



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

TROPHIC CLASSIFICATION

Year	Trophic class
1981	OLIGOTROPIC
2001	OLIGOTROPIC

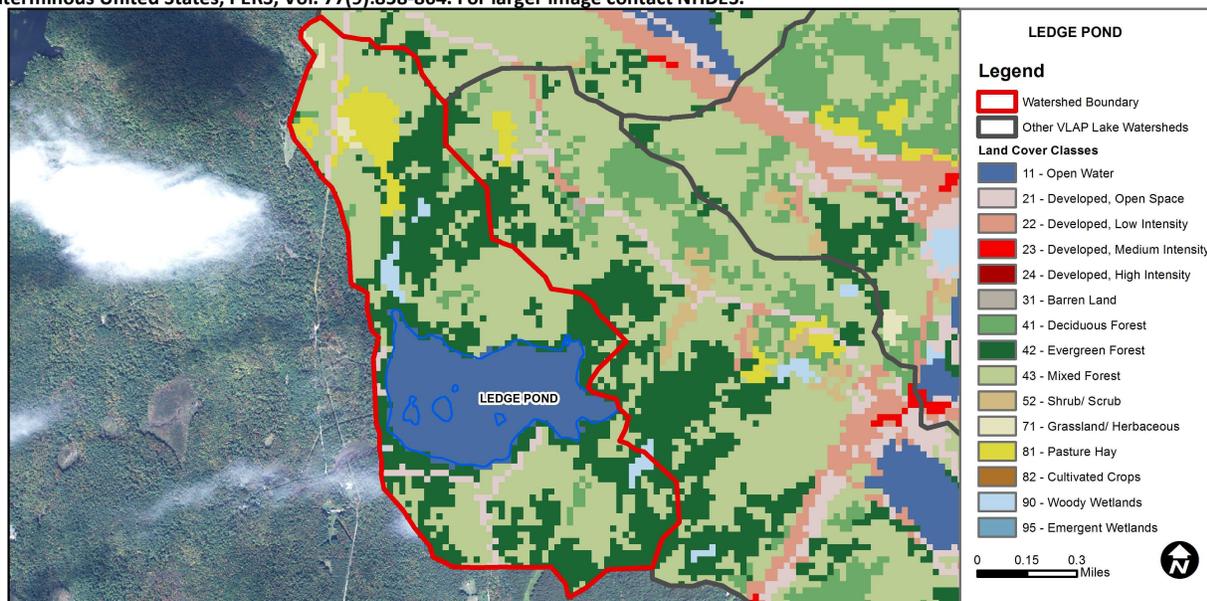
KNOWN EXOTIC SPECIES

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)	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

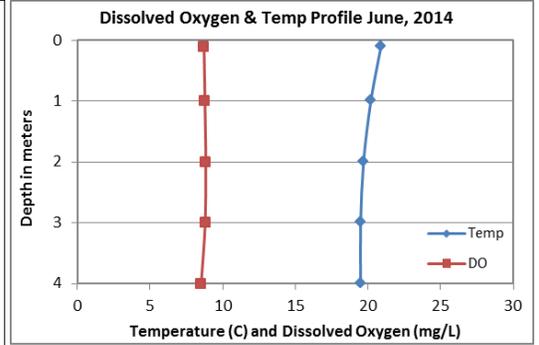


VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

LEDGE POND, SUNAPEE 2014 DATA SUMMARY

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

- CHLOROPHYLL-A:** Chlorophyll levels decreased slightly from June to August and remained low and less than the state median in 2014. Historical trend analysis indicates relatively stable chlorophyll levels with moderate variability between years.
- CONDUCTIVITY/CHLORIDE:** Deep spot and tributary conductivity levels were low and much less than the state median. Historical trend analysis indicates significantly decreasing (improving) epilimnetic (upper water layer) conductivity since monitoring began. We hope to see this continue!
- E. COLI:** E. coli levels at the dam were very low and much less than the state standards for public beaches (88 cts/100 mL) and surface waters (406 cts/100 mL).
- TOTAL PHOSPHORUS:** Epilimnetic and hypolimnetic (lower water layer) phosphorus levels decreased slightly from June to August and remained low and much less than the state median in 2014. Historical trend analysis indicates highly variable epilimnetic phosphorus since monitoring began. Inlet phosphorus levels were slightly higher in August and the turbidity of the sample was also elevated. This could indicate sediment and/or organic material contributed to the higher phosphorus levels. Outlet phosphorus remained stable and low in June and August.
- TRANSPARENCY:** Transparency improved from June to August and the Secchi disk was visible on the pond bottom in August. Historical trend analysis indicates stable transparency since monitoring began.
- TURBIDITY:** Epilimnetic turbidity was slightly higher in June potentially due to algal growth, however turbidity had decreased to a low level in August. Hypolimnetic turbidity was slightly above average in June and August potentially due to the disruption of bottom sediment or plants prior to sample collection. Inlet turbidity was low. Outlet turbidity was also slightly above average.
- PH:** Average epilimnetic and hypolimnetic pH levels were approximately equal to the low end of the desirable range 6.5–8.0 units, however historically have been much less than desirable. However, epilimnetic pH levels have improved since 2009 and we hope to see this trend continue. Historical trend analysis indicates highly variable epilimnetic pH levels since monitoring began.
- RECOMMENDED ACTIONS:** Pond water quality has remained stable with low levels of algal growth, nutrients and good clarity. We hope this continues! The increased frequency and intensity of storm events highlights the importance of managing stormwater runoff and maintaining vegetated buffers along the shoreline. DES' "NH Homeowner's Guide to Stormwater Management" is a great resource for lake and watershed residents. Keep up the great work!



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

Station Name	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	E. Coli #/100ml	Total P ug/l	Trans. m		Turb. ntu	pH
						NVS	VS		
Epilimnion	2.85	2.94	17.2		6	3.71	4.13	0.87	6.50
Hypolimnion			16.2		7			1.23	6.54
Dam Cove				10					
Inlet			22.9		10			1.99	5.95
Outlet			15.8		5			1.26	6.40

HISTORICAL WATER QUALITY TREND ANALYSIS

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

