



2023 VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

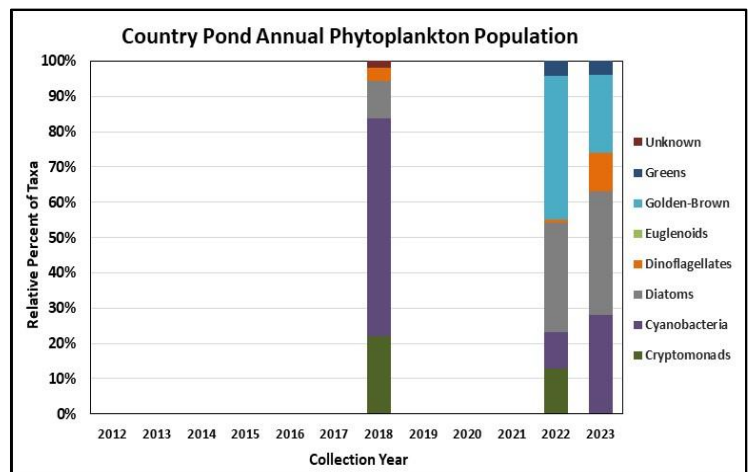
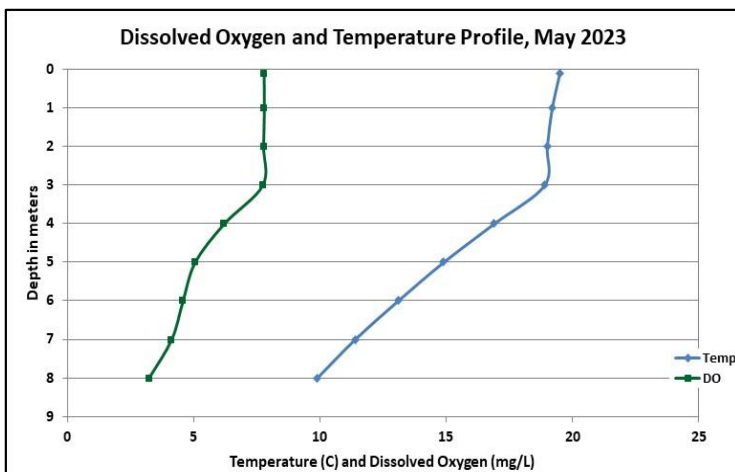
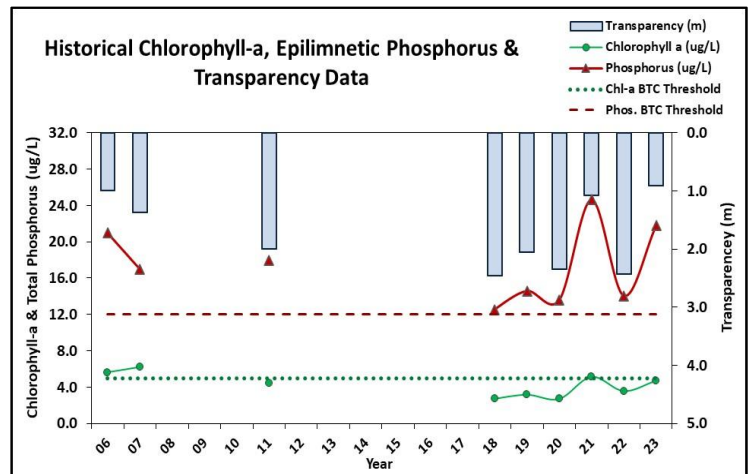
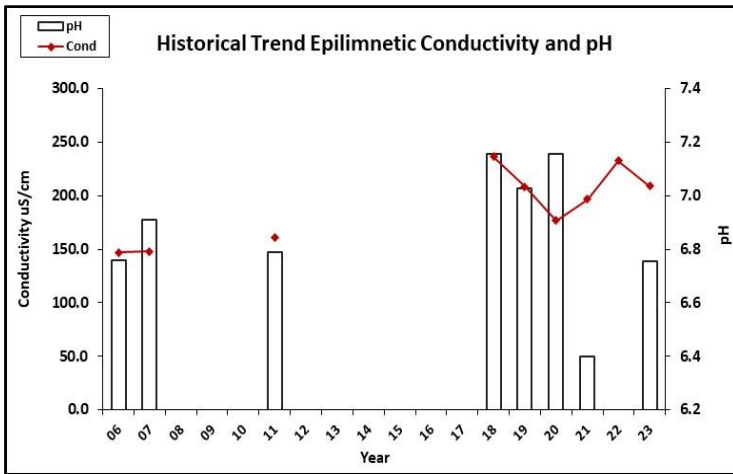
COUNTRY POND, KINGSTON

Recommended Actions: Great job sampling in 2023! Record summer rainfall, similar to that experienced in 2021, resulted in elevated pond and tributary phosphorus levels, darker water color and poor water clarity (transparency). Algal growth as measured by chlorophyll remained low likely due to the dark water color and decreased light penetration in the water column. However, [cyanobacteria](#) growth was abundant throughout the summer. This highlights the importance of managing and minimizing [stormwater](#) runoff from the surrounding watershed, particularly shoreline properties and impervious surface such as roads, driveways, and roof tops. Consult the Watershed Management Plan for recommendations on high priority areas and target these for remediation. Encourage local road agents and private winter maintenance companies to obtain [Green SnowPro Certification](#). Educate shorefront property owners on ways to reduce stormwater runoff using the [NH Homeowner's Guide to Stormwater Management](#) and encourage them to become certified [LakeSmart](#) through NH LAKES' lake-friendly living program. Keep up the great work!

HISTORICAL WATER QUALITY TREND ANALYSIS

PARAMETER	TREND	PARAMETER	TREND
Conductivity	N/A	Chlorophyll-a	N/A
pH (epilimnion)	N/A	Transparency	N/A
		Phosphorus (epilimnion)	N/A

HISTORICAL WATER QUALITY GRAPHICS





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OBSERVATIONS (Refer to Table 1 and Historical Deep Spot Data Graphics)

- ◆ **CHLOROPHYLL-A:** Chlorophyll level was low in May, increased slightly in June, decreased to a low level in July, and increased to an elevated level in September. Average chlorophyll level increased from 2022, was slightly greater than the state median, and was slightly less than the threshold for mesotrophic lakes. Visual inspection of historical data indicates relatively stable chlorophyll levels since 2018.
- ◆ **CONDUCTIVITY/CHLORIDE:** Epilimnetic (upper water layer), Metalimnetic (middle water layer), Hypolimnetic (lower water layer), Northwest Inlet, Outlet, and South Inlet conductivity levels remained elevated and greater than the state median. Epilimnetic, Hypolimnetic, Northwest Inlet, and South Inlet chloride levels were elevated and greater than the state median yet were less than the state chronic chloride standard. Visual inspection of historical data indicates relatively stable epilimnetic conductivity levels since 2018, but an overall increase since 2006.
- ◆ **COLOR:** Apparent color measured in the epilimnion indicates the water was highly tea colored, or dark brown, and became darker as the summer progressed.
- ◆ **TOTAL PHOSPHORUS:** Epilimnetic phosphorus level was slightly elevated in May, increased to a greatly elevated level in July following excessive rainfall, and decreased slightly through September yet remained elevated. Average epilimnetic phosphorus level increased from 2022 and was much greater than the state median and the threshold for mesotrophic lakes. Visual inspection of historical data indicates stable, yet variable, epilimnetic phosphorus levels since 2018. Metalimnetic phosphorus levels were elevated on each sampling event. Hypolimnetic phosphorus levels were low in May and increased to elevated levels through September due to phosphorus release from bottom sediments under anoxic (no dissolved oxygen) conditions. Northwest Inlet, Outlet and South Inlet phosphorus levels were elevated from July through September due to excessive summer rainfall.
- ◆ **TRANSPARENCY:** Transparency measured without (NVS) the viewscope was below average (worse) in May and decreased (worsened) to less than one meter in clarity as the summer progressed and excessive rainfall resulted in highly tea colored conditions. Average NVS transparency decreased from 2022 and was much less than the state median. Visual inspection of historical data indicates stable, yet variable, NVS transparency since 2018. Viewscope transparency (VS) was higher (better) than NVS transparency and a better measure of conditions.
- ◆ **TURBIDITY:** Deep spot and tributary turbidity levels were slightly elevated to elevated from June through September due to excessive rainfall, dark water color, and cyanobacteria scums.
- ◆ **pH:** Epilimnetic, Northwest Inlet, Outlet, and South Inlet pH levels were within the desirable range 6.5-8.0 units. Metalimnetic and Hypolimnetic pH levels were slightly acidic. Visual inspection of historical data indicates stable, yet variable, epilimnetic pH levels since 2018.

Table 1. 2023 Average Water Quality Data for COUNTRY POND - KINGSTON

Station Name	Alk. (mg/L)	Chlor-a (ug/L)	Chloride (mg/L)	Color (pcu)	Cond. (us/cm)	Total P (ug/L)	Trans. (m)		Turb. (ntu)	pH
							NVS	VS		
Epilimnion	16	4.70	51	195	208.8	20	0.91	1.60	1.54	6.76
Metalimnion	-	-	-	-	228.0	23	-	-	4.60	6.47
Hypolimnion	-	-	52	-	232.3	42	-	-	7.51	6.43
Northwest Inlet	-	-	45	-	213.9	21	-	-	1.76	6.80
Outlet	-	-	-	-	206.6	19	-	-	1.45	6.81
South Inlet	-	-	46	-	213.8	19	-	-	1.56	6.83

NH Median Values

Median values generated from historic lake monitoring data.

Alkalinity: 4.5 mg/L **Chlorophyll-a:** 4.39 ug/L
Conductivity: 42.3 uS/cm **Chloride:** 5 mg/L
Total phosphorus: 11 ug/L **Transparency:** 3.3 m
pH: 6.6

NH Water Quality Standards

Numeric criteria for specific parameters. Water quality violation if thresholds exceeded.

Chloride: > 230 mg/L (chronic) **Turbidity:** > 10 NTU above natural
E. coli: > 88 cts/100 mL (beach)
E. coli: > 406 cts/100 mL (surface waters)
pH: between 6.5-8.0 (unless naturally occurring)