



## Volunteer Lake Assessment Program Individual Lake Reports

### CONTENTION POND, HILLSBOROUGH, NH

#### MORPHOMETRIC DATA

Watershed Area (Ac.):	1,984	Max. Depth (m):	9.9	Flushing Rate (yr <sup>-1</sup> )	2.9	Year	Trophic class	KNOWN EXOTIC SPECIES
Surface Area (Ac.):	95	Mean Depth (m):	4.2	P Retention Coef:	0.53	1985	MESOTROPHIC	
Shore Length (m):	2,900	Volume (m <sup>3</sup> ):	1,605,000	Elevation (ft):	857	2004	MESOTROPHIC	

#### TROPHIC CLASSIFICATION

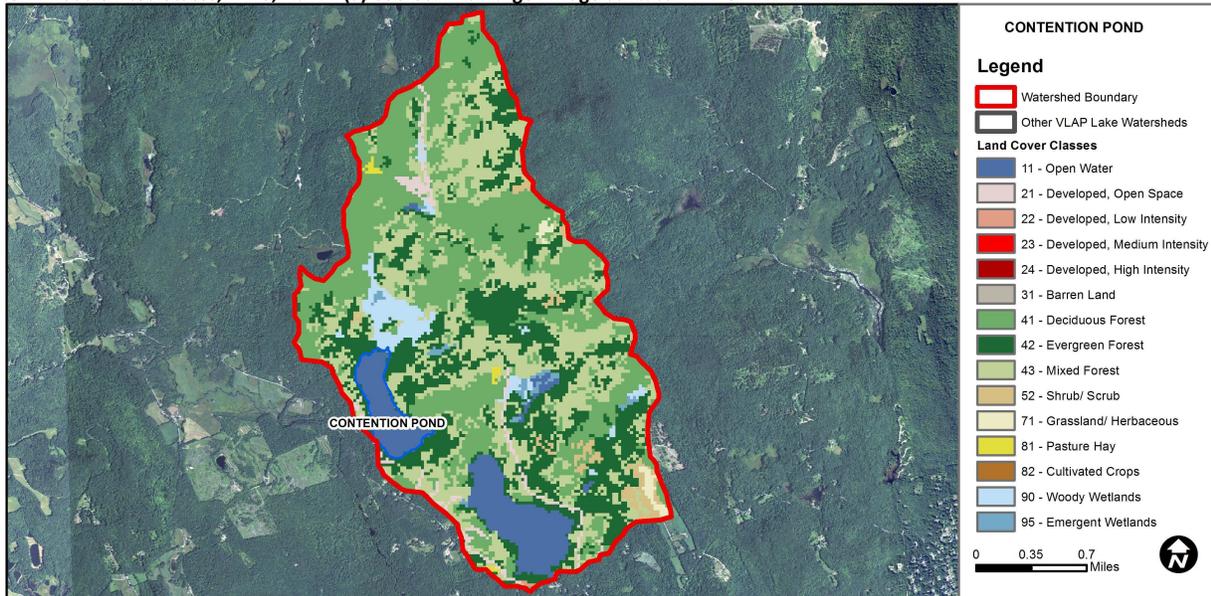
#### KNOWN EXOTIC SPECIES

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)	Cautionary	< 10 samples and 1 exceedance of criteria. More data needed.
	Chlorophyll-a	Slightly Bad	>5 samples and median is > threshold.
Primary Contact Recreation	E. coli	Encouraging	>2 samples exist that are > 75% of geometric mean criteria, but not enough samples to calculate geometric mean. No single sample exceedances. More data needed.
	Chlorophyll-a	Encouraging	< 10 samples and no exceedance of criteria. More data needed.

#### 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	8.39	Barren Land	0.02	Grassland/Herbaceous	0.57
Developed-Open Space	2.11	Deciduous Forest	32.14	Pasture Hay	0.3
Developed-Low Intensity	0.04	Evergreen Forest	23.99	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	27	Woody Wetlands	2.95
Developed-High Intensity	0	Shrub-Scrub	1.75	Emergent Wetlands	0.7



# VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

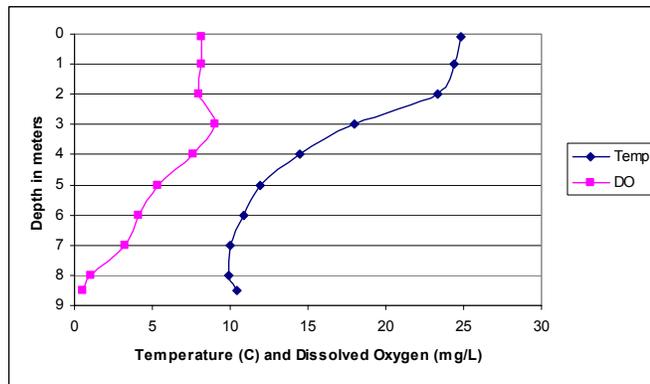
## CONTENTION POND, HILLSBOROUGH, NH

### 2012 DATA SUMMARY

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

- ♣ **CHLOROPHYLL-A:** Chlorophyll levels were low and below the NH lake median value.
- ♣ **CONDUCTIVITY/CHLORIDE:** Conductivity and chloride levels were low and below the NH lake median values.
- ♣ **TOTAL PHOSPHORUS:** Phosphorus levels were low for all stations except the Hypolimnion (lower water layer). It is possible that bottom sediment was disturbed and contaminated the sample.
- ♣ **TRANSPARENCY:** Deep spot transparency has fluctuated between 2.0 and 4.0 meters since monitoring began, and was approximately equal to the NH lake median value.
- ♣ **TURBIDITY:** Turbidity levels were relatively low in 2012. The hypolimnion turbidity sample was invalidated as the duplicate did not meet acceptance criteria.
- ♣ **pH:** pH decreased to undesirable levels in the Hypolimnion (lower water layer) likely due to decomposition of organic materials and the release of acidic by-products.
- ♣ **RECOMMENDED ACTIONS:** Conduct monitoring three times per summer, typically once per month in June, July and August, to allow better assessment of summer water quality and historical trends.

#### Dissolved Oxygen & Temperature Profile



Station Name	Table 1. 2012 Average Water Quality Data for CONTENTION POND								
	Alk.	Chlor-a	Chloride	Cond.	Total P	Trans.		Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	ug/l	NVS	VS	ntu	
Deep Epilimnion	3.4	2.66	3	21.8	9	3.13	4	0.68	6.24
Deep Hypolimnion				25.9	17				5.93
Deep Metalimnion				23.4	8			0.83	6.06
North Inlet			3	22.7	8			0.57	6.59
Outlet				22.9	7			0.55	6.64
South Inlet			3	22.5	7			0.86	6.65

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

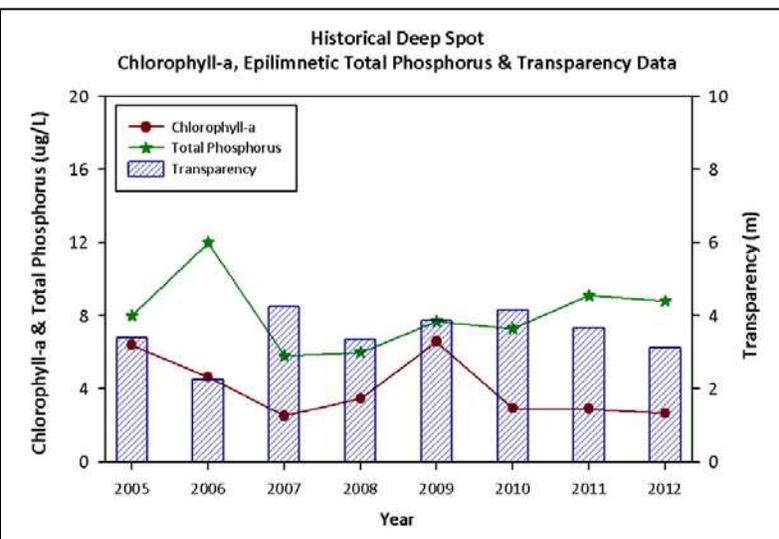
**Alkalinity:** 4.9 mg/L  
**Chlorophyll-a:** 4.58 mg/m<sup>3</sup>  
**Conductivity:** 40.0 uS/cm  
**Chloride:** 4 mg/L  
**Total Phosphorus:** 12 ug/L  
**Transparency:** 3.2 m  
**pH:** 6.6

**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:** 6.5-8.0 (unless naturally occurring)

#### HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	N/A	Additional data necessary to conduct trend analysis.
Transparency	N/A	Additional data necessary to conduct trend analysis.
Phosphorus (epilimnion)	N/A	Additional data necessary to conduct trend analysis.



This report was generated by the NH DES Volunteer Lake Assessment Program (VLAP). For more information contact:  
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