleasant L-F	9/11/2005	14.0	5.85	1.5	0.013	0.01	0.01	0.20	83.96	13	6.96	40	3.1	0.8	
174	Pleasant L-F	9/30/2005	14.3	4.75	1.5	0.010	0.02	0.01	0.12	57.64	13	6.78	39		2.4	
174	Pleasant L-F	10/6/2005	14.0	4.85					0.34	56.28						
174	Pleasant L-F	10/13/2005	14.4	4.90					0.28	60.57						
174	Pleasant L-F	7/4/2006	14.3	3.55	1.5	0.006	0.03	0.05			31	7.60	35	2.7	3.0	
174	Pleasant L-F	7/23/2006	14.6	3.35	1.5	0.006	0.01	0.01			23	6.98	35		3.7	
174	Pleasant L-F	8/6/2006	14.3	3.25	1.5	0.005	0.02	0.01	0.60	238.76	19	6.86	33		1.8	
174	Pleasant L-F	9/4/2006	14.3	3.15	1.5	0.005	0.02	0.02	0.46	185.35	18	7.69	34		8.5	
174	Pleasant L-F	9/16/2006	14.3	4.15	1.5	0.005	0.01	0.02	0.51	242.38	21	8.46	34	4.2	1.6	
174	Pleasant L-F	9/24/2006	14.3	3.25	1.5	0.007	0.03	0.04	0.45	204.53	16	6.72	56		3.5	
174	Pleasant L-F	10/1/2006	14.6	3.40	1.5	0.006	0.03	0.07	0.48	205.38	21	6.28	34		3.5	
174	Pleasant L-F	10/7/2006	14.6	3.95	1.5	0.005	0.01	0.07	0.37	113.01	23	6.92	36		2.7	
174	Pleasant L-F	6/28/2007	14.3	3.60	1.5	0.006	0.17	0.01	0.71	268.47	19	8.9	25	2.7	2.19	
174	Pleasant L-F	7/22/2007	14.3	4.25	1.5	0.006	0.12	0.01	0.52	187.78	17	7.6	28		4.66	
174	Pleasant L-F	8/5/2007	14.3	4.35	1.5	0.007	0.09	0.01	0.76	249.43	13	7.9	30		2.32	
174	Pleasant L-F	8/26/2007	14.3	4.10	1.5	0.005	0.05	0.01	0.36	148.00	14	7.4	23		2.76	
174	Pleasant L-F	9/3/2007	14.3	5.15	1.5	0.005	0.04	0.01	0.35	151.05	17	7.7	18	2.4	1.81	
174	Pleasant L-F	10/5/2007	14.3	4.75	1.5	0.005	0.02	0.02	0.25	108.63		7.5	31		1.96	
174	Pleasant L-F	10/13/2007	14.0	4.90	1.5	0.006	0.02	0.05	0.35	134.63	11	7.9	29		2.16	
174	Pleasant L-F	10/28/2007	13.7	4.60	1.5	0.006	0.03	0.06	0.38	147.96	15	7.5	29		3.40	
174	Pleasant L-F	7/14/2008	14.3	4.25	1.5	0.005	0.04	0.03	0.37	166.95	26	7.26	33	2.7	1.49	
174	Pleasant L-F	7/27/2008	14.3	5.40	1.5	0.004	0.03	0.03	0.30	181.16	12	7.69	35		1.44	
174	Pleasant L-F	8/8/2008	14.0	4.90	1.5	0.009	0.03	0.02	0.34	87.04		8.01	34		2.12	
174	Pleasant L-F	8/22/2008	14.3	4.95	1.5	0.005	0.02	0.01			17	7.52	36		1.25	
174	Pleasant L-F	9/10/2008	14.3	5.10	1.5	0.006	0.02	0.00	0.26	97.04	15	6.42	34	1.8	2.06	
174	Pleasant L-F	9/21/2008	14.0	5.20	1.5	0.012	0.01	0.00	0.21	37.89	11	7.30	35		2.21	
174	Pleasant L-F	9/27/2008	14.3	5.20	1.5	0.010	0.01	0.02	0.22	47.16	8	6.49	29		1.52	
174	Pleasant L-F	10/13/2008	14.3	5.25	1.5	0.009	0.01	0.04	0.25	65.13	5	6.61	29		1.48	
174	Pleasant L-F	07/05/2009	14.2	4.05	1.5	0.008	0.03	0.01			18	7.25	28	3.0	4.27	

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
174	Pleasant L-F	07/19/2009	14.5	4.85	1.5	0.008	0.02	0.03			21	8.09	27		4.78	
174	Pleasant L-F	7/6/2010	12.4	4.35	1.5	0.007	0.01	0.02	0.37	118.29	26	7.62	38	9.8	1.90	
174	Pleasant L-F	7/18/2010	12.3	4.25	1.5	0.010	0.01	0.02			22	6.77	39		1.40	
174	Pleasant L-F	8/15/2010	12.3	4.65	1.5	0.006	0.01	0.23	0.27	95.10	26	8.42	42		2.10	
174	Pleasant L-F	9/5/2010	12.3	4.55	1.5	0.008	0.01	0.03	0.24	63.35	24	7.04	70		4.40	
174	Pleasant L-F	9/12/2010	12.3	4.25		0.009	0.02	0.05	0.23	59.86	14	7.32	38	3.5	3.50	
174	Pleasant L-F	9/25/2010	12.3	4.60	1.5	0.007	0.01	0.02	0.25	76.08	16	8.20	38		3.30	
174	Pleasant L-F	7/17/2011	14.0	4.65	1.5	0.005	0.05	0.01	0.35	167.87	24	6.47	100	7.9	1.70	
174	Pleasant L-F	8/1/2011	14.3	4.50	1.5	0.009	0.08	0.01	0.63		57	7.59	38		2.60	
174	Pleasant L-F	8/20/2011	14.3	4.80	1.5	0.008	0.01	0.03	0.47	131.16	20	7.92	37		3.00	
174	Pleasant L-F	9/17/2011	14.0	4.70	1.5	0.011	0.07	0.04	0.43	88.21	29	8.51	44		4.00	
174	Pleasant L-F	9/24/2011	14.0	4.25	1.5	0.007	0.02	0.03	0.36	114.85	25	8.83	67	2.8	7.00	
174	Pleasant L-F	10/1/2011	14.6	4.10	1.5	0.006	0.01	0.03	0.36	130.92	27	7.54	36		2.10	
174	Pleasant L-F	10/9/2011	14.0	4.00	1.5	0.006	0.01	0.03	0.40	138.98	32	7.52	59		4.30	
174	Pleasant L-F	6/25/2013	14.3	3.95	1.5	0.010	0.10	0.02	0.33	74.16	24	7.05	36		1.50	
174	Pleasant L-F	7/9/2013	15.0	3.95	1.5	0.008			0.38	109.88	27	7.31	36			
174	Pleasant L-F	7/31/2013	16.0	3.80	1.5	0.010	0.01		0.31	70.99	27	8.10	40		1.40	
174	Pleasant L-F	8/12/2013	15.0	3.95	1.5	0.009					25	7.55	37		1.50	
174	Pleasant L-F	8/26/2013	15.0	4.05	1.5	0.008	0.01	0.01	0.36	103.66	25	6.99	39		3.50	
174	Pleasant L-F	9/7/2013	15.0	4.20	1.5	0.005			0.34	157.05	24	6.75	38		3.40	
174	Pleasant L-F	9/24/2013	15.0	4.35	1.5	0.007	0.01	0.01	0.36	111.18	18	6.96	38		2.40	
174	Pleasant L-F	10/14/2013	15.0	4.20	1.5	0.008			0.44	128.11	21	7.45	42		2.60	
174	Pleasant L-F	7/2/2014	15.0	4.55	1.5	0.005	0.07	0.03	0.39	160.23	22	7.68	42		0.80	
174	Pleasant L-F	7/15/2014	15.0	4.55	1.5	0.005			0.39	162.72	24	7.71	37		2.10	
174	Pleasant L-F	8/3/2014	16.0	4.45	1.5	0.006	0.02	0.02	0.27	105.37	24	8.10	39		2.20	
174	Pleasant L-F	8/25/2014	15.0	4.85	1.5	0.005			0.26	113.96	23	7.83	47		2.20	
174	Pleasant L-F	9/8/2014	16.0	4.40	1.5	0.005	0.01	0.01	0.27	118.98	22	7.29	42	3.1	3.60	
174	Pleasant L-F	9/28/2014	16.0	4.15	1.5	0.007			0.24	72.82	18	7.37	40		2.80	
174	Pleasant L-F	10/10/2014	16.0	4.05	1.5	0.006	0.01	0.03	0.24	87.64	19	6.55	44		3.90	
174	Pleasant L-F	10/25/2014	15.0	4.05	1.5	0.008			0.49	135.58	18	6.75	55		3.80	
174	Pleasant L-F	6/12/2015	13.0	3.10	1.5	0.019	0.08	0.06	0.41	21.76	26	7.29	43	3.3	3.50	
174	Pleasant L-F	7/6/2015	16.0	3.90	1.5	0.008			0.32	42.53	26	6.91	48		2.50	
174	Pleasant L-F	8/8/2015	16.0	4.30	1.5	0.008	0.00	0.03	0.26	34.03	26	8.24	43		2.10	5.0
174	Pleasant L-F	8/23/2015	16.0	4.50	1.5	0.018			0.24	13.67	25	7.83	43		1.00	
174	Pleasant L-F	9/12/2015		5.20	1.5	0.006	0.01	0.04	0.31	54.39	14	7.05	45	3.3	1.90	
174	Pleasant L-F	9/27/2015	16.0	4.80	1.5	0.004			0.38	86.36	13	7.50	45		2.00	
174	Pleasant L-F	8/10/2003				0.015	0.05	0.19	0.37	25.73						
174	Pleasant L-F	8/31/2003			13.7	0.014	0.02	0.18	0.19	13.32						
174	Pleasant L-F	9/6/2003			13.7	0.023	0.07	0.16								
174	Pleasant L-F	9/13/2003			13.7	0.013	0.00	0.17	0.18	14.57						
174	Pleasant L-F	10/5/2003			13.1	0.011	0.00	0.24	0.18	16.32						
174	Pleasant L-F	10/11/2003			1.5	0.016	0.00	0.19	0.25	15.71						
174	Pleasant L-F	7/18/2004				0.027										
174	Pleasant L-F	7/25/2004				0.015										
174	Pleasant L-F	8/17/2004				0.008										
174	Pleasant L-F	8/31/2004				0.007										
174	Pleasant L-F	9/11/2004				0.011										
174	Pleasant L-F	9/21/2004				0.011										
174	Pleasant L-F	10/1/2004				0.009										
174	Pleasant L-F	10/9/2004				0.009										
174	Pleasant L-F	7/3/2005				0.006										
174	Pleasant L-F	7/17/2005				0.012										
174	Pleasant L-F	8/1/2005				0.010										
174	Pleasant L-F	8/28/2005				0.017										
174	Pleasant L-F	9/11/2005				0.017										
174	Pleasant L-F	9/30/2005				0.012										
174	Pleasant L-F	7/4/2006	14.3			0.008										
174	Pleasant L-F	7/23/2006	14.6			0.010										
174	Pleasant L-F	8/6/2006	14.3			0.013										
174	Pleasant L-F	9/4/2006	14.3			0.010										
174	Pleasant L-F	9/16/2006	14.3			0.013										
174	Pleasant L-F	9/24/2006	14.3			0.012										
174	Pleasant L-F	10/1/2006	14.6			0.011										
174	Pleasant L-F	10/7/2006	14.6			0.010										
174	Pleasant L-F	6/28/2007	14.3			0.012										
174	Pleasant L-F	7/22/2007	14.3			0.008										

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
174	Pleasant L-F	8/5/2007	14.3			0.009										
174	Pleasant L-F	8/26/2007	14.3			0.008										
174	Pleasant L-F	9/3/2007	14.3			0.009										
174	Pleasant L-F	10/5/2007	14.3			0.005										
174	Pleasant L-F	10/13/2007	14.0			0.012										
174	Pleasant L-F	10/28/2007	13.7			0.013										
174	Pleasant L-F	07/05/2009	14.2			0.008		0.08								
174	Pleasant L-F	07/19/2009	14.5			0.009										
174	Pleasant L-F	7/6/2010				0.012		0.17								
174	Pleasant L-F	8/15/2010				0.011		0.03								
174	Pleasant L-F	9/12/2010				0.014		0.27								
174	Pleasant L-F	6/25/2013			15.0	0.010		0.04								
174	Pleasant L-F	7/31/2013			15.0	0.014		0.03								
174	Pleasant L-F	8/26/2013			14.0	0.014		0.15								
174	Pleasant L-F	9/24/2013			14.0	0.011		0.22								
174	Pleasant L-F	7/2/2014			14.0	0.008		0.09								
174	Pleasant L-F	7/15/2014			15.0	0.007										
174	Pleasant L-F	8/3/2014			15.0	0.007		0.12								
174	Pleasant L-F	8/25/2014			14.0	0.008										
174	Pleasant L-F	9/8/2014			15.0	0.007		0.26								
174	Pleasant L-F	9/28/2014			15.0	0.009										
174	Pleasant L-F	10/10/2014			15.0	0.009		0.33								
174	Pleasant L-F	10/25/2014			14.0	0.014										
174	Pleasant L-F	6/12/2015			13.0	0.008		0.07								
174	Pleasant L-F	7/6/2015			15.0	0.008										
174	Pleasant L-F	8/8/2015			15.0	0.035		0.09								
174	Pleasant L-F	8/23/2015			15.0	0.015										
174	Pleasant L-F	9/12/2015			14.0	0.011		0.20								
174	Pleasant L-F	9/27/2015			15.0	0.009										

LNum	PName	Date	Site	TAir	TH20	QA	QB	QC	QD	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cyl	FP-Chl	FP-BG	HAB-form	Shore HAB
174	Pleasant L-F	5/27/2000	epi	13	13	2	1	4	5											
174	Pleasant L-F	6/10/2000	epi	21	18	2	1	3	5											
174	Pleasant L-F	6/24/2000	epi	20	19	2	1	2	6											
174	Pleasant L-F	7/8/2000	epi	19	20	2	1	2	6											
174	Pleasant L-F	7/22/2000	epi	16	19	2	1	3	5											
174	Pleasant L-F	8/5/2000	epi	18	22	2	1	2	5											
174	Pleasant L-F	8/19/2000	epi	16	21	2	3	2	5											
174	Pleasant L-F	9/4/2000	epi	18	22	2	1	1												
174	Pleasant L-F	7/22/2001	epi	21	23	2	2	1												
174	Pleasant L-F	8/4/2001	epi	24	24	1	2	1	6											
174	Pleasant L-F	8/18/2001	epi	21	23	2	2	1	5											
174	Pleasant L-F	9/1/2001	epi	18	22	2	2	2												
174	Pleasant L-F	9/15/2001	epi	16	20	2	2	2	5											
174	Pleasant L-F	9/29/2001	epi	14	17	2	2	2	5											
174	Pleasant L-F	10/13/2001	epi	20	15	2	3	2	5											
174	Pleasant L-F	10/27/2001	epi	6	11	2	3	4	5											
174	Pleasant L-F	7/27/2003	epi	20	22	2	2	2	5											
174	Pleasant L-F	8/4/2003	epi	23	24	2	2	2	58											
174	Pleasant L-F	8/10/2003	epi	23	24	2	3	1	8											
174	Pleasant L-F	8/31/2003	epi	18	21	2	3	2	5											
174	Pleasant L-F	9/6/2003	epi	18	20	2	3	2	5											
174	Pleasant L-F	9/13/2003	epi	17	19	2	3	2	5											
174	Pleasant L-F	10/5/2003	epi	6	14	2	3	4	5											
174	Pleasant L-F	10/11/2003	epi	20	14	2	3	3	5											
174	Pleasant L-F	7/18/2004	epi	21	21	2	3	1	8											
174	Pleasant L-F	7/25/2004	epi	20	23	2	3	1	8											
174	Pleasant L-F	8/17/2004	epi	22	21	2	3	1	8											
174	Pleasant L-F	8/31/2004	epi	21	22	2	3	1	8											
174	Pleasant L-F	9/11/2004	epi	20	21	2	3	1	8											
174	Pleasant L-F	9/21/2004	epi	18	18	2	3	3	5											
174	Pleasant L-F	10/1/2004	epi	17	18	2	3	2	5											

LNum	PName	Date	Site	TAir	TH20	QA	QB	QC	QD	QE	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cyl	FP-Chl	FP-BG	HAB-form	Shore HAB
174	Pleasant L-F	10/9/2004	epi	16	16	2	3	3	5												
174	Pleasant L-F	7/3/2005	epi	22	25	2	3	1	7												
174	Pleasant L-F	7/17/2005	epi	26	25	2	3	2	58												
174	Pleasant L-F	8/1/2005	epi	22	25	2	3	1	0												
174	Pleasant L-F	8/28/2005	epi	23	23	2	3	1	0												
174	Pleasant L-F	9/11/2005	epi	19	22	2	3	2	5												
174	Pleasant L-F	9/30/2005	epi	18	18	2	3	2	5												
174	Pleasant L-F	10/6/2005	epi	21	18	2	3	5	5												
174	Pleasant L-F	10/13/2005	epi	19	17	2	3	2	5												
174	Pleasant L-F	7/4/2006	epi	22	23	2	3	2	5												
174	Pleasant L-F	7/23/2006	epi	23	23																
174	Pleasant L-F	8/6/2006	epi	22	23	2	3	1	8												
174	Pleasant L-F	9/4/2006	epi	16	19	2	3	4	5												
174	Pleasant L-F	9/16/2006	epi	18	19	2	3	2	5												
174	Pleasant L-F	9/24/2006	epi	16	16	2	3	5	5												
174	Pleasant L-F	10/1/2006	epi	7	15	2	3	4	5												
174	Pleasant L-F	10/7/2006	epi	10	14	2	3	5	5												
174	Pleasant L-F	6/28/2007	epi	24	23	2	3	1	0												
174	Pleasant L-F	7/22/2007	epi	22	22	2	3	1	0												
174	Pleasant L-F	8/5/2007	epi	21	24	2	3	1	0												
174	Pleasant L-F	8/26/2007	epi	20	22	2	3	3	5												
174	Pleasant L-F	9/3/2007	epi	21	22	2	3	1	0												
174	Pleasant L-F	10/5/2007	epi	11	17	2	3	4	5												
174	Pleasant L-F	10/13/2007	epi	8	16	2	3	3	5												
174	Pleasant L-F	10/28/2007	epi	6	13	2	3	4	5												
174	Pleasant L-F	7/14/2008	epi	23	22	2	3	1	8												
174	Pleasant L-F	7/27/2008	epi		24	2	3	2	0												
174	Pleasant L-F	8/8/2008	epi	20	23	2	3	1	0												
174	Pleasant L-F	8/22/2008	epi	24	23	2	3	1	0												
174	Pleasant L-F	9/10/2008	epi	21	21	2	3	2	8												
174	Pleasant L-F	9/21/2008	epi	18	19	2	3	3	5												
174	Pleasant L-F	9/27/2008	epi	18	18	2	3	4	5												
174	Pleasant L-F	10/13/2008	epi	19	15	2	3	4	5												
174	Pleasant L-F	07/05/2009	epi	20	20	2	3	1	0												
174	Pleasant L-F	07/19/2009	epi	18	21	2	3	1	0												
174	Pleasant L-F	7/6/2010	epi	29	24	2	3	1	0	0	0										
174	Pleasant L-F	7/18/2010	epi	23	26	2	3	1	0	0	0										
174	Pleasant L-F	8/15/2010	epi	18	23	2	3	4	5	0	6										
174	Pleasant L-F	9/5/2010	epi	17	19	2	3	4	5	0	0										
174	Pleasant L-F	9/12/2010	epi	13	18	2	3	4	5	0	0										
174	Pleasant L-F	9/25/2010	epi	18	17	2	3	4	5	0	0										
174	Pleasant L-F	7/17/2011	epi	27	24	2	3	1	0	0	0	8.00	2.60								
174	Pleasant L-F	8/1/2011	epi	21	24	2	3	3	0	0	0	11.10	2.60								
174	Pleasant L-F	8/20/2011	epi	22	23	2	3	1	0	0	0	12.50	2.20								
174	Pleasant L-F	9/17/2011	epi	14	18	2	3	4	5	0	0	8.00	4.50								
174	Pleasant L-F	9/24/2011	epi	19	19	2	3	4	5	0	0	12.10	4.20								
174	Pleasant L-F	10/1/2011	epi		19	2	3	4	5	0	0	7.40	4.00								
174	Pleasant L-F	10/9/2011	epi	19	16	2	3	4	5	0	0	9.40	4.00								
174	Pleasant L-F	6/25/2013	epi	16	22	1	3	1	0	0	0	2.20	1.50	<0.30	<0.650		1.40	0.00	fi	I	
174	Pleasant L-F	7/9/2013	epi	24	26	2	3	1	0	0	0	4.40	1.00	<0.30	<0.400		0.30	0.30	F	F	
174	Pleasant L-F	7/31/2013	epi	22	23	2	3	1	0	0	0	4.00	0.80	<0.30	<0.380		0.90	0.10	F		
174	Pleasant L-F	8/12/2013	epi	22	21	2	3	1	0	0	0	2.70	0.80	<0.30	<0.380		0.50	0.00	F	F	
174	Pleasant L-F	8/26/2013	epi	18	22	2	3	2	0	0	0			<0.30	<19.130		0.40	0.00	F	F	
174	Pleasant L-F	9/7/2013	epi	19	20	2	3	3	5	0	0			0.48	<19.130		1.10	0.30	F	F	
174	Pleasant L-F	9/24/2013	epi	6	16	2	3	4	5	0	0	4.20	0.70	<0.30	<0.100		0.30	0.00	F	F	
174	Pleasant L-F	10/14/2013	epi	13	14	2	3	5	5	0	0	1.80	1.00	<0.30	<0.090		0.50	0.00	F	F	
174	Pleasant L-F	7/2/2014	epi	25	26	2	3	1	0	0	0	2.80	0.10	<0.39	<0.03	<0.001	0.98	0.54	i		
174	Pleasant L-F	7/15/2014	epi	20	23	2	3	2	0	0	0	2.70	0.10	<0.39	<0.03	<0.001	0.26	0.00			
174	Pleasant L-F	8/3/2014	epi	21	23	2	3	1	0	0	0	3.10	0.10	<0.29	<0.14	<0.002	0.67	0.30	i		
174	Pleasant L-F	8/25/2014	epi	24	21	2	3	2	0	0	0	5.60	0.10	<0.29	<0.14	<0.002	1.03	0.19	i		
174	Pleasant L-F	9/8/2014	epi	23	20	2	3	3	0	0	0	5.40	0.20	<0.19	<0.12	<0.001	1.45	0.39	fi		

LNum	PName	Date	Site	TAir	TH20	QA	QB	QC	QD	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cyl	FP-Chl	FP-BG	HAB form	Shore HAB
174	Pleasant L-F	9/28/2014	epi	23	18	2	3	4	5	0	0	1.80	0.30	<0.19	<0.12	<0.001	1.24	0.00	f	
174	Pleasant L-F	10/10/2014	epi	8	15	2	3	4	5	0	0	3.50	0.20	<0.95	<0.09	<0.006	0.91	0.12	f	
174	Pleasant L-F	10/25/2014	epi	6	12	2	3	5	5	0	0	2.80	0.30	<0.95	<0.09	<0.006	5.95	3.49	f	
174	Pleasant L-F	6/12/2015	epi	19	21	2	1	2	0	0	0	20.30	0.40	<0.86	<0.008	<0.046	2.82	1.93	I	
174	Pleasant L-F	7/6/2015	epi	24	23	2	3	1	0	0	0	37.50	0.40	<0.71	<0.003	<0.011	3.02	2.54	F	
174	Pleasant L-F	8/8/2015	epi	20	23	2	3	1	8	0	0			<0.26	<0.023	<0.086	0.30	0.00	I	
174	Pleasant L-F	8/23/2015	epi	22	24	2	3	1	0	0	0			<0.30	<0.007	<0.035	1.38	0.58	I	I
174	Pleasant L-F	9/12/2015	epi	19	23	2	3	2	0	0	0	5.70	0.40	<0.30	<0.023	<0.086	0.85	0.28	F	
174	Pleasant L-F	9/27/2015	epi	19	20	2	3	3	5	0	0	4.10	0.40	<0.30	<0.007	<0.035	0.39	0.00	F	
174	Pleasant L-F	6/25/2013	hypo		13															
174	Pleasant L-F	7/31/2013	hypo		10															
174	Pleasant L-F	8/26/2013	hypo		10															
174	Pleasant L-F	9/24/2013	hypo		9															
174	Pleasant L-F	7/2/2014	hypo		11															
174	Pleasant L-F	7/15/2014	hypo		11															
174	Pleasant L-F	8/3/2014	hypo		12															
174	Pleasant L-F	8/25/2014	hypo		10															
174	Pleasant L-F	9/8/2014	hypo		10															
174	Pleasant L-F	9/28/2014	hypo		11															
174	Pleasant L-F	10/10/2014	hypo		9															
174	Pleasant L-F	10/25/2014	hypo		9															
174	Pleasant L-F	6/12/2015	hypo		10															
174	Pleasant L-F	7/6/2015	hypo		10															
174	Pleasant L-F	8/8/2015	hypo		11															
174	Pleasant L-F	8/23/2015	hypo		10															
174	Pleasant L-F	9/12/2015	hypo		9															
174	Pleasant L-F	9/27/2015	hypo		9															

## 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)	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
<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 Pleasant Lake

### Pleasant Lake (1201-0175)

NoKnownImpct

#### Waterbody Location Information

Revised: 08/19/2002

<b>Water Index No:</b>	H-240-144-21- 7-P745	<b>Drain Basin:</b>	Mohawk River
<b>Hydro Unit Code:</b>	02020004/180	<b>Str Class:</b>	B
<b>Waterbody Type:</b>	Lake (Mesotrophic)	<b>Reg/County:</b>	5/Fulton Co. (18)
<b>Waterbody Size:</b>	243.1 Acres	<b>Quad Map:</b>	CANADA LAKE (I-22-2)
<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>
<b>TMDL/303d Status:</b>	n/a ()	

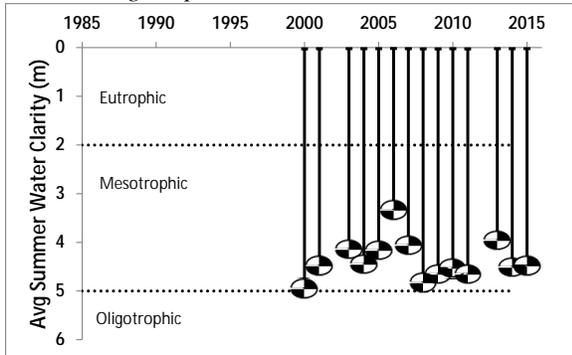
#### Further Details

Pleasant Lake was included in the NYS DEC Citizens Statewide Lake Assessment Program (CSLAP) volunteer monitoring effort. Results of this study found no evidence of water quality problems or use impairment. (DEC/DOW, BWM/Lake Services, August 2002)

# Appendix C- Long Term Trends: Pleasant Lake

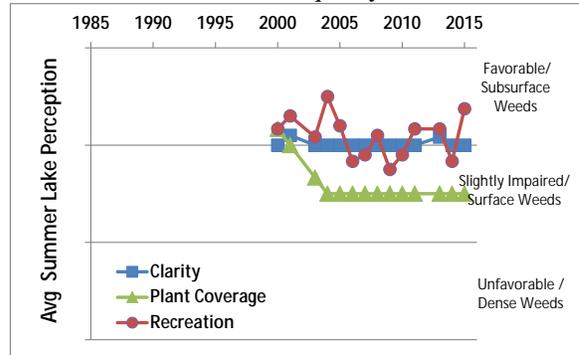
## Long Term Trends: Water Clarity

- No clear trend
- Most readings now typical of *mesotrophic* to *oligotrophic* lakes



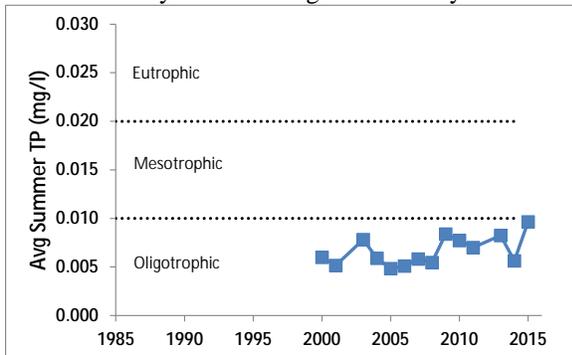
## Long Term Trends: Lake Perception

- Plant coverage higher after '03 but stable
- Recreational perception linked to changes in weather, not water quality or weeds



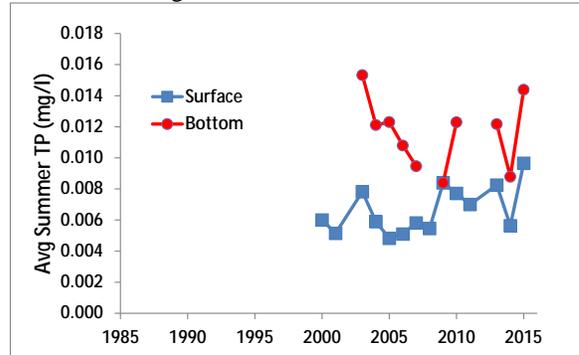
## Long Term Trends: Phosphorus

- Slight long-term increase
- Most readings typical of *oligotrophic* lakes, mostly similar to algae and clarity levels



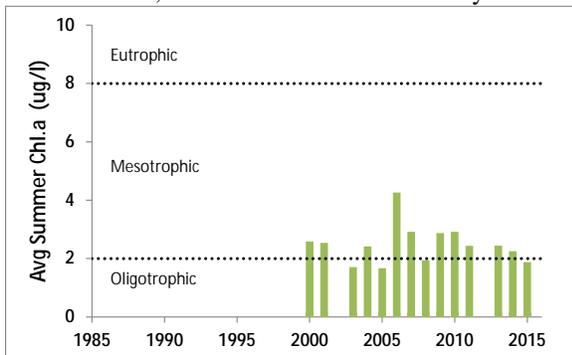
## Long Term Trends: Bottom Phosphorus

- Deep TP ↓ since early 00s; higher in 2015
- Mostly similar surface and bottom TP readings indicate little internal nutrient load



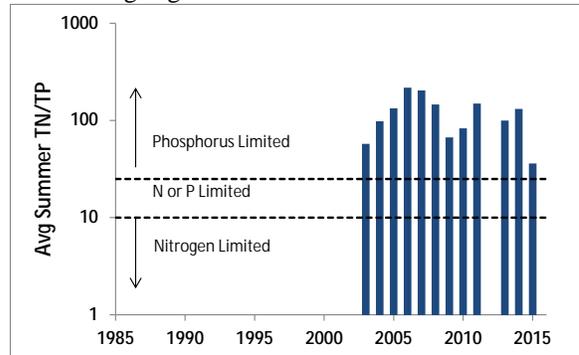
## Long Term Trends: Chlorophyll a

- Recent ↓ in algae levels
- Most readings typical of *mesoligotrophic* lakes, consistent with TP and clarity



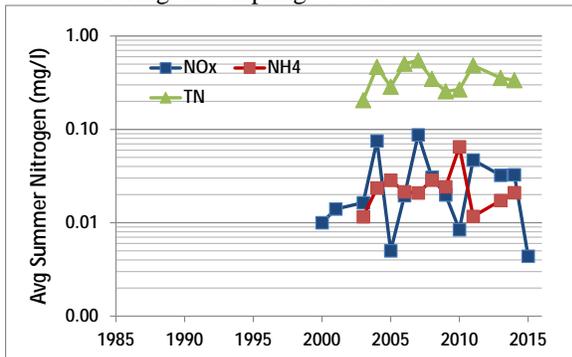
## Long Term Trends: N:P Ratio

- Recent ↓ in ratio
- Most readings indicate phosphorus limits algae growth



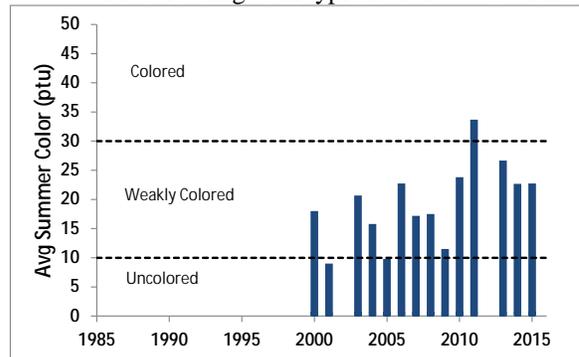
### Long Term Trends: Nitrogen

- No clear trend in any N indicators
- Low NO<sub>x</sub>, ammonia and total nitrogen during all sampling seasons



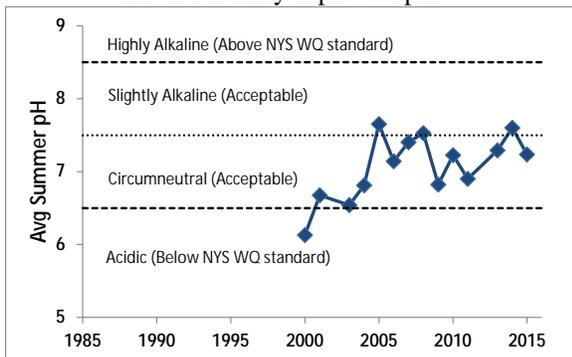
### Long Term Trends: Color

- Increasing slightly after lab change in 2002, with some additional increase afterwards
- Most readings still typical of *uncolored* lakes



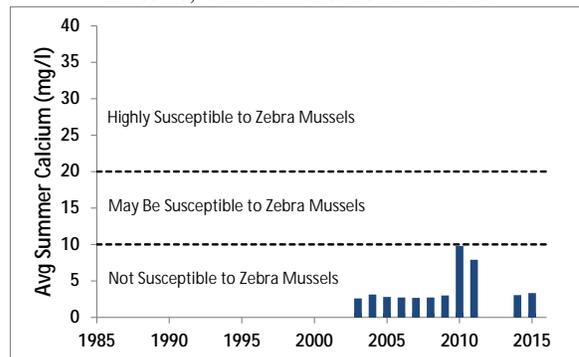
### Long Term Trends: pH

- Increasing pH since early 2000s
- Most readings typical of *circumneutral* lakes, with occasionally depressed pH



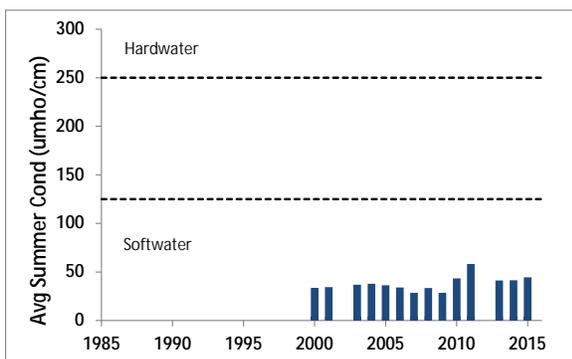
### Long Term Trends: Calcium

- No trends apparent
- Data indicates low susceptibility to zebra mussels, which are not found in lake



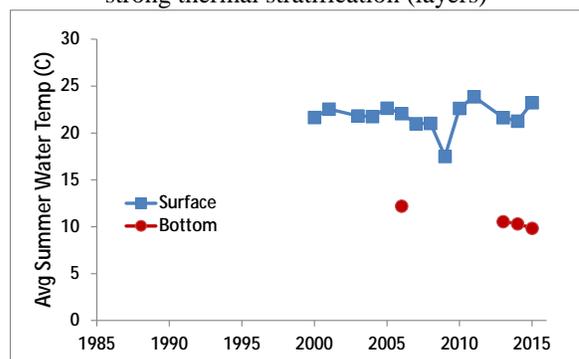
### Long Term Trends: Conductivity

- No clear trends; perhaps slight  $\uparrow$
- Most readings typical of *softwater* lakes



### Long Term Trends: Water Temperature

- $\downarrow$  deep H<sub>2</sub>O?; no change in surface T
- Lower deepwater temperatures indicate strong thermal stratification (layers)



## **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

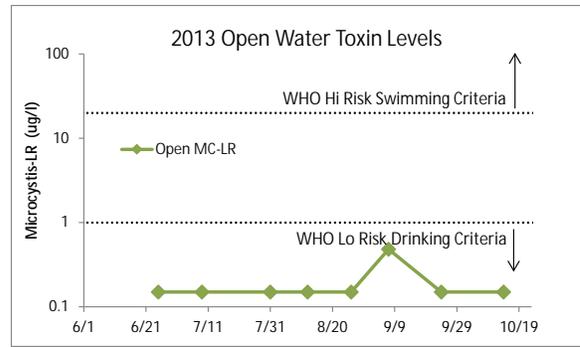
Some of these results are reported in other portions of these reports. This appendix the seasonal change in blue green algae, other algae types, and the primary algal toxin (microcystin-LR, a liver toxin). Analysis was completed on open water samples and, for some lakes, shoreline samples that were collected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



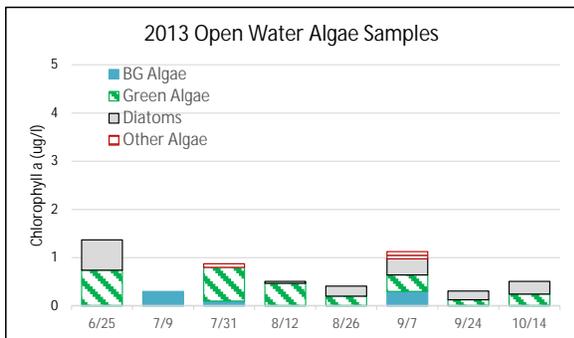
**Figure D2:**  
2013 Open Water Microcystin-LR



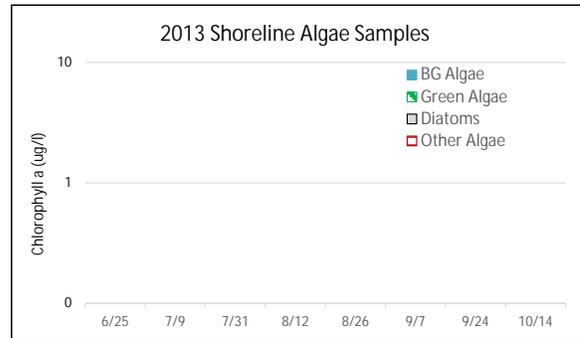
**Figure D3:**  
2013 Shoreline Total and BGA Chl.a



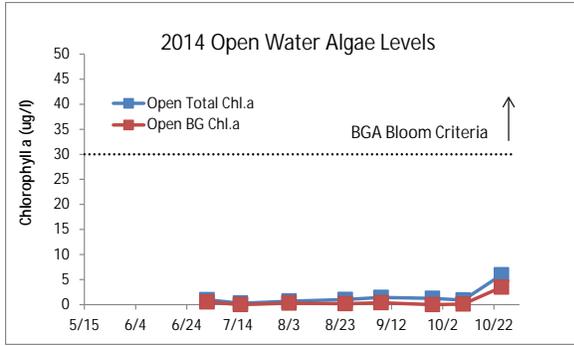
**Figure D4:**  
2013 Shoreline Microcystin-LR



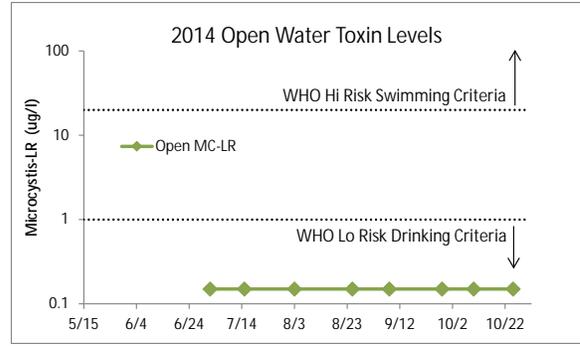
**Figure D5:**  
2013 Open Water Algae Types



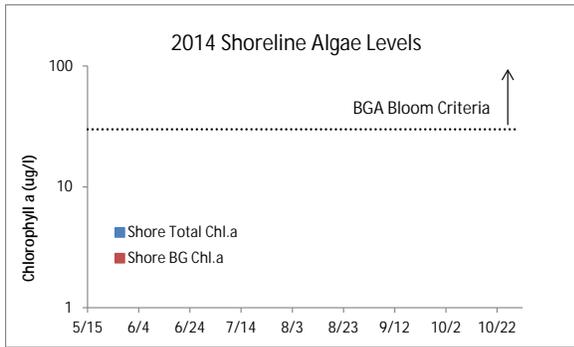
**Figure D6:**  
2013 Shoreline Algae Types



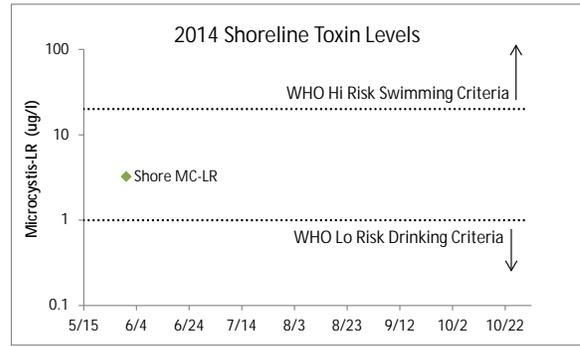
**Figure D7:**  
2014 Open Water Total and BGA Chl.a



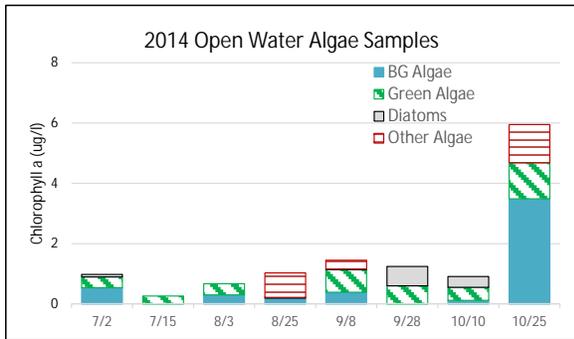
**Figure D8:**  
2014 Open Water Microcystin-LR



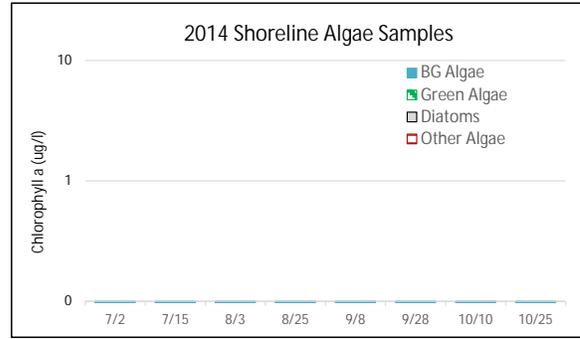
**Figure D9:**  
2014 Shoreline Total and BGA Chl.a



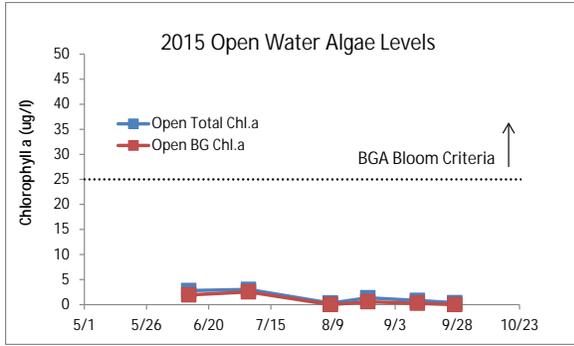
**Figure D10:**  
2014 Shoreline Microcystin-LR



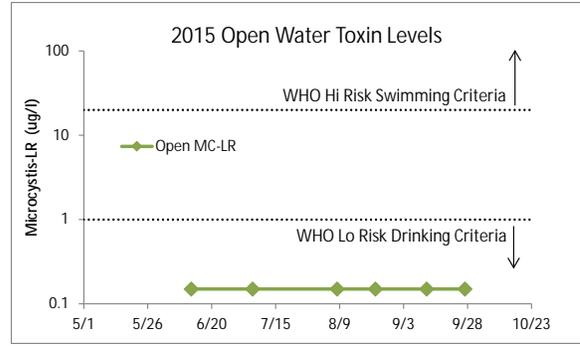
**Figure D11:**  
2014 Open Water Algae Types



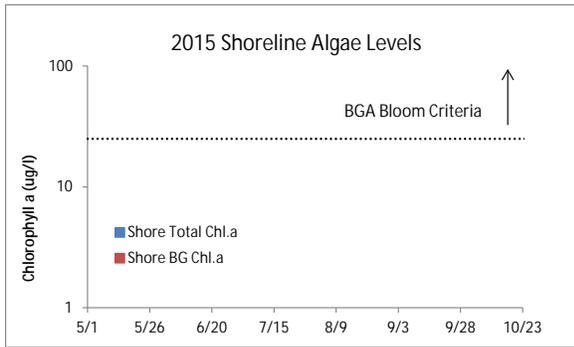
**Figure D12:**  
2014 Shoreline Algae Types



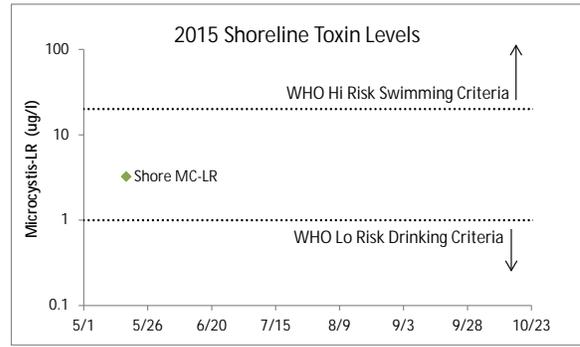
**Figure D13:**  
2015 Open Water Total and BGA Chl.a



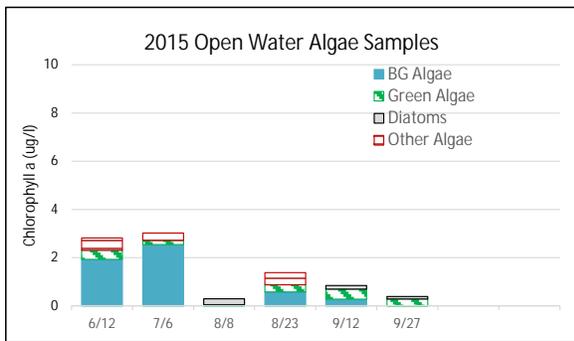
**Figure D14:**  
2015 Open Water Microcystin-LR



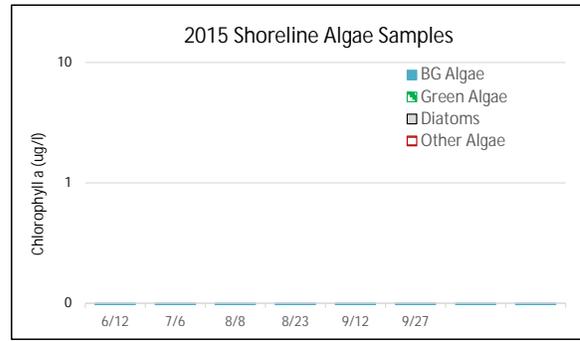
**Figure D15:**  
2015 Shoreline Total and BGA Chl.a



**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

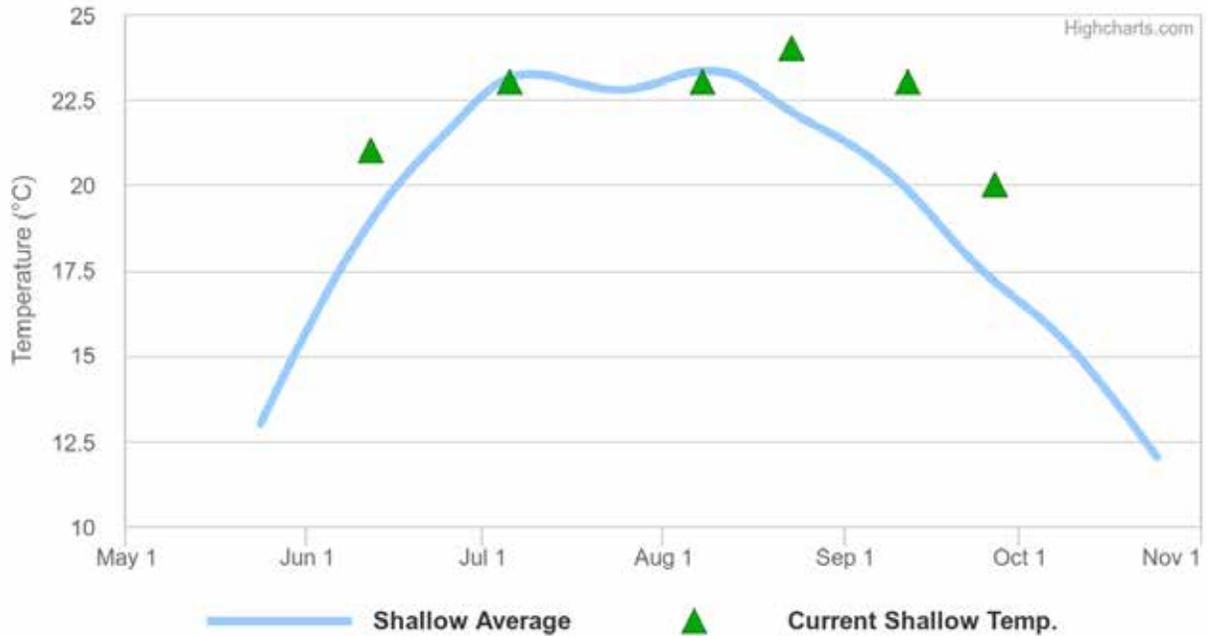
The table below shows the invasive aquatic plants and animals that have been documented in Fulton County, as cited in either the iMapInvasives database (<http://www.imapinvasives.org/>) or in the NYSDEC Division of Water database. These databases may include some, but not all, non-native plants or animals 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](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).

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>

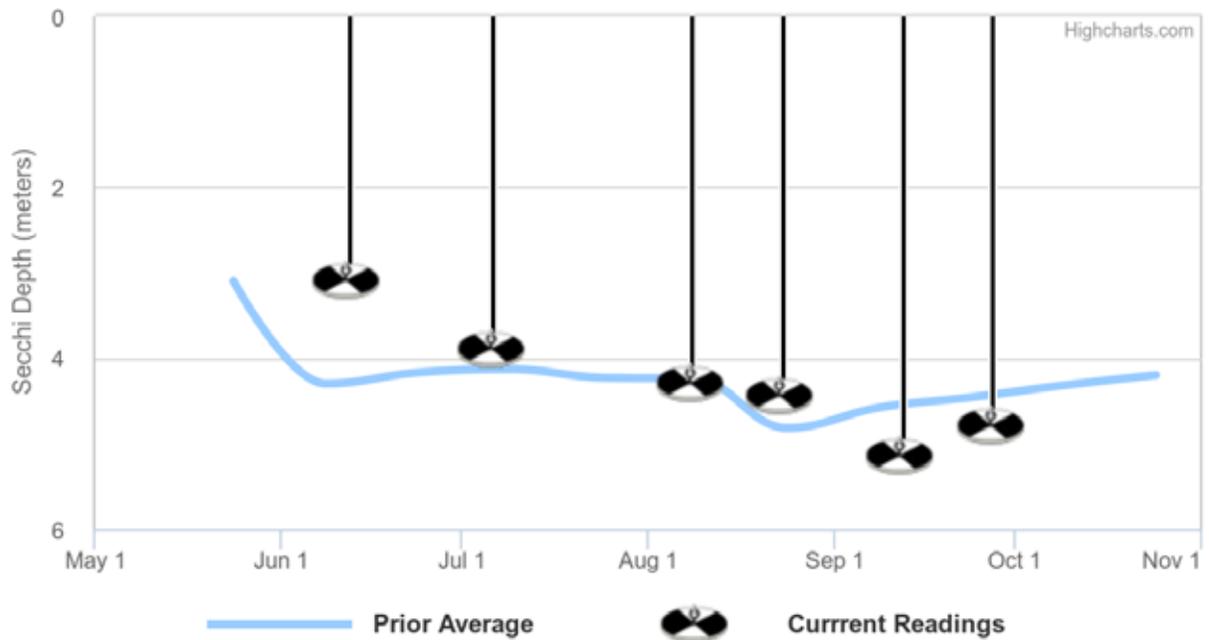
## Appendix F: Current Year vs. Prior Averages for Pleasant Lake-F

### 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 2000 to 2014.

### Current Year Secchi Readings vs. Prior Average



This year's session Secchi readings are about the same as the average of readings collected from 2000 to 2014.

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

