

## CSLAP 2012 Lake Water Quality Summary: Fulton Second Lake

### General Lake Information

<b>Location</b>	Town of Old Forge
<b>County</b>	Herkimer
<b>Basin</b>	Black River
<b>Size</b>	106.2 hectares (262.3 acres)
<b>Lake Origins</b>	Augmented by dam (1894)
<b>Watershed Area</b>	11,270 hectares (27,837 acres)
<b>Retention Time</b>	0.34 years
<b>Mean Depth</b>	15.6 meters
<b>Sounding Depth</b>	8.5 meters
<b>Public Access?</b>	via DEC launch at Fourth Lake
<b>Major Tributaries</b>	Third Lake Creek (via Third Lake), Indian Brook (via Fourth Lake)
<b>Lake Tributary To...</b>	First Lake/Old Forge Pond to Middle Branch Moose River to Moose River to Black River to Black River Bay to Lake Ontario
<b>WQ Classification</b>	A (potable water)
<b>Lake Outlet Latitude</b>	43.715
<b>Lake Outlet Longitude</b>	-74.914
<b>Sampling Years</b>	1986-1990, 1995-2012
<b>2011 Samplers</b>	Steve Pitela
<b>Main Contact</b>	Steve Pitela

### Lake Map



## **Background**

Fulton Second Lake is a 262 acre, class A lake found in the Town of Old Forge in Herkimer County, in the central Adirondack region of New York State. It is part of the Fulton Chain of Lakes. The lake was first sampled as part of CSLAP in 1986.

It is one of three CSLAP lakes among the more than 250 lakes found in Herkimer County, and one of 12 CSLAP lakes among the more than 460 lakes and ponds in the Black and Oswegatchie Rivers drainage basin.

## **Lake Uses**

Fulton Second Lake is a Class A lake; this means that the best intended use for the lake is for potable water—drinking, contact recreation—swimming and bathing, aquatic life and aesthetics. The lake is used by lake residents and visitors for a variety of recreational purposes, although there is a 35 mph daytime/25 mph nighttime speed limit on boats throughout the Fulton Chain of Lakes. The town of Webb operates a beach, and three marinas are maintained on the Chain (and boaters launching from these sites and the state launch on the Fourth Lake and Old Forge Pond have access to the Second Lake).

It is not known whether Fulton Second Lake has been stocked through any state fisheries stocking programs, or if any private stocking has occurred. Fish species in the lake include Atlantic salmon, rainbow trout, and yellow perch.

General statewide fishing regulations are applicable in Fulton Second Lake. In addition, open season for lake trout and landlocked salmon lasts all year, and there is a daily take limit of three for both species, and a daily limit of five trout. There is a minimum length of nine inches for trout, 15 inches for lake trout and 21 inches for landlocked salmon, and ice fishing is permitted. Smelt, suckers, alewives, and blueback herring have an open season from April 1<sup>st</sup> to May 15<sup>th</sup>, and can be caught with a dip net.

## **Historical Water Quality Data**

CSLAP sampling was conducted on Fulton Second Lake each year from 1986 to 1990, and 1995 to 2012. The CSLAP reports for each of the past several years can be found on the NYSFOLA website at <http://nysfola.mylaketown.com>. The 2011 CSLAP report and scorecard for Fulton Second Lake can also be found on the NYSDEC web page at <http://www.dec.ny.gov/lands/77866.html>.

The Fulton Chain of Lakes was sampled by the Conservation Department (the predecessor to the NYSDEC) as part of the Biological Survey of the Black River basin in 1931. This program was intended to evaluate water quality conditions as they relate to fisheries management, so much of the information collected cannot be easily compared to the CSLAP dataset. In addition, the water quality monitoring was conducted on other lakes in the Chain. The summary information for the lake included the following:

*“...a dam at the village of Old Forge has resulted in the raising of the water level in the first group (of lakes) to such an extent that there is no obstacle to the movement of fish throughout the area comprising Old Forge Lake and the first five lakes of the original chain....The average*

*bottom temperature for the deep parts of the first four lakes was 55.2F when the surface registered 71F. Small mouth bass have been present since... before 1882. Perch have gained access to the lake more recently.... Fishing for lake trout and whitefish has been reported good in all of the lakes which have deep water..(the lake) is remarkably free from large areas of vegetation. Many of the small bays have a few weeds in the shallow water along the shore and near the outlets.”*

The lake was also sampled in 1976 by the NYSDEC as part of its ambient lake monitoring program. The results from this sampling (or at least the results from those water quality indicators also measured through CSLAP) suggest that the lake was slightly clearer, as a result of lower nutrient levels. However, algae levels were similar to those measured through CSLAP, and it is likely that the small differences between the 1976 DEC sampling and the 1986 to the present day CSLAP sampling are within the normal range of variability for the lake.

## **Lake Association and Management History**

Fulton Second Lake is served by the Fulton Chain of Lakes Association, which has been involved in a variety of lake and watershed management activities. These include:

- Septic dye testing with the Town of Webb, every three years (the far western portion of the Chain is on the town sewer line), including limited bacterial and heavy metal testing
- Instituting soil erosion practices in cooperation with the Herkimer County SWCD
- Supporting town of Webb zoning restrictions and APA watershed rules
- Encouraging planting of buffer strips and restricting lawn fertilization by individual lot owners
- Eurasian watermilfoil control in cooperation with towns of Inlet/Webb (including hand harvesting by individual lot owners)
- support and financial donations to the Arts Center’s Ecology Gallery project.
- support the efforts of the Central Adirondack Arts and Sciences Advocacy
- navigational protection consistent with the Chain-specific boat speed limits imposed by the state Navigation Law and no-wake zones
- protection of Skull Island

In addition, the water level in the Chain is manipulated by the Hudson River-Black River regulating authority.

The Fulton Chain of Lakes Association maintains a website at [http://www.fultonchainoflakesassociation.org/fc\\_boating.html](http://www.fultonchainoflakesassociation.org/fc_boating.html).

## **Summary of 2012 CSLAP Sampling Results**

### **Evaluation of 2012 Annual and Monthly Results Relative to 2006-2011**

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 – Fulton Second Lake” section in Appendix C.

## **Evaluation of Eutrophication Indicators**

Water clarity readings were higher than normal in 2011 and 2012, particularly in late summer. Higher clarity was measured despite chlorophyll *a* and water color readings that were close to normal, and phosphorus readings were also close to normal. Chlorophyll *a* readings have decreased since the late 1980s, but similar long-term changes have not been apparent in water clarity or phosphorus readings. No clear seasonal trends in lake productivity have been apparent, despite a slight decrease in phosphorus during the summer. No clear seasonal trends were apparent in 2012.

The lake continues to be characterized as *mesoligotrophic*, based on water clarity, chlorophyll *a* (both typical of *mesotrophic* lakes) and total phosphorus (typical of *oligotrophic* lakes). The trophic state indices (TSI) evaluation suggests that each of the trophic indicators is “internally consistent,” with readings for each of the trophic indicators within the expected range (although phosphorus is slightly lower than expected, suggesting that the lake may be susceptible to small increases in phosphorus). Overall trophic conditions are summarized in the Lake Scorecard and Lake Condition Summary Table.

## **Evaluation of Potable Water Indicators**

Algae levels are too low to render the lake susceptible to taste and odor compounds or elevated DBP (disinfection by product) compounds that could affect the potability of the water. Deepwater manganese and iron levels are low, consistent with deepwater ammonia and phosphorus readings, suggesting no impacts for deepwater potable intakes. Potable water conditions, at least as measurable through CSLAP, are summarized in the Lake Scorecard and Lake Condition Summary Table.

## **Evaluation of Limnological Indicators**

Total nitrogen readings were lower than normal in 2012, part of a slight long-term decrease in this indicator. Color readings have increased slightly since the mid 1980s, a pattern seen in many other CSLAP lakes and consistent with the change in laboratories in 2002. Each of the other limnological indicators (NO<sub>x</sub>, ammonia, pH, conductivity, and calcium) was close to normal in 2012, and none of these other indicators has exhibited any clear long-term trends. Overall limnological conditions are summarized in the Lake Scorecard and Lake Condition Summary Table.

## **Evaluation of Biological Condition**

Phytoplankton, zooplankton, and macroinvertebrate data have not been collected through CSLAP at Fulton Second Lake. The fluoroprobe screening samples analyzed by SUNY ESF in 2012 found both low algae levels and low blue green algae levels.

The CSLAP macrophyte surveys show moderate diversity in the aquatic plant community, and identified 14 different aquatic plant species at the lake, including one exotic plant species (*Myriophyllum heterophyllum*, or variable watermilfoil). Although Eurasian watermilfoil has been found in several lakes in the Fulton Chain of Lakes, it has not been established (or at least observed) in Fulton Second Lake. The modified floristic quality index (FQI) indicates that the quality of the aquatic plant community is “excellent.”

There is only limited information about the fish community; three coldwater fish species have been reported.

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

### **Evaluation of Lake Perception**

Water quality assessments and recreational assessments were less favorable than normal in 2011 and 2012, despite higher than normal water clarity. For water quality and recreational assessments, this was consistent with a long-term trend toward less favorable conditions since the mid 2000s. This may be consistent with the increase in water color or less favorable weather, since these changes have not been attributed to “excessive algae” or “excessive weeds”. Aquatic plant coverage was higher than normal in 2011 and 2012, but it is not known if this was associated with exotic plants. This increase in plant coverage has been part of a long-term increase since the mid 2000s. No clear seasonal trends in lake perception have been apparent, including in 2012. Overall lake perception is summarized in the Lake Scorecard and Lake Condition Summary Table.

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

Water temperatures were higher than normal in 2011 and 2012, but no long-term changes have been apparent in either indirect indicator (air or water temperature) of local climate 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. Phycocyanin levels below the levels indicative of susceptibility to blue green algae and harmful algal blooms (HABs) in each year evaluated. This is consistent with the fluoroprobe screening results indicating low levels of blue green algae. Microcystis levels in the open water have been well below the levels indicating recreational water impacts; no shoreline blooms have been reported in recent years.

## Lake Condition Summary

Category	Indicator	Min	86-12 Avg	Max	2012 Avg	Classification	2012 Change?	Long-term Change?
Eutrophication Indicators	Water Clarity	2.45	3.68	5.75	4.38	Mesotrophic	Higher than Normal	No Change
	Chlorophyll <i>a</i>	0.40	3.57	11.10	2.88	Mesotrophic	Within Normal Range	No Change
	Total Phosphorus	0.003	0.009	0.029	0.008	Oligotrophic	Within Normal Range	No Change
Potable Water Indicators	Hypolimnetic Ammonia	0.01	0.07	0.24	0.05	Close to Surface NH4 Readings	Lower Than Normal	Not known
	Hypolimnetic Arsenic	0.34	0.47	0.50	0.50	Low Deepwater Arsenic Levels	Within Normal Range	Not known
	Hypolimnetic Iron	0.01	0.26	1.25	0.27	Low Iron Levels	Within Normal Range	Not known
	Hypolimnetic Manganese	0.01	0.28	0.73	0.24	Low Manganese Levels	Within Normal Range	Not known
Limnological Indicators	Hypolimnetic Phosphorus	0.002	0.010	0.079	0.007	Close to Surface TP Readings	Lower Than Normal	Not known
	Nitrate + Nitrite	0.00	0.07	0.59	0.03	Low NOx	Within Normal Range	No Change
	Ammonia	0.00	0.03	0.35	0.03	Low Ammonia	Within Normal Range	No Change
	Total Nitrogen	0.01	0.40	1.88	0.24	Low Total Nitrogen	Lower Than Normal	Decreasing Slightly
	pH	5.25	7.29	8.84	7.48	Circumneutral	Within Normal Range	No Change
	Specific Conductance	29	57	87	60	Softwater	Within Normal Range	No Change
	True Color	6	20	37	17	Intermediate Color	Within Normal Range	Increasing Slightly
	Calcium	0.9	5.0	10.4	5.0	Not Susceptible to Zebra Mussels	Within Normal Range	No Change
Lake Perception	WQ Assessment	1	1.5	3	2.6	Crystal Clear	Less Favorable than Normal	Highly Degrading
	Aquatic Plant Coverage	1	1.4	3	3.0	Plants Not Visible	Greater Coverage than Normal	Highly Degrading
	Recreational Assessment	1	1.3	3	2.0	Could Not Be Nicer	Less Favorable than Normal	Highly Degrading
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 sampled through CSLAP	Not known	Not known
	Macroinvertebrates					Not sampled through CSLAP	Not known	Not known
	Fish					Coldwater fishery	Not known	Not known
	Invasive Species					Variable watermilfoil	Not known	Not known
Local Climate Change	Air Temperature	6	18.7	32	18.8		Within Normal Range	No Change
	Water Temperature	10	20.0	27	21.7		Higher Than Normal	No Change
Harmful Algal Blooms	Open Water Phycocyanin	1	10	55	3	No readings indicate high risk of BGA	Not known	Not known
	Open Water FP Chl.a	1	2	3	2	No readings indicate high algae levels	Not known	Not known
	Open Water FP BG Chl.a	0	1	1	1	No readings indicate high BGA levels	Not known	Not known
	Open Water Microcystis	0.0	0.1	0.4	<0.30	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 2007 NYSDEC Priority Waterbody Listings (PWL) for the Black River basin indicates that the Fulton Chain of Lakes, including the Second Lake, has fish consumption *impaired* by DDT. The PWL listing for the lake is in Appendix C.

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

The CSLAP dataset at Fulton Second Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, is inadequate to evaluate the use of the lake for potable water. The limited CSLAP data related to potable water suitability indicates that depressed deepwater oxygen levels may *threaten* potable water use.

### **Contact Recreation (Swimming)**

The CSLAP dataset at Fulton Second Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggests that swimming and contact recreation should be fully supported, although the presence of exotic plants may eventually *threaten* this use. Additional information about bacteria levels is needed to determine if pathogens impact swimming.

### **Non-Contact Recreation (Boating and Fishing)**

The CSLAP dataset on Fulton Second Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that no impacts to non-contact recreation are apparent, although this use may eventually be *threatened* by variable watermilfoil.

### **Aquatic Life**

The CSLAP dataset on Fulton Second Lake, including water chemistry data and physical measurements, suggest that aquatic life may be *threatened* by variable watermilfoil. Additional data are needed to evaluate the food and habitat conditions for aquatic organisms in the lake.

### **Aesthetics**

The CSLAP dataset on Fulton Second Lake, including volunteer samplers' perception data, suggest that aesthetics should be fully supported.

### **Fish Consumption**

There are no fish consumption advisories on Fulton Second Lake, although it is not known if the fish consumption advisory for Fulton Fourth Lake should be extended to the Second Lake.

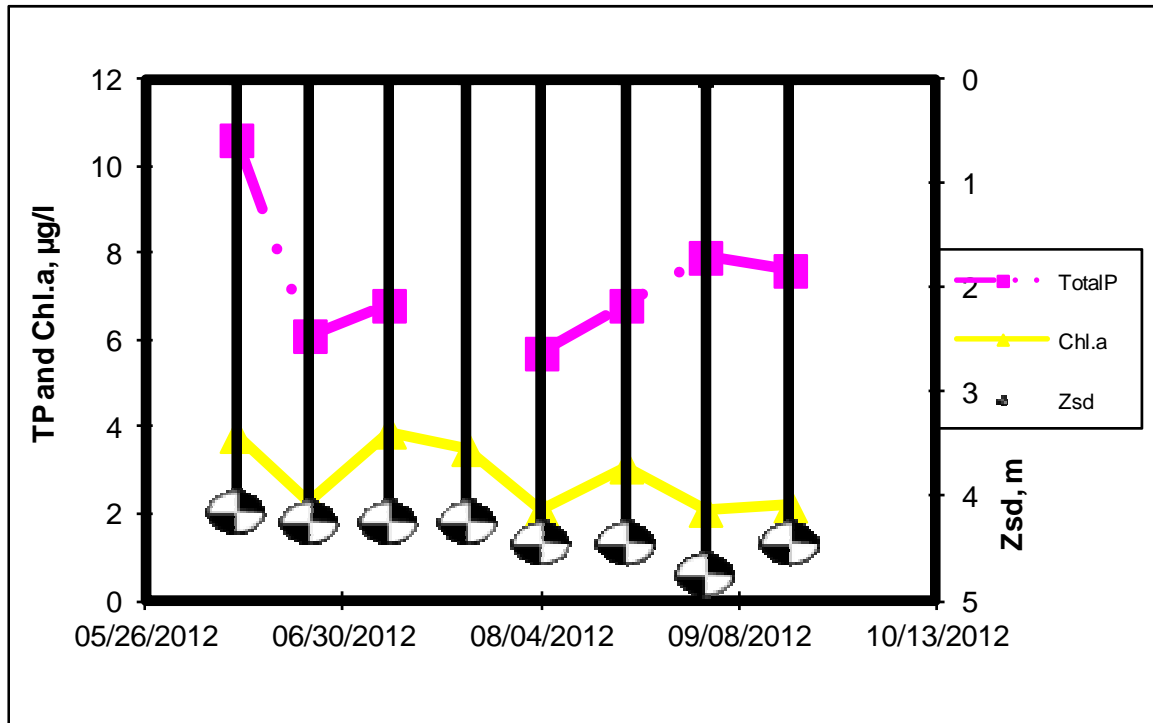
## **Additional Comments and Recommendations**

Aquatic plant surveys should continue to be conducted at Fulton Second Lake to determine if other invasive species, from Eurasian watermilfoil to spiny water flea, have migrated into the lake.

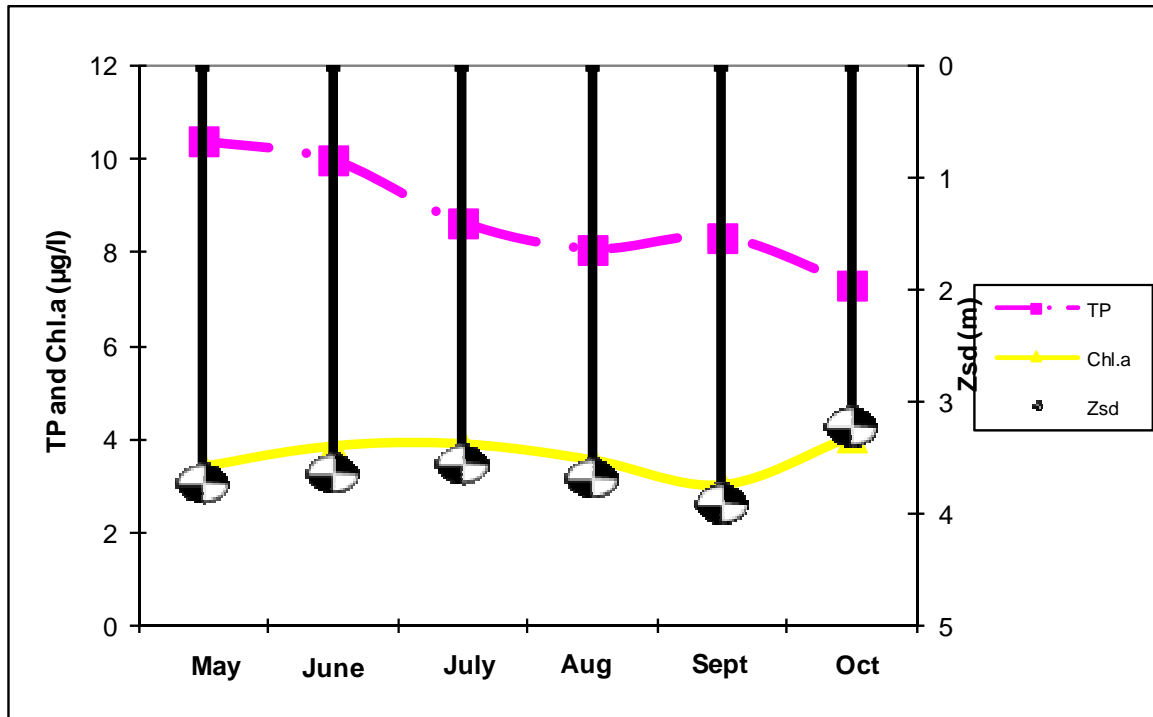
### **Aquatic Plant IDs-2012**

None submitted for identification.

### Time Series: Trophic Indicators, 2012

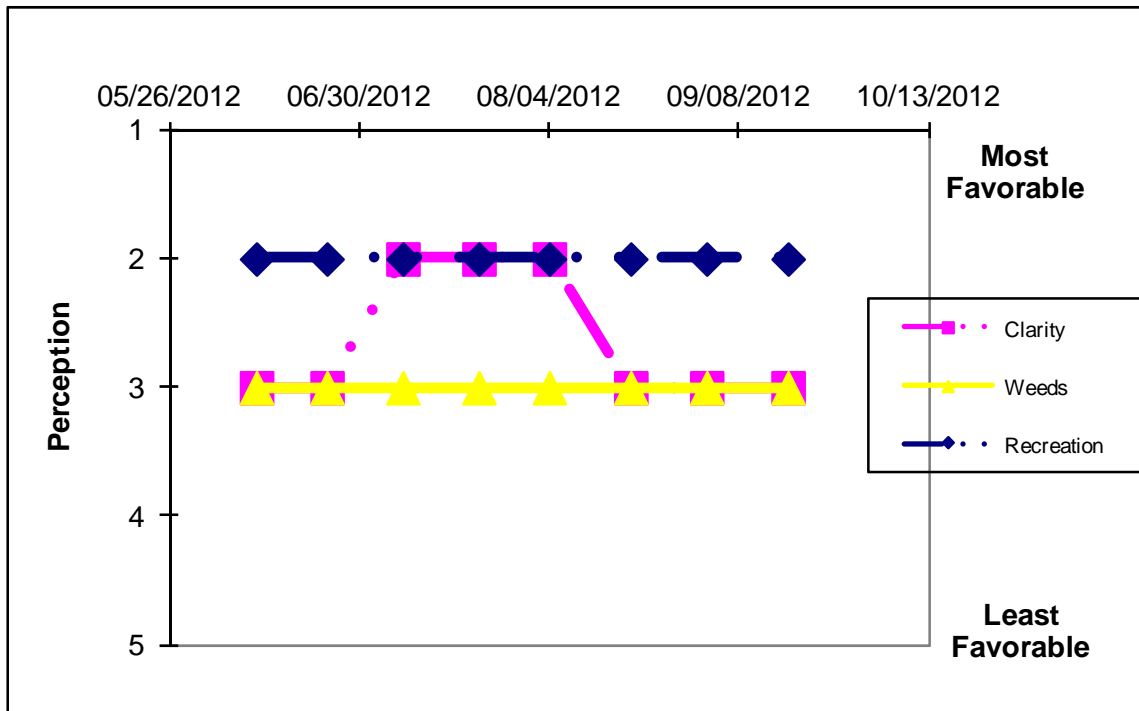


### Time Series: Trophic Indicators, Typical Year (1986-2012)

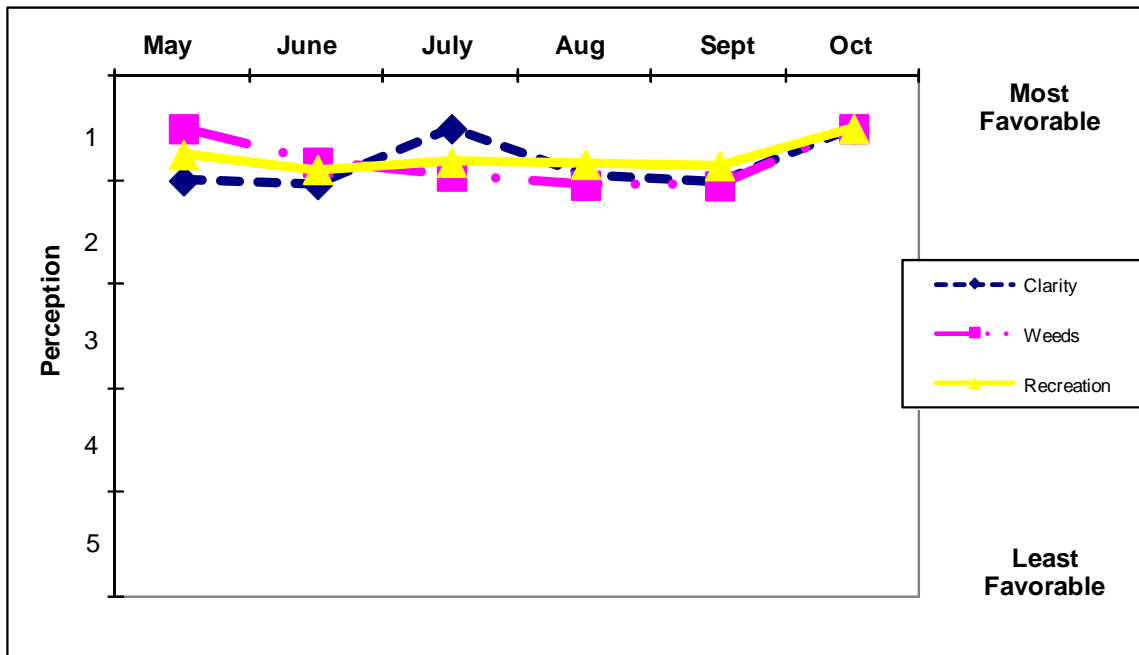




## Time Series: Lake Perception Indicators, 2012



## Time Series: Lake Perception Indicators, Typical Year (1986-2012)



## Appendix A- CSLAP Water Quality Sampling Results for Fulton Second Lake

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a
13	Fulton Second L	7/4/1986	10.5	3.00	1.5	0.010	0.05				15	7.22	48		2.22
13	Fulton Second L	7/11/1986	12.0	3.75	1.5	0.010					15	7.11	49		
13	Fulton Second L	7/18/1986	11.0	3.63	1.5	0.009	0.11				15	7.47	50		1.55
13	Fulton Second L	7/24/1986	11.0	3.50	1.5		0.09				15	7.09	49		0.52
13	Fulton Second L	7/29/1986	10.5	3.50	1.5	0.008	0.06				15				
13	Fulton Second L	8/8/1986	10.3	3.25	1.5	0.008					18	8.24	47		1.55
13	Fulton Second L	8/15/1986	10.5	3.50	1.5	0.007	0.08				20	8.08	47		1.72
13	Fulton Second L	8/22/1986	11.5	3.75	1.5	0.008	0.06				20	8.30	47		0.61
13	Fulton Second L	8/28/1986	10.5	3.13	1.5	0.008	0.06				18	7.85	48		2.37
13	Fulton Second L	9/5/1986	8.5	3.00	1.5	0.003	0.06				16	7.22	49		1.56
13	Fulton Second L	9/10/1986	8.5	3.50	1.5	0.008	0.03				17	7.12	49		1.56
13	Fulton Second L	9/19/1986	10.5	4.13	1.5	0.023	0.05				19	6.75	48		1.06
13	Fulton Second L	9/25/1986	12.0	5.00	1.5	0.008	0.07				18	7.51	45		1.63
13	Fulton Second L	6/25/1987	11.0	5.75	1.5	0.024	0.21				15	7.36	51		2.80
13	Fulton Second L	7/13/1987	10.0	3.25	1.5	0.029	0.09				17	6.89	49		4.70
13	Fulton Second L	7/28/1987	12.0	4.50	1.5	0.008	0.10				20	6.74	48		7.20
13	Fulton Second L	8/1/1987	8.3	3.50	1.5	0.009	0.08				16	6.73	49		11.10
13	Fulton Second L	8/11/1987	8.5	3.50	1.5	0.007	0.07				17	7.25	49		3.10
13	Fulton Second L	8/26/1987	12.0	4.00	1.5	0.007	0.06				11	7.14	49		3.30
13	Fulton Second L	9/8/1987	13.0	4.50	1.5	0.007	0.03				14	7.22	48		6.70
13	Fulton Second L	9/22/1987	7.5	3.00	1.5	0.012	0.08				20	7.04	52		6.20
13	Fulton Second L	10/5/1987	12.5	3.00	1.5	0.009	0.08				21	6.97	49		5.60
13	Fulton Second L	6/22/1988	10.0	3.25	1.5	0.011	0.16				15	7.64	58		2.52
13	Fulton Second L	7/6/1988	7.7	3.90	1.5	0.007	0.14				15	7.57	59		4.07
13	Fulton Second L	7/19/1988	9.1	4.31	1.5	0.008	0.10				6	7.13	53		
13	Fulton Second L	8/2/1988		4.25	1.5	0.008	0.06				10	7.83	58		3.11
13	Fulton Second L	8/9/1988	10.1	3.33	1.5	0.009	0.06				14	7.64	56		3.63
13	Fulton Second L	8/15/1988	9.8	2.68	1.5	0.011	0.01				11	7.36	54		6.14
13	Fulton Second L	8/23/1988	10.0	3.80	1.5	0.003	0.01				12	7.68	60		4.59
13	Fulton Second L	8/29/1988	10.0	3.85	1.5	0.008	0.02				12				3.40
13	Fulton Second L	9/6/1988	10.0	3.00	1.5	0.010	0.03				12	7.55	59		3.40
13	Fulton Second L	9/12/1988	10.0	3.55	1.5	0.007	0.02				15	7.64	58		3.03
13	Fulton Second L	7/5/1989	9.7	3.55	1.5	0.007	0.11				15	6.95	59		2.80
13	Fulton Second L	7/19/1989	9.1	4.10	1.5	0.014	0.09				16	7.62	56		2.96
13	Fulton Second L	8/3/1989	9.0	3.45	1.5	0.008	0.31				15	7.67	57		2.81
13	Fulton Second L	8/14/1989	10.0	3.55	1.5	0.005	0.16				12	7.79	57		3.74
13	Fulton Second L	8/24/1989	10.0	3.20	1.5	0.005	0.03				15	7.47	56		4.00
13	Fulton Second L	9/5/1989	9.7	3.50	1.5	0.007	0.03				15	7.34	56		2.52
13	Fulton Second L	9/19/1989	10.0	3.95	1.5	0.007	0.03				14	7.57	56		2.44
13	Fulton Second L	10/3/1989	10.0	2.75	1.5	0.012	0.10				22	7.46	56		3.22
13	Fulton Second L	7/2/1990	10.0	3.80	1.5	0.005	0.28				20	6.95	54		4.00
13	Fulton Second L	7/11/1990	10.0	3.80	1.5	0.007	0.25				20	7.12	54		2.36
13	Fulton Second L	7/26/1990	10.0	4.55	1.5	0.008	0.23				17	7.48	53		3.55
13	Fulton Second L	8/7/1990	10.0	3.60	1.5	0.007	0.18					7.77	54		6.10
13	Fulton Second L	8/21/1990	10.0	3.80	1.5	0.008	0.16				23	7.58	55		4.51
13	Fulton Second L	9/4/1990	10.0	4.05	1.5	0.005	0.12				18	5.25	63		1.88
13	Fulton Second L	9/10/1990	10.0	3.95	1.5	0.005	0.11				18	7.38	56		2.97
13	Fulton Second L	9/17/1990	10.0	3.40	1.5	0.006	0.09				18	7.66	55		4.08
13	Fulton Second L	7/1/1996	8.5	3.10	1.5	0.009	0.16				20	7.13	60		4.80
13	Fulton Second L	7/15/1996	8.3	3.95	1.5	0.008	0.13				20		58		4.00
13	Fulton Second L	7/29/1996	8.3	3.60	1.5	0.006	0.13				30				3.50
13	Fulton Second L	8/12/1996	8.3	4.50	1.5	0.010	0.09				20	6.04	59		3.00
13	Fulton Second L	8/18/1996	8.3	4.45	1.5	0.008	0.07				20	7.07	59		3.80
13	Fulton Second L	9/2/1996	8.3	3.55	1.5	0.009	0.04				20	7.15	58		2.20
13	Fulton Second L	9/16/1996	8.3	3.55	1.5	0.018					15	7.24	57		2.20
13	Fulton Second L	9/30/1996	8.3	3.75	1.5	0.024					15	5.43	63		1.22
13	Fulton Second L	5/26/1997	8.3	3.75	1.5	0.008	0.30				20	7.21	55		2.20
13	Fulton Second L	6/22/1997	8.3	3.70	1.5	0.008	0.20				20	7.69	57		3.10
13	Fulton Second L	7/6/1997	8.3	4.85	1.5	0.009	0.16				15	7.02	57		2.64
13	Fulton Second L	7/22/1997	8.3	3.90	1.5	0.011	0.14				20	6.94	57		6.84
13	Fulton Second L	8/4/1997	8.3	4.00	1.5	0.005					16	7.69	57		4.28
13	Fulton Second L	8/17/1997	8.3	4.10	1.5	0.007					16	7.34	58		2.64
13	Fulton Second L	9/14/1997	8.3	4.20	1.5	0.009	0.04				14	6.70	58		4.61
13	Fulton Second L	9/28/1997	8.3	3.70	1.5	0.011					14	7.63	59		4.14
13	Fulton Second L	5/25/1998	8.3	3.15	1.5	0.014	0.15				16	7.03	57		4.88
13	Fulton Second L	6/8/1998	8.3	2.65	1.5		0.13				15	7.51	58		6.41
13	Fulton Second L	6/21/1998	8.3	4.25	1.5		0.18				23	7.10	56		2.69
13	Fulton Second L	7/6/1998	8.3	3.30	1.5		0.13				23	7.23	58		4.85
13	Fulton Second L	7/20/1998	8.3	3.55	1.5						22	7.23	58		3.96
13	Fulton Second L	8/3/1998		4.20	1.5						20	7.00	58		
13	Fulton Second L	8/17/1998	8.3	3.30	1.5						18	7.29	59		3.78
13	Fulton Second L	9/1/1998	8.3	4.25	1.5						29	7.10	59		3.34
13	Fulton Second L	6/2/1999	8.3	2.70	1.5	0.009	0.09				18	7.62	60		5.95
13	Fulton Second L	6/9/1999	8.0	2.85	1.5	0.008	0.07				18	7.41	60		5.40

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a
13	Fulton Second L	6/20/1999	8.0	4.00	1.5	0.009	0.03				17	7.46	61		5.95
13	Fulton Second L	7/5/1999	8.1	2.80	1.5	0.008	0.01				16	7.05	61		6.55
13	Fulton Second L	7/19/1999	11.0	3.10	1.5	0.009	0.01				12	6.39	61		5.20
13	Fulton Second L	8/8/1999	8.0	4.00	1.5	0.012	0.01				12	7.93	63		4.48
13	Fulton Second L	8/25/1999	8.0	4.30	1.5	0.006	0.01				13	7.78	67		2.62
13	Fulton Second L	9/13/1999	8.0	4.80	1.5	0.005	0.01				17	7.14	61		2.70
13	Fulton Second L	6/7/2000	8.3	3.25	1.5	0.006	0.15				20	7.55	60		6.60
13	Fulton Second L	6/19/2000	8.3	3.80	1.5	0.009	0.13				20	6.29	60		4.80
13	Fulton Second L	7/9/2000	8.3	3.90	1.5	0.004	0.11				17	7.07	60		4.18
13	Fulton Second L	7/24/2000	8.3	3.60	1.5	0.005	0.09				24	6.93	60		5.00
13	Fulton Second L	8/7/2000	8.3	3.80	1.5	0.009	0.08				21	7.01	60		3.59
13	Fulton Second L	8/20/2000	8.3	3.70	1.5	0.005	0.07				22	7.31	60		2.61
13	Fulton Second L	9/10/2000	8.3	4.58	1.5	0.008	0.59				24	7.90	60		3.56
13	Fulton Second L	9/29/2000	8.3	3.60	1.5	0.010	0.05				21	6.41	60		3.23
13	Fulton Second L	6/24/2001	8.3	3.70	1.5	0.007	0.12				19	6.38	69		5.05
13	Fulton Second L	7/10/2001	8.3	3.20	1.5	0.008	0.11				25	6.32	60		6.45
13	Fulton Second L	7/23/2001	8.3	3.30	1.5	0.007	0.08				24	7.79	60		2.24
13	Fulton Second L	8/7/2001	8.3	2.75	1.5	0.005	0.03				19	7.59	61		3.20
13	Fulton Second L	8/20/2001	8.3	3.50	1.5	0.008	0.01				17	7.10	60		4.24
13	Fulton Second L	9/4/2001	8.3	3.10	1.5	0.010	0.02				17	6.77	62		3.00
13	Fulton Second L	9/17/2001	8.3	3.95	1.5	0.006	0.01				16	7.61	62		3.13
13	Fulton Second L	10/1/2001	8.3	3.85	1.5	0.004	0.01				17	6.95	63		
13	Fulton Second L	06/11/02	8.3	3.40	1.5	0.007	0.10	0.04	0.62	201.50	20	7.14	63		2.00
13	Fulton Second L	06/25/02	8.3	3.05	1.5	0.010	0.07	0.01	0.27	62.11	27	7.05	59		3.55
13	Fulton Second L	07/09/02	8.3	2.80	1.5	0.010	0.06	0.03	0.67	145.41	18	7.05	61		2.95
13	Fulton Second L	07/24/02	8.3	3.10	1.5	0.016	0.03	0.08	0.52	69.43	20	7.29	60		5.93
13	Fulton Second L	08/06/02	8.3	3.20	1.5	0.013	0.00	0.01	0.56	96.36	17	7.19	61	0.9	
13	Fulton Second L	08/20/02	8.3	3.25	1.5	0.005	0.00	0.04	0.78	348.24	10	7.19	60		3.13
13	Fulton Second L	09/03/02	8.3	4.90	1.5	0.003	0.01	0.02	0.81	530.90	12	6.93	63		3.27
13	Fulton Second L	09/24/02	8.3	4.90	1.5	0.010	0.02	0.04	0.54	116.75	10	7.13	62		5.29
13	Fulton Second L	6/10/2003	8.3	2.90	1.5	0.009	0.15	0.02	0.59	144.38	24	6.96	62	4.8	9.21
13	Fulton Second L	6/24/2003	8.3	2.45	1.5	0.009	0.10	0.00	0.34	79.48	24	7.21	60		4.65
13	Fulton Second L	7/8/2003	8.3	2.45	1.5	0.008	0.03	0.02	0.51	144.77	17	7.12	61		8.64
13	Fulton Second L	7/22/2003	8.3	2.90	1.5	0.012	0.00	0.03	0.23	41.93	20	7.19	61		3.80
13	Fulton Second L	8/6/2003	8.3	3.85	1.5	0.016	0.00	0.02	0.34	45.98	17	7.06	60	5.2	4.22
13	Fulton Second L	8/19/2003	8.3	3.70	1.5	0.009	0.02	0.01	0.36	91.34	16	7.06	62		1.17
13	Fulton Second L	9/3/2003	8.3	4.30	1.5	0.010	0.02	0.03	0.45	98.26	20	6.61	62		3.74
13	Fulton Second L	9/17/2003	8.3	4.40	1.5	0.016	0.00	0.01	0.39	54.58	16	7.12	61		1.95
13	Fulton Second L	6/23/2004	8.0	3.00	2.0	0.008	0.11	0.01	0.39	108.60	20	6.90	64		2.76
13	Fulton Second L	7/6/2004	8.3	3.00	1.5	0.006	0.04	0.01	0.18	67.95	17	6.85	64		4.80
13	Fulton Second L	7/19/2004	8.3	2.60	1.5		0.17	0.09	1.88		22	6.47	64		1.90
13	Fulton Second L	8/2/2004	8.3	3.50	1.5	0.007	0.05	0.01	0.26	78.81	13	7.38	54		5.00
13	Fulton Second L	8/17/2004	8.3	3.30	1.5	0.010	0.04	0.03	0.51	113.22	15	7.04	66	5.9	3.20
13	Fulton Second L	8/31/2004	8.3	3.20	1.5	0.006	0.04	0.02	0.52	194.11	19	7.83	54		3.80
13	Fulton Second L	9/14/2004	8.3	3.70	1.5	0.006	0.28	0.05	0.59	236.07	7	7.82	53		3.60
13	Fulton Second L	9/26/2004	8.3	3.00	1.5	0.005	0.07	0.04	0.82	355.26	23	7.72	40		2.53
13	Fulton Second L	6/7/2005	8.3	3.35	1.5	0.018	0.01	0.08	0.35	41.72	19	7.44	59	5.0	3.63
13	Fulton Second L	6/27/2005	8.3	3.30	1.5	0.014	0.01	0.09	0.41	64.89	13	6.24	59		2.09
13	Fulton Second L	7/18/2005	8.3	3.10	1.5	0.008	0.07	0.07	0.40	114.77	26	7.43	51		3.06
13	Fulton Second L	8/2/2005	8.3	2.90	1.5	0.005	0.04	0.03	0.31	134.93	37	7.40	61		2.72
13	Fulton Second L	8/16/2005	8.3	3.10	1.5	0.007	0.05	0.03	0.35	115.90	31	6.86	48	5.9	3.93
13	Fulton Second L	8/30/2005	8.3	2.90	1.5	0.008	0.01	0.01	0.15	44.83	22	6.77	59		4.80
13	Fulton Second L	9/13/2005	8.3	2.95	1.5	0.006	0.01	0.01	0.01	1.83	21	7.53	60		2.73
13	Fulton Second L	10/3/2005	8.3	3.15	1.5	0.006	0.03	0.02	0.25	90.44	21	7.56	46		3.08
13	Fulton Second L	6/12/2006	8.3	2.90	1.5	0.008	0.13	0.01	0.55	150.36	34		51	5.2	5.58
13	Fulton Second L	7/4/2006	8.3	2.95	1.5	0.007	0.10	0.01	0.58	176.92	35	7.65	51		2.20
13	Fulton Second L	7/19/2006	8.3	3.05	1.5	0.007			0.64	199.30	20	6.80	50		3.07
13	Fulton Second L	7/31/2006	8.3	3.05	1.5	0.005	0.07	0.04	0.70	297.65	31	8.27	52		3.50
13	Fulton Second L	8/22/2006	8.3	3.30	1.5	0.006	0.05	0.02	0.43	155.02	28	8.03	52		3.75
13	Fulton Second L	9/12/2006	8.3	2.95	1.5	0.006	0.03	0.01	0.32	112.82	21	6.92	36		4.92
13	Fulton Second L	9/17/2006	8.3	3.35	1.5	0.006	0.02	0.01	0.53	194.67	22	7.45	39		3.71
13	Fulton Second L	10/3/2006	8.3	3.35	1.5	0.006	0.02	0.03	0.59	227.50	22	6.44	29		4.33
13	Fulton Second L	6/25/2007	8.3	3.95	1.5	0.006	0.13	0.02	0.49	188.80	18	7.3	62	5.0	1.99
13	Fulton Second L	7/3/2007	8.3	3.85		0.006	0.11	0.03	0.37	137.87	23	6.7	55		3.76
13	Fulton Second L	7/23/2007	8.3	3.05	1.5	0.010	0.06	0.01	0.44	95.85	15	7.9	61		4.08
13	Fulton Second L	8/5/2007	8.3	3.75	1.5	0.011	0.02	0.01	0.52	108.61	14	7.6	51		3.89
13	Fulton Second L	8/20/2007	8.3	3.65	1.5	0.008	0.00	0.01	0.50	134.55	13	6.9	60	5.3	4.39
13	Fulton Second L	9/3/2007	8.3	4.35	1.5	0.007	0.01	0.02	0.46	148.52	13	7.9	69		3.01
13	Fulton Second L	9/17/2007	8.9	4.45	1.5	0.007	0.05	0.03	0.39	122.74	11	7.4	66		2.32
13	Fulton Second L	9/30/2007	8.8	4.35	1.5	0.007	0.03	0.02	0.52	162.92	13	8.0	61		3.24
13	Fulton Second L	6/9/2008	8.3	3.75	1.5	0.013	0.10	0.02	0.28	49.05	19	6.51	58	4.9	4.43
13	Fulton Second L	6/24/2008	8.3	4.25	1.5	0.006	0.09	0.03	0.30	105.46	25	7.44	56		2.65
13	Fulton Second L	7/7/2008	8.3	3.75	1.5	0.005	0.21	0.04	0.35	153.99	24	7.38	45		3.02
13	Fulton Second L	7/21/2008	8.3	3.15	1.5	0.008	0.09	0.03	0.26	69.35	32	7.83	36		4.48
13	Fulton Second L	8/4/2008	8.3	3.90	1.5	0.007	0.06	0.07	0.28	90.32	26	7.92	55	3.5	2.54
13	Fulton Second L	8/17/2008	8.3	3.60	1.5	0.006	0.06	0.03	0.27	101.99	25	7.38	50		3.81
13	Fulton Second L	9/1/2008	8.3	3.95	1.5	0.005	0.04	0.02	0.24	107.01	27	7.48	57		3.23

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a
13	Fulton Second L	9/20/2008	8.3	3.15	1.5	0.004	0.04	0.03	0.24	121.89	25	7.48	65		2.82
13	Fulton Second L	06/13/2009	8.3	4.10	1.5	0.017	0.00	0.35	0.43	55.93	24			4.5	4.46
13	Fulton Second L	06/29/2009	8.3	3.85	1.5	0.011	0.05	0.13	0.31	63.84	28				3.35
13	Fulton Second L	07/27/2009	8.3	3.85	1.5	0.007	0.06	0.05	0.24	79.00	35	8.29	34		3.58
13	Fulton Second L	08/03/2009	8.3	3.35	1.5	0.008	0.04	0.02	0.25	66.80	33	7.43	48		3.79
13	Fulton Second L	08/16/2009	8.3	3.75	1.5	0.008	0.02	0.01	0.21	59.71	30	6.49	45	4.7	2.60
13	Fulton Second L	08/31/2009	8.3	4.35	1.5	0.006	0.02	0.02	0.24	90.28	34	7.51	70		3.10
13	Fulton Second L	09/14/2009	8.3	4.65	1.5	0.008	0.01	0.02	0.25	67.65	31	7.63	47		2.40
13	Fulton Second L	09/26/2009	8.3	3.65	1.5	0.005	0.02	0.04	0.22	90.91	28	8.22	52		2.12
13	Fulton Second L	05/17/2010	8.3	4.15	1.5	0.009	0.01	0.03			23	7.93	66	10.4	3.10
13	Fulton Second L	06/07/2010	8.3	4.55	1.5	0.007	0.04	0.04			21	7.76	65		0.40
13	Fulton Second L	06/20/2010	8.3	4.25	1.5	0.009	0.05	0.03	0.51	125.16	17	6.86	69		3.10
13	Fulton Second L	07/05/2010	8.3	4.15	1.5	0.008	0.06	0.03	0.27	73.15	18	7.09	67		2.50
13	Fulton Second L	07/19/2010	8.3	4.05	1.5	0.010	0.02	0.07	0.38	86.64	16	7.70	71	5.5	2.90
13	Fulton Second L	08/02/2010	8.3	3.95	1.5	0.020	0.03	0.11	0.38	40.87	21	7.31	58		3.20
13	Fulton Second L	08/17/2010	8.3	4.35	1.5	0.009	0.01	0.01	0.23	55.12	20	7.32	52		2.80
13	Fulton Second L	09/07/2010	8.3	4.05	1.5		0.03	0.02	0.30	1.60	19	7.51	69		2.80
13	Fulton Second L	05/30/2011	8.3	3.85	1.5	0.011	0.16	0.02	0.34	69.08	34	7.75	60	4.3	3.50
13	Fulton Second L	06/16/2011	8.3	4.25	1.5	0.008	0.15	0.04	0.21	58.85	33	6.85	74		2.60
13	Fulton Second L	06/27/2011	8.3	3.55	1.5	0.013	0.07	0.03	0.54	95.22	32	6.88	63		1.80
13	Fulton Second L	07/11/2011	8.3	4.35	1.5		0.09	0.03	0.52	33.65	32	7.93	64		3.00
13	Fulton Second L	07/25/2011	8.3	3.65	1.5	0.009	0.04	0.02	0.29	69.35	26	8.84	87	4.9	4.80
13	Fulton Second L	08/13/2011	8.3	4.25	1.5	0.015	0.02	0.02	0.46	67.77	22	8.32	59		2.80
13	Fulton Second L	08/27/2011	8.3	4.35	1.5	0.010	0.03	0.03	0.26	58.44	24	7.25	51		3.80
13	Fulton Second L	09/12/2011	8.3	4.15	1.5	0.004	0.05	0.02	0.35	193.60	28	6.71	62		3.20
13	Fulton Second L	06/11/2012	8.3	4.15	1.5	0.011	0.09	0.01	0.28	57.08	23	7.54	64	4.5	3.80
13	Fulton Second L	06/24/2012	8.3	4.25	1.5	0.006	0.06	0.04	0.27	95.93	19	7.75	49		2.30
13	Fulton Second L	07/08/2012	8.3	4.25	1.5	0.007	0.05	0.03	0.24	76.35	19	6.76	53		3.90
13	Fulton Second L	07/22/2012	8.3	4.25	1.5	0.016	0.02	0.02	0.33	45.64	17	7.54	62		3.50
13	Fulton Second L	08/04/2012	8.3	4.45	1.5	0.006	0.01	0.03	0.17	64.60	17	8.42	66	5.5	2.10
13	Fulton Second L	08/19/2012	8.3	4.45	1.5	0.007	0.02	0.03	0.21	69.24	15	6.85	62		3.10
13	Fulton Second L	09/02/2012	8.3	4.75	1.5	0.008	0.01	0.03	0.16	45.39	14	7.34	61		2.10
13	Fulton Second L	09/17/2012	8.3	4.45	1.5	0.008	0.01	0.02	0.30	87.42	12	7.62	66		2.20
LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP			Fe	Mn	As
13	Fulton Second L	5/25/1998	8.3		7.3	0.008									
13	Fulton Second L	6/21/1998	8.3		7.3	0.020									
13	Fulton Second L	7/20/1998	8.3			0.016									
13	Fulton Second L	8/17/1998	8.3			0.013									
13	Fulton Second L	07/09/02	8.3			0.016									
13	Fulton Second L	7/8/2003	8.3			0.010	0.04	0.01	0.37	80.79					
13	Fulton Second L	9/3/2003	8.3			0.020	0.01	0.24	0.50	54.00					
13	Fulton Second L	6/23/2004				0.004	0.10	0.01	0.11	59.09					
13	Fulton Second L	8/31/2004				0.006	0.03	0.02	0.18	63.65					
13	Fulton Second L	6/7/2005				0.005									
13	Fulton Second L	6/27/2005				0.017									
13	Fulton Second L	7/18/2005				0.008									
13	Fulton Second L	8/2/2005				0.005									
13	Fulton Second L	8/16/2005				0.007									
13	Fulton Second L	8/30/2005				0.007									
13	Fulton Second L	9/13/2005				0.005									
13	Fulton Second L	10/3/2005				0.007									
13	Fulton Second L	7/2/2007				0.008									
13	Fulton Second L	7/23/2007			6.8	0.008									
13	Fulton Second L	8/5/2007			6.8	0.007									
13	Fulton Second L	8/20/2007			6.8	0.010									
13	Fulton Second L	9/3/2007			6.8	0.079									
13	Fulton Second L	9/17/2007	8.9		6.8	0.006									
13	Fulton Second L	9/30/2007	8.8		6.8	0.006									
13	Fulton Second L	6/9/2008	8.3		8.3	0.008									
13	Fulton Second L	6/24/2008	8.3		6.8	0.009									
13	Fulton Second L	7/7/2008	8.3		6.8	0.008									
13	Fulton Second L	7/21/2008	8.3		6.8	0.007									
13	Fulton Second L	8/4/2008	8.3		6.8	0.011									
13	Fulton Second L	8/17/2008	8.3		6.8	0.007									
13	Fulton Second L	9/1/2008	8.3		6.8	0.004									
13	Fulton Second L	9/20/2008	8.3		6.8	0.005									
13	Fulton Second L	06/13/2009			6.8	0.021		0.05							
13	Fulton Second L	06/29/2009			6.8	0.009									
13	Fulton Second L	07/27/2009			6.8	0.008		0.08							
13	Fulton Second L	08/03/2009			6.8	0.010									
13	Fulton Second L	08/16/2009			6.8	0.011		0.11					0.29	0.23	
13	Fulton Second L	08/31/2009			6.8	0.012									
13	Fulton Second L	09/14/2009			6.8	0.007		0.08					1.25	0.65	
13	Fulton Second L	09/26/2009			6.8	0.007									
13	Fulton Second L	5/17/2010			6.8	0.007		0.12					0.11		
13	Fulton Second L	6/20/2010			6.8	0.010		0.05					0.11		

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP			Fe	Mn	As
13	Fulton Second L	7/19/2010			6.8	0.008		0.09					0.03		0.34
13	Fulton Second L	8/17/2010			6.8	0.016		0.06					0.16	0.34	
13	Fulton Second L	05/30/2011	8.3		6.8	0.005		0.03							
13	Fulton Second L	06/27/2011	8.3		6.8	0.011		0.05							
13	Fulton Second L	07/25/2011	8.3		6.8	0.010		0.08							
13	Fulton Second L	08/27/2011	8.3		6.8	0.008		0.13							
13	Fulton Second L	06/11/2012			6.8	0.008		0.01							
13	Fulton Second L	06/24/2012			6.8								0.03	0.02	
13	Fulton Second L	07/08/2012			6.8	0.009		0.09							
13	Fulton Second L	07/22/2012			6.8								0.09	0.08	
13	Fulton Second L	08/04/2012			6.8	0.008									
13	Fulton Second L	08/19/2012			6.8								0.45	0.41	0.50
13	Fulton Second L	09/02/2012			6.8	0.002		0.05							
13	Fulton Second L	09/17/2012			6.8								0.50	0.43	0.50

LNum	PName	Date	Site	TAir	TH20	QA	QB	QC	QD	QE	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cyclin	FP-Chl	FP-BG	HAB form	
13	Fulton Second L	7/4/1986	epi	15	18																
13	Fulton Second L	7/11/1986	epi	19	21																
13	Fulton Second L	7/18/1986	epi	30	21																
13	Fulton Second L	7/24/1986	epi	24	20																
13	Fulton Second L	7/29/1986	epi	23	23																
13	Fulton Second L	8/8/1986	epi	23	22																
13	Fulton Second L	8/15/1986	epi	12	15																
13	Fulton Second L	8/22/1986	epi	14	17																
13	Fulton Second L	8/28/1986	epi	6	15																
13	Fulton Second L	9/5/1986	epi	14	15																
13	Fulton Second L	9/10/1986	epi	14	15																
13	Fulton Second L	9/19/1986	epi	15	15																
13	Fulton Second L	9/25/1986	epi	15	15																
13	Fulton Second L	6/25/1987	epi	25	22																
13	Fulton Second L	7/13/1987	epi	32	25																
13	Fulton Second L	7/28/1987	epi	17	22																
13	Fulton Second L	8/1/1987	epi	22	21																
13	Fulton Second L	8/11/1987	epi	15	20																
13	Fulton Second L	8/26/1987	epi	17	18																
13	Fulton Second L	9/8/1987	epi	20	19																
13	Fulton Second L	9/22/1987	epi	14	16																
13	Fulton Second L	10/5/1987	epi	9	12																
13	Fulton Second L	6/22/1988	epi	19																	
13	Fulton Second L	7/6/1988	epi	23	21																
13	Fulton Second L	7/19/1988	epi	21	23																
13	Fulton Second L	8/2/1988	epi	21	24																
13	Fulton Second L	8/9/1988	epi	28	26																
13	Fulton Second L	8/15/1988	epi	23	24																
13	Fulton Second L	8/23/1988	epi	16	20																
13	Fulton Second L	8/29/1988	epi	15	18																
13	Fulton Second L	9/6/1988	epi	12	16																
13	Fulton Second L	9/12/1988	epi	10	17																
13	Fulton Second L	7/5/1989	epi	18	22																
13	Fulton Second L	7/19/1989	epi	18	21																
13	Fulton Second L	8/3/1989	epi	23	22																
13	Fulton Second L	8/14/1989	epi	17	21																
13	Fulton Second L	8/24/1989	epi	15	20																
13	Fulton Second L	9/5/1989	epi	14	19																
13	Fulton Second L	9/19/1989	epi	14	18																
13	Fulton Second L	10/3/1989	epi	9	14																
13	Fulton Second L	7/2/1990	epi	15	17																
13	Fulton Second L	7/11/1990	epi	18	22																
13	Fulton Second L	7/26/1990	epi	18	24																
13	Fulton Second L	8/7/1990	epi	17	24																
13	Fulton Second L	8/21/1990	epi	14	15																
13	Fulton Second L	9/4/1990	epi	17	20																

LNum	PName	Date	Site	TAir	TH20	QA	QB	QC	QD	QE	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cyclin	FP-Chl	FP-BG	HAB form
13	Fulton Second L	9/10/1990	epi	14	17															
13	Fulton Second L	9/17/1990	epi	9	16															
13	Fulton Second L	7/1/1996	epi	16	18	1	1	1												
13	Fulton Second L	7/15/1996	epi	27	21	1	1	1	5											
13	Fulton Second L	7/29/1996	epi	17	15	1		1	5											
13	Fulton Second L	8/12/1996	epi	16	22	1	1	1												
13	Fulton Second L	8/18/1996	epi	17	21	1	1	1												
13	Fulton Second L	9/2/1996	epi	22	21	1	1	1												
13	Fulton Second L	9/16/1996	epi	19	22	1	1	2	5											
13	Fulton Second L	9/30/1996	epi	9	16	1	1	1	6											
13	Fulton Second L	5/26/1997	epi	8	10	1	1	1	5											
13	Fulton Second L	6/22/1997	epi	20	20	1	1	1	5											
13	Fulton Second L	7/6/1997	epi	15	20	1	1	1												
13	Fulton Second L	7/22/1997	epi	15	19	1	1	1												
13	Fulton Second L	8/4/1997	epi	15	18	1	1	1												
13	Fulton Second L	8/17/1997	epi	19	20	1	1	1	5											
13	Fulton Second L	9/14/1997	epi	16	17	1	1	1												
13	Fulton Second L	9/28/1997	epi	13	13	1	1	1												
13	Fulton Second L	5/25/1998	epi	21	16	1	1	1	6											
13	Fulton Second L	6/8/1998	epi	12	13	1	1	1	5											
13	Fulton Second L	6/21/1998	epi	22	20	1	1	1												
13	Fulton Second L	7/6/1998	epi	20		1	1	1	6											
13	Fulton Second L	7/20/1998	epi	23	23	1	1	1												
13	Fulton Second L	8/3/1998	epi	20	25	1	1	1	6											
13	Fulton Second L	8/17/1998	epi	26	24	1	1	1												
13	Fulton Second L	9/1/1998	epi	17	20	1	1	1												
13	Fulton Second L	6/2/1999	epi	21	19	1	1	1	5											
13	Fulton Second L	6/9/1999	epi	18	21	1	1	1	5											
13	Fulton Second L	6/20/1999	epi	22	22	1	1	1												
13	Fulton Second L	7/5/1999	epi	26	24	1	1	1	5											
13	Fulton Second L	7/19/1999	epi	22	24	2	1	2	6											
13	Fulton Second L	8/8/1999	epi	18	20	1	1	1	5											
13	Fulton Second L	8/25/1999	epi	21	21	1	1	1												
13	Fulton Second L	9/13/1999	epi	21	19	1	1	1												
13	Fulton Second L	6/7/2000	epi	12	15	1	1	1	5											
13	Fulton Second L	6/19/2000	epi	17	19	1	1	1	5											
13	Fulton Second L	7/9/2000	epi	16	20	1	1	1	5											
13	Fulton Second L	7/24/2000	epi	22	20	1	1	1												
13	Fulton Second L	8/7/2000	epi	20	20															
13	Fulton Second L	8/20/2000	epi	13	20	1	1	1	5											
13	Fulton Second L	9/10/2000	epi	17	15	1	1	1												
13	Fulton Second L	9/29/2000	epi	9	14	1	1	1												
13	Fulton Second L	6/24/2001	epi	20	18	1	1	1	5											
13	Fulton Second L	7/10/2001	epi	22	18	1	1	1	0											
13	Fulton Second L	7/23/2001	epi	24	22	1	1	1	0											
13	Fulton Second L	8/7/2001	epi	23	24	1	1	1	5											
13	Fulton Second L	8/20/2001	epi	24	22	1	1	1	5											
13	Fulton Second L	9/4/2001	epi	17	18	1	1	1	5											
13	Fulton Second L	9/17/2001	epi	16	18	1	1	1												
13	Fulton Second L	10/1/2001	epi	10	15	1	1	1	6											
13	Fulton Second L	06/11/02	epi	23	19	1	1	1												
13	Fulton Second L	06/25/02	epi	14	21	1	1	1												
13	Fulton Second L	07/09/02	epi	22	23	1	1	1												
13	Fulton Second L	07/24/02	epi	16	22	2	1	1												
13	Fulton Second L	08/06/02	epi	13	25	1	1	1												
13	Fulton Second L	08/20/02	epi	16	23	1	1	1												
13	Fulton Second L	09/03/02	epi	18	21	1	1	1												
13	Fulton Second L	09/24/02	epi	10	19	1	1	1												
13	Fulton Second L	6/10/2003	epi	18	19	2	1	1												
13	Fulton Second L	6/24/2003	epi	22	22	1	1	1												
13	Fulton Second L	7/8/2003	epi	24	23	1	1	1												

LNum	PName	Date	Site	TAir	TH2O	QA	QB	QC	QD	QE	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cyclin	FP-Chl	FP-BG	HAB form
13	Fulton Second L	7/22/2003	epi	18	21	1	1	1												
13	Fulton Second L	8/6/2003	epi	21	23	1	1	1												
13	Fulton Second L	8/19/2003	epi	20	23	1	1	1												
13	Fulton Second L	9/3/2003	epi	18	20	1	1	1												
13	Fulton Second L	9/17/2003	epi	15	21	1	1	1												
13	Fulton Second L	6/23/2004	epi	20	20	1	1	1	0											
13	Fulton Second L	7/6/2004	epi	20	21	1	1	1	0											
13	Fulton Second L	7/19/2004	epi	19	21	1	1	1	0											
13	Fulton Second L	8/2/2004	epi	19	24	1	1	1	0											
13	Fulton Second L	8/17/2004	epi	20	21	1	1	1	0											
13	Fulton Second L	8/31/2004	epi	23	21	1	1	1	0											
13	Fulton Second L	9/14/2004	epi	24	20	1	1	1	0											
13	Fulton Second L	9/26/2004	epi	20	19	1	1	1	0											
13	Fulton Second L	6/7/2005	epi	22	20	1	1	1	0											
13	Fulton Second L	6/27/2005	epi	31	27	1	1	1	0											
13	Fulton Second L	7/18/2005	epi	26	26	1	1	1	0											
13	Fulton Second L	8/2/2005	epi	25	25	1	1	1	0											
13	Fulton Second L	8/16/2005	epi	24	24	1	1	1	0											
13	Fulton Second L	8/30/2005	epi	24	22	1	1	1	0											
13	Fulton Second L	9/13/2005	epi	24	22	1	1	1	0											
13	Fulton Second L	10/3/2005	epi	22	17	1	1	1	0											
13	Fulton Second L	6/12/2006	epi	20	16	1	1	1	0											
13	Fulton Second L	7/4/2006	epi	23	21	1	1	1	0											
13	Fulton Second L	7/19/2006	epi	31	26	1	1	1	0											
13	Fulton Second L	7/31/2006	epi	27	24	1	1	1	0											
13	Fulton Second L	8/22/2006	epi	19	21	1	1	1	0											
13	Fulton Second L	9/12/2006	epi	21	18	1	1	1	0											
13	Fulton Second L	9/17/2006	epi	22	18	1	1	1	0											
13	Fulton Second L	10/3/2006	epi	18	13	1	1	1	0											
13	Fulton Second L	6/25/2007	epi	29	21	1	1	1	0											
13	Fulton Second L	7/3/2007	epi	12	20	1	1	1	0											
13	Fulton Second L	7/23/2007	epi	23	21	2	1	2	0											
13	Fulton Second L	8/5/2007	epi	17	24	2	2	2	0											
13	Fulton Second L	8/20/2007	epi	18	21	2	1	1	0											
13	Fulton Second L	9/3/2007	epi	17	21	2	2	2	0											
13	Fulton Second L	9/17/2007	epi	8	18	2	2	2	0											
13	Fulton Second L	9/30/2007	epi	11	18	2	3	2	0											
13	Fulton Second L	6/9/2008	epi	22	21	2	1	2	8											
13	Fulton Second L	6/24/2008	epi	19	19	2	2	2	8											
13	Fulton Second L	7/7/2008	epi	22	22	2	2	2	0											
13	Fulton Second L	7/21/2008	epi	20	23	2	2	2	0											
13	Fulton Second L	8/4/2008	epi	22	22	2	2	2	0											
13	Fulton Second L	8/17/2008	epi	21	20	2	2	2	8											
13	Fulton Second L	9/1/2008	epi	18	21	3	2	1	0											
13	Fulton Second L	9/20/2008	epi	20	18	2	2	2	0											
13	Fulton Second L	06/13/2009	epi	24	19	2	2	2	6											
13	Fulton Second L	06/29/2009	epi	17	21	2	2	2	5											
13	Fulton Second L	07/27/2009	epi	19	21	2	2	2	5											
13	Fulton Second L	08/03/2009	epi	21	22	2	2	2	0											
13	Fulton Second L	08/16/2009	epi	27	24	2	3	2	0						0.06					
13	Fulton Second L	08/31/2009	epi	11	19	2	3	2	8											
13	Fulton Second L	09/14/2009	epi	10	19	2	2	2	0			17.79								
13	Fulton Second L	09/26/2009	epi	12	17	3	3	2	5			17.06		0.01						
13	Fulton Second L	05/17/2010	epi	24	13	1	1	1	0	0	0									
13	Fulton Second L	06/07/2010	epi	12	19	2	1	2	8	0	0									
13	Fulton Second L	06/20/2010	epi	22	20	2	1	2	0	0	0									
13	Fulton Second L	07/05/2010	epi	24	21	2	3	2	0	0	0									
13	Fulton Second L	07/19/2010	epi	23	24	2	3	2	0	5	5									
13	Fulton Second L	08/02/2010	epi	21	23	2	2	2	0	0	0									
13	Fulton Second L	08/17/2010	epi	19	22	2	3	2	0	0	0	13.00		0.02						
13	Fulton Second L	09/07/2010	epi	18	19	2	3	2	0	0	0	55.00		0.07						

LNum	PName	Date	Site	TAir	TH2O	QA	QB	QC	QD	QE	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cyclin	FP-Chl	FP-BG	HAB form
13	Fulton Second L	05/30/2011	epi	19	19	3	1	2	0	0	0									
13	Fulton Second L	06/16/2011	epi	18		3	1	3	16	0	0		6.00	3.00						
13	Fulton Second L	06/27/2011	epi	19	20	3	3	2	0	0	0		7.90	4.10						
13	Fulton Second L	07/11/2011	epi	23	24	2	3	2	0	0	0		4.50	3.00						
13	Fulton Second L	07/25/2011	epi	17	25	3	3	2	5	0	0		8.60	4.19						i
13	Fulton Second L	08/13/2011	epi	20	22	3	3	2	0	0	0		16.00	3.40	0.38	<0.400	<0.1			
13	Fulton Second L	08/13/2011	epi												0.22					
13	Fulton Second L	08/27/2011	epi	19	21	3	3	2	0	0	0		14.60	4.10						
13	Fulton Second L	09/12/2011	epi												0.03					
13	Fulton Second L	09/12/2011	epi	17	20	3	3	2	0	0	0		4.40	3.60						
13	Fulton Second L	06/11/2012	epi	22	20	3	3	2	6	7	0		2.10	0.70	<0.30	<0.417		1.45	0.73	
13	Fulton Second L	06/24/2012	epi	18	22	3	3	2	0	0	0		0.90	0.50	<0.30	<0.428		1.51	1.05	I
13	Fulton Second L	07/08/2012	epi	22	23	2	3	2	0	0	0		3.40	0.60	<0.30	<0.423		2.09	0.52	I
13	Fulton Second L	07/22/2012	epi	22	24	2	3	2	0	0	0		4.40	0.70	<0.30	<0.585		2.17	0.36	I
13	Fulton Second L	08/04/2012	epi	25	25	2	3	2	0	0	0		4.60	0.30	<0.30	<0.330		2.59	1.18	
13	Fulton Second L	08/19/2012	epi	14	21	3	3	2	0	0	0		2.70	0.70	<0.30	<0.223		2.84	1.45	I
13	Fulton Second L	09/02/2012	epi	16	22	3	3	2	0	0	0		3.90	0.60	<0.30	<0.580		1.61	0.44	I
13	Fulton Second L	09/17/2012	epi	14	18	3	3	2	9	0	0		2.50	0.50	<0.30	<3.205		0.85	0.60	I
13	Fulton Second L	6/21/1998	hypo		13															
13	Fulton Second L	7/23/2007	hypo		19															
13	Fulton Second L	8/5/2007	hypo		23															
13	Fulton Second L	8/20/2007	hypo		20															
13	Fulton Second L	9/3/2007	hypo		20															
13	Fulton Second L	9/17/2007	hypo		27															
13	Fulton Second L	9/30/2007	hypo		18															
13	Fulton Second L	6/24/2008	hypo		18															
13	Fulton Second L	7/21/2008	hypo		21															
13	Fulton Second L	8/4/2008	hypo		13															
13	Fulton Second L	8/17/2008	hypo		15															
13	Fulton Second L	9/1/2008	hypo		14															
13	Fulton Second L	9/20/2008	hypo		17															
13	Fulton Second L	06/13/2009	hypo		13															
13	Fulton Second L	06/29/2009	hypo		14															
13	Fulton Second L	07/27/2009	hypo		17															
13	Fulton Second L	08/03/2009	hypo		16															
13	Fulton Second L	08/16/2009	hypo		17															
13	Fulton Second L	08/31/2009	hypo		17															
13	Fulton Second L	09/14/2009	hypo		17															
13	Fulton Second L	09/26/2009	hypo		16															
13	Fulton Second L	5/17/2010	hypo		11															
13	Fulton Second L	6/20/2010	hypo		12															
13	Fulton Second L	7/19/2010	hypo		15															
13	Fulton Second L	8/17/2010	hypo		15															
13	Fulton Second L	05/30/2011	hypo		10															
13	Fulton Second L	06/27/2011	hypo		11															
13	Fulton Second L	07/25/2011	hypo		12															
13	Fulton Second L	08/27/2011	hypo		13															
13	Fulton Second L	06/11/2012	hypo		17															
13	Fulton Second L	06/24/2012	hypo		10															
13	Fulton Second L	07/08/2012	hypo		10															
13	Fulton Second L	07/22/2012	hypo		12															
13	Fulton Second L	08/04/2012	hypo		12															
13	Fulton Second L	08/19/2012	hypo		12															
13	Fulton Second L	09/02/2012	hypo		13															
13	Fulton Second L	09/17/2012	hypo		16															



## Legend Information

<i>Indicator</i>	<i>Description</i>	<i>Detection Limit</i>	<i>Standard (S) / Criteria (C)</i>
<b>General Information</b>			
<b>Lnum</b>	lake number (unique to CSLAP)		
<b>Lname</b>	name of lake (as it appears in the Gazetteer of NYS Lakes)		
<b>Date</b>	sampling date		
<b>Field Parameters</b>			
<b>Zbot</b>	lake depth at sampling point, meters (m)		
<b>Zsd</b>	Secchi disk transparency or clarity	0.1m	1.2m ( C)
<b>Zsamp</b>	water sample depth (m) (epi = epilimnion or surface; bot = bottom)	0.1m	none
<b>Tair</b>	air temperature ( C)	-10C	none
<b>TH20</b>	water temperature ( C)	-10C	none
<b>Laboratory Parameters</b>			
<b>Tot.P</b>	total phosphorus (mg/l)	0.003 mg/l	0.020 mg/l ( C)
<b>NOx</b>	nitrate + nitrite (mg/l)	0.01 mg/l	10 mg/l NO3 (S), 2 mg/l NO2 (S)
<b>NH4</b>	total ammonia (mg/l)	0.01 mg/l	2 mg/l NH4 (S)
<b>TN</b>	total nitrogen (mg/l)	0.01 mg/l	none
<b>TN/TP</b>	nitrogen to phosphorus (molar) ratio, = (TKN + NOx)*2.2/TP		none
<b>TCOLOR</b>	true (filtered) color (ptu, platinum color units)	1 ptu	none
<b>pH</b>	powers of hydrogen (S.U., standard pH units)	0.1 S.U.	6.5, 8.5 S.U. (S)
<b>Cond25</b>	specific conductance, corrected to 25C (umho/cm)	1 umho/cm	none
<b>Ca</b>	calcium (mg/l)	1 mg/l	none
<b>Chl.a</b>	chlorophyll a (ug/l)	0.01 ug/l	none
<b>Fe</b>	iron (mg/l)	0.1 mg/l	1.0 mg/l (S)
<b>Mn</b>	manganese (mg/l)	0.01 mg/l	0.3 mg/l (S)
<b>As</b>	arsenic (ug/l)	1 ug/l	10 ug/l (S)
<b>AQ-PC</b>	Phycocyanin (aquafior) (unitless)	1 unit	none
<b>AQ-Chl</b>	Chlorophyll a (aquafior) (ug/l)	1 ug/l	none
<b>MC-LR</b>	Microcystis-LR (ug/l)	0.01 ug/l	1 ug/l potable (C) 20 ug/l swimming (C)
<b>Ana</b>	Anatoxin-a (ug/l)	variable	none
<b>Cyl</b>	Cylindrospermopsin (ug/l)	0.1 ug/l	none
<b>FP-Chl, FP-BG</b>	Fluoroprobe total chlorophyll, fluoroprobe blue-green chlorophyll (ug/l)	0.1 ug/l	none
<b>Lake Assessment</b>			
<b>QA</b>	water quality assessment; 1 = crystal clear, 2 = not quite crystal clear, 3 = definite algae greenness, 4 = high algae levels, 5 = severely high algae levels		
<b>QB</b>	aquatic plant assessment; 1 = no plants visible, 2 = plants below surface, 3 = plants at surface, 4 = plants dense at surface, 5 = surface plant coverage		
<b>QC</b>	recreational assessment; 1 = could not be nicer, 2 = excellent, 3 = slightly impaired, 4 = substantially impaired, 5 = lake not usable		
<b>QD</b>	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		
<b>QF, QG</b>	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		
<b>HAB form</b>	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- Monthly Evaluation of Fulton Second Lake Data, 2006-2012

### June Data

	2006	2007	2008	2009	2010	2011	2012
Zsd	NORMAL	NORMAL	NORMAL	NORMAL	HIGH	NORMAL	NORMAL
TP	NORMAL	NORMAL	NORMAL	HIGH	NORMAL	NORMAL	NORMAL
Chl.a	HIGH	LOW	NORMAL	NORMAL	LOW	LOW	NORMAL
NOx	HIGH	HIGH	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
NH4	NORMAL	NORMAL	NORMAL	HIGH	NORMAL	NORMAL	NORMAL
TN	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
pH		NORMAL	NORMAL		NORMAL	NORMAL	NORMAL
SpCond	NORMAL	NORMAL	NORMAL		HIGH	HIGH	NORMAL
Color	HIGH	NORMAL	NORMAL	NORMAL	NORMAL	HIGH	NORMAL
Ca	NORMAL	NORMAL	NORMAL	NORMAL			NORMAL
QA	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	HIGH	HIGH
QB	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	HIGH	NORMAL
TH20	LOW	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL

High = average monthly reading > 90<sup>th</sup> percentile reading for lake, 2000-2010

Low = average monthly reading < 10<sup>th</sup> percentile reading for lake, 2000-2010

Normal = average monthly reading between 10<sup>th</sup> and 90<sup>th</sup> percentile reading for lake, 2000-2010

### July Data

	2006	2007	2008	2009	2010	2011	2012
Zsd	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
TP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	HIGH	NORMAL
Chl.a	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
NOx	NORMAL	NORMAL	HIGH	NORMAL	NORMAL	NORMAL	NORMAL
NH4	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
TN	HIGH	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
pH	NORMAL	NORMAL	NORMAL	HIGH	NORMAL	HIGH	NORMAL
SpCond	NORMAL	NORMAL	LOW	LOW	HIGH	HIGH	NORMAL
Color	NORMAL	NORMAL	NORMAL	HIGH	NORMAL	NORMAL	NORMAL
Ca					NORMAL	NORMAL	
QA	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	HIGH	NORMAL
QB	NORMAL	NORMAL	NORMAL	NORMAL	HIGH	HIGH	NORMAL
QC	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
TH20	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	HIGH	NORMAL

High = average monthly reading > 90<sup>th</sup> percentile reading for lake, 2000-2010

Low = average monthly reading < 10<sup>th</sup> percentile reading for lake, 2000-2010

Normal = average monthly reading between 10<sup>th</sup> and 90<sup>th</sup> percentile reading for lake, 2000-2010

## August Data

	2006	2007	2008	2009	2010	2011	2012
<i>Zsd</i>	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	HIGH
<i>TP</i>	NORMAL	NORMAL	NORMAL	NORMAL	HIGH	HIGH	NORMAL
<i>Chl.a</i>	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
<i>NOx</i>	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
<i>NH4</i>	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
<i>TN</i>	NORMAL	NORMAL	NORMAL	LOW	NORMAL	NORMAL	LOW
<i>pH</i>	HIGH	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
<i>SpCond</i>	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
<i>Color</i>	NORMAL	LOW	NORMAL	HIGH	NORMAL	NORMAL	NORMAL
<i>Ca</i>		NORMAL	LOW	NORMAL			NORMAL
<i>QA</i>	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	HIGH	HIGH
<i>QB</i>	NORMAL	NORMAL	NORMAL	HIGH	HIGH	HIGH	NORMAL
<i>QC</i>	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
<i>TH20</i>	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL

High = average monthly reading > 90<sup>th</sup> percentile reading for lake, 2000-2010

Low = average monthly reading < 10<sup>th</sup> percentile reading for lake, 2000-2010

Normal = average monthly reading between 10<sup>th</sup> and 90<sup>th</sup> percentile reading for lake, 2000-2010

## September Data

	2006	2007	2008	2009	2010	2011	2012
<i>Zsd</i>	NORMAL	HIGH	NORMAL	NORMAL	NORMAL	NORMAL	HIGH
<i>TP</i>	NORMAL	NORMAL	LOW	NORMAL		LOW	NORMAL
<i>Chl.a</i>	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	LOW
<i>NOx</i>	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
<i>NH4</i>	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
<i>TN</i>	NORMAL	NORMAL	NORMAL	LOW	NORMAL	NORMAL	LOW
<i>pH</i>	NORMAL	NORMAL	NORMAL	HIGH	NORMAL	NORMAL	NORMAL
<i>SpCond</i>	LOW	NORMAL	NORMAL	NORMAL	HIGH	NORMAL	NORMAL
<i>Color</i>	NORMAL	LOW	NORMAL	NORMAL	NORMAL	NORMAL	LOW
<i>Ca</i>							
<i>QA</i>	NORMAL	NORMAL	HIGH	HIGH	NORMAL	HIGH	HIGH
<i>QB</i>	NORMAL	HIGH	NORMAL	HIGH	HIGH	HIGH	NORMAL
<i>QC</i>	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
<i>TH20</i>	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL

High = average monthly reading > 90<sup>th</sup> percentile reading for lake, 2000-2010

Low = average monthly reading < 10<sup>th</sup> percentile reading for lake, 2000-2010

Normal = average monthly reading between 10<sup>th</sup> and 90<sup>th</sup> percentile reading for lake, 2000-2010

## Appendix C- Priority Waterbody Listing for Fulton Second Lake

### Fulton Chain Lakes, First thru Fourth Lk (0801-0373) Impaired Seg

#### Waterbody Location Information

Revised: 03/12/2007

**Water Index No:** Ont 19- 81-18-P782a thru P782d      **Drain Basin:** Black River  
**Hydro Unit Code:** 04150101/060      **Str Class:** A      Black River  
**Waterbody Type:** Lake (Mesotrophic)      **Reg/County:** 6/Herkimer Co. (22)  
**Waterbody Size:** 3315.3 Acres      **Quad Map:** OLD FORGE (G-21-0)  
**Seg Description:** total area of all four lakes

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

Use(s) Impacted	Severity	Problem Documentation
FISH CONSUMPTION	Impaired	Known

#### Type of Pollutant(s)

Known: PESTICIDES (DDT)  
Suspected: ---  
Possible: ---

#### Source(s) of Pollutant(s)

Known: CHEMICAL LEAK/SPILL, TOX/CONTAM. SEDIMENT  
Suspected: ---  
Possible: ---

#### Resolution/Management Information

**Issue Resolvability:** 3 (Strategy Being Implemented)  
**Verification Status:** 5 (Management Strategy has been Developed)  
**Lead Agency/Office:** DEC/DER      **Resolution Potential:** Medium  
**TMDL/303d Status:** 2b (Multiple Segment/Categorical Water, Fish Consumption)

#### Further Details

Fish consumption in Fourth Lake is known to be impaired by pesticide (DDT) contamination, a result of a suspected spill or improper disposal.

Fish consumption in Fourth Lake is impaired due to a NYS DOH health advisory that recommends eating no lake trout because of elevated levels of DDT. The specific source of the contamination is unknown, but under investigation. Contaminated bottom sediment have been found in lake tributaries. The advisory for this lake was issued prior to 1998-99. (2006-07 NYS DOH Health Advisories and DEC/DFWMR, Habitat, December 2006).

Second Lake has been sampled as part of the NYSDEC Citizen Statewide Lake Assessment Program (CSLAP) beginning in 1986 and continuing through the present. 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 easily satisfy what is recommended for swimming beaches. Measurements of pH typically fall within the state water quality range of 6.5 to 8.5. The lake water is slightly to moderately colored, which is also typical of northwestern Adirondack Lakes. Oxygen levels do not appear to be

significantly reduced at lower lake depths. (DEC/DOW, BWAM/CSLAP, February 2006)

Public perception of the lake and its uses is also evaluated as part of the CSLAP program. These assessments indicate recreational suitability of the lake to be very favorable. The recreational suitability of the lake is described most frequently as "could not be nicer." The lake itself is most often described as "crystal clear," an assessment that is somewhat higher than suggested by water quality clarity of the lake but likely reflects the natural condition (color) of the lake. Assessments have noted that aquatic plants rarely grow to the lake surface. Aquatic plants are dominated by native and have not been cited as impacting recreational uses. However, invasive species (Eurasian watermilfoil) has been documented in other chain lakes. (DEC/DOW, BWAM/CSLAP, February 2006)

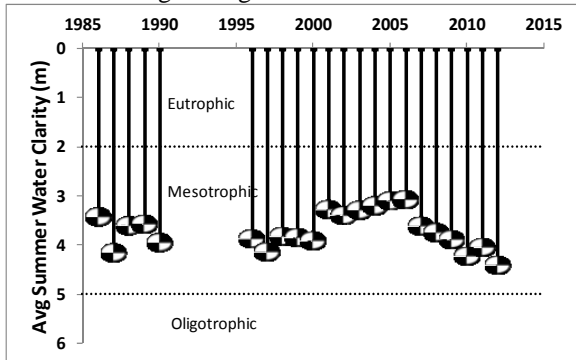
This lake waterbody is designated class A, suitable for use as a water supply, public bathing beach, general recreation and aquatic life support. Water quality monitoring by NYSDEC focuses primarily on support of general recreation and aquatic life. Samples to evaluate the bacteriological condition and 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.

Fourth Lake is included on the NYS 2006 Section 303(d) List of Impaired Waters. The lake is included on Part 2b of the List as a Fish Consumption Water.

# Appendix D- Long Term Trends: Fulton Second Lake

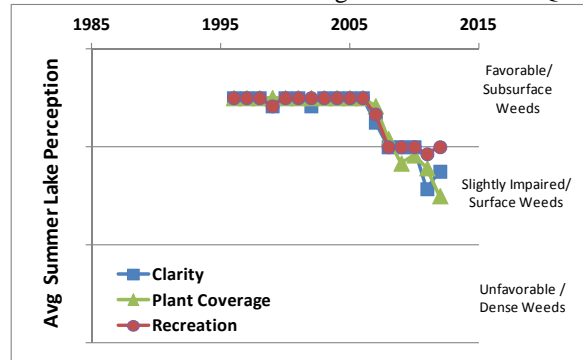
## Long Term Trends: Water Clarity

- No trends apparent
- Most readings typical of *mesotrophic* lakes, in range of algae but lower than TP levels



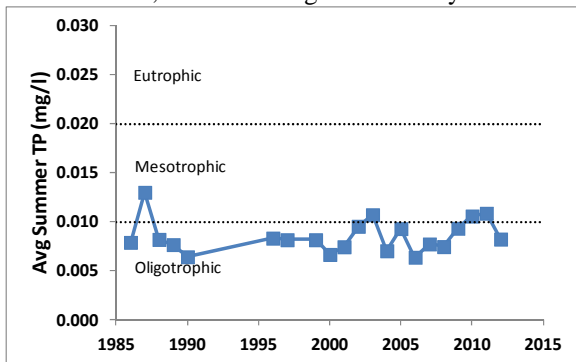
## Long Term Trends: Lake Perception

- Degrading assessments since mid 2000s
- Changes in WQ and recreational perception not connected to changes in measured WQ



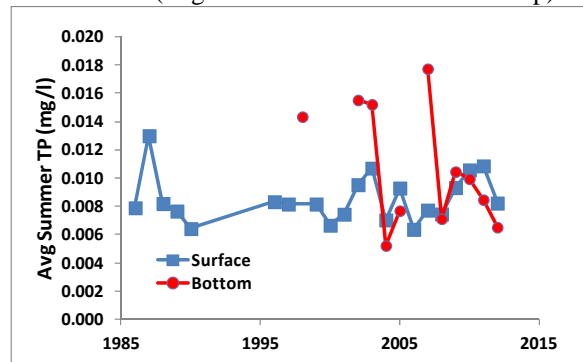
## Long Term Trends: Phosphorus

- No trends apparent
- Most readings typical of *mesoligotrophic* lakes, lower than algae and clarity levels



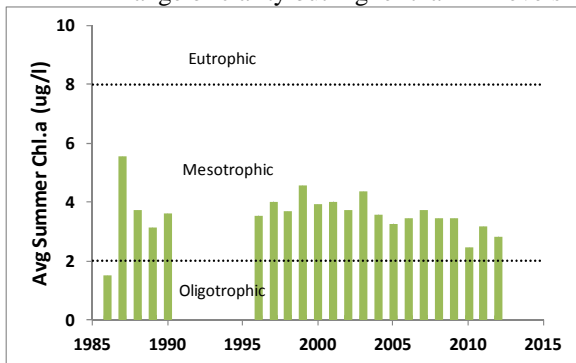
## Long Term Trends: Bottom Phosphorus

- Bottom TP similar to surface TP
- Probably not any significant internal nutrient load (migration of nutrients bottom to top)



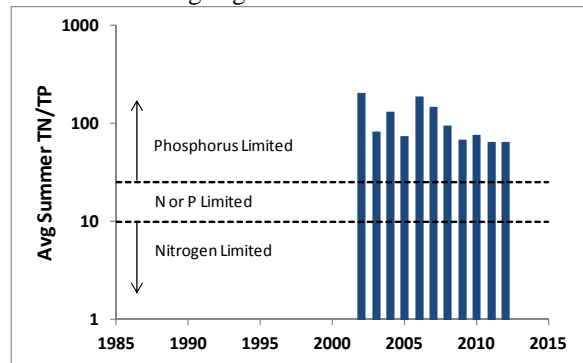
## Long Term Trends: Chlorophyll a

- No trends apparent
- Most readings typical of *mesotrophic* lakes, in range of clarity but higher than TP levels



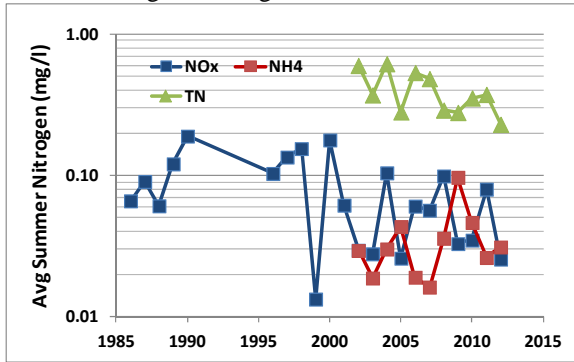
## Long Term Trends: N:P Ratio

- Decreasing N:P ratios
- Most readings still indicate phosphorus limits algae growth



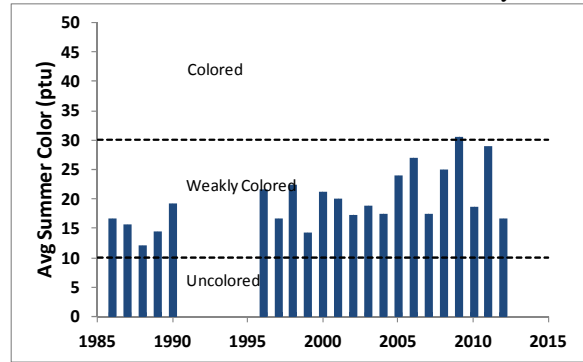
### Long Term Trends: Nitrogen

- Decreasing total nitrogen readings
- Generally low NO<sub>x</sub>, ammonia, and total nitrogen readings



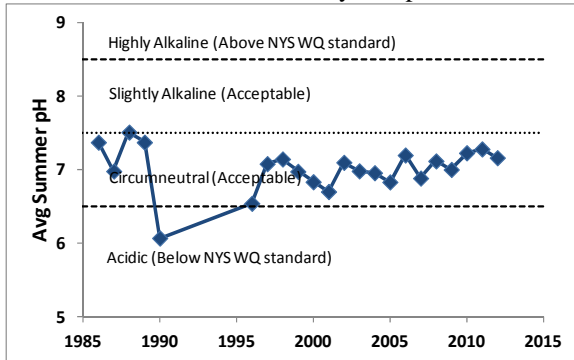
### Long Term Trends: Color

- Higher readings since early 2000s
- Most readings typical of *weakly colored* lakes, with little effect on water clarity



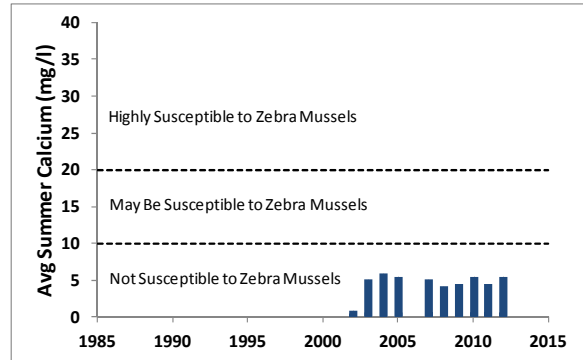
### Long Term Trends: pH

- No trends apparent
- Most readings typical of *circumneutral* lakes, with occasionally low pH



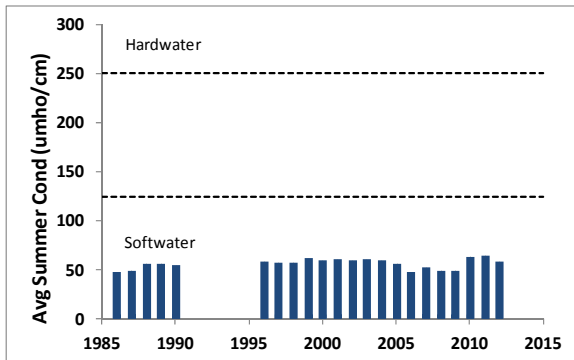
### Long Term Trends: Calcium

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



### Long Term Trends: Conductivity

- No trends apparent
- Most readings typical of lakes with *soft water*



### Long Term Trends: Water Temperature

- No trends apparent in surface temperatures
- Variable bottom temperatures indicate occasionally weak thermal layers

