



2023 VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

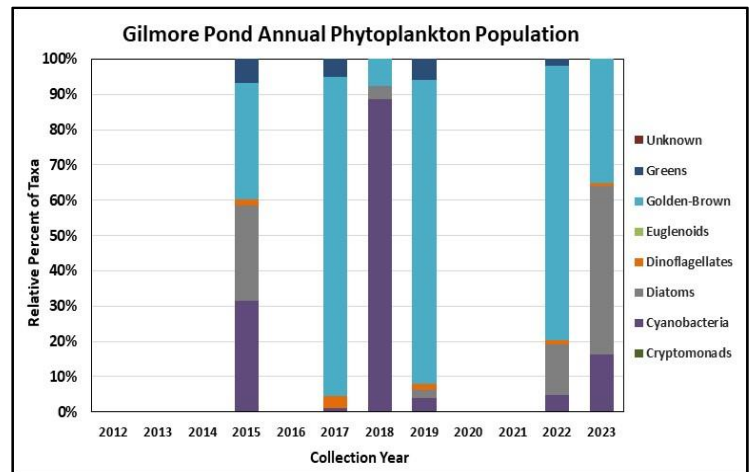
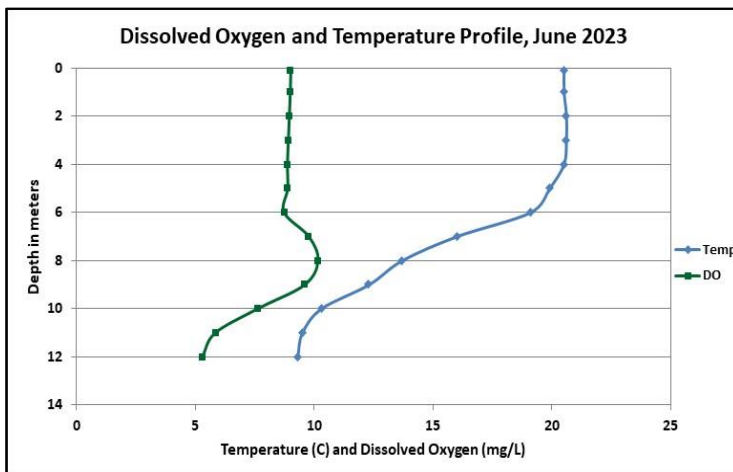
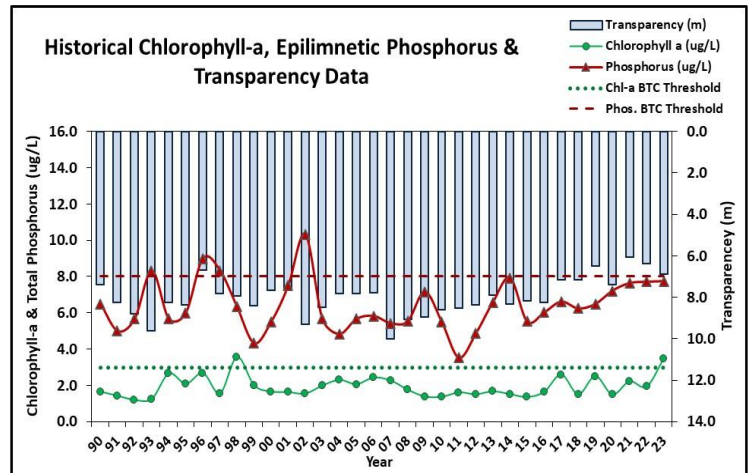
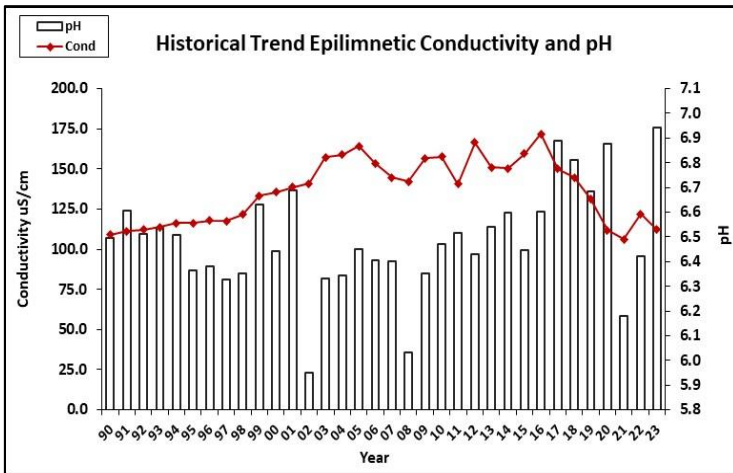
GILMORE POND, JAFFREY

Recommended Actions: Great job sampling in 2023! Pond quality is representative of oligotrophic, or high quality, conditions. However, epilimnetic phosphorus levels have gradually increased since 2015 and chlorophyll levels have become more variable with levels exceeding the threshold for oligotrophic lakes in 2023. The increased intensity of storm events and associated stormwater runoff and fluctuating climate conditions resulting in shorter periods of ice cover, warmer water temperatures, and longer periods of thermal stratification can impact pond quality over time. This highlights the importance of implementing [stormwater management](#) best practices within the watershed. Consider development of a [watershed management plan](#) to help identify and quantify nutrient loading from different sources within the watershed and make recommendations on ways to improve water quality. Encourage shoreline property owners to become certified [LakeSmart](#) through NH LAKES' lake-friendly living program. Pond conductivity levels have steadily improved since 2016 which is a positive sign that management actions taken on the local level may be effective. Continue working with local road agents and winter maintenance companies to utilize best practices when applying road salt on roadways, parking lots, driveways and walkways. Keep up the great work!

HISTORICAL WATER QUALITY TREND ANALYSIS

PARAMETER	TREND	PARAMETER	TREND
Conductivity	Stable	Chlorophyll-a	Stable
pH (epilimnion)	Stable	Transparency	Worsening
Phosphorus (hypolimnion)	Stable	Phosphorus (epilimnion)	Stable

HISTORICAL WATER QUALITY GRAPHICS





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

- ◆ **CHLOROPHYLL-A:** Chlorophyll level was within a low range in June, increased to a slightly elevated level in July, and increased again in August. Average chlorophyll level increased from 2022, was less than the state median, and was slightly greater than the threshold for oligotrophic lakes. Historical trend analysis indicates relatively stable chlorophyll levels since monitoring began.
- ◆ **CONDUCTIVITY/CHLORIDE:** Epilimnetic (upper water layer), Metalimnetic (middle water layer) and Hypolimnetic (lower water layer) conductivity levels were slightly elevated and greater than the state median. Epilimnetic chloride levels were also slightly greater than the state median yet much less than the state chronic chloride standard. Historical trend analysis indicates stable, yet variable, epilimnetic conductivity levels since monitoring began and conductivity levels have decreased since 2016.
- ◆ **COLOR:** Apparent color measured in the epilimnion indicates the water was clear with little to no tea, or brown, coloring.
- ◆ **TOTAL PHOSPHORUS:** Epilimnetic phosphorus level was slightly elevated in June, decreased to a low level in July, and remained stable in August. Average epilimnetic phosphorus level remained stable with 2022, was less than the state median, and was approximately equal to the threshold for oligotrophic lakes. Metalimnetic phosphorus level was low and remained stable from June through August. Hypolimnetic phosphorus level was within a moderate range and was highest in July. Historical trend analysis indicates relatively stable epilimnetic and hypolimnetic phosphorus levels since monitoring began.
- ◆ **TRANSPARENCY:** Transparency measured with (VS) and without (NVS) the viewscope was high (good) in June, decreased (worsened) by over two meters in July following excessive rainfall, and decreased again in August. Average NVS transparency increased (improved) slightly from 2022 and remained much higher (better) than the state median. However, historical trend analysis indicates significantly decreasing (worsening) NVS transparency since monitoring began.
- ◆ **TURBIDITY:** Epilimnetic turbidity level fluctuated within a low range and was highest in July following excessive rainfall. Metalimnetic turbidity level was slightly elevated in June likely due to a layer of algal growth. Hypolimnetic turbidity level was also slightly elevated in June.
- ◆ **pH:** Epilimnetic and Metalimnetic pH levels were within the desirable range of 6.5-8.0 units. Historical trend analysis indicates stable, yet variable, epilimnetic pH levels since monitoring began. Hypolimnetic pH level was slightly acidic and potentially critical to aquatic life.

Table 1. 2023 Average Water Quality Data for GILMORE POND - JAFFREY

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	4.9	3.45	24	13	112.1	8	6.88	7.58	0.59	6.94
Metalimnion	-	-	-	-	113.9	8	-	-	1.00	6.61
Hypolimnion	-	-	-	-	115.6	10	-	-	1.10	6.11

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)