Volunteer Lake Assessment Program Individual Lake Reports

LONG POND, DANVILLE, NH

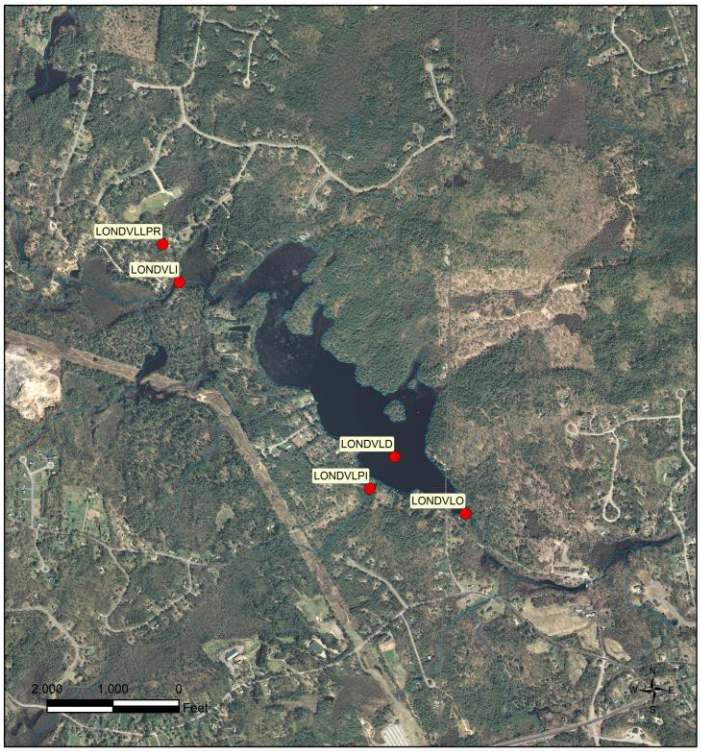
MORPHOMETRIC DATA | **TROPHIC CLASSIFICATION** | **KNOWN EXOTIC SPECIES**

Watershed Area (Ac.):	2,560	**Max. Depth (m):**	3.9	**Flushing Rate (yr^{1}):**	8.3	**Year**	**Trophic class**	Variable Milfoil
Surface Area (Ac.):	89	**Mean Depth (m):**	1.6	**P Retention Coef:**	0.52	1982	EUTROPHIC	
Shore Length (m):	2,600	**Volume (m^3):**	566,000	**Elevation (ft):**	144	1995	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)	Cautionary	Limited data for this parameter predicts exceedance of water quality standards or thresholds; however more data are necessary to fully assess the parameter.
	pH	Cautionary	Limited data for this parameter predicts exceedance of water quality standards or thresholds; however more data are necessary to fully assess the parameter.
	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	Cautionary	Limited data for this parameter predicts exceedance of water quality standards or thresholds; 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.
	Chlorophyll-a	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.

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



LONG POND
DANVILLE
VOLUNTEER LAKE ASSESSMENT PROGRAM

STATIONID	STATION NAME
LONDVLD	DEEP SPOT
LONDVLPI	PINE ST INLET
LONDVLI	INLET
LONDVLO	OUTLET
LONDVLLPR	LONG POND RD. INLET

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

Volunteer Lake Assessment Program Individual Lake Reports
Long Pond, Danville
2020 Data Summary

Recommended Actions: Great job sampling in 2020! Maintain an annual monitoring program and try to increase monitoring frequency to once per month, typically June, July and August, to establish a baseline data set and to assess water quality trends. Drought conditions helped to improved water quality in 2020 with lower levels of algal growth and improved water clarity (transparency). Drought conditions also resulted in lighter water color which helped improve clarity due to the lack of flushing of wetland systems rich in dissolved organic matter that imparts a tea, or brown, color to the water. Continue efforts to educate lake and watershed residents on ways to reduce stormwater runoff from their properties by utilizing NHDES' "NH Homeowner's Guide to Stormwater Management". Educate and encourage local winter maintenance companies on the Green SnowPro Certification program to help reduce amount of road salt applied to roads, parking lots, driveways, and walkways during winter months. 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 August, was less than the state median and the threshold for mesotrophic lakes, and was the lowest level measured since monitoring began. Visual inspection of historical data indicates stable chlorophyll levels since monitoring began.
- **Conductivity/Chloride:** Epilimnetic (deep spot), Inlet and Outlet conductivity and/or chloride levels remained elevated and much greater than the state medians. However, chloride levels were less than the state chronic chloride standard. Visual inspection of historical data indicates decreasing (improving) epilimnetic conductivity levels since monitoring began.
- **Color:** Apparent color measured in the epilimnion indicates the water was moderately tea colored, or brown, in August. Average color decreased from highly tea colored conditions measured between 2017-2019.
- **Total Phosphorus:** Epilimnetic and Outlet phosphorus levels were within a moderate range in August. Epilimnetic phosphorus level remained stable with 2019 and was greater than the state median and the threshold for mesotrophic lakes. Visual inspection of historical data indicates stable epilimnetic phosphorus levels since monitoring began. Inlet phosphorus levels were elevated due to stagnant/low flow conditions and beaver activity.
- **Transparency:** Transparency measured with (VS) and without (NVS) the viewscope was high (good) for the pond in August likely due to the lighter water color. Average NVS transparency increased (improved) from 2019 and was the highest (best) measured since monitoring began. Visual inspection of historical data indicates stable transparency since monitoring began.
- **Turbidity:** Epilimnetic and Outlet turbidity levels were within a low range. Inlet turbidity levels were elevated due to low flow/stagnant conditions and highly colored water.
- **pH:** Epilimnetic and Outlet pH levels were within the desirable range 6.5-8.0 units. Visual inspection of historical data indicates stable, yet variable, epilimnetic pH levels since monitoring began. Inlet pH levels were slightly less than desirable.

Station Name	Table 1. 2020 Average Water Quality Data for LONG POND - DANVILLE									
	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	16.1	2.66	60	70	196.0	19	2.62	2.75	0.58	7.17
Inlet			65		236.0	89			5.00	6.44
Outlet					194.9	16			0.48	6.92

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	N/A	Ten years of data necessary for analysis.	Chlorophyll-a	N/A	Ten years of data necessary for analysis.
pH (epilimnion)	N/A	Ten years of data necessary for analysis.	Transparency	N/A	Ten years of data necessary for analysis.
			Phosphorus (epilimnion)	N/A	Ten years of data necessary for analysis.