



# VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

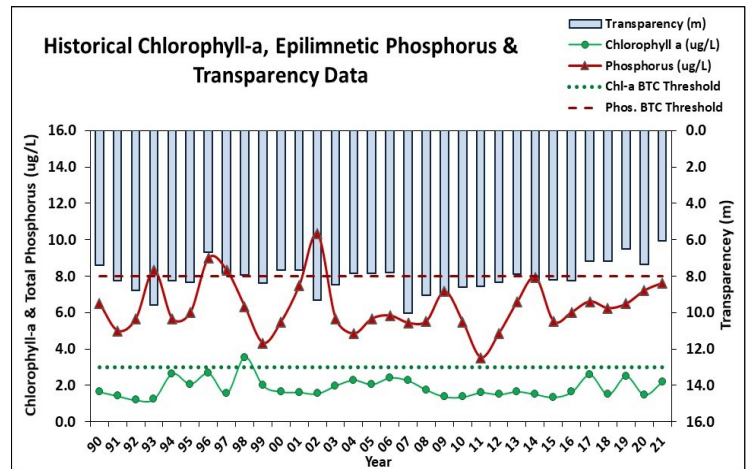
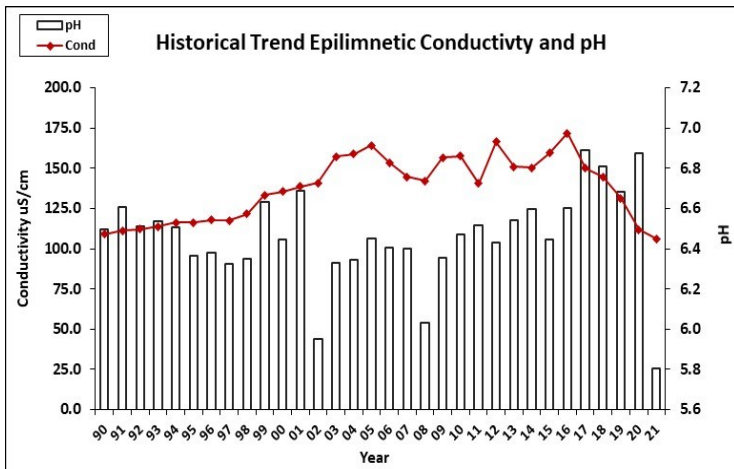
## GILMORE POND, JAFFREY

### 2021 DATA SUMMARY

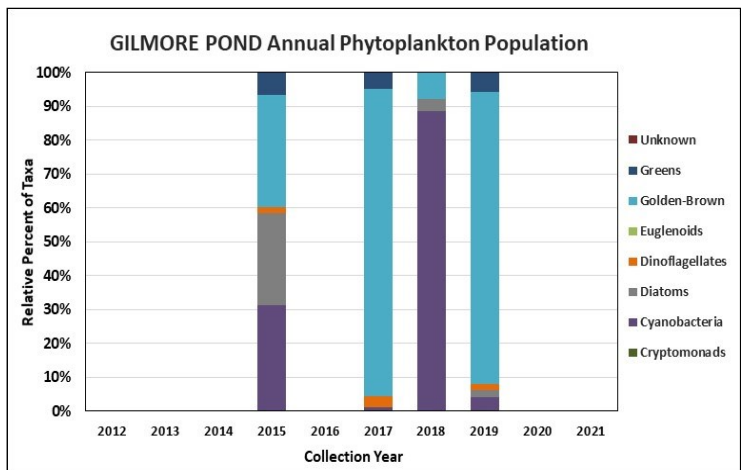
**RECOMMENDED ACTIONS:** Great job sampling in 2021! Pond quality is representative of oligotrophic, or high quality, conditions, however above average rainfall in summer 2021 resulted in the pond experiencing above average nutrient levels and algal growth, poor water clarity (transparency), and darker water color. Historical trend analysis indicates that water clarity measured with the viewscope has worsened since 2006 indicating a more rapid change in pond clarity. This may be a result of increased frequency and intensity of storm events and associated stormwater runoff which 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
<b>Conductivity</b>	Worsening	<b>Chlorophyll-a</b>	Stable
<b>pH (epilimnion)</b>	Stable	<b>Transparency</b>	Stable
		<b>Phosphorus (epilimnion)</b>	Stable



### DISSOLVED OXYGEN AND PHYTOPLANKTON (Note: Information may not be collected annually)





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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 and increased gradually to a slightly elevated range in August. Average chlorophyll level increased slightly from 2020 but remained less than the state median and the threshold for oligotrophic lakes. Historical trend analysis indicates stable chlorophyll levels since monitoring began.
- ◆ **CONDUCTIVITY/CHLORIDE:** Epilimnetic (upper water layer), Metalimnetic (middle water layer) and Hypolimnetic (lower water layer) conductivity levels remained slightly elevated and greater than the state median. Epilimnetic and Hypolimnetic chloride levels were also slightly elevated and greater than the state median, yet much less than the state chronic chloride standard. Historical trend analysis indicates significantly increasing (worsening) epilimnetic conductivity levels since monitoring began. However, epilimnetic conductivity levels have decreased steadily since 2016 and we hope to see this continue!
- ◆ **COLOR:** Apparent color measured in the epilimnion indicates the water was clear, with little to no tea or brown coloring, in June and July and then darkened slightly to lightly tea colored, or light brown, conditions in August.
- ◆ **TOTAL PHOSPHORUS:** Epilimnetic phosphorus level was slightly elevated in June and then decreased to a low level in July and August. Average epilimnetic phosphorus level increased slightly from 2020, was less than the state median, and was approximately equal to the threshold for oligotrophic lakes. Historical trend analysis indicates stable epilimnetic phosphorus levels since monitoring began. Metalimnetic and Hypolimnetic phosphorus levels fluctuated within a low to moderate range and remained stable with that measured in 2020.
- ◆ **TRANSPARENCY:** Transparency measured without the viewscope (NVS) was below average (worse) in June, increased (improved) to within an average range in July, and then decreased (worsened) greatly in August when algal growth was higher, water color was darker, and following above average rainfall in July. Average NVS transparency decreased (worsened) from 2020 but remained much higher (better) than the state median. Historical trend analysis indicates stable NVS transparency since monitoring began. Viewscope (VS) transparency was much higher (better) than NVS transparency and likely a better measure of actual conditions. However, historical trend analysis indicates significantly decreasing (worsening) VS transparency since 2006.
- ◆ **TURBIDITY:** Epilimnetic turbidity levels were low in June and July and increased to an above average range in August when algal growth was higher and water color was darker. Metalimnetic and Hypolimnetic turbidity levels fluctuated within a low range for those stations.
- ◆ **PH:** Epilimnetic pH levels fluctuated within a slightly acidic range and were less than desirable 6.5-8.0 units. Historical trend analysis indicates relatively stable epilimnetic pH levels since monitoring began. Metalimnetic and Hypolimnetic pH levels were also slightly acidic and less than desirable.

Station Name	Table 1. 2021 Average Water Quality Data for GILMORE POND - JAFFREY									
	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	4.4	2.22	36	27	106.3	8	6.08	7.04	0.58	5.81
Metalimnion					109.1	8			0.58	6.34
Hypolimnion			30		109.1	11			0.66	6.08

#### 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)