



# VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

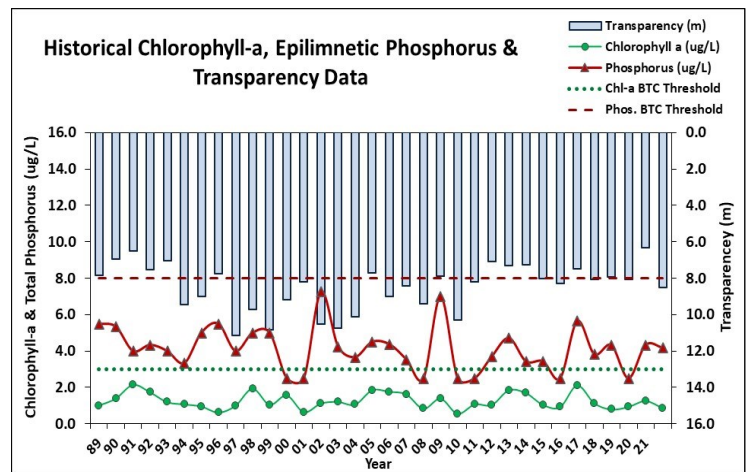
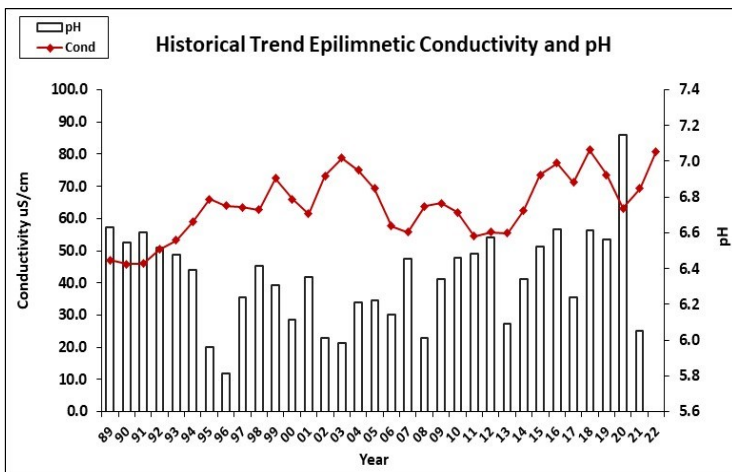
## GRANITE LAKE, STODDARD

### 2022 DATA SUMMARY

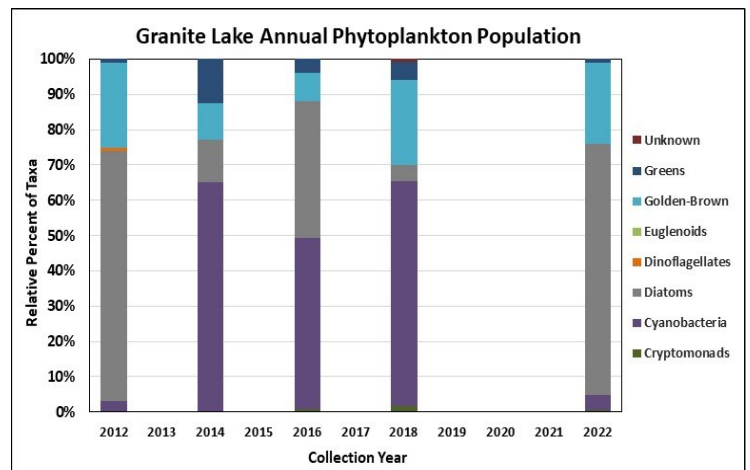
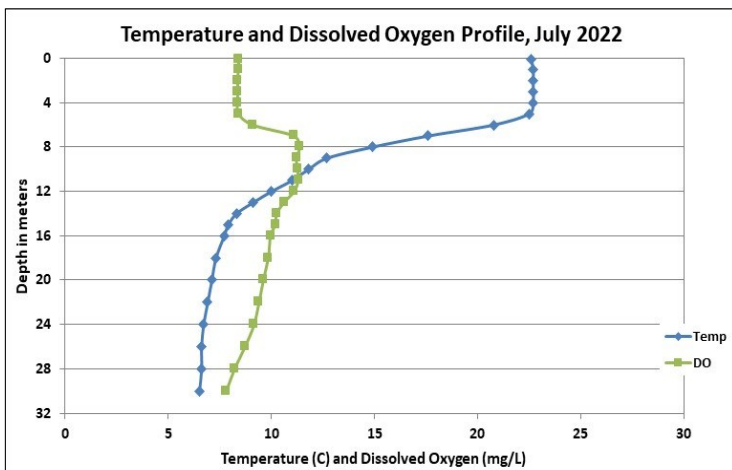
**RECOMMENDED ACTIONS:** Great job sampling in 2022! Lake quality remains representative of oligotrophic, or high quality, waters with low levels of nutrients (phosphorus) and algal (chlorophyll-a) growth. However, a cyanobacteria bloom was observed and an alert issued in June of 2022. Observe the lake in 2023 for any signs of cyanobacteria blooms or surface scums and [notify](#) the NHDES [Harmful Algal Bloom \(HAB\) Program](#). This highlights the delicate balance of the lake ecosystem and the sensitivity to changes in climate and water quality. Drought conditions, low water levels and tributary flows likely helped to improve water quality in 2022. The increased frequency and intensity of storm events highlights the importance of continually managing [stormwater](#) runoff within the watershed by stabilizing dirt/gravel roads, stream banks and shorelines to minimize erosion and sedimentation during extreme storm events. If not already done, inventory culverts around the lake and prioritize culvert replacement to ensure properly sized culverts that can handle 100-year storm events on a regular basis. Encourage shoreline property owners to be certified [LakeSmart](#) through NH LAKES' lake-friendly living program. Keep up the great work!

### HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Parameter	Trend
Conductivity	Worsening	Chlorophyll-a	Stable
pH (epilimnion)	Stable	Transparency	Stable
		Phosphorus (epilimnion)	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 July and decreased in September. Average chlorophyll level decreased from 2021 and was much less than the state median and the threshold for oligotrophic lakes. Historical trend analysis indicates relatively stable chlorophyll levels since monitoring began.
- ◆ **CONDUCTIVITY/CHLORIDE:** Deep spot, Nye Meadow Outlet and Outlet conductivity and/or chloride levels were slightly greater than the state medians yet less than a level of concern. However, historical trend analysis indicates significantly increasing (worsening) epilimnetic (upper water layer) conductivity levels since monitoring began. 305 North Shore Rd., 395 North Shore Rd. and North Shore End conductivity and/or chloride levels were low and less than the state median. 586 Granite Lake Rd., 603 Granite Lake Rd., Inlet, and Townline Inlet conductivity and/or chloride levels were elevated and greater than the state medians.
- ◆ **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 very low in July and increased slightly in September. Average epilimnetic phosphorus level remained stable with 2021 and was much less than the state median and the threshold for oligotrophic lakes. Historical trend analysis indicates relatively stable epilimnetic phosphorus level since monitoring began. Metalimnetic (middle water layer) and Hypolimnetic (lower water layer) phosphorus levels fluctuated within a low range. 305 and 395 North Shore Rd., 586 and 603 Granite Lake Rd., Outlet, and Townline Inlet phosphorus levels fluctuated within a low range. Inlet, North Shore End and Nye Meadow Outlet phosphorus levels fluctuated within a moderate range.
- ◆ **TRANSPARENCY:** Transparency measured without the viewscope (NVS) was below average (worse) in July potentially due to a significant storm event prior to sampling, and then increased (improved) in September. Average NVS transparency increased from 2021 and was much higher (better) than the state median. Historical trend analysis indicates relatively stable NVS transparency since monitoring began. Viewscope (VS) transparency was much higher (better) than NVS transparency and likely a better measure of actual conditions.
- ◆ **TURBIDITY:** Deep Spot, 305 and 395 North Shore Rd., 586 Granite Lake Rd., North Shore End, Nye Meadow Outlet, Outlet, and Townline Inlet turbidity levels fluctuated within a low range. 603 Granite Lake Rd. and Inlet turbidity level was slightly elevated in September and lab data noted colored water.
- ◆ **PH:** Epilimnetic pH values were invalidated due to a laboratory equipment error and we apologize for the inconvenience. Metalimnetic, 305 and 395 North Shore Rd., 586 Granite Lake Rd., North Shore End, and Outlet pH levels were within the desirable range 6.5-8.0 units. Historical trend analysis indicates stable, yet variable, epilimnetic pH levels since monitoring began. Hypolimnetic, Inlet and Nye Meadow Outlet pH levels were slightly less than desirable. 603 Granite Lake Rd. and Townline Inlet pH levels were slightly acidic and potentially critical to aquatic life.

Station Name	Table 1. 2022 Average Water Quality Data for GRANITE LAKE - STODDARD									
	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	2.6	0.87	18	10	80.8	4	8.50	10.11	0.31	
Metalimnion					76.4	7			0.80	6.55
Hypolimnion					78.6	7			0.64	6.16
305 North Shore Rd.					20.9	8			0.28	6.49
395 North Shore Rd.			3		26.2	12			0.40	6.56
586 Granite Lake Rd.			82		349.0	9			0.88	6.62
603 Granite Lake Rd.					330.0	6			1.30	4.66
Inlet			53		207.3	16			1.25	6.33
North Shore End					25.7	14			0.78	6.46
Nye Meadow Outlet			10		48.6	17			1.06	6.06
Outlet					81.8	3			0.28	6.58
Townline Inlet			80		316.5	10			0.44	5.70

#### 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)