Volunteer Lake Assessment Program Individual Lake Reports

WILD GOOSE POND, PITTSFIELD, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	2,313	**Max. Depth (m):**	6.8	**Flushing Rate (yr^1)**	4.1
Surface Area (Ac.):	99	**Mean Depth (m):**	2.7	**P Retention Coef:**	0.54
Shore Length (m):	3,200	**Volume (m^3):**	1,277,500	**Elevation (ft):**	623

TROPHIC CLASSIFICATION

Year	Trophic class
1981	OLIGOTROPHIC
2002	MESOTROPHIC

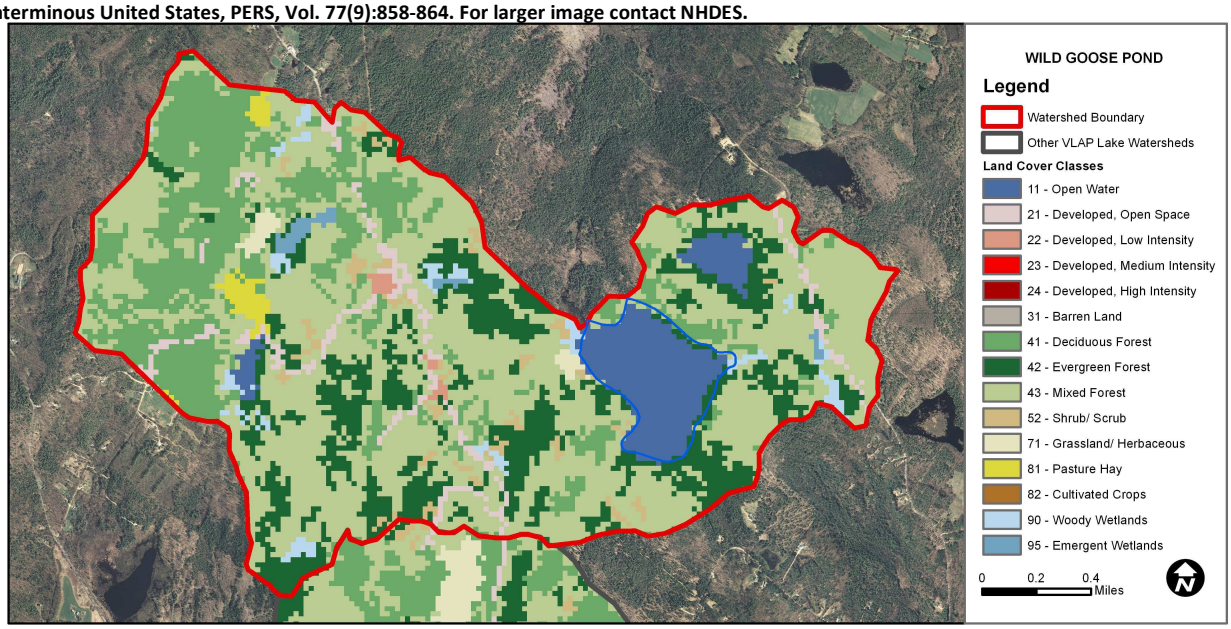
KNOWN EXOTIC SPECIES

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)	Encouraging	The calculated median is fewer than 5 samples and is < 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	Encouraging	The calculated median is fewer than 5 samples and is < indicator. More data needed.
Primary Contact Recreation	Escherichia coli	No Data	No data for this parameter.
	Chlorophyll-a	Encouraging	There are < 10 samples with 0 exceedances of indicator. 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.



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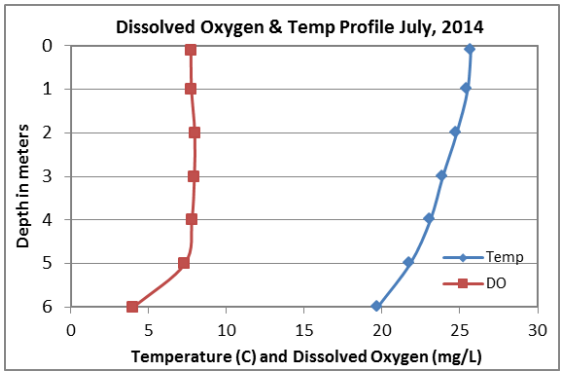
Wild Goose Pond, Pittsfield

2014 Data Summary

Observations and Recommendations (*Refer to Table 1 and Historical Deep Spot Data Graphics*)

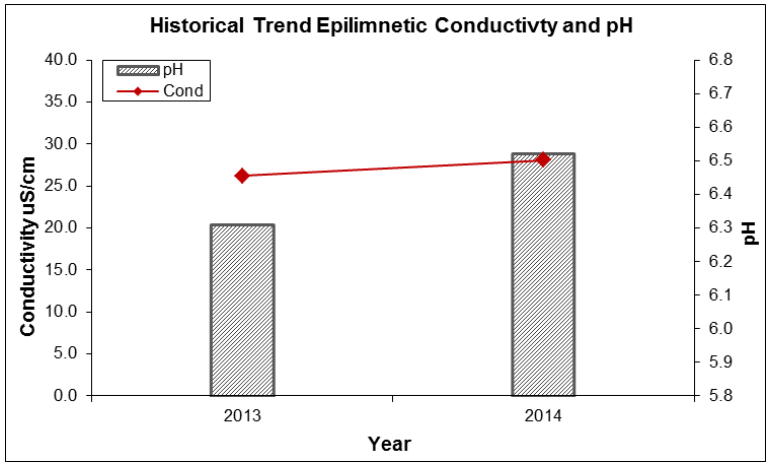
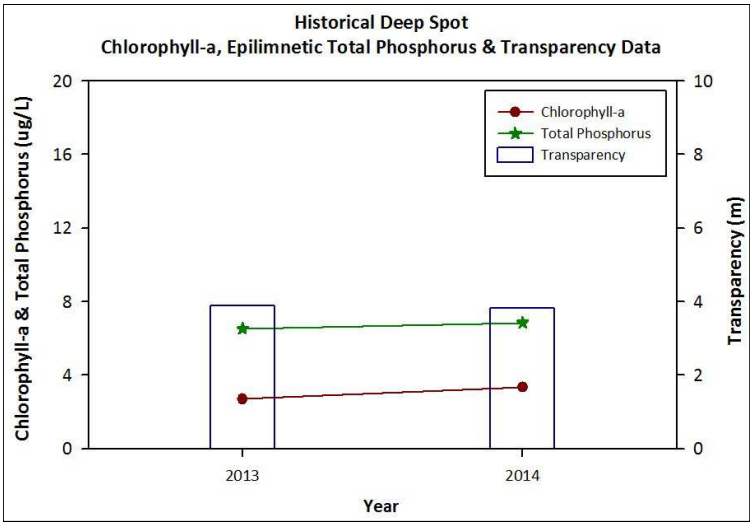
- **Chlorophyll-a:** Chlorophyll levels were low in June, and then increased slightly in July and August. Field data noted an algal bloom throughout the pond in August, however average chlorophyll levels were relatively low, less than the state median, and remained stable from 2013.
- **Conductivity/Chloride:** Epilimnetic (upper water layer), Hypolimnetic (lower water layer) and Smith Inlet conductivity and/or chloride levels were low and less than the state medians. Average epilimnetic conductivity remained stable from 2013.
- **Total Phosphorus:** Epilimnetic phosphorus levels were low from June through August, were much less than the state median, and remained stable from 2013. Hypolimnetic phosphorus levels were average in July but elevated in August and the turbidity of the sample was also elevated indicating potential bottom sediment contamination. Smith Inlet phosphorus levels were also elevated in June and August and the turbidity of those samples was elevated. Historical logging activity has likely contributed to a sub-watershed rich in organic content which has impacted Smith Inlet.
- **Transparency:** Transparency improved slightly from June to July and then decreased in August during the noted algal bloom and following a rain event. Average transparency was slightly better than the state median and remained stable from 2013. Transparency measured with the viewscope (VS) was generally better than that measured without and likely a better representation of water clarity.
- **Turbidity:** Epilimnetic turbidity increased slightly from June to August as algal growth increased. Hypolimnetic turbidity was low in June and July, but elevated in August suggesting potential bottom sediment contamination. Smith Inlet turbidity was elevated in June and August and tributary comments indicate the water is highly colored and rich in organic content.
- **pH:** Epilimnetic pH was less than desirable range 6.5—8.0 units in June, but improved in July and August. However hypolimnetic pH remained less than desirable on each sampling event. Smith Inlet pH levels were much less than desirable due to the high tannic and humic acid content of the water.
- **Recommended Actions:** Maintain current monitoring program to establish a baseline of water quality data to assess seasonal and historical water quality trends. Smith Inlet water quality is poor and historical logging activities in the sub-watershed have likely contributed to the high organic and color content of the water. Unfortunately the elevated phosphorus levels may impact plant and/or algal growth in the pond. Watch for excessive shoreline plant growth where the tributary enters the pond. Keep up the great work!



Station Name	Table 1. 2014 Average Water Quality Data for WILD GOOSE POND								
	Alk. mg/l	Chlor-a ug/l	Chloride mg/l	Cond. uS/cm	Total P ug/l	Trans. m		Turb. ntu	pH
						NVS	VS		
Epilimnion	2.23	3.34	3	28.1	7	3.83	4.58	1.19	6.52
Hypolimnion				30.2	29			4.27	6.27
Smith Inlet				25.8	66			12.52	4.88

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/m^3
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 for analysis.