



Volunteer Lake Assessment Program Individual Lake Reports
WILLAND POND, SOMERSWORTH, NH

MORPHOMETRIC DATA

TROPHIC CLASSIFICATION

KNOWN EXOTIC SPECIES

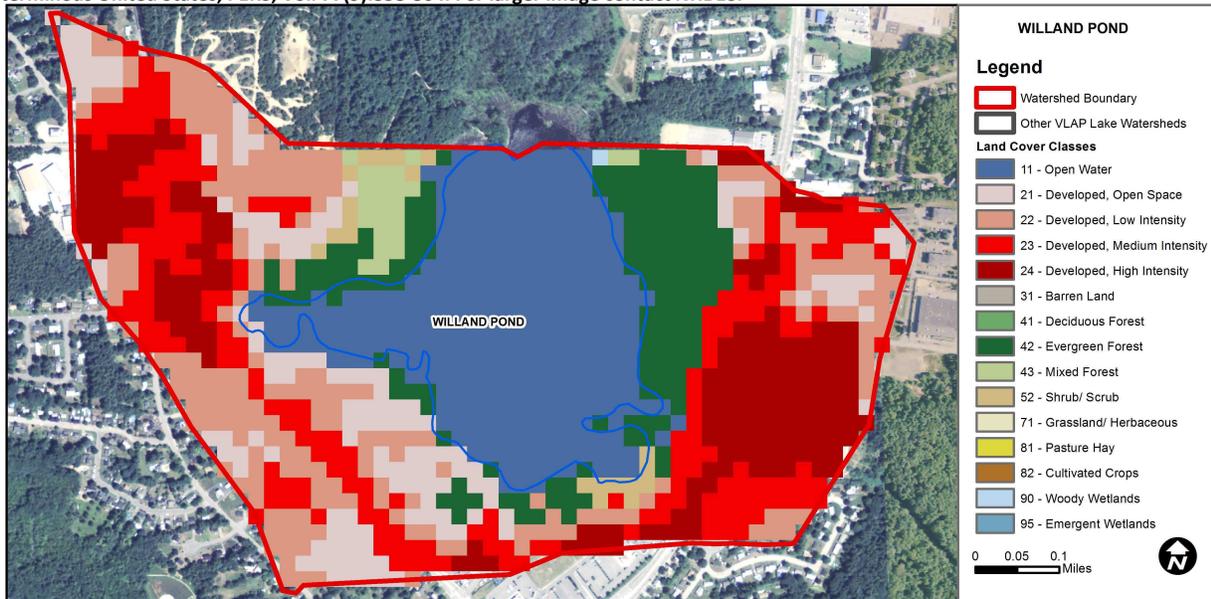
Watershed Area (Ac.):	288	Max. Depth (m):	11.2	Flushing Rate (yr ⁻¹):	0.3	Year	Trophic class	Variable Milfoil
Surface Area (Ac.):	86	Mean Depth (m):	4.7	P Retention Coef.:	0.84	1987	MESOTROPHIC	
Shore Length (m):	2,700	Volume (m ³):	1,627,000	Elevation (ft):	182			

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)	Bad	>/=5 samples and median is >2x threshold.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Bad	>/=5 samples and median is >2x threshold.
Primary Contact Recreation	E. coli	Bad	>/=1 exceedance(s) of geometric mean criterion and/or >/=2 exceedances of single sample criterion, with 1 or more >2X criteria.
	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).
	Chlorophyll-a	Cautionary	< 10 samples and 1 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	24.2	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	10.9	Deciduous Forest	0	Pasture Hay	0
Developed-Low Intensity	17.6	Evergreen Forest	11.88	Cultivated Crops	0
Developed-Medium Intensity	16.1	Mixed Forest	1.81	Woody Wetlands	0.08
Developed-High Intensity	14.8	Shrub-Scrub	1.57	Emergent Wetlands	0



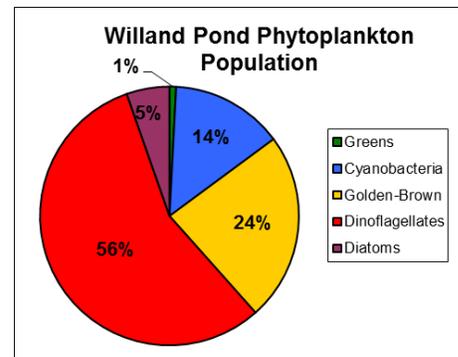
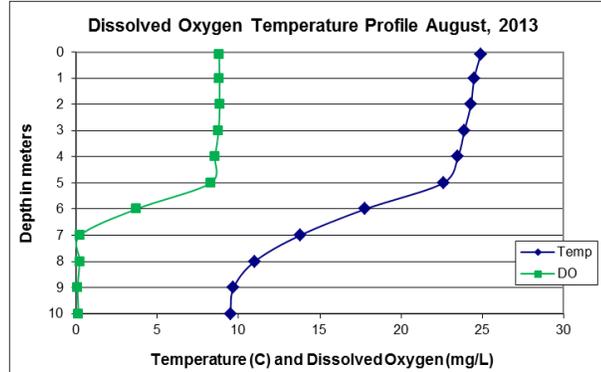
VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

WILLAND POND, DOVER, NH

2013 DATA SUMMARY

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

- 🔥 **CHLOROPHYLL-A:** Chlorophyll levels were low on each sampling event, below the state median, and consistent with 2012. Visual inspection of historical data indicates chlorophyll levels have decreased (improved) since monitoring began.
- 🔥 **CONDUCTIVITY/CHLORIDE:** Conductivity and chloride levels were elevated and indicative of the urbanized watershed.
- 🔥 **TOTAL PHOSPHORUS:** Epilimnetic and metalimnetic phosphorus levels increased slightly from June to July but were relatively low and below the state median. Hypolimnetic phosphorus increased from June to August likely due to release of phosphorus from bottom sediments under anoxic conditions. Visual analysis of historical data indicates epilimnetic phosphorus levels have decreased (improved) since monitoring began.
- 🔥 **TRANSPARENCY:** Transparency improved in 2013 and was better than the state median. Visual inspection of historical data indicates transparency has increased (improved) since monitoring began.
- 🔥 **TURBIDITY:** Epilimnetic and metalimnetic turbidity was low on each sampling event. Hypolimnetic turbidity was elevated in August likely due to the accumulation of organic compounds under anoxic conditions.
- 🔥 **pH:** pH levels were lower than desirable range 6.5 – 8.0 units in the hypolimnion.
- 🔥 **RECOMMENDED ACTIONS:** Pond water quality improved again in 2013 even though the early summer was marked with above average rainfall, which is a great sign. Maintain current water level management efforts and continue monitoring program to track water quality trends. Keep up the great work!



Station Name	Alk.	Chlor-a	Chloride	Cond.	Total P	Trans.		Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	ug/l	NVS	VS	ntu	
Epilimnion	3.87	3.66	53	223.7	9	4.94	5.00	0.56	6.71
Metalimnion				224.3	10			0.66	6.66
Hypolimnion				221.5	22			2.85	5.90

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	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.

