Galway Lake Questions and Answers, 2015 CSLAP

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

A1. Water quality conditions in Galway Lake were probably unchanged in 2015. Water clarity and algae levels were close to normal; while phosphorus readings were higher than usual, these readings were either in error or not representative of conditions at that time. Weed coverage was greater, but no shoreline blooms were reported or sampled.

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

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

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

A3. Galway Lake has similar water clarity, and lower algae and nutrient levels, than most lakes in the area, and shoreline blooms were not reported in 2014 or 2015. Extensive weed growth was reported in part of the lake, and was higher than usual in 2015.

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

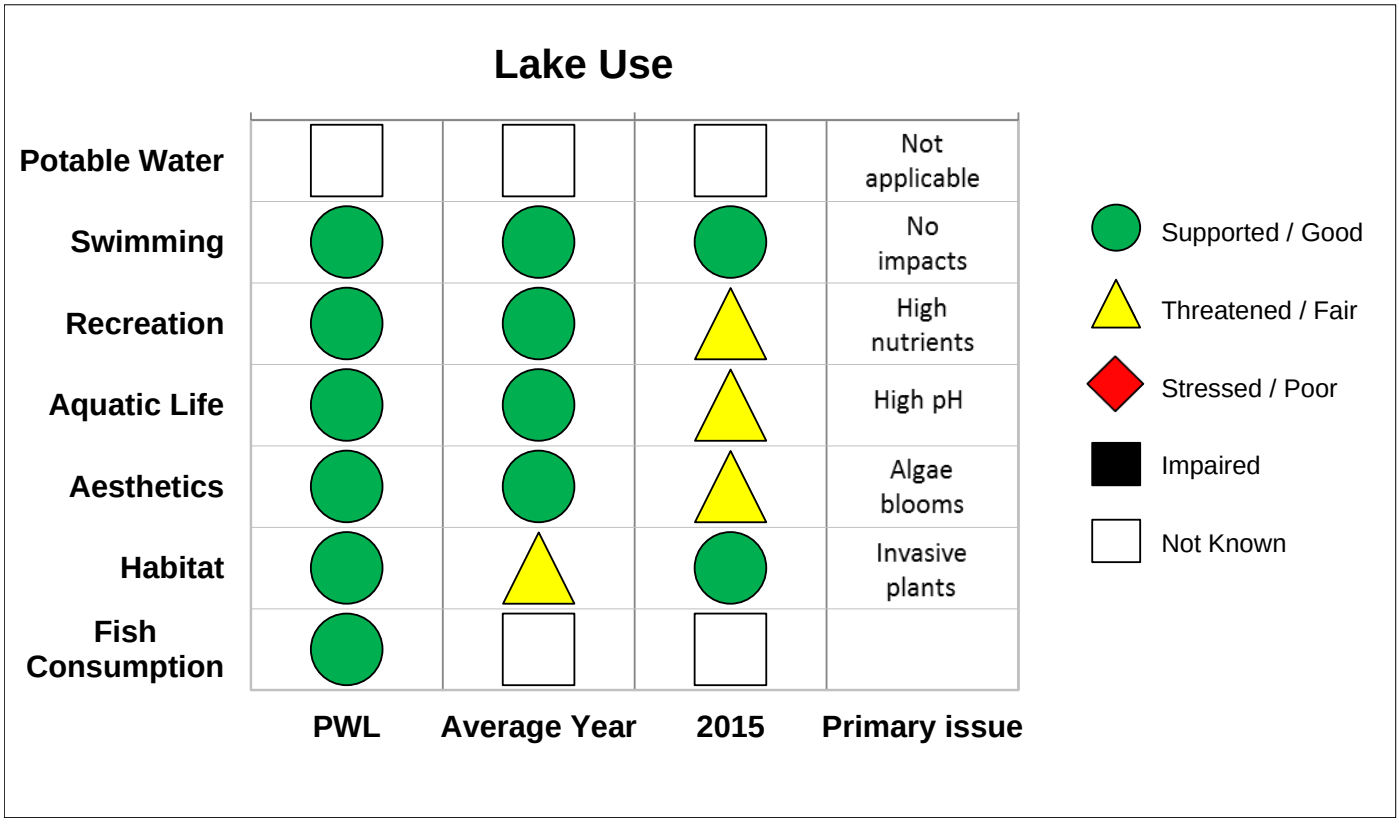
A4. Algae levels have decreased since the early 1990s, resulting in improved water quality assessments. Recreational assessments have not improved, since these assessments have become increasingly influenced by aquatic plant coverage.

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

A5. Galway Lake may be susceptible to shoreline algae blooms, although blooms were not reported in the last few years. However, lake residents should be on the lookout for, and should avoid exposure to, these blooms.

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 should be continued to maintain water quality by reducing nutrient and sediment loading to the lake. Any watershed management actions resulting in the long-term drop in algae levels should be continued. Visiting boats should be inspected to reduce the risk of new invasive species, since nearby lakes harbor several invasive plants not presently found in the lake.

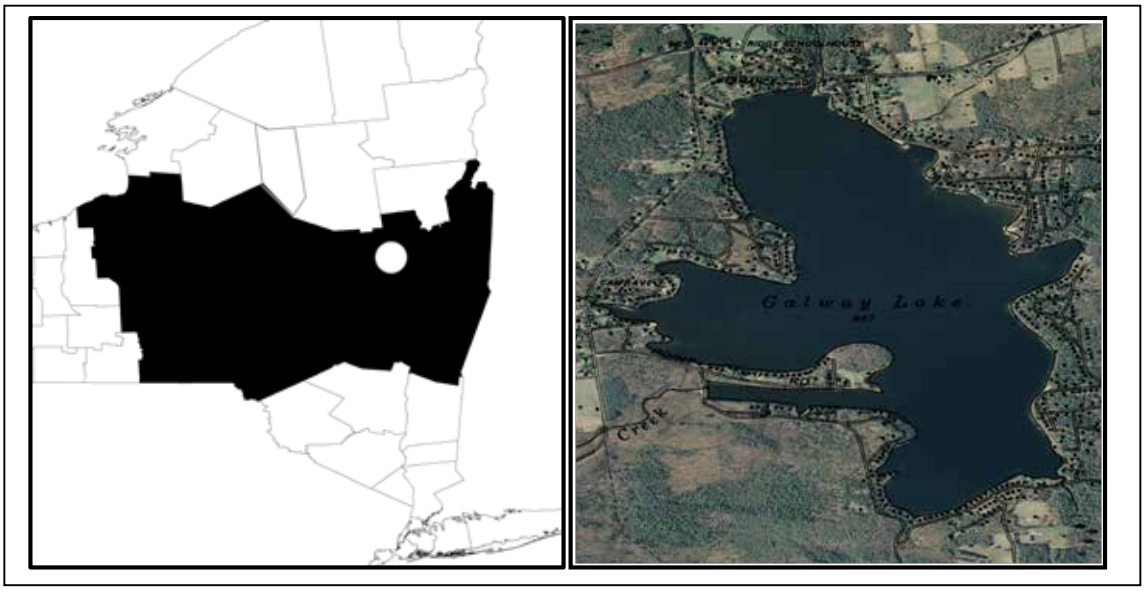


CSLAP 2015 Lake Water Quality Summary:
Galway Lake

General Lake Information

Location	Town of Galway
County	Saratoga
Basin	Mohawk River
Size	209.8 hectares (518.2 acres)
Lake Origins	Augmented by 30ft by 458ft earthen dam (1982)
Watershed Area	2,392 hectares (5,908 acres)
Retention Time	0.4 years
Mean Depth	2.6 meters
Sounding Depth	6.3 meters
Public Access?	lake association launch
Major Tributaries	no named tribs
Lake Tributary To…	North Chuctanunda Creek to Mohawk River
WQ Classification	B (contact recreation = swimming)
Lake Outlet Latitude	43.026
Lake Outlet Longitude	-74.084
Sampling Years	1990-1997, 2000-2010, 2012-2015
2015 Samplers	Ed Piotrowski
Main Contact	Ed Piotrowski

Lake Map



Background

Galway Lake is a 518 acre, class B lake found in the Town of Galway in Saratoga County in the Capital District region of New York State. It was first sampled as part of CSLAP in 1990.

It is one of seven CSLAP lakes among the more than 375 lakes and ponds found in Saratoga County, and one of 13 CSLAP lakes among the nearly 800 lakes and ponds in the Mohawk River drainage basin.

Lake Uses

Galway 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, aquatic life, and aesthetics. The lake is used by lake residents for swimming, power boating and other recreation via shoreline properties and a lake association launch area.

It is not known by the report authors if Galway Lake has been stocked as part of any private stocking efforts.

General statewide fishing regulations are applicable in Galway Lake. In addition, open season for lake trout lasts from April 1st to October 15th, with no minimum size but a daily limit of five fish, with no more than five brook trout less than eight inches. The open season for pickerel lasts from the 1st Saturday in May until March 15th, with no minimum size but a daily limit of five pickerel.

Historical Water Quality Data

CSLAP sampling was conducted on Galway Lake from 1990 to 1997, 2000 to 2010, and 2012 to 2015. The CSLAP reports for each of the past several years can be found on the NYSFOLA website at http://nysfola.mylaketown.com. The more recent CSLAP report for Galway Lake can also be found on the NYSDEC web page at http://www.dec.ny.gov/lands/77843.html.

Galway Lake was not sampled as part of any of the major New York State monitoring programs. The lake has not been sampled by DEC fisheries staff in support of fish stocking activities.

North Chuctanunda Creek has not been monitored through the NYSDEC Rotating Intensive Basins (RIBS) program, although it was sampled as part of the state stream macroinvertebrate monitoring program in 2001. The report from the NYSDEC 30 Year Trends Report indicates the following:

"*Water quality is assessed as slightly impacted for this stream, based on macroinvertebrate sampling at Amsterdam in 1996. The site sampled at the Route 5 bridge in Amsterdam showed effects of urban runoff, while the upstream site reflected minor nonpoint source nutrient enrichment. The stream was more recently sampled in 2000 at Willow Street in Amsterdam. The sample was field-assessed as non-impacted, but was not processed, and is therefore considered less definitive than the numerical results from 1996.*"

Galway Lake was sampled by the NYSDEC in 2010 as part of the state biomonitoring study of about a dozen CSLAP lakes each year. The macroinvertebrate samples collected as part of this study will be analyzed in 2013 with the rest of the samples collected in this study from 2008 to

2012. The limited water chemistry data indicated conditions comparable to those measured through CSLAP.

Lake Association and Management History

Galway Lake, formerly known as the Amsterdam Reservoir, was constructed in 1855, and in the next 20 years it was enlarged twice, to the present 550 acres. The lake is owned by the Galway Lake Campers' Association, Inc. and its members enjoy relaxing on the water, boating, fishing and swimming through the payment of an annual water assessment fee to the Galway Lake Campers' Association (GLCA).

- working with farmers on NPS control actions
- nutrient monitoring in watershed
- hypolimnetic withdraw/drawdown from dam
- barley straw study
- benthic matting
- association boat launch
- educational materials re invasive species

The Galway Lake Campers Association maintains a website at www.galwaylakeassciation.com.

Summary of 2015 CSLAP Sampling Results

Evaluation of 2015 Annual Results Relative to 1990-2014

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 – Galway Lake" section in Appendix C.

Evaluation of Eutrophication Indicators

Phosphorus readings were higher than normal in 2015, but algae (chlorophyll *a*) and water clarity readings were close to normal. Several of the TP samples had to be rejected due to likely bottle contamination (which may also have affected some of the "accepted samples" and samples from several other lakes from the same bottle lot), suggesting that the TP results were not representative of conditions in the lake. Algae levels have been lower in recent years, but neither phosphorus or water clarity readings have varied in the same timeframe. This suggests that overall trophic conditions were probably close to normal in 2015, and except for a possible reduction in algae levels, no long-term trends have been apparent.

Lake productivity appears to be fairly stable over the course of a typical CSLAP sampling season, although algae levels increase slightly from June through August. However, in 2014 and 2015, lake productivity increased from June through September, as manifested in increasing algae levels and decreasing water clarity.

The lake can be characterized as *mesotrophic*, or moderately productive, based on water clarity, chlorophyll *a*, and total phosphorus readings (all typical of *mesotrophic* lakes). The trophic state indices (TSI) evaluation suggests that each of these trophic indicators is "internally consistent"—each of these indicators is in the expected range given the readings of the other indicators.

Overall trophic conditions are summarized on the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Potable Water Indicators

Algae levels do not appear to be 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, but the lake is not used for drinking water. Hypolimnetic phosphorus and ammonia readings in Galway Lake are similar to those measured at the lake surface, although both were higher than usual in the last two years. No potable water impacts are apparent at deepwater intakes for any "unofficial" potable water use. Potable water conditions, at least as measurable through CSLAP, are summarized in the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Limnological Indicators

Conductivity readings were higher than usual in 2015, and these readings have generally increased in the last twenty years. NOx readings were lower than normal in the last two years, while ammonia readings were higher, but neither NOx nor ammonia has exhibited any long-term trends. It is likely that the small changes in each of the other limnological indicators have been within the normal range of variability in the lake.

Chloride levels in the 2015 samples, conducted for the first time through CSLAP and cited in Appendix A, ranged from 24 to 28 mg/l. These values are within the range of "moderate" road salt" runoff levels cited by the New Hampshire DES, although they are well below the state potable water quality standard of 250 mg/l and within the range of values found in a number of NYS lakes.

Overall limnological conditions are summarized in the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Biological Condition

The recent fluoroprobe screening samples analyzed by SUNY ESF showed low total algae and low blue green algae levels, with a mix of algae species. In 2013, a shoreline bloom had low blue green algae levels, and also exhibited a mix of algae. No shoreline blooms were reported in 2014 or 2015, although overall algae levels increased slightly during the summer of 2014 (with low blue green algae levels in nearly all samples). All open water total and blue green algae levels were fairly low in 2015.

Only limited macrophyte surveys have been conducted through CSLAP, although at least two exotic plant species (*Myriophyllum spicatum,* Eurasian watermilfoil, and *Potamogeton crispus,* curly-leafed pondweed) have been found in the lake. The NYSDEC biomonitoring study of the lake in 2010 identified at least 10 aquatic plant species, although only 10 shoreline locations were evaluated. A modified floristic quality index (FQI) based on these survey results suggests that the quality of the aquatic plant community is probably "fair."

The composition of the fish community includes a mix of coolwater (at least two species), and warmwater (at least three species) fish species—it is assumed that this represents an incomplete inventory.

Zooplankton surveys have not been conducted through CSLAP at Galway Lake, and the macroinvertebrates collected as part of the 2010 biomonitoring study will be identified as part of a larger on-going study by SUNY ESF.

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

Evaluation of Lake Perception

Aquatic plant coverage was greater than normal in 2014 and 2015, and plant coverage has increased slightly over the last 15 years. Water quality assessments were more favorable than normal in 2014 and 2015, and have improved slightly over the last decade. Recreational assessments were slightly less favorable than usual in 2015, though still mostly favorable, and these assessments have degraded slightly over the last decade. Recreational conditions are increasingly been linked to "excessive weed growth". None of these assessments have exhibited any clear seasonal changes, and no seasonal changes were apparent in 2015. Overall lake perception is summarized on the Lake Scorecard and Lake Condition Summary Table.

Evaluation of Local Climate Change

Water temperatures may have increased slightly since the early 1990s, and they were slightly higher than usual in 2015. It is not known if this is an indication of local climate change or if these changes cannot be well evaluated through CSLAP.

Evaluation of Algal Toxins

Algal toxin levels can vary significantly within blooms and from shoreline to lake, and the absence of toxins in a sample does not indicate safe swimming conditions. Fluoroprobe readings in the open water were below the thresholds for harmful algal blooms (HABs). Algae (but not blue green algae) levels have been highly elevated in the few reported shoreline blooms; no shoreline blooms have been reported in the last two years. An analysis of algae samples indicated low to undetectable microcystin levels in the open water (center of lake) but measurable (though still low) levels in shoreline blooms. However, these blooms are uncommon, and all readings have been below the levels needed support safe swimming. Lake residents and their pets are advised to avoid exposure to shoreline blooms or discolored water.

Lake Condition Summary

Category	Indicator	Min	Annual Avg	Max	2015 Avg	Classification	2015 Change?	Long-term Change?
Eutrophication Indicators	Water Clarity	1.75	3.39	5.45	3.41	Mesotrophic	Within Normal Range	No Change
	Chlorophyll *a*	0.10	4.02	23.20	3.33	Mesotrophic	Within Normal Range	Decreasing Slightly
	Total Phosphorus	0.005	0.014	0.030	0.018	Mesotrophic	Higher than Normal	No Change
Potable Water Indicators	Hypolimnetic Ammonia	0.00	0.02	0.15	0.06	Close to Surface NH4 Readings	Higher than Normal	Not known
	Hypolimnetic Arsenic							Not known
	Hypolimnetic Iron							Not known
	Hypolimnetic Manganese							Not known
Limnological Indicators	Hypolimnetic Phosphorus	0.007	0.021	0.269	0.068	Close to Surface TP Readings	Higher than Normal	Not known
	Nitrate + Nitrite	0.00	0.01	0.20	0.01	Low NOx	Lower Than Normal	No Change
	Ammonia	0.00	0.02	0.13	0.03	Low Ammonia	Higher than Normal	No Change
	Total Nitrogen	0.01	0.34	0.83	0.26	Low Total Nitrogen	Within Normal Range	No Change
	pH	5.80	8.05	8.98	8.07	Alkaline	Within Normal Range	No Change
	Specific Conductance	93	177	226	209	Intermediate Hardness	Higher than Normal	No Change
	True Color	3	14	38	11	Intermediate Color	Within Normal Range	No Change
	Calcium	6.6	16.0	23.0	14.5	May be Susceptible to Zebra Mussels	Within Normal Range	No Change
Lake Perception	WQ Assessment	1	1.5	4	1.0	Crystal Clear	More Favorable Than Normal	Highly Improving
	Aquatic Plant Coverage	1	2.2	3	2.9	Subsurface Plant Growth	Less Favorable than Normal	Highly Degrading
	Recreational Assessment	1	1.6	3	2.0	Excellent	Less Favorable than Normal	No Change
Biological Condition	Phytoplankton					Open water-low blue green algae biomass; Shoreline-high blue green algae in bloom	Not known	Not known
	Macrophytes					Fair quality of the aquatic plant community	Not known	Not known
	Zooplankton					Not measured through CSLAP	Not known	Not known
	Macroinvertebrates					2010 data not yet available	Not known	Not known
	Fish					Coolwater fishery	Not known	Not known
	Invasive Species					Eurasian watermilfoil, curly-leafed pondweed	Not known	Not known
Local Climate Change	Air Temperature	9	22.5	36	25.3		Higher Than Normal	Increasing Slightly
	Water Temperature	12	22.8	30	24.1		Higher Than Normal	No Change
Harmful Algal Blooms	Open Water Phycocyanin	1	10	54	13	No readings indicate high risk of BGA	Not known	Not known
	Open Water FP Chl.a	1	2	7	2	No readings indicate high algae levels	Not known	Not known
	Open Water FP BG Chl.a	0	0	1	0	No readings indicate high BGA levels	Not known	Not known
	Open Water Microcystis	<DL	<DL	1.2	<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	1507	2306	3105		All readings indicate high risk of BGA	Not known	Not known
	Shoreline FP Chl.a	48	187	327		All readings indicate high algae levels	Not known	Not known
	Shoreline FP BG Chl.a	2	9	16		Few readings indicate high BGA levels	Not known	Not known
	Shoreline Microcystis	<DL	2.2	7.2		At times measurable shoreline bloom MC-LR	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 2002 NYSDEC Priority Waterbody Listings (PWL) for the Mohawk River drainage basin indicate that Galway Lake has "no use impairments." The PWL listing for Galway Lake is listed in Appendix B.

Potable Water (Drinking Water)

The CSLAP dataset at Galway 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. These data indicate some potable water impacts for "unofficial" use could occur near shoreline algae blooms.

Public Bathing

The CSLAP dataset at Galway Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggests that public bathing, if conducted at a public swimming beach, might be supported, despite some shoreline blooms. 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 Galway Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that recreation should be fully supported, although this use at times may be *threatened* by elevated nutrients and their impact on weeds and shoreline algae blooms.

Aquatic Life

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

Aesthetics and Habitat

The CSLAP dataset on Galway Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that aesthetics should be *good*, although this condition may be *threatened* by shoreline blooms. Habitat should be *fair* due to invasive plants in some locations or at some times.

Fish Consumption

There are no fish consumption advisories posted for Galway Lake.

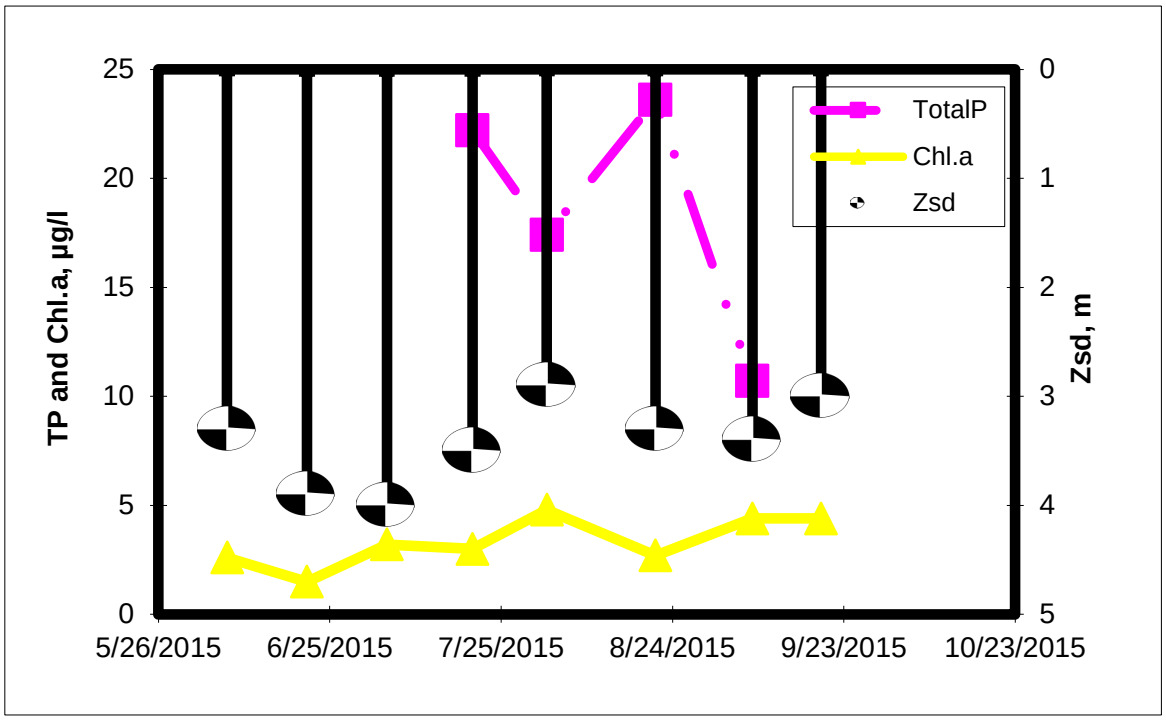
Additional Comments and Recommendations

The biomonitoring data collected from Galway Lake in 2010 may help to evaluate the impact of drawdown on the biological communities in Galway Lake. More detailed aquatic plant surveys may also help to evaluate the effect of deep drawdowns on Eurasian watermilfoil. Lake residents are advised to report any shoreline algae blooms and to avoid exposure to these blooms.

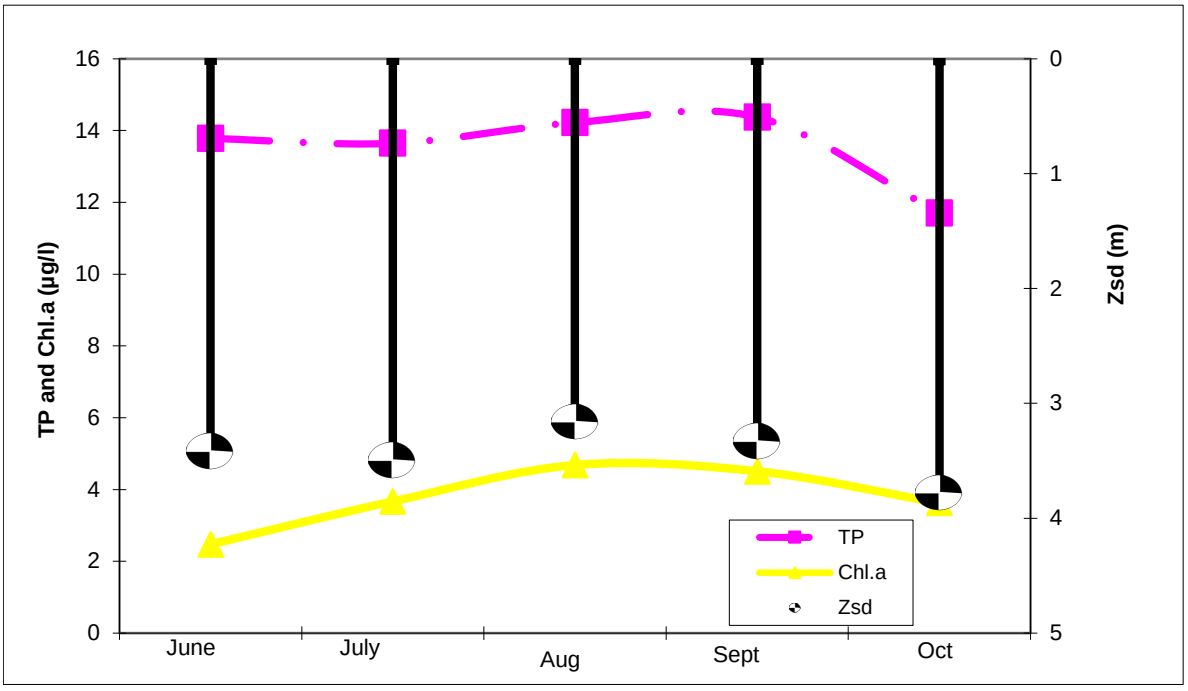
Aquatic Plant IDs-2015

None submitted for identification.

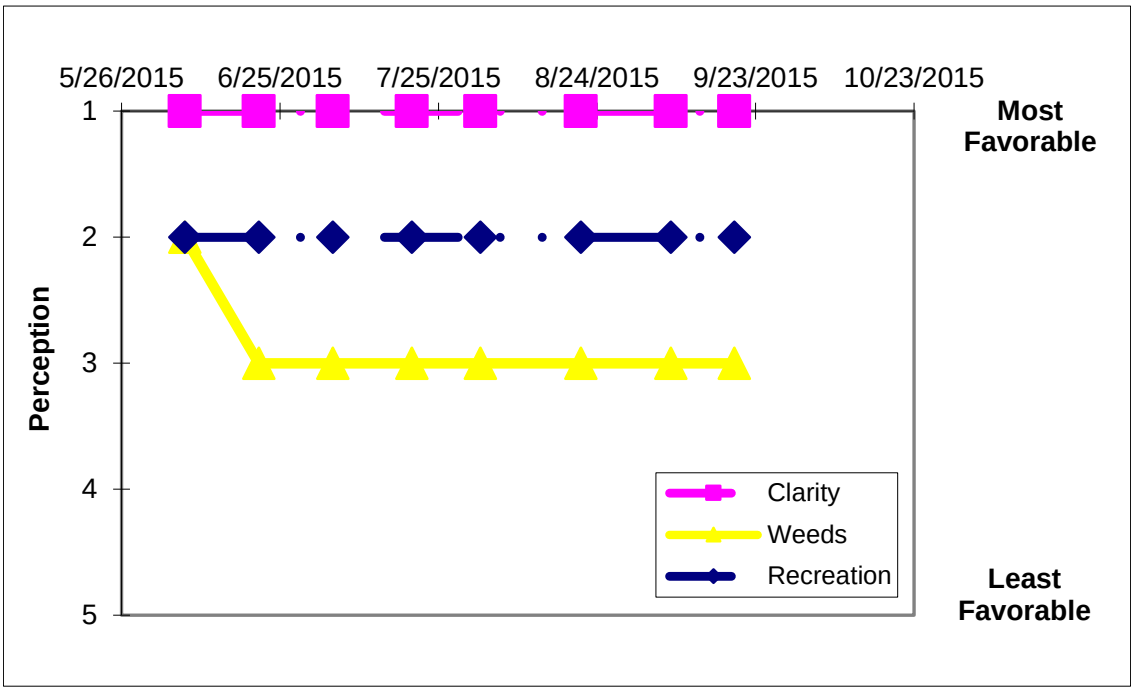
Time Series: Trophic Indicators, 2015



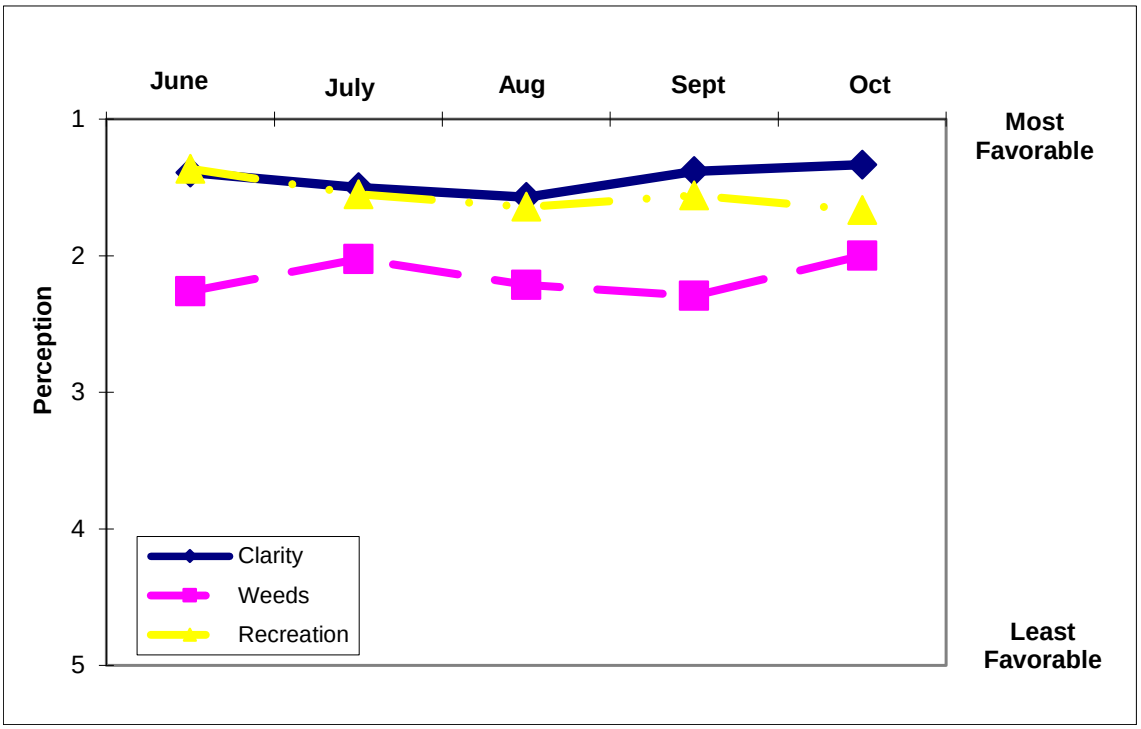
Time Series: Trophic Indicators, Typical Year (1990-2015)



Time Series: Lake Perception Indicators, 2015



Time Series: Lake Perception Indicators, Typical Year (1990-2015)



Appendix A- CSLAP Water Quality Sampling Results for Galway Lake

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
68	Galway L	7/1/1990	4.8	1.80	1.5	0.025	0.01				18	7.89	178		11.70	
68	Galway L	7/14/1990	4.5	1.80	1.5	0.017	0.01				18	8.28	168		8.14	
68	Galway L	7/29/1990	4.8	2.70	1.5	0.011	0.01				18	8.34	176		3.13	
68	Galway L	8/12/1990	5.4	2.95	1.5	0.017	0.01				15	8.29	167		9.65	
68	Galway L	8/26/1990	4.9	3.45	1.5	0.014	0.01				16	8.27	174		4.16	
68	Galway L	9/9/1990	5.2	2.30	1.5	0.013	0.01				19	8.29	169		6.52	
68	Galway L	9/23/1990	5.3	3.55	1.5	0.011	0.01				17	8.28	177		5.41	
68	Galway L	10/8/1990	5.5	4.25	1.5	0.012	0.01				18	8.26	186		4.35	
68	Galway L	6/30/1991	5.0	2.90	1.5	0.020	0.01				16	7.87	176		4.45	
68	Galway L	7/15/1991	6.0	2.90	1.5	0.011	0.01				16	8.20	171		3.66	
68	Galway L	8/4/1991	6.1	2.35	1.5	0.014	0.01				11	7.04	196		6.04	
68	Galway L	8/18/1991	5.8	3.60	1.5	0.008					8	8.25	168		4.71	
68	Galway L	9/1/1991	6.0	3.30	1.5	0.014					6	7.16	201			
68	Galway L	9/15/1991	5.8	1.75	1.5	0.013	0.01				8	8.37	133		8.09	
68	Galway L	6/15/1992	5.6	2.40	1.5	0.012	0.01				16	8.18	187		5.49	
68	Galway L	6/28/1992	5.8	2.30	1.5	0.016					20	8.18	191		3.93	
68	Galway L	7/19/1992	6.0	1.95	1.5	0.011	0.01				16	8.18	188		6.88	
68	Galway L	8/16/1992	6.0	1.95	1.5	0.017					15	7.85	192		11.30	
68	Galway L	8/30/1992	5.8	1.90	1.5	0.018	0.01				13	8.21	188		10.80	
68	Galway L	9/13/1992	5.8	2.20	1.5	0.018					17	8.19	190		12.10	
68	Galway L	9/25/1992	5.8	2.40	1.5	0.011	0.01				16	8.23	175		6.54	
68	Galway L	10/9/1992	5.8	2.90	1.5	0.010					16	8.06	188		4.51	
68	Galway L	7/5/1993	6.8	2.75	1.5	0.013	0.01				13	8.17	154		10.60	
68	Galway L	7/18/1993	6.3	2.10	1.5	0.014					3	8.01	159		8.37	
68	Galway L	8/1/1993	6.3	2.05	1.5	0.014	0.01				3	8.15	160		6.02	
68	Galway L	8/15/1993	6.0	2.25	1.5	0.014					7	8.14	162		11.30	
68	Galway L	8/29/1993	6.0	3.63	1.5	0.010	0.01				8	7.92	165		2.80	
68	Galway L	9/12/1993	6.0	3.50	1.5	0.014					10	8.29	166		2.85	
68	Galway L	10/3/1993	6.0	3.66	1.5	0.011	0.03				7	8.12	168		5.48	
68	Galway L	7/14/1994	6.0	3.00		0.008	0.01				8	7.72	150		1.29	
68	Galway L	7/18/1994	5.8	2.23	1.5	0.015	0.01				7	8.50	151		8.12	
68	Galway L	7/31/1994	4.8	3.25	1.5	0.014	0.01				7	8.14	154		3.89	
68	Galway L	8/20/1994	5.0	4.50		0.006					17	8.15	159		23.20	
68	Galway L	9/15/1994	5.0	3.63	1.5	0.014	0.01				12	8.06	162		3.19	
68	Galway L	9/24/1994	5.8	4.00	1.5	0.009					10	8.01	165		3.27	
68	Galway L	7/18/1995	5.7	4.75	1.5	0.008					10				1.02	
68	Galway L	8/1/1995	5.5	3.70	1.5	0.008	0.01				10	8.00	178		3.03	
68	Galway L	8/8/1995	5.7	3.00	1.5	0.012					10	8.02	180		5.44	
68	Galway L	8/22/1995	5.1	4.25	1.5	0.005	0.01				5	8.36	180		3.80	
68	Galway L	9/5/1995	5.8	5.38		0.010					10	8.14	180		2.25	
68	Galway L	9/18/1995	6.0	4.88	1.5	0.009					5	8.15	183		2.37	
68	Galway L	10/2/1995	5.8	5.45		0.008					10	8.08	184		3.27	
68	Galway L	7/16/1996	6.0	3.65	1.5	0.011					15	7.98	175		2.40	
68	Galway L	8/5/1996	6.0	4.15	1.5	0.010					15	8.20	182		3.80	
68	Galway L	8/26/1996	6.1	4.08	1.5	0.009					15	8.67	177		13.40	
68	Galway L	9/23/1996	6.0	2.15	1.5	0.015					15	7.97	179		11.20	
68	Galway L	7/14/1997	6.0	3.63	1.5	0.026					15	7.96	170		2.37	
68	Galway L	7/30/1997	6.0	2.90	1.5	0.018					15	8.04	172		3.01	
68	Galway L	8/11/1997	6.0	4.10	1.5						10	8.49	169		3.81	
68	Galway L	8/26/1997	6.0	3.65	1.5						8	8.11	172		2.08	
68	Galway L	6/14/2000	6.0	3.00	1.5	0.014	0.01				18	7.65	185		4.81	
68	Galway L	6/27/2000	7.0	4.25		0.009	0.01				15	8.29	177		2.26	
68	Galway L	7/11/2000	6.3	3.75	1.5	0.010	0.01				16	7.35	180		3.00	
68	Galway L	7/25/2000	6.0	3.63	1.5	0.010	0.01				13	8.22	179		6.75	
68	Galway L	8/8/2000	6.3	3.50	1.5	0.012	0.01				12	8.01	180		3.87	
68	Galway L	8/22/2000	6.0	3.00	1.5	0.012	0.01				13	7.85	180		3.64	
68	Galway L	9/5/2000				0.013	0.01				16	8.04	183		6.40	
68	Galway L	9/19/2000	6.0	2.78	1.5	0.018	0.01				11	7.92	185		10.40	
68	Galway L	7/17/2001	6.3	3.13	1.5	0.012	0.01				12	7.80	185		3.02	
68	Galway L	7/31/2001	6.0	5.15		0.009	0.01				8	8.21	184			
68	Galway L	8/15/2001	6.0	3.78	1.5	0.010	0.01				16	8.52	185			
68	Galway L	8/28/2001	6.1	2.88	1.5	0.011	0.01				9	8.00	183		2.47	
68	Galway L	06/25/02	6.0	2.53	3.0	0.010	0.01	0.07	0.36	35.84	12	8.21	188	9.27	1.06	

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
68	Galway L	07/09/02	6.2	4.15	1.5		0.00	0.05	0.41		10	8.09	187		1.25	
68	Galway L	07/23/02	6.1	4.70	1.5	0.008	0.00	0.05	0.39	46.29	12	8.72	187			
68	Galway L	08/06/02	6.0		1.5		0.12	0.05	0.55		10	8.61	186		3.64	
68	Galway L	08/20/02	6.0	3.88	1.5	0.010	0.00	0.04	0.53	52.86	11	8.94	184	6.63	2.60	
68	Galway L	09/03/02	7.0	2.95	1.5	0.013	0.02	0.01	0.43	32.23	12	8.32	182		1.55	
68	Galway L	09/24/02	6.2	5.15	1.5	0.014	0.00	0.01	0.32	22.69	9	7.99	184		4.13	
68	Galway L	10/01/02	6.2	3.90	1.5	0.011	0.00	0.02	0.39	34.58	12	8.23	185		0.84	
68	Galway L	10/18/02	6.3	4.53	1.5	0.012	0.02	0.08	0.55	44.45	32	7.62	190		4.40	
68	Galway L	6/10/2003	6.1	3.30	1.5	0.012	0.00	0.02	0.46	38.72	16	7.81	184	18.0	1.392	
68	Galway L	6/30/2003	6.0	4.75	1.5	0.025	0.04	0.05	0.53	21.47	13	8.31	189.8		5.306	
68	Galway L	7/15/2003	6.5	4.00	1.5	0.008	0.00	0.02	0.35	46.60	9	8.16	186.8		2.507	
68	Galway L	7/29/2003	6.1	3.13		0.017	0.00	0.00	0.08	4.61	24	8.12	187.5		2.522	
68	Galway L	8/12/2003	6.0	3.80	1.5	0.016	0.00	0.01	0.33	21.14	21	8.98	175.5	16.0	2.103	
68	Galway L	8/26/2003	6.0	3.13	1.5	0.011	0.00	0.01	0.19	16.79	9	8.30	183.5		2.306	
68	Galway L	9/9/2003	6.1	3.38	1.5	0.021	0.02	0.00			11	8.31	183.6			
68	Galway L	9/30/2003	6.1	3.75	1.5	0.017	0.00	0.01	0.39	22.88	7	7.89	168.8		1.212	
68	Galway L	6/14/2004	6.0	3.90	1.5	0.009	0.01	0.01	0.01	0.55	23	6.8	178		0.4	
68	Galway L	6/29/2004	6.0	3.60	1.5	0.018	0.01	0.02	0.22	12.54	16	6.49	185		2.7	
68	Galway L	7/20/2004	6.5	3.60	1.5	0.013	0.05	0.02	0.32	24.19	17	6.64	165		1.8	
68	Galway L	8/2/2004	6.3	3.40	1.5	0.016	0.01	0.01			23.2	5.8	152	12.9	4.0	
68	Galway L	8/17/2004	6.3	4.00	1.5	0.011	0.01	0.01	0.34	29.85	5	8.32	172		4.9	
68	Galway L	9/14/2004	6.0	3.30	1.5	0.030	0.02	0.01	0.79	26.48	23	7.69	151		1.2	
68	Galway L	9/21/2004	6.2	3.30	1.5	0.010	0.01	0.01	0.38	38.84	11	7.11	165		5.1	
68	Galway L	9/27/2004	6.1	4.20	1.5	0.010					4	7.9	156		1.2	
68	Galway L	6/21/2005	5.8	4.25	1.5	0.012	0.01	0.01	0.30	24.77	21	8.20	189	17.3	1.6	
68	Galway L	7/12/2005	6.0	4.38	1.5	0.018	0.01	0.01	0.23	12.59	14	7.30	189			
68	Galway L	7/26/2005	6.0	4.00	1.5	0.013	0.04	0.02	0.09	6.89	22	6.83	122		0.8	
68	Galway L	8/9/2005	5.7	4.25	1.5		0.01	0.01	0.11	2.41	8	8.55	158		1.3	
68	Galway L	8/23/2005	5.8	2.80	1.5	0.012	0.01	0.01	0.07	6.20	15	8.48	135	8.5	2.2	
68	Galway L	9/6/2005	6.3	3.33	1.5	0.011	0.01	0.01	0.11	10.46	3	8.46	171		2.4	
68	Galway L	6/12/2006		2.00	1.0											
68	Galway L	6/13/2006	6.0	2.50	1.5											
68	Galway L	6/27/2006	6.5	2.50	1.5	0.016	0.03	0.03			27	8.1	167		3.01	
68	Galway L	7/11/2006	7.3	3.30	1.5		0.01	0.01			13	8.47	204		1.86	
68	Galway L	7/25/2006	6.3	3.00		0.014	0.03	0.04			20	8.62	181		4.02	
68	Galway L	8/8/2006	6.0	3.25	1.5	0.017	0.01	0.02			8	8.85	183	18.3	0.92	
68	Galway L	8/22/2006	6.3	2.25	1.5	0.020	0.02	0.01			15	7.93	166		4.82	
68	Galway L	9/5/2006	6.0	1.75	1.5	0.020					11	8.26	184		9.29	
68	Galway L	9/19/2006		2.42		0.021					14	8.24	177		5.81	
68	Galway L	7/8/2007	6.0	3.38	1.5											
68	Galway L	7/10/2007	6.0	3.38	1.5	0.017	0.01	0.01	0.52	66.08	17	8.58	150	16.4	5.47	
68	Galway L	7/24/2007	6.0	3.00	1.5	0.015	0.01	0.09	0.57	83.25	13	8.58	177		8.17	
68	Galway L	8/7/2007				0.014	0.01	0.01	0.47	74.24	22	8.55	128		3.11	
68	Galway L	8/21/2007	6.0	2.63		0.029	0.00	0.02	0.55	41.48	7	8.58	153		3.10	
68	Galway L	9/4/2007	6.2	3.46	1.5	0.014	0.00	0.11	0.44	71.54	13	8.97	158		4.47	
68	Galway L	9/18/2007	6.5	2.75		0.017	0.01	0.01	0.82	109.03	12	8.15	165		4.44	
68	Galway L	10/1/2007	6.3	2.50	1.5	0.014	0.02	0.01	0.51	80.17	14	7.62	149		3.45	
68	Galway L	5/30/2008				0.020										
68	Galway L	6/2/2008	6.3	2.63	1.5	0.016	0.01	0.03	0.29	39.87	11	8.18	174	16.3	0.99	
68	Galway L	6/16/2008	6.0	3.75	1.5	0.014	0.03	0.02	0.33	52.30	12	8.39	211		3.26	
68	Galway L	7/15/2008	6.1	5.10	1.5	0.011	0.02	0.02	0.22	43.95	14	7.91	93		0.10	
68	Galway L	7/21/2008				0.029										
68	Galway L	7/29/2008	6.0	4.25	1.5	0.009	0.02	0.02	0.18	41.43	14	8.24	131		2.27	
68	Galway L	8/12/2008	6.0	2.00	1.5	0.015	0.01	0.03	0.36	51.56	28	7.84	162	13.6	4.21	
68	Galway L	8/25/2008	6.3	4.70	1.5	0.012	0.01	0.00	0.13	23.49	17	8.76	170		1.91	
68	Galway L	9/8/2008	6.3	3.15	1.5	0.017	0.00	0.00	0.22	28.19	18	8.33	151		2.59	
68	Galway L	9/22/2008	6.3	4.00	1.5	0.015	0.01	0.02	0.21	30.74	14	8.46	153		3.68	
68	Galway L	06/08/2009	6.3	4.75	1.5	0.015	0.02	0.04	0.33	48.54	19	6.69	174	20.5	1.49	
68	Galway L	06/22/2009	6.3	3.00	1.5	0.013	0.00	0.01	0.25	42.04	20	7.78	165		1.89	
68	Galway L	07/06/2009	6.0	3.43	1.5	0.012	0.00	0.01	0.13	22.89	24	7.67	117		1.77	
68	Galway L	07/20/2009	5.6	5.25	1.5	0.010	0.02	0.03	0.17	37.53	21	7.72	152		0.33	
68	Galway L	08/03/2009	6.0	4.00	1.5	0.010	0.01	0.03	0.36	77.65	23	7.29	137	16.9	2.19	
68	Galway L	08/17/2009	6.1	4.31	1.5	0.012	0.02	0.02	0.24	45.32	36	7.98	133		0.20	
68	Galway L	08/31/2009	6.0	2.55	1.5	0.020	0.01	0.01	0.24	26.44	38	8.48	150		2.00	
68	Galway L	09/14/2009	6.0	3.46	1.5	0.012	0.20	0.13	0.29	56.24	22	8.17	149		3.00	
68	Galway L	6/8/2010	6.3	3.75		0.011	0.03	0.03			14	7.58	183	23.0	0.10	

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
68	Galway L	6/22/2010	6.5	5.42		0.012	0.06	0.04	0.23	42.72	4	8.24	214		1.40	
68	Galway L	7/6/2010		3.63	1.5	0.016	0.02	0.02	0.36	51.05	14	8.26	201		5.40	
68	Galway L	7/20/2010	6.3	3.25	1.5	0.017	0.02	0.02	0.33	41.72	18	8.07	187		1.90	
68	Galway L	8/3/2010	6.3	4.31	1.5	0.012	0.03	0.03	0.25	45.62	16	7.75	194	20.6	2.60	
68	Galway L	8/17/2010	5.8	2.82	1.5	0.016	0.01	0.02	0.39	54.44	24		199		4.30	
68	Galway L	8/31/2010	6.0	4.00	1.5	0.022	0.01	0.02	0.20	19.74	4	8.00	204		1.90	
68	Galway L	9/7/2010	6.5	3.38	1.5	0.017	0.02	0.02	0.23	30.33	8	7.79	198		3.40	
68	Galway L	7/8/2012	5.5	3.75	1.5	0.015	0.01	0.02	0.24	36.07	16	8.01	194	20.9	1.50	
68	Galway L	7/22/2012	5.5	3.35	1.5	0.012	0.01	0.02	0.37	68.20	15	8.48	191			
68	Galway L	8/5/2012	5.5	2.75	1.5	0.012	0.02	0.03	0.24	45.38	15	8.33	179		3.50	
68	Galway L	8/19/2012	5.5	2.35	1.5	0.011	0.02	0.02	0.28	55.50	10	8.19	199		5.20	
68	Galway L	9/2/2012	5.5	3.35	1.5	0.010	0.02	0.03	0.24	53.17	10	8.20	190	18.3	3.40	
68	Galway L	9/15/2012	5.5	2.75	1.5	0.017	0.01	0.03	0.29	36.88	7	7.75	182		4.10	
68	Galway L	10/3/2012	5.5	4.05	1.5	0.010	0.01	0.02	0.25	54.25	8	7.26	196		1.00	
68	Galway L	7/7/2013	5.5	4.35	1.5	0.013	0.01	0.05	0.23	37.79	15	8.08	185		2.50	
68	Galway L	7/21/2013	5.5	3.70	1.5	0.010			0.28	63.86	19	8.45	183		1.10	
68	Galway L	7/21/2013			bloom											
68	Galway L	7/21/2013			bloom											
68	Galway L	8/4/2013		2.05	1.5	0.009	0.01	0.02	0.33	81.33	18	7.99	176		4.10	
68	Galway L	8/18/2013	5.5	2.30	1.5	0.015			0.42	60.34	22	8.16	180		4.70	
68	Galway L	9/2/2013	5.5	3.50	1.5	0.023	0.01	0.01	0.37	34.94	18	8.40	191		2.60	
68	Galway L	9/15/2013	5.5	3.60	1.5	0.010			0.38	82.99	15	7.99	198		2.70	
68	Galway L	9/28/2013	5.2	4.75	1.5	0.013	0.01	0.02	0.41	67.61	12	7.78	196		0.40	
68	Galway L	6/29/2014	5.5	4.05	1.5	0.009	0.01	0.03	0.36	91.88	11	8.17	192	18.3	2.30	
68	Galway L	7/13/2014	5.5	3.35	1.5	0.007			0.29	85.89	14	7.85	192		2.80	
68	Galway L	7/27/2014	5.5	4.15	1.5	0.009	0.01	0.03	0.36	87.03	13	8.00	189		1.50	
68	Galway L	8/10/2014	5.5	3.15	1.5	0.009			0.28	70.30	12	8.05	194		3.40	
68	Galway L	8/24/2014	5.5	2.45	1.5	0.011	0.01	0.01	0.35	67.75	13	7.50	190	15.9	6.80	
68	Galway L	9/7/2014	5.5	4.05	1.5	0.010			0.27	61.06	14	8.22	189		4.40	
68	Galway L	9/20/2014	5.5	2.90	1.5	0.011	0.01	0.01	0.27	52.11	17	8.08	185		6.30	
68	Galway L	10/11/2014	5.5	3.05	1.5	0.014			0.27	41.94	12	8.24	223		4.40	
68	Galway L	6/7/2015	5.5	3.30	1.5		0.01	0.03	0.16		9	7.42	226	12.9	2.60	
68	Galway L	6/21/2015	5.5	3.90	1.5				0.17		7	7.63	223		1.50	
68	Galway L	7/5/2015	5.5	4.00	1.5		0.01	0.04	0.25		13	7.41	226		3.20	24.0
68	Galway L	7/20/2015	5.0	3.50	1.5	0.022			0.27	12.30	15	8.44	198		3.00	
68	Galway L	8/2/2015	5.5	2.90	1.5	0.017	0.01	0.04	0.32	18.22	13	8.48	199	16.0	4.80	
68	Galway L	8/21/2015	5.5	3.30	1.5	0.024			0.39	16.61	11	8.49	207		2.70	
68	Galway L	9/7/2015	5.5	3.40	1.5	0.011	0.01	0.03	0.23	21.50	10	8.59	194		4.40	28.2
68	Galway L	9/19/2015	5.5	3.00	1.5				0.32		7	8.09	200		4.40	
68	Galway L	6/10/2003			5.0	0.008	0.00	0.01	0.41	50.74						
68	Galway L	7/15/2003			5.5	0.020	0.00	0.01	0.24	11.95						
68	Galway L	7/29/2003				0.023	0.00	0.00	0.06	2.69						
68	Galway L	8/26/2003			5.0	0.019	0.00	0.02	0.27	14.03						
68	Galway L	9/9/2003			5.1	0.018	0.01	0.01								
68	Galway L	9/30/2003			5.1	0.015	0.00	0.01	0.40	26.57						
68	Galway L	6/14/2004	6.0		5.8	0.015	0.01	0.01	0.17	11.63						
68	Galway L	6/29/2004	6.0		5.5	0.009	0.01	0.01	0.01	0.57						
68	Galway L	7/20/2004	6.5		6.0	0.016	0.01	0.05	0.41	26.05						
68	Galway L	8/2/2004	6.3		5.5	0.017	0.02	0.01	0.46	26.33						
68	Galway L	8/17/2004	6.3		5.5	0.014	0.01	0.01	0.34	24.57						
68	Galway L	9/14/2004	6.0		5.5	0.015	0.01	0.01	0.01	0.33						
68	Galway L	9/21/2004	6.2		5.5	0.016	0.01	0.01	0.31	19.72						
68	Galway L	9/27/2004	6.1		5.5	0.011	0.03	0.01	0.30	28.68						
68	Galway L	6/21/2005			5.3	0.011										
68	Galway L	7/12/2005			5.5	0.009										
68	Galway L	7/26/2005			5.5	0.009										
68	Galway L	8/9/2005			5.3	0.012										
68	Galway L	8/23/2005			5.3	0.013										
68	Galway L	9/6/2005			5.8	0.011										
68	Galway L	6/27/2006	6.5		6.0	0.015										
68	Galway L	7/11/2006	7.3			0.047										
68	Galway L	7/25/2006	6.3			0.020										
68	Galway L	8/8/2006	6.0		5.5	0.019										
68	Galway L	8/22/2006	6.3		5.8	0.014										
68	Galway L	9/5/2006	6.0		5.5	0.015										
68	Galway L	9/19/2006			6.1	0.014										

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
68	Galway L	7/10/2007	6.0		5.5	0.023										
68	Galway L	7/24/2007	6.0		5.5	0.021										
68	Galway L	8/7/2007				0.026										
68	Galway L	8/21/2007	6.0			0.018										
68	Galway L	9/4/2007	6.2		5.7	0.014										
68	Galway L	9/18/2007	6.5			0.018										
68	Galway L	10/1/2007	6.3		5.8	0.019										
68	Galway L	5/30/2008				0.022										
68	Galway L	6/2/2008			5.8	0.014										
68	Galway L	6/16/2008			5.5	0.016										
68	Galway L	7/15/2008			5.6	0.017										
68	Galway L	7/29/2008			5.5	0.021										
68	Galway L	8/12/2008			5.8	0.013										
68	Galway L	8/25/2008			5.8	0.017										
68	Galway L	9/8/2008			5.8	0.020										
68	Galway L	9/22/2008			20.0	0.013										
68	Galway L	06/08/2009	6.3		6.0	0.020		0.01								
68	Galway L	06/22/2009	6.3		5.8	0.020		0.05								
68	Galway L	07/06/2009	6.0		5.5	0.018		0.02								
68	Galway L	07/20/2009	5.6		5.3	0.015		0.02								
68	Galway L	08/03/2009	6.0		5.5	0.018		0.01								
68	Galway L	08/17/2009	6.1		5.8	0.021		0.01								
68	Galway L	08/31/2009	6.0		5.5	0.013		0.03								
68	Galway L	09/14/2009	6.0		5.5	0.009		0.01								
68	Galway L	6/8/2010	6.3			0.011		0.06								
68	Galway L	7/6/2010			5.5	0.013		0.02								
68	Galway L	8/3/2010	6.3			0.025		0.03								
68	Galway L	8/31/2010	6.0		5.5	0.020		0.02								
68	Galway L	7/8/2012			5.5	0.014		0.03								
68	Galway L	8/5/2012			5.0	0.011		0.02								
68	Galway L	9/2/2012			5.0	0.013		0.04								
68	Galway L	10/3/2012			5.0	0.009		0.02								
68	Galway L	7/7/2013			7.5	0.012		0.07								
68	Galway L	8/4/2013			5.0	0.011		0.02								
68	Galway L	9/2/2013			5.0	0.016		0.01								
68	Galway L	9/28/2013			5.0	0.011		0.02								
68	Galway L	6/29/2014			4.5	0.015		0.03								
68	Galway L	7/13/2014			4.5	0.014										
68	Galway L	7/27/2014			4.5	0.013		0.06								
68	Galway L	8/10/2014			4.5	0.010										
68	Galway L	8/24/2014			5.0	0.012		0.01								
68	Galway L	9/7/2014			4.5	0.017										
68	Galway L	9/20/2014			4.5	0.011		0.02								
68	Galway L	10/11/2014			4.5	0.010										
68	Galway L	6/7/2015			4.5	0.069		0.02								
68	Galway L	6/21/2015			4.5	0.080										
68	Galway L	7/5/2015			4.5	0.269		0.04								
68	Galway L	7/20/2015			4.5	0.021										
68	Galway L	8/2/2015			5.0	0.062		0.03								
68	Galway L	8/21/2015			5.0	0.014										
68	Galway L	9/7/2015			4.5	0.007		0.15								
68	Galway L	9/19/2015			5.0	0.022										
68.11	Galway L-North of Dike/Top	6/16/2003				0.009										
68.21	Galway L-South Bay/Top	6/16/2003				0.008										
68.31	Galway L-Channel/Top	6/16/2003				0.010										
68.12	Galway L-North of Dike/Bottom	6/16/2003				0.011										
68.22	Galway L-South Bay/Bottom	6/16/2003				0.009										
68.32	Galway L-Channel/Bottom	6/16/2003				0.010										
68.41	Galway L-North Bay	6/16/2003				0.013										
68.51	Galway L-West Bay	6/16/2003				0.009										
68.11	Galway L-North of Dike/Top	7/14/2003				0.008										
68.21	Galway L-South Bay/Top	7/14/2003				0.008										

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
68.31	Galway L-Channel/Top	7/14/2003				0.008										
68.12	Galway L-North of Dike/Bottom	7/14/2003				0.018										
68.22	Galway L-South Bay/Bottom	7/14/2003				0.015										
68.32	Galway L-Channel/Bottom	7/14/2003				0.028										
68.21	Galway L-South Bay/Top	8/18/2003				0.007										
68.11	Galway L-North of Dike/Top	8/18/2003				0.007										
68.31	Galway L-Channel/Top	8/18/2003				0.005										
68.22	Galway L-South Bay/Bottom	8/18/2003				0.018										
68.12	Galway L-North of Dike/Bottom	8/18/2003				0.020										
68.32	Galway L-Channel/Bottom	8/18/2003				0.026										
68.121	Galway L-Adabar	8/18/2003				0.007										
68.42	Galway L-North Bay cove	6/16/2003				0.015										
68.52	Galway L-West Bay cove	6/16/2003				0.015										
68.62	Galway L-South Bay cove	6/16/2003				0.010										
68.131	Galway L-Adabar Inlet	8/18/2003				0.007										
68.111	Galway L-outlet	8/18/2003				0.009										
68.71	Galway L-Rohlings	8/18/2003				0.007										
68.81	Galway L-Maywood	8/18/2003				0.007										
68.91	Galway L-Harts	8/18/2003				0.008										
68.101	Galway L-Jeffers	8/18/2003				0.007										
68.31	Channel	6/12/2004				0.009										
68.31	Channel	7/12/2004				0.008										
68.31	Channel	7/26/2004				0.008										
68.31	Channel	8/15/2004				0.009										
68.32	Channel-hypo	6/12/2004				0.016										
68.32	Channel-hypo	7/12/2004				0.020										
68.32	Channel-hypo	7/26/2004				0.012										
68.32	Channel-hypo	8/15/2004				0.021										
68.111	Galway L-outlet	6/12/2004				0.023										
68.111	Galway L-outlet	7/12/2004				0.015										
68.41	North Bay	6/12/2004				0.010										
68.41	North Bay	7/12/2004				0.008										
68.41	North Bay	8/15/2004				0.014										
68.42	North Bay cove	6/12/2004				0.027										
68.42	North Bay cove	7/12/2004				0.027										
68.11	North Dike	6/12/2004				0.008										
68.11	North Dike	7/12/2004				0.006										
68.11	North Dike	7/26/2004				0.007										
68.11	North Dike	8/15/2004				0.010										
68.12	North Dike-hypo	6/12/2004				0.034										
68.12	North Dike-hypo	7/12/2004				0.010										
68.12	North Dike-hypo	7/26/2004				0.009										
68.12	North Dike-hypo	8/15/2004				0.011										
68.62	South Bay cove	6/12/2004				0.016										
68.62	South Bay cove	7/12/2004				0.008										
68.21	South Dike	6/12/2004				0.009										
68.21	South Dike	7/12/2004				0.006	0.01									
68.21	South Dike	7/26/2004				0.011										
68.21	South Dike	8/15/2004				0.014										
68.22	South Dike-hypo	6/12/2004				0.009										
68.22	South Dike-hypo	7/12/2004				0.011										
68.22	South Dike-hypo	7/26/2004				0.008										
68.22	South Dike-hypo	8/15/2004				0.010										
68.51	West Bay	6/12/2004				0.009										
68.51	West Bay	7/12/2004				0.009										
68.51	West Bay	7/26/2004				0.010										
68.51	West Bay	8/15/2004				0.015										
68.31	Channel	6/14/05				0.008										
68.31	Channel	7/12/05				0.009										
68.31	Channel	8/15/05				0.009										
68.31	Channel	9/13/05				0.011										
68.32	Channel-hypo	6/14/05				0.019										

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
68.32	Channel-hypo	7/12/05				0.021										
68.32	Channel-hypo	8/15/05				0.021										
68.32	Channel-hypo	9/13/05				0.010										
68.111	Galway L-outlet	6/14/05				0.010										
68.111	Galway L-outlet	8/17/05				0.026										
68.41	North Bay	6/14/05				0.011										
68.42	North Bay cove	6/14/05				0.023										
68.42	North Bay cove	8/17/05				0.046										
68.62	South Bay cove	6/14/05				0.011										
68.11	North Dike	6/14/05				0.010										
68.11	North Dike	7/12/05				0.009										
68.11	North Dike	8/15/05				0.008										
68.11	North Dike	9/13/05				0.011										
68.12	North Dike-hypo	6/14/05				0.012										
68.12	North Dike-hypo	7/12/05				0.008										
68.12	North Dike-hypo	8/15/05				0.025										
68.12	North Dike-hypo	9/13/05				0.010										
68.21	South Dike	6/14/05				0.010										
68.21	South Dike	7/12/05				0.009										
68.21	South Dike	8/15/05				0.009										
68.21	South Dike	9/13/05				0.011										
68.22	South Dike-hypo	6/14/05				0.027										
68.22	South Dike-hypo	7/12/05				0.014										
68.22	South Dike-hypo	8/15/05				0.011										
68.22	South Dike-hypo	9/13/05				0.012										
68.51	West Bay	6/14/05				0.010										
68.31	Channel	6/12/2006				0.014										
68.31	Channel	7/10/2006				0.010										
68.31	Channel	8/12/2006				0.012										
68.31	Channel	9/16/2006				0.012										
68.32	Channel-hypo	6/12/2006				0.012										
68.32	Channel-hypo	7/10/2006				0.018										
68.32	Channel-hypo	8/12/2006				0.006										
68.32	Channel-hypo	9/16/2006				0.018										
68.11	North Dike	6/12/2006				0.017										
68.11	North Dike	7/10/2006				0.008										
68.11	North Dike	8/12/2006				0.015										
68.11	North Dike	9/16/2006				0.016										
68.12	North Dike-hypo	6/12/2006				0.014										
68.12	North Dike-hypo	7/10/2006				0.012										
68.12	North Dike-hypo	8/12/2006				0.032										
68.12	North Dike-hypo	9/16/2006				0.015										
68.21	South Dike	6/12/2006				0.013										
68.21	South Dike	7/10/2006				0.017										
68.21	South Dike	8/12/2006				0.015										
68.21	South Dike	9/16/2006				0.016										
68.22	South Dike-hypo	6/12/2006				0.013										
68.22	South Dike-hypo	7/10/2006				0.011										
68.22	South Dike-hypo	8/12/2006				0.015										
68.22	South Dike-hypo	9/16/2006				0.013										
68.41	North Bay	6/12/2006				0.014										
68.51	West Bay	6/12/2006				0.013										
68.31	Channel	7/16/2007				0.013	0.01									
68.31	Channel	8/20/2007				0.013	0.03									
68.32	Channel-hypo	7/16/2007				0.025										
68.32	Channel-hypo	8/20/2007				0.016										
68.11	North Dike	7/16/2007				0.012	0.01									
68.11	North Dike	8/20/2007				0.013	0.02									
68.12	North Dike-hypo	7/16/2007				0.022										
68.12	North Dike-hypo	8/20/2007				0.016										
68.21	South Dike	7/16/2007				0.012	0.02									
68.21	South Dike	8/20/2007				0.012	0.02									
68.22	South Dike-hypo	7/16/2007				0.011										
68.22	South Dike-hypo	8/20/2007				0.072										
68.41	North Bay	7/16/2007				0.014	0.02									
68.41	North Bay	8/20/2007				0.014	0.01									

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	NH4	TDN	TN/TP	TColor	pH	Cond25	Ca	Chl.a	Cl
68.51	West Bay	7/16/2007				0.015	0.04									
68.51	West Bay	8/20/2007				0.016	0.02									
68.11	North Dike	5/30/2008				0.010										
68.11	North Dike	7/21/2008				0.008										
68.11	North Dike	9/1/2008				0.012										
68.12	North Dike-hypo	5/30/2008				0.013										
68.12	North Dike-hypo	7/21/2008				0.064										
68.12	North Dike-hypo	9/1/2008				0.017										
68.21	South Dike	5/30/2008				0.008										
68.21	South Dike	7/21/2008				0.012										
68.21	South Dike	9/1/2008				0.012										
68.22	South Dike-hypo	5/30/2008				0.013										
68.22	South Dike-hypo	7/21/2008				0.018										
68.22	South Dike-hypo	9/1/2008				0.012										
68.31	Channel	5/30/2008				0.009										
68.31	Channel	7/21/2008				0.009										
68.31	Channel	9/1/2008				0.010										
68.32	Channel-hypo	5/30/2008				0.011										
68.32	Channel-hypo	7/21/2008				0.009										
68.32	Channel-hypo	9/1/2008				0.009										

LNum	PName	Date	Site	TAir	TH20	QA	QB	QC	QD	QF	QG	AQ-PC	AQ-Chla	MC-LR	Ana-a	Cyclin	FP-Chl	FP-BG	HABform	ShoreHAB
68	Galway L	7/1/1990	epi	23	21															
68	Galway L	7/14/1990	epi	23	19															
68	Galway L	7/29/1990	epi	24	26															
68	Galway L	8/12/1990	epi	24	24															
68	Galway L	8/26/1990	epi	23	23															
68	Galway L	9/9/1990	epi	14	20															
68	Galway L	9/23/1990	epi	13	20															
68	Galway L	10/8/1990	epi	19	17															
68	Galway L	6/30/1991	epi	16	24															
68	Galway L	7/15/1991	epi	21	25															
68	Galway L	8/4/1991	epi	26	24															
68	Galway L	8/18/1991	epi	25	25															
68	Galway L	9/1/1991	epi	17	24															
68	Galway L	9/15/1991	epi	20	20															
68	Galway L	6/15/1992	epi	22	23	1	1	1	0											
68	Galway L	6/28/1992	epi	18	14	1	1	1												
68	Galway L	7/19/1992	epi	23	23	2	1	1	0											
68	Galway L	8/16/1992	epi	18	20															
68	Galway L	8/30/1992	epi	17	22															
68	Galway L	9/13/1992	epi	15	20	2	2	1												
68	Galway L	9/25/1992	epi	18	15															
68	Galway L	10/9/1992	epi	13	14															
68	Galway L	7/5/1993	epi	22	24	3	2	3	13											
68	Galway L	7/18/1993	epi	19	24	3	1	1	1											
68	Galway L	8/1/1993	epi	21	24	2	1	1	0											
68	Galway L	8/15/1993	epi	23	24	2	1	2	6											
68	Galway L	8/29/1993	epi	18	24	2	2	2	6											
68	Galway L	9/12/1993	epi	13	20	1	1	1												
68	Galway L	10/3/1993	epi	9	14	1	1	1	5											
68	Galway L	7/14/1994	epi	25	24	3	2	2	1											
68	Galway L	7/18/1994	epi	26	25	4	2	3	13											
68	Galway L	7/31/1994	epi	27	26	2	2	1												
68	Galway L	8/20/1994	epi	22	24	2	2	1												
68	Galway L	9/15/1994	epi	17	20	1	2	1												
68	Galway L	9/24/1994	epi	18	18	2	2	1	5											
68	Galway L	7/18/1995	epi	24	26	2	2	2												
68	Galway L	8/1/1995	epi	28	26	2	2	2	2											
68	Galway L	8/8/1995	epi	22	25	3	2	2												
68	Galway L	8/22/1995	epi	20	24	2	2	2												
68	Galway L	9/5/1995	epi	23	22	2	3	2												

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
68	Galway L	9/18/1995	epi	15	18	2	2	2												
68	Galway L	10/2/1995	epi	15	17	2	2	2												
68	Galway L	7/16/1996	epi	23	21	2	2	2												
68	Galway L	8/5/1996	epi	27	25	3	2	2												
68	Galway L	8/26/1996	epi	24	24	2	2	1												
68	Galway L	9/23/1996	epi	17	19	2	1	1	5											
68	Galway L	7/14/1997	epi	28	24	1	2	1												
68	Galway L	7/30/1997	epi	19	24	2	1	1												
68	Galway L	8/11/1997	epi	25	25	1	2	1												
68	Galway L	8/26/1997	epi	21	22	2	3	1												
68	Galway L	6/14/2000	epi	23	20	2	3	2												
68	Galway L	6/27/2000	epi	27	24	1	3	1												
68	Galway L	7/11/2000	epi	25	22	1	2	1												
68	Galway L	7/25/2000	epi	24	25	2	2	1												
68	Galway L	8/8/2000	epi	25	24	1	2	1												
68	Galway L	8/22/2000	epi	20	22	2	3	1												
68	Galway L	9/5/2000	epi			2	2	1												
68	Galway L	9/19/2000	epi	19	19	2	2	1												
68	Galway L	7/17/2001	epi	25	22	1	1	1	6											
68	Galway L	7/31/2001	epi	26	26	1	1	1												
68	Galway L	8/15/2001	epi	24	25	2	2	1												
68	Galway L	8/28/2001	epi	25	25	2	2	2												
68	Galway L	06/25/02	epi	25	26	2	3	2												
68	Galway L	07/09/02	epi	28	25	1	1	1												
68	Galway L	07/23/02	epi	29	26	1	1	1												
68	Galway L	08/06/02	epi	22	25	2	2	2												
68	Galway L	08/20/02	epi	21	27	1	2	1												
68	Galway L	09/03/02	epi	22	21	1	2	1												
68	Galway L	09/24/02	epi	17	20	1	2	1												
68	Galway L	10/01/02	epi	22	19	1	2	1												
68	Galway L	10/18/02	epi	10	12	1	2	1	5											
68	Galway L	6/10/2003	epi	25	20	2	3	1	5											
68	Galway L	6/16/2003	epi			3	3	2												
68	Galway L	6/30/2003	epi	21	25	1	3	1												
68	Galway L	7/15/2003	epi	30	25	1	1	1												
68	Galway L	7/29/2003	epi	25	24	1	2	1												
68	Galway L	8/12/2003	epi	29	27	1	2	1												
68	Galway L	8/26/2003	epi	28	24	1	1	1												
68	Galway L	9/9/2003	epi	25	22	1	2	1												
68	Galway L	9/30/2003	epi	12	17	1	2	1												
68	Galway L	6/14/2004	epi	24	22	1	2	1	0											
68	Galway L	6/29/2004	epi	25	21	1	2	1	0											
68	Galway L	7/20/2004	epi	24	24	1	3	1	0											
68	Galway L	8/2/2004	epi	23	25	1	2	1	0											
68	Galway L	8/17/2004	epi	19	22	1	2	1	0											
68	Galway L	9/14/2004	epi	17	20	1	2	1	0											
68	Galway L	9/21/2004	epi	19	18	1	2	1	0											
68	Galway L	9/27/2004	epi	24	20	1	2	1	0											
68	Galway L	6/21/2005	epi	30	23	1	3	1	0											
68	Galway L	7/12/2005	epi	30	27	2	2	2	8											
68	Galway L	7/26/2005	epi	29	26	1	2	1	0											
68	Galway L	8/9/2005	epi	36	24	1	2	1	0											
68	Galway L	8/23/2005	epi	20	24	2	1	2	0											
68	Galway L	9/6/2005	epi	26	25	2	2	1	0											
68	Galway L	6/12/2006	epi	20	17	3	2		15											
68	Galway L	6/13/2006	epi	25	20	2	2	2	0											
68	Galway L	6/27/2006	epi	25	23	1	1	1	0											
68	Galway L	7/11/2006	epi	26	25	1	1	1	0											
68	Galway L	7/25/2006	epi	26	26	2	3	2	0											
68	Galway L	8/8/2006	epi	24	25	1	1	1	0											
68	Galway L	8/22/2006	epi	24	24	2	3	2	0											

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
68	Galway L	9/5/2006	epi	18	20	2	2	2	0											
68	Galway L	9/19/2006	epi	20	20	2	3	2	6											
68	Galway L	7/8/2007	epi	25	25	1	2	1	0											
68	Galway L	7/10/2007	epi	30	25	2	2	2	8											
68	Galway L	7/24/2007	epi	24	26	1	2	1	8											
68	Galway L	8/21/2007	epi	17	21	2	2	2	0											
68	Galway L	9/4/2007	epi	22	22	1	2	1	0											
68	Galway L	9/18/2007	epi	15	19	2	2	2	6											
68	Galway L	10/1/2007	epi	17	20	2	2	2	0											
68	Galway L	10/16/2007	epi	10	15	2	2	2	0											
68	Galway L	6/2/2008	epi	24	20	2	2	1	0											
68	Galway L	6/16/2008	epi	24	25	1	1	1	0											
68	Galway L	7/15/2008	epi	26	25	1	1	1	0											
68	Galway L	7/29/2008	epi	25	25	1	2	1	0											
68	Galway L	8/12/2008	epi	22	23	2	3	2	2											
68	Galway L	8/25/2008	epi	25	24	1	2	2	2											
68	Galway L	9/8/2008	epi	19	23	1	3	2	2											
68	Galway L	9/22/2008	epi	15	20	1	2	2	0											
68	Galway L	06/08/2009	epi	20	19	1	2	1	6											
68	Galway L	06/22/2009	epi	19	20	1	3	2	0											
68	Galway L	07/06/2009	epi	24	22	1	3	2	2											
68	Galway L	07/20/2009	epi	25	23	1	2	1	2											
68	Galway L	08/03/2009	epi	26	26	1	2	1	0											
68	Galway L	08/17/2009	epi	30	30	1	3	2	0											
68	Galway L	08/31/2009	epi	21	25	2	3	3	28					0.73						
68	Galway L	09/14/2009	epi	21	23	1	3	3	2			33.77		0.05						
68	Galway L	10/2/2009	epi											0.00						
68	Galway L	6/8/2010	epi	21	24	1	2	1	0	4	0									
68	Galway L	6/22/2010	epi	27	26	1	2	1	0	0	0									
68	Galway L	7/6/2010	epi	33	30	2	2	2	16	7										
68	Galway L	7/20/2010	epi	26	29	2	2	2	5	0	0									
68	Galway L	8/3/2010	epi	25	28	2	2	2	15	0	0	15.00		0.00						
68	Galway L	8/3/2010	bloom									1507		7.24						
68	Galway L	8/3/2010	bloom									3105		0.46						
68	Galway L	8/17/2010	epi	29	27	2	2	2	1	0	0									
68	Galway L	8/31/2010	epi	29	26	1	2	1	0	0	0									
68	Galway L	9/7/2010	epi	29	26	2	2	2	0	0	0	32.00		0.04						
68	Galway L	7/8/2012	epi	24	26	1	3	2	0	0	0			0.34	<0.392					
68	Galway L	7/22/2012	epi	25	26	1	3	2	0	0	0			<0.30	<0.585				I	
68	Galway L	8/5/2012	epi	24	27	1	3	2	0	0	0			<0.30	<0.330				I	
68	Galway L	8/19/2012	epi	28	25	1	3	1	0	0	0			<0.30	<0.223				I	
68	Galway L	9/2/2012	epi	26	24	2	3	2	0	0	0			<0.30	<0.725				I	
68	Galway L	9/15/2012	epi	17	22	1	3	2	0	0	0			<0.30	<3.299				I	
68	Galway L	10/3/2012	epi	21	17	1	3	2	0	0	0			<0.30	<3.205				I	
68	Galway L	10/20/2012	epi	18	13	1	2	2	0	0	0			<0.30	<3.205				I	
68	Galway L	7/7/2013	epi	27	28	1	3	2	2	0	0	3.40	1.50	<0.30	<0.510		2.20	0.40	I	I
68	Galway L	7/21/2013	epi	26	29	1	3	3	2	4	4	4.80	1.20	<0.30	<0.910		2.10	0.70	DE	DE
68	Galway L	7/21/2013	bloom											<1.50	<4.550		326.50	15.80		
68	Galway L	7/21/2013	bloom											<0.90	<2.730		47.80	1.80		
68	Galway L	8/4/2013	epi	19	24	2	3	3	2	0	0	8.90	1.10	1.18	<0.390		2.60	1.10	I	
68	Galway L	8/18/2013	epi	27	24	1	3	3	2	0	0	8.90	2.00	<0.30	<0.390		2.70	0.80	I	I
68	Galway L	9/2/2013	epi	24	25	1	3	2	2	0	0	13.20	1.30	<0.30	<1.100		2.00	1.10	I	I
68	Galway L	9/15/2013	epi	18	20	1	2	2	0	0	0	5.00	1.40	<0.30	<0.100		0.80	0.00	I	I
68	Galway L	9/28/2013	epi	22	18	1	3	2	0	0	0	2.70	1.20	<0.30	<10.600		0.70	0.00	I	I
68	Galway L	6/29/2014	epi	26	25	1	3	2	0	0	0	3.70	0.30	<0.48	<0.48	<0.002	0.70	0.10	i	i
68	Galway L	7/13/2014	epi	23	25	1	3	2	0	0	0	2.90	0.40	<0.40	<0.21	<0.003	1.10	0.00	i	i
68	Galway L	7/27/2014	epi	23	26	1	3	2	0	0	0	3.00	0.40	<0.63	<0.03	<0.001	1.20	0.00	i	i
68	Galway L	8/10/2014	epi	27	25	1	3	2	2	0	0	2.80	0.30	<0.28	<0.05	<0.001	0.70	0.00	i	i
68	Galway L	8/24/2014	epi	25	22	1	3	2	2	0	0	1.40	0.20	<0.26	<0.10	<0.002	7.10	0.00	i	i
68	Galway L	9/7/2014	epi	17	24	1	3	2	2	0	0	4.20	0.40	<0.29	<0.14	<0.002	1.60	0.20	i	i
68	Galway L	9/20/2014	epi	19	18	1	3	2	2	0	0	5.00	0.50	<0.48	<0.04	<0.001	2.40	0.30	i	i

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
68	Galway L	10/11/2014	epi	14	15	1	2	2	0	0	0	6.00	0.40	<0.73	<0.06	<0.001	3.00	0.80	i	i
68	Galway L	6/7/2015	epi	22	20	1	2	2	0	0	0	11.00	0.50	<0.77	0.04	<1.739	0.69	0.00	I	I
68	Galway L	6/21/2015	epi	27	24	1	3	2	0	0	0	3.40	0.30	<0.55	<0.004	<0.001	0.60	0.00	I	I
68	Galway L	7/5/2015	epi	22	22	1	3	2	2	0	0	6.30	0.40	<0.71	<0.003	<0.011	1.65	0.26	I	I
68	Galway L	7/20/2015	epi	29	26	1	3	2	2	0	0	3.60	0.60	<0.36	<0.003	<0.018	1.86	0.08	I	I
68	Galway L	8/2/2015	epi	30	27	1	3	2	2	0	0	2.85	0.44	<0.23	<0.004	<0.015	1.29	0.21	I	I
68	Galway L	8/21/2015	epi	26	26	1	3	2	2	0	0	53.60	2.30	<0.21	<0.003	<0.010	1.81	0.59	I	I
68	Galway L	9/7/2015	epi	25	25	1	3	2	2	0	0	11.10	0.60	<0.37	<0.012	<0.031	2.56	1.08	I	I
68	Galway L	9/19/2015	epi	21	23	1	3	2	2	0	0	8.70	0.30	<0.30	<0.007	<0.035	2.01	0.85	I	I
68	Galway L	7/8/2012	Hypo		24															
68	Galway L	9/2/2012	Hypo		24															
68	Galway L	7/7/2013	Hypo		19															
68	Galway L	8/4/2013	Hypo		24															
68	Galway L	9/2/2013	Hypo		21															
68	Galway L	9/28/2013	Hypo		17															
68	Galway L	6/29/2014	Hypo		19															
68	Galway L	7/13/2014	Hypo		22															
68	Galway L	7/27/2014	Hypo		25															
68	Galway L	8/10/2014	Hypo		23															
68	Galway L	8/24/2014	Hypo		21															
68	Galway L	9/7/2014	Hypo		22															
68	Galway L	9/20/2014	Hypo		18															
68	Galway L	10/11/2014	Hypo		15															

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 B: Priority Waterbody Listing for Galway Lake

Galway Lake (Amsterdam Reservoir) (1201-0110) NoKnownImpct

Waterbody Location Information Revised: 10/30/2002

Water Index No:	H-240- 69-P563			**Drain Basin:**	Mohawk River
Hydro Unit Code:	02020004/320	**Str Class:**	B		Mohawk River
Waterbody Type:	Lake(R) (Mesotrophic)			**Reg/County:**	5/Saratoga Co. (46)
Waterbody Size:	518.4 Acres			**Quad Map:**	GALWAY (I-24-3)
Seg Description:	entire lake				

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

Use(s) Impacted	Severity	Problem Documentation
NO USE IMPAIRMNT		

Type of Pollutant(s)

Known: - - -
Suspected: - - -
Possible: - - -

Source(s) of Pollutant(s)

Known: - - -
Suspected: - - -
Possible: - - -

Resolution/Management Information

Issue Resolvability: 8 (No Known Use Impairment)
Verification Status: (Not Applicable for Selected RESOLVABILITY)
Lead Agency/Office: n/a **Resolution Potential:**
TMDL/303d Status: n/a ()

Further Details

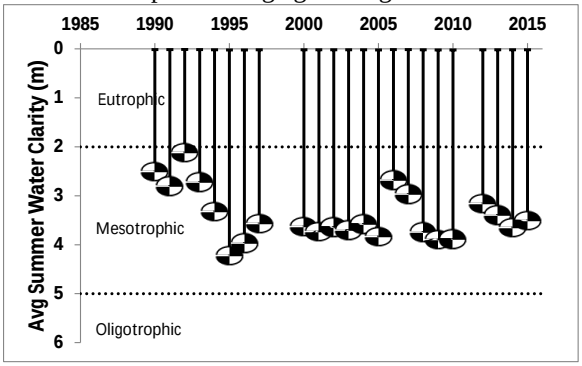
Galway Lake was included in the CSLAP volunteer monitoring effort from 1990 through 2000. Results of this monitoring found no evidence of use impairments. (DEC/DOW, BWM/Lake Services, August 2000)

Although water quality in the lake currently supports uses, local/county agencies have raised concerns regarding extensive development of the lake front, limited lots sizes and the potential impact of on-site septic systems. Invasive species (purple loosestrife and Eurasian milfoil) are also noted. The Galway Lake Association completed a study of the lake in 2001. (Saratoga County WQCC, April 2002)

Appendix C- Long Term Trends: Galway Lake

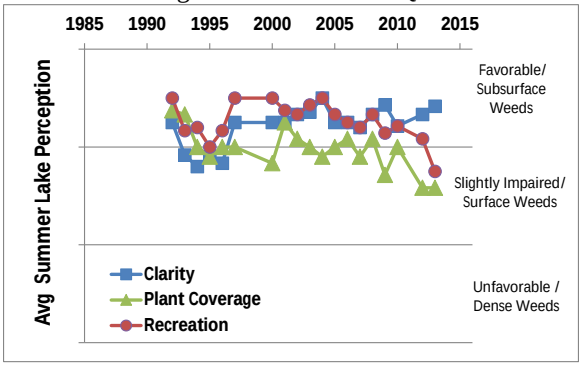
Long Term Trends: Water Clarity

- No clear trends since mid-1990s
- Most readings typical of *mesotrophic* lakes, in expected range given algae and TP levels



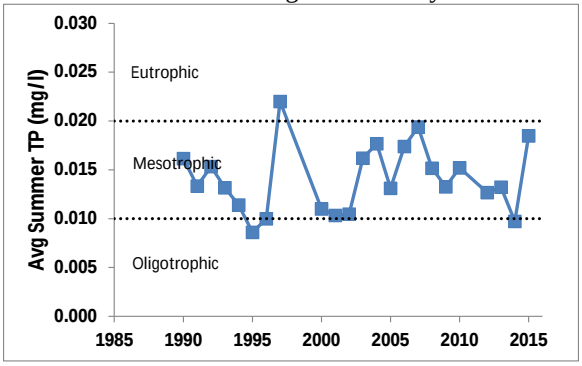
Long Term Trends: Lake Perception

- Better WQ, worse plant/rec since '00s
- Recreational perception more closely linked to changes in weeds than WQ



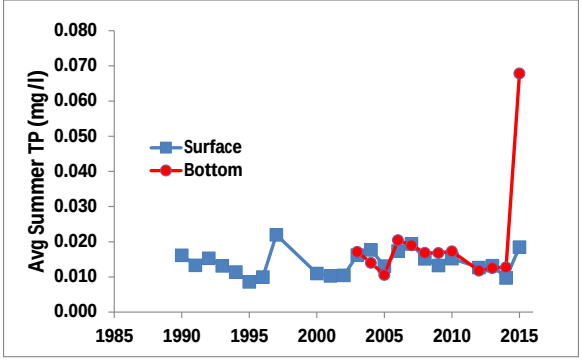
Long Term Trends: Phosphorus

- ↓ mid-00s to 2014, but ↑ '15; no clear trend
- Most readings typical of *mesotrophic* lakes, consistent with algae and clarity



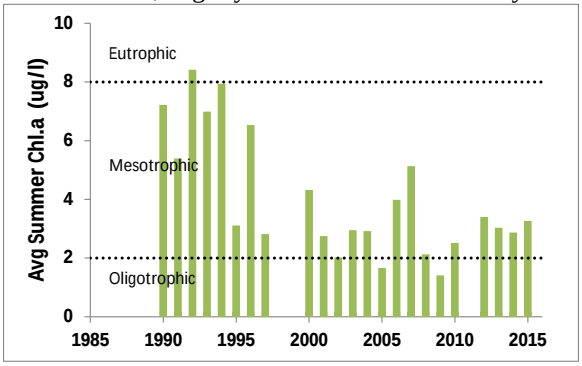
Long Term Trends: Bottom Phosphorus

- Bottom TP similar to surface TP; higher '15
- Probably not any significant internal nutrient load (migration of nutrients bottom to top)



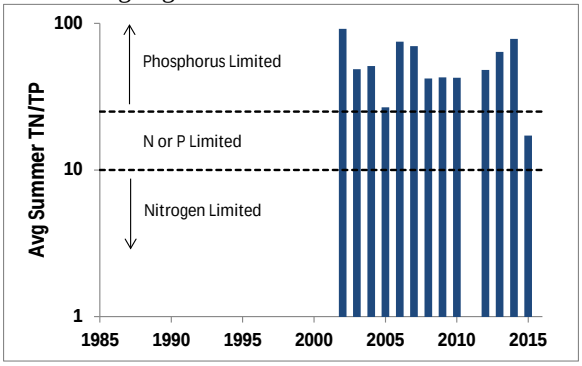
Long Term Trends: Chlorophyll a

- Decreasing since early 1990s
- Most readings typical of *mesoligotrophic* lakes, slightly lower than TP and clarity



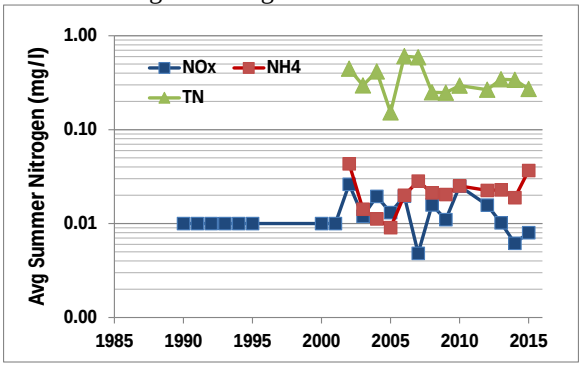
Long Term Trends: N:P Ratio

- No trends apparent, but lower in 2015
- Most readings indicate phosphorus limits algae growth



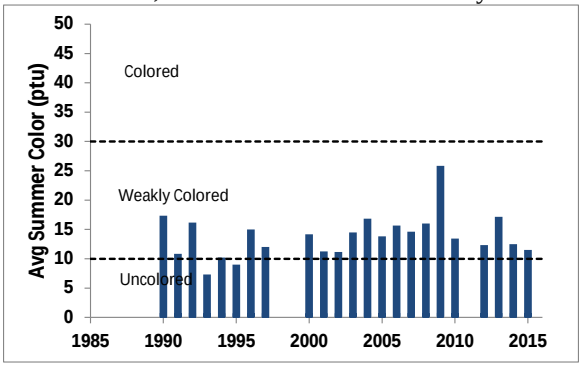
Long Term Trends: Nitrogen

- No clear trends for any N indicators
- Generally low NOx, ammonia, and total nitrogen readings



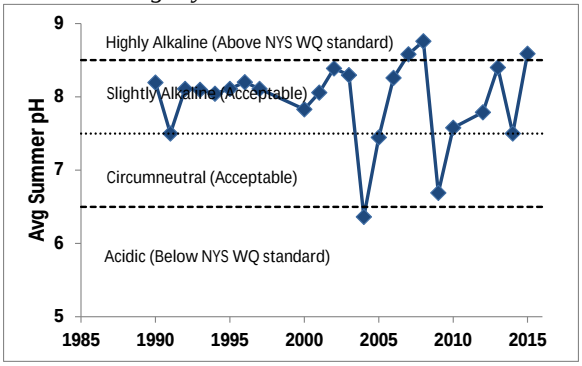
Long Term Trends: Color

- No trends apparent
- Most readings typical of *weakly colored* lakes, with no effect on water clarity



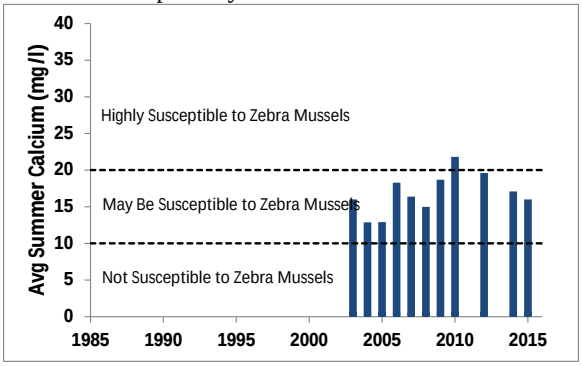
Long Term Trends: pH

- Increasing last 5yrs, but highly variable
- Most readings now typical of *circumneutral* to *slightly alkaline* lakes



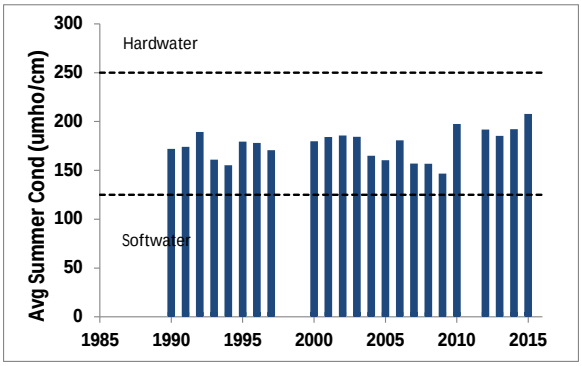
Long Term Trends: Calcium

- Slightly variable year to year
- Most readings indicate moderate susceptibility to zebra mussels



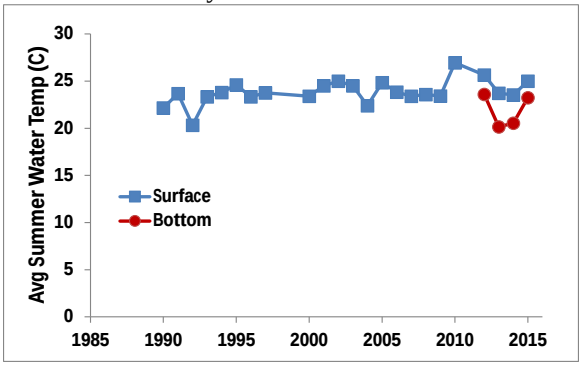
Long Term Trends: Conductivity

- Slight increase since early 1990s
- Most readings typical of lakes with *intermediate hardness*



Long Term Trends: Water Temperature

- Perhaps slight increase since early 1990s
- Similar bottom temperatures indicate weak thermal layers



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.

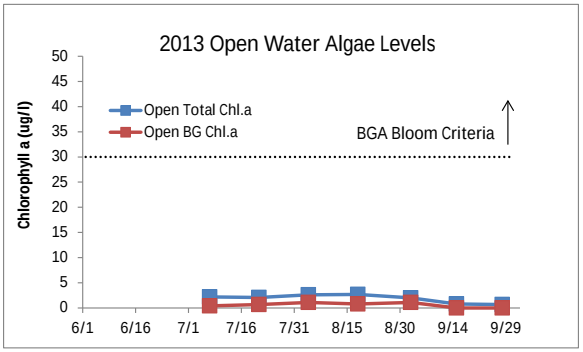


Figure D1:
2013 Open Water Total and BGA Chl.a

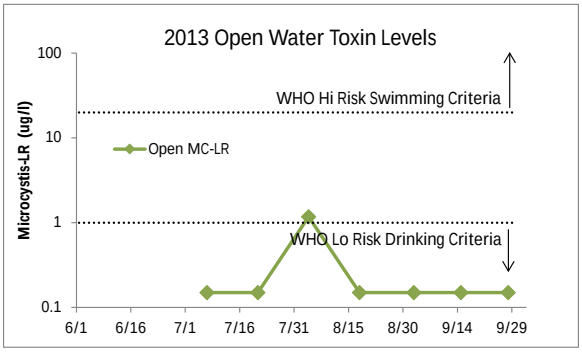


Figure D2:
2013 Open Water Microcystin-LR

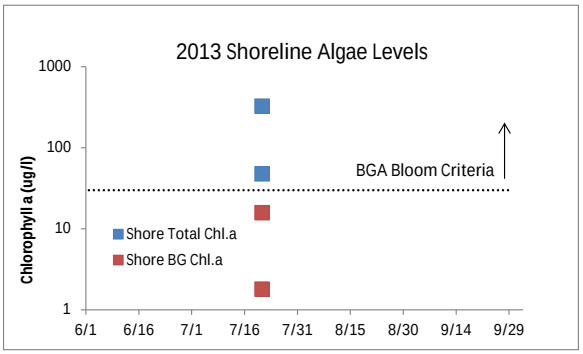


Figure D3:
2013 Shoreline Total and BGA Chl.a

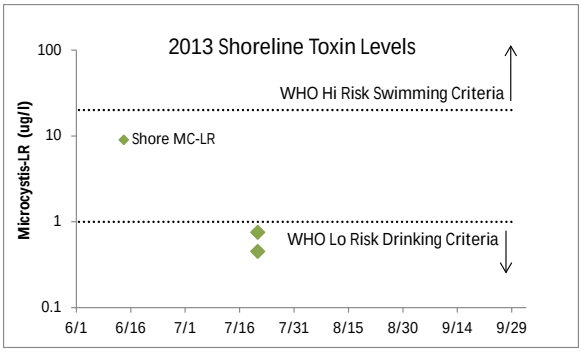


Figure D4:
2013 Shoreline Microcystin-LR

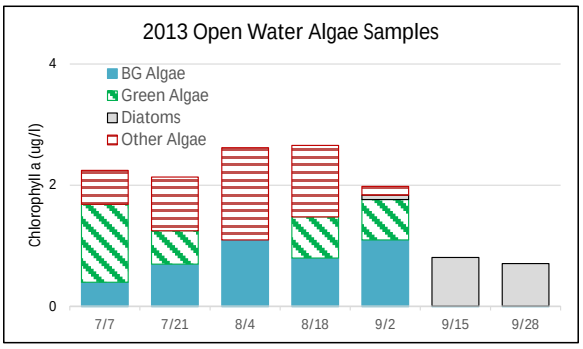


Figure D5:
2013 Open Water Algae Types

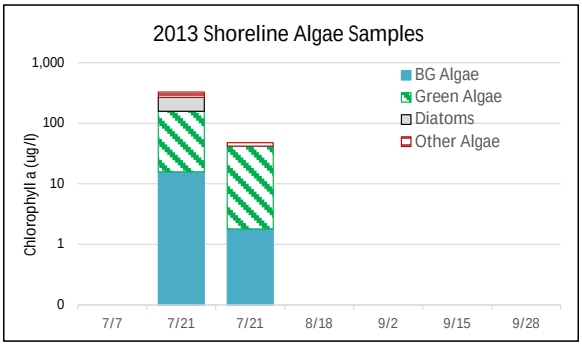


Figure D6:
2013 Shoreline Algae Types

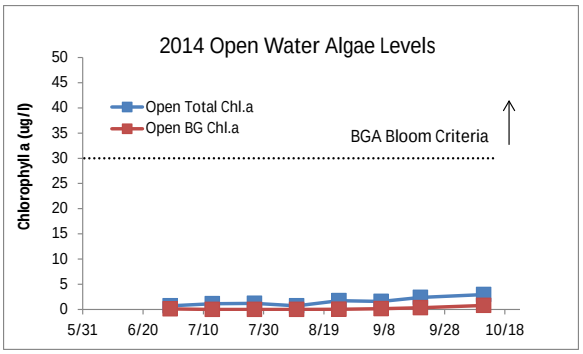


Figure D7:
2014 Open Water Total and BGA Chl.a

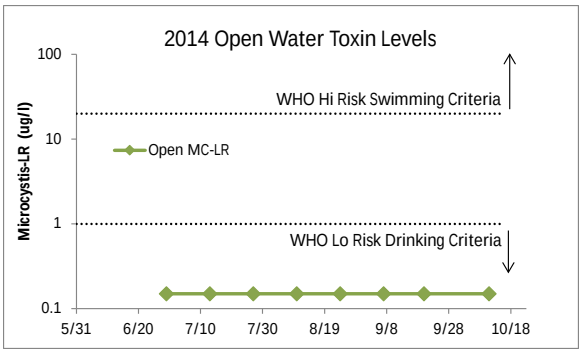


Figure D8:
2014 Open Water Microcystin-LR

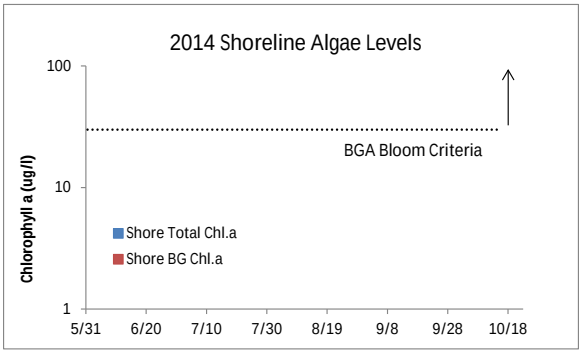


Figure D9:
2014 Shoreline Total and BGA Chl.a

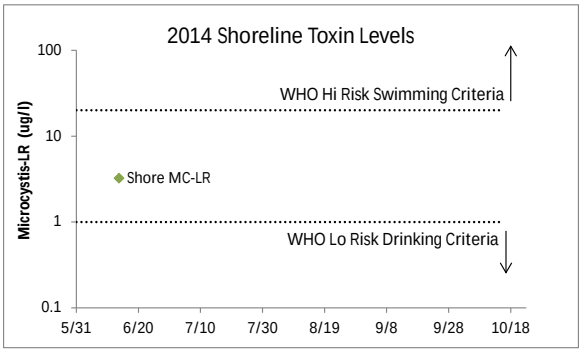


Figure D10:
2014 Shoreline Microcystin-LR

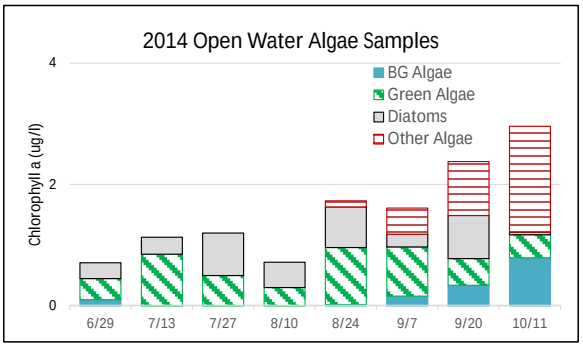


Figure D11:
2014 Open Water Algae Types

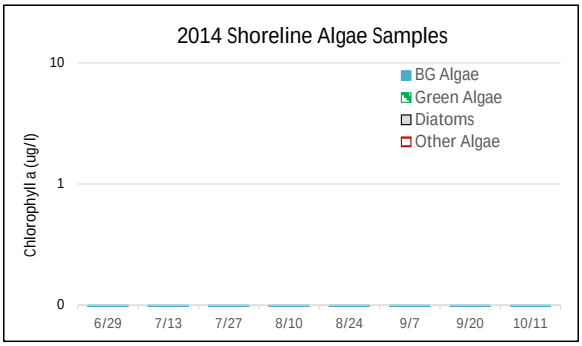


Figure D12:
2014 Shoreline Algae Types

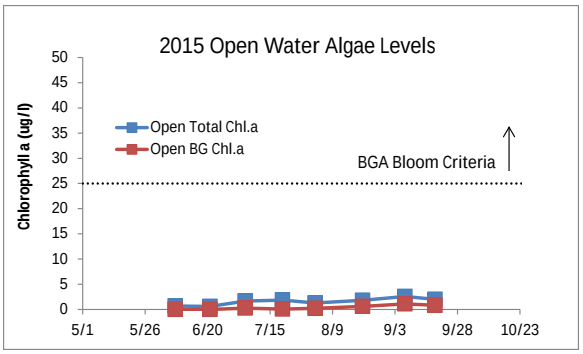


Figure D13:
2015 Open Water Total and BGA Chl.a

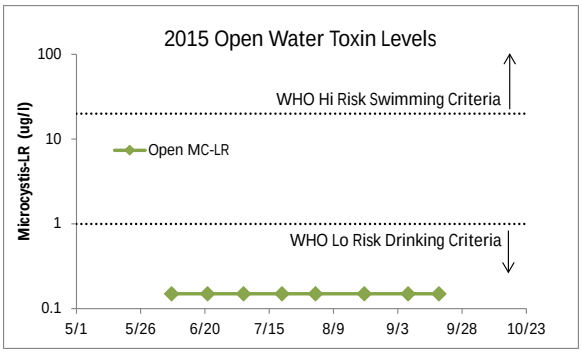


Figure D14:
2015 Open Water Microcystin-LR

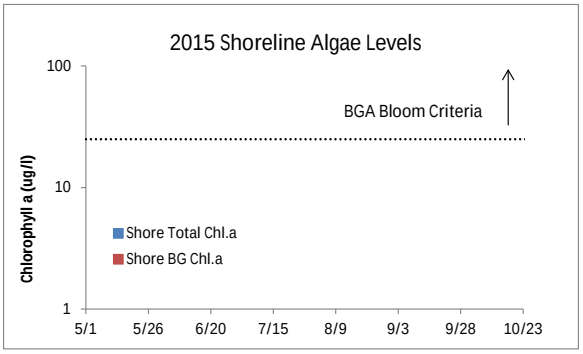


Figure D15:
2015 Shoreline Total and BGA Chl.a

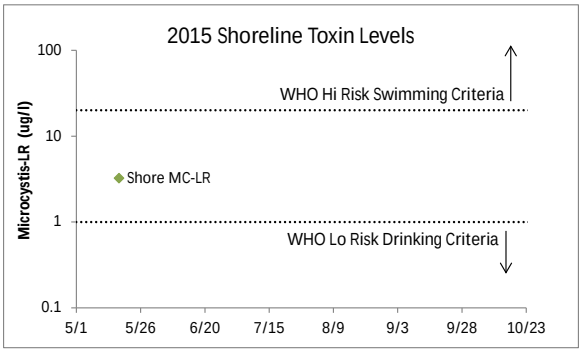


Figure D16:
2015 Shoreline Microcystin-LR

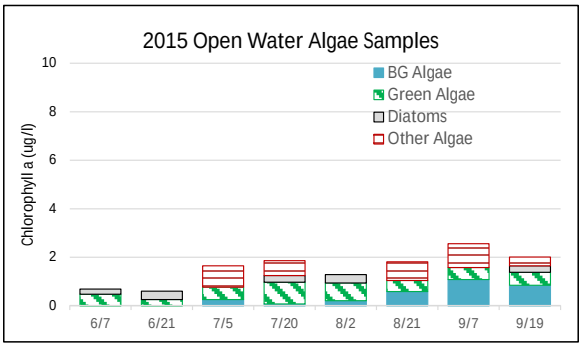


Figure D17:
2015 Open Water Algae Types

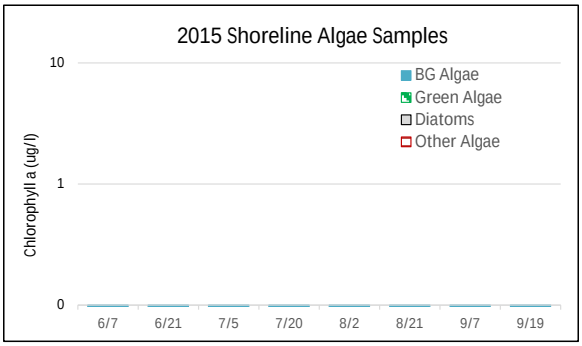


Figure D18:
2015 Shoreline Algae Types

Appendix E:
AIS Species in Saratoga County

The table below shows the invasive aquatic plants and animals that have been documented in Saratoga 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 – Saratoga County			
Waterbody	**Kingdom**	**Common name**	**Scientific name**
Anthony Kill	Plant	Water chestnut	*Trapa natans*
Ballston Lake	Animal	Zebra mussel	*Dreissena polymorpha*
Ballston Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Ballston Lake	Plant	Water chestnut	*Trapa natans*
Efner Lake	Plant	Fanwort	*Cabomba caroliniana*
Galway Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Galway Lake	Plant	Brittle naiad	*Najas minor*
Galway Lake	Plant	Water chestnut	*Trapa natans*
Great Sacandaga Lake	Animal	Spiny waterflea	*Bythotrephes longimanus*
Great Sacandaga Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Hudson River- Schuylerville	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Hudson River- Schuylerville	Plant	Water chestnut	*Trapa natans*
Hunt Lake	Plant	Fanwort	*Cabomba caroliniana*
Jenny Lake	Plant	Fanwort	*Cabomba caroliniana*
Little Round Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Little Round Lake	Plant	Brittle naiad	*Najas minor*
Little Round Lake	Plant	Water chestnut	*Trapa natans*
Mill Pond	Plant	Fanwort	*Cabomba caroliniana*
Moreau Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Round Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Round Lake	Plant	Brittle naiad	*Najas minor*
Round Lake	Plant	Water chestnut	*Trapa natans*
Saratoga Lake	Animal	Goldfish	*Carassius auratus*
Saratoga Lake	Animal	Common carp	*Cyprinus carpio*

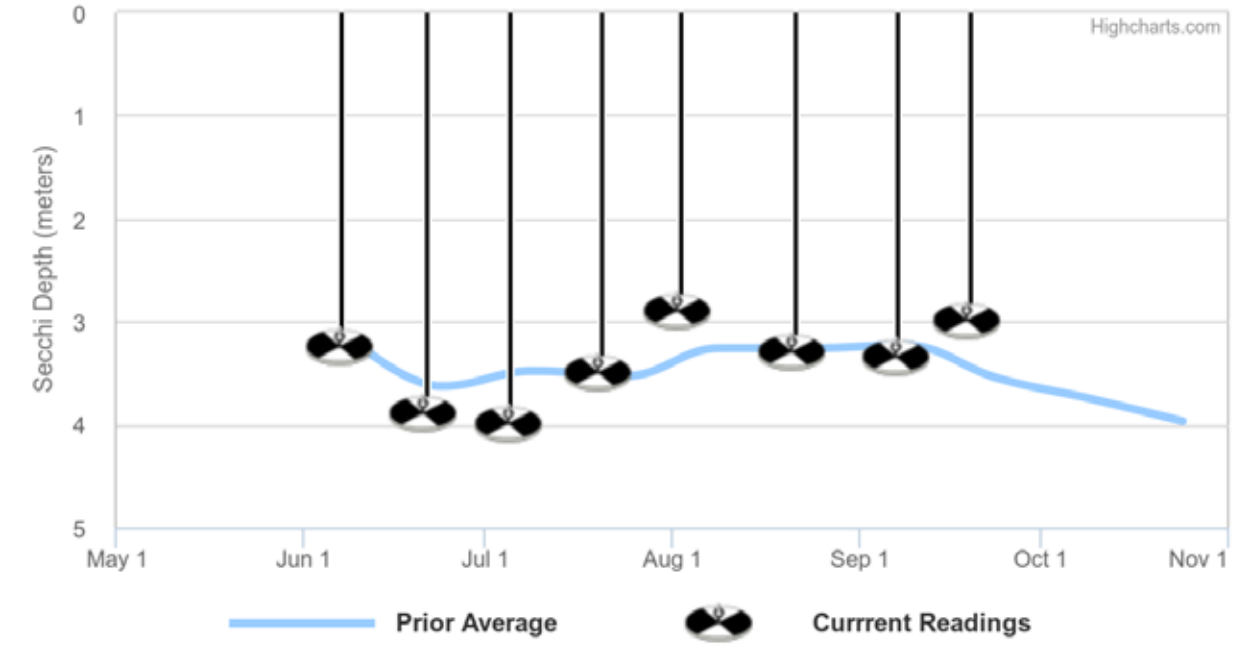
Waterbody	Kingdom	Common name	Scientific name
Saratoga Lake	Animal	Zebra mussel	*Dreissena polymorpha*
Saratoga Lake	Plant	Eurasian watermilfoil	*Myriophyllum spicatum*
Saratoga Lake	Plant	Curly leafed pondweed	*Potamogeton crispus*
Saratoga Lake	Plant	Water chestnut	*Trapa natans*
Stony Creek Reservoir	**Plant**	**Eurasian watermilfoil**	***Myriophyllum spicatum***
Stony Creek Reservoir	**Plant**	**Water chestnut**	***Trapa natans***
Van Patten's Pond	Plant	Water chestnut	*Trapa natans*
Woodland Lake	Plant	Curly leafed pondweed	*Potamogeton crispus*

Appendix F: Current Year vs. Prior Averages for Galway Lake

Current Year Water Temperatures vs. Prior Average

This year's shallow water sample temperatures are tending to be higher than normal when compared to the average of readings collected from 1990 to 2014. There are not enough deep water sample temperatures to determine a trend for the current year when compared to the average of readings collected from 2006 to 2014.

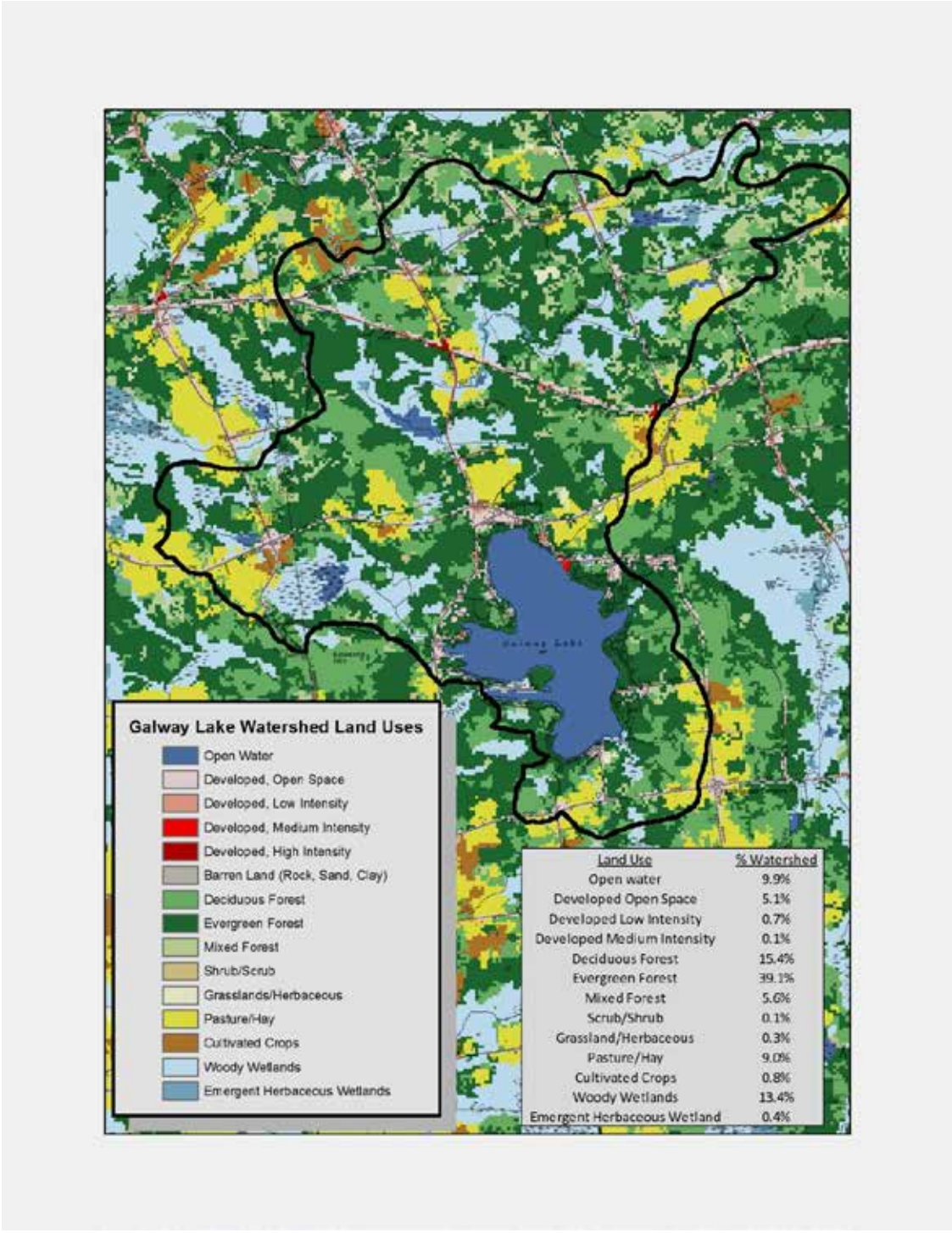
Current Year Secchi Readings vs. Prior Average



This year's session Secchi readings are about the same as the average of readings collected from 1990 to 2014

Appendix G: Watershed and Land Use Map for Galway Lake

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.



Land Use	% Watershed
Open water	9.9%
Developed Open Space	5.1%
Developed Low Intensity	0.7%
Developed Medium Intensity	0.1%
Deciduous Forest	15.4%
Evergreen Forest	39.1%
Mixed Forest	5.6%
Scrub/Shrub	0.1%
Grassland/Herbaceous	0.3%
Pasture/Hay	9.0%
Cultivated Crops	0.8%
Woody Wetlands	13.4%
Emergent Herbaceous Wetland	0.4%