



Volunteer Lake Assessment Program Individual Lake Reports

CHALK POND, NEWBURY, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	339	Max. Depth (m):	3.7	Flushing Rate (yr ⁻¹):	4.6
Surface Area (Ac.):	21	Mean Depth (m):	2	P Retention Coef:	0.56
Shore Length (m):	1,600	Volume (m ³):	166,500	Elevation (ft):	1252

TROPIC CLASSIFICATION

Year	Trophic class
1986	OLIGOTROPIC
2006	MESOTROPIC

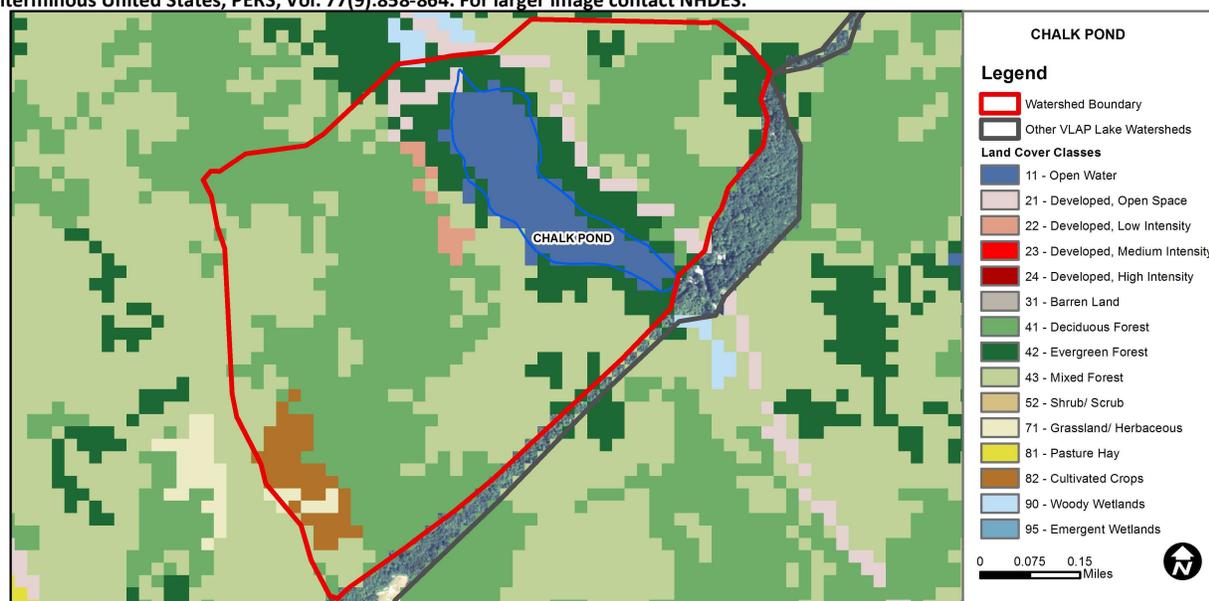
KNOWN EXOTIC SPECIES

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)	Slightly Bad	>/=5 samples and median is >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	Slightly Bad	>5 samples and median is > threshold.
Primary Contact Recreation	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.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of 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	8.56	Barren Land	0	Grassland/Herbaceous	0.47
Developed-Open Space	2.67	Deciduous Forest	40.51	Pasture Hay	0
Developed-Low Intensity	1.02	Evergreen Forest	12.09	Cultivated Crops	3.3
Developed-Medium Intensity	0	Mixed Forest	31.79	Woody Wetlands	0
Developed-High Intensity	0	Shrub-Scrub	0	Emergent Wetlands	0



VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

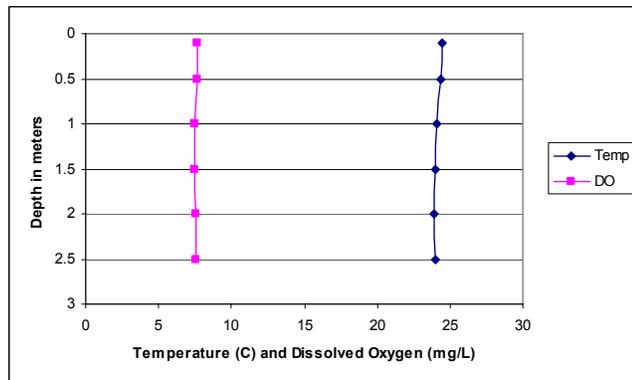
CHALK POND, NEWBURY, NH

2012 DATA SUMMARY

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

- ♣ **CHLOROPHYLL-A:** Chlorophyll levels were well below the NH lake median value and decreased from 2011. Historical trend analysis indicates chlorophyll levels fluctuate annually.
- ♣ **CONDUCTIVITY/CHLORIDE:** Deep spot and Outlet conductivity levels were average for NH lakes. Inlet conductivity was low.
- ♣ **E. COLI:** E. coli levels were well below state standards for public beaches and surface waters.
- ♣ **TOTAL PHOSPHORUS:** 2012 average phosphorus levels were low. Historical trend analysis indicates epilimnetic (upper water layer) phosphorus levels tend to fluctuate annually.
- ♣ **TRANSPARENCY:** Historical trend analysis indicates a significantly worsening (decreasing) lake transparency since monitoring began. A special study was conducted in 2012 to assess lake turbidity as it relates to the decreasing transparency. Results will be available when the student finalizes the report.
- ♣ **TURBIDITY:** 2012 average turbidity levels were low except for the hypolimnetic (lower water layer) turbidity which was slightly elevated.
- ♣ **PH:** Epilimnetic pH levels were lower than desirable.
- ♣ **RECOMMENDED ACTIONS:** Continue investigating turbidity and stormwater impacts as it relates to decreasing lake transparency. Keep up the great work!

2012 Dissolved Oxygen & Temperature Profile



Station Name	Table 1. 2012 Average Water Quality Data for CHALK POND							
	Alk.	Chlor-a	Cond.	E. Coli	Total P	Trans.	Turb.	pH
	mg/l	ug/l	uS/cm	#/100ml	ug/l	m	ntu	
						NVS		
Deep Epilimnion	5.1	2.09	47.8		7	3.3	0.64	6.35
Deep Hypolimnion			48.1		7		1.29	6.54
Inlet			23.8		6		0.69	6.24
Main Beach				2				
North Beach				19				
Outlet			46.7		8		0.62	6.44
South Beach				1				

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

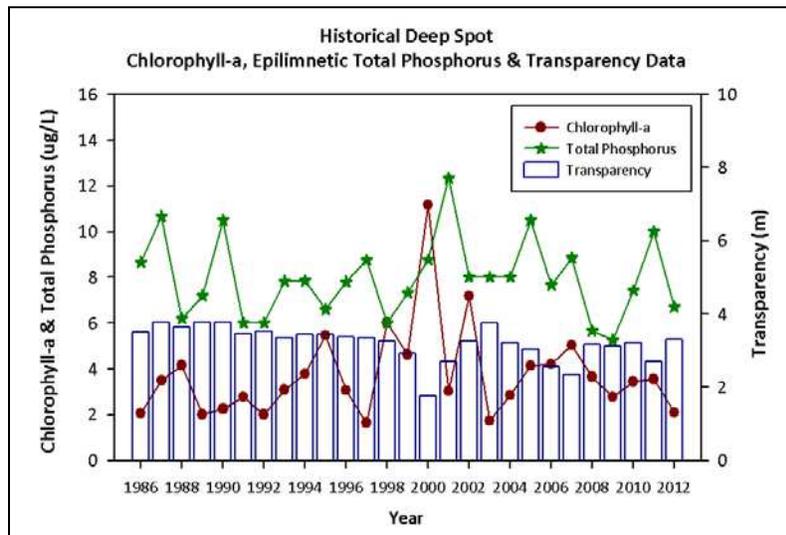
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m³
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

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
Chlorophyll-a	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.
Transparency	Degrading	Data significantly decreasing (worsening).
Phosphorus (epilimnion)	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.



This report was generated by the NH DES Volunteer Lake Assessment Program (VLAP). For more information contact:
 Sara Steiner
 PO Box 95
 Concord, NH 03302-0095
 (603) 271-2658
 sara.steiner@des.nh.gov

