

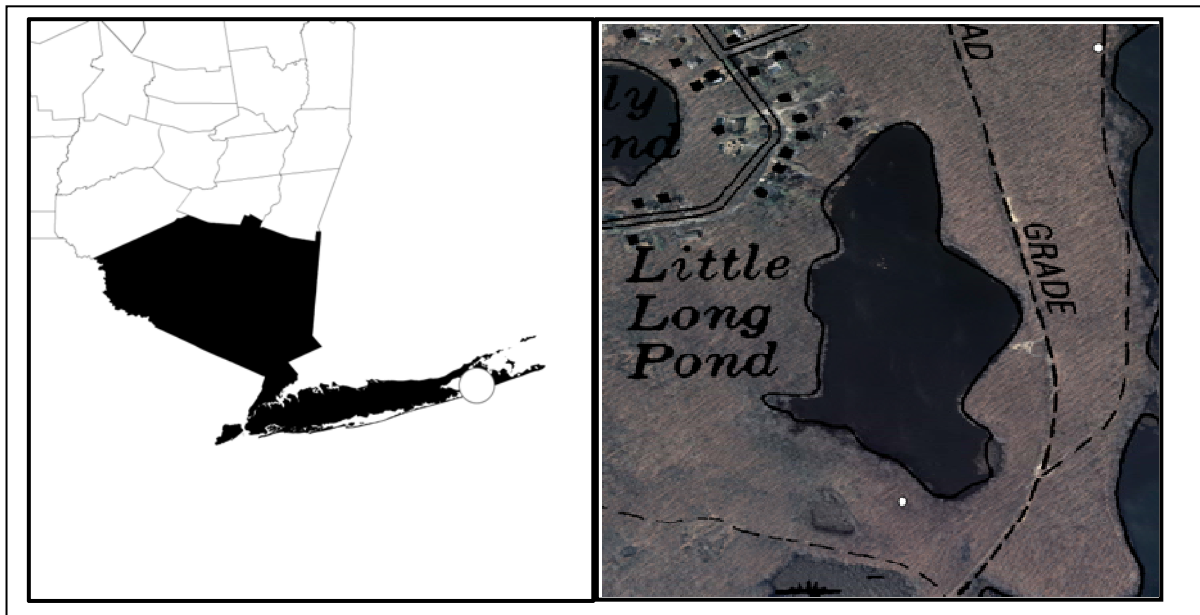
CSLAP 2013 Lake Water Quality Summary: Little Long Pond

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, 2011-2013
2013 Samplers	Dai Dayton and Jean Dodds
Main Contact	Dai Dayton

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 and 2011 to 2013. 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 Little Long Pond can also be found on the NYSDEC web page at <http://www.dec.ny.gov/lands/77836.html>.

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 2013 CSLAP Sampling Results

Evaluation of 2013 Annual and Monthly Results Relative to 2006-2012

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 –Little Long Pond” section in Appendix D.

Evaluation of Eutrophication Indicators

Each of the trophic indicators (water clarity, chlorophyll *a*, and total phosphorus) was close to normal in 2013, although phosphorus readings have increased slightly over the last eight years. Water clarity increases slightly during the typical summer, despite an increase in phosphorus readings (and relatively stable algae levels) over the same period. These trends were not apparent in 2013- phosphorus readings decreased after early summer in 2013.

The lake can be characterized as *mesoeutrophic*, or moderately to highly productive, based on chlorophyll *a*, water clarity (both indicative of *mesotrophic*, or moderately productive lakes) and total phosphorus readings (typical of *eutrophic*, or highly productive, lakes). The TSI evaluation suggests that phosphorus readings are usually higher than expected given the algae and water clarity readings in the lake—this was apparent in 2012 and 2013. This may be due to high pond turnover rates (water moving in and out of the pond quickly), or algae growth being limited by some other factor. 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. Potable water conditions, at least as measurable through CSLAP, are summarized in the Lake Scorecard and Lake Condition Summary Table

Evaluation of Limnological Indicators

Ammonia readings were lower than normal in 2013, but these readings have been low in nearly all samples. None of the other water quality indicators (NO_x, total nitrogen, pH, conductivity and color) has exhibited any clear long-term trends, and were close to normal in 2013. 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

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. Fluoroprobe (raw water) samples analyzed by SUNY ESF showed low open water algae levels and low blue green algae levels, consistent with the phycocyanin analyses from previous years.

Evaluation of Lake Perception

Water quality assessments were more favorable than normal in each of the last three years, and in 2012 and 2013 were consistent with slightly higher water clarity readings. The more favorable water quality assessments may have been part of a longer-term trend. This was consistent with recreational assessments that were more favorable than normal in 2013. Aquatic plant coverage was close to normal in 2012 and 2013. Recreational and water quality perception is slightly more favorable in late summer during most years, but these assessments were consistent and highly favorable in 2013. 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 2013, and water temperatures have not exhibited any clear long-term trends (although air temperatures have increased slightly over the last eight years). It is not known if local climate 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 were below the levels indicating susceptibility for harmful algal blooms (HABs) in the open water, consistent with fluoroprobe data showing low blue green algae levels in 2013. Microcystin (algal toxin) levels are well below the levels needed to support safe swimming in open water. No shoreline blooms have been reported or sampled.

Lake Condition Summary

Category	Indicator	Min	06-13 Avg	Max	2013 Avg	Classification	2013 Change?	Long-term Change?
Eutrophication Indicators	Water Clarity	0.75	2.60	3.95	2.95	Mesotrophic	Within Normal Range	No Change
	Chlorophyll <i>a</i>	0.10	2.34	10.14	2.05	Mesotrophic	Within Normal Range	No Change
	Total Phosphorus	0.003	0.032	0.173	0.022	Eutrophic	Within Normal Range	Increasing Slightly
Potable Water Indicators	Hypolimnetic Ammonia							
	Hypolimnetic Arsenic							
	Hypolimnetic Iron							
	Hypolimnetic Manganese							
Limnological Indicators	Hypolimnetic Phosphorus							
	Nitrate + Nitrite	0.03	0.13	0.32	0.14	Intermediate NOx	Within Normal Range	No Change
	Ammonia	0.03	0.13	0.45	0.06	Intermediate Ammonia	Lower Than Normal	No Change
	Total Nitrogen	0.45	0.87	1.40	0.79	Intermediate Total Nitrogen	Within Normal Range	No Change
	pH	6.81	7.59	8.35	7.53	Alkaline	Within Normal Range	No Change
	Specific Conductance	18	133	176	132	Intermediate Hardness	Within Normal Range	No Change
	True Color	1	27	59	32	Intermediate Color	Within Normal Range	No Change
	Calcium	6.5	7.8	9.6		Not Susceptible to Zebra Mussels		No Change
Lake Perception	WQ Assessment	1	1.4	3	1.0	Crystal Clear	More Favorable Than Normal?	Slightly Improving
	Aquatic Plant Coverage	1	2.9	4	3.0	Surface Plant Growth	Within Normal Range	No Change
	Recreational Assessment	1	1.3	3	1.0	Could Not Be Nicer	More Favorable Than Normal?	No Change
Biological Condition	Phytoplankton					No fluoroprobe samples submitted for analysis	Not known	Not known
	Macrophytes					Not measured through CSLAP	Not known	Not known
	Zooplankton					Not measured through CSLAP	Not known	Not known
	Macroinvertebrates					Not measured through CSLAP	Not known	Not known
	Fish					Warmwater fishery	Not known	Not known
	Invasive Species					None observed	Improving	Not known
Local Climate Change	Air Temperature	10	23.3	34	24.3		Within Normal Range	Increasing Slightly
	Water Temperature	11	24.9	31	24.8		Within Normal Range	No Change
Harmful Algal Blooms	Open Water Phycocyanin	3	11	46	6	No readings indicate high risk of BGA	Not known	Not known
	Open Water FP Chl.a	1	2	6	2	No readings indicate high algae levels	Not known	Not known
	Open Water FP BG Chl.a	0	0	1	0	No readings indicate high BGA levels	Not known	Not known
	Open Water Microcystis	<DL	0.2	0.4	<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					No shoreline blooms sampled for FP	Not known	Not known
	Shoreline FP BG Chl.a					No shoreline blooms sampled for FP	Not known	Not known
	Shoreline Microcystis					No shoreline bloom MC-LR data	Not known	Not known
	Shoreline Anatoxin a					No shoreline bloom anatoxin data	Not known	Not known

Evaluation of Lake Condition Impacts to Lake Uses

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 threatened by occasionally elevated nutrient levels.

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 occasionally low water clarity and very high phosphorus readings may *threaten* this use. 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.

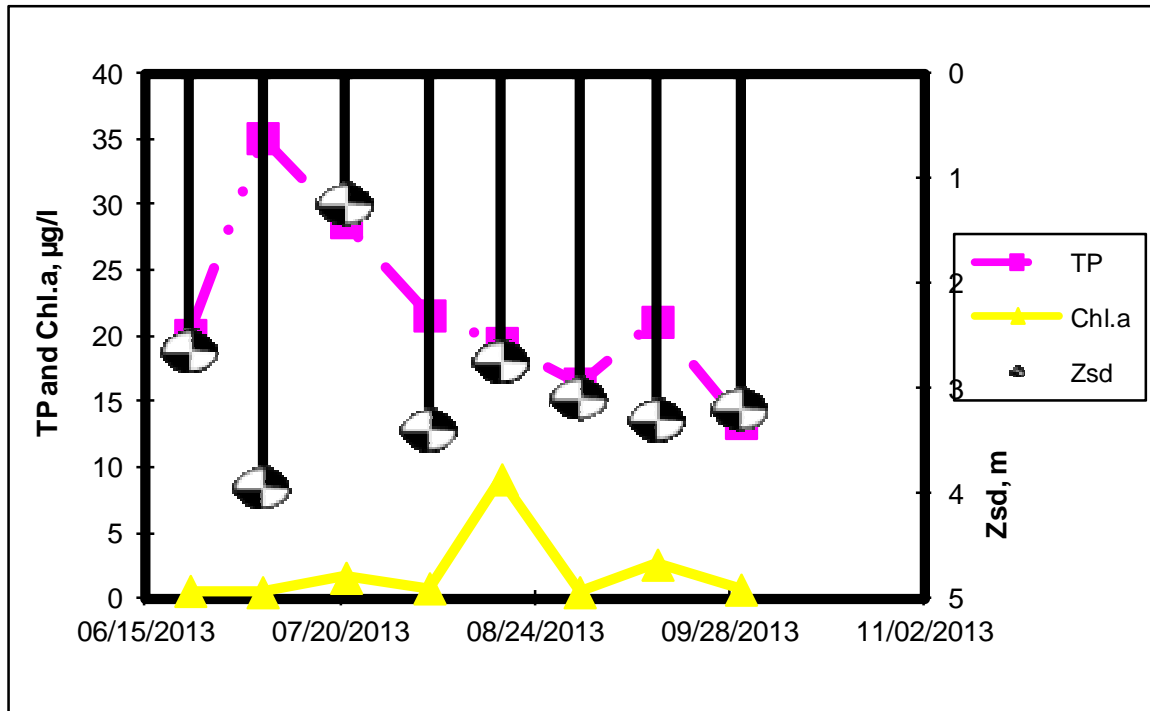
Additional Comments and Recommendations

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. Lake residents and samplers should report any shoreline blooms.

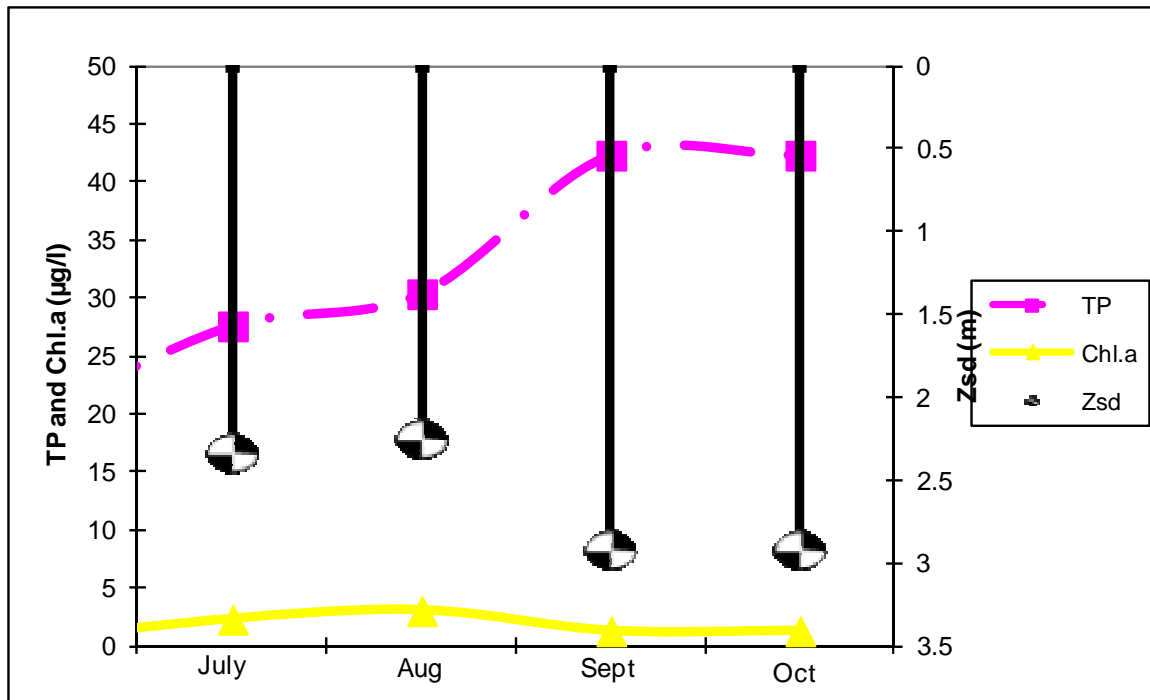
Aquatic Plant IDs-2013

None submitted for identification in 2013.

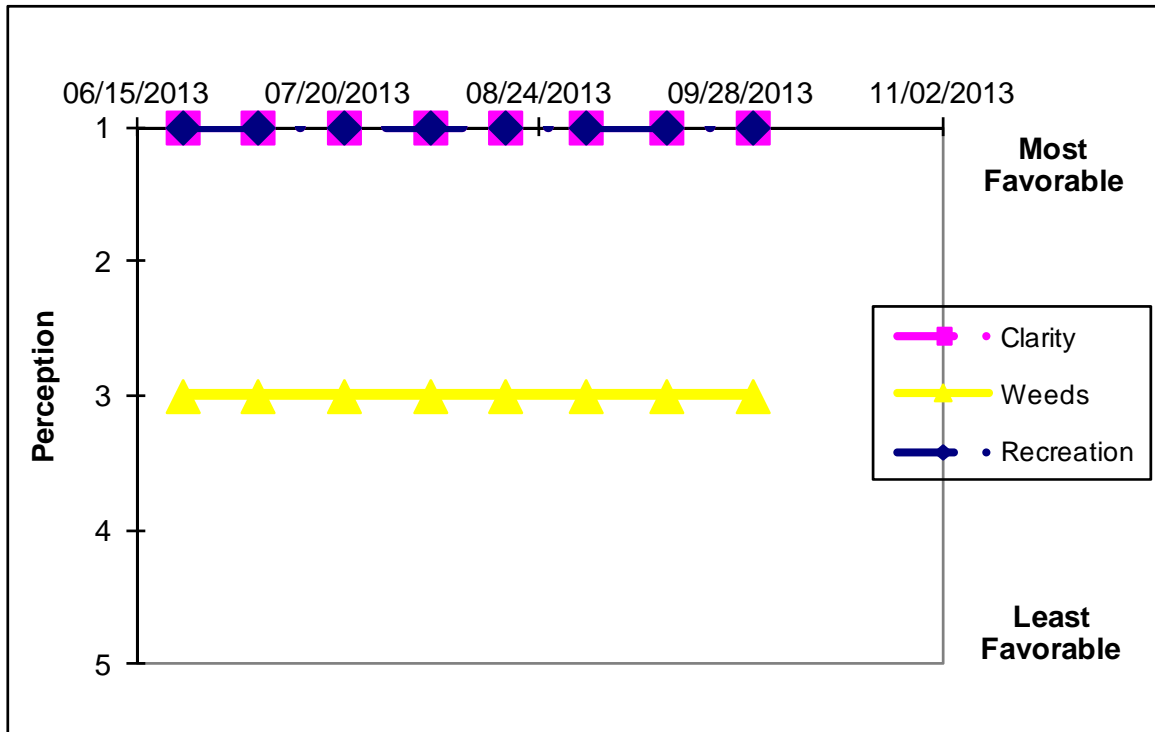
Time Series: Trophic Indicators, 2013



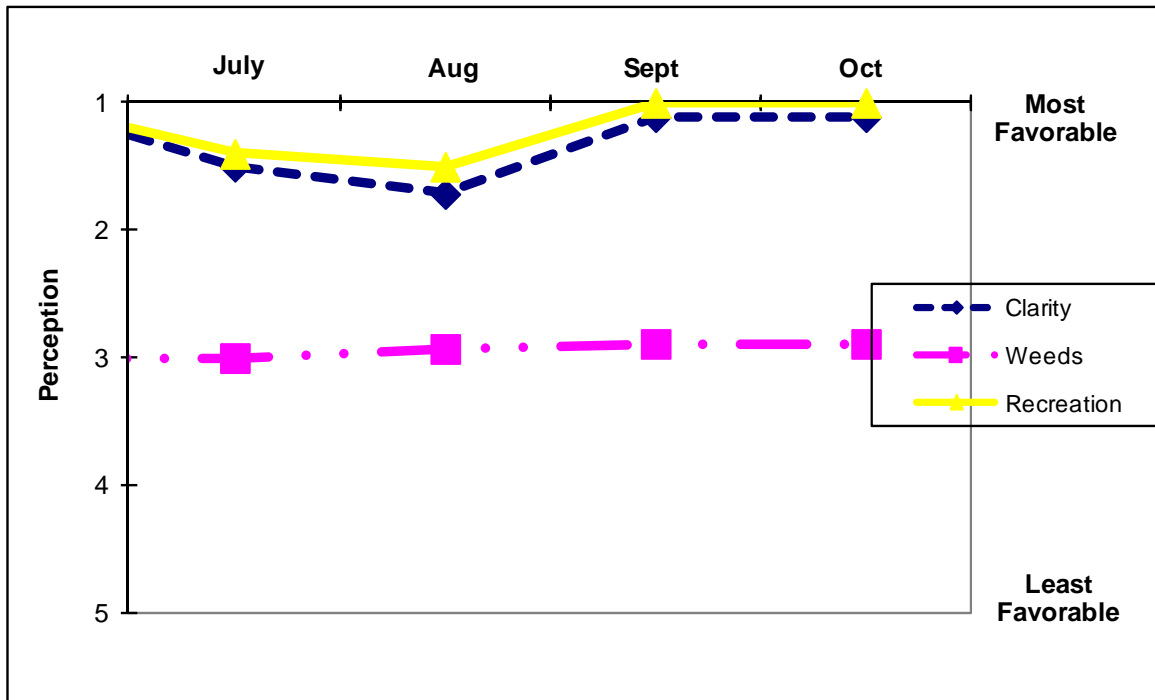
Time Series: Trophic Indicators, Typical Year (2006-2013)



Time Series: Lake Perception Indicators, 2013



Time Series: Lake Perception Indicators, Typical Year (2006-2013)



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
210	Little Long P	07/18/2011	5.8	1.90	1.8	0.036	0.15	0.03	0.75	46.17	22	7.91	159	7.2	2.50
210	Little Long P	07/24/2011	5.2	1.82	2.3	0.041	0.21	0.11	0.85	45.62	27	8.35	138		2.20
210	Little Long P	08/07/2011	5.9	1.39	2.4	0.031	0.11	0.06	0.74	52.30	24	7.09	134		2.80
210	Little Long P	08/21/2011				0.023	0.09	0.03	0.99	96.51	18	7.71	154		2.60
210	Little Long P	09/05/2011	5.3	2.44		0.020	0.10	0.12	0.80	88.22	23	7.51	133	7.6	1.10
210	Little Long P	09/11/2011	5.3	3.47	2.3	0.011	0.14	0.19	0.82	169.15	28	7.48	136		0.90
210	Little Long P	09/18/2011	5.2	3.20		0.045	0.16	0.20	0.73	35.38	10	7.76	155		1.90
210	Little Long P	10/01/2011		3.10		0.019	0.24	0.24	1.02	116.61	23	8.09	138		1.40
210	Little Long P	07/22/2012	5.0	1.94	2.1	0.020	0.11	0.06	0.86	94.57	27	7.60	151	9.4	2.60
210	Little Long P	07/31/2012	4.6	2.48	2.1	0.025	0.12	0.21	0.88	78.66	26	6.81	144		3.70
210	Little Long P	08/12/2012	5.3	2.20	2.1	0.037	0.07	0.17	1.00	59.00	24	7.75	159		1.30
210	Little Long P	08/26/2012	5.1	3.43	2.1	0.172	0.10	0.16	1.07	13.68	30	7.58	153		4.00
210	Little Long P	09/09/2012	5.1	3.13	2.1	0.069	0.08	0.23	0.94	29.75	34	7.71	176	9.6	2.00
210	Little Long P	09/23/2012	5.1	3.74	2.1	0.173	0.11	0.28	1.10	14.04	29	7.55	164		1.30
210	Little Long P	10/08/2012	4.9	3.44	2.1	0.030	0.20	0.38	1.17	85.87	27	7.55	171		4.40
210	Little Long P	10/22/2012	4.5	3.58	2.1	0.047	0.29	0.45	1.25	58.93	25	7.59	158		2.50
210	Little Long P	06/23/2013	5.8	2.65	2.1	0.020	0.32	0.07	0.90	97.96	21	7.38	139		0.60
210	Little Long P	07/06/2013	5.6	3.95	5.6	0.035			0.65	40.79	28	7.22	144		0.50
210	Little Long P	07/21/2013	5.4	1.25	2.1	0.029	0.11	0.06	0.60	45.61	39	7.23	18		1.60
210	Little Long P	08/05/2013	5.2	3.40	2.1	0.022			0.91	92.88	39	7.46	160		0.80
210	Little Long P	08/18/2013	4.4	2.75	2.1	0.020	0.06	0.05	0.81	90.93	43	8.13	152		9.10
210	Little Long P	09/01/2013	5.3	3.10	2.1	0.016			0.62	82.72	36	7.48	155		0.50
210	Little Long P	09/15/2013	5.3	3.31	2.1	0.021	0.08	0.05	1.09	113.23	28	7.72	133		2.60
210	Little Long P	09/30/2013	5.3	3.20		0.013			0.80	130.69	23	7.65	152		0.70

LNum	PName	Date	Site	TAir	TH20	QA	QB	QC	QD	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cyl	FP-Chl	FP-BG	HAB form	Shore HAB
210	Little Long P	8/8/2006	epi		29	2	3	2	0											
210	Little Long P	8/25/2006	epi	24	26	2	3	3	2											
210	Little Long P	9/16/2006	epi	24	22	2	2	1	0											
210	Little Long P	7/25/2007	epi	26	27	2	3	1	0											
210	Little Long P	8/9/2007	epi	23	28	3	3	1	0											
210	Little Long P	8/22/2007	epi	18	28	2	3	1	0											
210	Little Long P	8/30/2007	epi	24	25															
210	Little Long P	7/10/2008	epi	26	28	2	3	2	8											
210	Little Long P	7/22/2008	epi	26	31	2	3	1	0											
210	Little Long P	8/12/2008	epi	23	27	2	4	2	0											
210	Little Long P	8/18/2008	epi	24	27	3	3	2	0											
210	Little Long P	07/13/2009	epi	22	25	2	3	2	0											
210	Little Long P	08/12/2009	epi	28	27	2	3	2	8											
210	Little Long P	08/31/2009	epi	21	24	2	3	2	0											
210	Little Long P	07/18/2011	epi	24		2	3	3	5	0	0	12.80	4.10							
210	Little Long P	07/24/2011	epi	28	29	1	3	1	0	0	0	18.30	5.94							
210	Little Long P	08/07/2011	epi	30	29	1	1	1	5	0	0	46.30	12.80	0.54	<0.5	<0.1			i	
210	Little Long P	08/21/2011	epi			1	3	1	0	0	0	29.70	10.70						i	
210	Little Long P	09/05/2011	epi	29	27	1	3	1	0	0	0	4.80	4.00						i	
210	Little Long P	09/11/2011	epi	20	23	1	3	1	0	0	0								i	
210	Little Long P	09/18/2011	epi	17	21	1	3	1	0	0	0	7.20	4.30						i	
210	Little Long P	10/01/2011	epi	20	23	1	3	1	0	0	0	5.90	3.50						i	
210	Little Long P	07/22/2012	epi	33	27	1	3	1	0	0	0								i	
210	Little Long P	07/31/2012	epi	22	26	1	3	1	0	0	0								i	
210	Little Long P	08/12/2012	epi	27	28	1	3	1	0	0	0								i	
210	Little Long P	08/26/2012	epi	26	21	1	3	1	0	0	0								i	
210	Little Long P	09/09/2012	epi	16	20	1	3	1	0	0	0								i	
210	Little Long P	09/23/2012	epi	20	22	1	3	1	0	0	0								i	
210	Little Long P	10/08/2012	epi	10	11	1	3	1	0	0	0								i	
210	Little Long P	10/22/2012	epi	16	11	1	3	1	0	0	0								i	
210	Little Long P	06/23/2013	epi	26	24	1	3	1	0	0	0	3.80	1.40	<0.30	<0.410	1.40	0.00	3.80	i	i
210	Little Long P	07/06/2013	epi	34	30	1	3	1	0	0	0	3.10	1.20	<0.30	<0.510	1.40	0.00	3.10	i	i
210	Little Long P	07/21/2013	epi	31	28	1	3	1	0	0	0	11.90	5.00	<0.30	<0.910	5.60	0.90	11.90	i	i
210	Little Long P	08/05/2013	epi	25	27	1	3	1	0	0	0	4.30	2.60	<0.30	<0.390	1.50	0.00	4.30	i	i
210	Little Long P	08/18/2013	epi	21	24	1	3	1	0	0	0	8.10	3.30	<0.30	<0.510	3.00	0.10	8.10	i	i
210	Little Long P	09/01/2013	epi	24	24	1	3	1	0	0	0	5.50	1.80	<0.30	<1.100	1.20	0.00	5.50	i	i
210	Little Long P	09/15/2013	epi	19	22	1	3	1	0	0	0	3.60	2.20	<0.30	<1.240	1.20	0.00	3.60	i	i
210	Little Long P	09/30/2013	epi	15	18	1	3	1	0	0	0	6.70	1.50	<0.30	<0.100	0.90	0.00	6.70	i	i

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)	variable	none
Cyl	Cylindrospermopsin (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- Monthly Evaluation of Little Long Pond Data, 2006-2013

June Data

	2006	2007	2008	2009	2010	2011	2012	2013
Zsd								NORMAL
TP								NORMAL
Chl.a								NORMAL
NOx								HIGH
NH4								NORMAL
TN								NORMAL
pH								NORMAL
SpCond								NORMAL
Color								NORMAL
Ca								
QA								NORMAL
QB								NORMAL
QC								NORMAL
TH20								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	2012	2013
Zsd		HIGH	NORMAL	NORMAL		NORMAL	NORMAL	NORMAL
TP		NORMAL	NORMAL	NORMAL		HIGH	NORMAL	NORMAL
Chl.a		NORMAL	NORMAL	NORMAL		NORMAL	NORMAL	NORMAL
NOx		NORMAL	NORMAL	HIGH		HIGH	NORMAL	NORMAL
NH4		HIGH	HIGH	NORMAL		NORMAL	NORMAL	NORMAL
TN		NORMAL	HIGH	NORMAL		NORMAL	NORMAL	NORMAL
pH		NORMAL	NORMAL	NORMAL		HIGH	NORMAL	NORMAL
SpCond		NORMAL	NORMAL	LOW		NORMAL	NORMAL	LOW
Color		LOW	NORMAL	NORMAL		NORMAL	NORMAL	NORMAL
Ca		NORMAL	HIGH	LOW		NORMAL	HIGH	
QA		NORMAL	NORMAL	NORMAL		NORMAL	NORMAL	NORMAL
QB		NORMAL	NORMAL	NORMAL		NORMAL	NORMAL	NORMAL
QC		NORMAL	NORMAL	NORMAL		NORMAL	NORMAL	NORMAL
TH20		NORMAL	HIGH	NORMAL		HIGH	NORMAL	HIGH

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

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

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

August Data

	2006	2007	2008	2009	2010	2011	2012	2013
Zsd	NORMAL	NORMAL	NORMAL	NORMAL		NORMAL	NORMAL	NORMAL
TP	NORMAL	NORMAL	NORMAL	NORMAL		NORMAL	HIGH	NORMAL
Chl.a	NORMAL	NORMAL	HIGH	NORMAL		NORMAL	NORMAL	NORMAL
NOx	NORMAL	NORMAL	LOW	NORMAL		NORMAL	NORMAL	LOW
NH4	NORMAL	NORMAL	NORMAL	NORMAL		NORMAL	NORMAL	NORMAL
TN		NORMAL	LOW	LOW		NORMAL	HIGH	NORMAL
pH	NORMAL	NORMAL	NORMAL	NORMAL		NORMAL	NORMAL	NORMAL
SpCond	NORMAL	NORMAL	NORMAL	LOW		NORMAL	HIGH	HIGH
Color	NORMAL	NORMAL	NORMAL	HIGH		NORMAL	NORMAL	HIGH
Ca	NORMAL							
QA	NORMAL	HIGH	HIGH	NORMAL		NORMAL	NORMAL	NORMAL
QB	NORMAL	NORMAL	HIGH	NORMAL		LOW	NORMAL	NORMAL
QC	HIGH	NORMAL	NORMAL	NORMAL		NORMAL	NORMAL	NORMAL
TH20	NORMAL	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	2012	2013
Zsd	LOW					NORMAL	HIGH	NORMAL
TP	NORMAL					NORMAL	HIGH	NORMAL
Chl.a	NORMAL					NORMAL	NORMAL	NORMAL
NOx	NORMAL					NORMAL	NORMAL	NORMAL
NH4	NORMAL					NORMAL	HIGH	NORMAL
TN						NORMAL	HIGH	HIGH
pH	HIGH					NORMAL	NORMAL	NORMAL
SpCond	LOW					NORMAL	HIGH	NORMAL
Color	NORMAL					NORMAL	NORMAL	NORMAL
Ca						NORMAL	HIGH	
QA	NORMAL					NORMAL	NORMAL	NORMAL
QB	LOW					NORMAL	NORMAL	NORMAL
QC	NORMAL					NORMAL	NORMAL	NORMAL
TH20	LOW					NORMAL	LOW	LOW

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

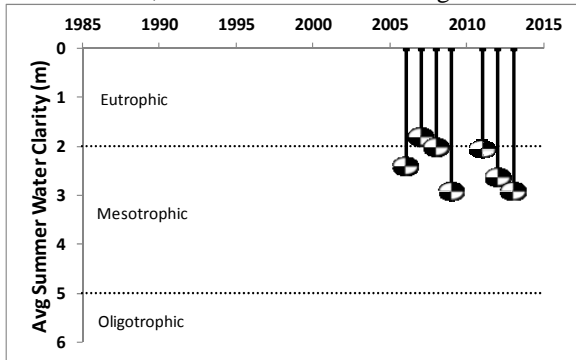
Low = average monthly reading < 10th percentile reading for lake, 2000-2010

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

Appendix D- Long Term Trends: Little Long Pond

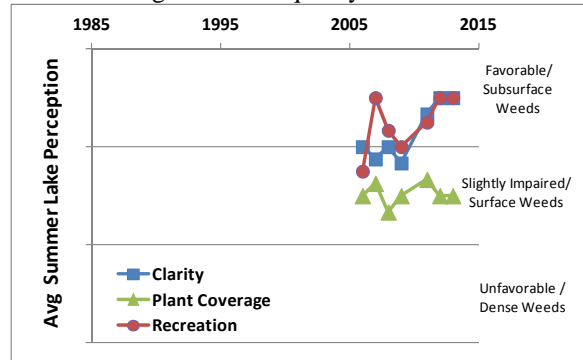
Long Term Trends: Water Clarity

- No trends apparent; slightly higher since '10
- Most readings typical of *mesoeutrophic* lakes, consistent with TP readings



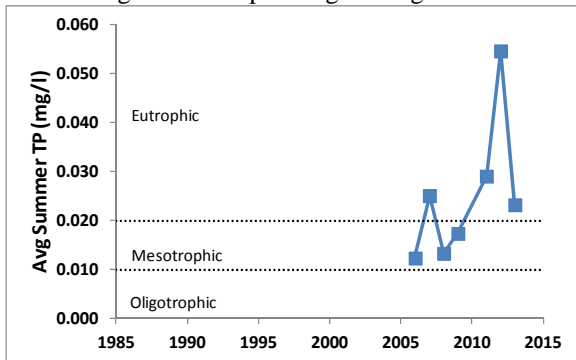
Long Term Trends: Lake Perception

- WQ and recreational assessments improving
- Recreational perception not closely linked to changes in water quality or weeds



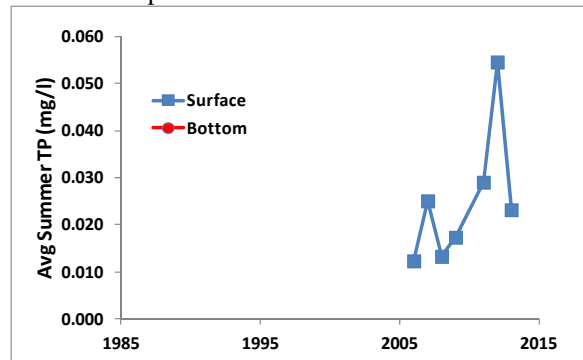
Long Term Trends: Phosphorus

- Increasing, though not yet clear if long term
- Recent readings typical of *eutrophic* lakes, higher than expected given algae levels



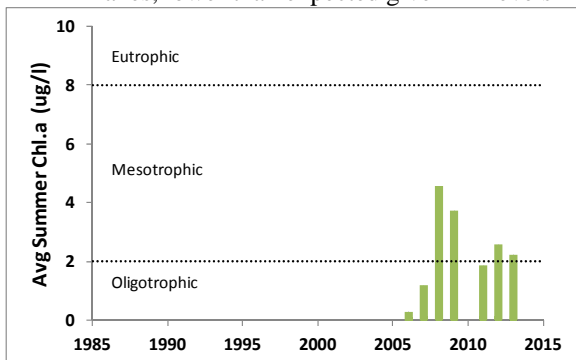
Long Term Trends: Bottom Phosphorus

- No deepwater TP readings
- Surface and bottom TP readings usually comparable in shallow lakes



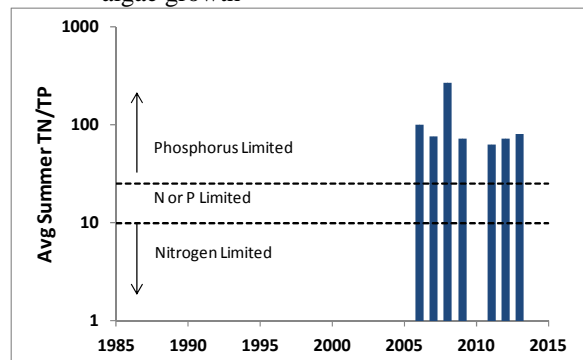
Long Term Trends: Chlorophyll a

- No trends apparent
- Most readings typical of *mesoligotrophic* lakes, lower than expected given TP levels



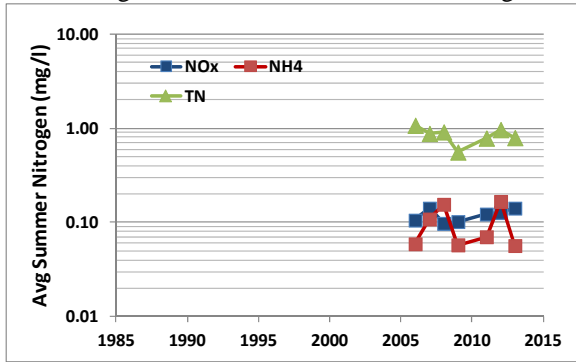
Long Term Trends: N:P Ratio

- No trends apparent
- Most readings indicate phosphorus limits algae growth



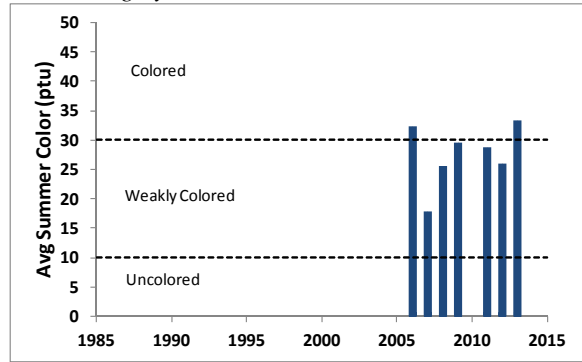
Long Term Trends: Nitrogen

- No trends apparent
- Total nitrogen readings elevated at times; higher than in other lakes w/similar algae



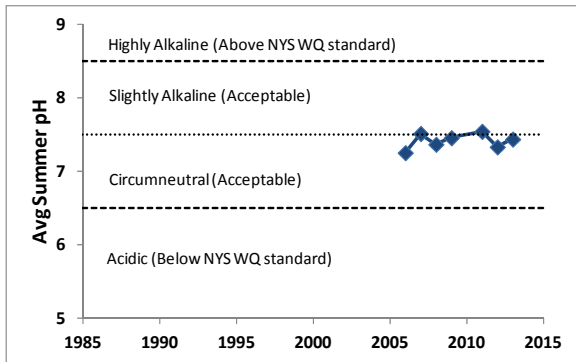
Long Term Trends: Color

- No trends apparent
- Most readings typical of *weakly colored* to *highly colored* lakes



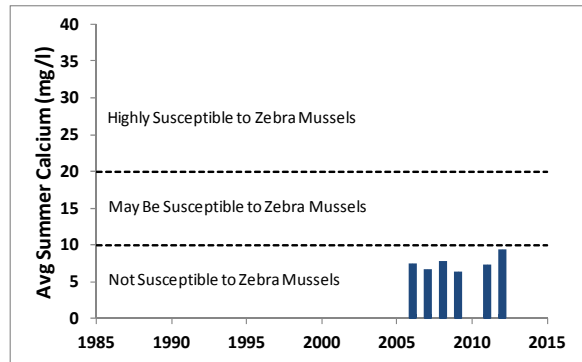
Long Term Trends: pH

- No trends apparent; most readings stable
- Most readings typical of *slightly alkaline* to *circumneutral* lakes



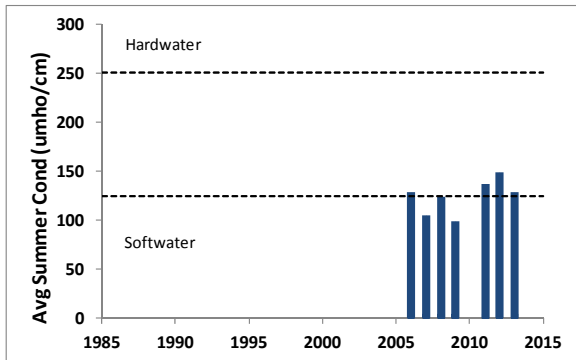
Long Term Trends: Calcium

- No trends apparent
- Data indicates low susceptibility to zebra mussels



Long Term Trends: Conductivity

- No trends apparent
- Most readings typical of *softwater* to *intermediate* hardness lakes



Long Term Trends: Water Temperature

- No trends apparent despite increasing air T
- Surface and bottom temperatures probably comparable in shallow lakes

