

CSLAP 2012 Lake Water Quality Summary: Lake Clear

General Lake Information

Location	Town of Harrietstown
County	Franklin
Basin	Lake Champlain
Size	404 hectares (998 acres)
Lake Origins	Natural
Watershed Area	2,090 hectares (5,162 acres)
Retention Time	2.8 years
Mean Depth	8.5 meters
Sounding Depth	17.5 meters
Public Access?	hand launch
Major Tributaries	Saranac River Headwaters
Lake Tributary To...	Saranac River to Saranac Lakes to Saranac River to....to Lake Champlain
WQ Classification	AA(T) (potable water)
Lake Outlet Latitude	44.348
Lake Outlet Longitude	-74.278
Sampling Years	1998-2010, 2012
2012 Samplers	Guy Grebe
Main Contact	Guy Grebe

Lake Map



Background

Lake Clear is a 998 acre, class AA(T) lake found in the Town of Harrietstown in Franklin County, in the northern Adirondack region of New York State. It was first sampled as part of CSLAP in 1998.

It is one of nine CSLAP lakes among the more than 270 lakes found in Essex County, and one of 24 CSLAP lakes among the more than 470 lakes and ponds in the Upper Hudson River drainage basin.

Lake Uses

Lake Clear is a Class AA(T) lake; this means that the best intended use for the lake is for potable water—drinking, contact recreation—swimming and bathing, non-contact recreation—boating and fishing, aquatic life, and aesthetics. The lake is used by lake residents and visitors (via a hand launch site) for a variety of recreational purposes—larger boats require private launching. A state owned day use area (unsupervised) serves as a beach.

Lake Clear is not stocked by the state; the lake association has stocked brown trout and salmon in the past.

General statewide fishing regulations are applicable in Lake Clear. In addition, open season for black bass lasts from 3rd Saturday in June through November 30th, with no size limit, a daily take limit of five fish and a minimum size of 12 inches. Open season for yellow perch and sunfish lasts all year, with no daily take or size limits. The open season for lake salmon and trout also lasts all year. There is a minimum size of 15 inches for lake salmon, and a daily take limit of three fish. Ice fishing is permitted. The daily take limit for trout is five fish.

Historical Water Quality Data

CSLAP sampling was conducted on Lake Clear each year from 1998 to 2010, and 2011,2. The CSLAP reports for each of the past several years can be found on the NYSFOLA website at <http://nysfola.mylaketown.com>. The 2010 CSLAP report for Lake Clear can also be found on the NYSDEC web page at <http://www.dec.ny.gov/lands/77871.html>.

Lake Clear has not been sampled by New York State as part of any the major state monitoring programs, although county or local monitoring may have been conducted to support fisheries management activities or for other purposes. The lake was sampled by several organizations, including the Adirondack Aquatic Institute (AAI) in 1994, the Public Service Commission (PSC) from 1991 to 1993, the MERI mercury study in 1988 and 1990, Don Charles as part of the northeast US PIRLA mercury study at Indiana University in 1978, and some informal monitoring by the DEC Divisions of Fish and Wildlife (1994) and Water (1984), and the old Conservation Department (now DEC) in 1964. These data show water quality results that have been comparable to those measured through CSLAP, although some indicators such as water clarity, pH and specific conductance have exhibited significant variability.

None of the unnamed ephemeral inlets has been sampled as part of the state Rotating Intensive Basins (RIBS) stream chemistry or state macroinvertebrate biological monitoring program. The lake drains into the Saranac River, and the Saranac River in Armand has been sampled through

the RIBS program. The Saranac River has been sampled at several sites through the state stream biomonitoring program. The closest site is at the Pine Street Bridge in Saranac Lake.

Lake Association and Management History

Lake Clear is served by the Lake Clear Association. Some of the activities conducted by or encouraged by the lake association include:

- Septic system educational efforts and encouraging leach field dye testing
- Maintaining shoreline buffer vegetation
- Discouraging waterfowl feeding
- Encouraging cleaning of boat propellers entering and leaving the lake, including signage
- Fish stocking (brown trout and salmon)
- Lake cleanups
- Waterfowl evaluations for “monitoring” swimmers itch
- Chemical monitoring of the inlet stream

It is not known if the Lake Clear Association maintains a website.

Summary of 2012 CSLAP Sampling Results

Evaluation of 2012 Annual and Monthly Results Relative to 2006-2011

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 –Lake Clear” section in Appendix C.

Evaluation of Eutrophication Indicators

Algae levels, as measured by chlorophyll *a*, were slightly lower than normal in 2012, but total phosphorus readings and water clarity were close to normal in 2012, and none of these indicators has exhibited any clear long-term trends. Lake productivity generally decreases during the typical summer, as manifested in increasing water clarity and decreasing nutrient and algae levels, but strong seasonal patterns were not apparent in 2012.

The lake continues to be characterized as *mesoligotrophic*, based on water clarity, chlorophyll *a* (both typical of *mesotrophic* lakes) and total phosphorus (typical of *oligotrophic* lakes), although algae levels in 2012 were more typical of *oligotrophic* lakes. The trophic state indices (TSI) evaluation suggests that each of the trophic indicators are “internally consistent,” with readings for each of the trophic indicators within the expected range. Overall trophic conditions are summarized on the Lake Scorecard and Lake Condition Summary Table.

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. Deepwater ammonia and phosphorus readings are low and similar to those measured at the lake surface. However, deepwater iron and manganese readings are at times elevated (though not in

2012) and higher than expected given the low deepwater ammonia levels. Additional deepwater metals monitoring may be appropriate to evaluate potable water intakes from bottom waters. Potable water conditions, at least as measurable through CSLAP, are summarized in the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Limnological Indicators

Conductivity and calcium readings were higher than normal in 2010 and 2012, and the rise in conductivity was part of a slight long-term increase. Each of the other limnological indicators (NO_x, ammonia, total nitrogen, pH, and color) was close to normal, and none of these indicators has exhibited a long-term trend. Overall limnological conditions are summarized on the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Biological Condition

Phytoplankton, zooplankton and macroinvertebrate data have not been collected through CSLAP at Lake Clear. The fluoroprobe screening samples analyzed by SUNY ESF found low total algae levels and low levels of blue green algae.

Macrophyte surveys have not been conducted at Lake Clear; a record of (at least) one native plant in the lake has been reported by Cedar Eden Environmental. The fish community is comprised of at least eight fish species, two of which are coldwater species and three of which are coolwater fish species.

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

Evaluation of Lake Perception

Water quality assessments were less favorable in each of the last several years (including 2012) than in the typical CSLAP sampling season, despite water clarity readings that were close to normal. This has been coincident with a change in primary sampling volunteers. Aquatic plant coverage was less extensive than normal over the same period. Recreational assessments were more favorable than normal in 2012, but this is probably due more to better weather or other factors unrelated to water quality or aquatic plants. Overall lake perception is summarized on the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Local Climate Change

Both air and water temperature readings were close to normal in 2012, although water temperature readings have decreased significantly over the last several years. It is not yet known if this represents normal variability or if this is a good indication of local climate change.

Evaluation of Algal Toxins

Algal toxin levels can vary significantly within blooms and from shoreline to lake, and the absence of toxins in a sample does not indicate safe swimming conditions. Phycocyanin readings are below the levels indicating susceptibility for harmful algal blooms (HABs), consistent with

2012 fluorprobe screening data indicating low blue green algae levels. Algal toxins readings are below the levels indicating a threat to swimming safety; no shoreline blooms have been reported.

Lake Condition Summary

Category	Indicator	Min	88-12 Avg	Max	2012 Avg	Classification	2012 Change?	Long-term Change?
Eutrophication Indicators	Water Clarity	2.45	4.45	6.85	4.63	Mesotrophic	Within Normal Range	No Change
	Chlorophyll <i>a</i>	0.20	2.64	6.66	1.44	Mesotrophic	Lower Than Normal	No Change
	Total Phosphorus	0.002	0.009	0.024	0.010	Oligotrophic	Within Normal Range	No Change
Potable Water Indicators	Hypolimnetic Ammonia	0.00	0.10	0.41	0.10	Close to Surface NH4 Readings	Within Normal Range	Not known
	Hypolimnetic Arsenic	0.34	0.55	0.90	0.50	Low Deepwater Arsenic Levels	Within Normal Range	Not known
	Hypolimnetic Iron	0.02	1.27	5.36	0.59	Highly Elevated Deepwater Fe	Lower Than Normal	Not known
	Hypolimnetic Manganese	0.03	0.72	1.75	0.67	Highly Elevated Deepwater Mn	Within Normal Range	Not known
Limnological Indicators	Hypolimnetic Phosphorus	0.002	0.026	0.112	0.013	Close to Surface TP Readings	Lower Than Normal	Not known
	Nitrate + Nitrite	0.00	0.01	0.18	0.01	Low NOx	Within Normal Range	No Change
	Ammonia	0.00	0.03	0.25	0.03	Low Ammonia	Within Normal Range	No Change
	Total Nitrogen	0.02	0.29	0.93	0.30	Low Total Nitrogen	Within Normal Range	No Change
	pH	5.98	7.30	8.81	7.20	Circumneutral	Within Normal Range	No Change
	Specific Conductance	20	77	144	99	Softwater	Higher than Normal	Increasing Significantly
	True Color	5	17	43	15	Intermediate Color	Within Normal Range	No Change
	Calcium	1.1	5.3	11.0	8.2	Not Susceptible to Zebra Mussels	Higher than Normal	No Change
Lake Perception	WQ Assessment	1	1.2	2	2.0	Crystal Clear	Less Favorable than Normal	Slightly Degrading
	Aquatic Plant Coverage	1	2.5	3	1.3	Subsurface Plant Growth	More Favorable Than Normal	No Change
	Recreational Assessment	1	2.2	4	1.8	Excellent	More Favorable Than Normal	No Change
Biological Condition	Phytoplankton					Open water-low blue green algae biomass	Not known	Not known
	Macrophytes					Not sampled through CSLAP	Not known	Not known
	Zooplankton					Not sampled through CSLAP	Not known	Not known
	Macroinvertebrates					Not sampled through CSLAP	Not known	Not known
	Fish					Two story fishery (coldwater fishery)	Not known	Not known
	Invasive Species					None observed	Not known	Not known
Local Climate Change	Air Temperature	10	21.0	31	20.0		Within Normal Range	No Change
	Water Temperature	12	18.7	25	17.5		Within Normal Range	Decreasing Slightly

Category	Indicator	Min	88-12 Avg	Max	2012 Avg	Classification	2012 Change?	Long-term Change?
Harmful Algal Blooms	Open Water Phycocyanin	0	8	52	2	No readings indicate high risk of BGA	Not known	Not known
	Open Water FP Chl.a	1	2	2	2	No readings indicate high algae levels	Not known	Not known
	Open Water FP BG Chl.a	0	1	2	1	No readings indicate high BGA levels	Not known	Not known
	Open Water Microcystis	0.4	0.2	0.4	0.2	Mostly undetectable open water MC-LR	Not known	Not known
	Open Water Anatoxin a	<DL	<DL	<DL	<DL	Open water Anatoxin-a 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

Lake Clear is presently among the lakes listed on the 2009 draft Lake Champlain basin Priority Waterbody List (PWL); aquatic life is listed as *impaired* due to low pH. The PWL listing for the lake is in Appendix C.

Potable Water (Drinking Water)

The CSLAP dataset at Lake Clear, including water chemistry data, physical measurements, and volunteer samplers' perception data, is inadequate to evaluate the use of the lake for potable water. Surface and deep water quality data suggest that potable water use in the bottom waters may be *threatened* by elevated iron and manganese, although additional data may be needed to verify this impact.

Contact Recreation (Swimming)

The CSLAP dataset at Lake Clear, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggests that swimming and contact recreation should be fully supported. Additional information about bacteria levels is needed to determine if pathogens impact swimming.

Non-Contact Recreation (Boating and Fishing)

The CSLAP dataset on Lake Clear, 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 Lake Clear, including water chemistry data and physical measurements, suggest that aquatic life should be fully supported. The impaired conditions cited on the existing PWL listing could not be verified. Additional data are needed to evaluate the food and habitat conditions for aquatic organisms in the lake.

Aesthetics

The CSLAP dataset on Lake Clear, including volunteer samplers' perception data, suggest that aesthetics should be fully supported.

Fish Consumption

There are no fish consumption advisories in Lake Clear.

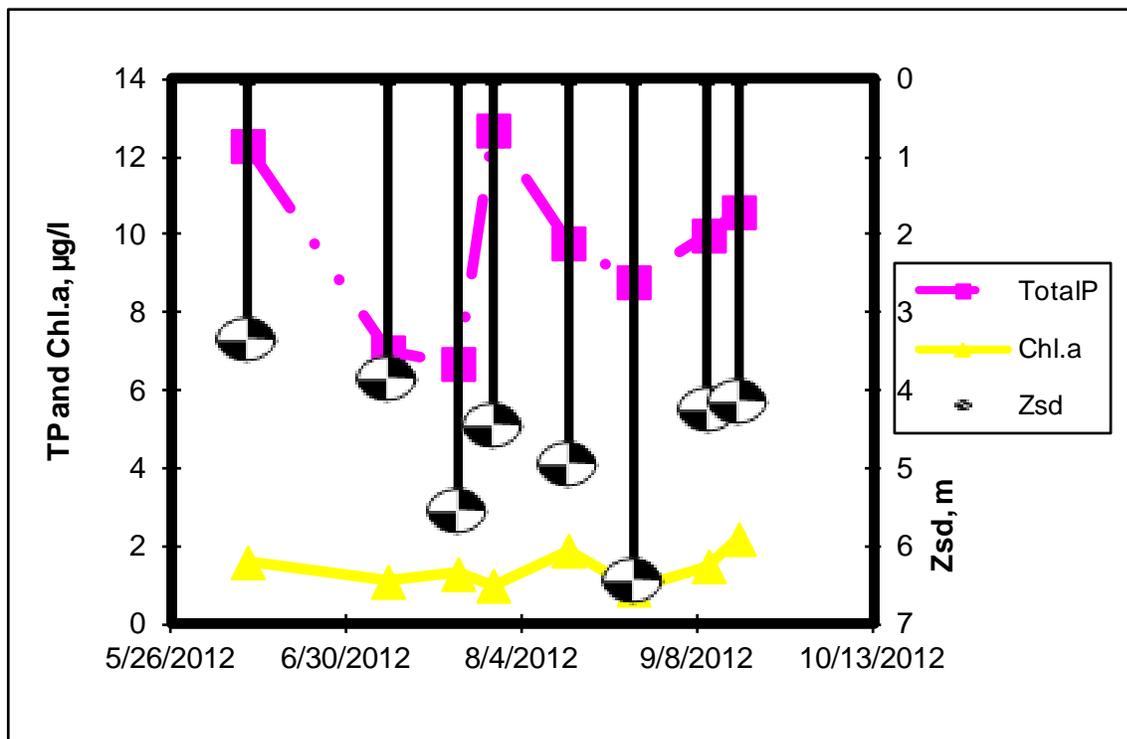
Additional Comments and Recommendations

The lake association should continue to be vigilant in preventing and searching for invasive species, and should consider conducting aquatic plant surveys to evaluate the presence of any exotic plants and the relative distribution of native plants in the lake.

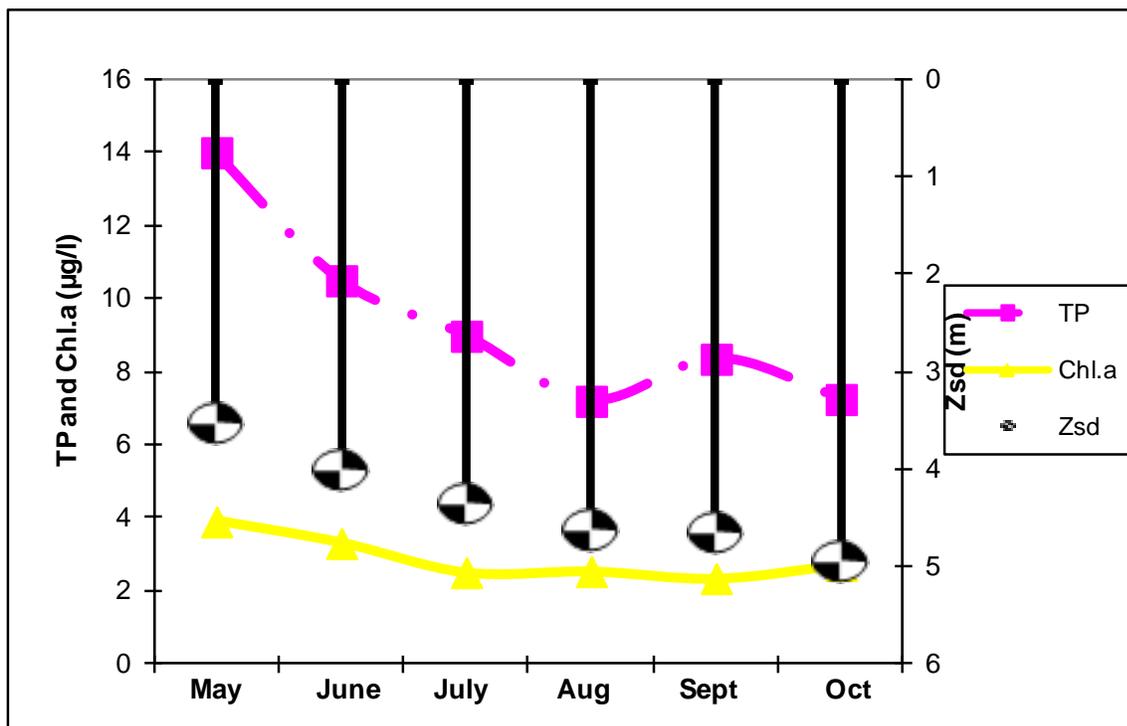
Aquatic Plant IDs-2012

None submitted for identification

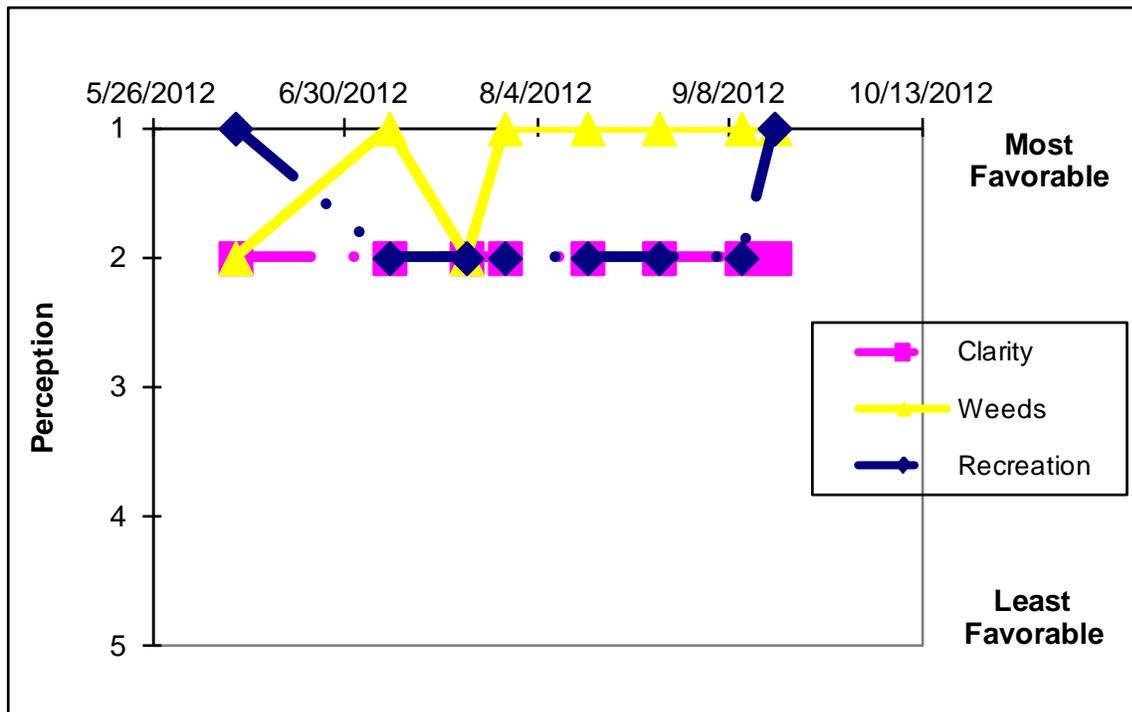
Time Series: Trophic Indicators, 2012



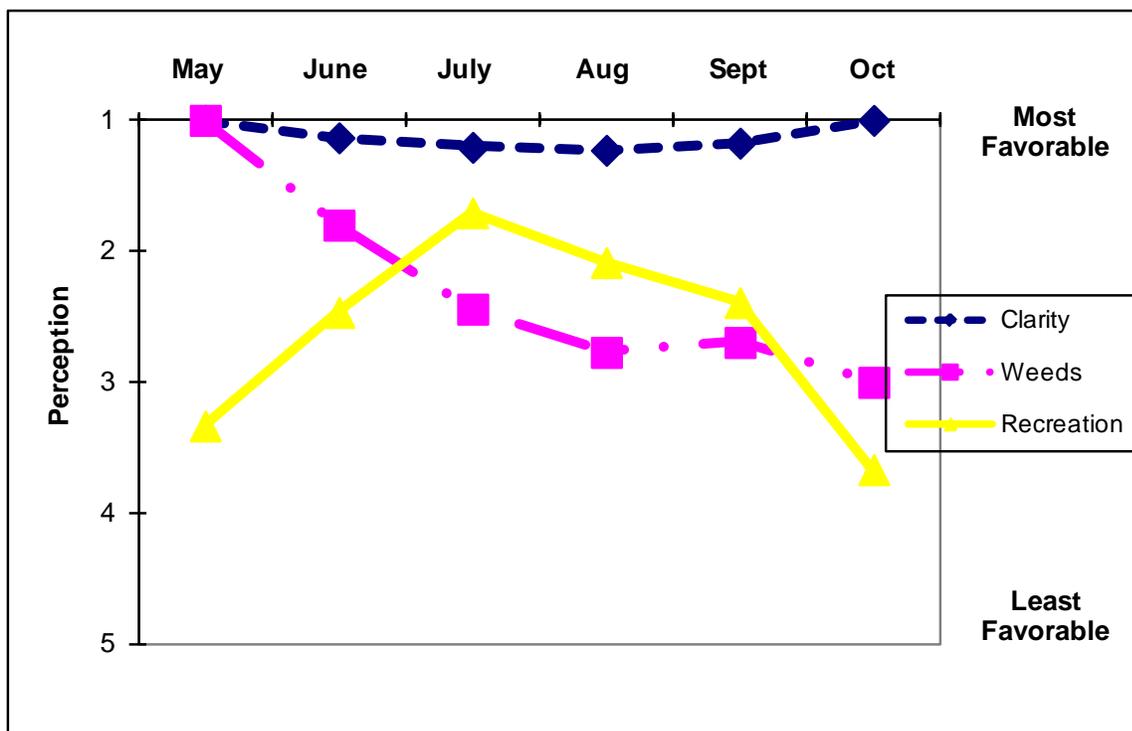
Time Series: Trophic Indicators, Typical Year (1998-2012)



Time Series: Lake Perception Indicators, 2012



Time Series: Lake Perception Indicators, Typical Year (1998-2012)



Appendix A- CSLAP Water Quality Sampling Results for Lake Clear

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a
146	L Clear	5/11/1998	15.1	2.45	1.5	0.009	0.01				17	6.49	60		6.51
146	L Clear	5/25/1998	17.5	4.70	1.5	0.009	0.01				15	7.39	62		3.07
146	L Clear	6/7/1998	17.5	3.40	1.5	0.009	0.01				12	6.98	62		6.66
146	L Clear	6/21/1998	17.5	3.25	1.5		0.01				13	7.24	60		3.07
146	L Clear	7/5/1998	17.5	3.05	1.5						18	7.69	59		4.90
146	L Clear	7/19/1998	17.5	3.00	1.5						24	7.37	59		2.80
146	L Clear	8/2/1998	17.5	3.05	1.5						23	7.00	60		2.78
146	L Clear	8/16/1998	17.5	4.05	1.5						20	7.31			3.99
146	L Clear	7/5/1999	17.5	4.15	1.5	0.008	0.01				14	7.48	77		1.42
146	L Clear	7/18/1999	17.5	4.45	1.5	0.006	0.01				13	6.54	65		2.39
146	L Clear	8/1/1999	17.5	4.35	1.5	0.007	0.01				7	6.75	66		1.60
146	L Clear	8/16/1999	17.5	6.70	1.5	0.014	0.01				10	6.99	66		1.05
146	L Clear	8/30/1999	17.5	5.25	1.5	0.006	0.01				11	7.63	63		2.06
146	L Clear	9/12/1999	17.5	6.85	1.5	0.005	0.01				8	7.87	67		0.38
146	L Clear	9/26/1999	17.5	4.85	1.5	0.010	0.01				15	7.38	67		2.58
146	L Clear	10/11/1999	17.5	4.75	1.5	0.007	0.01				12	6.75	68		2.35
146	L Clear	6/4/2000		3.60	1.5	0.008	0.04				18	7.63	65		3.20
146	L Clear	6/18/2000	17.5	3.25	1.5	0.011	0.01				18	6.78	65		4.60
146	L Clear	7/9/2000	17.5	3.45	1.5	0.008	0.01				17	7.60	65		5.10
146	L Clear	7/24/2000	17.5	4.65	1.5	0.010	0.01				16	7.11	67		4.22
146	L Clear	8/6/2000	17.5	4.05	1.5	0.010	0.01				18	6.38	65		2.94
146	L Clear	8/21/2000	17.5	3.75		0.007	0.01				17	7.49	66		3.76
146	L Clear	9/4/2000	17.5	3.55	1.5	0.007	0.01				17	7.63	66		1.32
146	L Clear	9/17/2000	17.5	3.55	1.5	0.014	0.01				18	7.12	67		4.19
146	L Clear	6/18/2001	17.5	4.65	1.5	0.014	0.01				16	7.78	70		2.18
146	L Clear	7/2/2001	17.5	4.45	1.5	0.010	0.01				13	7.00	68		5.35
146	L Clear	7/16/2001	17.5	4.65	1.5	0.008	0.01				16	6.35	68		2.60
146	L Clear	7/29/2001	17.5	5.95	1.5	0.010	0.01				11	8.81	69		1.24
146	L Clear	8/12/2001	17.5	5.75	1.5	0.007	0.01				11	7.42	70		2.56
146	L Clear	8/27/2001	17.5	4.25	1.5	0.006					10	7.21	70		1.06
146	L Clear	9/9/2001		5.55	1.5	0.008	0.01				16	7.84	69		
146	L Clear	9/24/2001		4.35	1.5	0.009	0.01				12	7.32	69		
146	L Clear	06/18/02	17.5	5.05	1.5	0.011	0.00	0.04	0.29	25.88	18	6.89	68	1.1	1.08
146	L Clear	07/21/02	17.5	4.55	1.5	0.003	0.00	0.04	0.41	154.59	27	7.25	68		2.70
146	L Clear	07/29/02	17.5	4.85	1.5	0.003	0.02	0.02			13	7.19	71		0.39
146	L Clear	08/11/02	17.5	5.15	1.5	0.006	0.01	0.14	0.40	63.95	16	7.27	69		3.12
146	L Clear	08/25/02	17.5	5.65	1.5	0.006			0.38	61.23	23	7.37	70	1.3	2.30
146	L Clear	09/06/02		5.25	1.5	0.012	0.01	0.03	0.43	36.43	20	7.14	72		1.05
146	L Clear	09/08/02		5.15	1.5	0.007	0.00	0.01	0.32	46.27	16	7.21	71		2.74
146	L Clear	09/22/02	17.5	5.35	1.5		0.01	0.01	0.32		14	7.21	71		3.42
146	L Clear	10/18/02	17.5	5.15	1.5		0.00	0.04	0.46						
146	L Clear	7/7/2003	17.5	4.85	1.5	0.013	0.00	0.00	0.37	28.31	18	7.14	75	5.2	1.61
146	L Clear	7/20/2003	17.5	4.75	1.5	0.013	0.00	0.00	0.02	1.42	16	7.09	77		2.03
146	L Clear	7/28/2003	17.5	4.75	1.5	0.012	0.00	0.00	0.13	11.10	14	7.17	75		2.71
146	L Clear	8/10/2003	17.5	5.05	1.5	0.010	0.00	0.00	0.13	12.79	17	7.39	74		1.21
146	L Clear	8/17/2003	17.5	4.75	1.5	0.008	0.01	0.03	0.25	30.45	12	7.12	73	5.5	2.83
146	L Clear	9/1/2003	17.5	4.65	1.5	0.009	0.00	0.01	0.42	49.07	11	7.10	76		2.59
146	L Clear	9/14/2003	17.5	4.75	1.5	0.008	0.00	0.01	0.21	26.79	12	6.92	79		1.36
146	L Clear	9/28/2003	17.5	4.75	16.5	0.013	0.01	0.25	0.15	10.94	9	7.23	76		3.18
146	L Clear	5/31/2004	17.5	3.45	1.5	0.024	0.01	0.02			15	7.09	83		2.12
146	L Clear	6/13/2004	17.5	4.25	1.5	0.019	0.01	0.01	0.17	9.25	15	6.24	78		5.59
146	L Clear	6/28/2004	17.5	3.65	1.5	0.005	0.01	0.01	0.08	15.99	30	6.38	82		0.80
146	L Clear	7/11/2004		4.05	1.5										
146	L Clear	7/25/2004	17.5	4.35	1.5	0.008	0.12	0.02	0.50	62.99	14	8.16	80	7.4	2.70
146	L Clear	8/8/2004	17.5	3.75	1.5	0.008	0.01	0.02	0.26	34.19	20	7.06	77		3.30
146	L Clear	8/22/2004	17.5	5.85	1.5	0.007	0.01	0.02	0.93	128.46		7.73	20		4.16
146	L Clear	9/5/2004	17.5	5.15	1.5	0.006	0.01	0.02	0.36	60.79	18	6.78	75		2.60
146	L Clear	6/13/2005	17.5	4.45	1.5	0.007	0.01	0.01	0.11	14.67	10	7.68	144	6.2	2.70
146	L Clear	6/26/2005	17.5	4.25	1.5	0.010	0.01	0.01	0.21	22.04	10	7.90	82		1.63
146	L Clear	7/10/2005		4.35	1.5	0.007	0.01	0.01	0.23	34.53	9	7.70	81		
146	L Clear	7/24/2005	17.5	4.15	1.5	0.007	0.01	0.01	0.09	13.45	10	7.88	77		1.64
146	L Clear	8/21/2005	17.5	4.25	1.5	0.005	0.01	0.03	0.27	50.28	11	7.04	83		1.84
146	L Clear	9/5/2005	17.5	5.25	1.5	0.006	0.01	0.05	0.12	19.27	15	7.17	85		1.86

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a
146	L Clear	9/18/2005		4.75	1.5	0.005	0.02	0.01	0.10	18.54	7	7.60	86		1.37
146	L Clear	6/18/2006	17.5	4.55	1.5	0.010	0.03	0.07	0.64	64.00	14	7.54	74	3.97	4.40
146	L Clear	7/4/2006	17.5	4.85	1.5	0.009	0.00	0.01	0.45	51.52	14	7.47	57		2.48
146	L Clear	7/16/2006	17.5	4.35	1.5	0.007	0.01	0.03	0.48	69.96	5	7.77	87		1.99
146	L Clear	7/30/2006		4.25	1.5	0.008	0.01	0.02	0.49	64.26	18	6.74	83		3.17
146	L Clear	8/13/2006	17.5	4.35	1.5	0.009	0.01	0.01	0.45	49.25	21	7.27	63	5.02	3.35
146	L Clear	8/27/2006	17.5	3.75	1.5	0.006	0.01	0.01	0.39	67.53	14	7.70	72		5.58
146	L Clear	9/10/2006	17.5	4.25	1.5	0.005	0.01	0.01	0.65	120.88	34	7.73	82		4.32
146	L Clear	9/17/2006	17.5	3.85	1.5	0.008					43	7.72	76		3.53
146	L Clear	6/30/2007	17.5	4.75	1.5	0.009	0.01	0.02	0.31	78.8	16	7.5	79	5.1	4.39
146	L Clear	7/22/2007	17.5	5.15	1.5	0.007	0.01	0.02	0.54	171.4	17	8.0	78		2.51
146	L Clear	8/5/2007	17.5	4.85	1.5	0.008	0.01	0.01	0.40	116.1	16	8.0	77		0.70
146	L Clear	8/12/2007		4.85	1.5	0.006	0.00	0.01	0.41	150.2	16	6.4	90		1.16
146	L Clear	8/19/2007	17.5	4.75	1.5	0.007	0.18	0.02	0.41	130.8	18	7.8	78	5.5	3.94
146	L Clear	8/25/2007	17.5	4.15	1.5	0.005	0.00	0.01	0.35	144.0	18	7.9	83		3.29
146	L Clear	9/23/2007	17.5	4.85	1.5	0.008	0.01	0.01	0.39	103.1	13	7.9	81		2.79
146	L Clear	10/1/2007	17.5	4.95	1.5	0.008	0.02	0.01	0.43	125.5	17	6.4	55		3.07
146	L Clear	7/6/2008	17.5	4.25	1.5	0.011	0.04	0.04	0.15	31.26	17	7.25	79	5.0	1.60
146	L Clear	7/14/2008	17.5	4.35	1.5	0.009	0.01	0.01	0.19	46.99		7.74	60		2.94
146	L Clear	7/21/2008	17.5	4.05	1.5	0.007	0.01	0.01	0.19	55.43	38	8.01	72		2.45
146	L Clear	7/27/2008	17.5	4.35	1.5	0.008	0.02	0.05	0.13	37.06	19	6.89	73		3.17
146	L Clear	8/9/2008	17.5	4.05	1.5	0.002	0.01	0.03	0.19	190.79	19	7.96	78	5.1	3.63
146	L Clear	8/17/2008		4.00	1.5	0.007	0.00	0.01	0.22	71.49	18	7.23	87		4.11
146	L Clear	8/24/2008	17.5	4.15	1.5	0.006	0.00	0.03	0.24	82.13	26	7.60	89		2.28
146	L Clear	9/13/2008	17.5	4.05	1.5	0.006	0.00	0.02	0.15	54.04	20	7.42	111		2.43
146	L Clear	06/14/2009		3.65	1.5	0.012	0.00	0.01	0.23	42.35	18	7.72	81	5.2	5.56
146	L Clear	06/28/2009	17.5	4.15	1.5	0.010	0.04	0.04	0.22	46.35	23	7.95	58		2.22
146	L Clear	07/11/2009	17.5	3.45	1.5	0.012	0.00	0.01	0.19	35.68	21	6.84	80		2.60
146	L Clear	07/19/2009	17.5	3.75	1.5	0.014	0.01	0.02	0.28	46.12	30	6.56	130		2.48
146	L Clear	08/02/2009	17.5	4.45	1.5	0.009	0.03	0.02	0.19	48.14	25	6.38	59	6.1	3.26
146	L Clear	08/15/2009		4.13	1.5	0.008	0.03	0.03	0.27	71.83	30	7.60	38		1.40
146	L Clear	08/24/2009	17.5	4.35	1.5	0.006	0.01	0.01	0.17	58.44	25	5.98	77		3.10
146	L Clear	08/31/2009	17.5	4.45	1.5	0.007	0.01	0.01	0.14	41.92	27		82		2.90
146	L Clear	7/4/2010	17.5	4.75		0.016	0.01	0.01	0.28	38.88	23	6.94	94	6.1	0.20
146	L Clear	7/18/2010		4.25	1.5	0.008	0.02	0.05	0.15	42.84	9	7.41	99		3.10
146	L Clear	7/26/2010	17.5	4.25	1.5	0.013	0.01	0.03	0.22	36.95	17	7.77	101		4.50
146	L Clear	8/1/2010	17.5	4.95	1.5	0.006	0.01	0.04	0.28	102.43	18	7.38	115		2.10
146	L Clear	8/15/2010	17.5	4.65	1.5	0.006	0.01	0.01	0.12	43.30	26	8.12	110	5.6	1.30
146	L Clear	8/21/2010	17.5	5.15	1.5	0.006	0.02	0.05	0.34	119.78	18	6.95	106		1.50
146	L Clear	9/6/2010	17.5	4.05	1.5	0.009	0.02	0.02	0.21	50.60	10	7.66	112		2.60
146	L Clear	9/12/2010	17.5	3.95	1.5	0.008	0.01	0.02	0.23	61.76	5	7.26	102		1.30
146	L Clear	6/10/2012	15.3	3.35		0.012	0.02	0.03	0.20	35.41	18	7.39	99	5.3	1.60
146	L Clear	7/8/2012	17.5	3.85	1.5	0.007	0.01	0.10	0.27	85.49	16	6.71	89		1.10
146	L Clear	7/22/2012	17.5	5.55	1.5	0.007	0.01	0.02	0.22	71.91	14	8.24	105		1.30
146	L Clear	7/29/2012	17.5	4.45	1.5	0.013	0.01	0.01	0.27	46.08	12	7.29	100		1.00
146	L Clear	8/13/2012	17.5	4.95	1.5	0.010	0.01	0.02	0.46	103.04	14	6.83	96	11.0	1.90
146	L Clear	8/26/2012	17.5	6.45	1.5	0.009	0.01	0.02	0.24	59.37	16	6.67	101		0.90
146	L Clear	9/10/2012	17.5	4.25	1.5	0.010	0.01	0.05	0.51	111.76	14	7.91	101		1.50
146	L Clear	9/16/2012	17.5	4.15	1.5	0.011	0.01	0.02	0.20	41.72	14	6.53	101		2.20
146	L Clear	07/21/02	17.5	4.55	16.5	0.030	0.10	0.19	0.61	20.61					
146	L Clear	07/29/02	17.5	4.85	16.5	0.006	0.07	0.02							
146	L Clear	08/11/02	17.5	5.15	16.5	0.026	0.08	0.23	0.60	23.56					
146	L Clear	08/25/02	17.5	5.65	16.0	0.010			0.59	62.20					
146	L Clear	09/06/02		5.25	16.0	0.112	0.00	0.41	0.60	5.40					
146	L Clear	09/08/02		5.15	16.0	0.016	0.00	0.10	0.37	23.00					
146	L Clear	09/22/02	17.5	5.35	16.0		0.00	0.32	0.65						
146	L Clear	7/7/2003			16.5	0.003	0.01	0.01	0.16	45.82					
146	L Clear	7/20/2003			16.5	0.016	0.12	0.00	0.13	8.40					
146	L Clear	7/28/2003			16.5	0.081	0.13	0.07	0.13	1.61					
146	L Clear	8/10/2003			16.5	0.021	0.14	0.02	0.32	15.09					
146	L Clear	8/17/2003			16.5	0.048	0.02	0.15	0.38	7.85					
146	L Clear	9/1/2003			16.5	0.038	0.02	0.16	0.26	6.96					
146	L Clear	9/14/2003			16.5	0.015	0.06	0.03	0.21	14.11					
146	L Clear	9/28/2003			1.0	0.023	0.01	0.05	0.14	6.19					
146	L Clear	5/31/2004	17.5		16.5	0.017	0.07	0.08							
146	L Clear	6/13/2004	17.5		17.3	0.058	0.07	0.01	1.21	20.76					

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP			Fe	Mn	As
146	L Clear	6/28/2004	17.5		16.5	0.029	0.12	0.16	0.29	9.97					
146	L Clear	7/11/2004			17.5										
146	L Clear	7/25/2004	17.5		16.5	0.022	0.01	0.01	0.25	11.06					
146	L Clear	8/8/2004	17.5		16.5	0.014	0.13	0.02	0.34	24.35					
146	L Clear	8/22/2004	17.5		16.5	0.028	0.06	0.15	0.41	14.93					
146	L Clear	9/5/2004	17.5		16.5	0.017	0.05	0.03	0.27	15.70					
146	L Clear	6/13/2005			16.5	0.034									
146	L Clear	6/26/2005			16.5	0.056									
146	L Clear	7/10/2005			16.5	0.017									
146	L Clear	7/24/2005			16.5	0.034									
146	L Clear	8/7/2005			16.5	0.012									
146	L Clear	8/21/2005			16.5	0.044									
146	L Clear	9/5/2005			16.5	0.029									
146	L Clear	9/18/2005			16.5	0.002									
146	L Clear	6/18/2006	17.5		16.5	0.008									
146	L Clear	7/4/2006	17.5		16.0	0.021									
146	L Clear	7/16/2006	17.5		16.5	0.026									
146	L Clear	7/30/2006			16.5	0.099									
146	L Clear	8/13/2006	17.5		16.5	0.035									
146	L Clear	8/27/2006	17.5		16.5	0.007									
146	L Clear	9/10/2006	17.5		16.5	0.010									
146	L Clear	9/17/2006	17.5		16.5	0.020									
146	L Clear	6/30/2007	17.5		16.5	0.010									
146	L Clear	7/22/2007	17.5		16.5	0.013									
146	L Clear	8/5/2007	17.5		16.5	0.012									
146	L Clear	8/12/2007			16.5	0.023									
146	L Clear	8/19/2007	17.5		16.5	0.016									
146	L Clear	8/25/2007	17.5		16.5	0.009									
146	L Clear	9/23/2007	17.5		16.5	0.004									
146	L Clear	10/1/2007	17.5		16.5	0.011									
146	L Clear	7/6/2008			16.5	0.028									
146	L Clear	7/14/2008			16.5	0.031									
146	L Clear	7/21/2008			16.5	0.040									
146	L Clear	7/27/2008			16.5	0.022									
146	L Clear	8/9/2008			16.5	0.036									
146	L Clear	8/17/2008			16.5	0.019									
146	L Clear	8/24/2008			16.5	0.054									
146	L Clear	9/13/2008			16.5	0.020									
146	L Clear	06/14/2009			16.5	0.031		0.12							
146	L Clear	06/28/2009	17.5		16.5	0.049									
146	L Clear	07/11/2009	17.5		16.5	0.029		0.10							
146	L Clear	07/19/2009	17.5		17.5	0.044									
146	L Clear	08/02/2009	17.5		17.5	0.018		0.01					0.55	0.44	0.34
146	L Clear	08/15/2009			15.3	0.022							0.66	0.55	
146	L Clear	08/24/2009	17.5		17.0			0.07					5.36	0.92	0.90
146	L Clear	08/31/2009	17.5		16.0	0.004									
146	L Clear	7/4/2010	17.5		17.5	0.021		0.04							
146	L Clear	7/26/2010	17.5		17.5	0.018		0.07					0.27	0.29	
146	L Clear	8/15/2010	17.5		17.5	0.016		0.15					0.35	0.56	0.34
146	L Clear	9/6/2010	17.5		17.5	0.021		0.19					3.09	1.75	0.70
146	L Clear	6/10/2012			15.0	0.009		0.05							
146	L Clear	7/8/2012			15.0								0.02	0.03	
146	L Clear	7/22/2012			15.0	0.017		0.07							
146	L Clear	7/29/2012			15.0								0.14	0.06	
146	L Clear	8/13/2012			15.0	0.016		0.21							
146	L Clear	8/26/2012			15.0								1.36	1.70	0.50
146	L Clear	9/10/2012			15.0	0.012		0.08							
146	L Clear	9/16/2012			15.0								0.86	0.88	0.50

LNum	PName	Date	Type	TAir	TH20	QA	QB	QC	QD	QE	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cyc	FP-Chl	FP-BG	HAB form
146	L Clear	5/11/1998	epi	20	15	1	1	4	5											
146	L Clear	5/25/1998	epi	25	17	1	1	2	6											
146	L Clear	6/7/1998	epi	13	14	1	2	4	5											
146	L Clear	6/21/1998	epi	25	22	1	2	3	4											
146	L Clear	7/5/1998	epi	22	21	1	2	3	5											
146	L Clear	7/19/1998	epi	22	23	1	2	1												
146	L Clear	8/2/1998	epi	15	22	1	3	1												
146	L Clear	8/16/1998	epi	22	23	1	3	2	5											
146	L Clear	7/5/1999	epi		25	1	3	2	6											
146	L Clear	7/18/1999	epi	27	23	1	3	2	5											
146	L Clear	8/1/1999	epi	30	25	1	3	2	6											
146	L Clear	8/16/1999	epi	14	20	1	3	1												
146	L Clear	8/30/1999	epi	16	19	1	3	3	5											
146	L Clear	9/12/1999	epi	24	20	1	3	1												
146	L Clear	9/26/1999	epi	21	16	1	3	1	6											
146	L Clear	10/11/1999	epi	11	13	1	3	4	5											
146	L Clear	6/4/2000	epi	19	15	1	2	3	5											
146	L Clear	6/18/2000	epi	19	15	1	2	4	5											
146	L Clear	7/9/2000	epi	22	20	1	1	3	5											
146	L Clear	7/24/2000	epi	20	20	1	3	1												
146	L Clear	8/6/2000	epi	25	20	1	3	3	5											
146	L Clear	8/21/2000	epi	18	20	1	3	1												
146	L Clear	9/4/2000	epi	13	21	1	3	4	5											
146	L Clear	9/17/2000	epi	17	17	1	3	4	5											
146	L Clear	6/18/2001	epi	17	23	1	2	2	6											
146	L Clear	7/2/2001	epi	21	21	1	1	2	5											
146	L Clear	7/16/2001	epi	23	20	1	3	2	6											
146	L Clear	7/29/2001	epi	18	22	1	3	1												
146	L Clear	8/12/2001	epi	23	24	1	3	1												
146	L Clear	8/27/2001	epi	22	23	1	3	1	6											
146	L Clear	9/9/2001	epi	27	22	1	3	1	6											
146	L Clear	9/24/2001	epi	20	18	1	2	2	5											
146	L Clear	06/18/02	epi	17	16	1	1	4	5											
146	L Clear	07/21/02	epi	22	23	1	2	1												
146	L Clear	07/29/02	epi	23	21	1	3	2	5											
146	L Clear	08/11/02	epi	15	17	1	3	1	8											
146	L Clear	08/25/02	epi	28	21	1	3	3	5											
146	L Clear	09/06/02	epi	15	17	1	3	3	5											
146	L Clear	09/08/02	epi	28	21	1	3	1	8											
146	L Clear	09/22/02	epi	20	20	1	3	2	5											
146	L Clear	10/18/02	epi	10	12	1	3	4	5											
146	L Clear	7/7/2003	epi	20	23	1	3	2	5											
146	L Clear	7/20/2003	epi	26	21	1	3	1	8											
146	L Clear	7/28/2003	epi	21	21	1	3	3	5											
146	L Clear	8/10/2003	epi	28	25	1	3	3	5											
146	L Clear	8/17/2003	epi	22	24	1	3	2	5											
146	L Clear	9/1/2003	epi	21	24	1	3	4	5											
146	L Clear	9/14/2003	epi	22	21	1	3	3	5											
146	L Clear	9/28/2003	epi	13	17	1	3	4	5											
146	L Clear	5/31/2004	epi	17	12	1	1	4	5											
146	L Clear	6/13/2004	epi	20	16	2	1	2	8											
146	L Clear	6/28/2004	epi	15	14	1	2	2	5											
146	L Clear	7/11/2004	epi	25	18	1	2	1	0											
146	L Clear	7/25/2004	epi	21	18	1	3	1	0											
146	L Clear	8/8/2004	epi	16	16	1	3	4	5											
146	L Clear	8/22/2004	epi	12	16	1	3	1	8											
146	L Clear	9/5/2004	epi	20	17	1	3	1	0											
146	L Clear	6/13/2005	epi	24	20	1	1	3	5											
146	L Clear	6/26/2005	epi	27	21	1	3	1	0											
146	L Clear	7/10/2005	epi	21	18	1	2	1	8											

LNum	PName	Date	Type	TAir	TH20	QA	QB	QC	QD	QE	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cyc	FP-Chl	FP-BG	HAB form
146	L Clear	7/24/2005	epi	26	22	1	3	1	0											
146	L Clear	8/7/2005	epi	26	20	1	3	2	8											
146	L Clear	8/21/2005	epi	19	19	1	3	4	5											
146	L Clear	9/5/2005	epi	21	21	1	3	1	0											
146	L Clear	9/18/2005	epi	16	20	1	3	4	58											
146	L Clear	6/18/2006	epi	31	14	1	1	3	8											
146	L Clear	7/4/2006	epi	23	20	1	2	3	5											
146	L Clear	7/16/2006	epi	27	19	1	3	1	0											
146	L Clear	7/30/2006	epi	26	23	1	3	1	0											
146	L Clear	8/13/2006	epi	17	21	1	3	2	5											
146	L Clear	8/27/2006	epi	16	20	1	3	4	5											
146	L Clear	9/10/2006	epi	16	18	1	3	3	5											
146	L Clear	9/17/2006	epi	23	18	1	3	3	5											
146	L Clear	6/30/2007	epi	18	15	1	2	3	2											
146	L Clear	7/22/2007	epi	22	18	1	3	1	0											
146	L Clear	8/5/2007	epi	23	22	1	3	1	0											
146	L Clear	8/12/2007	epi	27	20	1	3	1	0											
146	L Clear	8/19/2007	epi	18	16	1	3	4	5											
146	L Clear	8/25/2007	epi	28	16	1	3	3	5											
146	L Clear	9/23/2007	epi	15	14	1	3	3	5											
146	L Clear	10/1/2007	epi	22	14	1	3	3	5											
146	L Clear	7/6/2008	epi	27	18	1	3	1	0											
146	L Clear	7/14/2008	epi	19	16	1	3	2	5											
146	L Clear	7/21/2008	epi	20	17	1	3	2	5											
146	L Clear	7/27/2008	epi	23	17	1	2	1	0											
146	L Clear	8/9/2008	epi	22	19	1	3	2	5											
146	L Clear	8/17/2008	epi	20	18	1	3	3	5											
146	L Clear	8/24/2008	epi	29	19	1	3	1												
146	L Clear	9/13/2008	epi	24	16	1	3	3	5											
146	L Clear	06/14/2009	epi	23	15	1	1	1	0											
146	L Clear	06/28/2009	epi	19	17	1	3	1	0											
146	L Clear	07/11/2009	epi	17	15	1	3	2	0											
146	L Clear	07/19/2009	epi	21	16	2	3	2	0											
146	L Clear	08/02/2009	epi	23	17	2	3	2	5											
146	L Clear	08/15/2009	epi	23	20	2	3	2	0											
146	L Clear	08/24/2009	epi	20	19	2	3	2	0											
146	L Clear	08/31/2009	epi	18	15	2	3	2	0											
146	L Clear	7/4/2010	epi	28	16	2	2	2	0	0	0									
146	L Clear	7/18/2010	epi	23	20	2	2	2	5	0	0									
146	L Clear	7/26/2010	epi	22	18	2	2	2	0	0	0									
146	L Clear	8/1/2010	epi	24	19	1	1	1	0	0	0									
146	L Clear	8/15/2010	epi	23	18	2	2	2	0	0	0									
146	L Clear	8/21/2010	epi	20	17	2	2	2	0	0	0									
146	L Clear	9/6/2010	epi	18	16	2	2	2	0	0	0	52.41								
146	L Clear	9/12/2010	epi	20	14	2	2	2	0	0	0									
146	L Clear	6/10/2012	epi	24	15	2	2	1	0	0	0	1.80	0.90	<0.30	<0.417			2.34	0.04	I
146	L Clear	7/8/2012	epi	23	19	2	1	2	6	0	0	1.80	0.30	<0.30	<0.423			1.05	0.19	I
146	L Clear	7/22/2012	epi	22	20	2	2	2	0	0	0	0.40	0.30	<0.30	<0.585			1.20	0.42	I
146	L Clear	7/29/2012	epi	22	19	2	1	2	0	0	0	2.60	0.50	0.44	<0.292			1.52	0.34	I
146	L Clear	8/13/2012	epi	17	18	2	1	2	0	0	0	0.80	0.40	0.36	<0.552			2.24	1.46	I
146	L Clear	8/26/2012	epi	22	19	2	1	2	0	0	0	3.10	0.20	<0.30	<0.551			2.31	1.55	I
146	L Clear	9/10/2012	epi	15	15	2	1	2	0	0	0	4.20	0.50	<0.30	<0.580			1.79	0.56	I
146	L Clear	9/16/2012	epi	15	15	2	1	1	0	0	0	3.30	0.40	<0.30	<3.299			1.22	0.61	I
146	L Clear	07/21/02	hypo	22	23															
146	L Clear	07/29/02	hypo	23	21															
146	L Clear	08/11/02	hypo	26	23															
146	L Clear	08/25/02	hypo	21	22															
146	L Clear	09/06/02	hypo	15	17															
146	L Clear	09/08/02	hypo	28	21															
146	L Clear	09/22/02	hypo	20	20															

LNum	PName	Date	Type	TAir	TH20	QA	QB	QC	QD	QE	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cyc	FP-Chl	FP-BG	HAB form
146	L Clear	6/13/2005	hypo		6															
146	L Clear	6/26/2005	hypo		6															
146	L Clear	7/10/2005	hypo		6															
146	L Clear	7/24/2005	hypo		6															
146	L Clear	8/7/2005	hypo		6															
146	L Clear	8/21/2005	hypo		6															
146	L Clear	9/5/2005	hypo		6															
146	L Clear	9/18/2005	hypo		6															
146	L Clear	6/18/2006	hypo		6															
146	L Clear	7/4/2006	hypo		6															
146	L Clear	7/16/2006	hypo		6															
146	L Clear	7/30/2006	hypo		7															
146	L Clear	8/13/2006	hypo		6															
146	L Clear	8/27/2006	hypo		6															
146	L Clear	9/10/2006	hypo		6															
146	L Clear	9/17/2006	hypo		6															
146	L Clear	6/30/2007	hypo		5															
146	L Clear	7/22/2007	hypo		5															
146	L Clear	8/5/2007	hypo		6															
146	L Clear	8/12/2007	hypo		5															
146	L Clear	8/19/2007	hypo		5															
146	L Clear	8/25/2007	hypo		6															
146	L Clear	9/23/2007	hypo		5															
146	L Clear	10/1/2007	hypo		5															
146	L Clear	7/6/2008	hypo		6															
146	L Clear	7/14/2008	hypo		6															
146	L Clear	7/21/2008	hypo		6															
146	L Clear	7/27/2008	hypo		6															
146	L Clear	8/9/2008	hypo		6															
146	L Clear	8/17/2008	hypo		6															
146	L Clear	8/24/2008	hypo		6															
146	L Clear	9/13/2008	hypo		6															
146	L Clear	06/14/2009	hypo		8															
146	L Clear	06/28/2009	hypo		6															
146	L Clear	07/11/2009	hypo		7															
146	L Clear	07/19/2009	hypo		10															
146	L Clear	08/02/2009	hypo		8															
146	L Clear	08/15/2009	hypo		8															
146	L Clear	08/24/2009	hypo		12															
146	L Clear	08/31/2009	hypo		7															
146	L Clear	7/4/2010	hypo		8															
146	L Clear	7/26/2010	hypo		7															
146	L Clear	8/15/2010	hypo		7															
146	L Clear	9/6/2010	hypo		6															
146	L Clear	6/10/2012	hypo		6															
146	L Clear	7/8/2012	hypo		6															
146	L Clear	7/22/2012	hypo		6															
146	L Clear	7/29/2012	hypo		5															
146	L Clear	8/13/2012	hypo		5															
146	L Clear	8/26/2012	hypo		5															
146	L Clear	9/10/2012	hypo		5															
146	L Clear	9/16/2012	hypo		5															

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	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 C- Monthly Evaluation of Lake Clear Data, 2006-2012

June Data

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

Appendix C- Priority Waterbody Listing for Lake Clear

Lake Clear (1003-0109)

Need Verific

Waterbody Location Information

Revised: 02/24/2009

Water Index No:	C- 15-P114..P199	Drain Basin:	Lake Champlain
Hydro Unit Code:	02010006/010	Str Class:	AA(T)
Waterbody Type:	Lake	Reg/County:	5/Franklin Co. (17)
Waterbody Size:	1091.8 Acres	Quad Map:	UPPER SARANAC LAKE (D-23-B)
Seg Description:	entire lake		

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
AQUATIC LIFE	Impaired	Suspected

Type of Pollutant(s)

Known: ---
Suspected: ACID/BASE (PH)
Possible: ---

Source(s) of Pollutant(s)

Known: ---
Suspected: ATMOSPH. DEPOSITION
Possible: ---

Resolution/Management Information

Issue Resolvability:	1 (Needs Verification/Study (see STATUS))	
Verification Status:	4 (Source Identified, Strategy Needed)	
Lead Agency/Office:	ext/EPA	Resolution Potential: Medium
TMDL/303d Status:	2a*	

Further Details

Overview

Monitoring of Lake Clear reveals no impacts to uses. However aquatic life support in the smaller ponds in this segment is considered to be impaired due to low pH, a result of atmospheric deposition (acid rain). Available data indicating such impacts are limited to smaller ponds within this segment and is more than 20 years old. Until more recent data on the condition of these smaller waters is available, the impairment to aquatic life support in this segment will be considered to be suspected and limited.

Water Quality Sampling

Lake Clear has been sampled as part of the NYSDEC Citizen Statewide Lake Assessment Program (CSLAP) beginning in 1998 and continuing through 2005. An Interpretive Summary report of the findings of this sampling was published in 2006. These data indicate that the lake continues to be best characterized as mesoligotrophic, or moderately unproductive. Phosphorus levels in the lake typically fall well below the state guidance values indicating impacted/stressed recreational uses. Corresponding transparency measurements typically significantly exceed the recommended minimum for swimming beaches. Measurements of pH typically fall within the state water quality standard range of 6.5 to 8.5. The lake water is slightly to moderately colored, but color does not appear to limit water transparency. (DEC/DOW, BWAM/CSLAP, July 2006)

Recreational Assessment

Public perception of the lake and its uses is also evaluated as part of the CSLAP program. This assessment indicates recreational suitability of the lake to be very favorable since the lake was first evaluated and continuing through the most recent assessment. The recreational suitability of the lake is described most frequently as "excellent" or only "slightly" impacted. The lake itself is most often described as "crystal clear," an assessment somewhat more favorable than indicated by measured water quality characteristics, while the recreational assessment are slightly less favorable. Assessments have noted that aquatic plants regularly grow to, but not densely at, the lake surface. Aquatic plants surveys have not been conducted on the lake. (DEC/DOW, BWAM/CSLAP, July 2006)

Lake Uses

This lake waterbody is designated class AA, suitable for use as a water supply, public bathing beach, general recreation and aquatic life support. Water quality monitoring by NYSDEC focuses primarily on support of general recreation and aquatic life. Samples to evaluate the bacteriological condition and bathing use of the lake or to evaluate contamination from organic compounds, metals or other inorganic pollutants have not been collected as part of the CSLAP monitoring program. Monitoring to assess potable water supply and public bathing use is generally the responsibility of state and/or local health departments.

Other/Previous Sampling

Monitoring of Lake Clear (P199) was not included in the Adirondack Lake Survey Corporation (ALSC) lake monitoring and assessment effort conducted in the mid-1980s (1984-86). Generally these were one-time samples analyzed for variety of parameters, including total phosphorus, pH and water color. However, monitoring by ALSC (1985) revealed very low pH in Lindsey Pond (P200), Saint Germain Pond (P201) and Conley Line Pond (P204) and somewhat low pH in Meadow Pond (P203). Historical surveys of the smaller pond within this segment indicate that low pH due to acid deposition is limiting the fishery. (DEC, DOW, BWAM/WQAS, January 2009 and ALSC, 1984-86)

Water Quality Management

Efforts are underway on a national level to address problems caused by acid rain by reducing pollutant emissions, as required by the Clean Air Act. New York State (and other northeastern states) have taken legal action against USEPA to accelerate implementation of controls. Monitoring of these waters will continue, in order to assess changes in water quality resulting from implementation of the Clean Air Act. However, these changes are expected to occur only slowly over time.

Section 303(d) Listing

Saint Germain Pond (P201) is included on the 2008 Section 303(d) List of Impaired Waters within the listing for Minor Lakes Trib to Upper Saranac Lake (1002-0086). However the lakes within this segment, including Saint Germain Pond, have been reassigned to other segments. As a result, it is recommended that the listing for Minor Lakes Trib to Upper Saranac Lake be replaced by a listing for Clear Pond. Lindsey Pond (P200) is included on the NYS 2008 Section 303(d) List of Impaired Waters in Appendix A as a Smaller Lakes Impaired by Acid Rain. (DEC/DOW, BWAM, 2008)

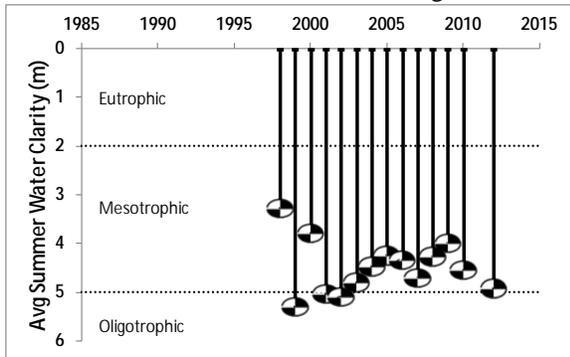
Segment Description

This segment includes the total area of Clear Pond (P199) and St. Germain Pond (P201) and Meadow Pond (P203), as well as smaller Lindsey Pond (P200), Conley Line Pond (P204) and unnamed ponds (P202). All the waters of this segment are Class AA.

Appendix D- Long Term Trends: Lake Clear

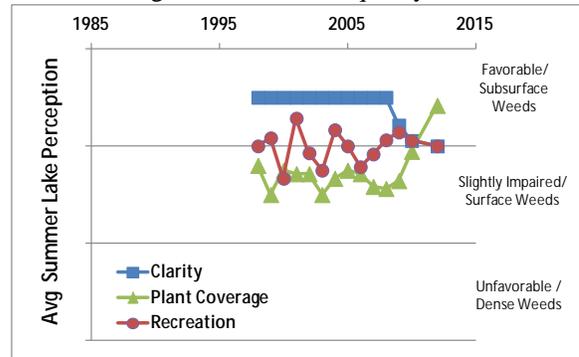
Long Term Trends: Water Clarity

- No trends apparent
- Most readings typical of *mesoligotrophic* lakes, consistent with TP and algae levels



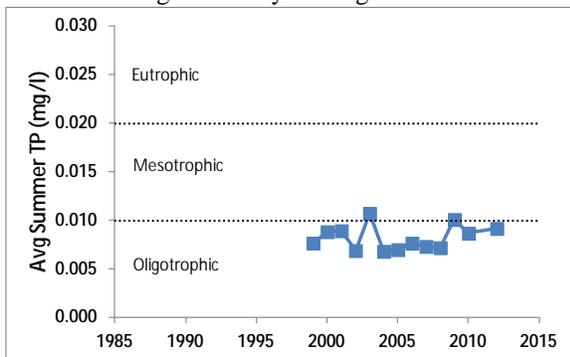
Long Term Trends: Lake Perception

- WQ assessments less favorable recently
- Recreational perception not closely linked to changes in either water quality or weeds



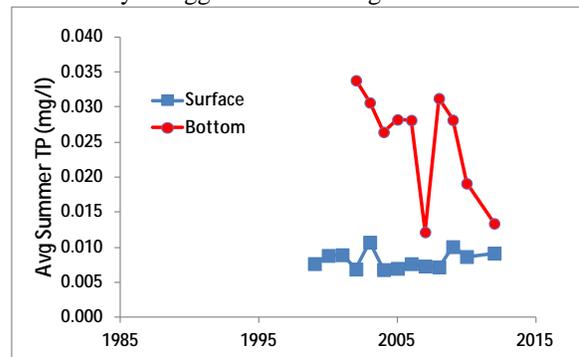
Long Term Trends: Phosphorus

- No trends apparent
- Most readings typical of *oligotrophic* lakes, in range of clarity and algae levels



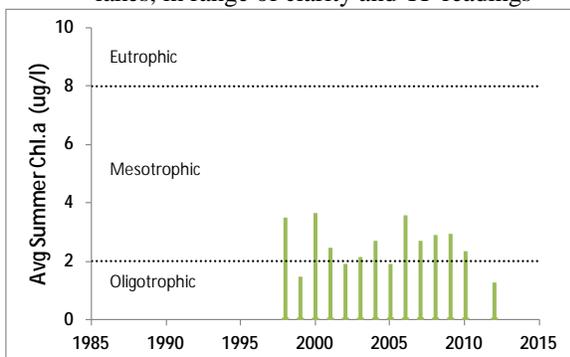
Long Term Trends: Bottom Phosphorus

- Slightly higher bottom than surface TP
- Bottom TP readings and strong thermal layer suggest little TP migration to surface



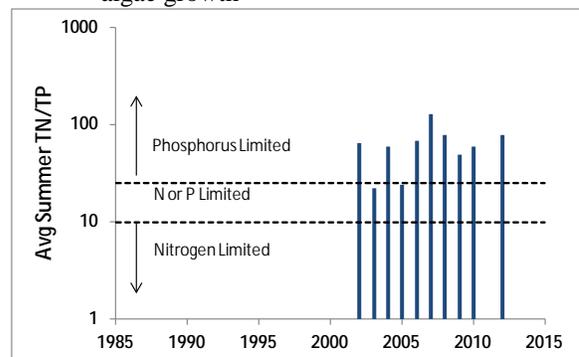
Long Term Trends: Chlorophyll a

- Slight decrease but no clear trends
- Most readings typical of *mesoligotrophic* lakes, in range of clarity and TP readings



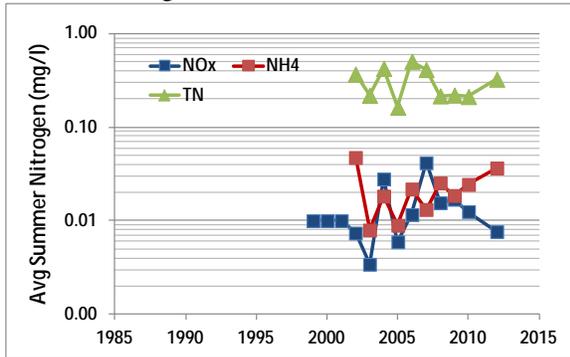
Long Term Trends: N:P Ratio

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



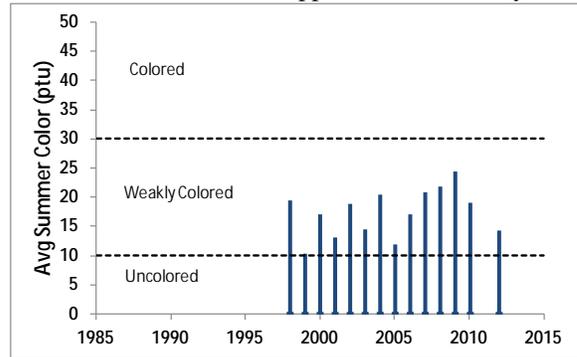
Long Term Trends: Nitrogen

- No trends apparent
- Low NOx, ammonia and total nitrogen readings



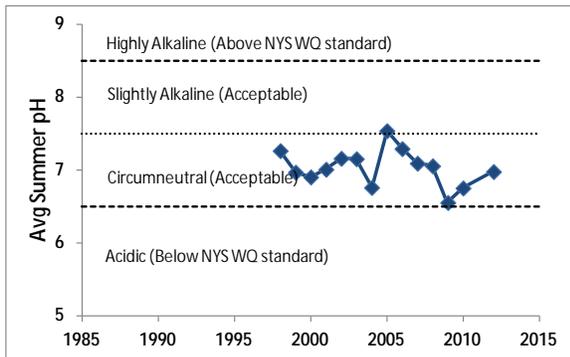
Long Term Trends: Color

- No trends apparent
- Most readings typical of *weakly colored* lakes, and do not appear to affect clarity



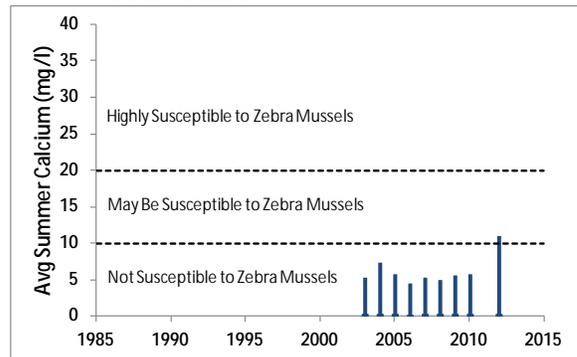
Long Term Trends: pH

- pH decreasing slightly, but no clear trend
- Most readings typical of *circumneutral* lakes



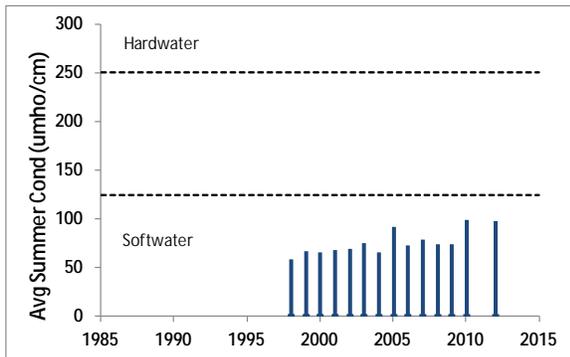
Long Term Trends: Calcium

- No trends apparent despite higher 2012 Ca
- Most readings indicate low susceptibility to zebra mussels



Long Term Trends: Conductivity

- Higher readings last two sampling seasons
- Most readings still typical of lakes with *soft water*



Long Term Trends: Water Temperature

- Surface temperatures decreasing slightly
- Much colder bottom temperatures indicates strong thermal layers in lake

