



# VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

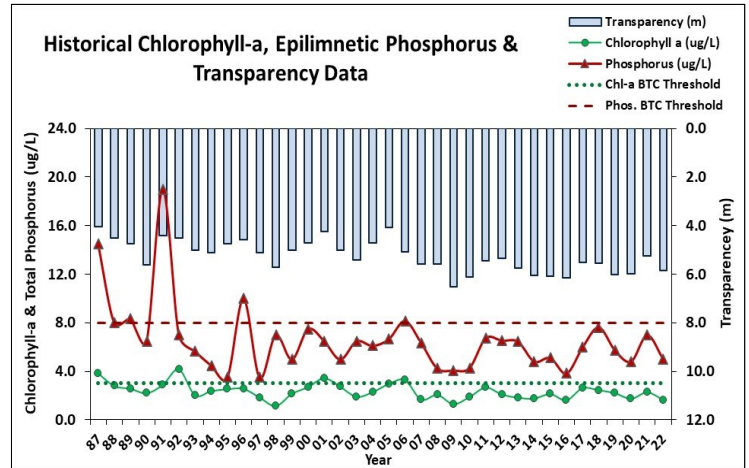
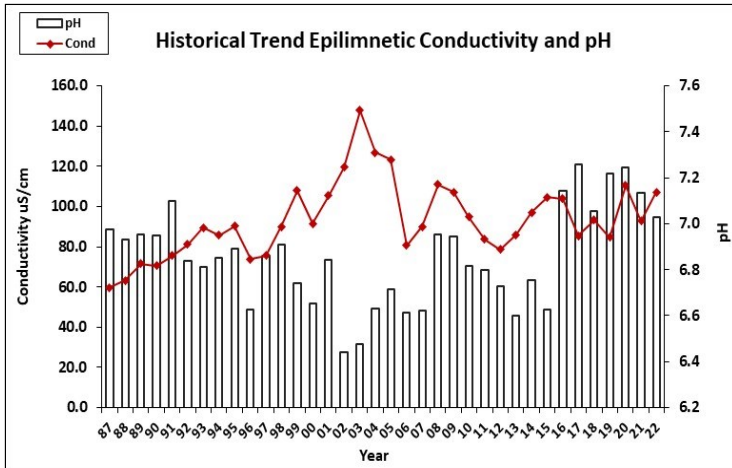
## KOLELEMOOK LAKE, SPRINGFIELD

### 2022 DATA SUMMARY

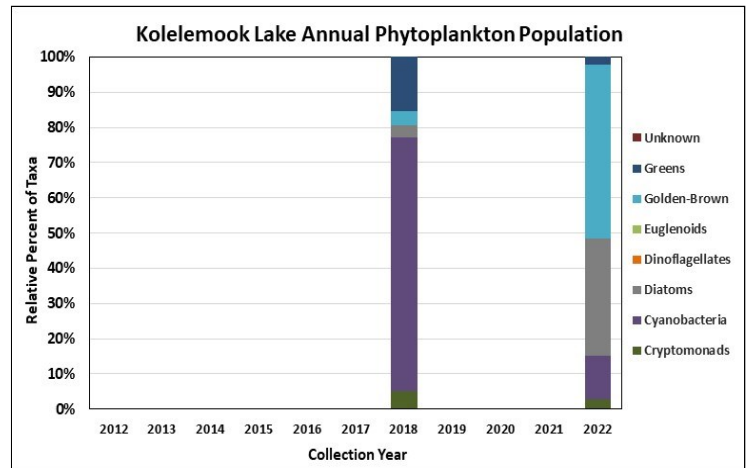
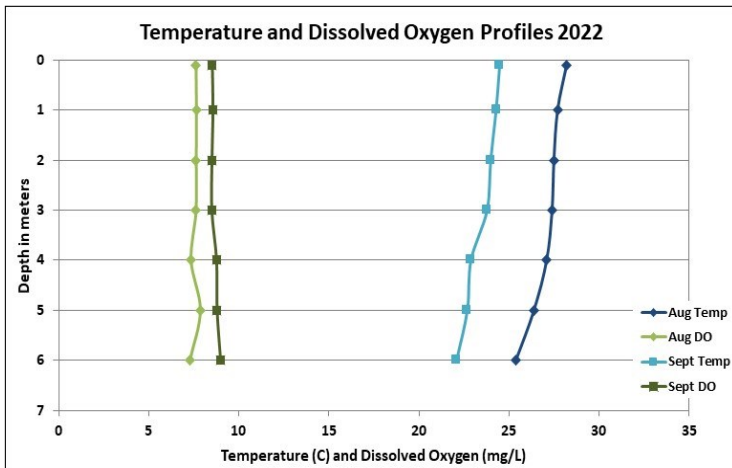
**RECOMMENDED ACTIONS:** Great job sampling in 2022! Lake quality remained representative of oligotrophic, or high quality, conditions and the improving water quality trends are a great sign. While conductivity has significantly increased since monitoring began, it appears to have stabilized since 2010. Drought conditions may have helped to decrease nutrient levels and algal growth, and improve water clarity. This highlights the importance of managing storm-water runoff within the watershed. Consider developing a watershed management plan to protect high quality waters. For more information, contact the NHDES [Watershed Assistance Section](#). The improved pH levels are indicative of the slow recovery of NH surface waters from historical acid precipitation. Keep up the great work!

#### HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Parameter	Trend
Conductivity	Worsening	Chlorophyll-a	Improving
pH (epilimnion)	Stable	Transparency	Improving
		Phosphorus (epilimnion)	Improving



#### 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, decreased slightly in July, and increased slightly in August. Average chlorophyll level decreased from 2022 and was less than the state median and the threshold for oligotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) chlorophyll levels since monitoring began.
- ◆ **CONDUCTIVITY/CHLORIDE:** Epilimnetic (upper water layer) and Hypolimnetic (lower water layer) conductivity levels remained greater than the state median, yet less than a level of concern. Epilimnetic chloride levels were also slightly greater than the state median yet much less than the state chronic chloride standard. However, historical trend analysis indicates significantly increasing (worsening) epilimnetic conductivity levels since monitoring began.
- ◆ **COLOR:** Apparent color measured in the epilimnion indicates the water was clear with little to no tea, or brown, coloring.
- ◆ **TOTAL PHOSPHORUS:** Epilimnetic and Hypolimnetic phosphorus levels were within a low range in June, remained stable in July, and increased slightly in August. Average epilimnetic phosphorus level decreased from 2021 and was less than the state median and the threshold for oligotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) epilimnetic phosphorus levels since monitoring began.
- ◆ **TRANSPARENCY:** Transparency measured with (VS) and without (NVS) the viewscope was high (good) in June and the Secchi disk was visible on the pond bottom, increased (improved) slightly in July, and decreased in August due to wave conditions. Average NVS transparency increased (improved) from 2021 and was higher (better) than the state median. Historical trend analysis indicates significantly increasing (improving) NVS transparency since monitoring began.
- ◆ **TURBIDITY:** Epilimnetic turbidity level fluctuated within a low range. Hypolimnetic turbidity level was slightly elevated in July.
- ◆ **pH:** Epilimnetic and Hypolimnetic pH levels fluctuated within the desirable range 6.5-8.0 units. Historical trend analysis indicates relatively stable epilimnetic pH levels since monitoring began.

Station Name	Table 1. 2022 Average Water Quality Data for KOLELEMOOK LAKE - SPRINGFIELD									
	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	8.9	1.65	22	20	107.1	5	5.87	6.15	0.52	7.03
Hypolimnion				20	105.8	6			0.90	7.04

#### 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)