

CSLAP 2011 Lake Water Quality Summary: Fulton Second Lake

General Lake Information

Location	Town of Old Forge
County	Herkimer
Basin	Black River
Size	106.2 hectares (262.3 acres)
Lake Origins	Augmented by dam (1894)
Watershed Area	11,270 hectares (27,837 acres)
Retention Time	0.34 years
Mean Depth	15.6 meters
Sounding Depth	8.5 meters
Public Access?	via DEC launch at Fourth Lake
Major Tributaries	Third Lake Creek (via Third Lake), Indian Brook (via Fourth Lake)
Lake Tributary To...	First Lake/Old Forge Pond to Middle Branch Moose River to Moose River to Black River to Black River Bay to Lake Ontario
WQ Classification	A (potable water)
Lake Outlet Latitude	43.715
Lake Outlet Longitude	-74.914
Sampling Years	1986-1990, 1995-2011
2011 Samplers	Steve Pitela
Main Contact	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 1st to May 15th, 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 2011. The CSLAP reports for each of the past several years can be found on the NYSFOLA website at <http://nysfola.mylaketown.com>. The 2009 and 2010 CSLAP reports 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.

Summary of 2011 CSLAP Sampling Results

Evaluation of 2011 Annual and Monthly Results Relative to 2006-2010

The Lake Condition Summary Table below and Appendix B compare annual and monthly results from 2011 to those measured in previous CSLAP sampling seasons. The pertinent deviations from normal conditions are discussed below.

Evaluation of Eutrophication Indicators

Water clarity readings were higher than normal in 2011. Overall total phosphorus readings were close to normal in 2011, despite higher than normal readings in July and August, but lower than normal readings in September. Chlorophyll *a* readings were also close to normal, and no long-term trends have been apparent with any of the trophic indicators. No clear seasonal trends in lake productivity have been apparent, including in 2011. 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 are “internally consistent,” with readings for each of the trophic indicators within the expected range. 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, to a lesser extent, iron levels are slightly elevated, but deepwater ammonia and phosphorus readings are low and similar to those measured at the lake surface, 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

Conductivity and color readings were higher than normal in 2011. The rise in conductivity was driven by elevated readings in early summer, but not late summer (after Hurricane Irene and Tropical Storm Lee), and color readings have increased slightly since the mid 1980s. None of the other limnological indicators varied from normal in 2011 or exhibited any clear patterns. 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 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 2010, despite the lack of change in trophic indicators. For water quality and recreational assessments, this was consistent with a long-term trend toward less favorable conditions. 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, but it is not known if this was associated with exotic plants, and no long-term trends have been apparent. No clear seasonal trends in lake perception have been apparent, including in 2011. 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, but no long-term changes have been apparent in either indirect indicator 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. Microcystis levels in bloom samples were well below the levels indicating recreational water impacts. Phycocyanin levels below the levels indicative of susceptibility to blue green algae and harmful algal blooms (HABs) in each year evaluated.

Lake Condition Summary

Category	Indicator	Min	86-11 Avg	Max	2011 Avg	Classification	2011 Change?	Long-term Change?
Eutrophication Indicators	Water Clarity	2.45	3.65	5.75	4.05	Mesotrophic	Higher than Normal	No Change
	Chlorophyll <i>a</i>	0.40	3.61	11.10	3.19	Mesotrophic	Within Normal Range	No Change
	Total Phosphorus	0.003	0.009	0.029	0.010	Oligotrophic	Within Normal Range	No Change
Potable Water Indicators	Hypolimnetic NH ₄	0.01	0.08	0.24	0.07	Close to Surface NH ₄ Readings	Within Normal Range	Not known
	Hypolimnetic As	0.34	0.45	0.50	0.50	Low Deepwater Arsenic Levels	Within Normal Range	Not known
	Hypolimnetic Iron	0.01	0.26	1.25	0.12	Low Iron Levels	Lower Than Normal	Not known
	Hypolimnetic Mn	0.01	0.31	0.73	0.24	Elevated Deepwater Mn	Within Normal Range	Not known
Limnological Indicators	Hypolimnetic TP	0.004	0.011	0.079	0.008	Close to Surface TP Readings	Within Normal Range	Not known
	Nitrate + Nitrite	0.00	0.08	0.59	0.08	Low NO _x	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	0.42	1.88	0.37	Low Total Nitrogen	Within Normal Range	No Change
	pH	5.25	7.28	8.84	7.57	Circumneutral	Within Normal Range	No Change
	Specific Conductance	29	57	87	65	Softwater	Higher than Normal	No Change
	True Color	6	20	37	29	Intermediate Color	Higher than Normal	Increasing Slightly
	Calcium	0.9	5.0	10.4	4.6	Not Susceptible to Zebra Mussels	Within Normal Range	No Change
Lake Perception	WQ Assessment	1	1.4	3	2.9	Crystal Clear	Less Favorable than Normal	Highly Degrading
	Plant Coverage	1	1.3	3	2.5	Plants Not Visible	Greater Coverage than Normal	No Change
	Rec. Assessment	1	1.3	3	2.1	Could Not Be Nicer	Less Favorable than Normal	Highly Degrading
Biological Condition	Phytoplankton					Not sampled through CSLAP	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	18.9		Within Normal Range	No Change
	Water Temperature	10	20.0	27	21.3		Higher Than Normal	No Change
Harmful Algal Blooms	Open Water Phycocyanin	4	15	55	9	All readings indicate low risk of BGA	Not known	Not known
	Open Water Microcystis	0.0	0.1	0.4	0.4	All readings indicate low lakewide toxins	Not known	Not known
	Shoreline Phycocyanin					No shoreline BGA blooms reported	Not known	Not known
	Shoreline Microcystis					No shoreline BGA blooms reported	Not known	Not known
	Other Toxins					Low anatoxin-a and cylindrospermopsin	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 *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 be *threatened* by the presence of variable watermilfoil.

Aquatic Life

The CSLAP dataset on Fulton Second Lake, including water chemistry data and physical measurements, suggest that aquatic life should be fully supported, although variable watermilfoil may *threaten* aquatic life. 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.

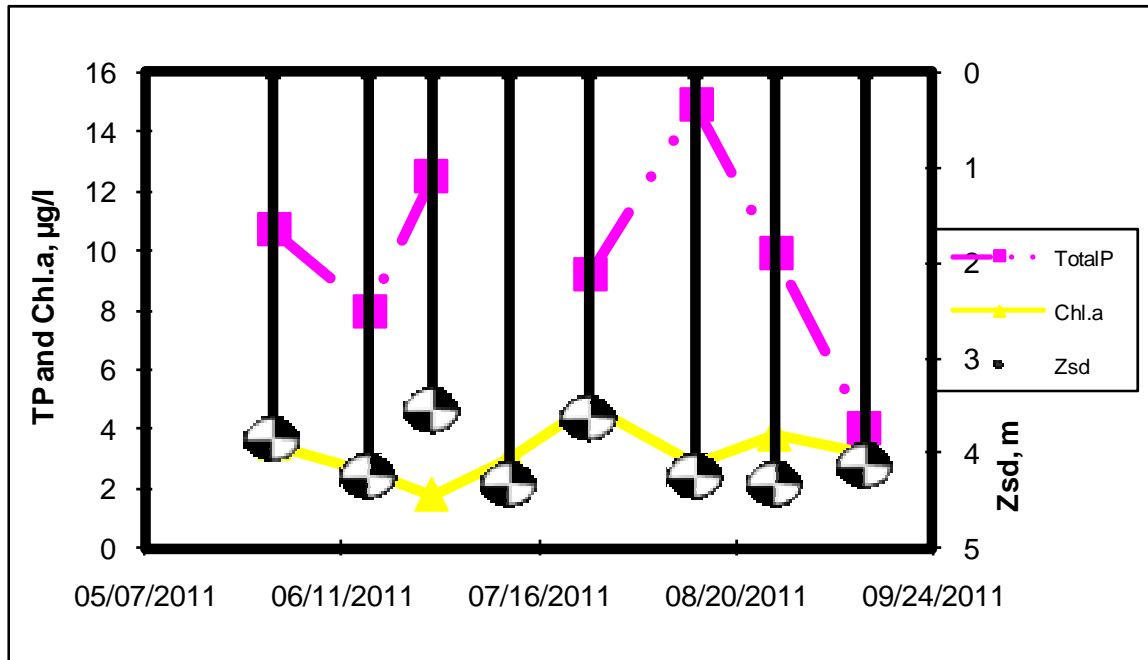
Additional Comments and Recommendations

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.

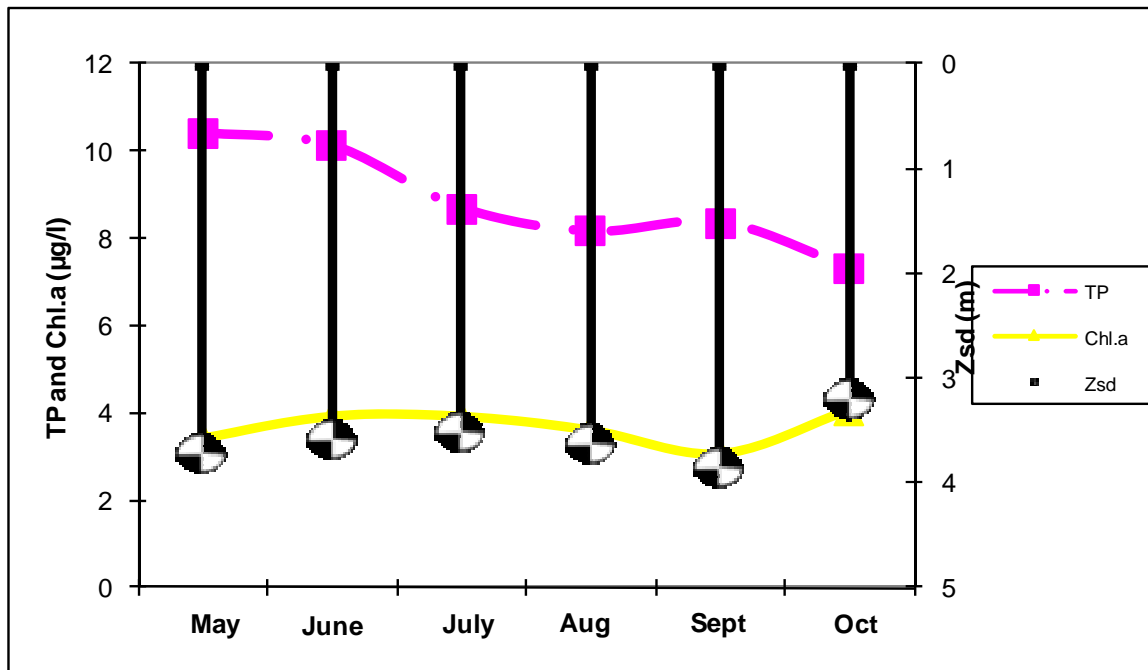
Aquatic Plant IDs-2011

None submitted for identification.

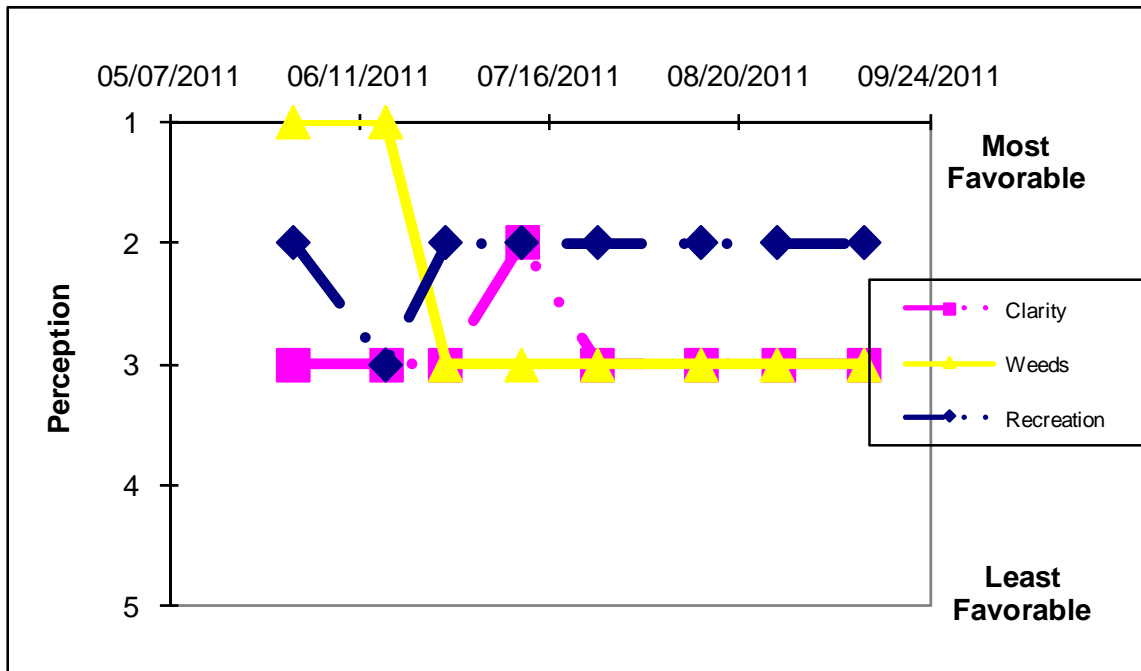
Time Series: Trophic Indicators, 2011



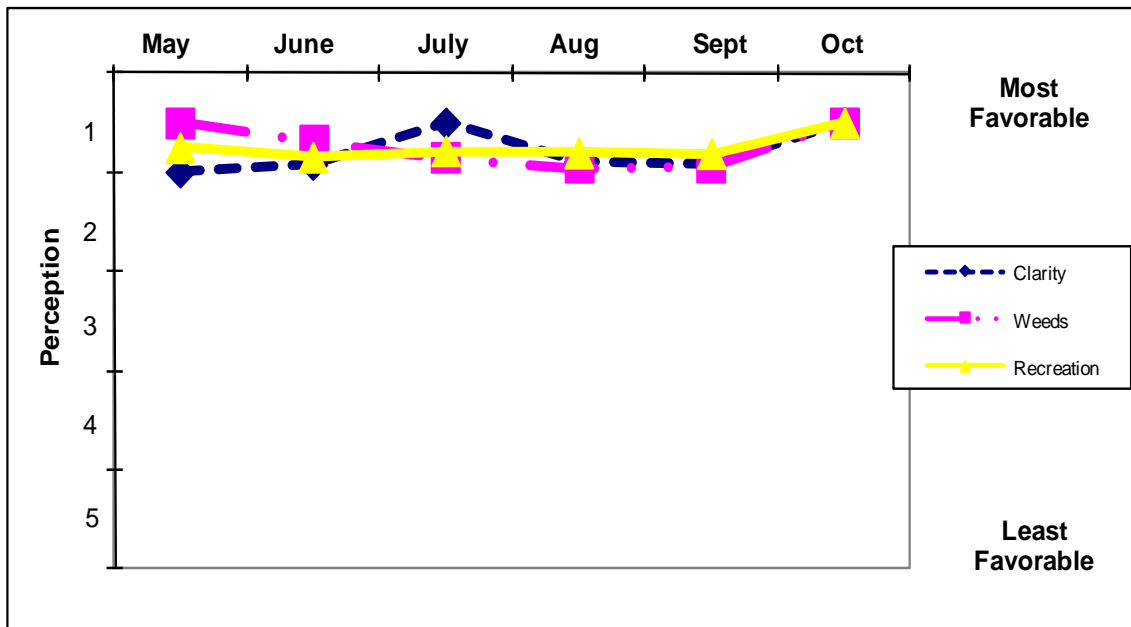
Time Series: Trophic Indicators, Typical Year (1986-2011)



Time Series: Lake Perception Indicators, 2011



Time Series: Lake Perception Indicators, Typical Year (1986-2011)



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
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		
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							

LNum	PName	Date	Zbot	Site	TAir	TH20	QA	QB	QC	QD	QE	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana	Cyclin
13	Fulton Second L	7/4/1986	10.5	epi	15	18												
13	Fulton Second L	7/11/1986	12.0	epi	19	21												
13	Fulton Second L	7/18/1986	11.0	epi	30	21												
13	Fulton Second L	7/24/1986	11.0	epi	24	20												
13	Fulton Second L	7/29/1986	10.5	epi	23	23												
13	Fulton Second L	8/8/1986	10.3	epi	23	22												
13	Fulton Second L	8/15/1986	10.5	epi	12	15												
13	Fulton Second L	8/22/1986	11.5	epi	14	17												
13	Fulton Second L	8/28/1986	10.5	epi	6	15												
13	Fulton Second L	9/5/1986	8.5	epi	14	15												
13	Fulton Second L	9/10/1986	8.5	epi	14	15												
13	Fulton Second L	9/19/1986	10.5	epi	15	15												
13	Fulton Second L	9/25/1986	12.0	epi	15	15												
13	Fulton Second L	6/25/1987	11.0	epi	25	22												
13	Fulton Second L	7/13/1987	10.0	epi	32	25												
13	Fulton Second L	7/28/1987	12.0	epi	17	22												
13	Fulton Second L	8/1/1987	8.3	epi	22	21												
13	Fulton Second L	8/11/1987	8.5	epi	15	20												
13	Fulton Second L	8/26/1987	12.0	epi	17	18												
13	Fulton Second L	9/8/1987	13.0	epi	20	19												
13	Fulton Second L	9/22/1987	7.5	epi	14	16												
13	Fulton Second L	10/5/1987	12.5	epi	9	12												
13	Fulton Second L	6/22/1988	10.0	epi	19													
13	Fulton Second L	7/6/1988	7.7	epi	23	21												
13	Fulton Second L	7/19/1988	9.1	epi	21	23												
13	Fulton Second L	8/2/1988		epi	21	24												
13	Fulton Second L	8/9/1988	10.1	epi	28	26												
13	Fulton Second L	8/15/1988	9.8	epi	23	24												
13	Fulton Second L	8/23/1988	10.0	epi	16	20												
13	Fulton Second L	8/29/1988	10.0	epi	15	18												
13	Fulton Second L	9/6/1988	10.0	epi	12	16												
13	Fulton Second L	9/12/1988	10.0	epi	10	17												
13	Fulton Second L	7/5/1989	9.7	epi	18	22												
13	Fulton Second L	7/19/1989	9.1	epi	18	21												
13	Fulton Second L	8/3/1989	9.0	epi	23	22												
13	Fulton Second L	8/14/1989	10.0	epi	17	21												
13	Fulton Second L	8/24/1989	10.0	epi	15	20												
13	Fulton Second L	9/5/1989	9.7	epi	14	19												
13	Fulton Second L	9/19/1989	10.0	epi	14	18												
13	Fulton Second L	10/3/1989	10.0	epi	9	14												
13	Fulton Second L	7/2/1990	10.0	epi	15	17												
13	Fulton Second L	7/11/1990	10.0	epi	18	22												
13	Fulton Second L	7/26/1990	10.0	epi	18	24												
13	Fulton Second L	8/7/1990	10.0	epi	17	24												
13	Fulton Second L	8/21/1990	10.0	epi	14	15												
13	Fulton Second L	9/4/1990	10.0	epi	17	20												
13	Fulton Second L	9/10/1990	10.0	epi	14	17												
13	Fulton Second L	9/17/1990	10.0	epi	9	16												
13	Fulton Second L	7/1/1996	8.5	epi	16	18	1	1	1									
13	Fulton Second L	7/15/1996	8.3	epi	27	21	1	1	1	5								
13	Fulton Second L	7/29/1996	8.3	epi	17	15	1	1	1	5								
13	Fulton Second L	8/12/1996	8.3	epi	16	22	1	1	1									
13	Fulton Second L	8/18/1996	8.3	epi	17	21	1	1	1									
13	Fulton Second L	9/2/1996	8.3	epi	22	21	1	1	1									
13	Fulton Second L	9/16/1996	8.3	epi	19	22	1	1	2	5								
13	Fulton Second L	9/30/1996	8.3	epi	9	16	1	1	1	6								
13	Fulton Second L	5/26/1997	8.3	epi	8	10	1	1	1	5								
13	Fulton Second L	6/22/1997	8.3	epi	20	20	1	1	1	5								
13	Fulton Second L	7/6/1997	8.3	epi	15	20	1	1	1									
13	Fulton Second L	7/22/1997	8.3	epi	15	19	1	1	1									
13	Fulton Second L	8/4/1997	8.3	epi	15	18	1	1	1									
13	Fulton Second L	8/17/1997	8.3	epi	19	20	1	1	1	5								
13	Fulton Second L	9/14/1997	8.3	epi	16	17	1	1	1									
13	Fulton Second L	9/28/1997	8.3	epi	13	13	1	1	1									
13	Fulton Second L	5/25/1998	8.3	epi	21	16	1	1	1	6								
13	Fulton Second L	6/8/1998	8.3	epi	12	13	1	1	1	5								
13	Fulton Second L	6/21/1998	8.3	epi	22	20	1	1	1									
13	Fulton Second L	7/6/1998	8.3	epi	20		1	1	1	6								
13	Fulton Second L	7/20/1998	8.3	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	8.3	epi	26	24	1	1	1									
13	Fulton Second L	9/1/1998	8.3	epi	17	20	1	1	1									
13	Fulton Second L	6/2/1999	8.3	epi	21	19	1	1	1	5								
13	Fulton Second L	6/9/1999	8.0	epi	18	21	1	1	1	5								
13	Fulton Second L	6/20/1999	8.0	epi	22	22	1	1	1									

LNum	PName	Date	Zbot	Site	TAir	TH20	QA	QB	QC	QD	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana	Cyclin
13	Fulton Second L	7/5/1999	8.1	epi	26	24	1	1	1	5							
13	Fulton Second L	7/19/1999	11.0	epi	22	24	2	1	2	6							
13	Fulton Second L	8/8/1999	8.0	epi	18	20	1	1	1	5							
13	Fulton Second L	8/25/1999	8.0	epi	21	21	1	1	1								
13	Fulton Second L	9/13/1999	8.0	epi	21	19	1	1	1								
13	Fulton Second L	6/7/2000	8.3	epi	12	15	1	1	1	5							
13	Fulton Second L	6/19/2000	8.3	epi	17	19	1	1	1	5							
13	Fulton Second L	7/9/2000	8.3	epi	16	20	1	1	1	5							
13	Fulton Second L	7/24/2000	8.3	epi	22	20	1	1	1								
13	Fulton Second L	8/7/2000	8.3	epi	20	20											
13	Fulton Second L	8/20/2000	8.3	epi	13	20	1	1	1	5							
13	Fulton Second L	9/10/2000	8.3	epi	17	15	1	1	1								
13	Fulton Second L	9/29/2000	8.3	epi	9	14	1	1	1								
13	Fulton Second L	6/24/2001	8.3	epi	20	18	1	1	1	5							
13	Fulton Second L	7/10/2001	8.3	epi	22	18	1	1	1	0							
13	Fulton Second L	7/23/2001	8.3	epi	24	22	1	1	1	0							
13	Fulton Second L	8/7/2001	8.3	epi	23	24	1	1	1	5							
13	Fulton Second L	8/20/2001	8.3	epi	24	22	1	1	1	5							
13	Fulton Second L	9/4/2001	8.3	epi	17	18	1	1	1	5							
13	Fulton Second L	9/17/2001	8.3	epi	16	18	1	1	1								
13	Fulton Second L	10/1/2001	8.3	epi	10	15	1	1	1	6							
13	Fulton Second L	06/11/02	8.3	epi	23	19	1	1	1								
13	Fulton Second L	06/25/02	8.3	epi	14	21	1	1	1								
13	Fulton Second L	07/09/02	8.3	epi	22	23	1	1	1								
13	Fulton Second L	07/24/02	8.3	epi	16	22	2	1	1								
13	Fulton Second L	08/06/02	8.3	epi	13	25	1	1	1								
13	Fulton Second L	08/20/02	8.3	epi	16	23	1	1	1								
13	Fulton Second L	09/03/02	8.3	epi	18	21	1	1	1								
13	Fulton Second L	09/24/02	8.3	epi	10	19	1	1	1								
13	Fulton Second L	6/10/2003	8.3	epi	18	19	2	1	1								
13	Fulton Second L	6/24/2003	8.3	epi	22	22	1	1	1								
13	Fulton Second L	7/8/2003	8.3	epi	24	23	1	1	1								
13	Fulton Second L	7/22/2003	8.3	epi	18	21	1	1	1								
13	Fulton Second L	8/6/2003	8.3	epi	21	23	1	1	1								
13	Fulton Second L	8/19/2003	8.3	epi	20	23	1	1	1								
13	Fulton Second L	9/3/2003	8.3	epi	18	20	1	1	1								
13	Fulton Second L	9/17/2003	8.3	epi	15	21	1	1	1								
13	Fulton Second L	6/23/2004	8.0	epi	20	20	1	1	1	0							
13	Fulton Second L	7/6/2004	8.3	epi	20	21	1	1	1	0							
13	Fulton Second L	7/19/2004	8.3	epi	19	21	1	1	1	0							
13	Fulton Second L	8/2/2004	8.3	epi	19	24	1	1	1	0							
13	Fulton Second L	8/17/2004	8.3	epi	20	21	1	1	1	0							
13	Fulton Second L	8/31/2004	8.3	epi	23	21	1	1	1	0							
13	Fulton Second L	9/14/2004	8.3	epi	24	20	1	1	1	0							
13	Fulton Second L	9/26/2004	8.3	epi	20	19	1	1	1	0							
13	Fulton Second L	6/7/2005	8.3	epi	22	20	1	1	1	0							
13	Fulton Second L	6/27/2005	8.3	epi	31	27	1	1	1	0							
13	Fulton Second L	7/18/2005	8.3	epi	26	26	1	1	1	0							
13	Fulton Second L	8/2/2005	8.3	epi	25	25	1	1	1	0							
13	Fulton Second L	8/16/2005	8.3	epi	24	24	1	1	1	0							
13	Fulton Second L	8/30/2005	8.3	epi	24	22	1	1	1	0							
13	Fulton Second L	9/13/2005	8.3	epi	24	22	1	1	1	0							
13	Fulton Second L	10/3/2005	8.3	epi	22	17	1	1	1	0							
13	Fulton Second L	6/12/2006	8.3	epi	20	16	1	1	1	0							
13	Fulton Second L	7/4/2006	8.3	epi	23	21	1	1	1	0							
13	Fulton Second L	7/19/2006	8.3	epi	31	26	1	1	1	0							
13	Fulton Second L	7/31/2006	8.3	epi	27	24	1	1	1	0							
13	Fulton Second L	8/22/2006	8.3	epi	19	21	1	1	1	0							
13	Fulton Second L	9/12/2006	8.3	epi	21	18	1	1	1	0							
13	Fulton Second L	9/17/2006	8.3	epi	22	18	1	1	1	0							
13	Fulton Second L	10/3/2006	8.3	epi	18	13	1	1	1	0							
13	Fulton Second L	6/25/2007	8.3	epi	29	21	1	1	1	0							
13	Fulton Second L	7/3/2007	8.3	epi	12	20	1	1	1	0							
13	Fulton Second L	7/23/2007	8.3	epi	23	21	2	1	2	0							
13	Fulton Second L	8/5/2007	8.3	epi	17	24	2	2	2	0							
13	Fulton Second L	8/20/2007	8.3	epi	18	21	2	1	1	0							
13	Fulton Second L	9/3/2007	8.3	epi	17	21	2	2	2	0							
13	Fulton Second L	9/17/2007	8.9	epi	8	18	2	2	2	0							
13	Fulton Second L	9/30/2007	8.8	epi	11	18	2	3	2	0							
13	Fulton Second L	6/9/2008	8.3	epi	22	21	2	1	2	8							
13	Fulton Second L	6/24/2008	8.3	epi	19	19	2	2	2	8							
13	Fulton Second L	7/7/2008	8.3	epi	22	22	2	2	2	0							
13	Fulton Second L	7/21/2008	8.3	epi	20	23	2	2	2	0							
13	Fulton Second L	8/4/2008	8.3	epi	22	22	2	2	2	0							
13	Fulton Second L	8/17/2008	8.3	epi	21	20	2	2	2	8							
13	Fulton Second L	9/1/2008	8.3	epi	18	21	3	2	1	0							

LNum	PName	Date	Zbot	Site	TAir	TH2O	QA	QB	QC	QD	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana	Cyclin
13	Fulton Second L	9/20/2008	8.3	epi	20	18	2	2	2	0							
13	Fulton Second L	06/13/2009	8.3	epi	24	19	2	2	2	6							
13	Fulton Second L	06/29/2009	8.3	epi	17	21	2	2	2	5							
13	Fulton Second L	07/27/2009	8.3	epi	19	21	2	2	2	5							
13	Fulton Second L	08/03/2009	8.3	epi	21	22	2	2	2	0							
13	Fulton Second L	08/16/2009	8.3	epi	27	24	2	3	2	0					0.06		
13	Fulton Second L	08/31/2009	8.3	epi	11	19	2	3	2	8							
13	Fulton Second L	09/14/2009	8.3	epi	10	19	2	2	2	0			17.79				
13	Fulton Second L	09/26/2009	8.3	epi	12	17	3	3	2	5			17.06		0.01		
13	Fulton Second L	05/17/2010	8.3	epi	24	13	1	1	1	0	0	0					
13	Fulton Second L	06/07/2010	8.3	epi	12	19	2	1	2	8	0	0					
13	Fulton Second L	06/20/2010	8.3	epi	22	20	2	1	2	0	0	0					
13	Fulton Second L	07/05/2010	8.3	epi	24	21	2	3	2	0	0	0					
13	Fulton Second L	07/19/2010	8.3	epi	23	24	2	3	2	0	5	5					
13	Fulton Second L	08/02/2010	8.3	epi	21	23	2	2	2	0	0	0					
13	Fulton Second L	08/17/2010	8.3	epi	19	22	2	3	2	0	0	0	13.00		0.02		
13	Fulton Second L	09/07/2010	8.3	epi	18	19	2	3	2	0	0	0	55.00		0.07		
13	Fulton Second L	05/30/2011	8.3	epi	19	19	3	1	2	0	0	0					
13	Fulton Second L	06/16/2011	8.3	epi	18		3	1	3	16	0	0	6.00	3.00			
13	Fulton Second L	06/27/2011	8.3	epi	19	20	3	3	2	0	0	0	7.90	4.10			
13	Fulton Second L	07/11/2011	8.3	epi	23	24	2	3	2	0	0	0	4.50	3.00			
13	Fulton Second L	07/25/2011	8.3	epi	17	25	3	3	2	5	0	0	8.60	4.19			
13	Fulton Second L	08/13/2011	8.3	epi	20	22	3	3	2	0	0	0	16.00	3.40	0.38	<0.4	<0.1
13	Fulton Second L	08/27/2011	8.3	epi	19	21	3	3	2	0	0	0	14.60	4.10			
13	Fulton Second L	09/12/2011	8.3	epi	17	20	3	3	2	0	0	0	4.40	3.60			
13	Fulton Second L	6/21/1998	8.3	hypo		13											
13	Fulton Second L	7/2/2007		hypo		19											
13	Fulton Second L	7/23/2007		hypo		23											
13	Fulton Second L	8/5/2007		hypo		20											
13	Fulton Second L	8/20/2007		hypo		20											
13	Fulton Second L	9/3/2007		hypo		27											
13	Fulton Second L	9/17/2007	8.9	hypo		18											
13	Fulton Second L	6/9/2008	8.3	hypo		18											
13	Fulton Second L	7/7/2008	8.3	hypo		21											
13	Fulton Second L	7/21/2008	8.3	hypo		13											
13	Fulton Second L	8/4/2008	8.3	hypo		15											
13	Fulton Second L	8/17/2008	8.3	hypo		14											
13	Fulton Second L	9/1/2008	8.3	hypo		17											
13	Fulton Second L	9/20/2008	8.3	hypo		19											
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	8.3	hypo		10											
13	Fulton Second L	06/27/2011	8.3	hypo		11											
13	Fulton Second L	07/25/2011	8.3	hypo		12											
13	Fulton Second L	08/27/2011	8.3	hypo		13											

Legend Information

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

Appendix B- Monthly Evaluation of Fulton Second Lake Data, 2006-2011

June Data

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

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

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

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

July Data

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

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

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

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

August Data

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

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

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

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

September Data

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

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

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

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

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 assessment 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 grows 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.