



Volunteer Lake Assessment Program Individual Lake Reports
LEDGE POND, SUNAPEE, NH

MORPHOMETRIC DATA

TROPHIC CLASSIFICATION

KNOWN EXOTIC SPECIES

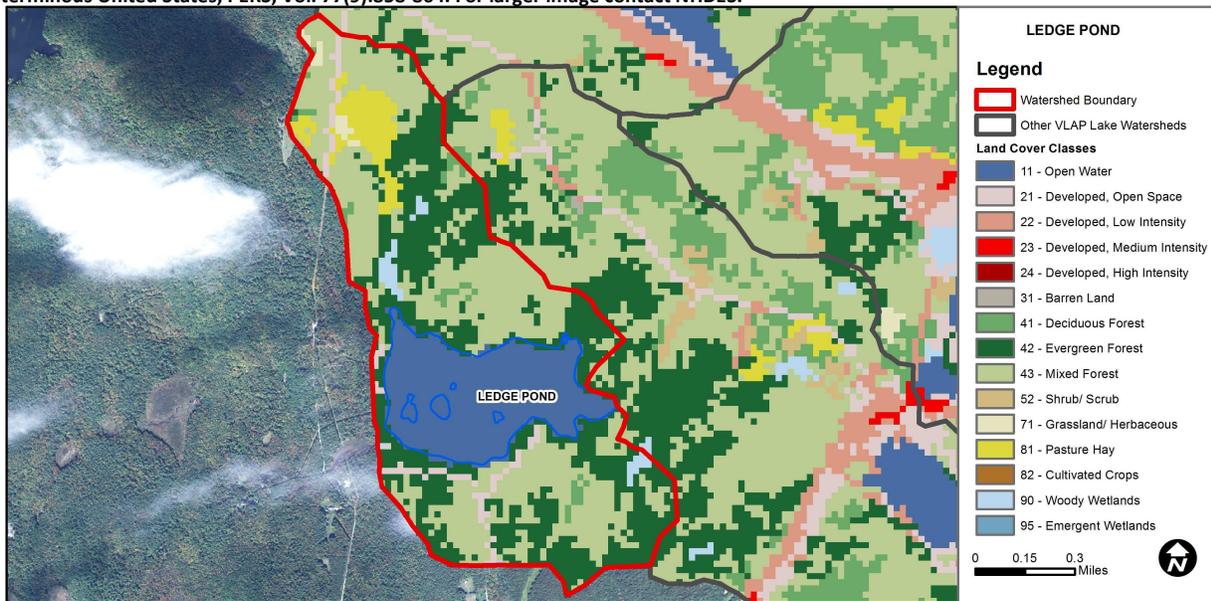
Watershed Area (Ac.):	835	Max. Depth (m):	5.2	Flushing Rate (yr ⁻¹):	1.3	Year	Trophic class	
Surface Area (Ac.):	110	Mean Depth (m):	2.8	P Retention Coef:	0.72	1981	OLIGOTROPIC	
Shore Length (m):	3,400	Volume (m ³):	1,233,000	Elevation (ft):	1308	2001	OLIGOTROPIC	

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)	Good	The calculated median is from 5 or more samples and is < indicator and > 1/2 indicator and the chlorophyll a indicator is okay.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	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	Good	The calculated median is from 5 or more samples and is < indicator and > 1/2 indicator.
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.
	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	19.7	Barren Land	0	Grassland/Herbaceous	0.72
Developed-Open Space	2.84	Deciduous Forest	1.47	Pasture Hay	4.34
Developed-Low Intensity	0	Evergreen Forest	31.2	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	36.55	Woody Wetlands	1.36
Developed-High Intensity	0	Shrub-Scrub	0	Emergent Wetlands	0



VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

LEDGE POND, SUNAPEE

2015 DATA SUMMARY

RECOMMENDED ACTIONS: Pond phosphorus and chlorophyll levels are good and representative of Oligotrophic, or high quality, waters. The improving pH is encouraging and we hope to see this continue! The noted sediment that has washed into Bascom Stream and the pond from the dirt/gravel road during storm events is a concern. Stormwater runoff can cause erosion and transport sediments and nutrients to the pond. This creates ideal substrate for aquatic plant growth and could encourage plant growth in the vicinity of the stream. Conduct stormwater sampling of Bascom Stream to assess phosphorus and sediment loads during a storm event. Work with the owners of the road to assess areas of stormwater erosion and install stormwater management devices to help capture and infiltrate stormwater to reduce erosion. The DES' "NH Homeowner's Guide to Stormwater Management" and the USFS "Environmentally Sensitive Road Maintenance for Dirt and Gravel Roads" are great resources. Contact the VLAP Coordinator for copies. Keep up the great work!

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

- **CHLOROPHYLL-A:** Chlorophyll levels remained stable and low from June to August. Average chlorophyll levels were much less than the state median, decreased from 2014 and were the lowest measured since monitoring began. Historical trend analysis indicates relatively stable chlorophyll levels with moderate variability since monitoring began.
- **CONDUCTIVITY/CHLORIDE:** Deep spot, Bascom Stream, Inlet, and Outlet conductivity levels remained low and less than the state median. Historical trend analysis indicates stable epilimnetic (upper water layer) conductivity levels since monitoring began.
- **TOTAL PHOSPHORUS:** Epilimnetic and hypolimnetic (lower water level) phosphorus levels remained stable and low from June to August. Average epilimnetic phosphorus was stable with 2014 and much less than the state median. Historical trend analysis indicates highly variable epilimnetic phosphorus since monitoring began. Inlet and Outlet phosphorus levels were within low to average ranges for those stations. Bascom Stream phosphorus was slightly elevated in August. The turbidity of the sample was also elevated and sediment was noted in the sample.
- **TRANSPARENCY:** Transparency was good in June and August and the Secchi disk was visible on the pond bottom. Average transparency remained stable with 2014 and was much better than the state median. Historical trend analysis indicates stable transparency since monitoring began.
- **TURBIDITY:** Epilimnetic, hypolimnetic and Inlet turbidities were low and within average ranges for those stations. Outlet turbidity was slightly higher than normal in June and a small amount of sediment was noted in the sample. Bascom Stream turbidity was elevated in August. Field data note sedimentation and runoff from a dirt road and the laboratory noted a moderate amount of sediment in the sample. However, samples were collected during stagnant conditions.
- **pH:** Epilimnetic and hypolimnetic pH was within the desirable range 6.5-8.0 units in June, however both decreased below 6.5 in August. Historical trend analysis indicates significantly increasing (improving) epilimnetic pH since monitoring began and we hope to see this continue! Tributary pH was generally less than desirable and slightly acidic.

Station Name	Table 1. 2015 Average Water Quality Data for LEDGE POND							
	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	Total P ug/l	Trans. m		Turb. ntu	pH
					NVS	VS		
Epilimnion	2.6	1.62	18.2	7	3.93	4.40	0.67	6.71
Hypolimnion			16.4	6			0.94	6.55
Bascom Stream			15.7	20			5.80	6.24
Inlet			22.8	11			0.83	6.12
Outlet			16.4	7			1.23	6.29

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

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
Conductivity	Stable	Trend not significant; data show low variability.	Chlorophyll-a	Stable	Trend not significant; data moderately variable.
pH (epilimnion)	Improving	Data significantly increasing.	Transparency	Stable	Trend not significant; data show low variability.
			Phosphorus (epilimnion)	Stable	Trend not significant; data highly variable.

