



## Volunteer Lake Assessment Program Individual Lake Reports

### DORRS POND, MANCHESTER, NH

#### MORPHOMETRIC DATA

Watershed Area (Ac.):	1,473	Max. Depth (m):	2.9	Flushing Rate (yr <sup>-1</sup> ):	31.2
Surface Area (Ac.):	18	Mean Depth (m):	1.3	P Retention Coef:	0.39
Shore Length (m):	1,600	Volume (m <sup>3</sup> ):	92,000	Elevation (ft):	270

#### TROPHIC CLASSIFICATION

#### KNOWN EXOTIC SPECIES

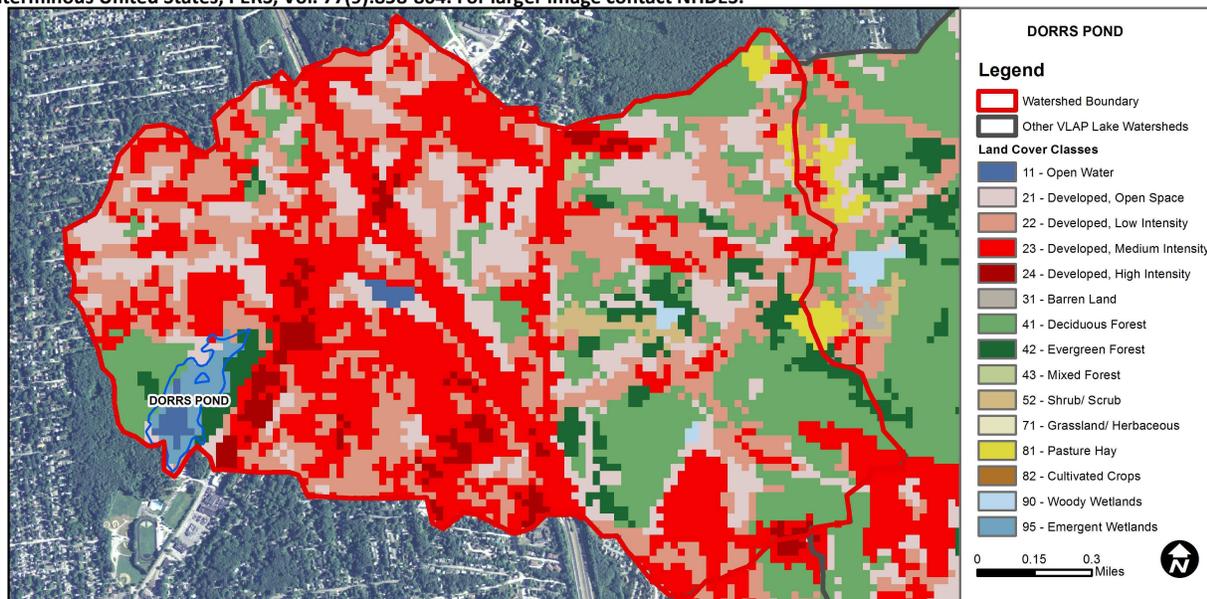
Year	Trophic class	Known Exotic Species
1981	EUTROPHIC	
1997	MESOTROPHIC	

The Waterbody Report Card tables are generated from the DRAFT 2014 305(b) report on the status of N.H. waters, and are based on data collected from 2004-2013. Detailed waterbody assessment and report card information can be found at [www.des.nh.gov/organizations/divisions/water/wmb/swqa/index.htm](http://www.des.nh.gov/organizations/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

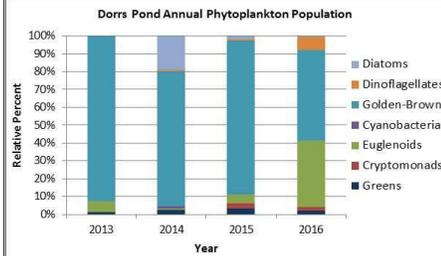
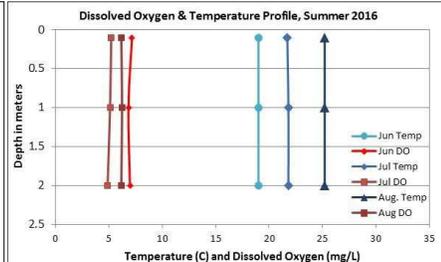
## DORRS POND, MANCHESTER

### 2016 DATA SUMMARY

**RECOMMENDED ACTIONS:** The improving chlorophyll trend is a good sign and we hope to see this continue, however chlorophyll and phosphorus levels were above average in 2016. Dorrs Pond is located within a highly urbanized watershed which leads to poor water quality. It is recommended to address the elevated chloride and phosphorus levels but we recognize the limitations in improving water quality. The installation of a fountain in the pond may lead to improved oxygen levels and help to decrease phosphorus and resulting algal growth. However, the pond transparency has been lower (worse) since 2013 and this may also be the result of the fountain. Continued monitoring will measure any impacts, positive or negative, that the fountain may have on water quality. Lessard Inlet experienced elevated turbidity levels following a significant storm event in July suggesting stormwater runoff impacts the tributary. Keep up the great work!

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

- CHLOROPHYLL-A:** Chlorophyll levels were elevated in June and August and indicative of an algal bloom. Average chlorophyll levels increased in 2016 and were much greater than the state median, however 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. Historical trend analysis indicates highly variable epilimnetic conductivity levels since monitoring began. Epilimnetic, Lessard Inlet and Outlet chloride levels exceeded the state standard for chronic chloride conditions. Chloride levels in East II Inlet exceeded the state standard in June but decreased to well below the standard by August.
- TOTAL PHOSPHORUS:** Epilimnetic phosphorus levels were elevated in June and August during the periods of elevated algal growth. Average epilimnetic phosphorus level increased from 2015 and was much greater than the state median. Historical trend analysis indicates stable epilimnetic phosphorus levels since monitoring began. East II Inlet phosphorus levels were within a low range for that station in June and July but increased to elevated levels following a significant storm event in August. Lessard Inlet phosphorus levels were slightly elevated on each sampling event. Juniper St. Inlet phosphorus level were low in June and increased to elevated levels in July and August. Outlet phosphorus levels were within an average range for that station.
- TRANSPARENCY:** Transparency measured without the viewscope (NVS) was low (worse) in June and July and then increased (improved) in August. Average NVS transparency decreased (worsened) from 2015 and was the lowest (worst) measured since 2002. Historical trend analysis indicates relatively stable transparency with moderate variability between years. Transparency measured with the viewscope (VS) was slightly better than NVS transparency and likely a better representation of actual conditions.
- TURBIDITY:** Epilimnetic turbidity level was slightly elevated in June and August during the periods of elevated algal growth, and greatly elevated in July when pond water was noted as brown indicating elevated levels of algal growth. East II Inlet turbidity levels were low in June and August and then slightly elevated in July following the storm event. Lessard Inlet turbidity was slightly elevated in June, elevated in July and then decreased to low levels in August. Juniper St. Inlet turbidity was elevated in June and water color was noted as brown, decreased to lower levels in July and then increased slightly in August. Outlet turbidity levels were slightly elevated in June and July and decreased to average levels in August.
- pH:** Epilimnetic and tributary pH levels were within the desirable range 6.5-8.0 units however have historically fluctuated below the desirable level. Historical trend analysis indicates stable epilimnetic pH levels since monitoring began.



Station Name	Table 1. 2016 Average Water Quality Data for DORRS POND-MANCHESTER								
	Alk. mg/l	Chlor-a ug/l	Chloride mg/l	Cond. uS/cm	Total P ug/l	Trans. m		Turb. ntu	pH
						NVS	VS		
Epilimnion	34.9	13.74	257	933.0	31	1.20	1.29	7.08	7.09
East II Inlet			143	592.0	25			0.87	7.05
Juniper St. Inlet			210	841.3	24			5.73	6.62
Lessard Inlet			277	1057.3	36			8.79	6.96
Outlet			240	938.7	30			5.75	7.05

**NH Median Values:** Median values for specific parameters generated from historic lake monitoring data.

**Alkalinity:** 4.9 mg/L  
**Chlorophyll-a:** 4.58 mg/m<sup>3</sup>  
**Conductivity:** 40.0 uS/cm  
**Chloride:** 4 mg/L  
**Total Phosphorus:** 12 ug/L  
**Transparency:** 3.2 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.

