MORPHOMETRIC DATA

						TROPHIC CLASSIFICATION	KNOWN EXOTIC SPECIES

							Year	Trophic class
Watershed Area (Ac.):	610	Max. Depth (m):	6.7	Flushing Rate (yr⁻¹)	0.9			
Surface Area (Ac.):	99	Mean Depth (m):	4.1	P Retention Coef:	0.71		1980	OLIGOTROPHIC
Shore Length (m):	2,900	Volume (m³):	1,623,000	Elevation (ft):	1387		1996	OLIGOTROPHIC

The Waterbody Report Card tables are generated from the DRAFT 2020 305(b) report on the status of N.H. waters, and are based on data collected from 2010-2019. Detailed waterbody assessment and report card information can be found at **NHDES' Water Quality Assessment Website.**

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	Sampling data is better than the water quality standards or thresholds for this parameter.
	pH	Slightly Bad	Data periodically exceed water quality standards or thresholds for this parameter by a small margin.
	Oxygen, Dissolved	Encouraging	Limited data for this parameter predicts water quality standards or thresholds are being met; however more data are necessary to fully assess the parameter.
	Dissolved oxygen satura	Encouraging	Limited data for this parameter predicts water quality standards or thresholds are being met; however more data are necessary to fully assess the parameter.
	Chlorophyll-a	Good	Sampling data is better than the water quality standards or thresholds for this parameter.
Primary Contact Recreation	Escherichia coli	Very Good	All sampling data meet water quality standards or thresholds for this parameter.
	Chlorophyll-a	Very Good	All sampling data meet water quality standards or thresholds for this parameter.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

KOLEMOOK LAKE - TOWN BEACH	Escherichia coli	Very Good	All sampling data meet water quality standards or thresholds for this parameter.

VLAP SAMPLE STATION MAP: This map depicts the location of routine sampling stations discussed on page two of the report.

KOLELEMOOK LAKE
SPRINGFIELD
VOLUNTEER LAKE ASSESSMENT PROGRAM

STATIONID	STATION NAME
KOLSPRD	DEEP SPOT
KOLSPRTBL	TOWN BEACH LEFT
KOLSPRTBR	TOWN BEACH RIGHT
KOLSPRD1	DONKEYS
KOLSPRAD	ARLENES DOCK
KOLSPRAO	ARLENES OAK

Source: The data layers are derived from NHDES data and are under constant revision. NHDES is not responsible for the use or interpretation of this information. Not intended for legal use.NHDES Watershed Management Bureau Date: 2/17/2021

Recommended Actions: Great job sampling in 2020! 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 in the lake since monitoring began, it appears to have stabilized since 2010. Consider development of a watershed management plan to protect high quality waters. For more information, contact the NHDES Watershed Assistance Section. The improved pH levels since 2016 are also positive and indicate the slow recovery of surface waters from historical impacts of acid precipitation. For more information on the recovery of NH surface waters see the NHDES "Acid Rain Status and Trends" report located on the website. Encourage shoreline property owners to be certified LakeSmart through NHLAKES lake-friendly living program www.nhlakes.org/lakesmart/. Keep up the great work!

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

⬥ **Chlorophyll-a:** Chlorophyll level was low in June, decreased slightly in July, and remained stable in August. Average chlorophyll level decreased slightly from 2019 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 and chloride levels remained slightly greater than the state medians, yet chloride levels remained much less than the state chronic chloride standard. 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 phosphorus level was low in June, decreased in July, and remained stable in August. Average epilimnetic phosphorus level decreased slightly from 2019 and was much less than the state median and the threshold for oligotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) epilimnetic phosphorus levels since monitoring began. Hypolimnetic phosphorus level was stable and low from June to August.

⬥ **Transparency:** Transparency measured with (VS) and without (NVS) the viewscope was high (good) in June and increased (improved) steadily as the summer progressed until the Secchi disk was visible on the lake bottom in August. Average NVS transparency remained stable with 2019 and was much higher (better) than the state median. Historical trend analysis indicates significantly increasing (improving) transparency since monitoring began.

⬥ **Turbidity:** Epilimnetic and Hypolimnetic turbidity levels were stable and low from June to August. Average epilimnetic and hypolimnetic turbidity levels decreased slightly from 2019 and were the lowest measured since 2013.

⬥ **pH:** Epilimnetic and Hypolimnetic pH levels were within the desirable range 6.5-8.0 units. Historical trend analysis indicates relatively stable epilimnetic pH levels since monitoring began.

Temperature Profile, July 2020
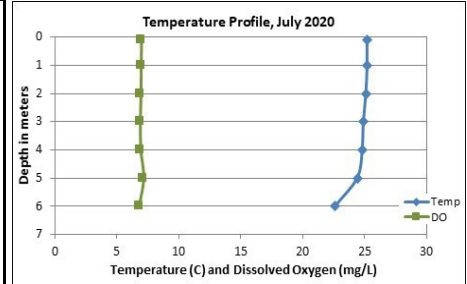
Station Name	Table 1. 2020 Average Water Quality Data for KOLELEMOOK LAKE - SPRINGFIELD									
	Alk. (mg/L)	Chlor-a (ug/L)	Chloride (mg/L)	Color (pcu)	Cond. (us/cm)	Total P (ug/L)	Trans. (m)		Turb. (ntu)	pH
							NVS	VS		
Epilimnion	8.63	1.75	21	23	110.4	5	5.99	6.07	0.50	7.24
Hypolimnion					107.8	6			0.55	7.20

NH Median Values: Median values for specific parameters 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. Results exceeding criteria are considered a water quality violation.

Chloride: > 230 mg/L (chronic)

E. coli: > 88 cts/100 mL – public beach

E. coli: > 406 cts/100 mL – surface waters

Turbidity: > 10 NTU above natural level

pH: between 6.5-8.0 (unless naturally occurring)

Historical Water Quality Trend Analysis

Parameter	Trend	Explanation	Parameter	Trend	Explanation
Conductivity	Worsening	Data significantly increasing.	Chlorophyll-a	Improving	Data significantly decreasing.
pH (epilimnion)	Stable	Trend not significant; data moderately variable.	Transparency	Improving	Data significantly increasing.
			Phosphorus (epilimnion)	Improving	Data significantly decreasing.

Historical Trend Epilimnetic Conductivty and pH

Historical Chlorophyll-a, Epilimnetic Phosphorus & Transparency Data