Volunteer Lake Assessment Program Individual Lake Reports

MOORES POND, TAMWORTH, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	12,224	**Max. Depth (m):**	11.3	**Flushing Rate (yr^{1})**	34
Surface Area (Ac.):	50	**Mean Depth (m):**	4.4	**P Retention Coef:**	0.14
Shore Length (m):	2,600	**Volume (m^3):**	886,000	**Elevation (ft):**	440

TROPHIC CLASSIFICATION

Year	Trophic class
1984	MESOTROPHIC
2004	MESOTROPHIC

KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

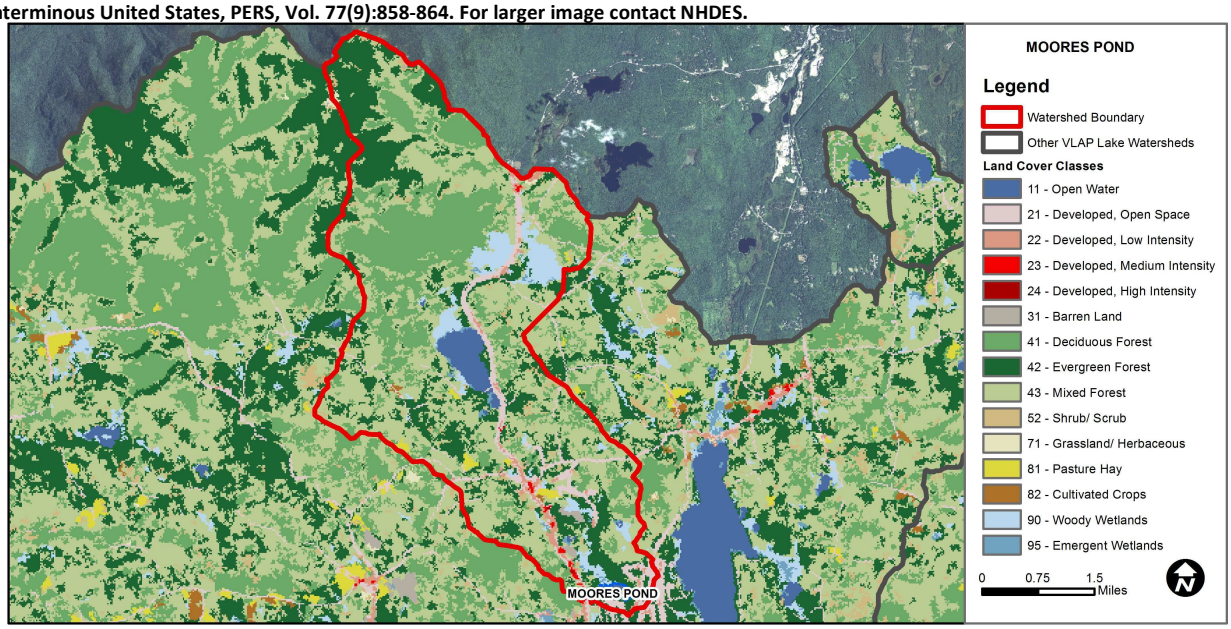
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Very Good	>5 samples and median is < 1/2 threshold.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	Good	Geometric means < criteria; however at least 1 exceedance of the single sample criteria occurred.
	Chlorophyll-a	Encouraging	< 10 samples and no exceedance of criteria. More data needed.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

MOORES POND - ASSOCIATION BEACH	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
MOORES POND - MOORES POND SKI AND BEACH	E. coli	Bad	>/=1 exceedance(s) of geometric mean criterion and/or >/=2 exceedances of single sample criterion, with 1 or more >2X criteria.

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.

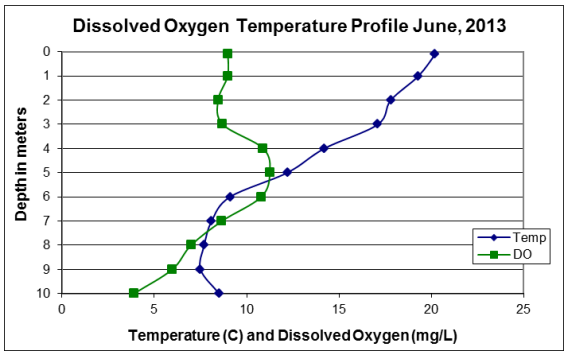


Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	2.53	Barren Land	0.31	Grassland/Herbaceous	0.11
Developed-Open Space	4.8	Deciduous Forest	24.4	Pasture Hay	0.55
Developed-Low Intensity	1.29	Evergreen Forest	21.43	Cultivated Crops	0.1
Developed-Medium Intensity	0.21	Mixed Forest	37.58	Woody Wetlands	4.62
Developed-High Intensity	0.02	Shrub-Scrub	1.57	Emergent Wetlands	0.46

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
MOORES POND, TAMWORTH, NH
2013 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic*)

- **CHLOROPHYLL-A:** Chlorophyll levels were low, decreased from 2012, and were less than the state median. Visual inspection of historical data indicates relatively stable chlorophyll since monitoring began.
- **CONDUCTIVITY/CHLORIDE:** Conductivity and chloride were slightly greater than the state medians. Visual inspection of historical data indicates stable epilimnetic conductivity since monitoring began.
- **E. COLI:** Beach E. coli levels were well below state standards for public beaches.
- **TOTAL PHOSPHORUS:** Deep spot and Northeast Corner phosphorus levels were very low in June which is good considering the significant storm events and above average rainfall for the month. Visual inspection of historical data indicates relatively stable epilimnetic phosphorus since monitoring began.
- **TRANSPARENCY:** Transparency was good and better than the state median. Viewscope transparency was much better than non-viewscope transparency and likely better represents actual conditions. Visual inspection of historical data indicates relatively stable transparency since monitoring began.
- **TURBIDITY:** Deep spot and Northeast Corner turbidity levels were relatively low.
- **pH:** Deep spot pH levels were lower than desirable range 6.5 – 8.0 units. Visual inspection of historical data indicates variable epilimnetic pH.
- **RECOMMENDED ACTIONS:** Increase monitoring frequency to three times per summer, typically June, July and August, to better assess seasonal and historical water quality trends. The increased frequency and intensity of storm events highlights the importance of reducing stormwater runoff into the pond. Educate lake and watershed residents on ways to reduce stormater runoff from their properties utilizing DES' "Homeowner's Guide to Stormwater Management".

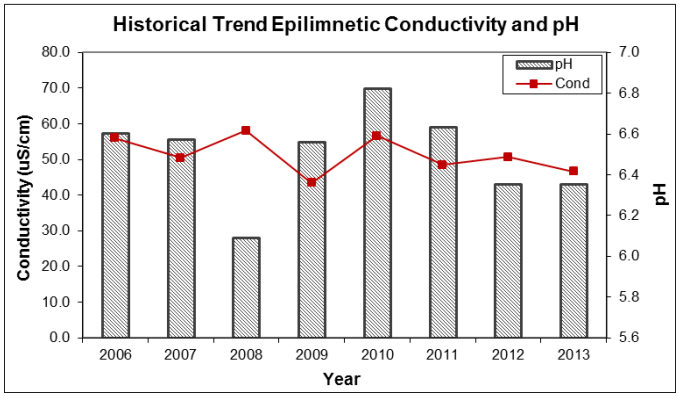
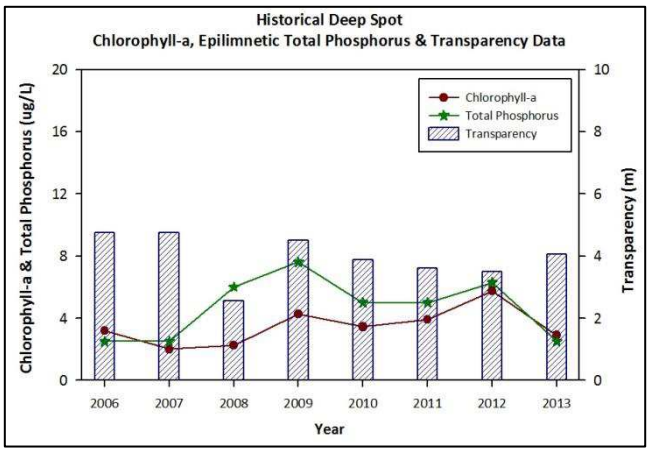


Station	Alk. mg/l	Chlor-a ug/l	Chloride mg/l	Cond. uS/cm	E. Coli #/100ml	Total P ug/l	Trans. m NVS	Trans. m VS	Turb. ntu	pH
Beach Front					10					
Epilimnion	3.10	2.90	7	46.6		3	4.05	5.10	0.98	6.35
Metalimnion				51.8		3			0.50	6.21
Hypolimnion				54.7		6			1.30	5.93
Northeast Corner				44.0		3			0.52	6.37

Table 1. 2013 Average Water Quality Data for MOORES POND

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^3
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: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	N/A	Ten consecutive years of data necessary.	Chlorophyll-a	N/A	Ten consecutive years of data necessary.
Conductivity	N/A	Ten consecutive years of data necessary.	Transparency	N/A	Ten consecutive years of data necessary.
			Phosphorus (epilimnion)	N/A	Ten consecutive years of data necessary.