Eagle Pond Questions and Answers, 2015 CSLAP

Q1. What is the condition of our lake this year?

A1. Water quality conditions in Eagle Pond may have been less favorable than usual in 2015. Both nutrient and algae levels were higher than usual, although no blue green algae blooms were apparent.

Q2. Is there anything new that showed up in the testing this year?

A2. Chloride testing results were typical of lakes with moderate to high impacts from road salt runoff, although no biological impacts have been measured or reported.

Q3. How does the condition of our lake this year compare with other lakes in the area?

A3. Eagle Pond has lower water clarity, and higher nutrient levels, but lower algae levels, than other nearby lakes. Weed coverage was lower than in some neighboring lakes.

Q4. Are there any trends in our lake's condition?

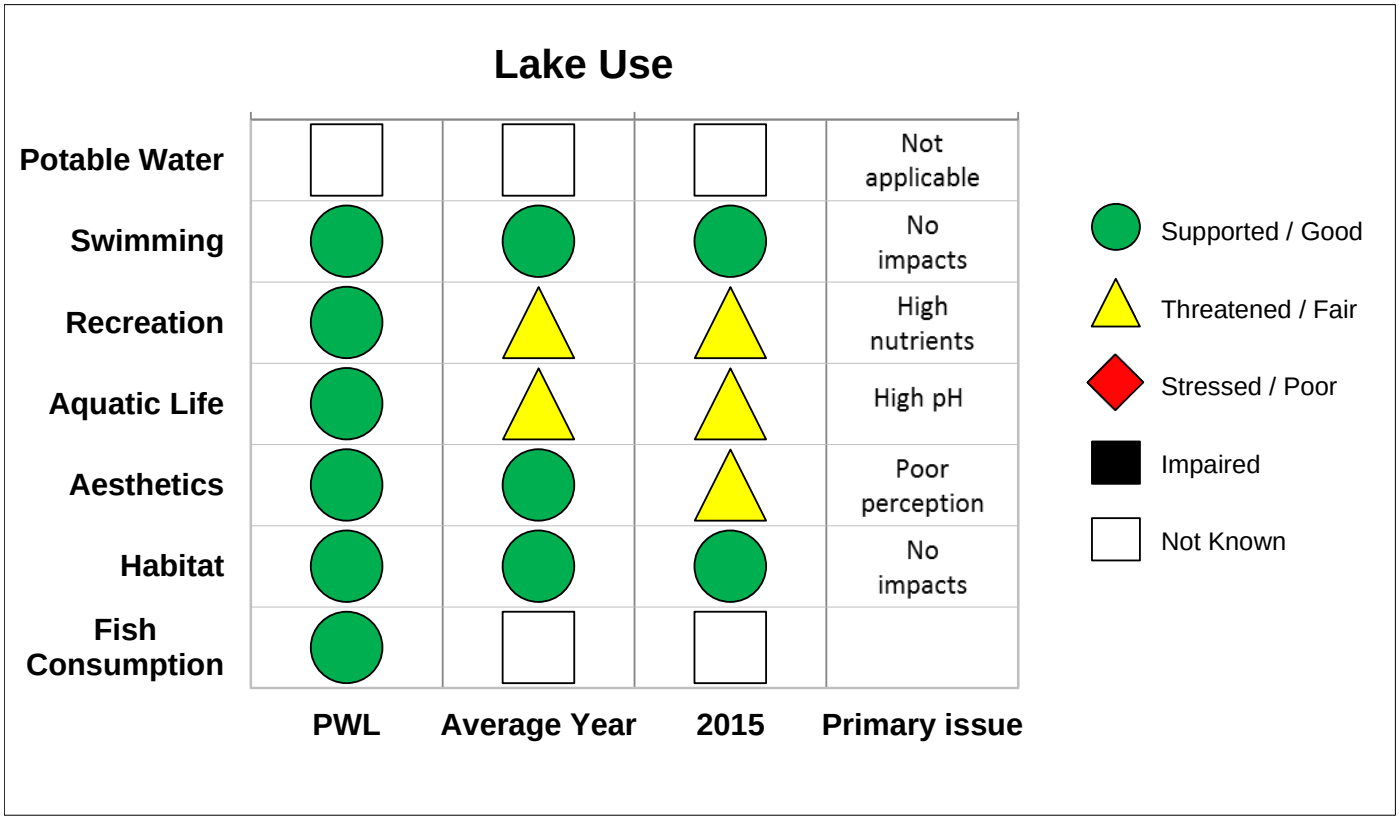
A4. Water clarity readings, and algae and nutrient levels, have been slightly higher than usual in recent years, but water quality and recreational assessments have improved over the same period. This suggests that water quality conditions may vary slightly from year to year.

Q5. Should we be concerned about the condition of our lake? Are we close to a tipping point?

A5. Although Eagle Pond has exhibited some shoreline blooms, the cause of these blooms is not yet known, so it is not known if the lake is close to a tipping point. Blooms have not been reported even in some years with elevated nutrient levels.

Q6. Are any actions indicated, based on the trends and this year's results?

A6. Individual stewardship activities such as pumping your septic system, growing a buffer of native plants next to the water bodies, and reducing erosion from shoreline properties and runoff into the lake will help to maintain existing water quality conditions. Any existing measures that resulted in this "improvement" should be continued. Lake residents should look for the presence of zebra mussels as a potential cause of the drop in algae levels.

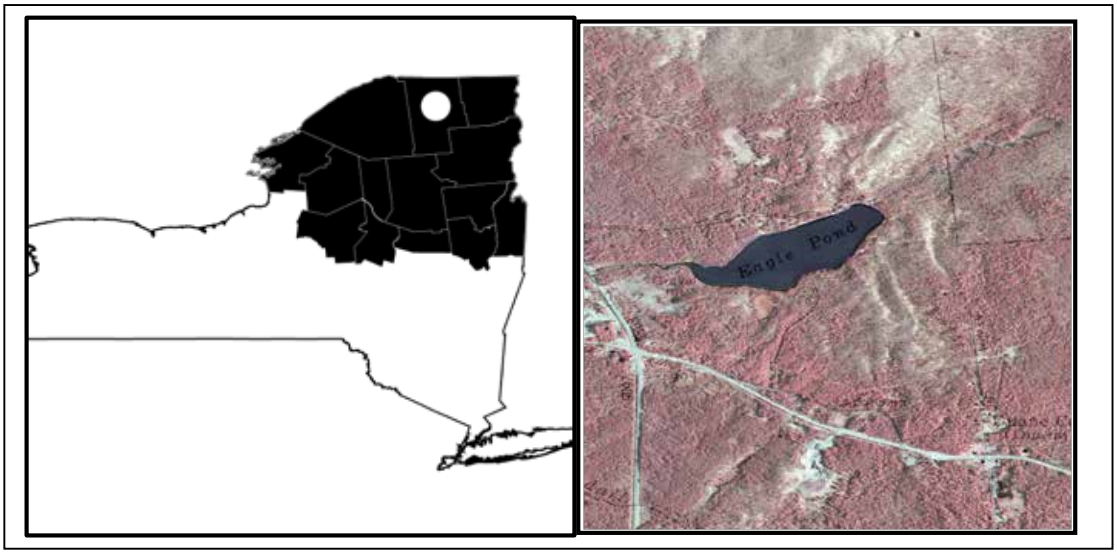


CSLAP 2015 Lake Water Quality Summary:
Eagle Pond

General Lake Information

Location	Town of Duane
County	Franklin
Basin	St. Lawrence River
Size	15.5 hectares (38.3 acres)
Lake Origins	Augmented by Dam
Watershed Area	131.7 hectares (325.3 acres)
Retention Time	0.08 years
Mean Depth	0.4 meters
Sounding Depth	1.7 meters
Public Access?	no
Major Tributaries	no named tributaries
Lake Tributary To…	Horseshoe Pond to Deer River to St. Regis River to St. Lawrence River
WQ Classification	C (non-contact recreation = boating, angling)
Lake Outlet Latitude	44.668
Lake Outlet Longitude	-74.281
Sampling Years	2008-2013, 2015
2015 Samplers	Gerry Gould
Main Contact	Gerry Gould

Lake Map



Background

Eagle Pond is a 38 acre, class C lake found in the town of Duane in Franklin County in the northeastern Adirondacks. The lake was first sampled as part of CSLAP in 2008.

It is one of 16 CSLAP lakes among the nearly 650 lakes and ponds found in Franklin County, and one of 26 CSLAP lakes among the more than 1650 lakes and ponds in the St. Lawrence River drainage basin.

Lake Uses

Eagle Pond is a Class C lake; this means that the best intended use for the lake is for non-contact recreation—boating and angling, aquatic life, and aesthetics, although the lake also supports contact recreation—swimming and bathing. The lake is used by lake residents for swimming, passive boating and other recreation via shoreline properties; the lake does not have public access.

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

General statewide fishing regulations are applicable in Eagle Pond. In addition, pumpkinseed sunfish and yellow perch have an open season all year long, with no size limits or daily take limits. The open season for trout is April 1st through October 15th, with no size limit but a daily take limit of five trout and five brook trout under eight inches. The open season for black bass is the third Saturday in June through November 15th, with a minimum length of 12 inches and a daily take limit of five fish.

Fish species identified in the Adirondack Lake Survey Corporation (ALSC) study of the lake (see below) include bluntnose minnow, brown bullhead, common shiner, golden shiner, largemouth bass, northern pike, pumpkinseed sunfish, rock bass, smallmouth bass, white sucker, and yellow perch. At that time, the brown bullhead and rock bass were the most abundant fish.

Historical Water Quality Data

CSLAP sampling was conducted on Eagle Pond from 2008 to 2013, and in 2015. The CSLAP reports for each of the past several years can be found on the NYSFOLA website at http://nysfola.mylaketown.com. The most recent CSLAP report and scorecard for Eagle Pond can also be found on the NYSDEC web page at http://www.dec.ny.gov/lands/77871.html.

Eagle Pond was sampled twice in 1985 as part of the Adirondack Lake Survey Corporation (ALSC) survey of more than 1600 Adirondack and other high elevation lakes in New York State from 1984 through 1987. Samples were collected from three sites on August 15, 1985, and from a single site on September 17th. These results show that most water quality indicators did not change significantly from 1985 to 2008, although it is not known if the results from either year are typical of Eagle Pond. Conductivity readings were substantially lower in 1985, but additional data will be needed to determine if this represents a significant change.

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

Lake Association and Management History

Eagle Pond is served by the Eagle Pond Association. Most of the management of the lake has been undertaken by lake residents, including lake monitoring, education regarding invasive species, and evaluation of the fish community. It is not known if the lake association maintains a website.

Summary of 2015 CSLAP Sampling Results

Evaluation of 2015 Annual and Monthly Results Relative to 2006-2013

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 –Eagle Pond" section in Appendix B.

Evaluation of Eutrophication Indicators

Both algae levels (as measured by chlorophyll *a*) and phosphorus readings were lower than usual in 2015. This suggests that the change in both indicators was within the normal range of variability, although both indicators have decreased over the last decade. Water clarity readings have been fairly stable, typical of shallow lakes with relatively low water transparency.

In the typical summer, phosphorus readings decrease from late July through the fall, consistent with a slight long term decrease in algae levels and slight increase in water clarity. However, while phosphorus readings decreased from May through July in 2015, neither water clarity nor chlorophyll *a* readings exhibited clear seasonal changes in 2015.

The lake continues to be difficult to characterize by trophic status—the lake can be considered *eutrophic*, based on water clarity, and *mesotrophic* based on total phosphorus and chlorophyll *a* readings. In 2015, both phosphorus and water clarity readings were typical of *eutrophic* lakes. The trophic state indices (TSI) evaluation indicates that the chlorophyll *a* readings are the greatest outliers—algae levels are much lower than expected given the nutrient levels in the lake. This suggests that the lake is not susceptible to small changes in phosphorus loading to the lake; however, shoreline algae blooms are occasionally reported. Water clarity appears to be influenced by both algae and water color, although it is ultimately limited by the shallow depth of the lake. Overall trophic conditions are summarized on the Lake Scorecard.

Evaluation of Potable Water Indicators

Surface algae levels do not appear to be high enough to trigger impacts from taste and odor compounds or dangerous chlorinated compounds associated with excessive algae, and the lake is not classified for use for potable water. Eagle Pond is not thermally stratified, at least on a consistent basis, so deepwater samples have not been collected in the lake (and deepwater intakes to avoid surface algae-enriched waters are not possible).

Evaluation of Limnological Indicators

Ammonia readings were higher than normal in 2015, and both ammonia and total nitrogen readings generally increased over the last several years. Conductivity readings have increased and pH has decreased over the last decade, but both were close to normal in 2015. It is likely that

the annual variability in most of these indicators is probably within the normal range for Eagle Pond.

Chloride levels in the 2015 samples, collected for the first time through CSLAP and cited in Appendix A, ranged from 40 to 54 mg/l. These values fall within the (low end of the) range of "major" road salt runoff levels cited by the New Hampshire DES. These readings are well below the state potable water quality standard of 250 mg/l but above the typical range of values found in most NYS lakes. These readings suggest a moderate likelihood of biological impacts from road salt. Additional data will help to determine if these represent normal readings for the lake.

Overall limnological conditions are summarized in the Lake Scorecard.

Evaluation of Biological Condition

Macrophyte surveys conducted through the ALSC and the DEC biomonitoring survey showed a moderately high diversity of aquatic plants, and no protected or exotic plant species were found. The modified floristic quality indices (FQI) indicate that the quality of the aquatic plant community is "excellent." The fish community in the lake is comprised of a mix of coolwater (at least four species) and warmwater (at least seven species) fish.

Phytoplankton and zooplankton surveys have not been conducted through CSLAP at Eagle Pond. The fluoroprobe screening samples analyzed by SUNY ESF indicate that algal communities in both the open water and within shoreline blooms are comprised primary of algal species other than blue green algae (cyanobacteria), although shoreline blooms may have higher blue green algae levels. Overall algae levels tend to be low in almost all samples. Shoreline blooms were not reported in 2015.

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

Evaluation of Lake Perception

Water quality and recreational assessments were more favorable than usual in 2015, despite higher than usual algae levels. Each of these indicators have improved over the last decade, consistent with a decrease in aquatic plant coverage over the same period.

Lake perception usually improves slightly during late summer in the typical CSLAP sampling season; plant coverage typically decreases in early summer, but decreases in late summer. In 2015, recreational assessments improved in late summer, despite the lack of seasonal changes in water quality indicators in 2015. Overall lake perception is summarized on the Lake Scorecard.

Evaluation of Local Climate Change

Water and air temperature readings in the summer index period were close to normal in 2015, but water temperatures have increased slightly over the last decade. 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. Fluoroprobe readings

have been well below thresholds for harmful algal blooms (HABs), although previous shoreline bloom samples have shown periodically elevated blue green algae levels. An analysis of algae samples indicated microcystin readings in the open water to be below levels hazardous to safe swimming, and algal toxins were not detected in the shoreline bloom sample submitted for analysis in 2012. No shoreline blooms were reported in 2015.

Lake Condition Summary

Category	Indicator	Min	Annual Avg	Max	2015 Avg	Classification	2015 Change?	Long-term Change?
Eutrophication Indicators	Water Clarity	1.20	1.46	1.70	1.45	Eutrophic	Within Normal Range	Decreasing Slightly
	Chlorophyll *a*	0.20	2.09	10.00	3.45	Mesotrophic	Higher than Normal	Decreasing Slightly
	Total Phosphorus	0.006	0.019	0.126	0.025	Mesotrophic	Within Normal Range	Decreasing Slightly
Potable Water Indicators	Hypolimnetic Ammonia							Not known
	Hypolimnetic Arsenic							Not known
	Hypolimnetic Iron							Not known
	Hypolimnetic Manganese							Not known
Limnological Indicators	Hypolimnetic Phosphorus							Not known
	Nitrate + Nitrite	0.01	0.05	0.14	0.03	Low NOx	Within Normal Range	No Change
	Ammonia	0.00	0.05	0.38	0.08	Low Ammonia	Higher than Normal	No Change
	Total Nitrogen	0.19	0.39	0.83	0.39	Low Total Nitrogen	Within Normal Range	No Change
	pH	6.97	7.91	9.06	7.80	Alkaline	Within Normal Range	No Change
	Specific Conductance	81	195	255	207	Intermediate Hardness	Within Normal Range	No Change
	True Color	1	17	47	13	Intermediate Color	Within Normal Range	No Change
	Calcium	9.6	14.2	17.5	10.8	May be Susceptible to Zebra Mussels	Lower Than Normal	No Change
Lake Perception	WQ Assessment	1	1.4	2	1.1	Crystal Clear	Within Normal Range	Slightly Improving
	Aquatic Plant Coverage	1	2.1	3	1.3	Subsurface Plant Growth	Less Coverage Than Normal	Slightly Degrading
	Recreational Assessment	1	2.3	4	1.6	Excellent	More Favorable Than Normal	Slightly Improving
Biological Condition	Phytoplankton					Open water-low blue green algae biomass; Shoreline-high blue green algae in bloom	Not known	Not known
	Macrophytes					Excellent quality of aquatic plant community	Not known	Not known
	Zooplankton					Not measured through CSLAP	Not known	Not known
	Macroinvertebrates					Not yet evaluated	Not known	Not known
	Fish					Warmwater fisheries	Not known	Not known
	Invasive Species					None observed	Not known	Not known
Local Climate Change	Air Temperature	3	18.3	27	17.9		Within Normal Range	No Change
	Water Temperature	8	18.8	26	18.9		Within Normal Range	No Change

Category	Indicator	Min	Annual Avg	Max	2015 Avg	Classification	2015 Change?	Long-term Change?
Harmful Algal Blooms	Open Water Phycocyanin	-1	6	26	4	No readings indicate high risk of BGA	Not known	Not known
	Open Water FP Chl.a	0	2	5	2	No readings indicate high algae levels	Not known	Not known
	Open Water FP BG Chl.a	0	0	2	0	No readings indicate high BGA levels	Not known	Not known
	Open Water Microcystis	<DL	<DL	0.7	<DL	Low to undetectable open water microcystins	Not known	Not known
	Open Water Anatoxin a	<DL	<DL	0.0	<DL	Open water Anatoxin-a at times detectable	Not known	Not known
	Shoreline Phycocyanin					No shoreline blooms sampled for PC	Not known	Not known
	Shoreline FP Chl.a	70	70	70		All readings indicate very high algae levels	Not known	Not known
	Shoreline FP BG Chl.a	16	16	16		Some readings indicate high BGA levels	Not known	Not known
	Shoreline Microcystis	<DL	<DL	<DL		Shoreline bloom MC-LR consistently not detectable	Not known	Not known
	Shoreline Anatoxin a	<DL	<DL	<DL		Shoreline bloom Anatoxin-a consistently not detectable	Not known	Not known

Evaluation of Lake Condition Impacts to Lake Uses

The 2007 NYSDEC Priority Waterbody Listings (PWL) for the St. Lawrence River drainage basin indicate that no uses are impaired in Eagle Pond, although this assessment was offered in the absence of water quality data (and was based on the Horseshoe Pond assessment).

Potable Water (Drinking Water)

The CSLAP dataset at Eagle Pond, including water chemistry data, physical measurements, and volunteer samplers' perception data, is inadequate to evaluate the use of the lake for potable water, and the lake is not used for this purpose. The limited CSLAP data suggest that unofficial potable water use could be impacted by shoreline algae blooms, although this is probably not apparent in most years.

Public Bathing

The CSLAP dataset at Eagle Pond, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggests that public bathing, if conducted at a public swimming beach, should be supported, although additional information about bacterial levels is needed to evaluate the safety of the water for swimming.

Recreation (Swimming and Non-Contact Uses)

The CSLAP dataset on Eagle Pond, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that recreation may be *threatened* by excessive nutrients triggering shoreline algae blooms.

Aquatic Life

The CSLAP dataset on Eagle Pond, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that aquatic life should be supported, although this use may be *threatened* by elevated pH and road salt runoff. Additional data are needed to evaluate the food and habitat conditions for aquatic organisms in the lake.

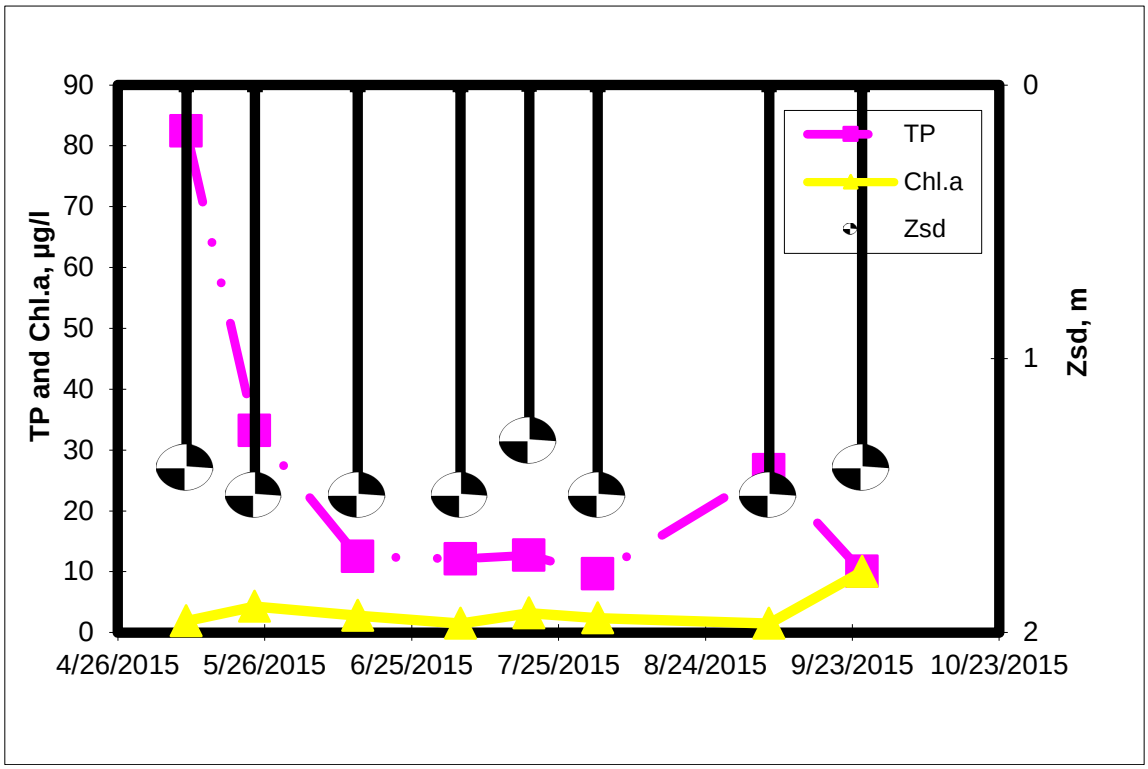
Aesthetics and Habitat
The CSLAP dataset on Eagle Pond, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that aesthetics may be only *fair* due to poor recreational perception associated with excessive weeds. Habitat may be *good* due to the lack of invasive plants.

Fish Consumption
There are no fish consumption advisories posted for Eagle Pond.

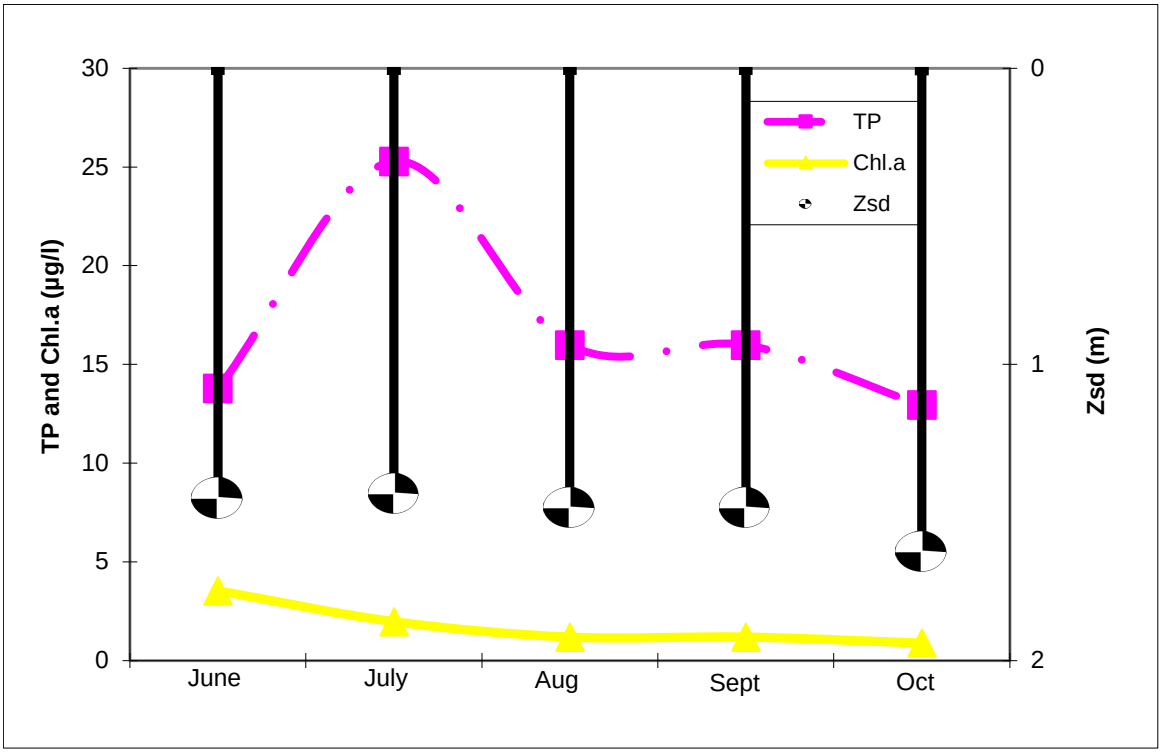
Additional Comments and Recommendations
Continued analysis of the benthic macroinvertebrate data and collection of additional aquatic plant information will help to better evaluate the biological condition of the lake. Lake residents and their pets should avoid contact with shoreline algae blooms or discolored water.

Aquatic Plant IDs-2015
No aquatic plants were submitted for identification in 2015.

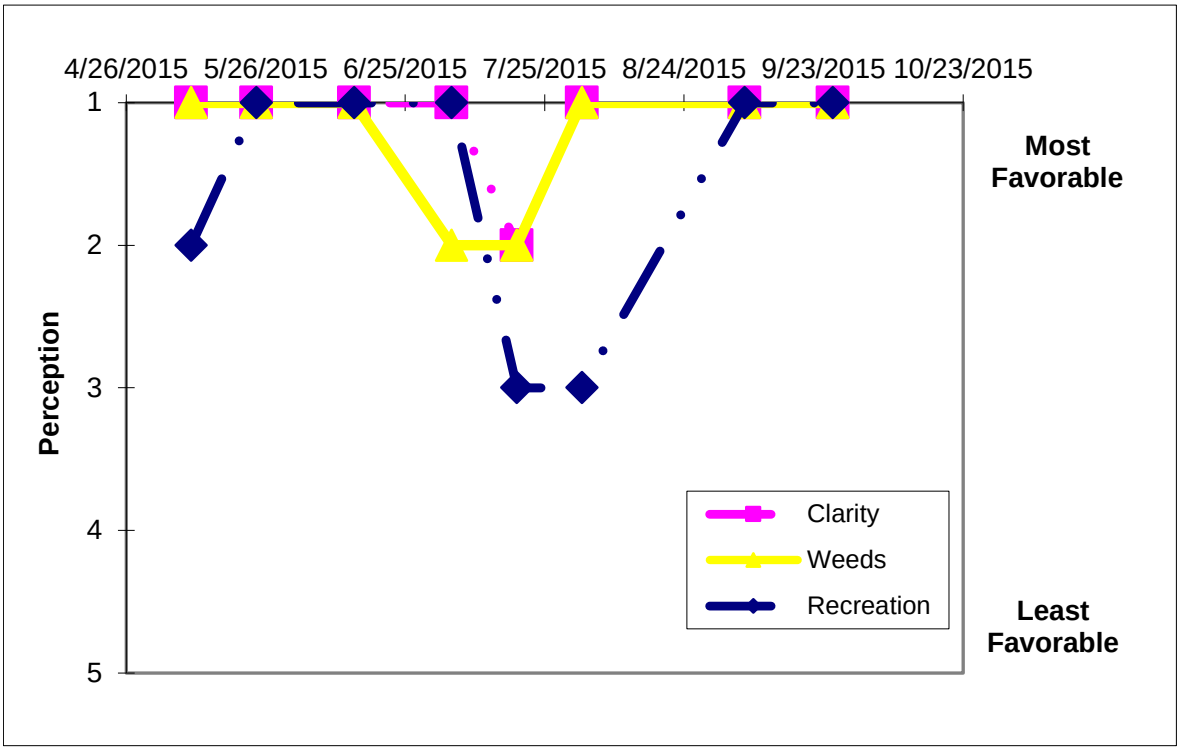
Time Series: Trophic Indicators, 2015



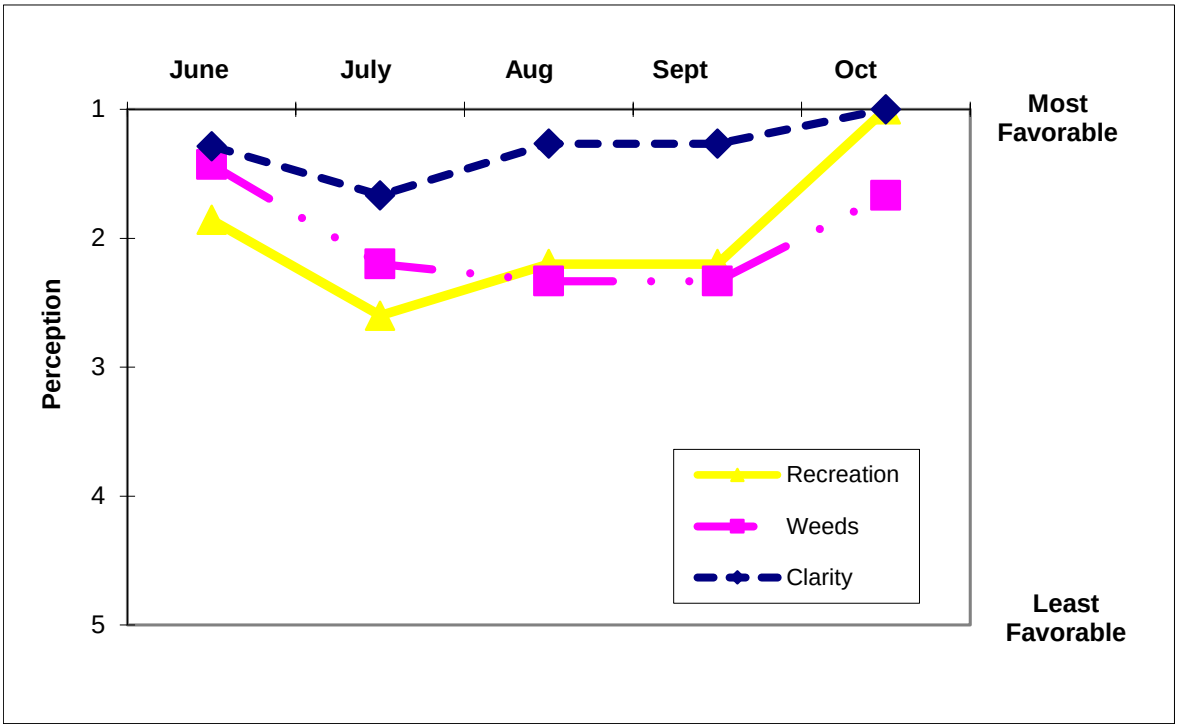
Time Series: Trophic Indicators, Typical Year (2008-2015)



Time Series: Lake Perception Indicators, 2013



Time Series: Lake Perception Indicators, Typical Year (2008-2015)



Appendix B- CSLAP Water Quality Sampling Results for Eagle Pond

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
215	Eagle P	7/6/2008	1.6	1.55	1.4	0.013	0.02	0.02	0.50	85.13	21	8.23	186	13.9	1.15	
215	Eagle P	7/20/2008	1.4	1.40	1.4	0.014	0.05	0.03	0.24	38.98	18	8.42	190			
215	Eagle P	8/3/2008	1.7	1.65	1.4	0.012	0.06	0.03	0.24	42.78	17	9.06	143		0.64	
215	Eagle P	8/17/2008	1.5	1.50	1.5	0.012	0.07	0.05	0.23	42.60		8.74	147		1.03	
215	Eagle P	8/31/2008	1.5	1.50	1.4	0.017	0.02	0.00	0.21	27.77	22	8.31	186	14.3	1.78	
215	Eagle P	9/14/2008	1.3	1.30	1.3	0.015	0.01	0.02	0.26	36.89	11	8.31	197		1.80	
215	Eagle P	9/28/2008	1.7	1.65	1.4	0.007	0.13	0.12	0.36	110.82	7	7.52	151		2.35	
215	Eagle P	10/12/2008	1.6	1.60	1.4	0.009	0.08	0.01	0.26	62.55	15	7.20	187		1.37	
215	Eagle P	06/17/2009	1.5	1.50	1.4	0.009	0.02	0.02	0.31	74.11	24	7.73	180	15.5	2.96	
215	Eagle P	06/28/2009	1.5	1.50	1.4	0.015	0.07	0.03	0.46	66.14	22	8.33	174		5.88	
215	Eagle P	07/12/2009	1.6	1.55	1.4	0.014	0.03	0.02	0.29	46.93	26	8.76	108		1.98	
215	Eagle P	07/26/2009		1.35	1.0	0.013	0.03	0.03	0.31	52.80	20	8.09	107		1.77	
215	Eagle P	08/09/2009	1.5	1.50	1.5	0.029	0.07	0.04	0.33	25.09	21	8.98	81		0.40	
215	Eagle P	08/24/2009	1.5	1.50	1.5	0.035	0.01	0.01	0.24	14.94	16	7.93	127	13.7	1.20	
215	Eagle P	09/06/2009	1.4	1.40	1.3	0.006	0.02	0.02	0.19	74.40	17	8.33	167		1.70	
215	Eagle P	09/20/2009	1.4	1.40	1.4	0.009	0.03	0.04	0.31	77.37	13	7.68	182		2.20	
215	Eagle P	7/4/2010	1.5	1.50	1.4	0.014	0.07	0.03	0.24	38.95	14	8.38	194	15.2	1.50	
215	Eagle P	7/18/2010		1.49	1.3	0.016	0.01	0.17	0.37	51.71	21	8.70	200		1.80	
215	Eagle P	8/1/2010		1.34	1.3	0.013	0.04	0.04	0.51	85.98	13	8.87	224		0.90	
215	Eagle P	8/15/2010	1.5	1.45	1.4	0.020	0.06	0.02	0.19	21.22	12	8.90	209		1.70	
215	Eagle P	8/29/2010	1.6	1.55	1.4	0.008	0.02	0.02	0.35	91.14	12	7.98	204	15.6	1.40	
215	Eagle P	9/12/2010	1.5	1.50	1.4	0.009	0.05	0.02	0.50	121.98	1	7.80	191		1.70	
215	Eagle P	9/26/2010		1.25	1.0	0.014	0.03	0.03	0.26	41.17	9	7.37	223		1.40	
215	Eagle P	10/10/2010	1.6	1.60	1.4	0.013	0.13	0.05	0.20	33.83	47	7.27	190			
215	Eagle P	7/2/2011	1.5	1.45	1.4	0.126	0.06	0.06	0.51	8.82	19	7.75	201	13.5	1.40	
215	Eagle P	7/17/2011	1.4	1.41	1.4	0.014	0.02	0.03	0.42	65.84	10	8.56	207		2.90	
215	Eagle P	7/31/2011	1.6	1.60	1.4	0.021	0.09	0.04	0.37	38.98	11	7.60	209		2.70	
215	Eagle P	8/14/2011	1.7	1.65	1.4	0.009	0.14	0.02	0.46	111.93	14	7.81	182		1.30	
215	Eagle P	8/28/2011	1.5	1.50	1.4	0.008	0.13	0.05	0.45	120.73	9	7.30	191	14.5	1.10	
215	Eagle P	9/11/2011	1.5	1.46	1.3	0.038	0.04	0.16	0.41	23.78	28	7.64	177		1.30	
215	Eagle P	9/25/2011	1.6	1.60	1.5	0.012	0.06	0.24	0.50	88.71	20	7.58	181		0.40	
215	Eagle P	10/9/2011	1.7	1.70	1.4	0.021	0.09	0.38	0.83	88.43	22	7.37	174		0.40	
215	Eagle P	6/10/2012														
215	Eagle P	6/10/2012	1.5	1.45	1.4	0.011	0.03	0.01	0.43	88.62	15	8.01	228	15.1	2.20	
215	Eagle P	6/24/2012	1.5	1.45	1.4	0.012	0.04	0.04	0.52	95.70	18	7.47	241		1.80	
215	Eagle P	7/8/2012	1.6	1.55	1.4	0.012	0.03	0.04	0.45	82.00	11	6.97	216		1.60	
215	Eagle P	7/22/2012		1.50	1.2	0.026	0.03	0.05	0.46	38.94	12	7.35	255		1.90	
215	Eagle P	8/5/2012	1.6	1.60	1.5	0.015	0.01	0.07	0.49	73.59	12	7.92	241	17.5	1.90	
215	Eagle P	8/19/2012	1.4	1.40	1.4	0.017	0.04	0.05	0.59	77.53	8	8.02	252		0.90	
215	Eagle P	9/2/2012	1.5	1.50	1.4	0.024	0.05	0.07	0.52	47.30	10	7.13	247		5.50	
215	Eagle P	9/16/2012	1.5	1.50	1.4	0.016	0.04	0.08	0.34	47.16	11	7.09	230		1.30	
215	Eagle P	6/8/2013	1.4	1.35	1.3	0.024	0.01	0.02	0.68	63.58	20	7.82	173		6.80	
215	Eagle P	6/23/2013	1.4	1.42	1.3	0.013					25	7.38	194		2.30	
215	Eagle P	7/7/2013	1.2	1.22	1.2	0.023	0.09	0.06	0.53	50.66	32	8.00	181		3.00	
215	Eagle P	7/21/2013	1.2	1.20	1.0	0.055					31	8.15	219		1.20	
215	Eagle P	8/4/2013	1.4	1.35	1.3	0.010		0.02	0.35	79.89	17	7.88	226		1.00	
215	Eagle P	8/18/2013	1.3	1.30	1.2	0.011					11	7.91	243		0.20	
215	Eagle P	9/1/2013	1.3	1.30	1.3	0.007	0.02	0.01	0.36	116.58	11	7.52	249		1.70	
215	Eagle P	9/15/2013	1.3	1.30	1.0	0.017	0.02	0.01			36	7.63	209		2.10	
215	Eagle P	5/10/2015	1.4	1.40	1.3	0.082	0.01	0.07	0.31	8.36	15	8.53	159	9.6	1.90	
215	Eagle P	5/24/2015	1.5	1.50	1.4	0.033			0.29	19.28	8	8.07	187		4.30	
215	Eagle P	6/14/2015	1.5	1.50	1.3	0.013	0.04	0.14	0.58	102.08	17	7.54	195		2.80	53.1
215	Eagle P	7/5/2015	1.5	1.50	1.4	0.012			0.51	92.18	22	7.27	193		1.50	
215	Eagle P	7/19/2015	1.3	1.30	1.2	0.013	0.05	0.08	0.43	74.66	15	7.31	219	12.1	3.20	
215	Eagle P	8/2/2015	1.5	1.50	1.3	0.010			0.39	89.83	13	8.23	219		2.40	
215	Eagle P	9/6/2015	1.5	1.50	1.3	0.027	0.02	0.03	0.26	21.26	10	8.11	248		1.50	40.5
215	Eagle P	9/25/2015	1.4	1.40	1.3	0.010			0.31	67.76	7	7.36	238		10.00	

LNum	PName	Date	Zsamp	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
215	Eagle P	7/6/2008	epi	22	21	1	2	3	8											
215	Eagle P	7/20/2008	epi	22	21	2	3	3	25											
215	Eagle P	8/3/2008	epi	18	19	1	3	3	258											
215	Eagle P	8/17/2008	epi	20	20	1	3	3	28											
215	Eagle P	8/31/2008	epi	20	20	2	3	3	0											
215	Eagle P	9/14/2008	epi	22	19	1	3	2	5											
215	Eagle P	9/28/2008	epi	18	15	2	3	2	2											
215	Eagle P	10/12/2008	epi	9	10	1	2	1	0											
215	Eagle P	06/17/2009	epi	21	22	2	2	3	6											
215	Eagle P	06/28/2009	epi	22	22	2	2	3	6											
215	Eagle P	07/12/2009	epi	16	20	2	2	1	0											
215	Eagle P	07/26/2009	epi	24	22	2	3	4	28											
215	Eagle P	08/09/2009	epi	20	20	2	2	2	0											
215	Eagle P	08/24/2009	epi	23	21	1	3	1	0											
215	Eagle P	09/06/2009	epi	11	17	1	2	1	0			12.11								
215	Eagle P	09/20/2009	epi	15	12	1	3	3	8			17.36								
215	Eagle P	7/4/2010	epi	22	21	1	2	1	0	0	0									
215	Eagle P	7/18/2010	epi	21	22	2	2	4	8	0	0									
215	Eagle P	8/1/2010	epi	18	20	1	3	4	28	0	0									
215	Eagle P	8/15/2010	epi	24	23	1	3	1	8	6	0	26.40								
215	Eagle P	8/29/2010	epi	19	20	1	2		0	0	0	21.21								
215	Eagle P	9/12/2010	epi	16	15	1	2	3	8	0	0									
215	Eagle P	9/26/2010	epi	17	16	1	2	4	58	0	0									
215	Eagle P	10/10/2010	epi	3	8	1	1	1	0	0	0									
215	Eagle P	7/2/2011	epi	25	21	2	1	2	0	0	0	21.30	10.80							
215	Eagle P	7/17/2011	epi	27	23	2	3	4	8	0	0	3.50	2.00							
215	Eagle P	7/31/2011	epi	18	20	1	2	1	0	0	0	4.20	2.10						i	
215	Eagle P	8/14/2011	epi	20	19	1	3	3	256	0	0	10.80	1.30	0.15	<0.400	<0.1			i	
215	Eagle P	8/28/2011	epi	17	19	2	1	2	5	0	0	4.70	1.50						i	
215	Eagle P	9/11/2011	epi	13	17	1	3	4	8	0	0	3.10	2.50						i	
215	Eagle P	9/25/2011	epi	18	18	2	3	3	0	0	0	2.60	2.00						i	
215	Eagle P	10/9/2011	epi	12	13	1	2	1	0	0	0	4.30	2.70						i	
215	Eagle P	6/10/2012	bloom											<0.60	<0.715		69.90	15.90	D	
215	Eagle P	6/10/2012	epi	22	19	2	2	3	6	0	0	0.80	0.40	<0.30	<0.417		0.82	0.21	D	
215	Eagle P	6/24/2012	epi	20	21							0.50	0.70	<0.30	<0.428		0.96	0.21	D	
215	Eagle P	7/8/2012	epi	20	23	2	2	2	36	0	0	-0.20	0.40	<0.30	<0.423		1.65	0.71	D	
215	Eagle P	7/22/2012	epi	22	22	2	2	3	8	0	0	1.80	0.40	<0.30	<0.292		1.44	0.18		
215	Eagle P	8/5/2012	epi	25	26	2	2	3	5	0	0	3.00	0.20	<0.30	<0.659		2.40	0.99	I	
215	Eagle P	8/19/2012	epi	18	17	1	2	1	0	0	0	3.10	0.30	<0.30	<0.552		1.92	1.35	I	
215	Eagle P	9/2/2012	epi	15	17	1	1	2	0	0	0	4.40	0.40	<0.30	<0.580		2.96	1.69	I	
215	Eagle P	9/16/2012	epi	9	16	1	2	1	0	0	0	-0.70	0.20	0.48	<3.299		2.57	1.79	I	
215	Eagle P	6/8/2013	epi	13	15	1	1	1	5	0	0			<0.30	<0.440		2.00	0.10	I	I
215	Eagle P	6/23/2013	epi	23	20	1	2	2	56	0	0	2.80	1.60	<0.30	<0.370		1.10	0.00	I	I
215	Eagle P	7/7/2013	epi	22	24	1	2	4	8	0	0	2.10	1.20	<0.30	<0.510		1.00	0.00	I	I
215	Eagle P	7/21/2013	epi	19	21	2	3	3	8	0	0	2.30	1.00	<0.30	<0.910		0.80	0.00	I	I
215	Eagle P	8/4/2013	epi	17	20	1	2	2	5	0	0	2.00	0.90	0.65	<0.390		1.00	0.00	I	I
215	Eagle P	8/18/2013	epi	17	18	1	2	2	6	0	0	1.90	0.70	<0.30	<0.390		0.30	0.00	I	I
215	Eagle P	9/1/2013	epi	22	20	1	3	1	2	0	0	2.70	0.70	<0.30	<1.100		0.40	0.00	I	I
215	Eagle P	9/15/2013	epi	12	13	2	3	4	8	0	0	8.10	2.00	0.35	<19.130		4.60	1.10	I	I
215	Eagle P	5/10/2015	epi	21	21	1	1	2	6	0	0	5.70	0.50	<1.34	<0.022	<0.065	0.71	0.00	I	I
215	Eagle P	5/24/2015	epi	14	15	1	1	1	0	0	0	4.70	0.50	<1.34	<0.032	<0.080	1.39	0.00	I	I
215	Eagle P	6/14/2015	epi	17	19	1	1	1	0	0	0	5.50	0.80	<0.55	<0.018	<0.139	1.92	0.00	I	I
215	Eagle P	7/5/2015	epi	19	19	1	2	1	0	0	0	3.50	0.60	<0.63	0.00	<0.000	1.96	0.00	I	I
215	Eagle P	7/19/2015	epi	22	22	2	2	3	2	0	0	0.40	0.90	<0.30	<0.009	<0.049	3.31	0.00	I	I
215	Eagle P	8/2/2015	epi	18	20	1	1	3	2	0	0	6.95	0.62	<0.23	<0.004	<0.015	2.18	0.00	I	I
215	Eagle P	9/6/2015	epi	21	21	1	1	1	0	0	0	1.10	0.20	<0.26	<0.023	<0.086	0.54	0.00	I	I
215	Eagle P	9/25/2015	epi	11	14	1	1	1	0	0	0	2.70	0.40	<0.30	<0.007	<0.035	0.79	0.00	I	I

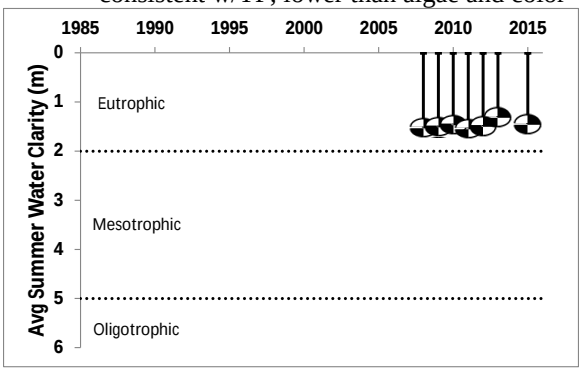
Legend Information

Indicator	*Description*	*Detection Limit*	*Standard (S) / Criteria (C)*
General Information			
Lnum	lake number (unique to CSLAP)		
Lname	name of lake (as it appears in the Gazetteer of NYS Lakes)		
Date	sampling date		
Field Parameters			
Zbot	lake depth at sampling point, meters (m)		
Zsd	Secchi disk transparency or clarity	0.1m	1.2m (C)
Zsamp	water sample depth (m) (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, Cl	calcium, chloride (mg/l)	1 mg/l	none
Chl.a	chlorophyll a (ug/l)	0.01 ug/l	none
Fe	iron (mg/l)	0.1 mg/1	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 (aquaflor) (unitless)	1 unit	none
AQ-Chl	Chlorophyll *a* (aquaflor) (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	Cylindrospermposin (ug/l)	0.1 ug/l	none
FP-Chl, FP-BG	Fluoroprobe total chlorophyll, fluoroprobe blue-green chlorophyll (ug/l)	0.1 ug/l	none
Lake Assessment			
QA	water quality assessment; 1 = crystal clear, 2 = not quite crystal clear, 3 = definite algae greenness, 4 = high algae levels, 5 = severely high algae levels		
QB	aquatic plant assessment; 1 = no plants visible, 2 = plants below surface, 3 = plants at surface, 4 = plants dense at surface, 5 = surface plant coverage		
QC	recreational assessment; 1 = could not be nicer, 2 = excellent, 3 = slightly impaired, 4 = substantially impaired, 5 = lake not usable		
QD	reasons for recreational assessment; 1 = poor water clarity, 2 = excessive weeds, 3 = too much algae, 4 = lake looks bad, 5 = poor weather, 6 = litter/surface debris, 7 = too many lake users, 8 = other		
QF, QG	Health and safety issues today (QF) and past week (QG); 0 = none, 1 = taste/odor, 2 = GI illness humans/animals, 3 = swimmers itch, 4 = algae blooms, 5 = dead fish, 6 = unusual animals, 7 = other		
HAB form, Shore HAB	HAB evaluation; A = spilled paint, B = pea soup, C = streaks, D = green dots, E = bubbling scum, F = green/brown tint, G = duckweed, H = other, I = no bloom		

Appendix C- Long Term Trends: Eagle Pond

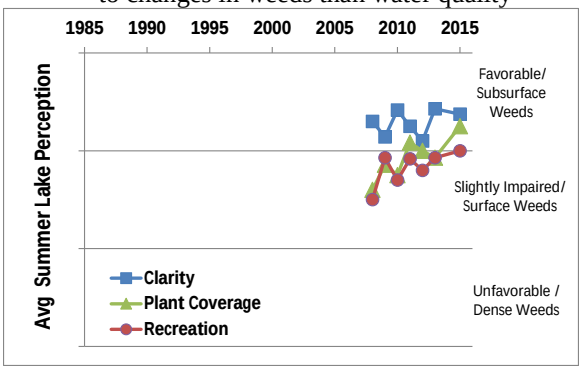
Long Term Trends: Water Clarity

- No trends apparent; very consistent clarity
- Most readings typical of *eutrophic* lakes, consistent w/TP, lower than algae and color



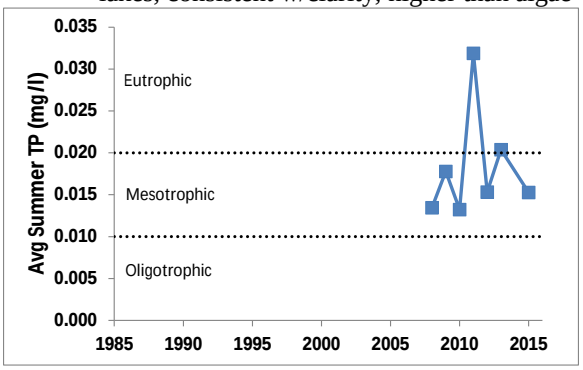
Long Term Trends: Lake Perception

- Improving recreation, plant, WQ perception
- Recreational perception more closely linked to changes in weeds than water quality



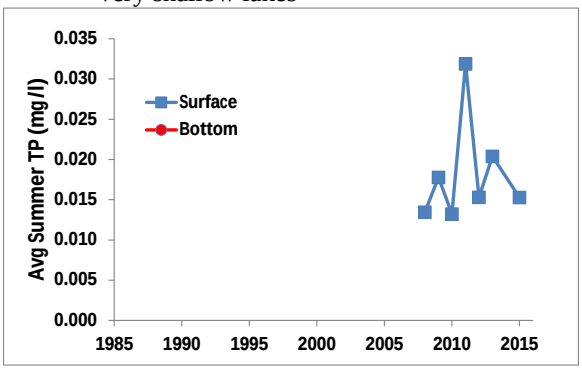
Long Term Trends: Phosphorus

- Generally increasing TP
- Most readings typical of *mesoeutrophic* lakes, consistent w/clarity, higher than algae



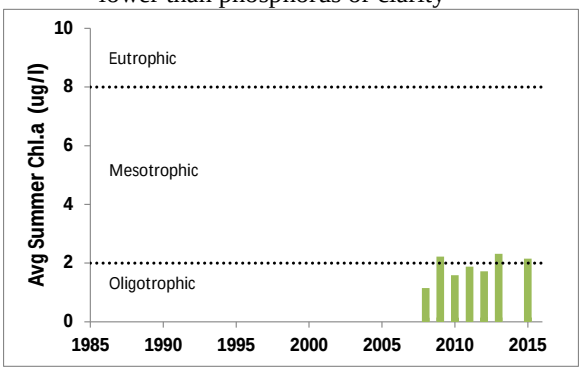
Long Term Trends: Bottom Phosphorus

- No bottom TP readings
- Surface and bottom TP usually similar in very shallow lakes



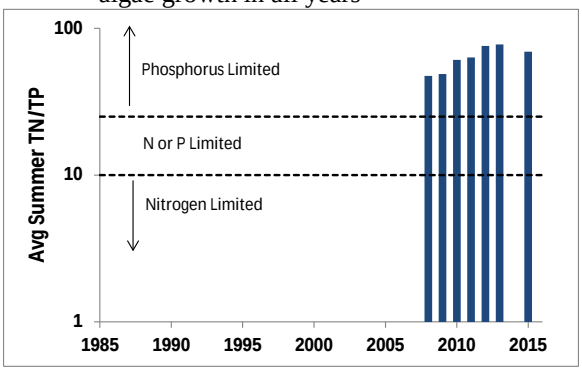
Long Term Trends: Chlorophyll a

- Slight increase not statistically significant
- Most readings typical of *oligotrophic* lakes, lower than phosphorus or clarity



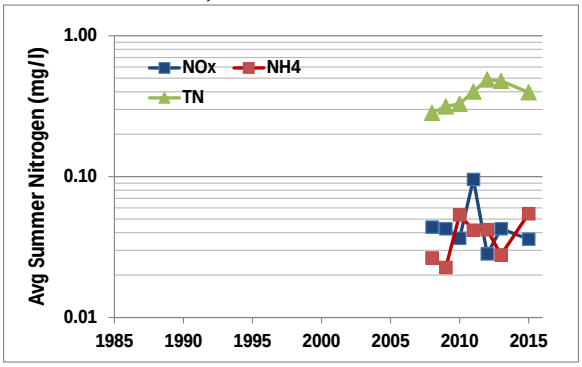
Long Term Trends: N:P Ratio

- Slight increase over last several years
- Most readings indicate phosphorus limits algae growth in all years



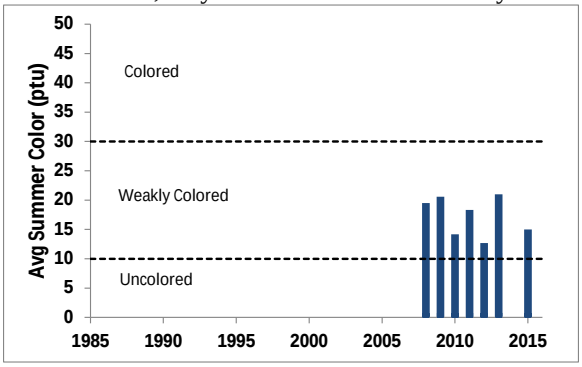
Long Term Trends: Nitrogen

- TN and NH4 increasing, perhaps consistent with slight rise in algae levels
- Low NOx, ammonia and overall TN



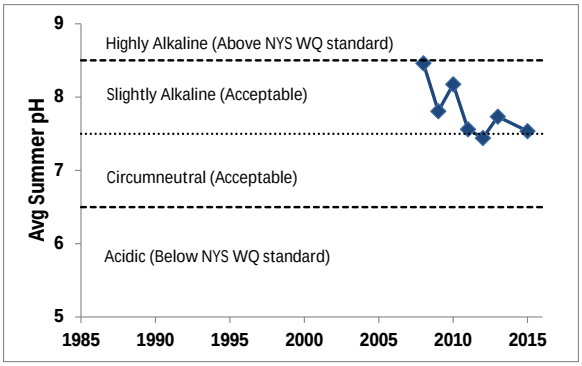
Long Term Trends: Color

- Variable from year to year
- Most readings typical of *weakly colored* lakes; may have some effect on clarity



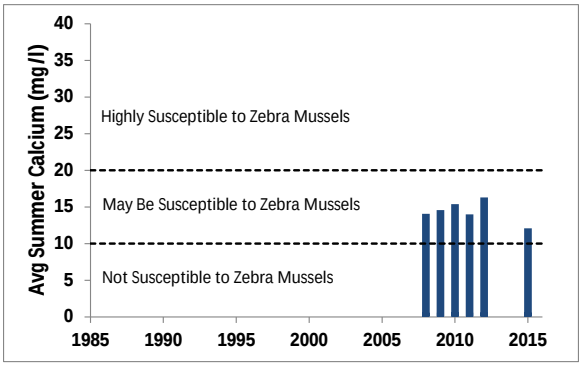
Long Term Trends: pH

- Decreasing; inconsistent with conductivity
- Most readings typical of *slightly alkaline* to *circumneutral* lakes



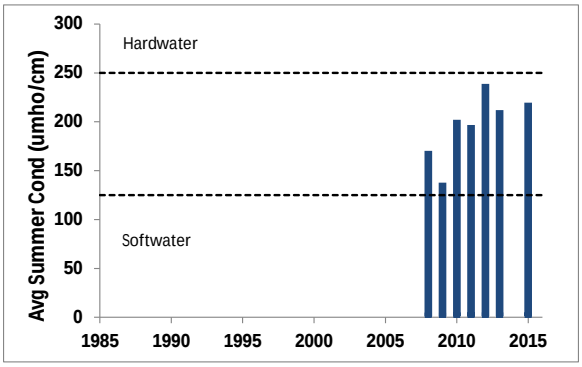
Long Term Trends: Calcium

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



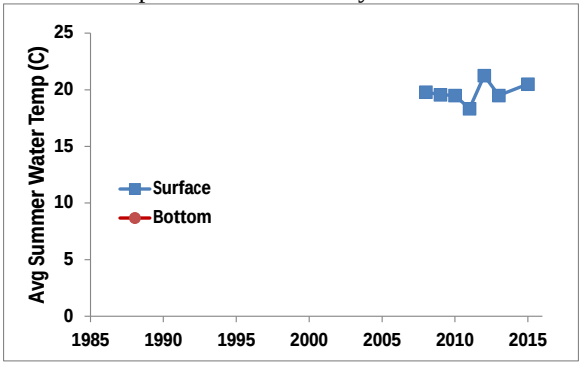
Long Term Trends: Conductivity

- Increasing; inconsistent with drop in pH
- Most readings typical of lakes with *intermediate hardness*



Long Term Trends: Water Temperature

- No trends apparent
- Likely similar surface and bottom temperatures in relatively shallow lakes



Appendix D:
Algae Testing Results from SUNY ESF Study

Most algae are harmless, naturally present, and an important part of the food web. However excessive algae growth can cause health, recreational, and aesthetic problems. Some algae can produce toxins that can be harmful to people and animals. High quantities of these algae are called harmful algal blooms (HABs). CSLAP lakes have been sampled for a variety of HAB indicators since 2008. This was completed on selected lakes as part of a NYS DOH study from 2008-2010. In 2011, enhanced sampling on all CSLAP lakes was initiated through an EPA-funded project that has continued through the current sampling season. This study has evaluated a number of HAB indicators as follows:

- Algae types - blue green, green, diatoms, and "other"
- Algae densities
- Microscopic analysis of bloom samples
- Algal toxin analysis

Some of these results are reported in other portions of these reports. This appendix the seasonal change in blue green algae, other algae types, and the primary algal toxin (microcystin-LR, a liver toxin). Analysis was completed on open water samples and, for some lakes, shoreline samples that were collected when visual evidence of blooms were apparent. Results are compared to the DEC criteria of 25-30 ug/l blue green chlorophyll a and 20 ug/l microcystin-LR (based on the World Health Organization (WHO) threshold for unsafe swimming conditions) and the WHO provisional criteria for long-term protection of treated water supplies (= 1 ug/l microcystin-LR). The data for algae types are drawn from a high end fluorometer used by SUNY ESF. While these results are useful for timely approximation of lake conditions, they are not as accurate as the total chlorophyll results measured as a regular part of CSLAP since 1986 in all open water samples. Therefore these results are used judiciously in the assessment of sampled waterbodies.

Two separate samples are evaluated. A sample is taken at the CSLAP sample point at the deepest point of the lake at every sample session. In addition, shoreline samples can be taken when a bloom is visible. It should be noted that shoreline conditions can vary significantly over time and from one location to another. The shoreline bloom sampling results summarized below are not collected as routinely as open water samples, and therefore represent snapshots in time. It is assumed that sampling results showing high blue green algae and/or toxin levels indicate that algae blooms may be common and/or widespread on these lakes. However, the absence of elevated blue green algae and toxin levels does not assure the lack of shoreline blooms on these lakes. Elevated open water readings may indicate a higher likelihood of shoreline blooms, but in some lakes, these shoreline blooms have not been (well) documented.

The results from these samples are summarized within the CSLAP report for the lake.

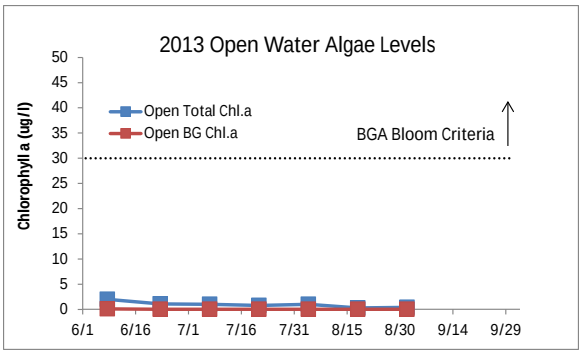


Figure D1:
2013 Open Water Total and BGA Chl.a

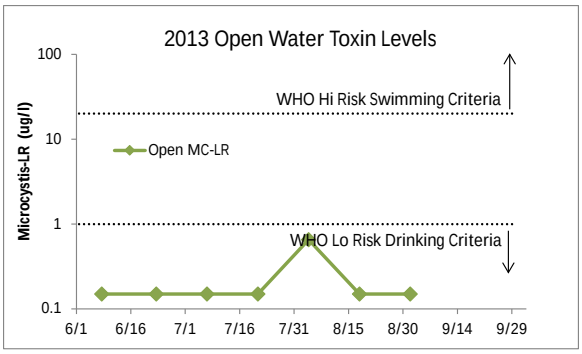


Figure D2:
2013 Open Water Microcystin-LR

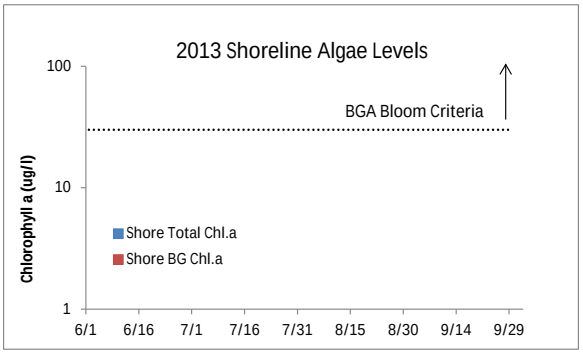


Figure D3:
2013 Shoreline Total and BGA Chl.a

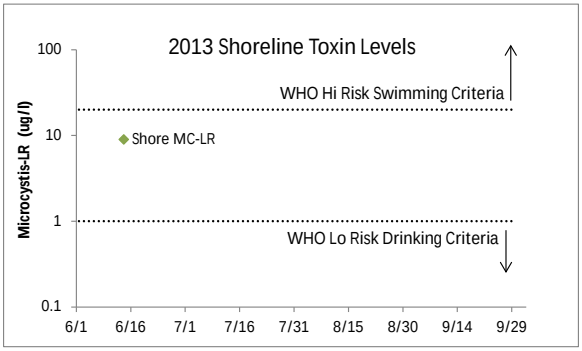


Figure D4:
2013 Shoreline Microcystin-LR

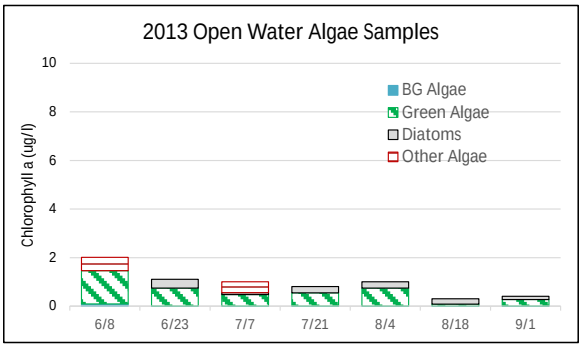


Figure D5:
2013 Open Water Algae Types

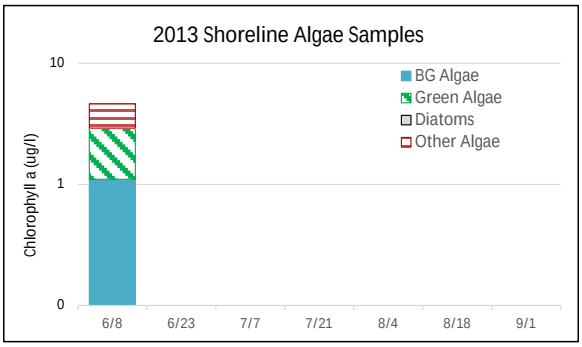


Figure D6:
2013 Shoreline Algae Types

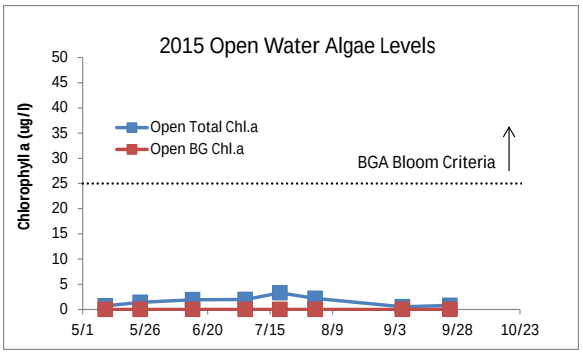


Figure D7:
2015 Open Water Total and BGA Chl.a

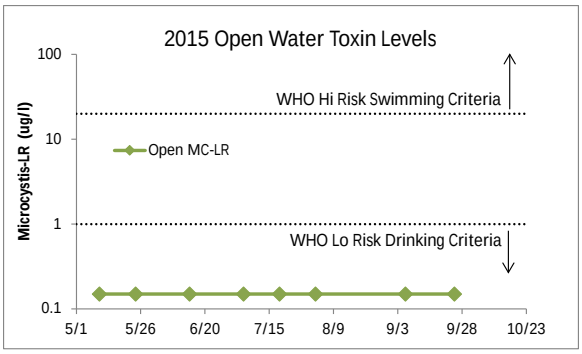


Figure D8:
2015 Open Water Microcystin-LR

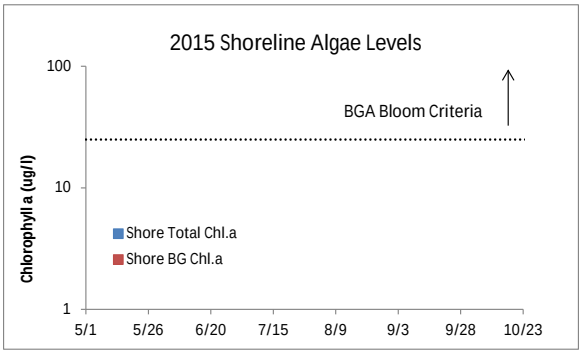


Figure D9:
2015 Shoreline Total and BGA Chl.a

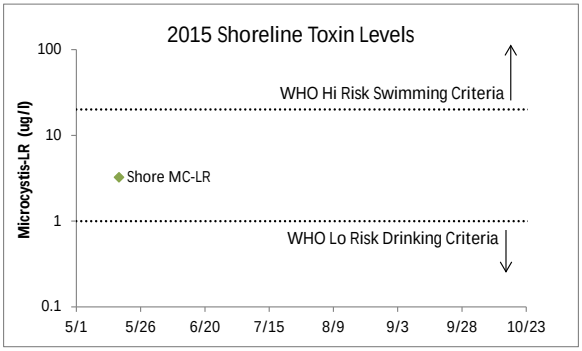


Figure D10:
2015 Shoreline Microcystin-LR

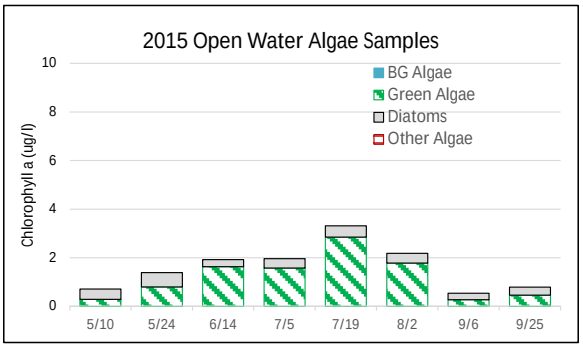


Figure D11:
2015 Open Water Algae Types

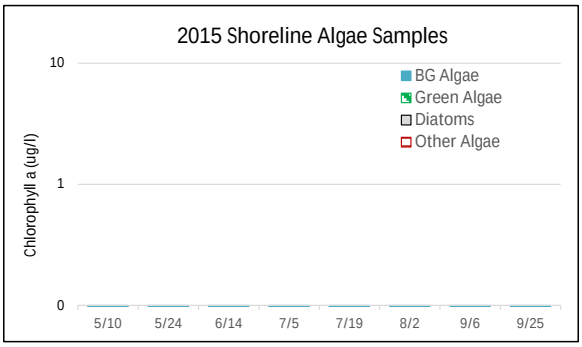


Figure D12:
2015 Shoreline Algae Types

Appendix E:
AIS Species in Franklin County

The table below shows the invasive aquatic plants and animals that have been documented in Franklin County, as cited in either the iMapInvasives database (http://www.imapinvasives.org/) or in the NYSDEC Division of Water database. These databases may include some, but not all, non-native plants or animals that have not been identified as "Prohibited and Regulated Invasive Species" in New York state regulations (6 NYCRR Part 575; http://www.dec.ny.gov/docs/lands_forests_pdf/islist.pdf).

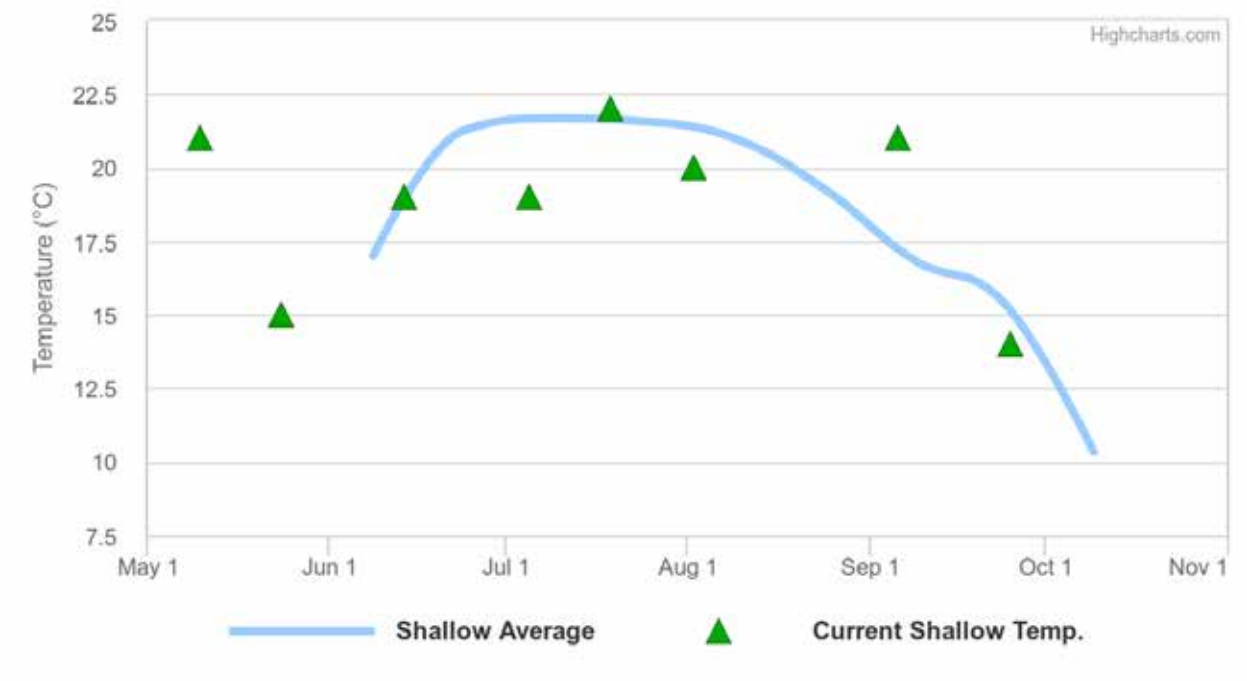
This list is not complete, but instead represents only those species that have been reported and verified within the county. If any additional aquatic invasive species (AIS) are known or suspected in these or other waterbodies in the county, this information should be reported through iMap invasives or by contacting NYSDEC at dowinfo@dec.ny.gov.

Aquatic Invasive Species - Franklin County			
Waterbody	**Kingdom**	**Common name**	**Scientific name**
Copperas Pond	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Deer River Flow	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
First Pond	Plant	Variable watermilfoil	*Myriophyllum heterophyllum*
First Pond	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Fish Creek Ponds	Plant	Variable watermilfoil	*Myriophyllum heterophyllum*
Fish Creek Ponds	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Floodwood Pond	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Follensby Clear Pond	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Franklin Falls Pond	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Franklin Falls Pond	Plant	Curly leafed pondweed	*Potamogeton crispus*
Horseshoe Pond	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Indian Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Kiwassa Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Lake Colby	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Lake Flower	Plant	Variable watermilfoil	*Myriophyllum heterophyllum*
Lake Flower	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Lake Flower	Plant	Curly leafed pondweed	*Potamogeton crispus*
Lake Titus	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Little Colby Pond	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Little Simon Pond	Plant	Variable watermilfoil	*Myriophyllum heterophyllum*
Little Square Pond	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Lower Chateaugay Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Lower Chateaugay Lake	Plant	Curly leafed pondweed	*Potamogeton crispus*
Lower Fish Creek Pond	Plant	Variable watermilfoil	*Myriophyllum heterophyllum*

Waterbody	Kingdom	Common name	Scientific name
Lower Fish Creek Pond	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Lower Saranac Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Lower Saranac Lake	Plant	Curly leafed pondweed	*Potamogeton crispus*
Meacham Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Middle Saranac Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Mountain View Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Oseetah Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Quebec Brook	**Plant**	**European frogbit**	***Hydrocharis morsus-ranae***
Second Pond	Plant	Variable watermilfoil	*Myriophyllum heterophyllum*
Simon Pond	Plant	Variable watermilfoil	*Myriophyllum heterophyllum*
Square Pond	Plant	Variable watermilfoil	*Myriophyllum heterophyllum*
Square Pond	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Tupper Lake	Plant	Variable watermilfoil	*Myriophyllum heterophyllum*
Union Falls Pond	Plant	Variable watermilfoil	*Myriophyllum heterophyllum*
Union Falls Pond	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Upper Fish Creek Pond	Plant	Variable watermilfoil	*Myriophyllum heterophyllum*
Upper Fish Creek Pond	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Upper Saranac Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*

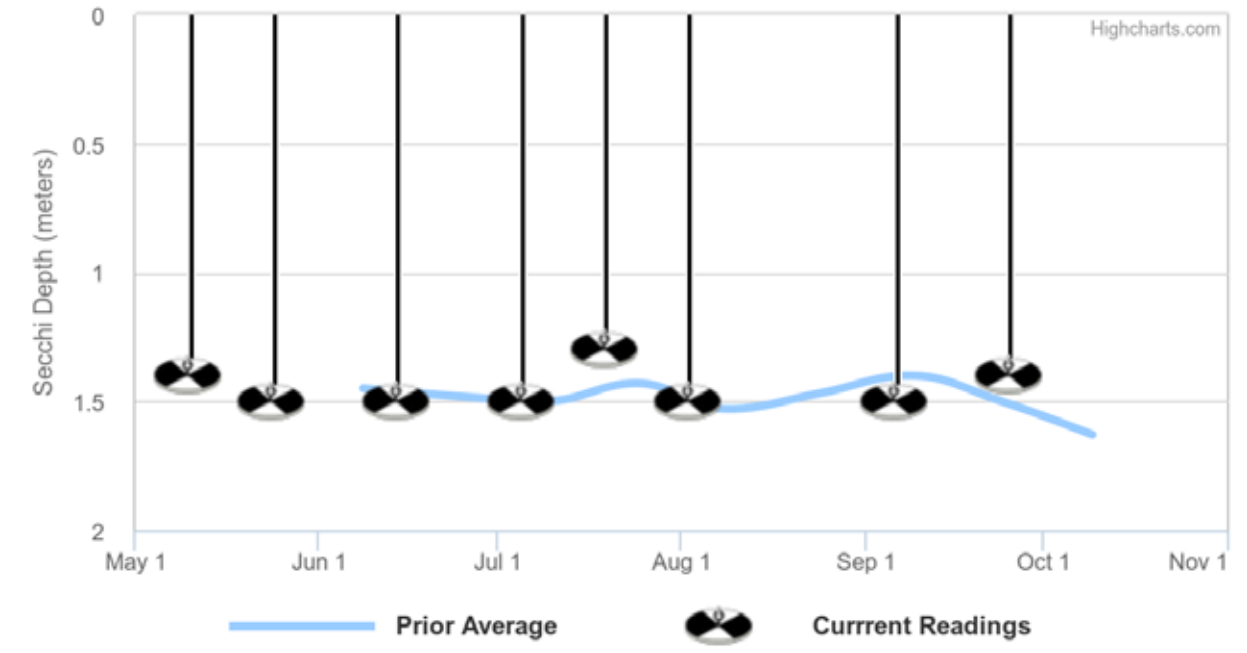
Appendix F: Current Year vs. Prior Averages for Eagle Pond

Current Year Water Temperatures vs. Prior Average



This year's shallow water sample temperatures are about the same as the average of readings collected from 2008 to 2013.

Current Year Secchi Readings vs. Prior Average



This year's session Secchi readings are about the same as the average of readings collected from 2008 to 2013

Appendix G: Watershed and Land Use Map for Eagle Pond

This watershed and land use map was developed using USGS StreamStats and ESRI ArcGIS using the 2006 land use satellite imagery. The actual watershed map and present land uses within this watershed may be slightly different due to the age of the underlying data and some limits to the use of these tools in some geographic regions and under varying flow conditions. However, these maps are intended to show the approximate extent of the lake drainage basin and the major land uses found within the boundaries of the basin.