Volunteer Lake Assessment Program Individual Lake Reports
LEDGE POND, SUNAPEE, NH

MORPHOMETRIC DATA

				TROPHIC CLASSIFICATION		KNOWN EXOTIC SPECIES
Watershed Area (Ac.):	835	Max. Depth (m):	5.2	Flushing Rate (yr⁻¹)	1.3	Year	Trophic class	
Surface Area (Ac.):	110	Mean Depth (m):	2.8	P Retention Coef:	0.72	1981	OLIGOTROPHIC	
Shore Length (m):	3,400	Volume (m³):	1,233,000	Elevation (ft):	1308	2001	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	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	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.
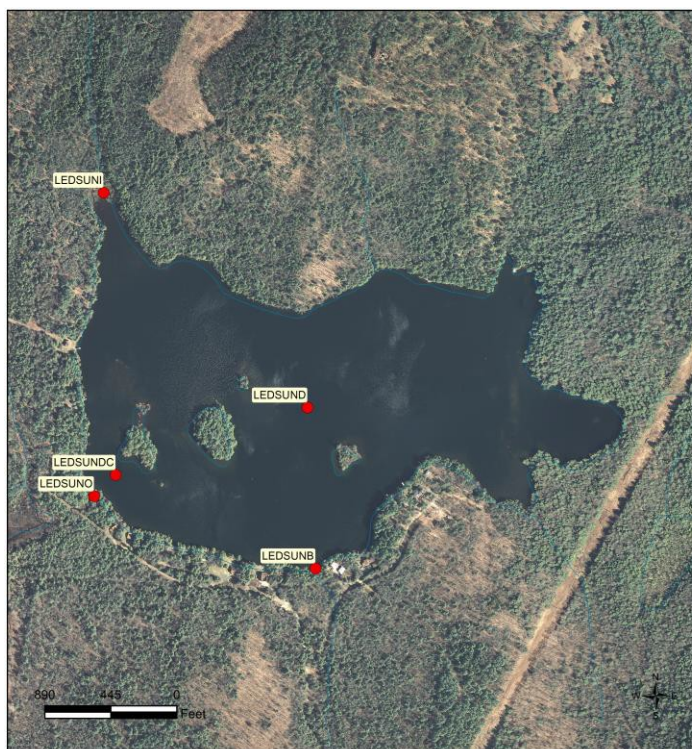
LEDGE POND
SUNAPEE
VOLUNTEER LAKE ASSESSMENT PROGRAM

STATIONID	STATION NAME
LEDSUNDC	DAM COVE
LEDSUNI	INLET
LEDSUNO	OUTLET
LEDSUND	DEEP SPOT
LEDSUNB	BASCOM STREAM

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! Pond quality is representative of oligotrophic, or high quality water. Drought conditions and the lack of stormwater runoff likely helped to keep phosphorus levels and algal growth (chlorophyll) low and water clarity (transparency) high. This highlights the importance of managing stormwater runoff within the watershed. Identify areas within the watershed prone to stormwater runoff and implement best practices recommended in NHDES' "NH Homeowner's Guide to Stormwater Management". The improving pH levels indicate recovery from historical impacts of acid precipitation. To learn more about how NH lakes are recovering consult the "Acid Rain Status and Trend Report" on the NHDES website. Encourage lake front property owners to become 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 July, decreased slightly from 2019, and was less than the state median and the threshold for oligotrophic lakes. Historical trend analysis indicates relatively stable chlorophyll levels since monitoring began.

⬥ **Conductivity/Chloride:** Epilimnetic (upper water layer), Hypolimnetic (lower water layer), Inlet and Outlet conductivity and/or chloride levels remained low and much less than the state medians. Historical trend analysis indicates stable 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, Hypolimnetic and Outlet phosphorus levels were within a low range. Epilimnetic phosphorus level decreased from 2019 and was much less than the state median and the threshold for oligotrophic lakes. Historical trend analysis indicates stable, yet variable, epilimnetic phosphorus levels since monitoring began. Inlet phosphorus level was slightly elevated likely due to low flow/stagnant conditions and low levels of sediment were noted in the sample.

⬥ **Transparency:** Transparency measured with the viewscope (VS) was high (good) in July, improved slightly from 2019, and the Secchi disk was visible on the pond bottom. Historical trend analysis indicates stable transparency since monitoring began.

⬥ **Turbidity:** Epilimnetic, Hypolimnetic and Outlet turbidity levels were within a low range. Inlet turbidity level was slightly above average for that station and sediment was noted in the sample.

⬥ **pH:** Epilimnetic, Hypolimnetic and Outlet pH levels were within the desirable range 6.5-8.0 units. Historical trend analysis indicates significantly increasing (improving) epilimnetic pH levels since monitoring began. We hope to see this continue! Inlet pH levels were slightly acidic and less than desirable.

Temperature Profile July 2020
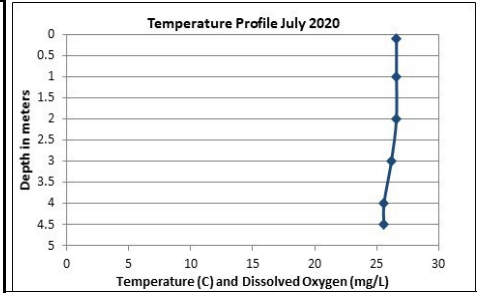
Station Name	Table 1. 2020 Average Water Quality Data for LEDGE POND - SUNAPEE								
	Alk. (mg/L)	Chlor-a (ug/L)	Chloride (mg/L)	Color (pcu)	Cond. (us/cm)	Total P (ug/L)	Trans. (m)	Turb. (ntu)	pH
							VS		
Epilimnion	2.7	2.50	3	20	14.8	5	4.50	0.66	6.86
Hypolimnion					14.2	7		0.86	6.82
Inlet					15.7	15		1.09	6.17
Outlet					14.4	6		0.41	6.73

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	Stable	Trend not significant; data show low variability.	Chlorophyll-a	Stable	Trend not significant; data moderately variable.
pH (epilimnion)	Improving	Data significantly increasing.	Transparency	Stable	Trend not significant; data show low variability.
			Phosphorus (epilimnion)	Stable	Trend not significant; data highly variable.

Historical Trend Epilimnetic Conductivty and pH

Historical Chlorophyll-a, Epilimnetic Phosphorus & Transparency Data

This report was generated by the NHDES Volunteer Lake Assessment Program (VLAP). For more information contact VLAP at (603) 271-2658 or sara.steiner@des.nh.gov