

CSLAP 2011 Lake Water Quality Summary: Loon Lake

General Lake Information

Location	Town of Wayland
County	Steuben
Basin	Chemung River
Size	67.3 hectares (166.2 acres)
Lake Origins	Natural
Watershed Area	602.1 hectares (1,487 acres)
Retention Time	1.8 years
Mean Depth	6.1 meters
Sounding Depth	13 meters
Public Access?	no
Major Tributaries	no named tribs
Lake Tributary To...	Moon Hollow Creek to Mill Creek to Canaseraga Creek to Genesee River to Lake Ontario
WQ Classification	B (contact recreation = swimming)
Lake Outlet Latitude	42.486
Lake Outlet Longitude	-77.563
Sampling Years	1994-2011
2011 Samplers	Roderick and Mary Lindsey, and Helen Sick
Main Contact	Helen Sick

Lake Map



Background

Loon Lake is a 166 acre, class B lake found in the Town of Wayland in Steuben County, in central New York State. It was first sampled as part of CSLAP in 1994.

It is one of four CSLAP lakes among the more than 20 lakes found in Steuben County, and one of nine CSLAP lakes among the more than 50 lakes and ponds in the Allegheny and Chemung Rivers drainage basin.

Lake Uses

Loon Lake is a Class B lake; this means that the best intended use for the lake is for contact recreation—swimming and bathing, non-contact recreation—boating and fishing, aquatic life, and aesthetics. The lake is used by lake residents and invited guests for swimming, non-power boating, and fishing. There is no public access to the lake.

It is not known whether Loon Lake has been stocked through any state fisheries stocking programs, or if any private stocking has occurred. Fish netting at the lake has identified brown bullhead, bullhead, carp, cisco, large- and small-mouthed bass, pickerel, pumpkinseed sunfish, rock bass, and yellow perch.

General statewide fishing regulations are applicable in Loon Lake. In addition, open season on trout is April 1-October 15, with no minimum size. There is a daily limit of five trout, with no more than two greater than 12 inches.

Historical Water Quality Data

CSLAP sampling was conducted on Loon Lake from 1994 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 Loon Lake will also be found on the NYSDEC web page at <http://www.dec.ny.gov/lands/77838.html>.

Loon Lake was sampled as part of the Conservation Department (predecessor to the NYSDEC) Biological Survey of the Chemung River basin in 1937. This monitoring program focused primarily on the relationship between water quality and fisheries management, and none of the water quality indicators evaluated through CSLAP were monitored in 1937 (except water temperature).

There was also a summary of the history of Loon Lake provided at the NYSFOLA regional conference in 1995:

“Loon Lake in Steuben County was formed by glaciers and is clam-shaped, 1,700 feet above sea level, a half-mile wide and encompasses 141 acres. Depths range from five-to-ten on down to forty-feet. It has a muck bottom & 1 gravel shore.

In the 1930-40s, Loon Lake was popular for its summertime dance hall and skating rink, the largest in NYS. The hall burnt down in 1936, was rebuilt, and burned down again several years later. The rink deteriorated until it was razed and now there is no public access to Loon Lake.

Loon Lake Association formed in the 1940s, was active for a time and then dormant for 10 years. In the 1950's Matthew Myers published a brochure that garnered interest and re-activated LLA. He was one of the LLA's conference reps.

In the 1950's, the biggest issue on Loon Lake was weeds. Through the town of Wayland, an Aquatic District was formed with taxing authority. Currently, District taxes are \$2.15 per \$1,000 assessed valuation. Funds were used to purchase, operate, and maintain a weed harvester. There is a big demand for harvested weeds for fertilizer on lake area gardens and farms. Disposal is not a problem.

The Association's 162 members represent 75-80% of the lake community. Dues are \$10. The group recently assumed responsibility for the Independence Day fireworks. Since Rte. 390 was constructed, the Loon Lake population has had an influx of city of Rochester property buyers. The community is less close-knit but properly upgrading and maintenance is a common goal”.

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

Lake Association and Management History

Loon Lake is served by the Loon Lake Association. It is not known to what extent the Association is involved in a lake management activities, nor if the Association maintains a website. However, in the mid 1990s, a taxing district raised funds for aquatic plant management

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

Chlorophyll *a* readings were higher than normal in 2011, particularly in late summer, but total phosphorus and Secchi disk transparency readings were close to normal, and none of these indicators has exhibited any clear long-term trends. The productivity of Loon Lake typically increases during the summer, as manifested in decreasing water clarity and increasing nutrient and algae levels. This was apparent in 2011, although this increasing productivity did not occur until mid August. The lake can be characterized as *mesotrophic*, or moderately productive, based on total phosphorus, water clarity, and chlorophyll *a* readings (all typical of *mesotrophic* lakes), although algae levels in 2011 were more typical of *eutrophic* lakes. The trophic state index (TSI) evaluation suggests that each of the trophic indicators are “internally” consistent—each of these trophic indicators are in the expected range given the measurements of these other indicators. Overall trophic conditions are summarized on the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Potable Water Indicators

Algae levels are usually not high enough to render the lake susceptible to taste and odor compounds or elevated DBP (disinfection by product) compounds that could affect the potability of the water, although higher algae levels were measured in 2011. However, Loon Lake is not classified for this use. Hypolimnetic phosphorus and ammonia readings are similar to those measured at the lake surface, despite a steady seasonal increase in lake productivity, so any “unofficial” potable water use may also be supported. 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 readings were higher than normal in 2011 and in June, July and August, but each of the water quality indicators were close to normal in 2011, and none of these water quality indicators has exhibited any clear long-term trends. It is likely that the small changes in each of the limnological indicators have been within the normal range of variability in the lake. Overall limnological conditions are summarized in the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Biological Condition

Only limited macrophyte surveys have been conducted through CSLAP at Loon Lake. These surveys found at least two exotic plant species—*Myriophyllum spicatum*, Eurasian watermilfoil, and *Potamogeton crispus*, curly-leafed pondweed.

The composition of the fish community is comprised of at least seven warmwater fish species, two coolwater fish species, and one coldwater fish species. It is likely that the lake fisheries is typical of a warmwater fishery community.

Phytoplankton, zooplankton, and macroinvertebrate surveys have not been conducted through CSLAP at Loon Lake.

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

Evaluation of Lake Perception

Aquatic plant coverage was higher than normal in 2011, but water quality and recreational assessments were close to normal in 2011 (despite higher algae levels), and none of these measures of lake perception has changed significantly since lake conditions were first assessed in 1994. Lake perception is typically stable during the summer, despite seasonal increases in lake productivity, and no seasonal trends were apparent in 2011. Overall lake perception is summarized on the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Local Climate Change

Air and water temperature readings in the summer index period were close to normal in 2011, and have not exhibited any clear long-term trends. It is not known if this is an indication of the lack 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. Phycocyanin readings at times exceed the levels indicating susceptibility for harmful algal blooms (HABs) in open water and within shoreline blooms. An analysis of algae samples indicate microcystin readings below the levels needed to support safe swimming in both open water and shoreline blooms.

Lake Condition Summary

Category	Indicator	Min	94-11 Avg	Max	2011 Avg	Classification	2011 Change?	Long-term Change?
Eutrophication Indicators	Water Clarity	1.15	4.42	8.35	3.55	Mesotrophic	Within Normal Range	No Change
	Chlorophyll <i>a</i>	0.05	6.20	47.40	10.00	Mesotrophic	Higher than Normal	No Change
	Total Phosphorus	0.002	0.013	0.027	0.013	Mesotrophic	Within Normal Range	No Change
Potable Water Indicators	Hypolimnetic NH4	0.00	0.03	0.16	0.03	Close to Surface NH4 Readings	Within Normal Range	Not known
	Hypolimnetic As					Not sampled through CSLAP		
	Hypolimnetic Iron					Not sampled through CSLAP		
	Hypolimnetic Mn					Not sampled through CSLAP		
Limnological Indicators	Hypolimnetic TP	0.008	0.021	0.290	0.020	Close to Surface TP Readings	Within Normal Range	Not known
	Nitrate + Nitrite	0.00	0.02	0.16	0.01	Low NOx	Within Normal Range	No Change
	Ammonia	0.00	0.03	0.20	0.03	Low Ammonia	Within Normal Range	No Change
	Total Nitrogen	0.10	0.43	1.13	0.38	Low Total Nitrogen	Within Normal Range	No Change
	pH	6.39	7.59	8.87	7.50	Alkaline	Within Normal Range	No Change
	Specific Conductance	81	124	259	145	Softwater	Higher than Normal	No Change
	True Color	1	11	57	8	Intermediate Color	Within Normal Range	No Change
	Calcium	2.5	11.0	13.1	12.3	May be Susceptible to Zebra Mussels	Within Normal Range	No Change
Lake Perception	WQ Assessment	1	2.1	3	2.3	Not Quite Crystal Clear	Within Normal Range	No Change
	Plant Coverage	1	2.2	4	3.0	Subsurface Plant Growth	Less Favorable than Normal	No Change
	Rec. Assessment	1	2.2	4	2.4	Excellent	Within Normal Range	No Change
Biological Condition	Phytoplankton					Not evaluated through CSLAP	Not known	Not known
	Macrophytes					Limited aquatic plant survey	Not known	Not known
	Zooplankton					Not evaluated through CSLAP	Not known	Not known
	Macroinvertebrates					Not evaluated through CSLAP	Not known	Not known
	Fish					Warmwater fishery?	Not known	Not known
	Invasive Species					Eurasian watermilfoil, curly leafed pondweed	Not known	Not known
Local Climate Change	Air Temperature	6	21.8	31	22.1		Within Normal Range	No Change
	Water Temperature	4	21.1	27	21.6		Within Normal Range	No Change
Harmful Algal Blooms	Open Water Phycocyanin	8	148	961	31	Some readings indicate high risk of BGA	Not known	Not known
	Open Water Microcystis	0.0	0.1	0.1	0.0	All readings indicate low lakewide toxins	Not known	Not known
	Shoreline Phycocyanin	129	129	129	0	Some shoreline BGA blooms likely	Not known	Not known
	Shoreline Microcystis	0.2	0.4	0.6	0.5	Shoreline bloom toxins below drinking water and swimming criteria	Not known	Not known
	Other Toxins					Low anatoxin-a and cylindrospermopsin	Not known	Not known

Evaluation of Lake Condition Impacts to Lake Uses

Loon Lake is presently among the lakes cited on the 2007 Chemung River Basin PWL, with recreation listed as *threatened* due to excessive weeds and algae. The PWL listing for Loon Lake is listed in Appendix C.

Potable Water (Drinking Water)

The CSLAP dataset at Loon Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, is inadequate to evaluate the use of the lake for potable water, and the lake is not used for this purpose.

Contact Recreation (Swimming)

The CSLAP dataset at Loon Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggests that swimming and contact recreation should be fully supported, although additional information about bacterial levels is needed to evaluate the safety of the water for swimming. The phycocyanin data indicates that the lake may be susceptible to harmful algal blooms.

Non-Contact Recreation (Boating and Fishing)

The CSLAP dataset on Loon Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that non-contact recreation should be fully supported, although this use may ultimately be *threatened* by the presence of Eurasian watermilfoil and curly leafed pondweed.

Aquatic Life

The CSLAP dataset on Loon Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that aquatic life may be *threatened* by the presence of Eurasian watermilfoil and curly leafed pondweed, although additional data are needed to evaluate the food and habitat conditions for aquatic organisms in the lake.

Aesthetics

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

Fish Consumption

There are no fish consumption advisories posted for Loon Lake.

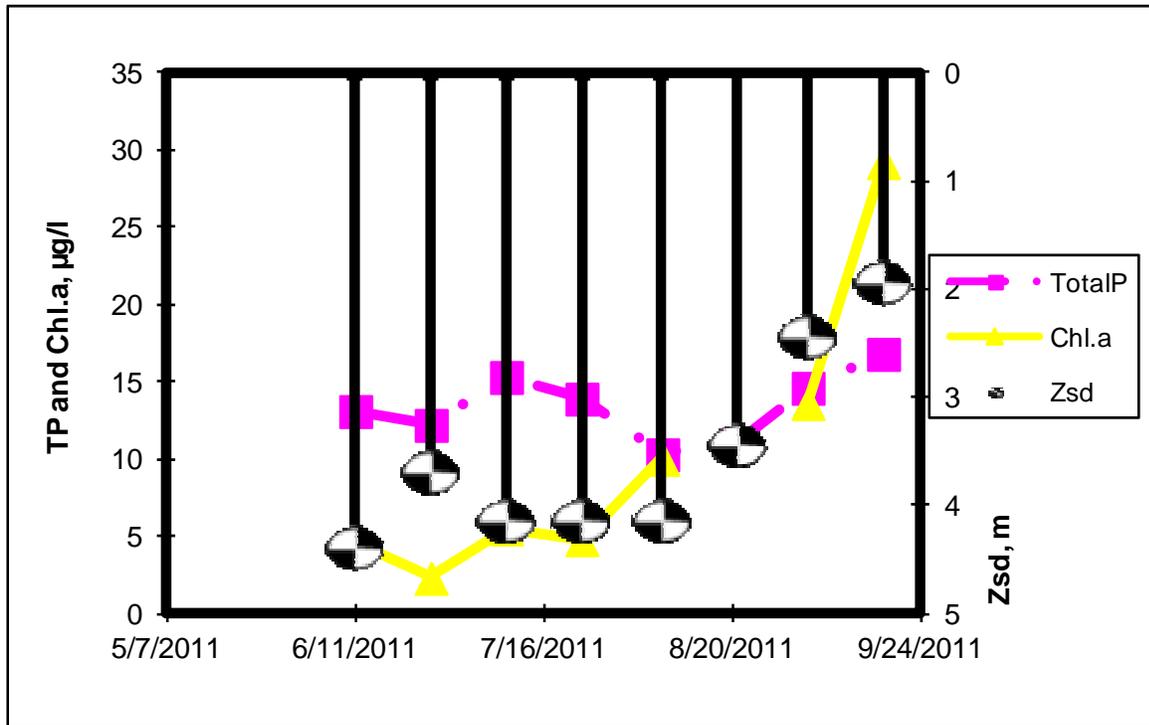
Additional Comments and Recommendations

Aquatic plant surveys should be conducted on Loon Lake to determine whether the aquatic plant community has been compromised by the presence of Eurasian watermilfoil and curly leafed pondweed.

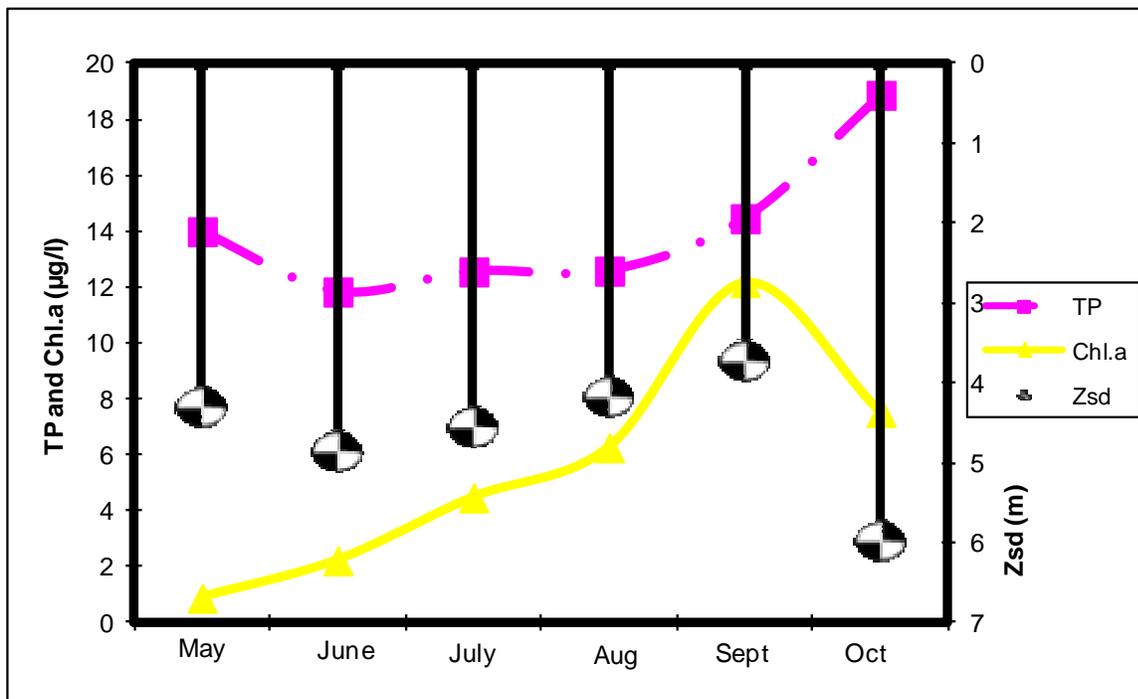
Aquatic Plant IDs-2011

None submitted for identification.

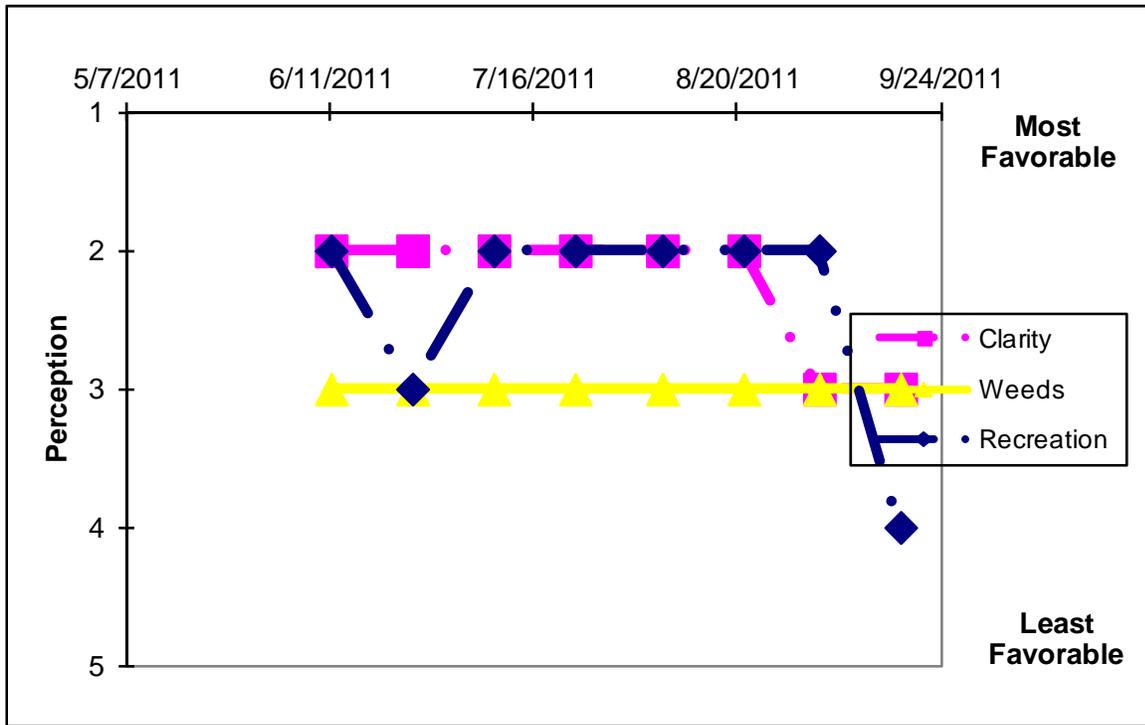
Time Series: Trophic Indicators, 2011



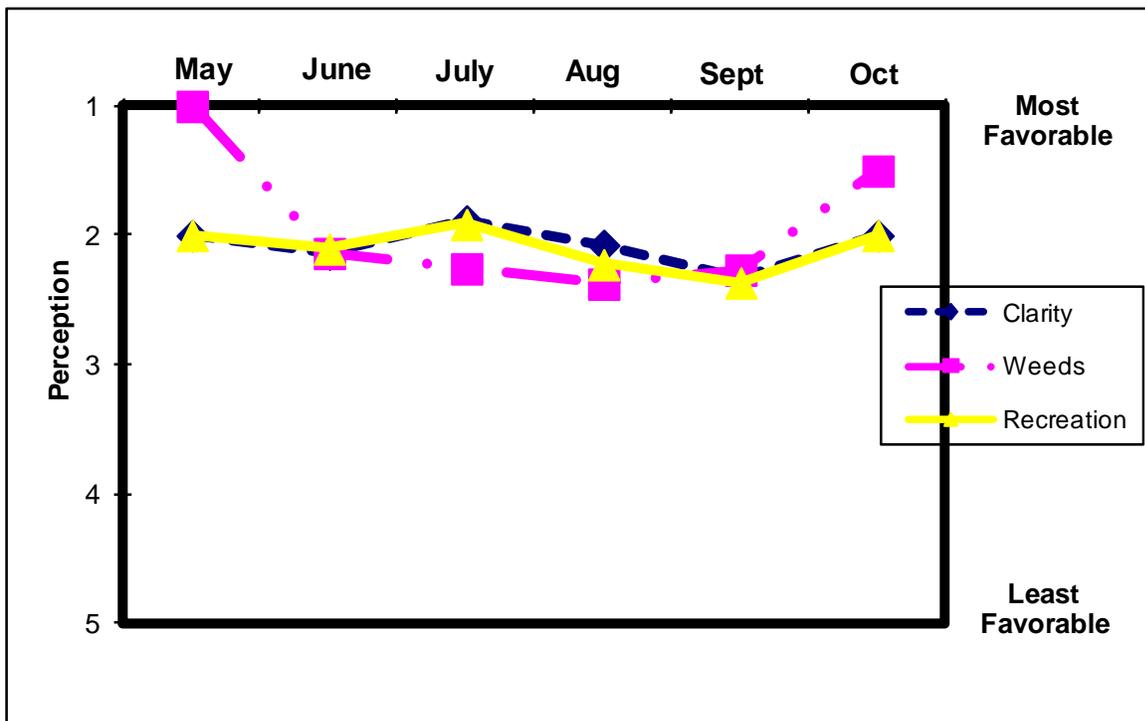
Time Series: Trophic Indicators, Typical Year (1991-2011)



Time Series: Lake Perception Indicators, 2011



Time Series: Lake Perception Indicators, Typical Year (1994-2011)



Appendix A- CSLAP Water Quality Sampling Results for Loon Lake

LNum	LName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a
136	Loon L-S	6/15/1994	8.0	4.50											
136	Loon L-S	6/22/1994	8.0	4.55											
136	Loon L-S	6/29/1994	8.0	5.10											
136	Loon L-S	7/11/1994	8.0	4.45											
136	Loon L-S	7/19/1994	8.0	4.33											
136	Loon L-S	8/3/1994	8.0	2.75											
136	Loon L-S	8/16/1994	8.0	2.95											
136	Loon L-S	8/30/1994	8.0	4.05											
136	Loon L-S	9/13/1994	8.0	4.25											
136	Loon L-S	10/4/1994	8.0	4.55											
136	Loon L-S	6/7/1995	11.0	5.00											
136	Loon L-S	6/21/1995	11.0	4.60											
136	Loon L-S	7/4/1995	11.0	4.45											
136	Loon L-S	7/19/1995	11.0	3.45											
136	Loon L-S	8/1/1995	11.0	2.95											
136	Loon L-S	8/15/1995	11.0	2.50											
136	Loon L-S	8/29/1995	11.0	2.15											
136	Loon L-S	9/2/1995	11.0	3.58											
136	Loon L-S	9/26/1995	11.0	3.68											
136	Loon L-S	6/24/1996	19.0	5.65											
136	Loon L-S	7/2/1996	19.0	6.28											
136	Loon L-S	7/12/1996	19.0	4.68											
136	Loon L-S	8/2/1996	19.0	4.28											
136	Loon L-S	8/14/1996	19.0	4.50											
136	Loon L-S	8/28/1996	19.0	4.00											
136	Loon L-S	9/13/1996	19.0	3.70											
136	Loon L-S	9/20/1996	19.0	3.70											
136	Loon L-S	10/15/1996	19.0	5.20											
136	Loon L-S	5/31/1997	13.0	2.75	1.5	0.016	0.01				5	7.85	112		0.17
136	Loon L-S	6/14/1997	13.0	4.40	1.5	0.012	0.01				5	6.57	116		1.66
136	Loon L-S	6/27/1997	13.0	3.50	1.5	0.019	0.01				10	7.52	115		
136	Loon L-S	7/11/1997	13.4	5.05	1.5	0.014	0.01				10	7.68	113		3.71
136	Loon L-S	7/25/1997	13.4	5.98	1.5	0.013	0.01				10	7.19	111		0.37
136	Loon L-S	8/8/1997	13.4	5.95	1.5	0.012	0.01				8	7.72	113		0.58
136	Loon L-S	8/25/1997	13.0	5.00	1.5	0.011	0.01				9	6.99	114		4.84
136	Loon L-S	9/19/1997	13.8	2.00	1.5	0.013	0.01				8	7.23	111		16.90
136	Loon L-S	5/30/1998	13.4	5.85	1.5	0.012	0.01				5	8.02	113		1.6
136	Loon L-S	6/12/1998	13.4	4.55	1.5	0.012	0.01				4	7.71	109		4.36
136	Loon L-S	6/28/1998	13.4	5.40	1.5		0.01				1	6.69	109		3.2
136	Loon L-S	7/13/1998	12.2	3.40	1.5		0.01				10	7.83	106		6.9
136	Loon L-S	7/27/1998	13.0	2.50	1.5						5	7.73	108		12.7
136	Loon L-S	8/7/1998	13.0	2.75	1.5						1	8.04	107		9.72
136	Loon L-S	8/21/1998	12.0	2.88	1.5						7	7.68	109		6.16
136	Loon L-S	9/11/1998	13.5	3.55	1.5	0.017	0.01				4	6.39	116		6.27
136	Loon L-S	6/5/1999	14.6	5.08	1.5	0.011	0.01				11	7.35	120		1.46
136	Loon L-S	6/19/1999	13.5	6.85	1.5	0.012	0.01				6	7.54	120		1.80
136	Loon L-S	7/3/1999	14.0	4.85	1.5	0.012	0.01				3	7.60	118		3.36
136	Loon L-S	7/17/1999	12.0	2.35	1.5	0.012	0.01				7	8.13	117		7.90
136	Loon L-S	7/31/1999	13.5	2.25	1.5	0.015	0.01				8	7.59	117		11.20
136	Loon L-S	8/15/1999	12.5	2.65		0.014	0.01				12	7.61	124		10.10
136	Loon L-S	8/29/1999	13.5	2.85	1.5	0.013	0.01				8	7.72	120		10.80
136	Loon L-S	10/11/1999	13.0	5.00	1.5	0.016	0.02				10	7.34	124		1.34
136	Loon L-S	6/5/2000	13.0	3.00	1.5	0.010	0.01				6	7.65	125		2.02
136	Loon L-S	6/20/2000	13.5	4.70	1.5	0.011	0.01				12	6.44	121		2.56
136	Loon L-S	7/10/2000	13.0	4.75	1.5	0.016	0.01				6	7.66	124		5.40
136	Loon L-S	7/23/2000	13.5	5.25	1.5	0.012	0.01				6	7.13	124		4.78
136	Loon L-S	8/5/2000	13.0	4.95	1.5		0.01				4	7.82	123		2.84
136	Loon L-S	8/26/2000	12.5	6.00	1.5	0.027					8	7.80	133		3.28
136	Loon L-S	9/18/2000	13.5	4.75	1.5	0.018					8	7.16	126		5.05
136	Loon L-S	6/16/2001	13.5	5.00	1.5	0.010	0.01				5	7.27	139		1.62
136	Loon L-S	6/30/2001	13.0	5.65	1.5		0.01				8	7.42	132		1.90
136	Loon L-S	7/21/2001	12.0	2.50	1.5	0.008	0.01				4	7.54	128		1.44
136	Loon L-S	7/29/2001	12.5	8.35	1.5	0.009	0.01				3	7.65	130		

LNum	LName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a
136	Loon L-S	8/11/2001	13.0	5.00	1.5	0.011	0.01				8	7.76	259		2.74
136	Loon L-S	8/25/2001	12.5	5.60	1.5	0.011	0.01				6	7.38	137		0.67
136	Loon L-S	9/8/2001		7.93	1.5	0.011	0.01				8	7.80	131		
136	Loon L-S	6/22/2002	13.9	7.55	1.5	0.016	0.01	0.03	0.98	135.95	6	8.21	128	2.53	0.19
136	Loon L-S	7/8/2002	14.0	8.30	1.5	0.009	0.00	0.02	0.44	102.39	17	7.79	127		0.31
136	Loon L-S	7/18/2002	14.0	4.70	1.5	0.012	0.01	0.10	0.63	113.76		7.26	129		0.79
136	Loon L-S	8/4/2002	13.4	5.35	1.5	0.009	0.01	0.02	0.49	114.53	8	7.79	126		0.07
136	Loon L-S	9/8/2002	12.5	5.70	1.5										
136	Loon L-S	6/15/2003			1.5	0.013	0.00	0.01	0.22	37.57	18	8.1	138.5	12.0	0.35
136	Loon L-S	7/10/2003		6.00	1.5	0.019	0.00	0.00	0.39	44.34	16	7.8	136		0.22
136	Loon L-S	8/1/2003	14.0	3.95	1.5	0.014	0.01	0.01	0.27	41.87	20	7.8	132.1		0.86
136	Loon L-S	8/9/2003	14.2	4.45	1.5		0.00	0.02	0.34		8	7.2	132.3		
136	Loon L-S	8/16/2003	14.4	4.55	1.5	0.012	0.00	0.15	0.46	82.56	7	8.1	128	11.0	2.85
136	Loon L-S	9/2/2003	14.2	3.80	1.5	0.024	0.00	0.01	0.23	21.13	10	6.6	138		3.34
136	Loon L-S	9/7/2003	14.2	6.00	1.5	0.009	0.03	0.02			10	7.7	134.7		2.91
136	Loon L-S	9/21/2003	14.5	4.10		0.015	0.00	0.01	0.31	45.13	21	7.5	136.2		3.55
136	Loon L-S	7/18/2004	15.5	8.00	1.5	0.008	0.02	0.01	0.50	132.72	22	6.7	80.7		
136	Loon L-S	8/1/2004	14.5	7.70	1.5	0.010	0.03	0.02	0.22	49.26	14	7.44	121		0.1
136	Loon L-S	8/15/2004	14.5	7.35	1.5	0.010	0.01	0.01	0.31	65.06	8	8.01	125		10.4
136	Loon L-S	8/29/2004	14.5	7.40	1.5	0.009	0.02	0.20	0.38	89.76	10	7.48	147		1.4
136	Loon L-S	9/12/2004	15.0	7.10	1.5	0.014	0.02	0.02	0.45	69.35	19	8.01	122	12.196	1.5
136	Loon L-S	9/26/2004	14.5	6.90	1.5	0.013	0.14	0.05			19	8.22	86.5		12.7
136	Loon L-S	10/10/2004	14.0	7.00	1.3	0.016	0.01	0.03	0.38	51.54	19	6.78	95.6		
136	Loon L-S	10/24/2004	14.5	7.50	1.5	0.025	0.05	0.06	0.67	58.24	19	7.02	92.6		
136	Loon L-S	6/19/2005	14.0	7.25	1.3	0.012	0.04	0.01	0.18	31.29	8	7.00	117	11.5	0.7
136	Loon L-S	7/10/2005	14.0	7.45	1.4	0.009	0.02	0.01	0.13	29.98	5	7.40	132		1.1
136	Loon L-S	7/24/2005	14.0	7.45	1.4	0.012	0.01	0.01	0.10	18.96	11	7.90	128		0.1
136	Loon L-S	8/7/2005	14.0	7.45	1.4		0.01	0.01	0.47		16	7.55	119	0.0	3.2
136	Loon L-S	8/21/2005	14.0	6.85	1.4	0.012	0.03	0.01	0.27	47.59	55	7.40		10.9	13.4
136	Loon L-S	9/4/2005	14.0	7.00	0.6	0.013	0.01	0.01	0.28	48.36	12	7.48	122		7.8
136	Loon L-S	9/18/2005	14.0	6.60	1.2	0.014	0.01	0.01	0.29	45.17	12	7.43	137		5.8
136	Loon L-S	10/2/2005	14.0	6.60		0.018	0.01	0.01	0.25	30.17	25	7.86	127		13.7
136	Loon L-S	6/13/2006	14.0	3.10	1.3	0.011	0.03	0.05	0.51	99.43	12	7.04	102	10.4	1.49
136	Loon L-S	6/25/2006	14.3	4.35	1.0	0.009	0.02	0.01	0.69	174.49	3	8.38	131		1.97
136	Loon L-S	7/9/2006	14.0	4.30	0.6	0.009	0.01	0.01	0.42	101.68	17	7.84	116		2.01
136	Loon L-S	7/23/2006	14.3	3.85	1.0	0.012	0.01	0.02	0.56	101.38	18	7.61	124		4.43
136	Loon L-S	8/6/2006	14.0	3.25	1.3	0.012	0.03	0.01	0.62	110.00	8	7.7	119	10.6	5.58
136	Loon L-S	8/20/2006	14.0	2.60	1.3	0.012	0.01	0.02	0.76	136.18	14	8.26	126		7.58
136	Loon L-S	9/4/2006	14.4	1.95		0.016			0.44	61.82	21	7.65	113		0.72
136	Loon L-S	9/17/2006	14.3	2.35	1.3	0.014	0.02	0.02	1.13	183.99	32	7.92	110		8.59
136	Loon L-S	6/24/2007	14.0	5.20	1.3	0.012	0.02	0.02	0.49	87.74	11	7.24	137	11.4	2.76
136	Loon L-S	7/8/2007	14.0	5.10	1.3	0.011	0.02	0.02	0.50	105.13	8	7.72	130		2.26
136	Loon L-S	7/22/2007				0.012	0.01	0.02	0.42	80.11	16	7.77	97		5.05
136	Loon L-S	8/5/2007	12.5	4.90	1.3	0.013	0.00	0.01	0.71	119.11	13	8.01	130		7.46
136	Loon L-S	8/19/2007	12.5	2.30	1.3	0.012	0.01	0.01	0.56	101.45	23	7.85	99	11.2	10.32
136	Loon L-S	9/2/2007	12.5	1.50	1.3	0.015	0.03	0.01	0.96	139.25	34	8.67	120		47.40
136	Loon L-S	9/16/2007	12.5	1.15	1.3	0.017	0.07	0.03	0.71	89.99	31	8.14	117		28.00
136	Loon L-S	9/30/2007	13.0	2.20	1.3	0.013	0.03	0.10	0.76	128.66	21	7.71	121		6.98
136	Loon L-S	6/15/2008	13.0	5.25	1.3	0.009	0.01	0.02	0.53	125.87	10	8.18	161	11.9	0.95
136	Loon L-S	6/29/2008	13.0	4.15	1.3	0.009	0.00	0.03	0.37	89.50	5	7.79	140		2.20
136	Loon L-S	7/13/2008	10.0	3.25	1.3	0.011	0.04	0.04	0.37	73.64	14	8.08	117		3.49
136	Loon L-S	7/27/2008	13.0	3.80	1.3	0.011	0.03	0.00	0.47	98.08	10	8.00	82		0.10
136	Loon L-S	8/9/2008	13.0	3.25	1.3	0.011	0.01	0.01	0.39	79.66	9	7.67	110	10.9	6.63
136	Loon L-S	8/24/2008	13.0	4.10	1.3	0.012	0.01	0.01	0.32	61.54	10	7.75	86		4.32
136	Loon L-S	9/8/2008		2.90	1.3	0.013	0.00	0.03	0.36	60.01	6	7.89	107		8.75
136	Loon L-S	9/21/2008	13.0	3.45	1.3	0.012	0.01	0.05	0.28	53.21	5	7.20	116		1.17
136	Loon L-S	06/14/2009	13.0	4.40	1.3	0.009	0.00	0.02	0.27	65.12	7	7.64	124	9.6	4.91
136	Loon L-S	06/29/2009	13.0	3.85	1.3	0.011	0.01	0.02	0.27	52.03	7	6.89	128		3.53
136	Loon L-S	07/12/2009	13.0	3.25	1.3	0.012	0.00	0.01	0.26	46.89	5	7.28	127		6.12
136	Loon L-S	07/26/2009	13.0	2.90	1.3	0.012	0.02	0.02	0.27	51.15	20	7.95	94		7.39
136	Loon L-S	08/09/2009	13.0	2.70	1.3	0.002	0.01	0.02	0.29	332.32	57	7.77	109	12.2	18.48
136	Loon L-S	08/23/2009	13.0	2.33	1.3	0.011	0.01	0.03	0.35	72.29	14	7.60	108		16.90
136	Loon L-S	09/05/2009	13.0	1.95	1.3	0.012	0.01	0.02	0.43	79.50	12	7.49	117		30.30
136	Loon L-S	09/20/2009		1.70	1.3	0.014	0.01	0.02	0.45	69.21	15	7.34	92		23.50
136	Loon L-S	6/11/2010		6.00	1.3	0.012	0.08	0.03			1	8.87	145	12.3	0.10
136	Loon L-S	6/26/2010		4.15	1.3	0.010	0.01	0.02	0.43	92.27	1	7.90	143		4.50

LNum	LName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a
136	Loon L-S	7/10/2010		4.35	1.3	0.011	0.01	0.02	0.30	58.02	8	7.89	119		5.60
136	Loon L-S	7/24/2010		3.50	1.3	0.015	0.01	0.02	0.43	64.36	7	7.07	136		13.90
136	Loon L-S	8/7/2010		3.10	1.3	0.014	0.02	0.02	0.28	43.07	4	7.99	142	13.1	14.50
136	Loon L-S	8/23/2010		2.05	1.3	0.017	0.02	0.04	0.44	56.55	15	7.41	140		2.30
136	Loon L-S	9/4/2010		2.15	1.3	0.013	0.01	0.01	0.65	111.38	9	7.66	143		3.00
136	Loon L-S	9/4/2010	grab		bloom										
136	Loon L-S	9/18/2010	13.0	1.75	1.3	0.016	0.16	0.01	0.42	58.20	20	7.20	150		12.90
136	Loon L-S	6/11/2011	13.0	4.40	1.3	0.013	0.04	0.04	0.21	35.77	1	7.30	152	12.4	4.60
136	Loon L-S	6/25/2011	13.0	3.70	1.3	0.012	0.02	0.03	0.26	47.07	14	7.55	143		2.30
136	Loon L-S	7/9/2011	13.0	4.15	1.3	0.015	0.01	0.02	0.31	44.72	3	7.09	151		5.50
136	Loon L-S	7/23/2011	13.0	4.15	1.3	0.014	0.02	0.02	0.32	50.33	14	8.11	149		4.80
136	Loon L-S	7/23/2011	grab		bloom										
136	Loon L-S	8/7/2011	13.0	4.15	1.3	0.010	0.01	0.03	0.30	64.29	9	7.68	145	12.2	10.00
136	Loon L-S	8/7/2011			bloom										
136	Loon L-S	8/21/2011	13.0	3.45	1.3	0.011	0.01	0.01	0.61	122.00	6	7.51	146		
136	Loon L-S	9/3/2011	13.0	2.45	1.3	0.015	0.01	0.03	0.48	72.18	7	7.77	127		13.60
136	Loon L-S	9/3/2011	grab		bloom										
136	Loon L-S	9/17/2011	grab		bloom										
136	Loon L-S	9/17/2011	13.0	1.95	1.3	0.017	0.01	0.04	0.52	68.23	11	7.00	143		29.20
136	Loon L-S	6/12/1998				0.015									
136	Loon L-S	7/27/1998				0.148									
136	Loon L-S	8/21/1998				0.229									
136	Loon L-S	9/11/1998				0.290									
136	Loon L-S	5/30/1998													1.97
136	Loon L-S	6/22/2002				0.015	0.00	0.03	1.52	229.41					
136	Loon L-S	7/8/2002					0.02	0.04	0.56						
136	Loon L-S	6/15/2003				0.014	0.00	0.01	0.26	40.84					
136	Loon L-S	7/10/2003				0.020	0.00	0.00	0.25	27.51					
136	Loon L-S	8/1/2003				0.016	0.01	0.01	0.20	27.02					
136	Loon L-S	8/9/2003					0.00	0.01	0.42						
136	Loon L-S	8/16/2003				0.011	0.01	0.02	0.42	81.47					
136	Loon L-S	9/2/2003				0.015	0.00	0.00	0.23	34.51					
136	Loon L-S	9/7/2003				0.014	0.03	0.02							
136	Loon L-S	9/21/2003				0.015	0.00	0.01	0.26	38.69					
136	Loon L-S	7/18/2004				0.010	0.01	0.01	0.44	100.46					
136	Loon L-S	8/1/2004				0.010	0.03	0.01	0.37	80.30					
136	Loon L-S	8/15/2004				0.013	0.01	0.01	0.30	51.24					
136	Loon L-S	8/29/2004				0.011	0.03	0.16	0.81	159.44					
136	Loon L-S	9/12/2004				0.016	0.01	0.01	0.28	40.18					
136	Loon L-S	9/26/2004				0.014	0.04	0.06	0.73	114.90					
136	Loon L-S	10/10/2004				0.016	0.01	0.01	0.36	48.88					
136	Loon L-S	10/24/2004				0.025	0.08	0.04	0.55	48.92					
136	Loon L-S	6/19/2005				0.010									
136	Loon L-S	7/10/2005				0.010									
136	Loon L-S	7/24/2005				0.009									
136	Loon L-S	8/7/2005				0.010									
136	Loon L-S	8/21/2005				0.010									
136	Loon L-S	9/4/2005				0.014									
136	Loon L-S	9/18/2005				0.015									
136	Loon L-S	10/2/2005				0.017									
136	Loon L-S	6/13/2006	14.0		0.0	0.011									
136	Loon L-S	6/25/2006	14.3		0.0	0.008									
136	Loon L-S	7/9/2006	14.0		0.0	0.013									
136	Loon L-S	7/23/2006	14.3		0.0	0.012									
136	Loon L-S	8/6/2006	14.0		0.0	0.011									
136	Loon L-S	8/20/2006	14.0		0.0	0.012									
136	Loon L-S	9/4/2006	14.4		0.0	0.018									
136	Loon L-S	9/17/2006	14.3		0.0	0.018									
136	Loon L-S	6/24/2007	14.0			0.011									
136	Loon L-S	7/8/2007	14.0			0.015									
136	Loon L-S	7/22/2007				0.015									
136	Loon L-S	8/5/2007	12.5			0.012									
136	Loon L-S	8/19/2007	12.5			0.017									
136	Loon L-S	9/2/2007	12.5			0.016									
136	Loon L-S	9/16/2007	12.5			0.018									
136	Loon L-S	9/30/2007	13.0			0.014									

LNum	LName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4				NO2	Fe	Mn	As
136	Loon L-S	6/15/2008	13.0			0.010									
136	Loon L-S	6/29/2008	13.0			0.010									
136	Loon L-S	7/13/2008	10.0			0.010									
136	Loon L-S	7/27/2008	13.0			0.013									
136	Loon L-S	8/9/2008	13.0			0.010									
136	Loon L-S	8/24/2008	13.0			0.011									
136	Loon L-S	9/8/2008				0.012									
136	Loon L-S	9/21/2008	13.0			0.014									
136	Loon L-S	06/14/2009	13.0			0.009		0.03							
136	Loon L-S	06/29/2009	13.0			0.011									
136	Loon L-S	07/12/2009	13.0			0.009		0.01							
136	Loon L-S	08/09/2009	13.0			0.014		0.02							
136	Loon L-S	08/23/2009	13.0			0.010									
136	Loon L-S	09/05/2009	13.0			0.014									
136	Loon L-S	09/20/2009				0.016									
136	Loon L-S	6/11/2010			0.0	0.011		0.03							
136	Loon L-S	7/10/2010			0.0	0.012		0.02							
136	Loon L-S	8/7/2010			0.0	0.013		0.02							
136	Loon L-S	9/4/2010			0.0	0.016		0.14							
136	Loon L-S	6/11/2011				0.017		0.04							
136	Loon L-S	7/9/2011				0.019		0.03							
136	Loon L-S	8/7/2011				0.028		0.03							
136	Loon L-S	9/3/2011				0.018		0.01							

LNum	LName	Date	Site	TAir	TH2O	QA	QB	QC	QD	QF	QG	AQ-PC	AQ-Chla	MC-LR	Anatoxin-a	Cyclin
136	Loon L-S	6/15/1994				3	3	2	2							
136	Loon L-S	6/22/1994				3	1	1	2							
136	Loon L-S	6/29/1994				1	1	1								
136	Loon L-S	7/11/1994				2	2	2	2							
136	Loon L-S	7/19/1994				2	2	2	2							
136	Loon L-S	8/3/1994				3	2	3	12							
136	Loon L-S	8/16/1994				3	2	2	1							
136	Loon L-S	8/30/1994				2	2	2								
136	Loon L-S	9/13/1994				2	2	2								
136	Loon L-S	10/4/1994				2	2	4	5							
136	Loon L-S	6/7/1995				3	2	3	35							
136	Loon L-S	6/21/1995				3	3	3	23							
136	Loon L-S	7/4/1995				2	3	2	2							
136	Loon L-S	7/19/1995				2	3	2	12							
136	Loon L-S	8/1/1995				2	3	3	12							
136	Loon L-S	8/15/1995				2	3	3	12							
136	Loon L-S	8/29/1995				2	3	3	12							
136	Loon L-S	9/2/1995				2	2	2	12							
136	Loon L-S	9/26/1995				2	2	2	12							
136	Loon L-S	6/24/1996				2	2	2	2							
136	Loon L-S	7/2/1996				2	2	2	2							
136	Loon L-S	7/12/1996				2	2	2	2							
136	Loon L-S	8/2/1996				2	2	2	2							
136	Loon L-S	8/14/1996				3	3	2	12							
136	Loon L-S	8/28/1996				2	2	2	12							
136	Loon L-S	9/13/1996				2	2	2	12							
136	Loon L-S	9/20/1996				2	2	2	12							
136	Loon L-S	10/15/1996				2	2	1	1							
136	Loon L-S	5/31/1997	epi	20	16	2	1	3	5							
136	Loon L-S	6/14/1997	epi	15	21	2	2	2	5							
136	Loon L-S	6/27/1997	epi	20	23	2	2	2								
136	Loon L-S	7/11/1997	epi	20	22	2	2	2								
136	Loon L-S	7/25/1997	epi	23	22	1	2	1								
136	Loon L-S	8/8/1997	epi	20	22	1	2	1	6							
136	Loon L-S	8/25/1997	epi	18	19	1	3	3	5							
136	Loon L-S	9/19/1997	epi	20	19	3	3	4	1235							
136	Loon L-S	5/30/1998	epi	25	20	2	1	1								
136	Loon L-S	6/12/1998	epi	25	18	3	2	4	5							

LNum	LName	Date	Site	TAir	TH2O	QA	QB	QC	QD	QF	QG	AQ-PC	AQ-Chla	MC-LR	Anatoxin-a	Cyclin
136	Loon L-S	6/28/1998	epi	25	23	3	3	2	2							
136	Loon L-S	7/13/1998	epi	22	22	3	3	2								
136	Loon L-S	7/27/1998	epi	22	23	3	3	2								
136	Loon L-S	8/7/1998	epi	20	22	3	2	2								
136	Loon L-S	8/21/1998	epi	21	22	2	2	2	5							
136	Loon L-S	9/11/1998	epi	18	18	3	3	3	15							
136	Loon L-S	6/5/1999	epi	17	19	1	1	1	6							
136	Loon L-S	6/19/1999	epi	22	20	2	2	1								
136	Loon L-S	7/3/1999	epi	23	23	2	2	1	6							
136	Loon L-S	7/17/1999	epi	27	24	2	2	2								
136	Loon L-S	7/31/1999	epi	24	25	2	3	2	6							
136	Loon L-S	8/15/1999	epi	19	21	2	1	3	5							
136	Loon L-S	8/29/1999	epi	16	21	2	2	2	5							
136	Loon L-S	10/11/1999	epi	18	16	1	1	1								
136	Loon L-S	6/5/2000	epi	17	19	2	2	4	5							
136	Loon L-S	6/20/2000	epi	31	22	2	2	2	5							
136	Loon L-S	7/10/2000	epi	23	23	2	3	3	6							
136	Loon L-S	7/23/2000	epi	23	21	1	2	2								
136	Loon L-S	8/5/2000	epi	23	24	2	3	2								
136	Loon L-S	8/26/2000	epi	23	22	1	3	2								
136	Loon L-S	9/18/2000	epi	20	18	2	1	2								
136	Loon L-S	6/16/2001	epi	25	22	1	2	2								
136	Loon L-S	6/30/2001	epi	24	25	2	3	2	5							
136	Loon L-S	7/21/2001	epi	22	22	1	2	1								
136	Loon L-S	7/29/2001	epi	21	22	2	3	3	5							
136	Loon L-S	8/11/2001	epi	24	25	2	3	3								
136	Loon L-S	8/25/2001	epi	26	22	2	3	3								
136	Loon L-S	9/8/2001	epi	27	22	2	3	2								
136	Loon L-S	6/22/2002	epi	28	22		4	3	2							
136	Loon L-S	7/8/2002	epi	30	25	2	3	3	2							
136	Loon L-S	7/18/2002	epi	30	25	2	3	2	2							
136	Loon L-S	8/4/2002	epi	30	27	2	2	2	8							
136	Loon L-S	9/8/2002	epi	27	23	2	3	1	8							
136	Loon L-S	7/10/2003	epi	26	23	2	3	3	8							
136	Loon L-S	8/1/2003	epi	26	23	2	3	3	28							
136	Loon L-S	8/9/2003	epi	30	25	2	3	2	2							
136	Loon L-S	8/16/2003	epi	28	26	2	3	2	28							
136	Loon L-S	9/2/2003	epi	16	18	3	3	3	25							
136	Loon L-S	9/7/2003	epi	27	21	2	3	2	8							
136	Loon L-S	9/21/2003	epi	18	19	2	3	1	8							
136	Loon L-S	7/18/2004	epi	18	20	2	3	2	8							
136	Loon L-S	8/1/2004	epi	28	22	2	3	2	8							
136	Loon L-S	8/15/2004	epi	22	20	2	3	2	28							
136	Loon L-S	8/29/2004	epi	26	23	2	3	2	28							
136	Loon L-S	9/12/2004	epi	20	20	2	2	2	28							
136	Loon L-S	9/26/2004	epi	20	17	2	1	2	8							
136	Loon L-S	10/10/2004	epi	10	14	2	1	2	8							
136	Loon L-S	10/24/2004	epi	6	4	2	1	2	58							
136	Loon L-S	6/19/2005	epi	14	7	2	1	2	5							
136	Loon L-S	7/10/2005	epi	25	22	2	1	2	8							
136	Loon L-S	7/24/2005	epi	25	24	2	1	2	8							
136	Loon L-S	8/7/2005	epi	30	21	2	1	2	8							
136	Loon L-S	8/21/2005	epi	25	22	2	1	2	5							
136	Loon L-S	9/4/2005	epi	21	20	2	1	2	8							
136	Loon L-S	9/18/2005	epi	23	20	2	2	2	8							
136	Loon L-S	10/2/2005	epi	26	15	3	2	2	8							
136	Loon L-S	6/13/2006	epi	17	18	2	2	2	8							
136	Loon L-S	6/25/2006	epi	22	21	2	2	2	8							
136	Loon L-S	7/9/2006	epi	22	21	2	2	2	8							
136	Loon L-S	7/23/2006	epi	17	22	2	2	2	8							
136	Loon L-S	8/6/2006	epi	24	24	2	2	2	8							
136	Loon L-S	8/20/2006	epi	24	24	2	2	2	5							

LNum	LName	Date	Site	TAir	TH2O	QA	QB	QC	QD	QF	QG	AQ-PC	AQ-Chla	MC-LR	Anatoxin-a	Cyclin
136	Loon L-S	9/4/2006	epi	18	21	2	2	2	5							
136	Loon L-S	9/17/2006	epi	19	21	2	2	2	8							
136	Loon L-S	6/24/2007	epi	25	21	2	2	2	0							
136	Loon L-S	7/8/2007	epi	23	22	2	2	2	0							
136	Loon L-S	8/5/2007	epi	22	23	2	2	1	0							
136	Loon L-S	8/19/2007	epi	21	21	3	2	2	1							
136	Loon L-S	9/2/2007	epi	13	20	3	2	3	1							
136	Loon L-S	9/16/2007	epi	10	18	2	2	2	5							
136	Loon L-S	9/30/2007	epi	19	18	3	2	4	5							
136	Loon L-S	6/15/2008	epi	18	22	3	2	1	0							
136	Loon L-S	6/29/2008	epi	22	21	1	2	2	5							
136	Loon L-S	7/13/2008	epi	24	23	1	2	2	5							
136	Loon L-S	7/27/2008	epi	26	23	2	2	1	0							
136	Loon L-S	8/9/2008	epi	24	23	2	2	1	0							
136	Loon L-S	8/24/2008	epi	27	25	2	2	2	0							
136	Loon L-S	9/8/2008	epi	25	21	2	2	2	0							
136	Loon L-S	9/21/2008	epi	17	18	2	2	2	5							
136	Loon L-S	06/14/2009	epi	16	19	3	2	2	0							
136	Loon L-S	06/29/2009	epi	19	21	2	2	2	0							
136	Loon L-S	07/12/2009	epi	16	20	2	2	2	0							
136	Loon L-S	07/26/2009	epi	20	22	2	2	2	0							
136	Loon L-S	08/09/2009	epi	22	22	2	2	3	5					0.04		
136	Loon L-S	08/23/2009	epi	23	23	2	2	3	0							
136	Loon L-S	09/05/2009	epi	23	22	3	2	3	12			213.6		0.14		
136	Loon L-S	09/20/2009	epi	16	18	3	2	3	15			224.2				
136	Loon L-S	6/11/2010	epi	23	21	2	2	1	0	0	0					
136	Loon L-S	6/26/2010	epi	24	22	2	2	3	5	0	0					
136	Loon L-S	7/10/2010	epi	23	25	2	2	1	0	0	0					
136	Loon L-S	7/24/2010	epi	25	25	2	2	2	0	0	0					
136	Loon L-S	8/7/2010	epi	22	23	2	2	1	0	0	0	64.00		0.02		
136	Loon L-S	8/23/2010	epi	18	21	3	3	4	15	0	0	961.40				
136	Loon L-S	9/4/2010	epi	16	21	2	3	3	125	0	0	210.00		0.05		
136	Loon L-S	9/4/2010	bloom									129.00		0.18		
136	Loon L-S	9/18/2010	Epi	20	16	3	3	3	125	0	0					
136	Loon L-S	6/11/2011	Epi	21	22	2	3	2	0	0	0	7.70	2.00			
136	Loon L-S	6/25/2011	Epi	19	21	2	3	3	1	0	0	7.70	1.70			
136	Loon L-S	7/9/2011	Epi	24	23	2	3	2	0	0	0	10.40	2.50			
136	Loon L-S	7/23/2011	Epi	27	26	2	3	2	0	0	0	9.60	1.85			
136	Loon L-S	7/23/2011	bloom											0.61	<0.5	<0.1
136	Loon L-S	8/7/2011	Epi	26	25	2	3	2	0	0	0	40.90	2.30			
136	Loon L-S	8/7/2011	Bloom											0.58	<0.5	<0.1
136	Loon L-S	8/21/2011	Epi	22	22	2	3	2	5	0	0	30.70	2.30			
136	Loon L-S	9/3/2011	Epi	27	23	3	3	2	1	0	0	75.70	2.60			
136	Loon L-S	9/3/2011	Bloom											0.30	<0.8	<0.1
136	Loon L-S	9/17/2011	bloom													
136	Loon L-S	9/17/2011	epi	11	12	3	3	4	15	0	0	61.80	4.50			

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 Loon Lake Data, 2006-2011

June Data

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

July Data

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

August Data

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

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

Loon Lake (0502-0039)

Threatened

Waterbody Location Information

Revised: 02/07/2007

Water Index No: Pa 3-58-38..P79	Drain Basin: Chemung River	
Hydro Unit Code: 02050105/030	Str Class: B	Chemung River
Waterbody Type: Lake	Reg/County: 8/Steuben Co. (51)	
Waterbody Size: 166.3 Acres	Quad Map: HASKINVILLE (L-10-2)	
Seg Description: entire lake		

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

Use(s) Impacted	Severity	Problem Documentation
Recreation	Threatened	Known

Type of Pollutant(s)

Known: PROBLEM SPECIES (Eurasian milfoil)
Suspected: Algal/Weed Growth
Possible: ---

Source(s) of Pollutant(s)

Known: HABITAT MODIFICATION
Suspected: ---
Possible: ---

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))	
Verification Status: 4 (Source Identified, Strategy Needed)	
Lead Agency/Office: ext/WQCC	Resolution Potential: Medium
TMDL/303d Status: n/a	

Further Details

Recreational uses in Loon Lake are known to experience minor threats due to excessive aquatic weed growth, primarily non-native Eurasian milfoil. Other indicators suggest non-impacted water quality.

Loon Lake has been sampled as part of the NYSDEC Citizen Statewide Lake Assessment Program (CSLAP) beginning in 1994 and continuing through the present. An Interpretive Summary report of the findings of this sampling was published in 2005. These data indicate that the lake continues to be best characterized as mesotrophic, with very high water clarity reading in recent years. Phosphorus levels in the lake rarely exceed the state guidance values indicating impacted/stressed recreational uses. However there appears to be a weak trend toward increasing lake productivity during the summer, perhaps due to deepwater nutrient levels that are somewhat elevated and may enrich surface waters during the summer after the lake turns over. Elevated phosphorus levels were recorded in about 20% of all hypolimnetic samples. Transparency measurements are typically greater the 4 feet, meeting what is recommended for swimming beaches. Measurements of pH were within the 6.5 to 8.5 range in greater than 95% of the samples collected. (DEC/DOW, BWAM/CSLAP, November 2005)

Public perception of the lake and its uses is also evaluated as part of the CSLAP program. These assessment also indicate

recreational suitability of the lake to be "excellent." The lake is described as "slightly" impacted for most recreational uses about 25% of the time; and "substantially" impacted at a frequency of 5%. The lake is described as having "definite Algal greenness" at a frequency of 20%, but has at no time been described as having "severely high algae levels." The limited incidences of recreational use impacts appear to be more closely related to excessive weed growth or poor weather than to water quality problems. Assessments have noted that aquatic plants often (45% of the time) grow to the lake surface. Aquatic plant communities appear to be dominated by non-native species (Eurasian water milfoil). Aquatic vegetation is controlled by mechanical weed harvesting in order to facilitate recreational use of the lake. 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. (DEC/DOW, BWAM/CSLAP, November 2005)