



Volunteer Lake Assessment Program Individual Lake Reports

CLOUGH POND, LOUDON, NH

MORPHOMETRIC DATA

MORPHOMETRIC DATA				TROPIC CLASSIFICATION		KNOWN EXOTIC SPECIES	
Watershed Area (Ac.):	230	Max. Depth (m):	18.2	Flushing Rate (yr ¹)		Year	Trophic class
Surface Area (Ac.):	46	Mean Depth (m):		P Retention Coef:		1983	MESOTROPHIC
Shore Length (m):	1,600	Volume (m ³):		Elevation (ft):	466	2002	MESOTROPHIC

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	Very Good	All sampling data meet water quality standards or thresholds for this 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	No Data	No data for this parameter.
	Cyanobacteria hepatoto	Slightly Bad	Cyanobacteria bloom(s).
	Chlorophyll-a	Very Good	All sampling data meet water quality standards or thresholds for this parameter.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

CLOUGH POND - TOWN BEACH	Escherichia coli	Good	Sampling data commonly meet water quality standards or thresholds for this parameter.
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VLAP SAMPLE STATION MAP: This map depicts the location of routine sampling stations discussed on page two of the report.



CLOUGH POND
LOUDON
VOLUNTEER LAKE ASSESSMENT PROGRAM

STATIONID	STATION NAME
CLOLOUI	INLET
CLOLOUD	DEEP SPOT
CLOLOUTB	OUTLET
CLOLOUTB	TOWN BEACH

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





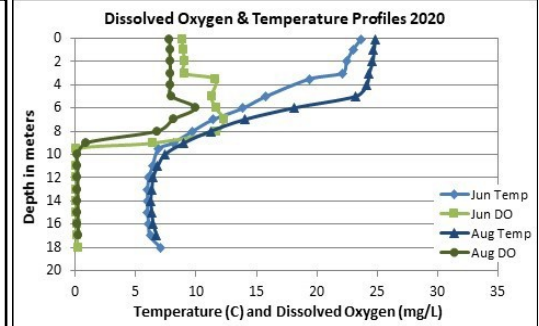
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Clough Pond, Loudon 2020 Data Summary

Recommended Actions: Great job sampling in 2020! Pond quality remained representative of mesotrophic, or average, conditions and the improving chl orophyll (algal growth) levels are encouraging. However, the pond did experience an early season cyanobacteria bloom likely due to warm water temperatures, above average clarity (transparency) and higher levels of nutrients in deeper waters. The dissolved oxygen profile again indicated super-saturated conditions in Metalimnetic waters likely indicating layers of cyanobacteria that can occasionally surface as blooms or scums. Report any suspicious algal/cyanobacteria growth to NHDES' Harmful Algal Bloom Program HAB@des.nh.gov. Inlet phosphorus levels have remained within a higher range since 2017. Investigate potential sources of phosphorus to the inlet and make note of any beaver activity. If beaver are present, consider installing a flow through device allowing water to flow through the dam. Drought conditions generally resulted in improved water quality with low turbidity levels, high clarity (transparency) and lower conductivity levels. This highlights the importance of managing stormwater runoff and the impacts of high intensity storm events on surface waters. Continue efforts to manage stormwater runoff in the watershed. 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 within a low range in June and remained stable in August. Average chlorophyll level decreased slightly from 2019 and was less than the state median and the threshold for mesotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) chlorophyll levels since monitoring began.
- ◆ **Conductivity/Chloride:** Epilimnetic (upper water layer), Metalimnetic (middle water layer), Hypolimnetic (lower water layer), Inlet, and Outlet conductivity and/or chloride levels remained slightly greater than the state medians, yet less than a level of concern. 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 in June and August.
- ◆ **Total Phosphorus:** Epilimnetic phosphorus level was within a low range in June and decreased slightly in August. Average epilimnetic phosphorus level decreased slightly from 2019 and was less than the state median and the threshold for mesotrophic lakes. Historical trend analysis indicates stable, yet variable, epilimnetic phosphorus levels since monitoring began. Metalimnetic phosphorus level was within a moderate range in June and increased to a slightly elevated level in August and the turbidity of the sample also increased likely indicating a layer of algae/cyanobacteria at that depth. Hypolimnetic phosphorus levels were slightly elevated in June and remained stable in August. Inlet phosphorus level was moderate in June and slightly elevated in August when sediment was noted in the sample. Outlet phosphorus levels remained low from June to August.
- ◆ **Transparency:** Transparency measured with (VS) and without (NVS) the viewscope was high (good) in June and remained stable in August. Average NVS transparency increased (improved) from 2019 and was higher (better) than the state median. Historical trend analysis indicates relatively stable NVS transparency since monitoring began.
- ◆ **Turbidity:** Epilimnetic turbidity levels were stable and low and were the lowest measured since monitoring began. Metalimnetic turbidity level was slightly elevated in August likely due to a layer of algae and average turbidity levels were the lowest measured since monitoring began. Hypolimnetic turbidity levels fluctuated within a moderate range for that station. Inlet turbidity level was slightly elevated in August and sediment was noted in the sample. Average Outlet turbidity level was also the lowest measured since monitoring began.
- ◆ **pH:** Epilimnetic, Metalimnetic, Inlet, 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. Hypolimnetic pH level was slightly acidic and less than desirable.



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)

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

Station Name	Table 1. 2020 Average Water Quality Data for CLOUGH POND - LOUDON									
	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	8.3	3.10	18	20	73.0	8	5.00	4.62	0.34	7.11
Metalimnion					71.2	15			1.02	6.79
Hypolimnion					82.0	29			2.28	6.08
Inlet			18		72.4	17			2.28	6.63
Outlet			19		74.8	7			0.62	6.84

Historical Water Quality Trend Analysis

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

