Volunteer Lake Assessment Program Individual Lake Reports

ISLAND POND, WASHINGTON, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	1,600	**Max. Depth (m):**	16.8	**Flushing Rate (yr^{1})**	1
Surface Area (Ac.):	202	**Mean Depth (m):**	5.6	**P Retention Coef:**	0.64
Shore Length (m):	5,800	**Volume (m^3):**	4,574,000	**Elevation (ft):**	1407

TROPHIC CLASSIFICATION

Year	Trophic class
2001	MESOTROPHIC
2007	MESOTROPHIC

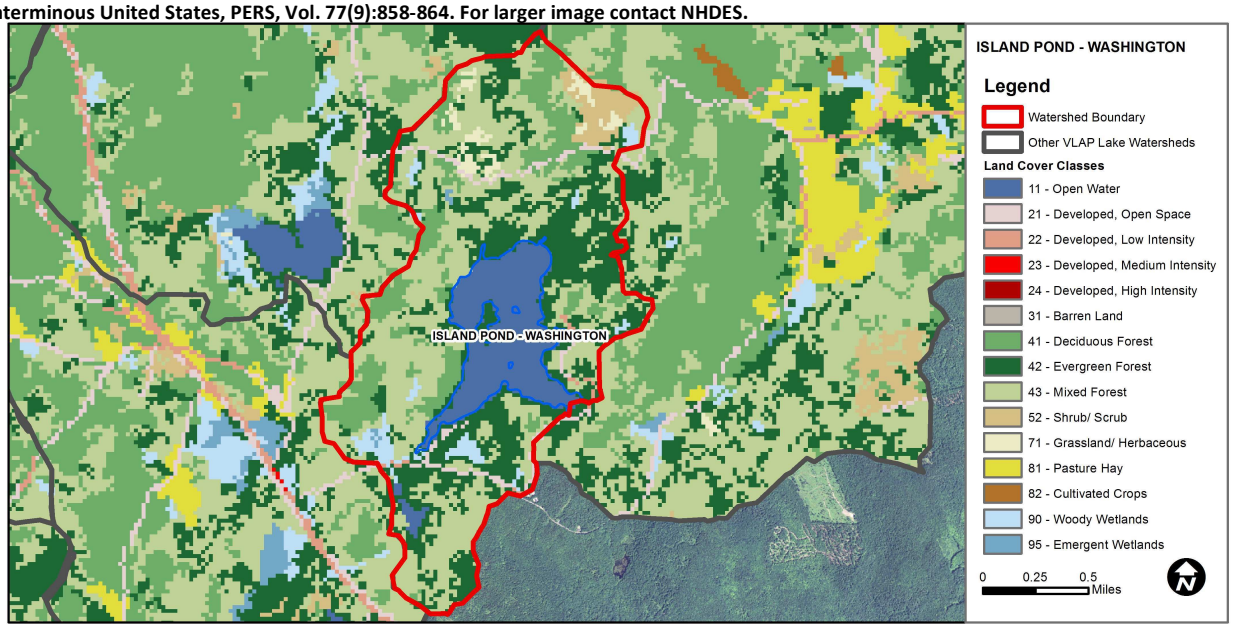
KNOWN EXOTIC SPECIES

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)	Slightly Bad	>/=5 samples and median is >threshold.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	D.O. (mg/L)	Good	At least 10 samples with 1 sample but < 10% of samples exceeding criteria.
	D.O. (% sat)	Very Good	At least 10 samples with 0 exceedances of criteria.
	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	Good	At least 10 samples with 1 sample but < 10% of samples exceeding 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	13.3	Barren Land	0	Grassland/Herbaceous	1.92
Developed-Open Space	1.99	Deciduous Forest	12.45	Pasture Hay	0
Developed-Low Intensity	0.4	Evergreen Forest	28.03	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	36.68	Woody Wetlands	2.65
Developed-High Intensity	0	Shrub-Scrub	2.41	Emergent Wetlands	0.19

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
ISLAND POND, WASHINGTON, NH
2012 DATA SUMMARY

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

- **CHLOROPHYLL-A:** Chlorophyll levels were average in 2012 and historical trend analysis indicates a relatively stable chlorophyll level since monitoring began (excluding 2006 spike).
- **CONDUCTIVITY/CHLORIDE:** Conductivity levels were relatively low and are below the NH lake median.
- **E. COLI:** E. coli levels were very low and well below the state standards for public beaches and surface waters.
- **TOTAL PHOSPHORUS:** Deep spot phosphorus levels were low and historical trend analysis indicates epilimnetic (upper water layer) phosphorus levels tend to fluctuate from year to year. Phosphorus levels were elevated and increased downstream in Boathouse Inlet from the East Washington Rd. station.
- **TRANSPARENCY:** Transparency levels were slightly above average for most NH lakes, however historical trend analysis indicates a significantly decreasing (worsening) transparency since monitoring began.
- **TURBIDITY:** Turbidity levels were slightly elevated in Boathouse Inlet and East Washington Rd which may have contributed to elevated phosphorus levels.
- **pH:** pH levels were low and can be critical to aquatic life.
- **RECOMMENDED ACTIONS:** Conduct additional monitoring with a VLAP biologist in Boathouse Inlet to help assess phosphorus loading. Educate watershed residents on ways to reduce stormwater runoff from their properties. Utilize DES' "NH Homeowner's Guide to Stormwater Management" tool.

Dissolved Oxygen & Temperature Profile

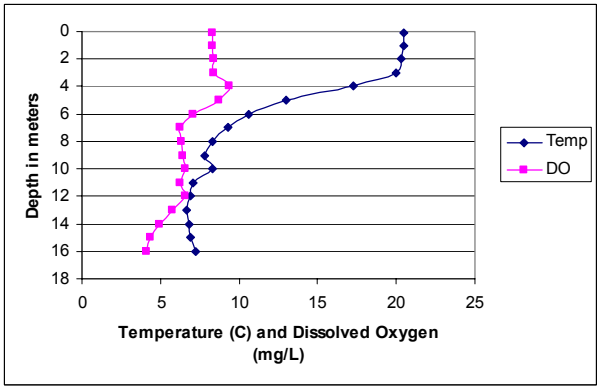


Table 1. 2012 Average Water Quality Data for ISLAND POND

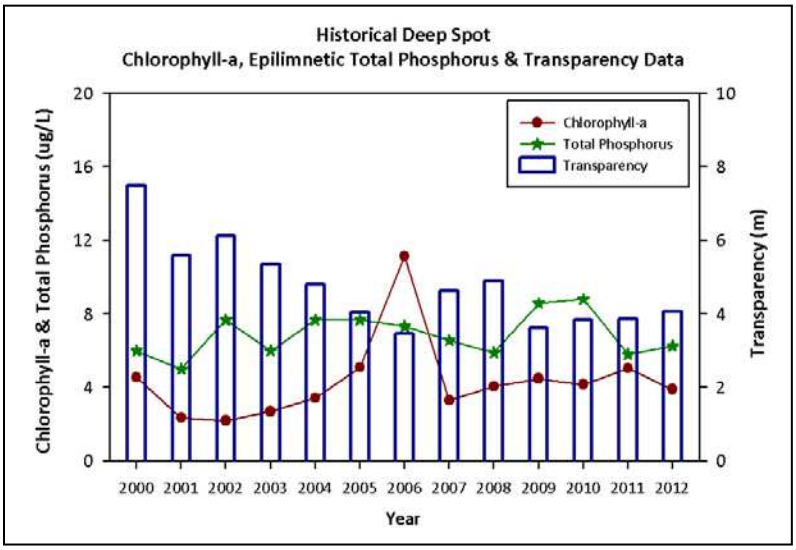
Station Name	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	E. Coli #/100ml	Total P ug/l	Trans. m	Turb. ntu	pH
						NVS		
Beach				6				
Boathouse Inlet			37.0	10	49		1.93	5.48
Bodnars Cove			29.1		6		0.57	6.24
Dam Outlet			31.5		5		0.47	6.17
East Washington Rd			30.9	10	27		2.79	5.26
Deep Epilimnion	1.55	3.90	29.0		6	4.08	0.6	6.19
Deep Metalimnion			30.1		5		0.44	5.71
Deep Hypolimnion			29.9		8		0.66	5.63
Journeys End Inlet			25.7		7		0.27	6.41

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



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