



Volunteer Lake Assessment Program Individual Lake Reports

NUTT POND, MANCHESTER, NH

MORPHOMETRIC DATA
TROPIC CLASSIFICATION
KNOWN EXOTIC SPECIES

Watershed Area (Ac.):	415	Max. Depth (m):	9.2	Flushing Rate (yr¹)	3.1	Year	Trophic class	Brazilian Elodea
Surface Area (Ac.):	16	Mean Depth (m):	4	P Retention Coef:	0.53	1981	EUTROPHIC	
Shore Length (m):	950	Volume (m³):	260,500	Elevation (ft):	237	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)	Slightly Bad	Data exceed water quality standards or thresholds for this parameter by a small margin.
	pH	Slightly Bad	Data periodically exceed water quality standards or thresholds for a given parameter by a small margin.
	Oxygen, Dissolved	Very Good	All sampling data meet water quality standards or thresholds for this parameter.
	Dissolved oxygen satura	Slightly Bad	Data periodically exceed water quality standards or thresholds for this parameter by a small margin.
	Chlorophyll-a	Slightly Bad	Data exceed water quality standards or thresholds for this parameter by a small margin.
Primary Contact Recreation	Escherichia coli	No Data	No data for this parameter.
	Chlorophyll-a	Slightly Bad	Data periodically exceed water quality standards or thresholds for this parameter by a small margin.

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



**NUTT POND
MANCHESTER
VOLUNTEER LAKE ASSESSMENT PROGRAM**

STATIONID	STATION NAME
NUTMAND	DEEP SPOT
NUTMANI2	INLET
NUTMANO	OUTLET

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

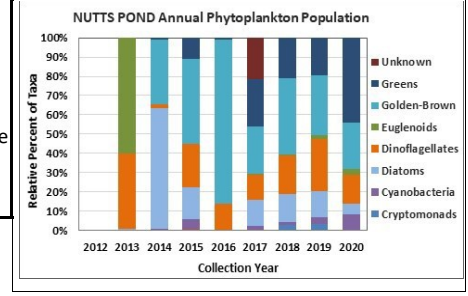
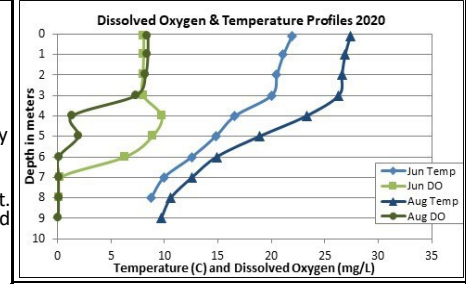
Nutts Pond, Manchester

2020 Data Summary

Recommended Actions: Great job sampling in 2020! Drought conditions led to decreased (improved) chlorophyll and turbidity levels and increased (improved) water clarity, particularly in June. This highlights the importance of managing stormwater runoff in an urban watershed. The improving chlorophyll levels are encouraging, however epilimnetic phosphorus levels have increased steadily since 2014 and remain greater than the threshold for mesotrophic lakes. Elevated conductivity and chloride levels are indicative of the urban environment, however efforts should continually be made to evaluate management activities related to application of winter de-icing materials on parking lots and roadways. Continue to measure apparent color and its relationship with water clarity. Keep up the great work!

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

- ◆ **Chlorophyll-a:** Chlorophyll level was low in June and then increased to a slightly elevated level in August. Average chlorophyll level decreased from 2019, was slightly greater than the state median, and was slightly less than the threshold for mesotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) chlorophyll levels since monitoring began.
- ◆ **Conductivity/Chloride:** Deep spot, Inlet and Outlet conductivity and/or chloride levels remained greatly elevated and much greater than the state medians and the state chronic chloride standard. Historical trend analysis indicates significantly increasing (worsening) epilimnetic (upper water layer) conductivity levels since monitoring began.
- ◆ **Color:** Apparent color measured in the epilimnion indicates the water was lightly tea colored, or light brown.
- ◆ **Total Phosphorus:** Epilimnetic phosphorus level was moderate in June and increased to a slightly elevated level in August. Average epilimnetic phosphorus level increased slightly from 2019 and was greater than the state median and the threshold for mesotrophic lakes. Metalimnetic (middle water layer) phosphorus levels were elevated on each sampling event. Hypolimnetic (lower water level) phosphorus levels remained greatly elevated and within a normal range for that station. Inlet phosphorus level was low in June and greatly elevated in August during drought conditions. Outlet phosphorus levels fluctuated within a moderate range.
- ◆ **Transparency:** Transparency measured with (VS) and without (NVS) the viewscope was above average (good) in June and measured approximately five meters, and then decreased (worsened) to two meters in August. Average NVS transparency increased (improved) from 2019 and was approximately equal to the state median. Historical trend analysis indicates stable, yet variable transparency since monitoring began.
- ◆ **Turbidity:** Epilimnetic, Metalimnetic and Outlet turbidity fluctuated within a low range and average turbidity levels were the lowest measured since monitoring began. Hypolimnetic turbidity levels were greatly elevated. Inlet turbidity levels were slightly elevated in August when phosphorus levels were also elevated.
- ◆ **pH:** Deep spot, Inlet and Outlet pH levels were within the desirable range 6.5-8.0 units. Historical trend analysis indicates stable epilimnetic pH levels since monitoring began.



Station Name	Table 1. 2020 Average Water Quality Data for NUTTS POND - MANCHESTER									
	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	24.9	4.40	329	40	1172.0	19	3.25	3.50	0.85	7.26
Metalimnion					1372.0	31			1.42	6.86
Hypolimnion					3295.0	87			121.70	6.52
Inlet			356		1371.5	81			1.96	7.12
Outlet			317		1182.0	19			0.86	7.26

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 show low variability.	Transparency	Stable	Trend not significant; data highly variable.
			Phosphorus (epilimnion)	Improving	Data significantly decreasing.

