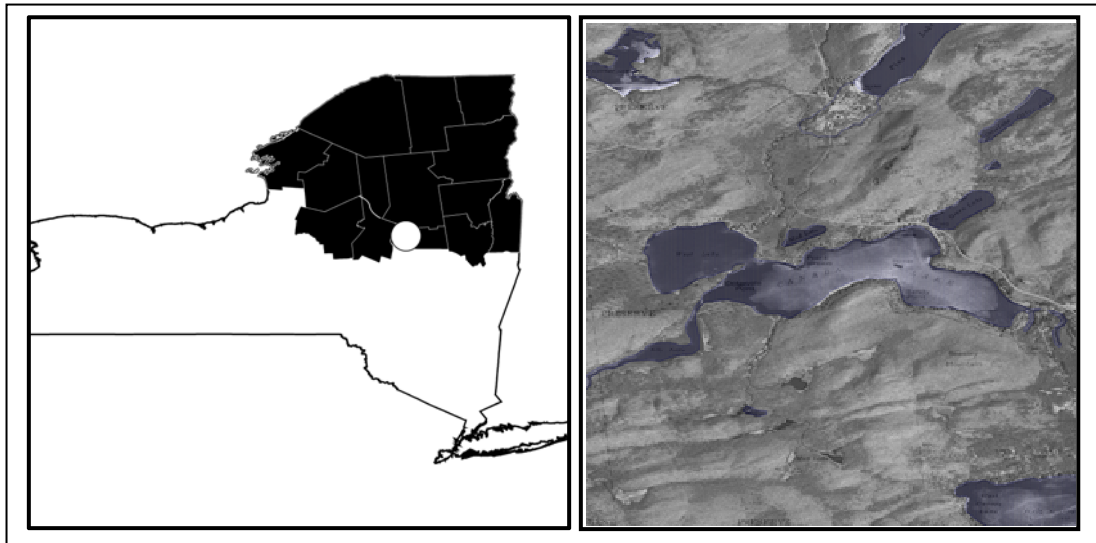


## CSLAP 2013 Lake Water Quality Summary: Canada Lake

### General Lake Information

<b>Location</b>	Town of Caroga
<b>County</b>	Fulton
<b>Basin</b>	Mohawk River
<b>Size</b>	51.8 hectares (127.9 acres)
<b>Lake Origins</b>	Natural
<b>Watershed Area</b>	10,856 hectares (26,816 acres)
<b>Retention Time</b>	0.1 years
<b>Mean Depth</b>	21.3 meters
<b>Sounding Depth</b>	28 meters
<b>Public Access?</b>	DEC launch at inlet
<b>Major Tributaries</b>	Burnt Vly Stream (Via West Lake)
<b>Lake Tributary To...</b>	Sprite Creek to East Canada Creek to Mohawk River
<b>WQ Classification</b>	B (contact recreation = swimming)
<b>Lake Outlet Latitude</b>	43.141
<b>Lake Outlet Longitude</b>	-74.594
<b>Sampling Years</b>	2001-2010, 2012-2013
<b>2013 Samplers</b>	John and Merryn Byrnes
<b>Main Contact</b>	Merryn Byrnes

### Lake Map



## Background

Canada Lake is a 130 acre, class B lake found in the Town of Caroga in Fulton County, in the southern Adirondack region of New York State. It has been sampled as part of CSLAP since 2001.

It is one of eight CSLAP lakes among the more than 65 lakes found in Fulton County, and one of 28 CSLAP lakes among the more than 285 lakes and ponds in the Mohawk River drainage basin.

## Lake Uses

Canada Lake is a Class B lake; this means that the best intended use for the lake is for contact recreation—swimming and bathing, non-contact recreation—boating and angling, aquatic life, and aesthetics. The lake is used by lake residents for swimming, boating and other recreation via shoreline properties; the public can access the lake via a DEC launch at the inlet.

It is not known by the report authors if Canada Lake has been stocked by lake residents or municipal officials. Canada Lake has been stocked by the state with 1,750 eight inch brown trout and 2,860 eight to nine inch lake trout.

General statewide fishing regulations are applicable in Canada Lake. In addition, the open season for chain pickerel is the 1<sup>st</sup> Saturday in May through March 15<sup>th</sup>, with no size limits but a take limit of five fish. There is a year-round open season for lake trout and other trout, with a lake trout size limit of 21 inches and a take limit of three lake trout and five other trout. Ice fishing is allowed.

There are two fish consumption advisories on Canada Lake of no more than one meal per month for chain pickerel and smallmouth bass greater than 15 inches in length.

## Historical Water Quality Data

CSLAP sampling was conducted on Canada Lake from 2001 to 2010, and 2012 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 for Canada Lake can also be found on the NYSDEC web page at <http://www.dec.ny.gov/lands/77870.html>.

Canada Lake was sampled as part of the 1934 Biological Survey conducted by the NYS Conservation Department (the predecessor to the NYSDEC). The focus of this monitoring program, as related to lake sampling, was monitoring to evaluate the biological condition of the lake. As such, many of the water quality indicators in CSLAP were not monitored through the Biological Survey. These data indicated that water clarity was probably comparable in 1934 and since 2000, while pH readings have probably dropped slightly since 1934- perhaps due to the influence of acid rain. The Biological Survey results also indicate that deepwater oxygen levels—in water more than 140 feet deep!- were comparable to those at the lake surface, indicating excellent water quality. The written summary of the lake was as follows:

*“For the purposes of this report Canada Lake, West Lake (P718), and Lily Lake (P716) will be considered as one lake. This body of water has an area of 710 acres about 400 acres of which is over 40 ft. deep. The maximum depth is 144 ft. The chemical conditions in Canada Lake proper*

*are excellent while the bottom samples from the West Lake and Lily Lake portions contain no oxygen. The lack of oxygen is due to the decomposition of the sawdust with which the bottom of these two lakes is covered.”*

Sampling data from the lake is also included in the statewide fisheries database. These indicate conditions comparable to those measured through CSLAP.

The major Canada Lake tributaries (Burnt Vly Stream via West Lake) and the outlet (Sprite Creek) have not been monitored through the NYSDEC Rotating Intensive Basins (RIBS) program. No sites have been sampled through the state stream macroinvertebrate monitoring program.

## **Lake Association and Management History**

Canada Lake is served by the Canada Lake Protective Association. The lake association involved in a variety of lake management activities, including:

- flare lighting
- ski and wakeboard clinic
- youth activities
- fish stocking- salmon
- lake management committee re: fire safety, fishing, stewardship, lake safety, water testing, water level
- bacteria testing
- other social activities

The Canada Lake Protective Association maintains a website, at

<http://www.canadalake.com/display.cfm?CFID=48409&CFTOKEN=11667129>.

## **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 – Canada Lake” section in Appendix C.

### **Evaluation of Eutrophication Indicators**

Total phosphorus readings were lower than normal in 2013, although algae (chlorophyll *a*) and water clarity levels were close to normal in 2013. None of these trophic indicators has exhibited any significant long-term trends. Water clarity readings increase slightly during the course of the typical summer, although algae and nutrient levels do not vary in the same manner. No such changes were apparent in 2013.

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) readings.

The trophic state indices (TSI) evaluation suggests that phosphorus readings are slightly lower than expected given the algae levels and water clarity in the lake. This suggests that Canada Lake may be susceptible to small increases in phosphorus. Overall trophic conditions are summarized on the Lake Scorecard and Lake Condition Summary Table.

### **Evaluation of Potable Water Indicators**

No water quality indicators related specifically to potable water usage have been collected through CSLAP in Canada Lake. 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. However, the lake is not classified for this use. Hypolimnetic phosphorus and ammonia readings in Canada Lake are low and similar to those at the lake surface, suggesting that deepwater intakes should not be compromised. Potable water conditions, at least as measurable through CSLAP, are summarized in the Lake Scorecard and Lake Condition Summary Table.

### **Evaluation of Limnological Indicators**

Color readings were slightly higher than normal in 2013, but no long term trends in color have been apparent. Each of the other limnological indicators (NO<sub>x</sub>, ammonia, total nitrogen, pH, conductivity, and calcium) was close to normal in 2012, and none of these indicators has exhibited a long-term trends. Overall limnological conditions are summarized in the Lake Scorecard and Lake Condition Summary Table.

### **Evaluation of Biological Condition**

The limited information about the fish community in the lake is comprised of a mix of coldwater (at least three species), coolwater (at least one species) and warmwater (at least four species) fish. This indicates that the lake supports a two story fishery.

Macrophyte, zooplankton and macroinvertebrate surveys have not been conducted through CSLAP at Canada Lake. The fluoroprobe screening samples analyzed by SUNY ESF in 2012 and 2013 indicated very low algae levels and a low percentage of blue green algae (the high algae levels in the late August fluoroprobe sample was probably not accurate or representative of algae levels in the lake), and no shoreline blooms have been reported or sampled.

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

### **Evaluation of Lake Perception**

Water quality assessments, aquatic plant coverage, and recreational assessments were close to normal in 2012 and 2013, consistent with the stable water quality conditions. None of these indicators of lake perception has exhibited any long-term trends. No seasonal trends are normally apparent, although plant coverage increases during the summer. No seasonal trends were apparent in 2012 or 2013. Overall lake perception is summarized on the Lake Scorecard and Lake Condition Summary Table.

## **Evaluation of Local Climate Change**

Air temperature readings in the summer index period were slightly higher than normal in 2013, but did not affect water temperature. Temperature readings have not varied significantly since CSLAP sampling began in the lake. It is not likely that any of the small changes in air or water temperature readings are indicative of local climate change in the lake.

## **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 have been below the levels indicating susceptibility for harmful algal blooms (HABs), and the fluoroprobe screening results in 2012 and 2013 confirm both low algae levels and low percentages of blue green algae. An analysis of algae samples indicates microcystin and anatoxin-a levels below the levels needed to support safe swimming in limited open water sampling. No shoreline blooms have been reported.

## Lake Condition Summary

Category	Indicator	Min	01-13 Avg	Max	2013 Avg	Classification	2013 Change?	Long-term Change?
Eutrophication Indicators	Water Clarity	2.45	4.63	9.40	4.32	Mesotrophic	Within Normal Range	No Change
	Chlorophyll <i>a</i>	0.26	1.57	4.50	1.31	Oligotrophic	Within Normal Range	No Change
	Total Phosphorus	0.001	0.007	0.019	0.005	Oligotrophic	Lower Than Normal	No Change
Potable Water Indicators	Hypolimnetic Ammonia	0.01	0.04	0.30	0.03	Close to Surface NH4 Readings	Within Normal Range	Not known
	Hypolimnetic Arsenic							Not known
	Hypolimnetic Iron							Not known
	Hypolimnetic Manganese							Not known
Limnological Indicators	Hypolimnetic Phosphorus	0.001	0.006	0.026	0.005	Close to Surface TP Readings	Lower Than Normal	Not known
	Nitrate + Nitrite	0.01	0.13	0.48	0.12	Intermediate NOx	Within Normal Range	No Change
	Ammonia	0.00	0.03	0.17	0.02	Low Ammonia	Within Normal Range	No Change
	Total Nitrogen	0.10	0.39	0.99	0.36	Low Total Nitrogen	Within Normal Range	No Change
	pH	5.99	7.15	9.35	7.02	Circumneutral	Within Normal Range	No Change
	Specific Conductance	25	39	53	37	Softwater	Within Normal Range	No Change
	True Color	2	16	40	24	Intermediate Color	Higher than Normal	No Change
	Calcium	1.6	2.2	2.7		Not Susceptible to Zebra Mussels		No Change
Lake Perception	WQ Assessment	1	1.2	3	1.1	Crystal Clear	Within Normal Range	No Change
	Aquatic Plant Coverage	1	2.4	3	2.5	Subsurface Plant Growth	Within Normal Range	No Change
	Recreational Assessment	1	1.3	5	1.0	Could Not Be Nicer	Within Normal Range	No Change
Biological Condition	Phytoplankton					Open water-low blue green algae biomass	Not known	Not known
	Macrophytes					Not known	Not known	Not known
	Zooplankton					Not measured through CSLAP	Not known	Not known
	Macroinvertebrates					Not measured through CSLAP	Not known	Not known
	Fish					Coldwater fishery	Not known	Not known
	Invasive Species					Brown trout	Not known	Not known
Local Climate Change	Air Temperature	2	21.6	31	24.0		Higher Than Normal	No Change
	Water Temperature	11	21.9	28	22.1		Within Normal Range	No Change
Harmful Algal Blooms	Open Water Phycocyanin	-3	8	53	8	No readings indicate high risk of BGA	Not known	Not known
	Open Water FP Chl.a	0	3	34	1	Few readings indicate high algae levels	Not known	Not known
	Open Water FP BG Chl.a	0	2	31	0	Few readings indicate high BGA levels	Not known	Not known
	Open Water Microcystis	<DL	<DL	<DL	<0.30	Open water MC-LR consistently not detectable	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**

The 2002 NYSDEC Priority Waterbody Listings (PWL) for the Mohawk River drainage basin indicate that habitat is *stressed* by hydrologic modification. The PWL listing for Canada Lake is shown in Appendix C.

### **Potable Water (Drinking Water)**

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

### **Contact Recreation (Swimming)**

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

### **Non-Contact Recreation (Boating and Fishing)**

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

### **Fish Consumption**

There are fish consumption advisories posted for Canada Lake—fish consumption is limited to no more than one meal per month for chain pickerel and for smallmouth bass greater than 15 inches in length.

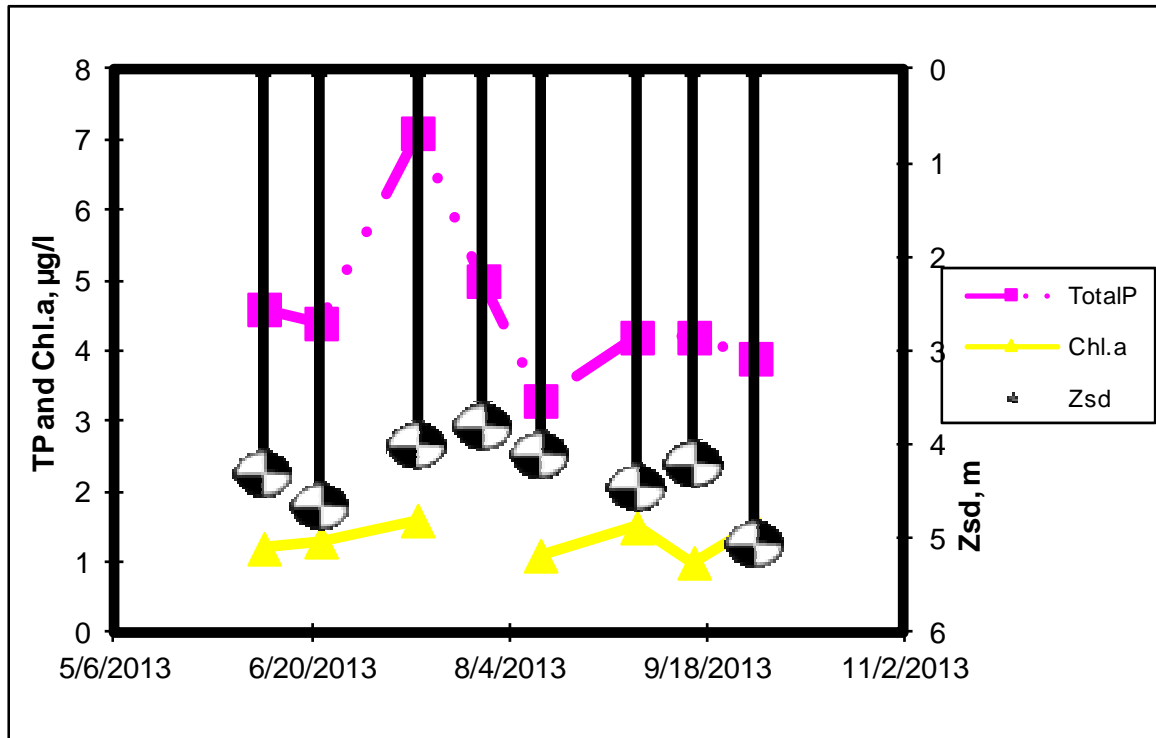
## **Additional Comments and Recommendations**

Aquatic plant survey data should be collected to determine if invasive, exotic plants are found in the lake, and the extent to which aquatic plants influenced recreational assessments of Canada Lake. Lake residents should report (and avoid exposure to) any shoreline blooms.

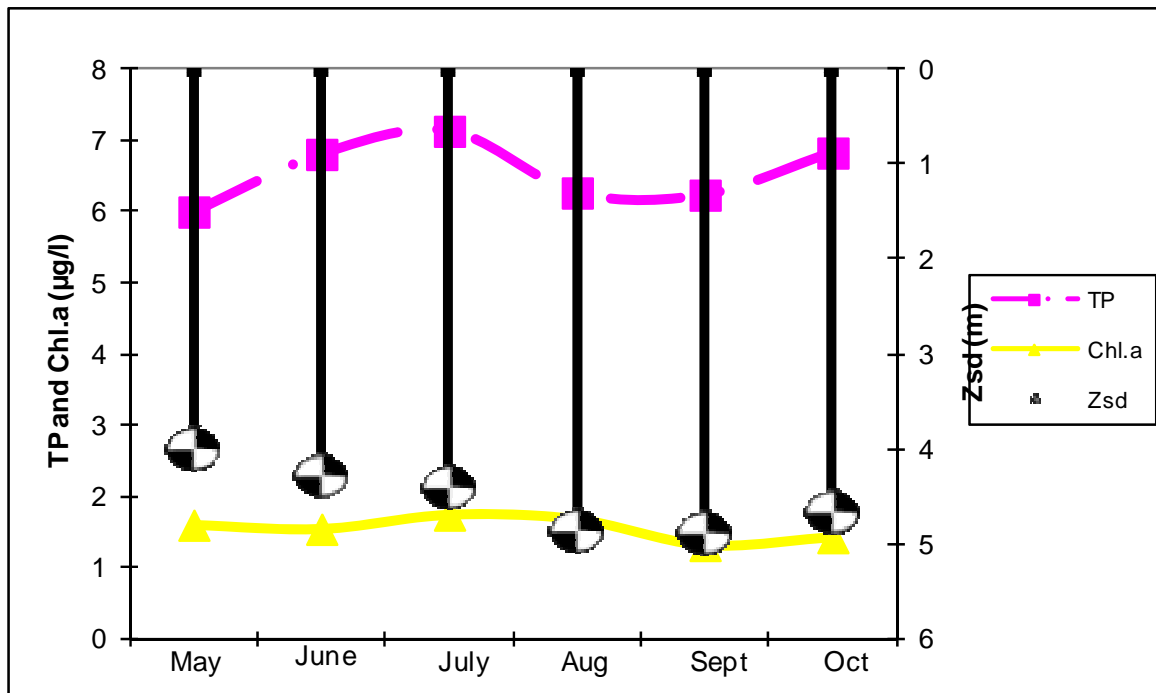
### **Aquatic Plant IDs-2013**

None submitted for identification

### Time Series: Trophic Indicators, 2013

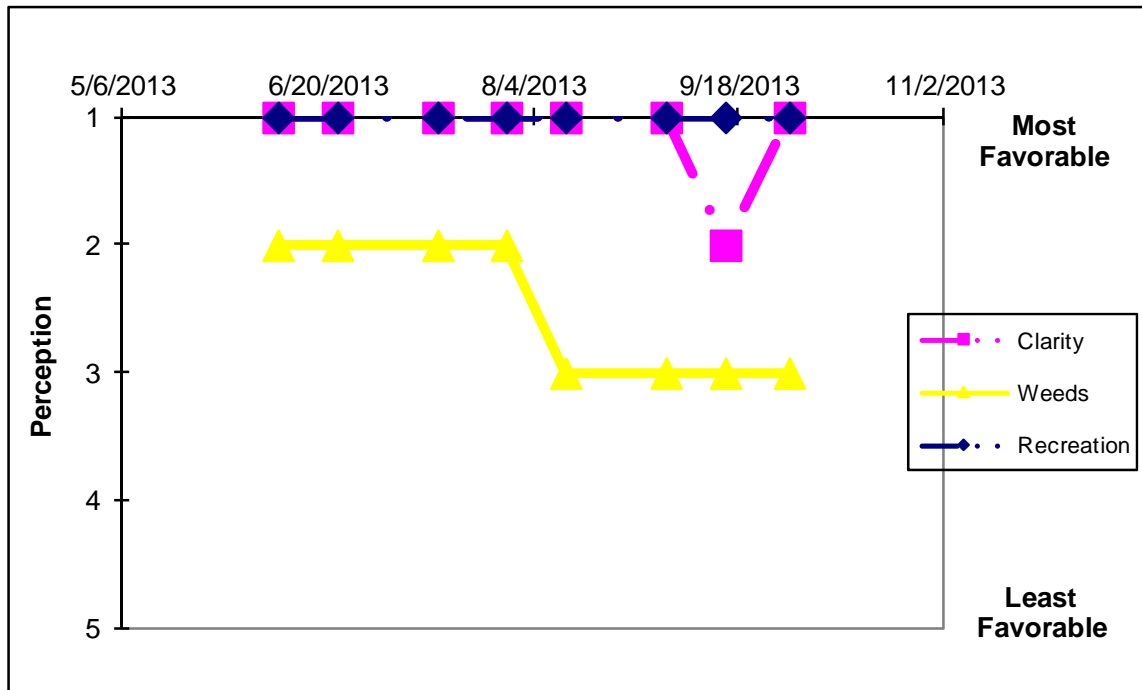


### Time Series: Trophic Indicators, Typical Year (2001-2013)

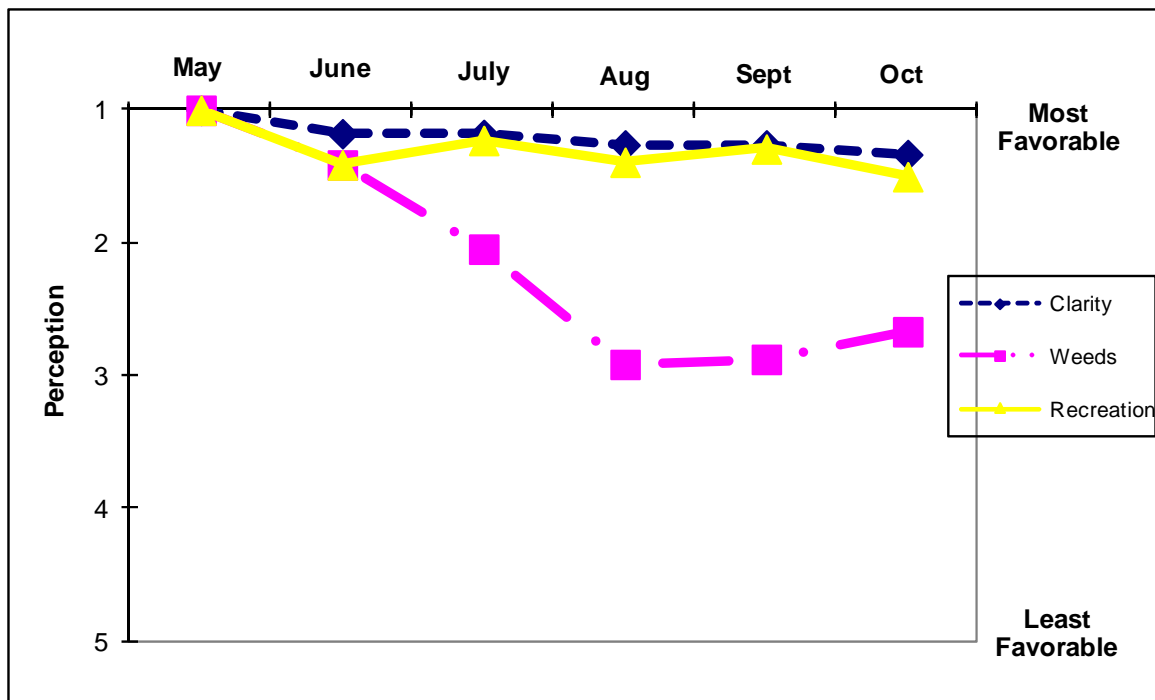




## Time Series: Lake Perception Indicators, 2013



## Time Series: Lake Perception Indicators, Typical Year (2001-2013)





LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a
176	Canada L	8/27/2008	>28	5.50	1.5	0.010	0.12	0.00	0.22	49.02	6	7.27	34		1.35
176	Canada L	9/7/2008	>28	5.05	1.5	0.004	0.11	0.01	0.21	131.16	8	7.29	41		1.28
176	Canada L	9/17/2008	>28	5.15	1.5	0.004	0.13	0.03	0.33	188.88	10	7.48	41		1.22
176	Canada L	9/29/2008	>28	4.90	1.5	0.005	0.13	0.03	0.28	123.49	9	7.05	41		1.28
176	Canada L	06/14/2009	>28	4.85	1.5	0.006	0.14	0.02	0.25	98.27	12	7.59	49	2.0	2.94
176	Canada L	07/08/2009	>28	4.05	1.5	0.005	0.07	0.02	0.21	86.37	26	7.36	34		2.68
176	Canada L	07/20/2009	>28	4.60	1.5	0.006	0.10	0.04	0.20	78.18	17	8.05	29		1.53
176	Canada L	08/09/2009	>28	5.10	1.5	0.009	0.07	0.03	0.24	58.26	20	7.59	29		1.63
176	Canada L	08/23/2009	>28	6.30	1.5	0.007	0.06	0.03	0.23	72.29	31	7.83	37	1.7	1.30
176	Canada L	09/02/2009	>28	4.50	1.5	0.006	0.05	0.01	0.16	62.21	25	7.79	34		2.00
176	Canada L	09/13/2009	>28	3.95	1.5	0.008	0.03	0.01	0.15	44.59	32	6.69	27		4.50
176	Canada L	10/12/2009	>28	3.95	1.5	0.009	0.06	0.02	0.20	50.32	34	7.01	28		4.20
176	Canada L	5/31/2010	28+	4.00	1.5	0.006	0.13	0.03	0.61	223.30	10	6.88	34	2.5	1.60
176	Canada L	6/20/2010	28+	4.35	1.5	0.006	0.09	0.02	0.29	116.40	10	6.42	41		2.30
176	Canada L	7/11/2010		6.60	1.5	0.007	0.08	0.03	0.20	63.41	7	7.28	36		0.60
176	Canada L	8/1/2010	28+	4.50	1.5	0.005	0.06	0.04	0.27	115.50	21	7.61	41		1.10
176	Canada L	8/16/2010	28+	4.70	1.5	0.005	0.06	0.05	0.20	94.22	18	6.74	42	1.9	1.70
176	Canada L	8/25/2010	28+	3.35	1.5	0.008	0.08	0.07	0.33	94.29	24	7.22	36		4.30
176	Canada L	9/19/2010	28+	4.00	1.5	0.009	0.09	0.03	0.26	62.33	26	7.08	37		1.30
176	Canada L	10/3/2010	28+	3.65	1.5	0.001	0.09	0.04	0.29	635.80	27	7.08	43		1.00
176	Canada L	6/10/2012	28+	3.40	1.5	0.008	0.24	0.01	0.51	149.31	19	7.29	39	1.6	2.80
176	Canada L	6/24/2012	28+	3.90	1.5	0.005	0.19	0.04	0.33	134.04	18	7.98	38		1.90
176	Canada L	7/8/2012	28+	3.85	1.5	0.007	0.15	0.01	0.26	82.66	18	7.98	38		2.70
176	Canada L	7/29/2012	28+	3.75	1.5	0.006	0.11	0.02	0.36	132.73	13	8.14	37		2.70
176	Canada L	8/12/2012	28+	3.65	1.5	0.007	0.11	0.02	0.34	105.35	14	8.30	38	1.8	3.60
176	Canada L	8/26/2012	28+	3.80	1.5	0.007	0.08	0.02	0.32	94.54	10	8.64	51		2.20
176	Canada L	9/16/2012	28+	4.25	1.5	0.008	0.12	0.03	0.50	137.50	9	6.10	39		1.20
176	Canada L	9/30/2012	28+	5.65	1.5	0.005	0.11	0.04	0.26	108.75	13	7.35	40		1.20
176	Canada L	6/9/2013	>28	4.30	1.5	0.005	0.24	0.04	0.37	174.57	19	6.80	39		1.20
176	Canada L	6/22/2013	>28	4.65	1.5	0.004			0.33	166.64	24	6.74	37		1.30
176	Canada L	7/14/2013	>28	4.00	1.5	0.007	0.08	0.01	0.21	64.98	30	7.05	35		1.60
176	Canada L	7/29/2013	>28	3.80	1.5	0.005			0.48	210.17	31	7.24	35		
176	Canada L	8/11/2013	>28	4.10	1.5	0.003	0.10	0.03	0.36	242.97	24	7.41	36		1.10
176	Canada L	9/2/2013	>28	4.45	1.5	0.004			0.39	202.74	22	7.08	37		1.50
176	Canada L	9/15/2013	>28	4.20	1.5	0.004	0.07	0.01	0.34	180.39	21	6.38	38		1.00
176	Canada L	9/29/2013	>28	5.05	1.5	0.004			0.41	231.28	17	7.45	39		1.50
176	Canada L	06/10/02	42.7												
176	Canada L	06/24/02	42.7												
176	Canada L	08/06/02	42.7	4.55	15.2			0.03	0.50						
176	Canada L	08/18/02	42.7	4.45	15.2		0.07	0.05	0.32						
176	Canada L	09/02/02	42.7												
176	Canada L	09/22/02	42.7			0.005									
176	Canada L	6/16/2003			25.9	0.003	0.16	0.02	0.37	250.46					
176	Canada L	7/14/2003			25.9	0.006	0.22	0.05	0.50	196.43					
176	Canada L	7/27/2003			24.4	0.004	0.26	0.01	0.24	134.69					
176	Canada L	8/11/2003			24.4	0.017	0.21	0.01	0.37	49.01					
176	Canada L	8/24/2003			24.4	0.026	0.20	0.03	0.42	35.25					
176	Canada L	9/8/2003			27.4	0.003	0.27	0.03							
176	Canada L	9/20/2003				0.018	0.23	0.04	0.27	33.60					
176	Canada L	10/25/2003				0.013	0.10	0.03	0.35	59.32					
176	Canada L	6/6/2004	>28		28.0	0.004	0.26	0.03							
176	Canada L	6/27/2004	>30.48			0.013	0.25	0.03	1.29	218.24					
176	Canada L	7/11/2004	>30.48			0.005	0.09	0.04	0.62	258.08					
176	Canada L	7/26/2004	>30.48		28.0	0.007	0.25	0.03	0.44	138.29					
176	Canada L	8/10/2004	>28		28.0	0.008	0.29	0.02	0.42	121.57					
176	Canada L	9/2/2004	>28		28.0	0.012	0.26	0.05	0.59	105.21					
176	Canada L	9/19/2004	>28		28.0	0.005	0.01	0.04	0.45	220.78					
176	Canada L	10/2/2004			28.0	0.003	0.07	0.01	0.30	205.08					
176	Canada L	6/8/2005	28+		28.0	0.003									
176	Canada L	6/28/2005	28+		28.0	0.005									
176	Canada L	7/19/2005	28+		28.0	0.010									
176	Canada L	8/7/2005	28+		28.0	0.007									

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a
176	Canada L	8/21/2005	28+		28.0	0.009									
176	Canada L	9/5/2005	28+		28.0	0.009									
176	Canada L	9/19/2005	28+		28.0	0.006									
176	Canada L	10/5/2005	28+		28.0	0.012									
176	Canada L	6/19/2006	>28		28.0	0.004									
176	Canada L	7/6/2006	>28		28.0	0.005									
176	Canada L	7/23/2006	>28		28.0	0.006									
176	Canada L	8/6/2006	>28		28.0	0.003									
176	Canada L	8/20/2006	>28		28.0	0.005									
176	Canada L	9/6/2006	>28		28.0	0.005									
176	Canada L	9/17/2006	>28		28.0	0.004									
176	Canada L	10/2/2006	>28		28.0	0.007									
176	Canada L	7/1/2007	>28		28.0	0.006									
176	Canada L	7/14/2007	>28		28.0	0.005									
176	Canada L	7/30/2007	>28		28.0	0.008									
176	Canada L	8/19/2007	>28		28.0	0.010									
176	Canada L	8/26/2007	>28		28.0	0.006									
176	Canada L	9/11/2007	>28		28.0	0.006									
176	Canada L	9/23/2007	>28		28.0	0.007									
176	Canada L	10/3/2007	>28		28.0	0.006									
176	Canada L	6/22/2008	>28		28.0	0.005									
176	Canada L	7/14/2008	>28		28.0	0.005									
176	Canada L	7/27/2008	>28		28.0	0.006									
176	Canada L	8/17/2008	>28		28.0	0.004									
176	Canada L	8/27/2008	>28		28.0	0.005									
176	Canada L	9/7/2008	>28		28.0	0.003									
176	Canada L	9/17/2008	>28		28.0	0.004									
176	Canada L	9/29/2008	>28		28.0	0.005									
176	Canada L	06/14/2009				0.005		0.04							
176	Canada L	07/08/2009				0.001									
176	Canada L	07/20/2009				0.001		0.09							
176	Canada L	08/09/2009				0.006									
176	Canada L	08/23/2009				0.004		0.04							
176	Canada L	09/02/2009				0.005									
176	Canada L	09/13/2009				0.013		0.30							
176	Canada L	10/12/2009				0.007									
176	Canada L	05/31/2010	28+		28.0	0.005		0.04							
176	Canada L	07/11/2010			28+	0.006		0.05							
176	Canada L	08/16/2010	28+		28.0	0.003		0.05							
176	Canada L	09/19/2010	28+		28.0	0.001		0.01							
176	Canada L	06/10/2012			28.0	0.008		0.03							
176	Canada L	07/08/2012			28.0	0.007		0.03							
176	Canada L	08/12/2012			28.0	0.007		0.04							
176	Canada L	09/16/2012			28.0	0.006		0.07							
176	Canada L	06/09/2013			28.0	0.006		0.03							
176	Canada L	07/14/2013			28.0	0.005		0.03							
176	Canada L	08/11/2013			28.0	0.004		0.05							
176	Canada L	09/15/2013			28.0	0.003		0.03							

LNum	PName	Date	Site	TAir	TH20	QA	QB	QC	QD	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cylin	FP-Chl	FP-BG	HAB form	Shore HAB
176	Canada L	6/2/2001	epi	18	16	1	2	1	0											
176	Canada L	6/15/2001	epi	21	20	1	2	1	0											
176	Canada L	6/30/2001	epi	25	24															
176	Canada L	7/16/2001	epi	20	20	2	2	1												
176	Canada L	7/29/2001	epi	26	24	1	2	1												
176	Canada L	8/13/2001	epi	28	26	1	2	1	0											
176	Canada L	8/27/2001	epi	26	24	1	3	1												
176	Canada L	9/10/2001	epi	26	24	1	3	1												
176	Canada L	06/10/02	epi	2	20	2	1	3	58											
176	Canada L	06/24/02	epi	22	21	3	1	2	18											
176	Canada L	07/08/02	epi	20	22	2	2	2	8											
176	Canada L	08/06/02	epi	18	23	2	3	2	8											
176	Canada L	08/18/02	epi	28	26	2	3	1	8											
176	Canada L	09/02/02	epi	22	21	2	3	2	5											
176	Canada L	09/22/02	epi	20	21	2	3	5	5											
176	Canada L	6/16/2003	epi	22	19	1	1	2	8											
176	Canada L	7/14/2003	epi	24	23	1	1	1	8											
176	Canada L	7/27/2003	epi	21	20	1	1	1	5											
176	Canada L	8/11/2003	epi	27	26	1	3	1	5											
176	Canada L	8/24/2003	epi	20	22	1	3	1	8											
176	Canada L	9/8/2003	epi	20	20	1	3	1	8											
176	Canada L	9/20/2003	epi	18	20	1	3	1	8											
176	Canada L	10/25/2003	epi	18	11	2	3	2												
176	Canada L	6/6/2004	epi	14	18	1	1	4	5											
176	Canada L	6/27/2004	epi	19	19	1	1	1	5											
176	Canada L	7/11/2004	epi	23	22	1	1	1	0											
176	Canada L	7/26/2004	epi	19	24	1	2	2	0											
176	Canada L	8/10/2004	epi	20	22	1	2	2	5											
176	Canada L	9/2/2004	epi	21	23	1	2	2	0											
176	Canada L	9/19/2004	epi	16	20	1	3	1	0											
176	Canada L	10/2/2004	epi	16	19	1	3	2	5											
176	Canada L	6/8/2005	epi	29	23	1	1	1	5											
176	Canada L	6/28/2005	epi	29	28	1	3	1	0											
176	Canada L	7/19/2005	epi	30	27	1	2	1	0											
176	Canada L	8/7/2005	epi	29	27	1	3	1	7											
176	Canada L	8/21/2005	epi	20	24	1	3	1	0											
176	Canada L	9/5/2005	epi	20	24	1	3	1	7											
176	Canada L	9/19/2005	epi	19	22	1	3	1	0											
176	Canada L	10/5/2005	epi	20	19	1	2	1	0											
176	Canada L	6/19/2006	epi	19	21	1	1	1	0											
176	Canada L	7/6/2006	epi	18	22	2	3	3	16											
176	Canada L	7/23/2006	epi	22	25	1	3	2	1											
176	Canada L	8/6/2006	epi	23	26	1	3	2	1											
176	Canada L	8/20/2006	epi	23	24	1	3	3	15											
176	Canada L	9/6/2006	epi	16	19		3	2	15											
176	Canada L	9/17/2006	epi	20	20	1	3	1	6											
176	Canada L	10/2/2006	epi	18	16	1	3	1	0											
176	Canada L	7/1/2007	epi	18	21	1	2	1	5											
176	Canada L	7/14/2007	epi	21	23	1	2	1	0											
176	Canada L	7/30/2007	epi	24	24	1	3	1	0											
176	Canada L	8/19/2007	epi	21	23	1	3	1	0											
176	Canada L	8/26/2007	epi	21	22	1	3	1	0											
176	Canada L	9/11/2007	epi	20	23	1	3	1	0											
176	Canada L	9/23/2007	epi	22	21	1	3	1	0											
176	Canada L	10/3/2007	epi	22	20															
176	Canada L	6/22/2008	epi	23	21	1	1	1	0											
176	Canada L	7/14/2008	epi	25	23	1	2	1	5											
176	Canada L	7/27/2008	epi	24	25	1	1	1	0											
176	Canada L	8/17/2008	epi	22	22	1	3	2	5											
176	Canada L	8/27/2008	epi	24	23	1	3	1	0											
176	Canada L	9/7/2008	epi	22	23	1	3	1	5											

LNum	PName	Date	Site	TAir	TH20	QA	QB	QC	QD	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cylin	FP-Chl	FP-BG	HAB form	Shore HAB
176	Canada L	9/17/2008	epi	18	21	1	3	1	8											
176	Canada L	9/29/2008	epi	16	18	1	3	1	5											
176	Canada L	06/14/2009	epi	18	21	1	2	1	0											
176	Canada L	07/08/2009	epi	17	20	1	2	1	0											
176	Canada L	07/20/2009	epi	23	22	1	3	1	0											
176	Canada L	08/09/2009	epi	20	22	1	3	1	0											
176	Canada L	08/23/2009	epi	26	26	1	3	1	0											
176	Canada L	09/02/2009	epi	17	21	2	3	1	0											
176	Canada L	09/13/2009	epi	21	21	1	3	1	0			16.26								
176	Canada L	10/12/2009	epi	9	13	1	3	1	0											
176	Canada L	5/31/2010	epi	28	23	1	1	1	0											
176	Canada L	6/20/2010	epi	26	22	1	1	1	0											
176	Canada L	7/11/2010	epi	29	27	1	2	1	0											
176	Canada L	8/1/2010	epi	26	25	1	3	1	0											
176	Canada L	8/16/2010	epi	27	24	1	3	1	0											
176	Canada L	8/25/2010	epi	21	21	3	3	4	16			53.37								
176	Canada L	9/19/2010	epi	17	18	1	3	1	0											
176	Canada L	10/3/2010	epi	15	17	2	2	2	1											
176	Canada L	6/10/2012	epi	27	19	1	1	1	0	0	0	0.50	0.50	<0.30	<0.417		0.61	0.26	i	
176	Canada L	6/24/2012	epi	21	24	1	1	1	0	0	0	0.30	0.50	<0.30	<0.410		0.90	0.41	i	
176	Canada L	7/8/2012	epi	29	24	2	2	1	0	0	0	-3.00	0.50	<0.30	<0.423		1.86	0.89	i	
176	Canada L	7/29/2012	epi	23	25	1	3	1	0	0	0	2.00	0.40	<0.30	<0.292		1.52	0.51	i	
176	Canada L	8/12/2012	epi	23	25	1	3	1	0	0	0	3.40	0.70	<0.60	<1.074		2.58	0.42	i	
176	Canada L	8/26/2012	epi	26	25	3	3	1	0	0	0	3.10	0.40	<0.40	<0.734		34.27	31.02	i	
176	Canada L	9/16/2012	epi	18	21	1	3	1	0	0	0	40.40	0.20	<0.30	<3.205		0.39	0.39	i	
176	Canada L	9/30/2012	epi	16	16	1	3	1	0	0	0	1.40	0.20	<0.30	<3.205		0.53	0.53	i	
176	Canada L	6/9/2013	epi	25	18	1	2	1	0	0	0	1.10	1.10	<0.30	<0.420		0.70	0.00	i	i
176	Canada L	6/22/2013	epi	25	18	1	2	1	0	0	0	1.20	1.10	<0.30	<0.370		0.70	0.00	i	
176	Canada L	7/14/2013	epi	31	27	1	2	1	7	0	0	0.90	1.30	<0.30	<0.490		0.90	0.00	i	i
176	Canada L	7/29/2013	epi	22	26	1	2	1	0	0	0	2.40	1.20	<0.30	<0.380		0.70	0.00	i	
176	Canada L	8/11/2013	epi	22	24	1	3	1	0	0	0	1.80	1.10	<0.30	<0.340		0.60	0.00	i	i
176	Canada L	9/2/2013	epi	18	20	1	3	1	0	0	0	1.70	1.40	<0.30	<0.570		0.90	0.00	i	
176	Canada L	9/15/2013	epi	27	25	2	3	1	0	0	0		0.90	<0.30	<0.100		0.10	0.00	i	
176	Canada L	9/29/2013	epi	22	18	1	3	1	0	0	0	1.70	1.00	<0.30	<0.050		0.50	0.00	i	i
176	Canada L	08/06/02	hypo	18	21	2	3	2	8											
176	Canada L	08/18/02	hypo	28	24	2	3	1	8											
176	Canada L	6/16/2003	hypo		16															
176	Canada L	7/14/2003	hypo		11															
176	Canada L	7/27/2003	hypo		10															
176	Canada L	8/11/2003	hypo		10															
176	Canada L	8/24/2003	hypo		8															
176	Canada L	9/8/2003	hypo		10															
176	Canada L	9/20/2003	hypo		10															
176	Canada L	10/25/2003	hypo		10															
176	Canada L	6/6/2004	hypo		0															
176	Canada L	6/27/2004	hypo		8															
176	Canada L	7/11/2004	hypo		8															
176	Canada L	7/26/2004	hypo		8															
176	Canada L	8/10/2004	hypo		8															
176	Canada L	9/2/2004	hypo		9															
176	Canada L	9/19/2004	hypo		8															
176	Canada L	10/2/2004	hypo		9															
176	Canada L	6/8/2005	hypo		8															
176	Canada L	6/28/2005	hypo		8															
176	Canada L	7/19/2005	hypo		10															
176	Canada L	8/7/2005	hypo		10															
176	Canada L	8/21/2005	hypo		9															
176	Canada L	9/5/2005	hypo		11															
176	Canada L	9/19/2005	hypo		9															
176	Canada L	10/5/2005	hypo		8															
176	Canada L	6/19/2006	hypo		9															

LNum	PName	Date	Site	TAir	TH20	QA	QB	QC	QD	QE	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cylin	FP-Chl	FP-BG	HAB form	Shore HAB
176	Canada L	7/6/2006	hypo		9																
176	Canada L	7/23/2006	hypo		9																
176	Canada L	8/6/2006	hypo		8																
176	Canada L	8/20/2006	hypo		9																
176	Canada L	9/6/2006	hypo		9																
176	Canada L	9/17/2006	hypo		9																
176	Canada L	10/2/2006	hypo		8																
176	Canada L	7/1/2007	hypo		8																
176	Canada L	7/14/2007	hypo		10																
176	Canada L	7/30/2007	hypo		8																
176	Canada L	8/19/2007	hypo		9																
176	Canada L	8/26/2007	hypo		9																
176	Canada L	9/11/2007	hypo		8																
176	Canada L	9/23/2007	hypo		9																
176	Canada L	10/3/2007	hypo		9																
176	Canada L	6/22/2008	hypo		7																
176	Canada L	7/14/2008	hypo		13																
176	Canada L	7/27/2008	hypo		8																
176	Canada L	8/17/2008	hypo		8																
176	Canada L	8/27/2008	hypo		8																
176	Canada L	9/7/2008	hypo		9																
176	Canada L	9/17/2008	hypo		9																
176	Canada L	9/29/2008	hypo		8																
176	Canada L	05/31/2010	hypo		9																
176	Canada L	07/11/2010	hypo		9																
176	Canada L	08/16/2010	hypo		10																
176	Canada L	09/19/2010	hypo		9																
176	Canada L	06/10/2012	hypo		8																
176	Canada L	07/08/2012	hypo		10																
176	Canada L	08/12/2012	hypo		9																
176	Canada L	09/16/2012	hypo		9																
176	Canada L	06/09/2013	hypo		8																
176	Canada L	07/14/2013	hypo		9																
176	Canada L	08/11/2013	hypo		9																
176	Canada L	09/15/2013	hypo		8																

## Legend Information

<i>Indicator</i>	<i>Description</i>	<i>Detection Limit</i>	<i>Standard (S) / Criteria (C)</i>
<b>General Information</b>			
<b>Lnum</b>	lake number (unique to CSLAP)		
<b>Lname</b>	name of lake (as it appears in the Gazetteer of NYS Lakes)		
<b>Date</b>	sampling date		
<b>Field Parameters</b>			
<b>Zbot</b>	lake depth at sampling point, meters (m)		
<b>Zsd</b>	Secchi disk transparency or clarity	0.1m	1.2m ( C)
<b>Zsamp</b>	water sample depth (m) (epi = epilimnion or surface; bot = bottom)	0.1m	none
<b>Tair</b>	air temperature ( C)	-10C	none
<b>TH20</b>	water temperature ( C)	-10C	none
<b>Laboratory Parameters</b>			
<b>Tot.P</b>	total phosphorus (mg/l)	0.003 mg/l	0.020 mg/l ( C)
<b>NOx</b>	nitrate + nitrite (mg/l)	0.01 mg/l	10 mg/l NO3 (S), 2 mg/l NO2 (S)
<b>NH4</b>	total ammonia (mg/l)	0.01 mg/l	2 mg/l NH4 (S)
<b>TN</b>	total nitrogen (mg/l)	0.01 mg/l	none
<b>TN/TP</b>	nitrogen to phosphorus (molar) ratio, = (TKN + NOx)*2.2/TP		none
<b>TCOLOR</b>	true (filtered) color (ptu, platinum color units)	1 ptu	none
<b>pH</b>	powers of hydrogen (S.U., standard pH units)	0.1 S.U.	6.5, 8.5 S.U. (S)
<b>Cond25</b>	specific conductance, corrected to 25C (umho/cm)	1 umho/cm	none
<b>Ca</b>	calcium (mg/l)	1 mg/l	none
<b>Chl.a</b>	chlorophyll a (ug/l)	0.01 ug/l	none
<b>Fe</b>	iron (mg/l)	0.1 mg/l	1.0 mg/l (S)
<b>Mn</b>	manganese (mg/l)	0.01 mg/l	0.3 mg/l (S)
<b>As</b>	arsenic (ug/l)	1 ug/l	10 ug/l (S)
<b>AQ-PC</b>	Phycocyanin (aquafior) (unitless)	1 unit	none
<b>AQ-Chl</b>	Chlorophyll a (aquafior) (ug/l)	1 ug/l	none
<b>MC-LR</b>	Microcystis-LR (ug/l)	0.01 ug/l	1 ug/l potable (C) 20 ug/l swimming (C)
<b>Ana</b>	Anatoxin-a (ug/l)	variable	none
<b>Cyl</b>	Cylindrospermopsin (ug/l)	0.1 ug/l	none
<b>FP-Chl, FP-BG</b>	Fluoroprobe total chlorophyll, fluoroprobe blue-green chlorophyll (ug/l)	0.1 ug/l	none
<b>Lake Assessment</b>			
<b>QA</b>	water quality assessment; 1 = crystal clear, 2 = not quite crystal clear, 3 = definite algae greenness, 4 = high algae levels, 5 = severely high algae levels		
<b>QB</b>	aquatic plant assessment; 1 = no plants visible, 2 = plants below surface, 3 = plants at surface, 4 = plants dense at surface, 5 = surface plant coverage		
<b>QC</b>	recreational assessment; 1 = could not be nicer, 2 = excellent, 3 = slightly impaired, 4 = substantially impaired, 5 = lake not usable		
<b>QD</b>	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		
<b>QF, QG</b>	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		
<b>HAB form, Shore HAB</b>	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 Canada Lake Data, 2006-2013

### June Data

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

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

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

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

### July Data

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

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

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

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

## August Data

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

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

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

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

## September Data

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

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

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

## Appendix C- Priority Waterbody Listing for Canada Lake

**Lily, Canada, Stewarts Land, West Lakes (1201-0050)      Need Verific**

### Waterbody Location Information

Revised: 08/19/2002

**Water Index No:** H-240-144-13-P716,P717,P718      **Drain Basin:** Mohawk River  
**Hydro Unit Code:** 02020004/180      **Str Class:** B(T)      Mohawk River  
**Waterbody Type:** Lake (Unknown Trophic)      **Reg/County:** 5/Fulton Co. (18)  
**Waterbody Size:** 153.7 Acres      **Quad Map:** CANADA LAKE (1-22-2)  
**Seg Description:** total area of all four lakes

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

Use(s) Impacted	Severity	Problem Documentation
Habitat/Hydrology	Stressed	Possible

#### Type of Pollutant(s)

Known: ---  
Suspected: WATER LEVEL/FLOW  
Possible: ---

#### Source(s) of Pollutant(s)

Known: ---  
Suspected: HYDRO MODIFICATION  
Possible: ---

### Resolution/Management Information

**Issue Resolvability:** 1 (Needs Verification/Study (see STATUS))  
**Verification Status:** 1 (Waterbody Nominated, Problem Not Verified)  
**Lead Agency/Office:** DEC/FWMR      **Resolution Potential:** Medium  
**TMDL/303d Status:** n/a ()

### Further Details

Natural resources (fishery) habitat in the Canada, West, Lily, and Stewarts Landing Lake system may be limited due to reduced vegetative habitat for spawning and cover. Operation of Stewarts Landing Dam (owned and operated by NYS DEC) results in significant water level fluctuations.

Stewarts Landing and Canada Lake have been included in recent (1997 through 2001) NYS DEC Citizen Statewide Lake Assessment Program (CSLAP) volunteer monitoring efforts. Results of these studies found no evidence of water quality problems or use impairment. (DEC/DOW, BWM/Lake Services, August 2002)

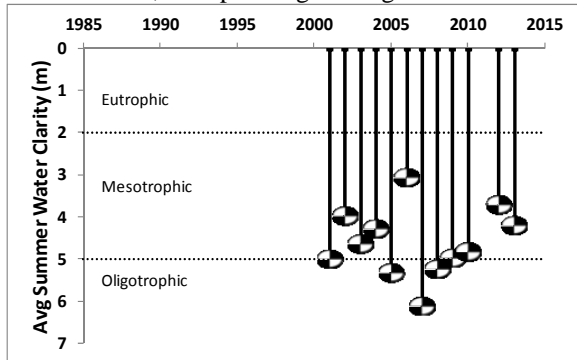
Canada Lake was surveyed by DEC/FWMR staff in summer of 2002. The focus of the survey was to sample lake trout populations. Data from this survey will be available in 2003. (DEC/FWMR, Region 5, August 2002)

The local lake association has monitored minor lake acidification. Lake pH is considered somewhat low, but still satisfactory for the support of aquatic life. Chlorides from road salting are also a concern. (Canada Lake Protective Association, April 2002)

## Appendix D- Long Term Trends: Canada Lake

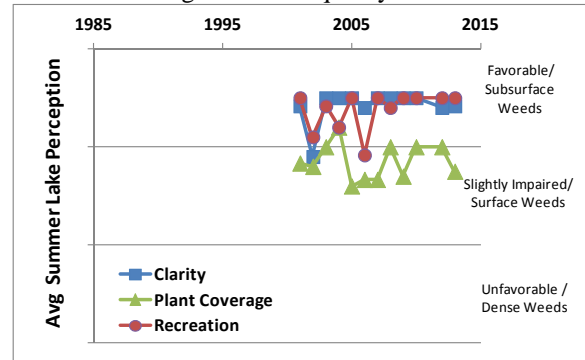
### Long Term Trends: Water Clarity

- No trends apparent; decreasing recently
- Most readings typical of *mesoligotrophic* lakes, as expected given algae and TP levels



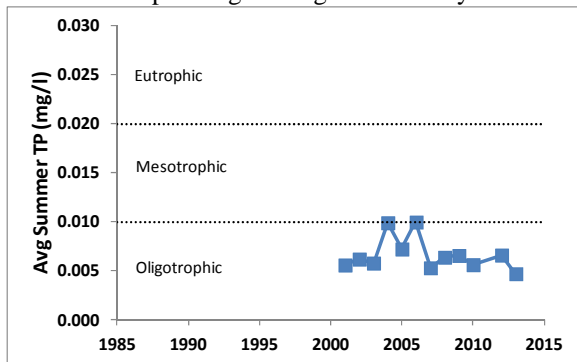
### Long Term Trends: Lake Perception

- No trends apparent
- Recreational perception more closely linked to changes in water quality than weeds



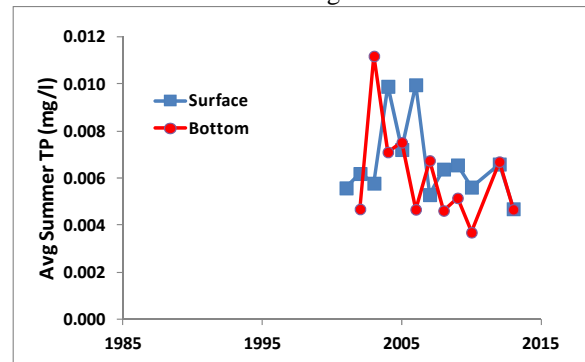
### Long Term Trends: Phosphorus

- No trends apparent; lower in 2013
- Most readings typical of *oligotrophic* lakes, as expected given algae and clarity levels



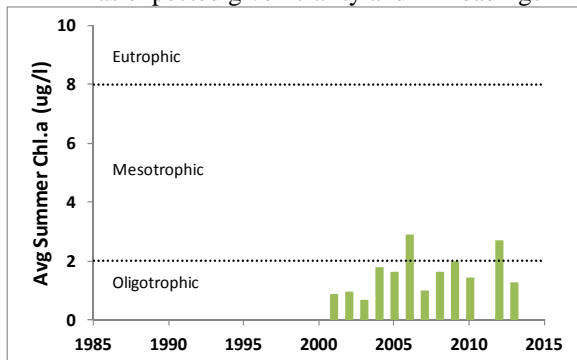
### Long Term Trends: Bottom Phosphorus

- Bottom and surface TP mostly similar
- Given strong thermal stratification, this indicates little TP migration to surface



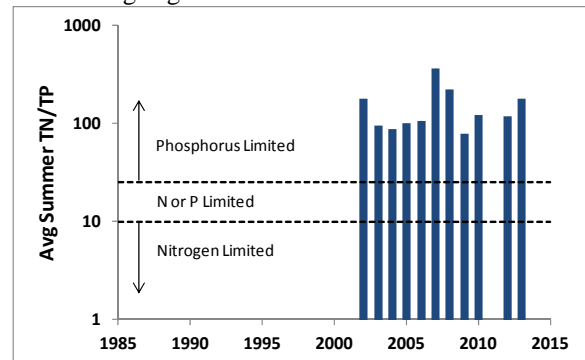
### Long Term Trends: Chlorophyll a

- No trends apparent
- Most readings typical of *oligotrophic* lakes, as expected given clarity and TP readings



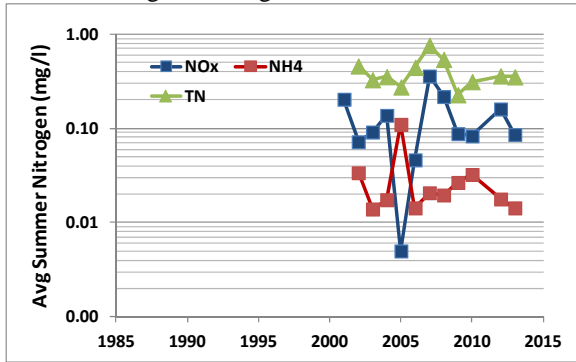
### Long Term Trends: N:P Ratio

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



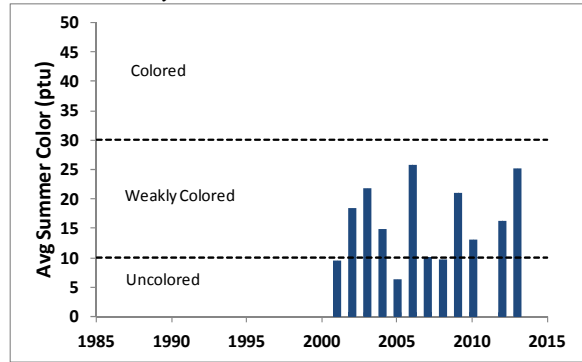
### Long Term Trends: Nitrogen

- No trends apparent
- Low but variable nitrate, ammonia and total nitrogen readings



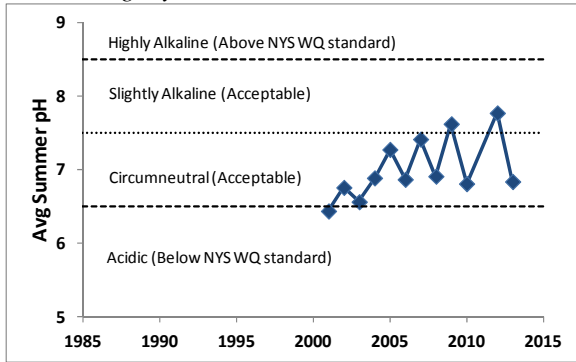
### Long Term Trends: Color

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



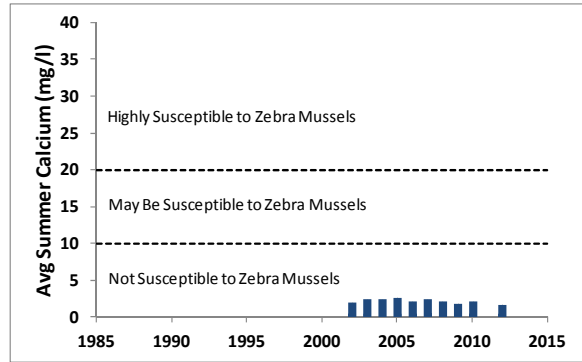
### Long Term Trends: pH

- No trend; varies from year to year
- Most readings typical of *circumneutral* to *slightly alkaline* lakes



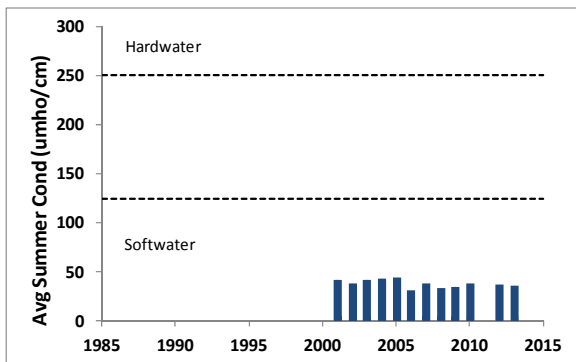
### Long Term Trends: Calcium

- No trends apparent
- Most readings indicate low susceptibility to zebra mussels



### Long Term Trends: Conductivity

- No trends apparent
- Most readings typical of *softwater* lakes



### Long Term Trends: Water Temperature

- No trends apparent in surface temperatures
- Low deepwater temperatures indicate strong thermal layer

