



Volunteer Lake Assessment Program Individual Lake Reports

LEDGE POND, SUNAPEE, NH

MORPHOMETRIC DATA

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

TROPIC CLASSIFICATION

Year	Trophic class
1981	OLIGOTROPIC
2001	OLIGOTROPIC

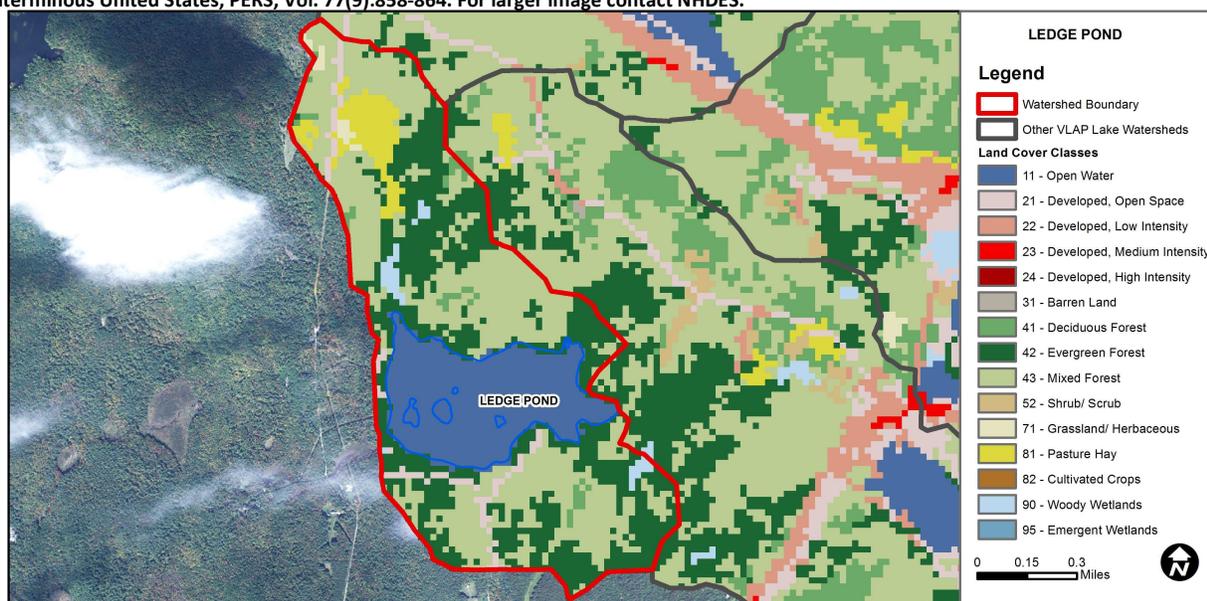
KNOWN EXOTIC SPECIES

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)	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	Encouraging	>2 samples exist that are > 75% of geometric mean criteria, but not enough samples to calculate geometric mean. No single sample exceedances. More data needed.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of 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	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



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2013 DATA SUMMARY

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

- ♣ **CHLOROPHYLL-A:** Chlorophyll levels were low and well below the state median. Historical trend analysis indicates stable chlorophyll levels with moderate variability between years.
- ♣ **CONDUCTIVITY/CHLORIDE:** Conductivity levels were very low and well below the state median. Historical trend analysis indicates significantly decreasing (improving) epilimnetic (upper water layer) conductivity since monitoring began.
- ♣ **TOTAL PHOSPHORUS:** Phosphorus levels were slightly higher in June than in August, potentially due to the above average rainfall, however levels were still within a low range. Historical trend analysis indicates relatively stable epilimnetic phosphorus with high variability between years.
- ♣ **TRANSPARENCY:** Transparency remained slightly better the state median. June transparency was likely impacted by a layer of algae in the hypolimnion (lower water layer) as noted on the field data sheet. Historical trend analysis indicates stable transparency with low variability between years.
- ♣ **TURBIDITY:** Inlet turbidity was slightly elevated in June and sediment was noted in the sample. Deep spot turbidity remained relatively low.
- ♣ **pH:** pH levels were lower than desirable range 6.5 – 8.0 units in June, however increased to acceptable levels in August.
- ♣ **RECOMMENDED ACTIONS:** Water quality is good and has remained stable since monitoring began. Continue to educate watershed residents on ways to reduce stormwater runoff from their properties utilizing DES' "Homeowner's Guide to Stormwater Management".

Table 1. 2013 Average Water Quality Data for LEDGE POND								
Station Name	Alk.	Chlor-a	Cond.	Total P	Trans.		Turb.	pH
	mg/l	ug/l	uS/cm	ug/l	m		ntu	
					NVS	VS		
Epilimnion	2.35	1.99	16.5	8	3.88	3.94	0.75	6.40
Hypolimnion			16.3	9			0.80	6.51
Inlet			16.0	10			1.16	6.51
Outlet			15.0	5			0.69	6.68

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

