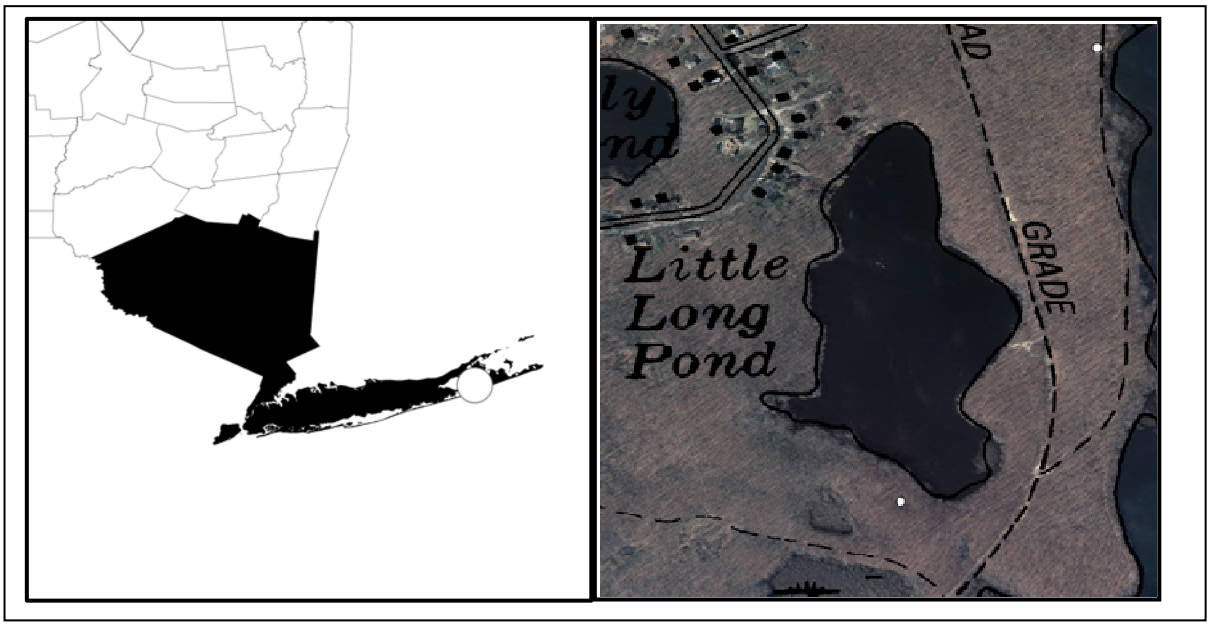
Appendix A:
CSLAP 2009 Lake Water Quality Summary: Little Long Pond

General Lake Information

Location	town of Southampton
County	Suffolk
Basin	Long Island Sound/Atlantic City
Size	5.2 hectares (12.8 acres)
Lake Origins	Natural
Watershed Area	97.5 hectares (240.8 acres)
Retention Time	0.5 years
Mean Depth	2.9 meters
Sounding Depth	6.1 meters
Public Access?	no
Major Tributaries	no named tribs
Lake Tributary To…	no named outlet
WQ Classification	C (non-contact recreation = boating, angling)
Lake Outlet Latitude	40.975
Lake Outlet Longitude	-72.296
Sampling Years	2007-2009
2009 Samplers	Joe Carlozi, James Forehlich, Harrison and Max Yardley, and John Mahoney
Main Contact	Bonnie Mahoney

Lake Map

(sampling location marked with a circle)



Background

Little Long Pond is a 13 acre, class C lake found in the Town of Southampton in Suffolk County, in the Long Island region of New York State. It was first sampled as part of CSLAP in 2008.

It is one of 6 CSLAP lakes among the >100 lakes found in Suffolk County, and one of 8 CSLAP lakes among the >200 lakes and ponds in the Atlantic Ocean-Long Island Sound drainage basin.

Lake Uses

Little Long Pond is a Class C lake; this means that the best intended use for the lake is for non-contact recreation—boating and aesthetics, although the lake may also support contact recreation—swimming and bathing. The lake is not used for swimming or other recreational uses, and there is no public access to the lake.

It is not known whether Little Long Pond has been stocked through any state fisheries stocking programs, or if any private stocking has occurred.

General statewide fishing regulations are applicable in Little Long Pond. In addition, there is a year-round open season on bluegill, crappie, pumpkinseed sunfish, trout and yellow perch. There is a size limit of 9", and a daily take limit of 15 for all of these fish except trout, which has a daily take limit of 3. Ice fishing of trout is permitted.

There are no lake-specific fish consumption advisories on Little Long Pond.

Historical Water Quality Data

CSLAP sampling was conducted on Little Long Pond from 2007-2009. The CSLAP reports for Little Long Pond for several years are posted on the NYSFOLA website at www.nysfola.org, under NYS Lake Association Lake List.

Little Long Pond has not been sampled through any previous NYSDEC monitoring program. It is not known if the lake has been sampled by any organizations associated with the Long Island Greenbelt.

There are no NYSDEC RIBS monitoring sites near Little Long Pond, and there are no named tributaries to the lake.

Lake Association and Management History

Little Long Pond is part of the Long Pond Greenbelt complex, along with (among other CSLAP lakes) Black Pond and Lily Pond. The Long Pond Greenbelt is an approximately 11-kilometer (7-mile) north-south corridor of ponds, streams, and adjacent upland areas in the Outer Coastal Plain physiographic province. The preservation of land in the Long Pond Greenbelt has been a goal in the master plan for the town of Southampton since 1970. Long Pond Greenbelt is recognized by the New York State Department of State as a Significant Coastal Fish and

Wildlife Habitat, and by the U.S. Fish and Wildlife Service as a priority wetland complex under the federal Emergency Wetlands Resources Act of 1986. The New York State Natural Heritage Program, in conjunction with The Nature Conservancy, recognizes several Priority Sites for Biodiversity within the Long Pond Greenbelt complex. Other excellent examples of coastal plain pond shore communities occur at Black Pond and Lily Pond.

Information about the Long Pond Greenbelt can be found at http://library.fws.gov/pubs5/web_link/text/lpg_form.htm.

Summary of 2009 CSLAP Sampling Results

Evaluation of Eutrophication Indicators

Chlorophyll *a* readings were lower than normal in 2009, but total phosphorus and Secchi disk transparency readings were close to normal. With only four years of data, it is premature to evaluate long-term trends, so it is not yet known if the lower chlorophyll *a* readings in 2009 represent normal variability or part of a longer trend. The lake can be characterized as *mesotrophic*, or moderately productive, based on chlorophyll *a*, water clarity and total phosphorus readings (all typical of *mesotrophic* lakes). The TSI evaluation suggests that each of these trophic indicators is "internally consistent"—each of these indicators is in the expected range given the readings of the other indicators. Overall trophic conditions are summarized on the Lake Scorecard.

Evaluation of Potable Water Indicators

Algae levels are 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 the lake is not classified for use for drinking water.

Evaluation of Limnological Indicators

Most of the limnological indicators measured in CSLAP in 2009 deviated from normal. True color and calcium readings were higher than normal in 2009, while ammonia and total nitrogen readings were lower than normal. It is premature to evaluate long-term trends with any of these limnological indicators, although color readings have been higher in many CSLAP lakes in recent years, particularly 2009, probably in response to wetter weather. However, it is likely that the small changes in most of these indicators have been within the normal range of variability in the lake. Overall limnological conditions are summarized in the Lake Scorecard.

Evaluation of Biological Condition

Phytoplankton, macrophyte, zooplankton and macroinvertebrate surveys have not been evaluated through CSLAP in Little Long Pond, and the composition of the fish community is not known.

Evaluation of Lake Perception

Water quality, aquatic plant and recreational assessments were close to normal in 2009, and none of these measures of lake perception has exhibited any clear long-term trends. Overall lake perception is summarized on the Lake Scorecard.

Evaluation of Local Climate Change

Air and water temperature readings in the summer index period were close to normal in 2009, and neither air nor water temperature readings has exhibited any 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.

Lake Scorecard

Category	Indicator	Classification	2009 Change?	Long Term Change?
Eutrophication Indicators	Water Clarity	Mesotrophic	No	Too early to tell
	Chlorophyll *a*	Mesotrophic	Lower than normal	Too early to tell
	Total Phosphorus	Mesotrophic	No	Too early to tell
Potable Water Indicators	Hypolimnetic Ammonia	Not applicable		
	Hypolimnetic Arsenic			
	Hypolimnetic Iron			
	Hypolimnetic Manganese			
Limnological Indicators	Hypolimnetic Phosphorus	Not applicable		
	Nitrate + Nitrite	Intermediate NOx	No	Too early to tell
	Ammonia	Intermediate Ammonia	Lower than normal	Too early to tell
	Total Nitrogen	Intermediate Total Nitrogen	Lower than normal	Too early to tell
	pH	Alkaline	No	Too early to tell
	Specific Conductance	Softwater	No	Too early to tell
	True Color	Intermediate Color	Higher than normal	Too early to tell
	Calcium	Not Susceptible to Zebra Mussels	Higher than normal	Too early to tell
Lake Perception	WQ Assessment	Not Quite Crystal Clear	No	Too early to tell
	Aquatic Plant Coverage	Surface Plant Growth	No	Too early to tell
	Recreational Assessment	Excellent	No	Too early to tell
Biological Condition	Phytoplankton	Not evaluated through CSLAP	Not known	Not known
	Macrophytes	Not evaluated through CSLAP	Not known	Not known
	Zooplankton	Not evaluated through CSLAP	Not known	Not known
	Macroinvertebrates	Not evaluated through CSLAP	Not known	Not known
	Fish	Not known	Not known	Not known
	Invasive Species	None observed through CSLAP	Not known	Not known
Local Climate Change	Air Temperature		No	Too early to tell
	Water Temperature		No	Too early to tell

Evaluation of Lake Condition Impacts to Lake Uses

Little Long Pond is not presently listed on the Atlantic Ocean / Long Island Sound PWL, last updated in 2002.

Potable Water (Drinking Water)

The CSLAP dataset at Little Long Pond, including water chemistry data, physical measurements, and volunteer samplers' perception data, is inadequate to evaluate the use of the lake for potable water, and the lake is not used for this purpose. The algae levels in the lake suggest that the "unofficial" potable water use may be supported.

Contact Recreation (Swimming)

The CSLAP dataset at Little Long Pond, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggests that swimming and contact recreation would be fully supported, although additional information about bacterial levels is needed to evaluate the safety of the water for swimming (and it is not known if any swimming occurs in the lake).

Non-Contact Recreation (Boating and Fishing)

The CSLAP dataset on Little Long Pond, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that non-contact recreation should be fully supported.

Aquatic Life

The CSLAP dataset on Little Long Pond, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that aquatic life should be fully supported, although additional data are needed to evaluate the food and habitat conditions for aquatic organisms in the lake.

Aesthetics

The CSLAP dataset on Little Long Pond, 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 Little Long Pond.

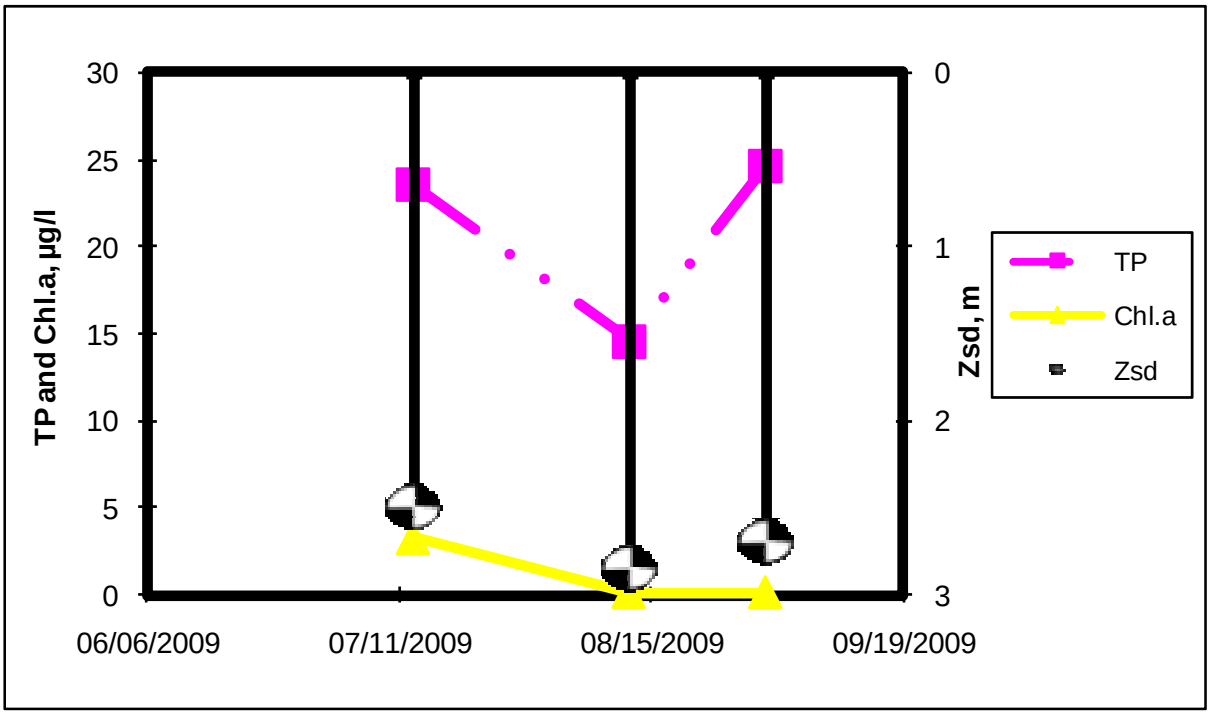
Additional Comments and Recommendations

Aquatic plant monitoring in Little Long Pond may be useful in determining if the plant community is more strongly affected by native or invasive plants.

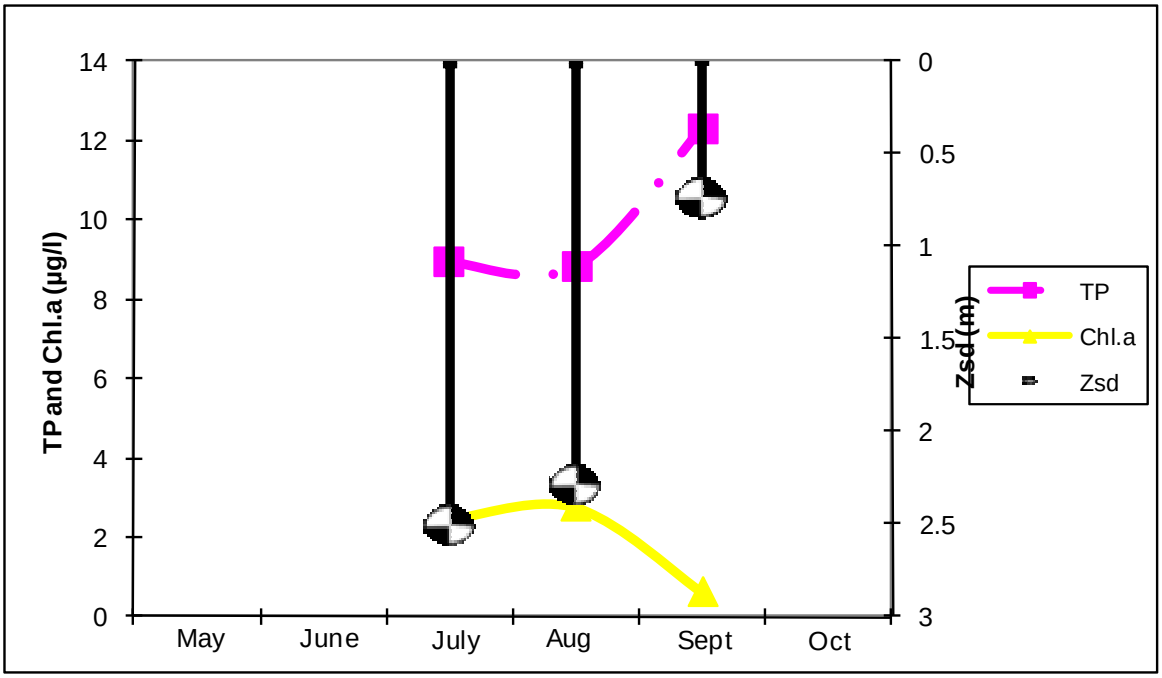
Aquatic Plant IDs-2009

None submitted in 2009.

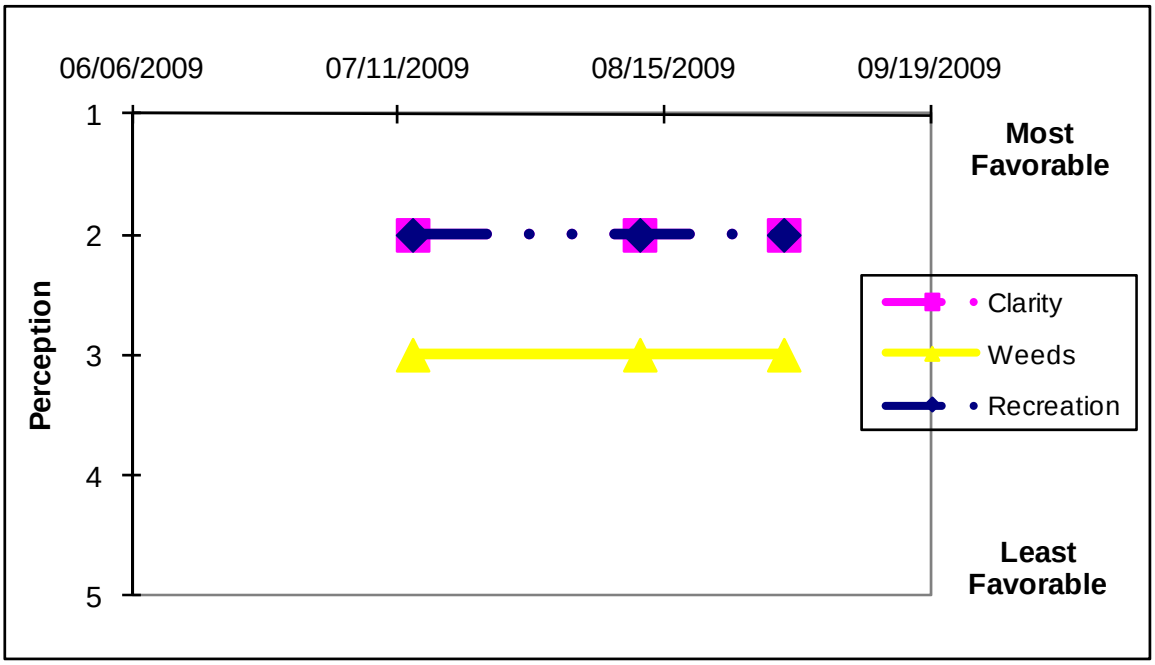
Time Series: Trophic Indicators, 2009



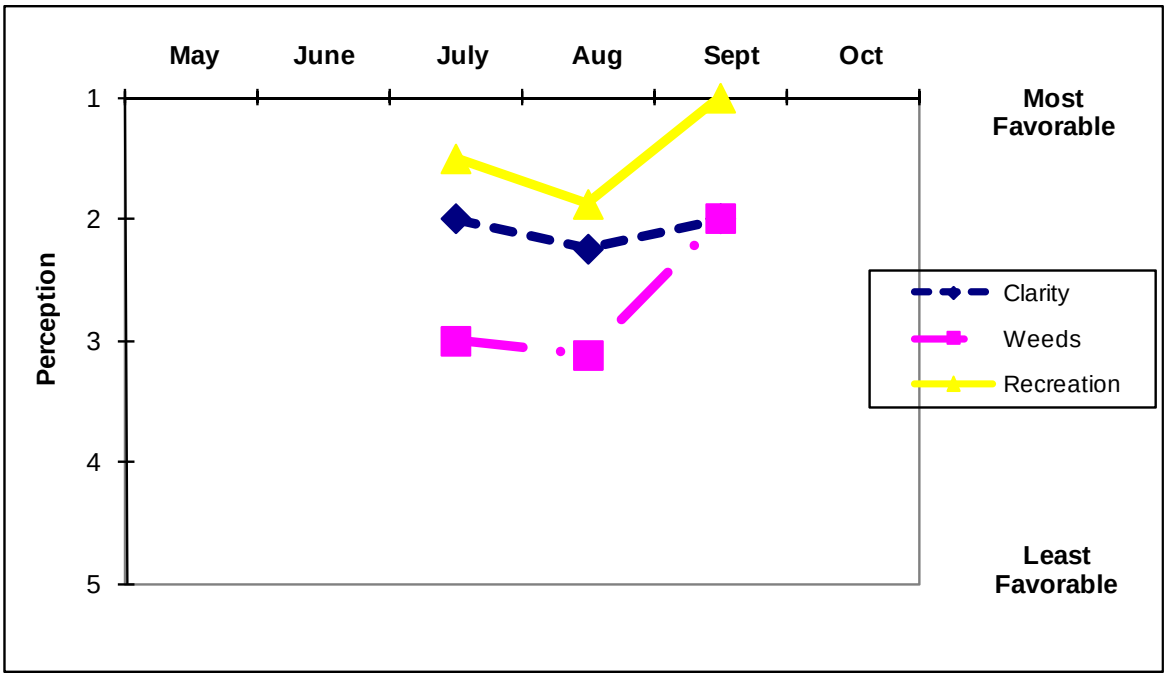
Time Series: Trophic Indicators, Typical Year (2007-2009)



Time Series: Lake Perception Indicators, 2009



Time Series: Lake Perception Indicators, Typical Year (2007-2009)



Appendix B- CSLAP Water Quality Sampling Results for Little Long Pond

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a
210	Little Long P	8/8/2006	5.5	2.20	1.5	0.017	0.1	0.1	0.99	59.14	28	7.80	144	7.6	0.52
210	Little Long P	8/25/2006	5.0	2.60	3.2	0.008	0.1	0.1	1.17	145.81	37	7.02	115		0.10
210	Little Long P	9/16/2006	3.0	0.75	2.0	0.012	0.1	0.1			32	8.32	72		0.61
210	Little Long P	7/25/2007	4.5	3.10	1.5	0.036	0.16	0.20	0.92	57.1	15	8.0	124	6.8	0.94
210	Little Long P	8/9/2007	5.6	1.60	1.5	0.037	0.14	0.08	0.91	54.3	24	7.1	122		1.67
210	Little Long P	8/22/2007	8.5	1.75	1.5	0.015	0.14	0.08	0.81	117.8	1	7.6	104		1.71
210	Little Long P	8/30/2007	5.9	2.35	2.0	0.003	0.14	0.06	0.78	692.8	28	7.7	96		2.66
210	Little Long P	7/10/2008	4.6	3.10	2.0	0.016	0.08	0.27	1.40	192.03	29	6.96	135	7.8	0.10
210	Little Long P	7/22/2008		1.37	1.3	0.016	0.10	0.17	0.83	115.00	24	7.45	126		5.47
210	Little Long P	8/12/2008		1.23	1.5	0.019	0.08	0.12	0.66	76.37	22	8.13	143		10.14
210	Little Long P	8/18/2008	6.1	3.40	1.3	0.014	0.03	0.04	0.45	70.02	18	7.49	131		7.84
210	Little Long P	07/13/2009	4.8	2.50	1.5	0.024	0.18	0.07	0.69	64.60	34	7.35	93	6.5	3.28
210	Little Long P	08/12/2009	6.0	2.85	1.3	0.015	0.09	0.06	0.54	81.67	37	7.56	72		0.10
210	Little Long P	08/31/2009	5.9	2.70	1.6	0.025	0.07	0.07	0.61	54.06	59	7.64	109		0.10

LNum	PName	Date	Zbot	Zsd	Zsamp	QaQc	TAir	TH20	QA	QB	QC	QD
210	Little Long P	8/8/2006	5.5	2.20	1.5	1		29	2	3	2	0
210	Little Long P	8/25/2006	5.0	2.60	3.2	1	24	26	2	3	3	2
210	Little Long P	9/16/2006	3.0	0.75	2.0	1	24	22	2	2	1	0
210	Little Long P	7/25/2007	4.5	3.10	1.5	1	26	27	2	3	1	0
210	Little Long P	8/9/2007	5.6	1.60	1.5	1	23	28	3	3	1	0
210	Little Long P	8/22/2007	8.5	1.75	1.5	1	18	28	2	3	1	0
210	Little Long P	8/30/2007	5.9	2.35	2.0	1	24	25				
210	Little Long P	7/10/2008	4.6	3.10	2.0	1	26	28	2	3	2	8
210	Little Long P	7/22/2008		1.37	1.3	1	26	31	2	3	1	0
210	Little Long P	8/12/2008		1.23	1.5	1	23	27	2	4	2	0
210	Little Long P	8/18/2008	6.1	3.40	1.3	1	24	27	3	3	2	0
210	Little Long P	07/13/2009	4.8	2.50	1.5	1	22	25	2	3	2	0
210	Little Long P	08/12/2009	6.0	2.85	1.3	1	28	27	2	3	2	8
210	Little Long P	08/31/2009	5.9	2.70	1.6	1	21	24	2	3	2	0

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)	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/1	0.3 mg/l (S)
Mn	manganese (mg/l)	0.01 mg/l	0.3 mg/l (S)
As	arsenic (mg/l)	1 ug/l	10 ug/l (S)
Lake Assessment			
QA	water quality assessment, 5 point scale; 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, 5 point scale; 1 = no plants visible, 2 = plants below surface, 3 = plants at surface, 4 = plants dense at surface, 5 = surface plant coverage		
QC	recreational assessment, 5 point scale; 1 = could not be nicer, 2 = excellent, 3 = slightly impaired, 4 = substantially impaired, 5 = lake not usable		
QD	reasons for recreational assessment, 8 choices; 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		