Volunteer Lake Assessment Program Individual Lake Reports
DORRS POND, MANCHESTER, NH

MORPHOMETRIC DATA

						TROPHIC CLASSIFICATION		**KNOWN EXOTIC SPECIES**
Watershed Area (Ac.):	1,473	Max. Depth (m):	2.9	Flushing Rate (yr¹)	31.2	Year	Trophic class	
Surface Area (Ac.):	18	Mean Depth (m):	1.3	P Retention Coef:	0.39	1981	EUTROPHIC	
Shore Length (m):	1,600	Volume (m³):	92,000	Elevation (ft):	270	1997	MESOTROPHIC	

The Waterbody Report Card tables are generated from the DRAFT 2018 305(b) report on the status of N.H. waters, and are based on data collected from 2008-2017. Detailed waterbody assessment and report card information can be found at www.des.nh.gov/organization/divisions/water/wmb/swqa/index.htm

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Bad	Data exceed water quality standards or thresholds for this parameter by a large margin.
	pH	Good	Sampling data commonly meet water quality standards or thresholds for this parameter.
	Oxygen, Dissolved	Slightly Bad	Data periodically exceed water quality standards or thresholds for this parameter by a small margin.
	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.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.
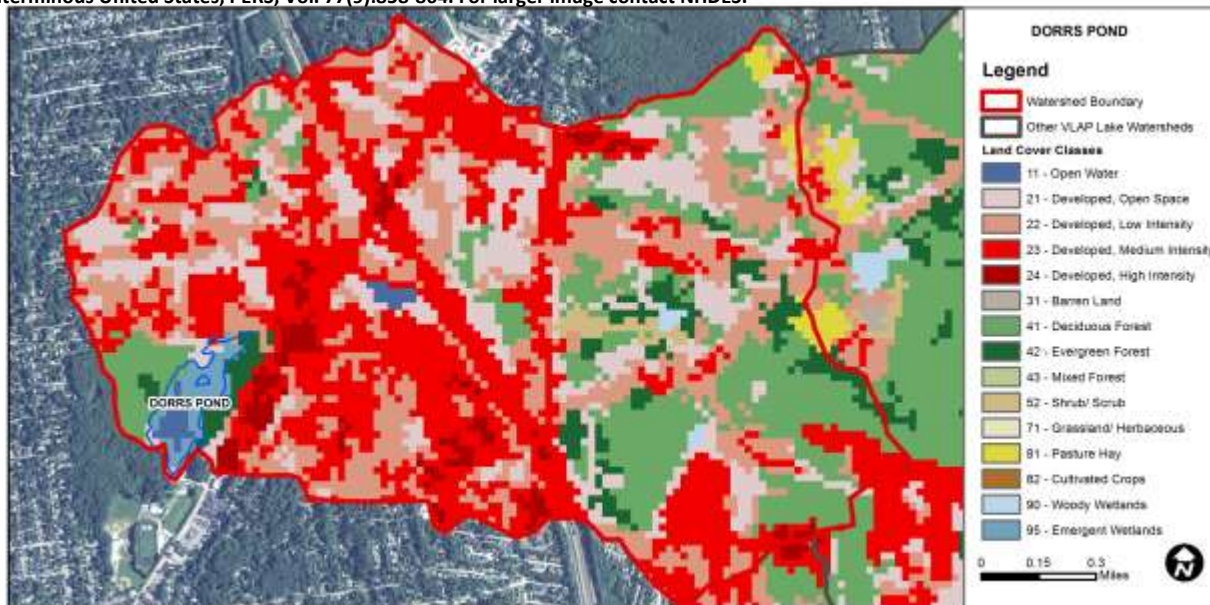
Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	0.65	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	16.8	Deciduous Forest	16.18	Pasture Hay	0.63
Developed-Low Intensity	25.3	Evergreen Forest	4.15	Cultivated Crops	0
Developed-Medium Intensity	30.9	Mixed Forest	0.13	Woody Wetlands	0.26
Developed-High Intensity	2.94	Shrub-Scrub	0.76	Emergent Wetlands	1.23

# VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
DORRS POND, MANCHESTER
2019 DATA SUMMARY

RECOMMENDED ACTIONS: The improving chlorophyll levels are a positive sign, however phosphorus levels remain greater than the threshold for mesotrophic lakes. East II Inlet phosphorus levels have improved since 2017 and we hope to see this continue. The fountain was active in July and August and during this time algal growth increased and water clarity (transparency) decreased. Chloride levels are likely toxic to some aquatic life in the pond. Once again, this is representative of an urban watershed, and best efforts should be made to try and reduce the use of salts on roads, parking lots, driveways, and walkways. Keep up the great work!

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

- **CHLOROPHYLL-A:** Chlorophyll level was low in June, increased to slightly elevated level in July, and then decreased slightly in August. Average chlorophyll level decreased from 2018 and was approximately equal to the state median and the threshold for mesotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) chlorophyll levels since monitoring began.
- **CONDUCTIVITY/CHLORIDE:** Epilimnetic (deep spot) and tributary conductivity and chloride levels remained elevated and much greater than the state medians. Chloride levels at East II Inlet and Lessard Inlet exceeded the state chronic chloride standard. Chloride levels at all other stations approached the chronic standard on each sampling event but did not exceed the standard. Historical trend analysis indicates highly variable epilimnetic conductivity levels since monitoring began.
- **COLOR:** Apparent color measured in the epilimnion indicates the water was highly tea colored, or dark brown.
- **TOTAL PHOSPHORUS:** Epilimnetic phosphorus levels were elevated and decreased slightly as the summer progressed. Average epilimnetic phosphorus level decreased from 2018 but remained greater than the state median and the threshold for mesotrophic lakes. Historical trend analysis indicates stable epilimnetic phosphorus levels since monitoring began. East II Inlet phosphorus levels fluctuated within a moderate range. Juniper St. Inlet phosphorus levels were low in June and August and elevated in July when turbidity levels were also elevated. Lessard Inlet phosphorus levels were elevated but within a normal range for this station. Outlet phosphorus levels were slightly elevated in June and July and decreased to a moderate level in August.
- **TRANSPARENCY:** Transparency measured with (VS) and without (NVS) the viewscope was high (good) in June, decreased (worsened) in July and remained stable in August. Average NVS transparency increased (improved) slightly from 2018. Historical trend analysis indicates relatively stable transparency since monitoring began.
- **TURBIDITY:** Epilimnetic turbidity levels were within a moderate range for that station and remained stable from June to August. East II Inlet turbidity levels were low. Lessard Inlet turbidity levels were elevated in July and August during dry conditions. Juniper St. Inlet turbidity levels were slightly elevated in June and increased in July and August. Outlet turbidity levels were slightly elevated in July.
- **PH:** Epilimnetic, East II Inlet, Juniper St. Inlet, Lessard 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.

Dissolved Oxygen & Temperature Profiles, 2019

DORRS POND Annual Phytoplankton Population
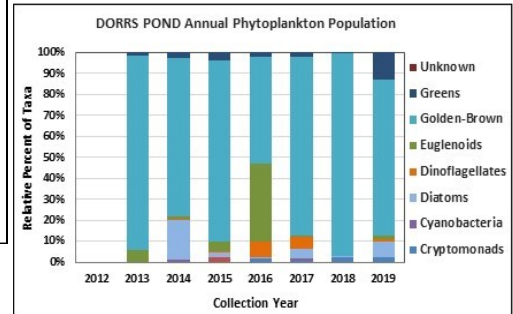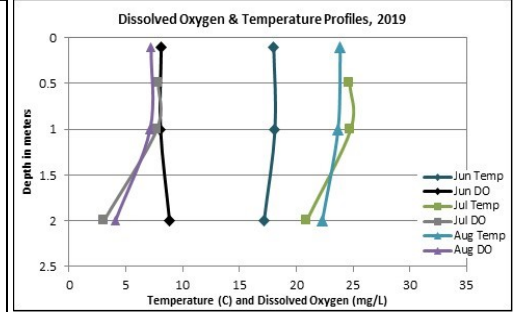
Table 1. 2019 Average Water Quality Data for DORRS POND - MANCHESTER

Station Name	Alk. mg/l	Chlor-a ug/l	Chloride mg/l	Color pcu	Cond. us/cm	Total P mg/l	Trans. m NVS	Trans. m VS	Turb. ntu	pH
Epilimnion	26.9	4.85	210	117	723.7	22	1.58	1.72	2.35	7.14
East II Inlet			274		968.0	18			0.47	7.11
Juniper St. Inlet			180		651.0	16			4.74	6.51
Lessard Inlet			418		1395.7	31			10.39	7.09
Outlet			209		727.3	24			1.58	7.03

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

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