



VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

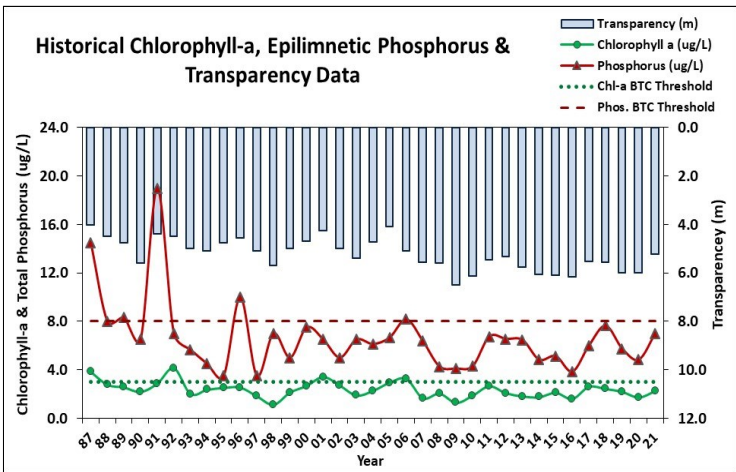
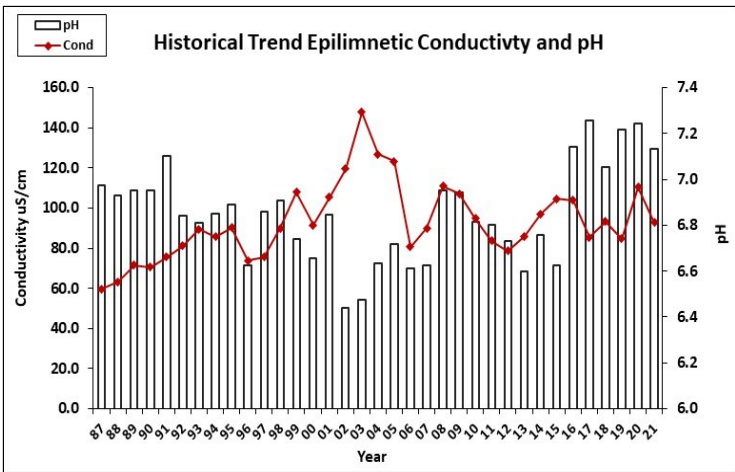
KOLELEMOOK LAKE, SPRINGFIELD

2021 DATA SUMMARY

RECOMMENDED ACTIONS: Great job sampling in 2021! 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. Record rainfall in July and significant storm events in August resulted in high water levels, high turbidity levels and decreased lake clarity. This highlights the importance of managing stormwater runoff within the watershed and may be a more regular occurrence in the future. 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. It is recommended to collect a phytoplankton sample in July of 2022. The Colby Sawyer College laboratory can loan out a plankton net for this purpose. Please contact the [VLAP Coordinator](#) with any questions. Keep up the great work!

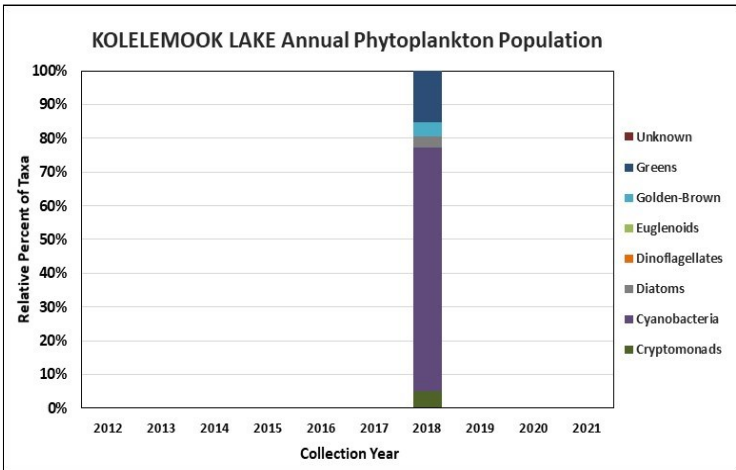
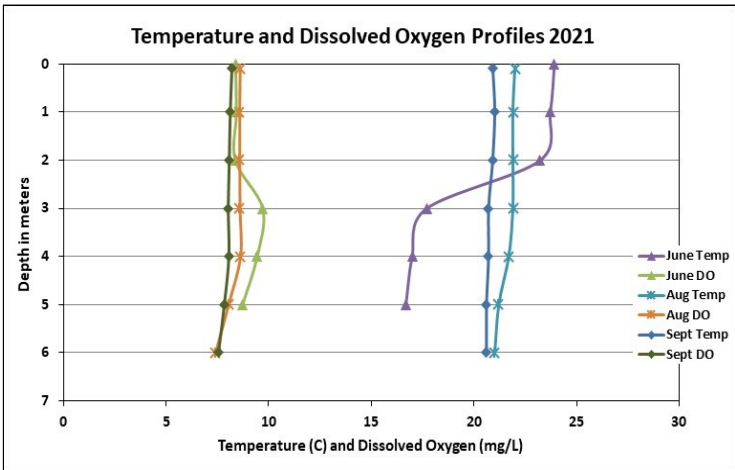
HISTORICAL WATER QUALITY TREND ANALYSIS

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 was very low in June and increased gradually as the summer progressed but remained within a low range. Average chlorophyll level increased slightly from 2020 but remained 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, and decreased as the summer progressed. 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 fluctuated within a clear to lightly tea colored, or light brown, range.
- ◆ **TOTAL PHOSPHORUS:** Epilimnetic and Hypolimnetic phosphorus levels were slightly elevated in June and then decreased to a low level as the summer progressed. Average epilimnetic phosphorus level increased slightly from 2020 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 without the viewscope (NVS) was high (good) in June, decreased (worsened) in August following significant storm events prior to sampling and record rainfall in July, and then increased slightly (improved) in September. Average NVS transparency decreased slightly from 2020 but remained higher (better) than the state median. Historical trend analysis indicates significantly increasing (improving) NVS transparency since monitoring began. Viewscope transparency (VS) was higher (better) than NVS transparency and likely a better measure of actual conditions.
- ◆ **TURBIDITY:** Epilimnetic and Hypolimnetic turbidity levels were slightly elevated in August following significant storm events prior to sampling and record rainfall 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. 2021 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	9.23	2.28	15	23	92.8	7	5.23	5.85	0.92	7.13
Hypolimnion					93.5	7			1.07	7.13

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)