



Volunteer Lake Assessment Program Individual Lake Reports

GOOSE POND, CANAAN, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	10,176	Max. Depth (m):	11	Flushing Rate (yr ⁻¹):	1.6
Surface Area (Ac.):	554	Mean Depth (m):	4.5	P Retention Coef:	0.6
Shore Length (m):	10,100	Volume (m ³):	11,296,500	Elevation (ft):	829

TROPIC CLASSIFICATION

Year	Trophic class
1988	OLIGOTROPIC
2005	MESOTROPIC

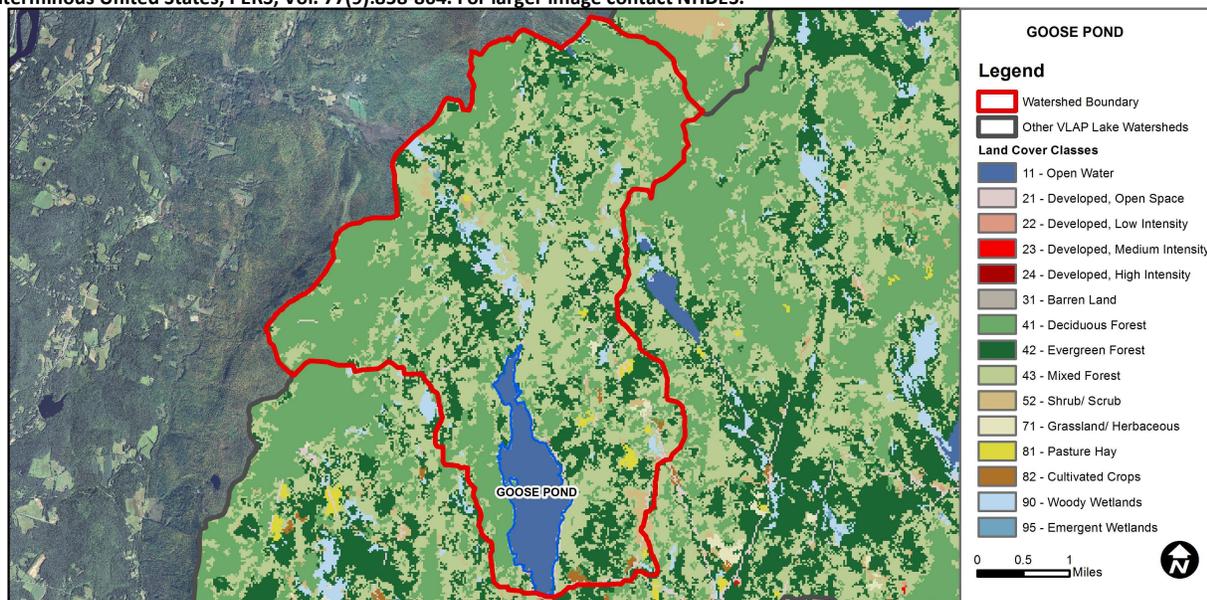
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the DRAFT 2014 305(b) report on the status of N.H. waters, and are based on data collected from 2004-2013. Detailed waterbody assessment and report card information can be found at www.des.nh.gov/organizations/divisions/water/wmb/swqa/index.htm

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Cautionary	The calculated median is fewer than 5 samples but > indicator and the chlorophyll a indicator is okay. More data needed.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Oxygen, Dissolved	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Dissolved oxygen satura	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Chlorophyll-a	Cautionary	The calculated median is fewer than 5 samples but > indicator. More data needed.
Primary Contact Recreation	Escherichia coli	Very Good	Where there are no geometric means, all bacteria samples are < 75% of the geometric mean. Where there are geometric means all single bacteria samples are < the SSMC and all geometric means are < geometric mean criteria.
	Cyanobacteria hepatoto	Slightly Bad	Cyanobacteria bloom(s).
	Chlorophyll-a	Very Good	There are a total of at least 10 samples with 0 exceedances of indicator.

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	5.98	Barren Land	0	Grassland/Herbaceous	0.16
Developed-Open Space	1.04	Deciduous Forest	34.05	Pasture Hay	0.52
Developed-Low Intensity	0.06	Evergreen Forest	18.08	Cultivated Crops	0.26
Developed-Medium Intensity	0	Mixed Forest	35.68	Woody Wetlands	2.66
Developed-High Intensity	0	Shrub-Scrub	1.29	Emergent Wetlands	0.22

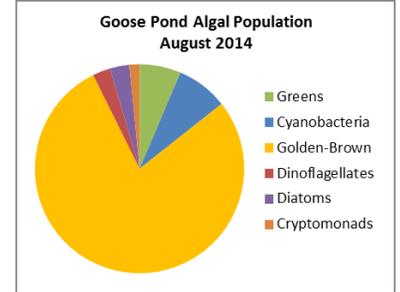
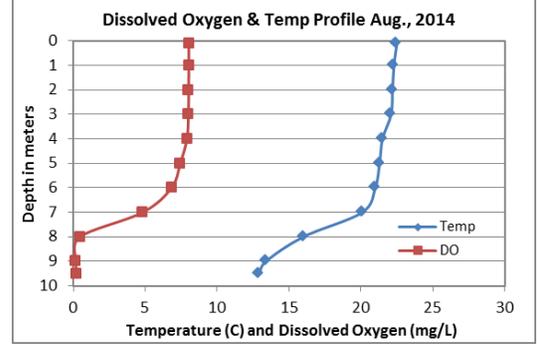


VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

GOOSE POND, CANAAN 2014 DATA SUMMARY

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

- ◆ **CHLOROPHYLL-A:** Chlorophyll levels were low in May and increased to average levels from June through September. The 2014 average chlorophyll level was slightly less than the state median and visual inspection of historical data indicates stable chlorophyll levels since 2007.
- ◆ **CONDUCTIVITY/CHLORIDE:** Deep spot, Goose Pond Bk., Big Island Cove Bk., Island View Bk., and Marshall Bk., conductivity and chloride levels remained low and less than the state medians. Conductivity was slightly greater in Hinkson and Mourton Bks. but chloride levels remained equal to the state median. Visual inspection of historical data indicates stable epilimnetic (upper water layer) conductivity since 2007.
- ◆ **E. COLI:** Beach and Little Island E. coli levels were much less than the state standards of 88 cts/100 mL for public beaches and 406 cts/100 mL for surface waters.
- ◆ **TOTAL PHOSPHORUS:** Epilimnetic phosphorus was elevated in May and wind and wave conditions could have mixed phosphorus from lower depths during weakly stratified conditions. Phosphorus decreased to low levels from May to Sept. and visual inspection of historical data indicates relatively stable epilimnetic phosphorus levels since 2005. Metalimnetic (middle water layer) and Hypolimnetic (lower water layer) phosphorus levels were low to average and remained fairly stable. Phosphorus was elevated in Big Island Cove Bk. in May during high flows. Island View Bk., Hinkson Bk. and Mourton Bk. experienced elevated phosphorus after a significant storm event in July.
- ◆ **TRANSPARENCY:** Transparency improved as the summer progressed and average transparency was better than the state median. Visual inspection of historical data indicates relatively stable transparency since 2007.
- ◆ **TURBIDITY:** Deep spot turbidity remained low to average on each sampling event. Hinkson Bk. and Mourton Bk. experienced elevated turbidities after a significant storm event in July.
- ◆ **pH:** Epilimnetic and Metalimnetic pH levels were within desirable range of 6.5-8.0 units, however Hypolimnetic pH levels decreased below the desirable range. Tributary pH levels remained in a good range.
- ◆ **RECOMMENDED ACTIONS:** The significant storm event in July revealed elevated phosphorus and turbidity levels in several tributaries particularly Hinkson and Mourton Brooks. Try to identify potential areas of erosion in these sub-watersheds and implement stormwater best management practices to reduce erosion and stormwater runoff to these tributaries. DES has a new initiative, Soak up the Rain NH, aimed at helping local organizations to implement stormwater projects. Visit www.soaknh.org to learn more and become Soak Partner. Keep up the great work!



Station Name	Table 1. 2014 Average Water Quality Data for GOOSE POND									
	Alk. mg/l	Chlor-a ug/l	Chloride mg/l	Cond. uS/cm	E. Coli #/100ml	Total P ug/l	Trans. m		Turb. ntu	pH
							NVS	VS		
Epilimnion	7.6	3.28	3	34.7		8	4.66	5.75	0.81	6.78
Metalimnion				34.6		8			1.07	6.70
Hypolimnion				35.6		9			1.11	6.35
Goose Pond Brook			3	35.1		7			0.99	6.96
Beach					0					
Big Island Cove Brook				35.6		12			1.02	6.66
Dam Swimming Area				36.6		8			0.88	7.01
Hinkson Brook			4	69.3		13			2.65	6.97
Island View Brook			3	36.9		8			1.30	6.88
Little Island					1					
Marshall Brook			3	35.0		9			1.18	6.81
Mourton Brook			4	68.7		14			2.73	7.13

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: between 6.5-8.0 (unless naturally occurring)

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

HISTORICAL WATER QUALITY TREND ANALYSIS

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

