CSLAP 2015 Lake Water Quality Summary:
Silver Lake

General Lake Information

Location	Town of Perry
County	Wyoming
Basin	Genesee River
Size	328.9 hectares (812.4 acres)
Lake Origins	Natural
Watershed Area	5,230 hectares (12,918 acres)
Retention Time	1.2 years
Mean Depth	7.2 meters
Sounding Depth	11.6 meters
Public Access?	cartop launch
Major Tributaries	Silver Lake Inlet
Lake Tributary To…	Silver Lake outlet to Genesee River to Lake Ontario
WQ Classification	A (potable water)
Lake Outlet Latitude	42.716
Lake Outlet Longitude	-78.020
Sampling Years	1986-1991, 1995-1997, 2006-2013, 2015
2015 Samplers	Frank V. Bright
Main Contact	Frank V. Bright

Lake Map

Background

Silver Lake is an 810 acre, class A lake found in the Town of Castile in Wyoming County, just west of the Finger Lakes Region of New York State. It has been sampled as part of CSLAP periodically since 1986.

It is one of two CSLAP lakes among the more than 225 lakes and ponds found in Wyoming County, and one of three CSLAP lakes among the nearly 757 lakes and ponds in the Genesee River drainage basin.

Lake Uses

Silver Lake is a Class A lake; this means that the best intended use for the lake is for potable water intake—drinking—as well as contact recreation—swimming and bathing, non-contact recreation—boating and fishing, aquatic life, and aesthetics. The lake is used by lake residents and visitors for power boating and swimming, through residential shoreline access to the lake and a state launch on the east side of the lake.

Silver Lake has been regularly stocked by New York state. About 4.2 million ½ inch walleye are stocked annually. Fish species found in the lake include black crappie, bluegill, brown bullhead, largemouth bass, northern pike, pumpkinseed sunfish, rock bass, walleye and yellow perch.

General statewide fishing regulations are applicable in Silver Lake. In addition, the open season for trout is April 1st to October 15th, with no minimum size of 12 inches, and a daily take limit of five, with no more than two trout to be greater than 12 inches.

There are no lake-specific fish consumption advisories on Silver Lake.

Historical Water Quality Data

CSLAP sampling was conducted on Silver Lake from 1986 to 1991, 1995 to 1997, 2006 to 2013, and in 2015. The CSLAP reports for each of the past several years can be found on the NYSFOLA website at http://nysfola.mylaketown.com. The most recent CSLAP report and scorecard for Silver Lake can also be found on the NYSDEC web page at http://www.dec.ny.gov/lands/77828.html.

The lake was sampled as part of the state Lake Biomonitoring pilot project (as part of the state Lake Classification and Inventory study, or LCI) conducted by the NYSDEC in 2008. Most of these readings are comparable between the programs—conductivity readings were much higher in the LCI (but similar to those at other times of the year). The depth profiles show oxygen depletion below 7-8 meters, as expected given the highly elevated deepwater phosphorus readings. Chloride readings are high enough to indicate some runoff from road salting operations, but are well below the state water quality standards. The biological samples collected as part of this program have not yet been analyzed, and these results will be summarized in a separate report.

Silver Lake was sampled by New York State as part of the Biological Survey of the Genesee River basin conducted by the Conservation Department (the predecessor to the NYSDEC) on August 26, 1926. The majority of the water quality indicators evaluated as part of CSLAP were not included in this survey. pH readings in 1926 were slightly higher than the typical Silver Lake readings, but were within the range measured through CSLAP. Water clarity readings in 1926

were about 4.9 meters, higher than in all but a single CSLAP sampling session in 1989 (and much higher than in recent years in late summer). The lake was thermally stratified, with the transition from warm water to cold water occurring at a depth of about 20-25 feet. Deepwater oxygen levels were depressed near the lake bottom (readings about 1.7 ppm, versus about 8.4 ppm at the lake surface). The field notes from this survey indicated the following:

"Silver Lake is a typical, shallow, brown water lake characterized by a fair amount of muddy shoreline, an abundance of vegetation and a rich bottom of mud.... The lake apparently falls in the class of typical, brown water, non-bass (small mouthed) lakes."

"Silver Lake, in Wyoming County, lies in a shallow valley with very gradual slopes. The surrounding hills rise only a few hundred feet above the lake, which is 1,356 feet above sea level. The lake is about three miles long and about three-quarters of a mile wide in its widest place. Its shores are mostly stony or gravelly, except that at the north and south ends, where swamps occur, the shore and bottom are muddy. The lake is fed by springs. A small inlet and the outlet of Silver Lake both occur at the north end.

The lake is shallow and the flat bottom is mostly about 25-35 feet deep. The deepest bottom found in the lake was 37 feet. The transparency of the water in Silver Lake is low as compared to Conesus Lake and may be termed "brown water". A white disc 10cm. in diameter lowered into the water at noon, August 26, 1926, disappeared from view 16 feet from the surface. On account of its shallowness and the low transparency of the water, Silver Lake shows no stratification in its plankton life. Rooted plants occur only in the shallow water near the shore and at the ends of the lake; none were observed below the 15-foot depth".

The lake was surveyed in 1976 and 1979 as part of a DEC statewide water quality study. These data indicate conditions similar to those measured in the mid-1980s through CSLAP. Water quality monitoring has been conducted as part of state fisheries stocking activities; the results indicate slightly higher water clarity in the fisheries dataset, but the other data appeared to be comparable.

The lake has also been studied in the past by the Community College of the Finger Lakes (Dr. Bruce Gilman), SUNY Geneseo (Dr. Herman Forest) and others.

Neither the Silver Lake inlet nor outlet has been monitored through the NYSDEC Rotating Intensive Basins (RIBS) program. The outlet was sampled downstream of Perry (about 6 km downstream from the lake) through the state stream macroinvertebrate monitoring program in 1995 and 1999. The summary of this sampling was as follows:

"Based on macroinvertebrate sampling downstream of Perry in 1999, water quality was assessed as moderately impacted. The sample was dominated by filtering caddisfly larvae. The impact was likely a combination of impoundment effect and enrichment from the Perry sewage treatment facility. The stream was previously sampled in 1995, and was also determined to be slightly impacted".

Lake Association and Management History

Silver Lake is served by the Silver Lake Association. The lake association is involved in a number of lake improvement and social activities.

The lake association maintains a web site at http://www.silverlakeassociation.org/

Summary of 2015 CSLAP Sampling Results

Evaluation of 2015 Annual and Monthly Results Relative to 2006-2013

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 – Silver Lake" section in Appendix C.

Evaluation of Eutrophication Indicators

Water quality conditions in Silver Lake were probably close to normal in 2015, recognizing that these conditions vary from year to year. Water clarity was slightly higher than usual, consistent with lower than usual (open water) algae (chlorophyll *a*) levels. However, nutrient (phosphorus) readings were higher than usual, and phosphorus levels have increased over the last 15-20 years, although these readings decreased from the mid-1980s to the mid-1990s. Neither water clarity nor chlorophyll *a* has exhibited any clear long-term trends.

Lake productivity usually increases from mid-summer into early fall, as manifested in decreasing water clarity and increasing nutrient and algae levels, and then decreases in the fall. In 2015, the drop in lake productivity occurred in mid-summer.

The lake can be characterized as *mesoeutrophic*, or moderately to highly productive, based on water clarity (typical of *mesotrophic* lakes), total phosphorus and chlorophyll *a* readings (both typical of *eutrophic* lakes). The trophic state indices (TSI) evaluation suggests that water clarity and phosphorus readings are usually higher than expected given the chlorophyll *a* readings in the lake. This discrepancy may be due to the effect of zebra mussels. Overall trophic conditions are summarized on the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Potable Water Indicators

Algae levels are frequently high enough to render the lake susceptible to taste and odor compounds or elevated DBP (disinfection by product) compounds that could affect the potability of the water, although it is not known if this results in any actual impacts to drinking water. Deepwater phosphorus, ammonia, iron, manganese, and arsenic readings are higher than those measured at the lake surface, and these manganese levels exceed the state water quality standards, so deepwater intakes may not support potable water use (although these deepwater indicators have not been sampled in recent years). Potable water conditions, at least as measurable through CSLAP, are summarized in the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Limnological Indicators

Each of the nitrogen indicators (NOx, ammonia and total nitrogen) were higher than usual in 2015, and NOx and total nitrogen have generally increased since the late 1990s. Color readings were higher after the change in laboratories in 2002, but have varied since then. Each of the other limnological indicators was close to normal in 2015, although conductivity has decreased over the last two decades.

Chloride levels in the 2015 samples, conducted for the first time through CSLAP and cited in Appendix A, ranged from 33 to 88 mg/l. These values are within the range of "moderate" to "major" road salt runoff levels cited by the New Hampshire DES. These readings are well below the state potable water quality standard of 250 mg/l but above the range of values found in a number of NYS lakes.

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

Evaluation of Biological Condition

Limited macrophyte surveys have been conducted through CSLAP at Silver Lake. At least 5 aquatic plant species have been found, including at least one exotic plant species (*Myriophyllum spicatum,* Eurasian watermilfoil). The biological survey of the lake conducted by the Conservation Department in 1926 found at least 27 aquatic plant species, including at least one other exotic plant species (*Potamogeton crispus,* curly-leafed pondweed) and at least one protected plant species (*Megalodonta beckii,* water marigold). The modified floristic quality index (FQI) for the lake based on CSLAP data indicates that the quality of the aquatic plant community is "poor," while the FQI based on the 1926 data indicates that the quality of the aquatic plant community is "fair."

The 2008 macroinvertebrate survey of the lake found few macroinvertebrates, probably due to an incomplete collection of organisms rather than the lack of macroinvertebrates in the lake. The limited data indicate taxa mostly sensitive to water quality changes (typical of high water quality lakes) but no organisms associated with good water quality. Additional work will be required to fully evaluate these apparently contradictory results.

The composition of the fish community is comprised of at least five warmwater fish species, and at least four coolwater fish species. This suggests that the lake can most likely be characterized as a coolwater fishery.

Zooplankton have not been evaluated through CSLAP in Silver Lake. The fluoroprobe screening samples analyzed by SUNY ESF in previous years found relatively low algae levels and a low percentage of blue green algae, with higher readings in the fall in response to higher phosphorus readings. The higher algae levels and blue green algae levels in the fall are dominated by *Microcystis,* a blue green algae species capable of producing toxins. In 2015, both open water and shoreline blue green algae blooms were reported, with elevated toxin levels in some late July samples.

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

Evaluation of Lake Perception

Water quality and recreational conditions were close to normal in 2015, perhaps consistent with lower algae levels and lower water clarity. Plant coverage was lower than usual in 2015; it is not known if this is due to active management or if it is associated with reduced growth of native or exotic plants. Recreational assessments are affected by both weeds and algae, and have improved slightly since the mid-1990s. Water quality and recreational assessments degrade over the typical summer, consistent with the seasonally increasing lake productivity and weed coverage

(although plant coverage typically decreases in the fall). Less favorable assessments were apparent in the early summer of 2015, but these improved in late summer after the algae blooms faded. Overall lake perception is summarized on the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Local Climate Change

Water temperature readings in the summer index period were close to normal in 2015, although surface and bottom water temperature readings may have increased slightly over time. It is not known if this is an indication of local climate change or if these changes cannot be well evaluated through CSLAP.

Evaluation of Algal Toxins

Algal toxin levels can vary significantly within blooms and from shoreline to lake, and the absence of toxins in a sample does not indicate safe swimming conditions. Fluoroprobe readings frequently exceed the threshold for harmful algal blooms (HABs) in the open water and especially along the shoreline. An analysis of algae samples indicated microcystin levels below the levels needed to support safe swimming in the open water, but highly elevated readings are found in some shoreline blooms- this was also apparent in mid-summer in 2015. Swimmers should avoid exposure to these shoreline blooms or any discolored water.

Lake Condition Summary

Category	Indicator	Min	Annual Avg	Max	2015 Avg	Classification	2015 Change?	Long-term Change?
Eutrophication Indicators	Water Clarity	0.38	2.35	6.00	2.61	Mesotrophic	Within Normal Range	No Change
	Chlorophyll *a*	0.10	20.09	160.40	14.53	Eutrophic	Within Normal Range	No Change
	Total Phosphorus	0.014	0.042	0.184	0.072	Eutrophic	Higher than Normal	No Change
Potable Water Indicators	Hypolimnetic Ammonia	0.01	0.57	2.40	0.04	Highly Elevated Deepwater NH4	Lower Than Normal	Not known
	Hypolimnetic Arsenic	0.50	1.93	3.20		Elevated Deepwater As		Not known
	Hypolimnetic Iron	0.01	0.38	1.24		Elevated Deepwater Fe		Not known
	Hypolimnetic Manganese	0.38	1.83	2.99		Highly Elevated Deepwater Mn		Not known
Limnological Indicators	Hypolimnetic Phosphorus	0.020	0.228	0.928	0.065	Elevated Deepwater TP	Lower Than Normal	Not known
	Nitrate + Nitrite	0.00	0.11	0.86	0.32	Intermediate NOx	Higher than Normal	No Change
	Ammonia	0.00	0.04	0.12	0.07	Low Ammonia	Higher than Normal	No Change
	Total Nitrogen	0.45	0.80	1.88	1.07	Intermediate Total Nitrogen	Higher than Normal	No Change
	pH	6.48	8.00	8.75	8.16	Alkaline	Within Normal Range	No Change
	Specific Conductance	77	283	364	279	Hardwater	Within Normal Range	No Change
	True Color	3	18	82	10	Intermediate Color	Within Normal Range	Increasing Slightly
	Calcium	16.2	35.6	50.5	28.9	Highly Susceptible to Zebra Mussels	Within Normal Range	No Change

Category	Indicator	Min	Annual Avg	Max	2015 Avg	Classification	2015 Change?	Long-term Change?
Lake Perception	WQ Assessment	1	2.5	5	2.3	Not Quite Crystal Clear	Within Normal Range	No Change
	Aquatic Plant Coverage	1	2.6	4	2.0	Surface Plant Growth	Less Coverage Than Normal	Slightly Improving
	Recreational Assessment	1	2.5	4	2.1	Excellent	Within Normal Range	Slightly Improving
Biological Condition	Phytoplankton					Not measured through CSLAP	Not known	Not known
	Macrophytes					Poor quality of the aquatic plant community	Not known	Not known
	Zooplankton					Not measured through CSLAP	Not known	Not known
	Macroinvertebrates					Contradictory results	Not known	Not known
	Fish					Coolwater fishery	Not known	Not known
	Invasive Species					Zebra mussels, rudd, Eurasian watermilfoil, curly-leafed pondweed	Not known	Not known
Local Climate Change	Air Temperature	10	21.9	37	25.4		Higher Than Normal	No Change
	Water Temperature	10	21.0	27	21.3		Within Normal Range	No Change
Harmful Algal Blooms	Open Water Phycocyanin	3	117	700	93	Most readings indicate high risk of BGA	Not known	Not known
	Open Water FP Chl.a	1	14	99	26	Few readings indicate high algae levels	Not known	Not known
	Open Water FP BG Chl.a	0	7	75	17	Few readings indicate high BGA levels	Not known	Not known
	Open Water Microcystis	<DL	0.5	7.2	<DL	Mostly undetectable open water MC-LR	Not known	Not known
	Open Water Anatoxin a	<DL	<DL	<DL	<DL	Open water Anatoxin-a consistently not detectable	Not known	Not known
	Shoreline Phycocyanin					No shoreline blooms sampled for PC	Not known	Not known
	Shoreline FP Chl.a	7.3	3944	10569	3944	Most readings indicate high algae levels	Not known	Not known
	Shoreline FP BG Chl.a	4.1	3316	9375	3316	Most readings indicate high BGA levels	Not known	Not known
	Shoreline Microcystis	<DL	151	815	<DL	Very high shoreline bloom MC-LR	Not known	Not known
	Shoreline Anatoxin a	<DL	<DL	<DL	<DL	Shoreline bloom Anatoxin-a consistently not detectable	Not known	Not known

Evaluation of Lake Condition Impacts to Lake Uses

Silver Lake is presently among the lakes listed on the Genesee River Basin Priority Waterbody List (2002). Water supply is identified as *impaired*, and public bathing, recreation, and aesthetics are listed as *stressed*. The PWL listing for Silver Lake is listed in Appendix B.

Potable Water (Drinking Water)

The CSLAP dataset at Silver 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 moderate to high algae levels indicate that potable water use from the surface waters of the lake may be *id*, and elevated deepwater manganese readings may *stress* potable water use of the lake through deep intakes.

Public Bathing
The CSLAP dataset at Silver Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggests that public bathing, if conducted at a public swimming beach, may be *stressed* by excessive algae, shoreline algae blooms, and poor water clarity. Additional information about bacterial levels is needed to evaluate the safety of the water for swimming.

Recreation (Swimming and Non-Contact Uses)
The CSLAP dataset on Silver Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that recreation may be *impaired* by excessive algae and shoreline blooms.

Aquatic Life
The CSLAP dataset on Silver Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that aquatic life may be *stressed* by hypolimnetic hypoxia (depressed deepwater oxygen readings) and *threatened* by road salt runoff. Additional data are needed to evaluate the food and habitat conditions for aquatic organisms in the lake.

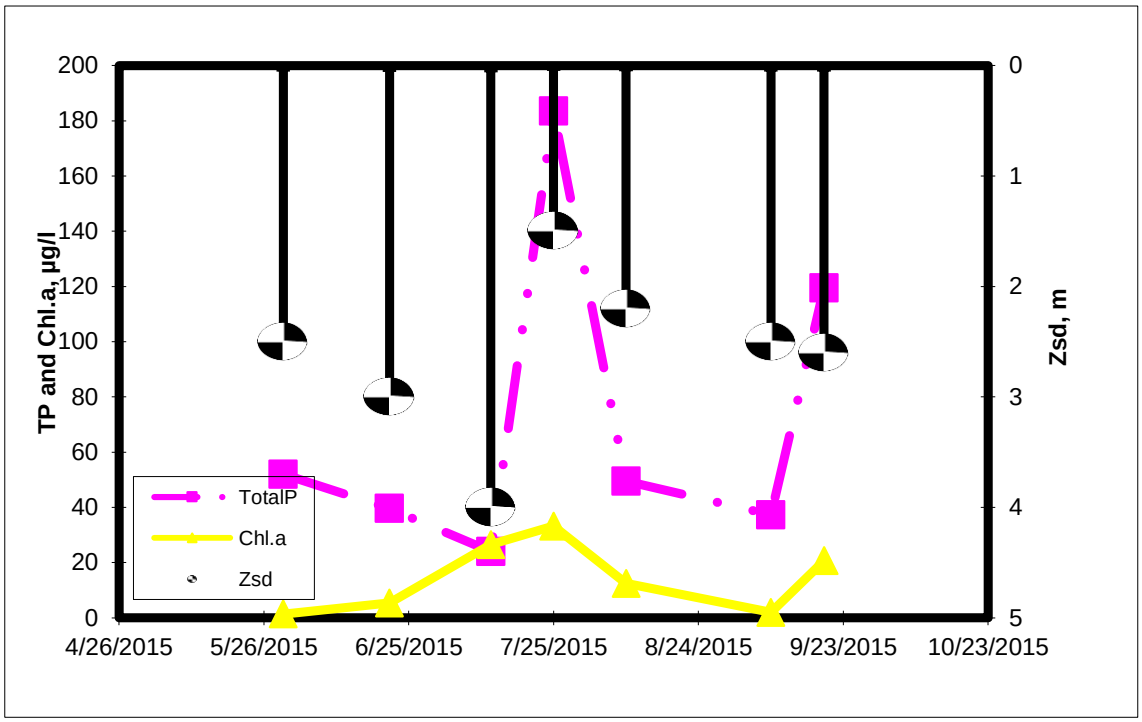
Aesthetics and Habitat
The CSLAP dataset on Silver Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that aesthetics may be *poor* due to poor perception from excessive algae, particularly the presence of shoreline blue green algae blooms. Habitat may be *fair* due to invasive plants (Eurasian watermilfoil).

Fish Consumption
There are no fish consumption advisories posted for Silver Lake.

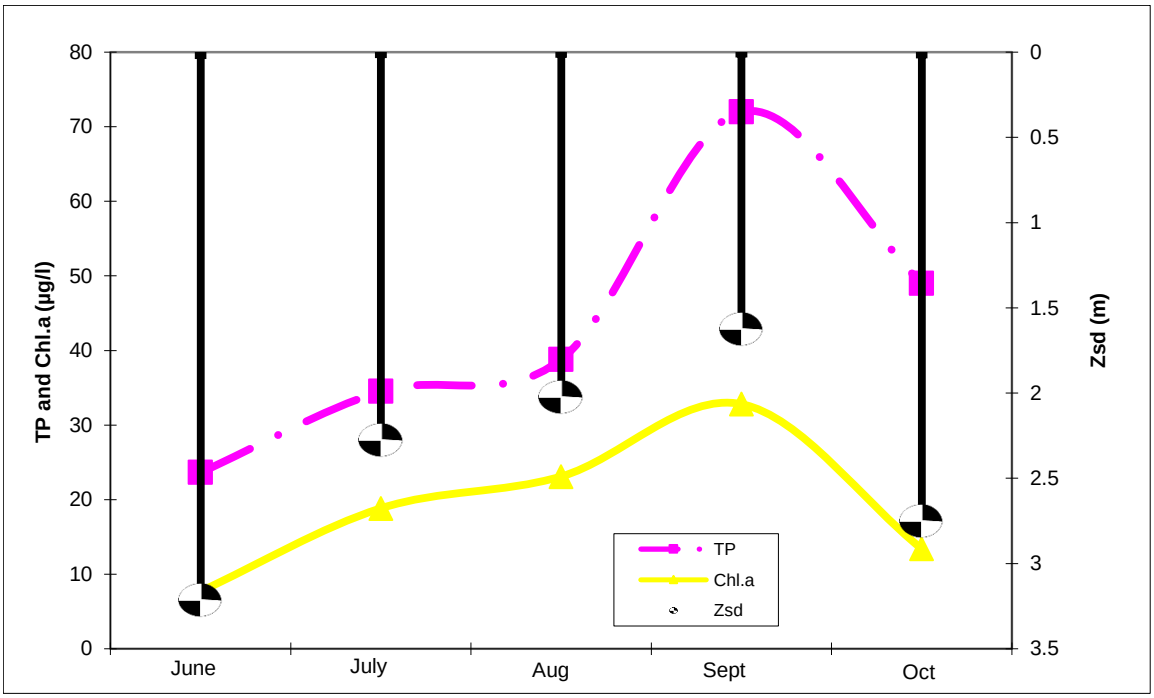
Additional Comments and Recommendations
Additional aquatic plant survey data may help to determine if the aquatic plant community is dominated by exotic plants, or if the occasional management of the nuisance weed problems in the lake has resulted in a shift to dominance by native plant species. Lake residents should report and avoid exposure to any shoreline algae blooms.

Aquatic Plant IDs-2015
None submitted for identification in 2015.

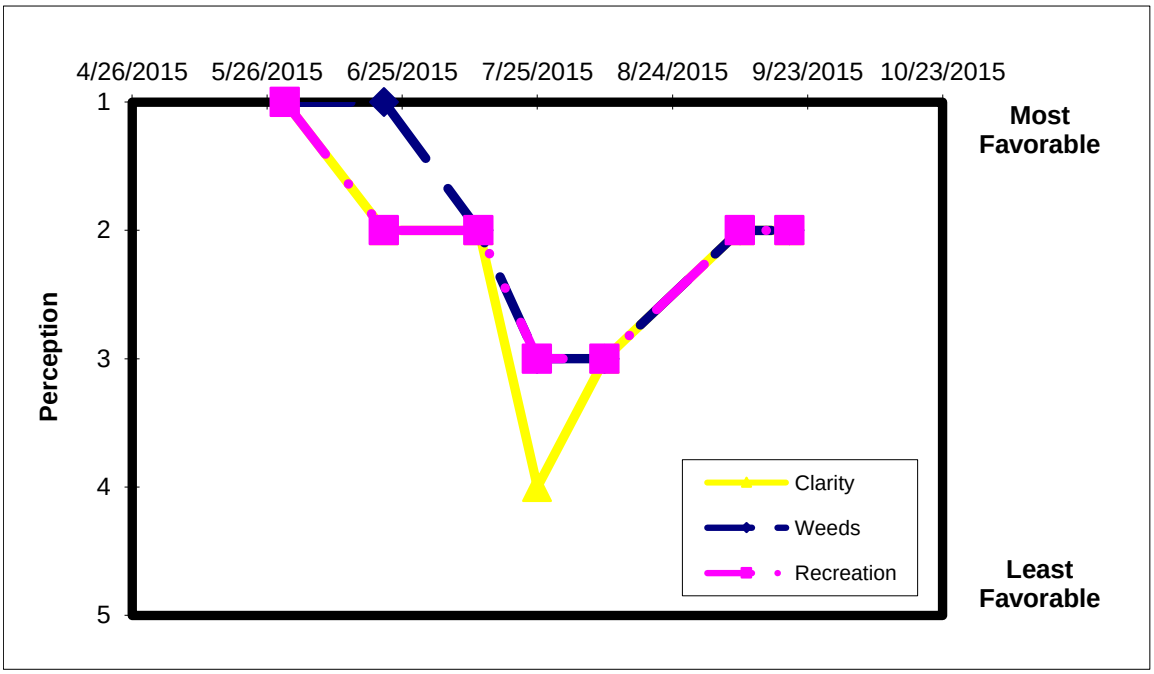
Time Series: Trophic Indicators, 2015



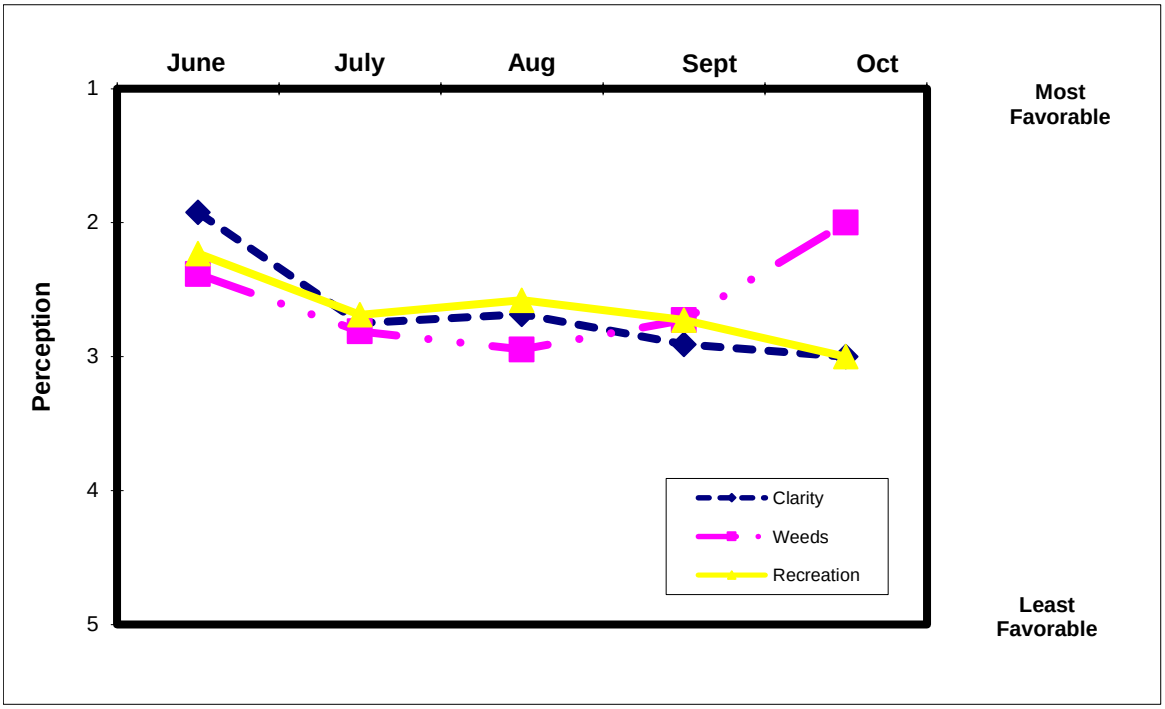
Time Series: Trophic Indicators, Typical Year (1986-2015)



Time Series: Lake Perception Indicators, 2015



Time Series: Lake Perception Indicators, Typical Year (1986-2015)



Appendix A- CSLAP Water Quality Sampling Results for Silver Lake

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
25	Silver L (W)	6/13/1986	10.0		1.5	0.023	0.47				5	7.94	304		11.80	
25	Silver L (W)	6/19/1986		2.50	1.5	0.018	0.43				5	7.94	311		4.74	
25	Silver L (W)	6/25/1986		2.13	1.5	0.025	0.36				5	8.14	311		3.92	
25	Silver L (W)	7/3/1986	10.0	2.50	1.5	0.027	0.34				10	8.13	310		3.18	
25	Silver L (W)	7/9/1986	10.0	2.50	1.5	0.027	0.24				8	8.39	307		4.34	
25	Silver L (W)	7/16/1986	10.0	2.50	1.5	0.035	0.21				8	8.30	307		5.25	
25	Silver L (W)	7/23/1986	10.5	2.00	1.5	0.037	0.03					8.67	300		18.40	
25	Silver L (W)	7/31/1986	10.5	1.25	1.5	0.043	0.03				8	8.50	275		14.80	
25	Silver L (W)	8/4/1986	10.0	1.50	1.5	0.050	0.03				6	8.52	283		19.20	
25	Silver L (W)	8/11/1986	11.0	1.00	1.5	0.067	0.03				25	8.55	273		22.20	
25	Silver L (W)	8/20/1986	11.0	1.00	1.5	0.077	0.03				16	8.11	287		30.30	
25	Silver L (W)	8/29/1986	11.0	1.00	1.5	0.100	0.03				8	7.76	300		23.70	
25	Silver L (W)	9/3/1986	11.0	1.00	1.5	0.110	0.03				15	8.23	294		16.30	
25	Silver L (W)	9/9/1986	10.0	1.50	1.5	0.100	0.03				10	8.25	295		12.30	
25	Silver L (W)	9/17/1986	10.0	1.38	1.5	0.094	0.03				10	7.67	299		15.30	
25	Silver L (W)	6/10/1987	10.0	2.50	1.5	0.022	0.11				15	8.23	257		12.50	
25	Silver L (W)	6/15/1987	9.7	3.50	1.5	0.024	0.11				8	8.48	308		6.20	
25	Silver L (W)	6/23/1987	9.8	2.00	1.5	0.029	0.01				10	8.46	300		16.30	
25	Silver L (W)	6/29/1987	10.0	1.50	1.5	0.036	0.05				10	8.12	303		22.90	
25	Silver L (W)	7/7/1987	10.0	1.33	1.5	0.039	0.01				14	7.98	304		54.80	
25	Silver L (W)	7/15/1987	10.0	1.50	1.5	0.035	0.01				11	7.96	291		35.50	
25	Silver L (W)	7/22/1987	10.0	1.38	1.5	0.040	0.01				10	8.05	287		45.10	
25	Silver L (W)	7/29/1987	9.5	0.75	1.5	0.045	0.02				13	7.69	266		72.50	
25	Silver L (W)	8/1/1987	10.0	0.88	1.5	0.056	0.01				11	7.44	278		151.00	
25	Silver L (W)	8/10/1987	10.0	1.00	1.5	0.055	0.01				14	7.58	279		123.00	
25	Silver L (W)	8/17/1987	9.5	2.63	1.5	0.036	0.01				15	7.90	284		17.00	
25	Silver L (W)	8/25/1987	10.0	1.25	1.5	0.071	0.01				9	7.74	275			
25	Silver L (W)	9/4/1987	10.0	1.13	1.5	0.120	0.01				3	7.76	281		66.00	
25	Silver L (W)	9/10/1987	9.5	0.38	1.5	0.140	0.01				12	7.64	294		125.00	
25	Silver L (W)	6/21/1988	9.5	2.25	1.5	0.021	0.01				6	8.36	302		19.20	
25	Silver L (W)	6/28/1988	10.0	2.00	1.5	0.024	0.01				10	8.46	323		17.20	
25	Silver L (W)	7/5/1988	9.8	1.50	1.5	0.027	0.01				11	8.53	347		10.10	
25	Silver L (W)	7/13/1988	9.5	2.00	1.5	0.039	0.01				10	8.45	312		16.80	
25	Silver L (W)	7/19/1988	10.0	1.75	1.5	0.033	0.01				5	8.28	310		40.00	
25	Silver L (W)	7/29/1988	10.0	1.50	1.5	0.030	0.01				8	7.15	320		16.50	
25	Silver L (W)	8/5/1988	10.0	1.75	1.5	0.029	0.01				11	7.66	299		17.50	
25	Silver L (W)	8/12/1988	9.8	1.00	1.5	0.030	0.01				6	8.50	279		35.50	
25	Silver L (W)	8/16/1988	7.5	1.00	1.5	0.021	0.01				6	8.62	262		45.90	
25	Silver L (W)	8/23/1988	10.0	0.75	1.5	0.052	0.01				6	8.56	238		50.30	
25	Silver L (W)	8/30/1988	9.0	1.25	1.5	0.053	0.01				3	7.62	310		20.00	
25	Silver L (W)	9/8/1988	10.0	1.50	1.5	0.067	0.01				6	8.08	302		19.20	
25	Silver L (W)	9/16/1988	10.0	1.00	1.5	0.090	0.01				8	7.93	309		51.80	
25	Silver L (W)	9/21/1988	9.0	1.25	1.5	0.064	0.01					7.77	305		25.20	
25	Silver L (W)	9/28/1988	10.0	1.38	1.5	0.085	0.02				6	8.31	278		33.30	
25	Silver L (W)	6/23/1989	10.1	3.50	1.5	0.022	0.49				10	7.74	339		6.03	
25	Silver L (W)	7/5/1989	10.0	4.63	1.5	0.018	0.39				15	8.30	332		2.85	
25	Silver L (W)	7/18/1989	10.0	2.50	1.5	0.015	0.27				9	8.55	329		9.02	
25	Silver L (W)	7/28/1989	10.0	2.50	1.5	0.053	0.16					8.49	320		6.90	
25	Silver L (W)	8/4/1989	10.0	2.50	1.5	0.058	0.17				5	6.77	320		6.14	
25	Silver L (W)	8/11/1989	9.1	4.00	1.5	0.038					12	8.36	324		3.92	
25	Silver L (W)	8/15/1989	9.5	4.50	1.5	0.014	0.10				6	6.48	321		3.92	
25	Silver L (W)	8/22/1989	10.0	6.00	1.5	0.019	0.08				5	8.35	320		3.77	
25	Silver L (W)	8/30/1989	10.0	4.00	1.5	0.016					8	8.42	317		7.74	
25	Silver L (W)	9/6/1989	10.0	2.00	1.5	0.030					10	8.22	322		12.70	
25	Silver L (W)	9/13/1989	10.0	2.00	1.5	0.022					6	8.41	318		25.30	
25	Silver L (W)	9/20/1989	10.0	1.50	1.5	0.080	0.01				9	7.89	334		45.30	
25	Silver L (W)	7/5/1990	9.8	2.10	1.5	0.019	0.10				8	8.31	330		16.80	
25	Silver L (W)	7/18/1990	10.0	2.25	1.5	0.021	0.01				3	8.10	323		19.80	
25	Silver L (W)	8/4/1990	10.0	2.00	1.5	0.030	0.01				3	8.35	308		15.60	
25	Silver L (W)	8/16/1990	10.0	2.15	1.5	0.029	0.01				5	8.12	309		13.00	
25	Silver L (W)	8/28/1990	9.7	2.00	1.5	0.047	0.01				11	7.94	314		11.60	
25	Silver L (W)	9/12/1990	9.5	1.25	1.5	0.067	0.01				13	8.45	316		29.00	
25	Silver L (W)	10/8/1990	9.5	1.50	1.5	0.053	0.01					8.38	289		15.20	

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
25	Silver L (W)	6/3/1991	10.0	2.50												
25	Silver L (W)	6/15/1991	10.0	2.50												
25	Silver L (W)	7/11/1991	10.0	1.70												
25	Silver L (W)	8/12/1991	9.4	1.60												
25	Silver L (W)	9/13/1991	9.4	1.80												
25	Silver L (W)	8/14/1996		2.73	1.5	0.022	0.01				10	8.75	282		19.50	
25	Silver L (W)	8/28/1996				0.017	0.01				10	8.35	279		7.30	
25	Silver L (W)	9/18/1996				0.084	0.01				10	7.62	283		12.20	
25	Silver L (W)	6/25/1997		4.50	1.8	0.025	0.39				25	8.19	336		5.08	
25	Silver L (W)	7/9/1997		3.25	4.6	0.016	0.28				10	8.11	336		17.10	
25	Silver L (W)	7/30/1997		4.00	3.0	0.014					6	7.07	331		6.25	
25	Silver L (W)	10/8/1997		4.00	1.5	0.045	0.01				6	8.30	320		11.60	
25	Silver L (W)	6/15/2006	11.3	4.60		0.018	0.30	0.02	0.98	54.23	20	7.91	279	16.2	0.55	
25	Silver L (W)	6/30/2006		3.35	1.5	0.022	0.22	0.03	0.85	38.75	27	7.65	267		6.41	
25	Silver L (W)	7/14/2006		3.75		0.026	0.11	0.03	0.83	32.31	33	8.38	253		5.80	
25	Silver L (W)	7/28/2006	3.3	3.30	1.5	0.022	0.03	0.03	0.70	31.43	48	7.41	228		5.81	
25	Silver L (W)	8/11/2006		2.20	1.5	0.021	0.03	0.02	0.90	43.33	39	7.70	283	36.5	8.02	
25	Silver L (W)	8/25/2006		3.10	1.5	0.017	0.02	0.02	0.98	56.48	39	8.21	318		7.15	
25	Silver L (W)	9/8/2006		2.30	1.5	0.049	0.01	0.01	0.64	13.03	19	7.09	211		23.26	
25	Silver L (W)	9/21/2006		2.30	1.5	0.043	0.02	0.05	0.91	21.13	14	7.31	248		13.48	
25	Silver L (W)	7/19/2007	11.3	1.55		0.028	0.16	0.05	0.75	59.94		8.04	271	39.3		
25	Silver L (W)	7/28/2007	11.0	1.00		0.031	0.01	0.03	0.80	57.47	32	8.07	247		20.72	
25	Silver L (W)	8/8/2007				0.025	0.01	0.02	0.65	57.67	15	7.74	265		8.51	
25	Silver L (W)	8/20/2007	10.9	2.50		0.030	0.19	0.04	0.98	72.91	20	7.78	193		8.77	
25	Silver L (W)	9/1/2007	11.0	2.28		0.034	0.01	0.02	0.85	56.51	29	8.32	77	34.6	15.38	
25	Silver L (W)	6/13/2008	11.0	2.35		0.042	0.11	0.07	0.95	50.47	9	7.49	233		0.74	
25	Silver L (W)	6/24/2008	11.2	4.20	1.0	0.038	0.08	0.05	1.01	58.92	10	8.28	233	37.5	5.17	
25	Silver L (W)	7/17/2008	11.4	4.60	1.0	0.033	0.04	0.00	0.48	32.14	8	7.61	183		9.38	
25	Silver L (W)	7/24/2008		1.65	1.0	0.060	0.02	0.10	0.56	20.53	15	7.86	301		32.86	
25	Silver L (W)	8/12/2008	11.2	1.93	1.0	0.043	0.01	0.04	0.51	26.27	30	8.24	330	33.8	4.75	
25	Silver L (W)	8/28/2008	11.3	1.70	1.0	0.054	0.00	0.01	0.62	25.47	46	8.72	257			
25	Silver L (W)	9/12/2008	11.6	1.30	1.0	0.075	0.01	0.02	0.70	20.76	32	7.98	259		12.74	
25	Silver L (W)	06/10/2009	11.4	3.40	1.0	0.022	0.26	0.06	0.79	77.98	49	7.94	210		6.20	
25	Silver L (W)	06/22/2009	11.5	3.05	1.0	0.027	0.14	0.06	0.53	43.02	32	7.59	290		6.28	
25	Silver L (W)	07/05/2009	10.9	2.65	1.0	0.023	0.08	0.03	0.48	46.24	49	7.70	183	36.2	8.16	
25	Silver L (W)	07/20/2009	11.3	1.20	1.0	0.057	0.03	0.07	0.73	28.00	67	7.59	217		19.85	
25	Silver L (W)	08/03/2009	11.4	0.95	1.0	0.063	0.02	0.04	0.45	15.73	38	7.96	217	36.7	22.00	
25	Silver L (W)	08/16/2009	11.1	1.20	1.0	0.043	0.01	0.02	0.55	28.22	52	8.46	158		17.70	
25	Silver L (W)	08/29/2009	11.5	1.75	1.0	0.039	0.01	0.03	0.53	30.26	41			29.7	26.50	
25	Silver L (W)	09/10/2009	11.2	1.20	1.0	0.131	0.04	0.02	1.19	19.97	82	8.67	105	25.3	160.40	
25	Silver L (W)	10/04/2009			bloom											
25	Silver L (W)	5/15/2010	11.7	4.25	1.0	0.016	0.37	0.04			13	7.80	290	49.6	4.00	
25	Silver L (W)	5/30/2010	11.5	5.00	1.0	0.015	0.23	0.04	0.93	134.30	6	8.17	288		2.80	
25	Silver L (W)	6/11/2010	11.5	5.75	1.0	0.024	0.26	0.07	0.76	69.58	10	8.33	364		0.10	
25	Silver L (W)	6/26/2010	11.5	2.70	1.0	0.031	0.34	0.02			12	7.95	290		16.90	
25	Silver L (W)	7/10/2010	11.4	2.00	1.0	0.033	0.01	0.09	0.65	44.13	15	7.94		37.9	16.90	
25	Silver L (W)	8/6/2010	11.3	0.85	1.0	0.032	0.01	0.02	0.92	63.17	14	8.43	267		34.80	
25	Silver L (W)	8/21/2010	11.2	1.25	1.0	0.030	0.02	0.04	0.78	57.70	10	8.11	305		33.00	
25	Silver L (W)	9/2/2010	11.4	1.65	1.0	0.029	0.01	0.02	0.70	52.59	17	7.68	266		21.80	
25	Silver L (W)	10/8/2010														
25	Silver L (W)	5/25/2011	11.6	5.65	1.0	0.026	0.86	0.08	1.20	100.34	53	7.43	302	50.5	2.90	
25	Silver L (W)	6/10/2011	11.5	4.88	1.0	0.020	0.50	0.06	0.82	90.08	9	7.23	332		2.70	
25	Silver L (W)	6/30/2011	11.3	3.50	1.0	0.025	0.39	0.04	0.96	85.51	65	7.55	225		0.70	
25	Silver L (W)	7/13/2011	11.1	3.10	1.0	0.026	0.29	0.03	0.80	69.28	43	7.38	260		6.90	
25	Silver L (W)	7/13/2011	grab	bloom												
25	Silver L (W)	7/27/2011	10.7	1.80	1.5	0.032	0.06	0.02	0.71	48.21	41	8.26	276	37.7	14.30	
25	Silver L (W)	8/9/2011	grab	bloom												
25	Silver L (W)	8/17/2011	11.0	2.65	1.5											
25	Silver L (W)	8/31/2011	11.4	1.78	1.0	0.047	0.01	0.01	0.85	39.92	15	7.75	274		40.50	
25	Silver L (W)	9/14/2011	10.9	1.40	1.0	0.065	0.01	0.03	1.00	33.88	16	7.59	278		40.10	
25	Silver L (W)	9/14/2011	grab	bloom												
25	Silver L (W)	9/23/2011	grab	bloom												
25	Silver L (W)	10/22/2011	grab	bloom												
25	Silver L (W)	5/31/2012	11.1	5.80	1.5	0.016	0.54	0.05			42	7.44	185	47.5	3.40	
25	Silver L (W)	6/15/2012	11.2	4.60	1.5	0.018	0.46	0.05	0.94	114.13	27	7.51	342		2.80	
25	Silver L (W)	6/25/2012	11.4	3.65	1.5	0.021	0.35	0.02	0.80	85.53	34	7.59	311		4.80	

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
25	Silver L (W)	7/19/2012	11.2	2.30	1.5	0.030	0.01	0.02	0.59	43.12	31	8.00	300		5.10	
25	Silver L (W)	8/1/2012	11.1	2.20	1.5	0.027	0.01	0.01	0.49	39.99	22	8.23	279	33.8	3.90	
25	Silver L (W)	8/19/2012	11.2	3.55	1.5	0.029	0.01	0.01	0.50	38.42	6	7.93	284		7.10	
25	Silver L (W)	8/30/2012	11.2	3.10	1.5	0.021	0.01	0.03	0.47	50.14	10	7.59	256		6.00	
25	Silver L (W)	9/13/2012	11.2	2.30	1.5	0.045	0.01	0.04	0.61	29.62	8	8.04	253		8.80	
25	Silver L (W)	7/4/2013	11.4	3.00	1.5	0.031	0.50	0.02	1.12	78.58	31	7.95	309			
25	Silver L (W)	7/22/2013	11.4	1.45	1.5	0.026			0.77	64.55	27	8.10	232			
25	Silver L (W)	8/3/2013	10.8	1.60	1.5	0.036	0.01	0.02	0.58	35.70	22	7.50	302		8.60	
25	Silver L (W)	8/14/2013	11.3	1.40	1.5	0.046			0.74	35.34	59	7.58	229		8.20	
25	Silver L (W)	8/30/2013	11.0	1.75	1.0	0.033	0.01	0.04	0.65	43.33	29	8.24	285		17.70	
25	Silver L (W)	9/27/2013	11.2	1.80	1.0	0.093			0.76	18.03	22	7.79	306		12.60	
25	Silver L (W)	5/30/2015	10.7	2.50	1.5	0.052	0.41	0.12	0.75	14.38	8	7.42	316	33.0	1.40	
25	Silver L (W)	6/21/2015	11.0	3.00	1.5	0.040			1.52	38.46	10	8.33	358		5.40	
25	Silver L (W)	7/12/2015	11.3	4.00	1.5	0.024	0.71	0.06	1.36	56.50	14	7.69	255		26.50	88.30
25	Silver L (W)	7/25/2015	11.0	1.50	1.5	0.184			1.88	10.24	9	8.27	273		33.20	
25	Silver L (W)	8/9/2015	11.0	2.20	1.5	0.050	0.14	0.07	0.78	15.72	11	8.39	228	24.8	12.50	
25	Silver L (W)	9/8/2015	11.0	2.50	1.5	0.037			0.67	18.02	8	8.68	252		2.00	
25	Silver L (W)	7/24/2015			bloom											
25	Silver L (W)	8/12/2015			bloom											
25	Silver L (W)	8/12/2015			bloom											
25	Silver L (W)	9/6/2015			bloom											
25	Silver L (W)	9/6/2015			bloom											
25	Silver L (W)	9/19/2015	11.0	2.60	1.5	0.119	0.00	0.02	0.54	4.54	9	8.32	270		20.70	33.10
LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4				Fe	Mn	As	NO2	
25	Silver L (W)	6/15/2006	11.3		9.5	0.045										
25	Silver L (W)	6/30/2006			9.5	0.020										
25	Silver L (W)	7/14/2006			9.5	0.273										
25	Silver L (W)	7/28/2006	3.3		9.5	0.379										
25	Silver L (W)	8/11/2006			9.5	0.261										
25	Silver L (W)	8/25/2006			9.5	0.622										
25	Silver L (W)	9/8/2006			9.0	0.335										
25	Silver L (W)	9/21/2006			9.5	0.044										
25	Silver L (W)	7/19/2007	11.3		11.0	0.407										
25	Silver L (W)	7/28/2007	11.0		10.4	0.131										
25	Silver L (W)	8/8/2007				0.442										
25	Silver L (W)	8/20/2007	10.9		10.7	0.730										
25	Silver L (W)	9/1/2007	11.0		11.0	0.590										
25	Silver L (W)	6/13/2008	11.0		11.0	0.093										
25	Silver L (W)	6/24/2008	11.2		11.0	0.042										
25	Silver L (W)	7/17/2008	11.4		11.4	0.280										
25	Silver L (W)	7/24/2008			10.0	0.245										
25	Silver L (W)	8/12/2008	11.2		10.0	0.404										
25	Silver L (W)	8/28/2008	11.3		10.0	0.505										
25	Silver L (W)	9/12/2008	11.6		10.0	0.216										
25	Silver L (W)	06/10/2009	11.0		11.0	0.114		0.30								
25	Silver L (W)	06/22/2009	10.5		10.5	0.057		0.28								
25	Silver L (W)	07/05/2009	10.0		10.0	0.083		0.31								
25	Silver L (W)	07/20/2009	10.0		10.0	0.269		0.68								
25	Silver L (W)	08/03/2009	10.0		10.0	0.269		0.60				0.26	1.65	2.30		
25	Silver L (W)	08/16/2009	10.0		10.0	0.531		0.81				0.56	2.06			
25	Silver L (W)	08/29/2009	10.5		10.5	0.703		1.67				1.08	2.16	3.20		
25	Silver L (W)	09/10/2009	10.0		10.0	0.807		0.01								
25	Silver L (W)	5/15/2010	11.7		11.0	0.036		0.03								
25	Silver L (W)	5/30/2010	11.5		10.5	0.033		0.08								
25	Silver L (W)	6/11/2010	11.5		10.5	0.097		0.19								
25	Silver L (W)	6/26/2010	11.5		10.5	0.067		0.29								
25	Silver L (W)	7/10/2010	11.4		10.0	0.104		0.41				0.03	1.06			
25	Silver L (W)	8/6/2010	11.3		10.5	0.164		0.70				0.31	1.63	1.90		
25	Silver L (W)	8/21/2010	11.2		10.0	0.415		2.35				0.27	2.00	2.50		
25	Silver L (W)	9/2/2010	11.4		10.5	0.177		0.86				0.26	2.36			
25	Silver L (W)	5/25/2011	11.6		10.5	0.045		0.19								
25	Silver L (W)	6/10/2011	11.5		10.5	0.082		0.40								
25	Silver L (W)	6/30/2011	11.3		10.5	0.255		0.56								
25	Silver L (W)	7/11/2011	10.7		10.0	0.045		0.37								
25	Silver L (W)	7/13/2011	11.1		10.0	0.049		0.41				0.01	1.14		0.01	

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4				Fe	Mn	As	NO2	
25	Silver L (W)	8/17/2011	11.0		10.0	0.727		1.72				1.24	2.99	1.00	0.01	
25	Silver L (W)	8/31/2011	11.4		10.0	0.154		0.56				0.01	1.78		0.01	
25	Silver L (W)	9/14/2011	10.9		10.0	0.135		0.50				0.15	1.02	2.00	0.01	
25	Silver L (W)	5/31/2012			10.0	0.027	0.16	0.16				0.03	0.38			
25	Silver L (W)	7/19/2012			10.0							0.49	1.95			
25	Silver L (W)	8/1/2012			10.0	0.425		1.23								
25	Silver L (W)	8/19/2012			9.5							0.49	2.81	2.00		
25	Silver L (W)	8/30/2012			10.0	0.928		2.40								
25	Silver L (W)	9/13/2012			10.0							0.60	2.51	0.50		
25	Silver L (W)	7/4/2013			10.0	0.060		0.29								
25	Silver L (W)	7/22/2013			10.0	0.020										
25	Silver L (W)	8/3/2013			9.0	0.044		0.55								
25	Silver L (W)	8/14/2013			10.0	0.042										
25	Silver L (W)	8/30/2013			10.0	0.088		0.26								
25	Silver L (W)	9/27/2013			10.5	0.091										
25	Silver L (W)	5/30/2015			9.0	0.023		0.06								
25	Silver L (W)	6/21/2015			10.0	0.038										
25	Silver L (W)	7/12/2015			9.8	0.081		0.06								
25	Silver L (W)	7/25/2015			9.5	0.165										
25	Silver L (W)	8/9/2015			9.5	0.028		0.04								
25	Silver L (W)	9/6/2015			9.5	0.037										
25	Silver L (W)	9/19/2015			9.5	0.081		0.02								

LNum	PName	Date	Site	TAir	TH20	QA	QB	QC	QD	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cylin	FP-Chl	FP-BG	HAB form	Shore HAB
25	Silver L (W)	6/13/1986	epi																	
25	Silver L (W)	6/19/1986	epi	20	18															
25	Silver L (W)	6/25/1986	epi	12	17															
25	Silver L (W)	7/3/1986	epi	17	20															
25	Silver L (W)	7/9/1986	epi	23	22															
25	Silver L (W)	7/16/1986	epi	19	21															
25	Silver L (W)	7/23/1986	epi	21	23															
25	Silver L (W)	7/31/1986	epi	18	22															
25	Silver L (W)	8/4/1986	epi	20	22															
25	Silver L (W)	8/11/1986	epi	15	19															
25	Silver L (W)	8/20/1986	epi	15	20															
25	Silver L (W)	8/29/1986	epi	13	17															
25	Silver L (W)	9/3/1986	epi	19	17															
25	Silver L (W)	9/9/1986	epi	17	16															
25	Silver L (W)	9/17/1986	epi	12	15															
25	Silver L (W)	6/10/1987	epi	13	15															
25	Silver L (W)	6/15/1987	epi	22	18															
25	Silver L (W)	6/23/1987	epi	22	20															
25	Silver L (W)	6/29/1987	epi	21	19															
25	Silver L (W)	7/7/1987	epi	23	21															
25	Silver L (W)	7/15/1987	epi	12	20															
25	Silver L (W)	7/22/1987	epi	21	22															
25	Silver L (W)	7/29/1987	epi	15	17															
25	Silver L (W)	8/1/1987	epi	22	21															
25	Silver L (W)	8/10/1987	epi	21	21															
25	Silver L (W)	8/17/1987	epi	24	26															
25	Silver L (W)	8/25/1987	epi	18	19															
25	Silver L (W)	9/4/1987	epi	17	17															
25	Silver L (W)	9/10/1987	epi	22	20															
25	Silver L (W)	6/21/1988	epi	28	22															
25	Silver L (W)	6/28/1988	epi	15	19															
25	Silver L (W)	7/5/1988	epi	29	22															
25	Silver L (W)	7/13/1988	epi	22	24															
25	Silver L (W)	7/19/1988	epi	22	23															
25	Silver L (W)	7/29/1988	epi	24	23															
25	Silver L (W)	8/5/1988	epi	23	24															
25	Silver L (W)	8/12/1988	epi	28	25															
25	Silver L (W)	8/16/1988	epi	25	25															

LNum	PName	Date	Site	TAir	TH20	QA	QB	QC	QD	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cylin	FP-Chl	FP-BG	HAB form	Shore HAB
25	Silver L (W)	8/23/1988	epi	19	22															
25	Silver L (W)	8/30/1988	epi	19	19															
25	Silver L (W)	9/8/1988	epi	22	19															
25	Silver L (W)	9/16/1988	epi	17	17															
25	Silver L (W)	9/21/1988	epi	14	12															
25	Silver L (W)	9/28/1988	epi	12	10															
25	Silver L (W)	6/23/1989	epi	22	19															
25	Silver L (W)	7/5/1989	epi	21	22															
25	Silver L (W)	7/18/1989	epi	21	22															
25	Silver L (W)	7/28/1989	epi	18	22															
25	Silver L (W)	8/4/1989	epi	25	22															
25	Silver L (W)	8/11/1989	epi	17	20															
25	Silver L (W)	8/15/1989	epi	29	22															
25	Silver L (W)	8/22/1989	epi	24	22															
25	Silver L (W)	8/30/1989	epi	23	20															
25	Silver L (W)	9/6/1989	epi	24	20															
25	Silver L (W)	9/13/1989	epi	20	19															
25	Silver L (W)	9/20/1989	epi	21	19															
25	Silver L (W)	7/5/1990	epi	21	19															
25	Silver L (W)	7/18/1990	epi	23	21															
25	Silver L (W)	8/4/1990	epi	20	22															
25	Silver L (W)	8/16/1990	epi	19	21															
25	Silver L (W)	8/28/1990	epi	25	22															
25	Silver L (W)	9/12/1990	epi	24	20															
25	Silver L (W)	10/8/1990	epi	13	13															
25	Silver L (W)	6/3/1991	epi	25	22															
25	Silver L (W)	6/15/1991	epi	24	20															
25	Silver L (W)	7/11/1991	epi	20	22															
25	Silver L (W)	8/12/1991	epi	19	20															
25	Silver L (W)	9/13/1991	epi	22	20															
25	Silver L (W)	8/14/1996	epi	27	24	3	3	4	346											
25	Silver L (W)	6/25/1997	epi	29	17															
25	Silver L (W)	7/9/1997	epi	17	21															
25	Silver L (W)	7/30/1997	epi	27	20															
25	Silver L (W)	10/8/1997	epi	24	17	3	2	3	13											
25	Silver L (W)	6/15/2006	epi	16	14	2	2	2	2											
25	Silver L (W)	6/30/2006	epi	21	22	2	2	2	2											
25	Silver L (W)	7/14/2006	epi	22	24	3	3	3	2											
25	Silver L (W)	7/28/2006	epi	24	25	3	3	2	25											
25	Silver L (W)	8/11/2006	epi	22	25	3	3	2	2											
25	Silver L (W)	8/25/2006	epi	18	22	3	3	2	2											
25	Silver L (W)	9/8/2006	epi	16	20	3	3	3	2											
25	Silver L (W)	9/21/2006	epi	10	17	3	3	3	12											
25	Silver L (W)	6/13/2008	epi	24	15	3	1	2	0											
25	Silver L (W)	6/24/2008	epi	21	21	2	2	2	0											
25	Silver L (W)	7/17/2008	epi	32	25	2	3	3	25											
25	Silver L (W)	7/24/2008	epi	27	25	4	3	4	123											
25	Silver L (W)	8/12/2008	epi	20	22	2	2	3	258											
25	Silver L (W)	8/28/2008	epi	18	16	3	4	4	24											
25	Silver L (W)	9/12/2008	epi	18	20	3	3	4	125											
25	Silver L (W)	06/10/2009	epi	21	19	1	2	1	0											
25	Silver L (W)	06/22/2009	epi	22	21	2	1	2	0											
25	Silver L (W)	07/05/2009	epi	23	22	2	2	2	0											
25	Silver L (W)	07/20/2009	epi	28	22	3	3	3	13											
25	Silver L (W)	08/03/2009	epi	26	23	3	3	3	0											
25	Silver L (W)	08/16/2009	epi	30	26	3	3	2	7					0.22						
25	Silver L (W)	08/29/2009	epi	25	23	3	3	2	0											
25	Silver L (W)	09/10/2009	epi	23	22	3	3	3	1			328.3		0.25						
25	Silver L (W)	10/04/2009	epi											0.24						
25	Silver L (W)	5/15/2010	epi	14	13	1	1	1	5	0	0									
25	Silver L (W)	5/30/2010	epi	30	22	1	2	2	6	5	0									

LNum	PName	Date	Site	TAir	TH20	QA	QB	QC	QD	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cylin	FP-Chl	FP-BG	HAB form	Shore HAB
25	Silver L (W)	6/11/2010	epi	33	22	1	3	2	2	0	0									
25	Silver L (W)	6/26/2010	epi	21	22	2	4	3	234	0	0									
25	Silver L (W)	7/10/2010	epi	37	27	2	3	2	2	0	0									
25	Silver L (W)	8/6/2010	epi	23	25	4	2	3	15	7	0	182.50								
25	Silver L (W)	8/21/2010	epi	24	24							428.30								
25	Silver L (W)	9/2/2010	epi	32	26	3	3	2	0	0	0	533.80								
25	Silver L (W)	10/8/2010										700.00		0.34						
25	Silver L (W)	5/25/2011	epi	25	19	2	1	2	0	5	5									
25	Silver L (W)	6/10/2011	epi	26	23	2	2	2	0	0	0	16.70	3.00							
25	Silver L (W)	6/30/2011	epi	20	22	2	3	4	2	0	5	12.20	2.10							
25	Silver L (W)	7/13/2011	epi	26	26	2	4	4	2	0	0	31.60	4.80	0.63	<0.5	<0.1				
25	Silver L (W)	7/13/2011	bloom											1.43	<440	0.00				
25	Silver L (W)	7/27/2011	epi	24	26	3	3	3	2	0	0	38.50	11.20	0.41	<0.4	<0.1				
25	Silver L (W)	8/9/2011	bloom											158.53	<0.8	<0.1				
25	Silver L (W)	8/17/2011	epi	25	25	2	3	3	2	0	0									
25	Silver L (W)	8/31/2011	epi	24	22	2	3	2	0	0	0	183.80	4.50	0.46	<0.4	<0.1				
25	Silver L (W)	9/14/2011	epi	19	22	3	3	3	2	0	0	382.70	9.70	2.62						
25	Silver L (W)	9/14/2011	bloom											59.82	<0.8	0.00				
25	Silver L (W)	9/23/2011	bloom											101.63						
25	Silver L (W)	10/22/2011	bloom																	
25	Silver L (W)	5/31/2012	epi	15	21	1	2	1	0	0	0	3.80	0.20	<0.30	<0.417		0.9	0.5		
25	Silver L (W)	6/15/2012	epi	27	22	2	4	2	2	0	0	3.40	0.50	<0.30	<0.413		1.1	0.3		
25	Silver L (W)	6/25/2012	epi	26	22	2	4	3	2	7	7	7.40	0.40	0.43	<0.392		6.1	2.2		
25	Silver L (W)	7/19/2012	epi	28	26	3	3	2	2	0	0	13.50	0.90	<0.30	<0.292		6.4	0.9		
25	Silver L (W)	8/1/2012	epi	30	26	2	3	2	2	0	0	34.80	0.60	<0.30	<0.330		3.9	0.7		
25	Silver L (W)	8/19/2012	epi	27	24	2	3	2		0	0	6.60	0.90	<0.30	<0.552		4.6	1.3		
25	Silver L (W)	8/30/2012	epi	23	23	2	3	2	2	0	0	16.70	2.10	<0.30	<0.725		8.2	1.7		
25	Silver L (W)	9/13/2012	epi	28	23	2	3	2	0	4	0	56.90	0.70	0.47	<3.299		7.6	5.2		
25	Silver L (W)	7/4/2013	epi	25	24	2	3	2	0	0	0	26.80	3.90	<0.30	<0.510		6.5	0.5		
25	Silver L (W)	7/22/2013	epi	27	27	3	3	4	12	4	4	21.70	2.80	<0.30	<0.400		7.1	1.6		
25	Silver L (W)	8/3/2013	epi	21	23	3	3	2	0	0	0	35.40	15.20	0.62	<0.390		15.0	0.0		
25	Silver L (W)	8/14/2013	epi	21	23	3	3	2	5	0	0	55.60	4.20	<0.30	<0.390		9.6	4.1		
25	Silver L (W)	8/30/2013	epi	23	24	2	2	2	1	0	0	94.60	4.40	<0.30	<1.100		21.8	13.4		
25	Silver L (W)	9/27/2013	epi	20	19	3	2	2	0	0	0	42.20	3.90	<0.30	<10.600		9.3	3.3		
25	Silver L (W)	5/30/2015	epi	27	18	1	1	1	0	7	0	5.20	1.10	<0.45	<0.089	<0.199	2.0	0.0	F	I
25	Silver L (W)	6/21/2015	epi	25	20	2	1	2	0	0	0	5.00	0.80	<0.55	<0.004	<0.001	2.0	0.0	I	I
25	Silver L (W)	7/12/2015	epi	27	19	2	2	2	0	0	0	14.50	2.20	<0.76	<0.003	<0.011	14.2	2.1	I	I
25	Silver L (W)	7/25/2015	epi	30	26	4	3	3	1348	4	4	388.30	2.50	<0.30	<0.002	<0.014	98.9	74.6	DE	DE
25	Silver L (W)	8/9/2015	epi	19	19	3	3	3	38	0	0	43.70	1.10	<1.13	<0.003	<0.013	28.1	16.8	B	B
25	Silver L (W)	9/8/2015	epi	28	26	2	2	2	0	0	0			<0.39	<0.004	<0.012	8.5	5.2	I	I
25	Silver L (W)	7/24/2015	bloom											55.08	<0.007	<0.037	10569	9375		ed
25	Silver L (W)	8/12/2015	bloom											15.42	<0.007	<0.025	3176	2544		
25	Silver L (W)	8/12/2015	bloom											30.35	<0.007	<0.025	5963	4653		
25	Silver L (W)	9/6/2015	bloom											<0.43	<0.020	<0.058	7.3	4.1		
25	Silver L (W)	9/6/2015	bloom											<0.43	<0.020	<0.058	7.7	4.2		
25	Silver L (W)	9/19/2015	bloom	22	21	2	2	2	0	0	0	100.20	0.90	<0.74	<0.010	<0.075	24.9	21.2	I	I
25	Silver L (W)	7/28/2006	hypo		16															
25	Silver L (W)	8/11/2006	hypo		15															
25	Silver L (W)	7/28/2007	hypo		18															
25	Silver L (W)	9/1/2007	hypo		17															
25	Silver L (W)	6/24/2008	hypo		13															
25	Silver L (W)	7/17/2008	hypo		15															
25	Silver L (W)	7/24/2008	hypo		16															
25	Silver L (W)	8/12/2008	hypo		16															
25	Silver L (W)	8/28/2008	hypo		21															
25	Silver L (W)	9/12/2008	hypo		19															
25	Silver L (W)	06/10/2009	hypo		16															
25	Silver L (W)	06/22/2009	hypo		17															
25	Silver L (W)	07/05/2009	hypo		18															
25	Silver L (W)	07/20/2009	hypo		18															
25	Silver L (W)	08/03/2009	hypo		19															

LNum	PName	Date	Site	TAir	TH20	QA	QB	QC	QD	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cylin	FP-Chl	FP-BG	HAB form	Shore HAB
25	Silver L (W)	08/16/2009	hypo		19															
25	Silver L (W)	08/29/2009	hypo		19															
25	Silver L (W)	09/10/2009	hypo		18															
25	Silver L (W)	5/15/2010	hypo		12															
25	Silver L (W)	5/30/2010	hypo		14															
25	Silver L (W)	6/11/2010	hypo		15															
25	Silver L (W)	6/26/2010	hypo		15															
25	Silver L (W)	7/10/2010	hypo		15															
25	Silver L (W)	8/6/2010	hypo		17															
25	Silver L (W)	8/21/2010	hypo		16															
25	Silver L (W)	9/2/2010	hypo		21															
25	Silver L (W)	5/25/2011	hypo		13															
25	Silver L (W)	6/10/2011	hypo		14															
25	Silver L (W)	6/30/2011	hypo		14															
25	Silver L (W)	7/11/2011	hypo		19															
25	Silver L (W)	7/13/2011	hypo		17															
25	Silver L (W)	8/17/2011	hypo		16															
25	Silver L (W)	8/31/2011	hypo		20															
25	Silver L (W)	9/14/2011	hypo		20															
25	Silver L (W)	5/31/2012	hypo		14															
25	Silver L (W)	7/19/2012	hypo		16															
25	Silver L (W)	8/1/2012	hypo		15															
25	Silver L (W)	8/19/2012	hypo		18															
25	Silver L (W)	8/30/2012	hypo		16															
25	Silver L (W)	9/13/2012	hypo		19															
25	Silver L (W)	7/4/2013	hypo		19															
25	Silver L (W)	7/22/2013	hypo		20															
25	Silver L (W)	8/3/2013	hypo		19															
25	Silver L (W)	8/14/2013	hypo		22															
25	Silver L (W)	8/30/2013	hypo		21															
25	Silver L (W)	9/27/2013	hypo		19															
25	Silver L (W)	5/30/2015	hypo		16															
25	Silver L (W)	6/21/2015	hypo		17															
25	Silver L (W)	7/12/2015	hypo		16															
25	Silver L (W)	7/25/2015	hypo		22															
25	Silver L (W)	8/9/2015	hypo		17															
25	Silver L (W)	9/6/2015	hypo		20															
25	Silver L (W)	9/19/2015	hypo		18															

Legend Information

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

Appendix B- Priority Waterbody Listing for Silver Lake

Silver Lake (0403-0002) — Impaired Seg

Waterbody Location Information

Revised: 10/28/02

Water Index No: Ont 117- 70-P115
Hydro Unit Code: 04130002/160 **Str Class:** A
Waterbody Type: Lake
Waterbody Size: 812.7 Acres (Eutrophic)
Seg Description: entire lake

Drain Basin: Genesee River
Upper Genesee River
Reg/County: 9/Wyoming Co. (61)
Quad Map: CASTILE (K-08-2)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
WATER SUPPLY	Impaired	Known
Public Bathing	Stressed	Known
Recreation	Stressed	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)
Known: ALGAL/WEED GROWTH (algal growth), NUTRIENTS, Pesticides, Silt/Sediment
Suspected: - - -
Possible: Pathogens

Source(s) of Pollutant(s)
Known: AGRICULTURE, Streambank Erosion
Suspected: Construction
Possible: Failing On-Site Syst

Resolution/Management Information

Issue Resolvability: 2 (Strategy Exists, Needs Funding/Resources)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/WQCC **Resolution Potential:** Medium
TMDL/303d Status: 3 (Waters Requiring Re-Assessment Based on New Methodology)

Further Details

The drinking water supply as well as public bathing/recreational uses and aesthetics of Silver Lake are impacted by nutrients (phosphorus) and algal growth that reduce clarity. Agricultural activities in the watershed are the primary source of nutrient loads. On-site septic systems are also an issue.

Turbidity (clarity) standards/guidance values are regularly not met in the lake and in finished waters from the drinking water treatment plant. The plant has experienced additional costs in order to meet existing standards; potential new (lower) standards are under consideration and raise concerns about the need for additional filtering. (DEC/DOW, Region 9, April 2001)

CSLAP volunteer monitoring of the lake conducted from 1986 through 1997 has documented elevated phosphorus and algal levels and reduced clarity. During the summer, lake clarity does not meet minimum recommendations (based on recommendations for siting new bathing beaches). Conditions are typical of stressed recreational uses. Although no data

is currently available, THM formation may be an issue given the algal densities in the lake. (DEC/DOW, BWM/Lake Services, April 2001)

Much of the area surrounding the lake is agricultural with high concentrations of dairy farming activity. Improper manure management (spreading on frozen or snow covered ground adjacent to the lake) and fertilizer use are the primary sources of nutrient loads to the lake. There are many on-going programs to install agricultural BMPs. Many area dairy farms fall under CAFO regulation and are working on plans to reduce and/or eliminate nutrient runoff over the next five years. Cropland soil erosion and pesticide/herbicide use are also concerns. A recent USGS study and report found pesticides to be present in the watershed, but at concentrations within applicable standards. (Wyoming County WQCC, April 2001)

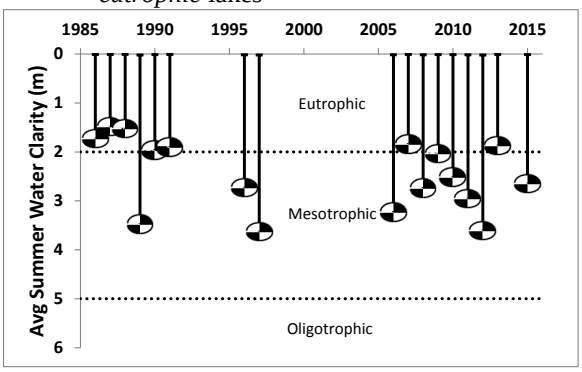
Inadequate and/or failing on-site septic systems serving the many cottages around the lake are also a suspected source of nutrients. Algal blooms appear to be less of a problem since sanitary sewers were installed in the more densely populated areas (Silver Lake and Fairview) in the mid-1980s. However, not all cottages are connected to the lake sewer district and it is suspected that many have sub-standard and failing septic systems. Construction of new residences and the use fertilizers, herbicides and pesticides on lawns (and golf courses) bordering the lake are also a concern. The Wyoming County Soil and Water Conservation District and Water Quality Committee are undertaking studies to implement non-point source BMP's, such as the construction of a sediment trap on the lake inlet. (Wyoming County WQCC, April 2001)

The lake is included on the NYS 2002 Section 303(d) List of Impaired Waters. The lake is included on Part 3 of the List as a Water Previously Listed But Requiring Re-Assessment Based on New Assessment/List Methodology.

Appendix C- Long Term Trends: Silver Lake

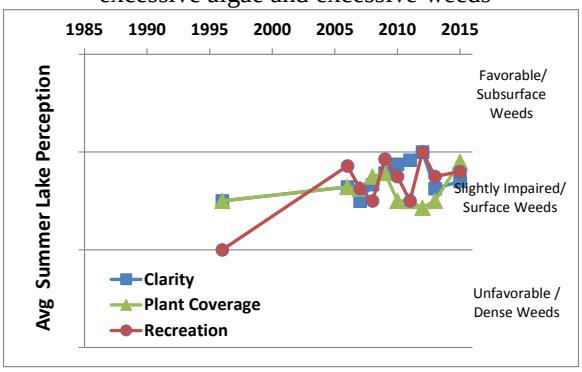
Long Term Trends: Water Clarity

- No trends apparent; variable year to year
- Most readings typical of *mesotrophic* to *eutrophic* lakes



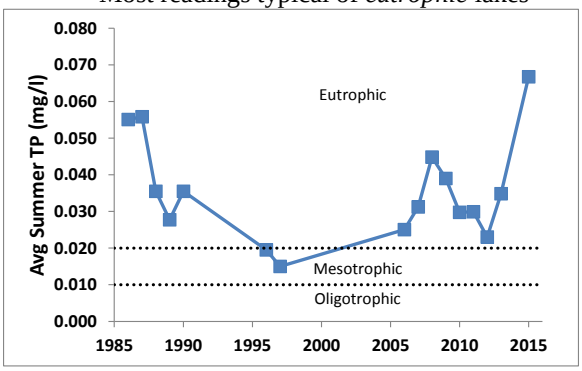
Long Term Trends: Lake Perception

- Recreational and WQ perceptions improving
- Recreational perception linked to both excessive algae and excessive weeds



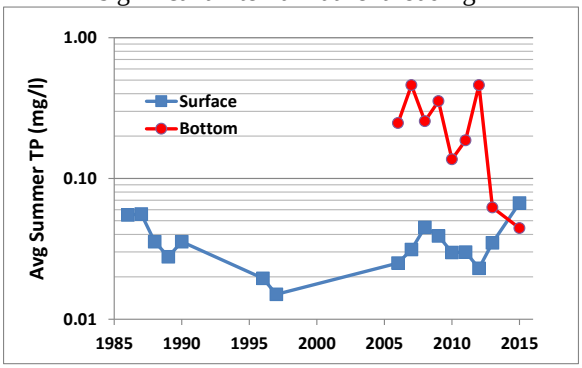
Long Term Trends: Phosphorus

- No trends apparent; higher since late 90s after decrease mid-80s to late 90s
- Most readings typical of *eutrophic* lakes



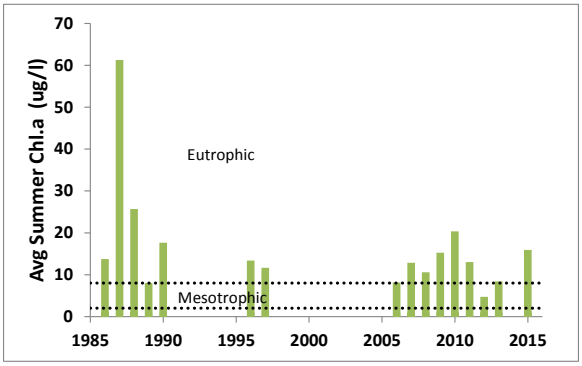
Long Term Trends: Bottom Phosphorus

- Deepwater TP > surface TP, but lower 2015
- 2013 deepwater TP readings indicates weak significant internal nutrient loading



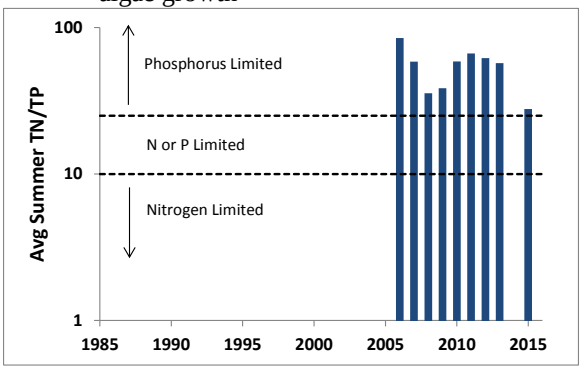
Long Term Trends: Chlorophyll a

- No trends apparent; less variability after '87
- Most readings typical of *eutrophic* lakes



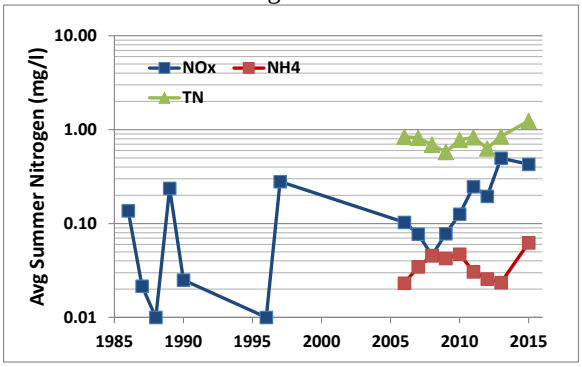
Long Term Trends: N:P Ratio

- No trends apparent, but lower 2015
- Most readings indicate phosphorus limits algae growth



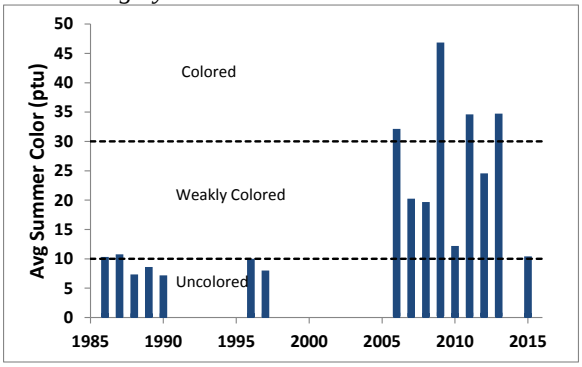
Long Term Trends: Nitrogen

- NOx highly variable; TN and NOx ↑?
- Elevated total nitrogen usually associated with elevated algae levels



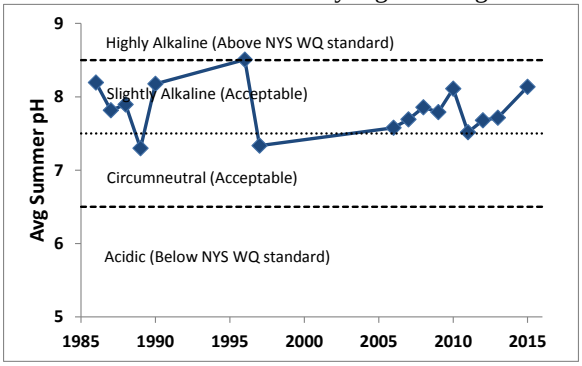
Long Term Trends: Color

- Color > lab change 2002 but ↓ after 2010
- Most readings typical of *weakly colored* to *highly colored* lakes



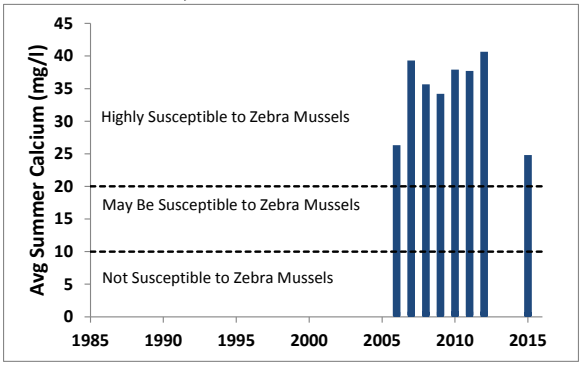
Long Term Trends: pH

- No trends apparent
- Most readings typical of *slightly alkaline* lakes with occasionally high readings



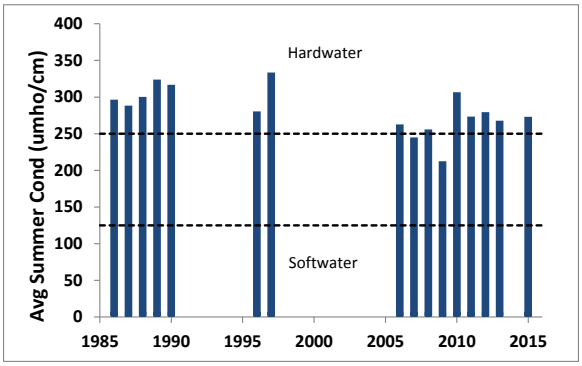
Long Term Trends: Calcium

- No trends apparent, but lower in 2015
- Data indicates high susceptibility to zebra mussels, which have been found in lake



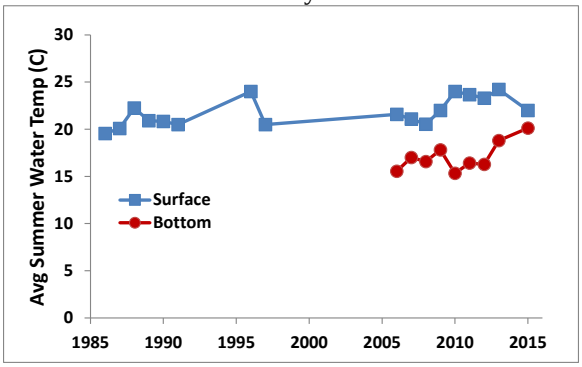
Long Term Trends: Conductivity

- No trends apparent, though recently lower
- Most readings typical of *hardwater* to *intermediate hardness* lakes



Long Term Trends: Water Temperature

- Slightly increasing surface and bottom T
- Bottom temperatures indicate thermal stratification usually weak



Appendix D:
Algae Testing Results from SUNY ESF Study

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

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

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

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

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

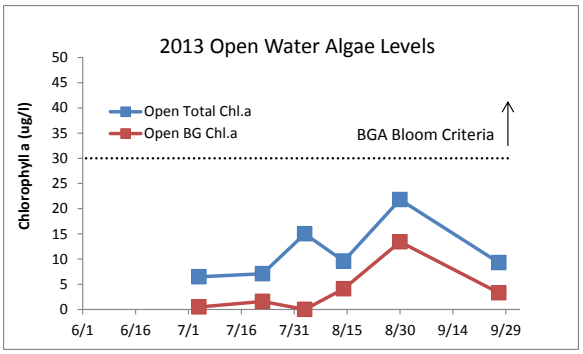


Figure D1:
2013 Open Water Total and BGA Chl.a

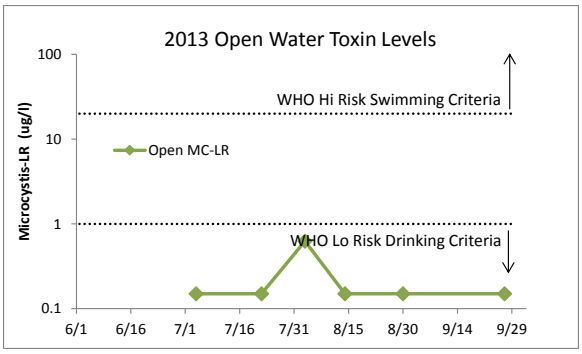


Figure D2:
2013 Open Water Microcystin-LR

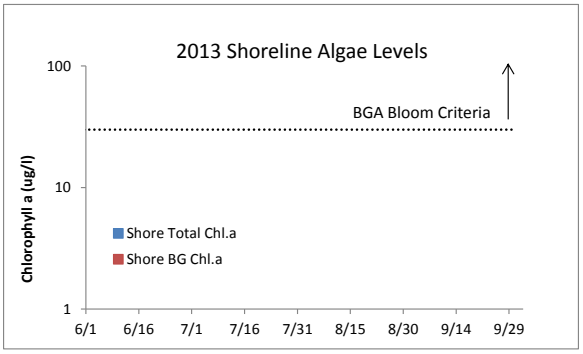


Figure D3:
2013 Shoreline Total and BGA Chl.a

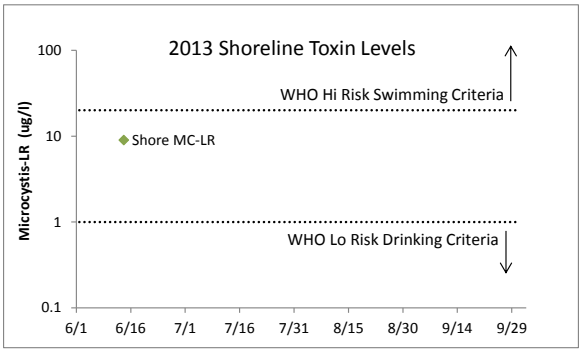


Figure D4:
2013 Shoreline Microcystin-LR

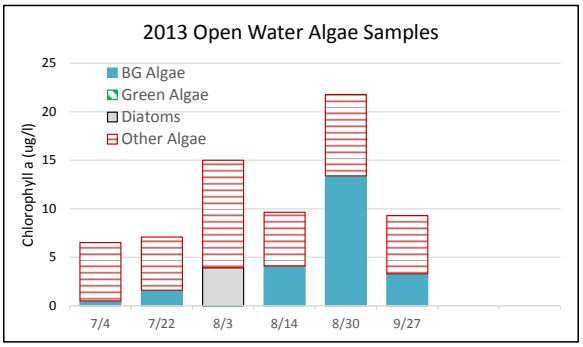


Figure D5:
2013 Open Water Algae Types

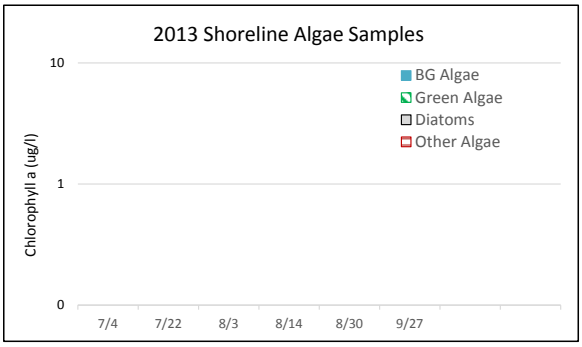


Figure D6:
2013 Shoreline Algae Types

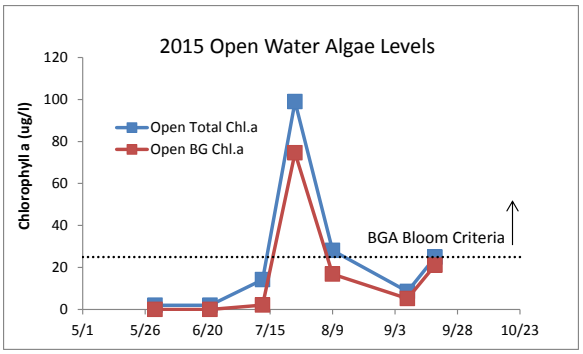


Figure D7:
2015 Open Water Total and BGA Chl.a

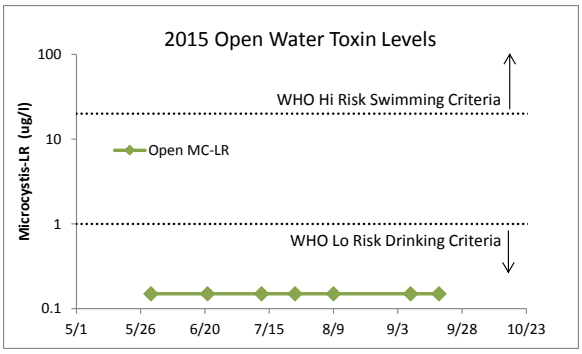


Figure D8:
2015 Open Water Microcystin-LR

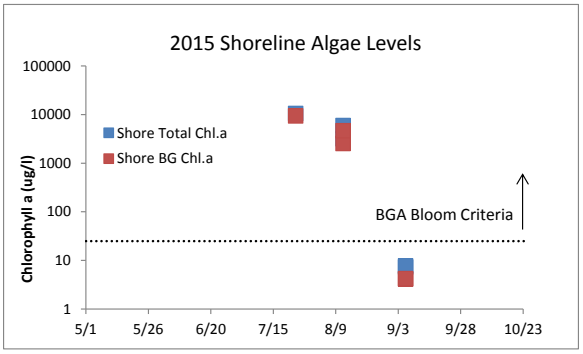


Figure D9:
2015 Shoreline Total and BGA Chl.a

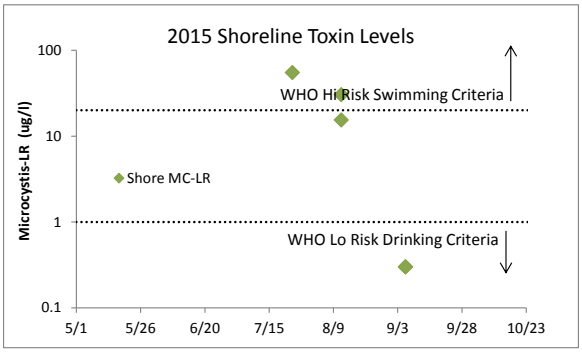


Figure D10:
2015 Shoreline Microcystin-LR

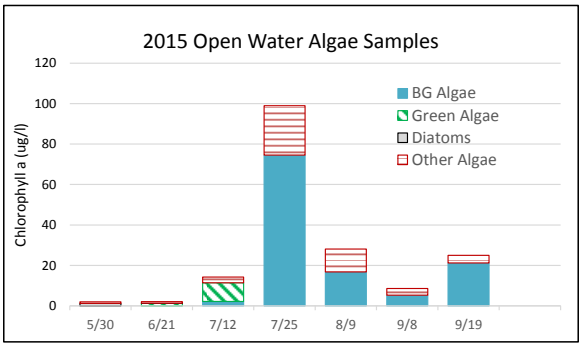


Figure D11:
2015 Open Water Algae Types

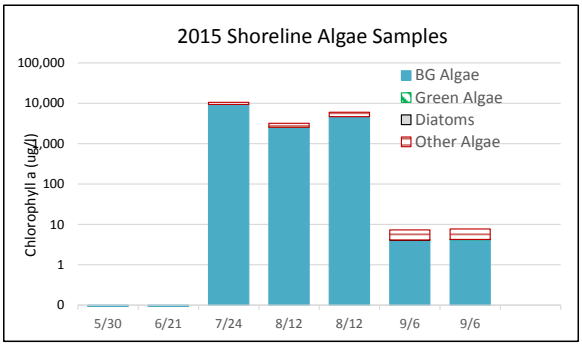


Figure D12:
2015 Shoreline Algae Types

Appendix E:
AIS Species in Wyoming County

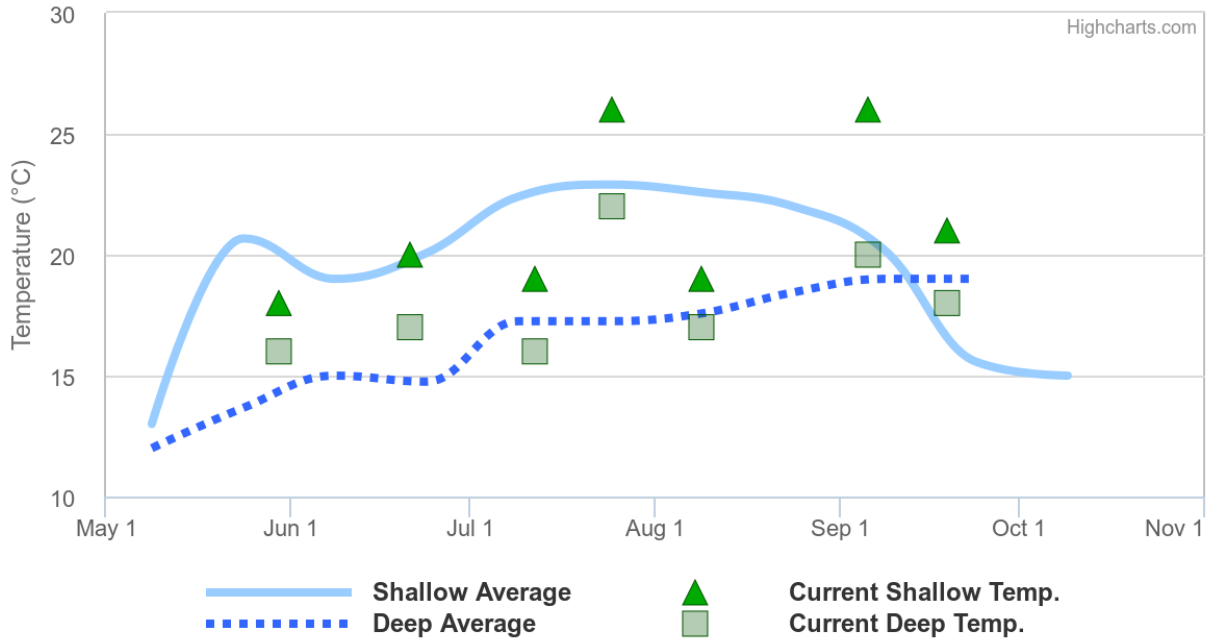
The table below shows the invasive aquatic plants and animals that have been documented in Wyoming County, as cited in either the iMapInvasives database (http://www.imapinvasives.org/) or in the NYSDEC Division of Water database. These databases may include some, but not all, non-native plants or animals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

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

Aquatic Invasive Species - Wyoming County			
Waterbody	**Kingdom**	**Common name**	**Scientific name**
Akron Reservoir	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Attica Reservoir #2	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Attica Reservoir #2	Plant	Curly leafed pondweed	*Potamogeton crispus*
Faun Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Java Lake	Plant	Curly leafed pondweed	*Potamogeton crispus*
Lake Le Roy	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Silver Lake	Animal	Zebra mussel	*Dreissena polymorpha*
Silver Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Silver Lake	Plant	Curly leafed pondweed	*Potamogeton crispus*
Silver Lake	Animal	Rudd	*Scardinius erythrophthalmus*

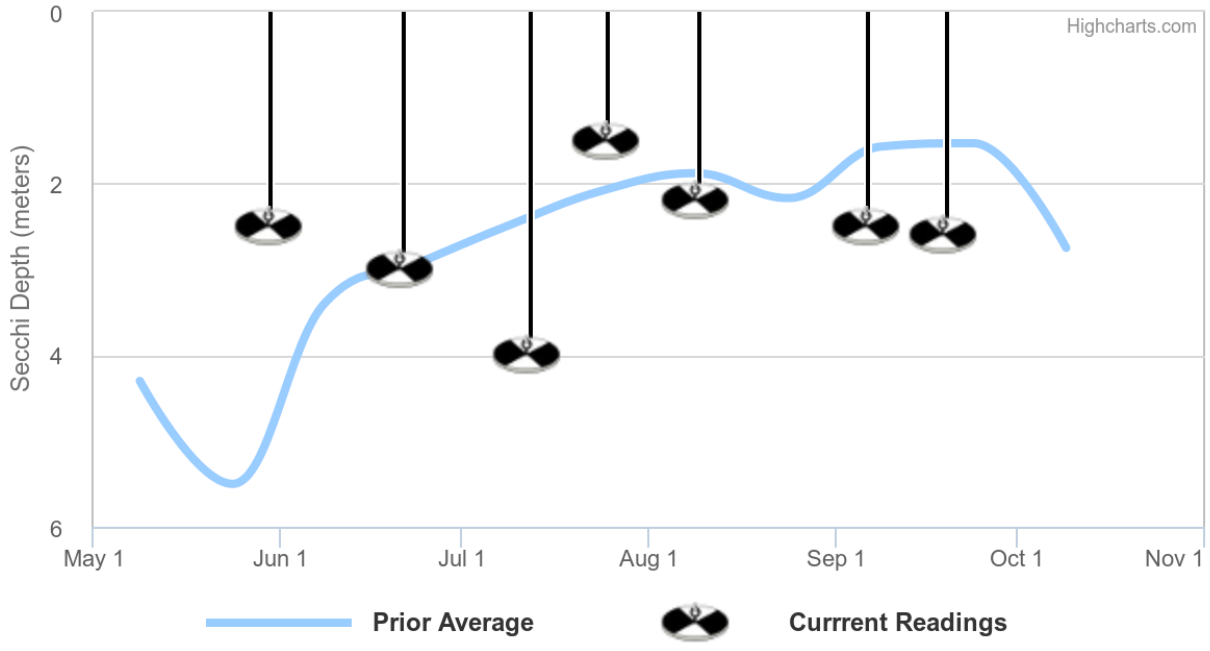
Appendix F: Current Year vs. Prior Averages for Silver Lake

Current Year Water Temperatures vs. Prior Average



This year's shallow water sample temperatures are tending to be higher than normal when compared to the average of readings collected from 1986 to 2013. This year's deep water sample temperatures are tending to be higher than normal when compared to the average of readings collected from 2006 to 2013.

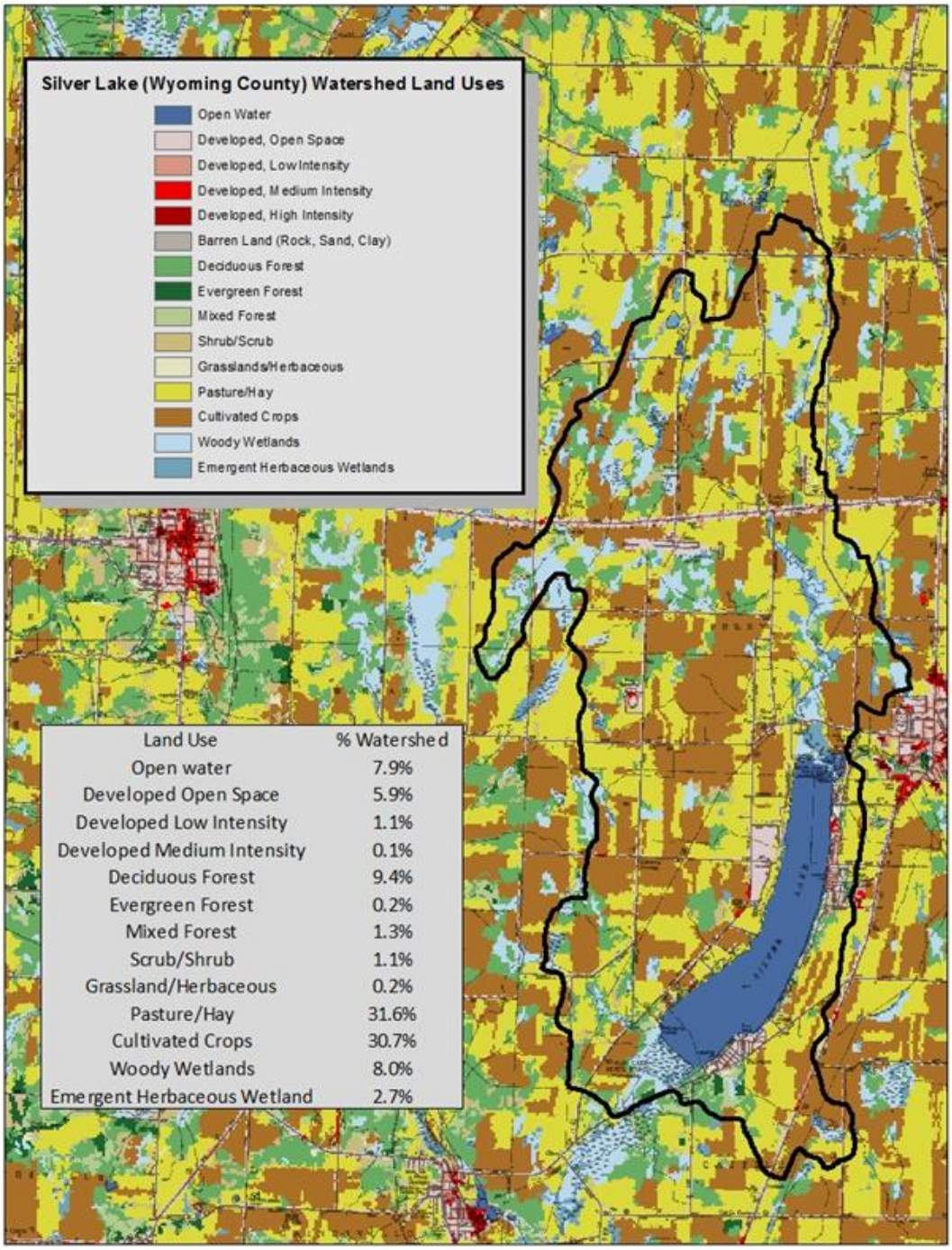
Current Year Secchi Readings vs. Prior Average



This year's session Secchi readings are tending to be higher than normal when compared to the average of readings collected from 1986 to 2013

Appendix G: Watershed and Land Use Map for Silver Lake

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



Land Use	% Watershed
Open water	7.9%
Developed Open Space	5.9%
Developed Low Intensity	1.1%
Developed Medium Intensity	0.1%
Deciduous Forest	9.4%
Evergreen Forest	0.2%
Mixed Forest	1.3%
Scrub/Shrub	1.1%
Grassland/Herbaceous	0.2%
Pasture/Hay	31.6%
Cultivated Crops	30.7%
Woody Wetlands	8.0%
Emergent Herbaceous Wetland	2.7%