Volunteer Lake Assessment Program Individual Lake Reports

KATHERINE, LAKE, PIERMONT, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	525	**Max. Depth (m):**	6.4	**Flushing Rate (yr^{-1}):**	2.1
Surface Area (Ac.):	37	**Mean Depth (m):**	2.8	**P Retention Coef:**	0.63
Shore Length (m):	1,800	**Volume (m^3):**	494,500	**Elevation (ft):**	1339

TROPHIC CLASSIFICATION

Year	Trophic class
1985	OLIGOTROPHIC
2005	OLIGOTROPHIC

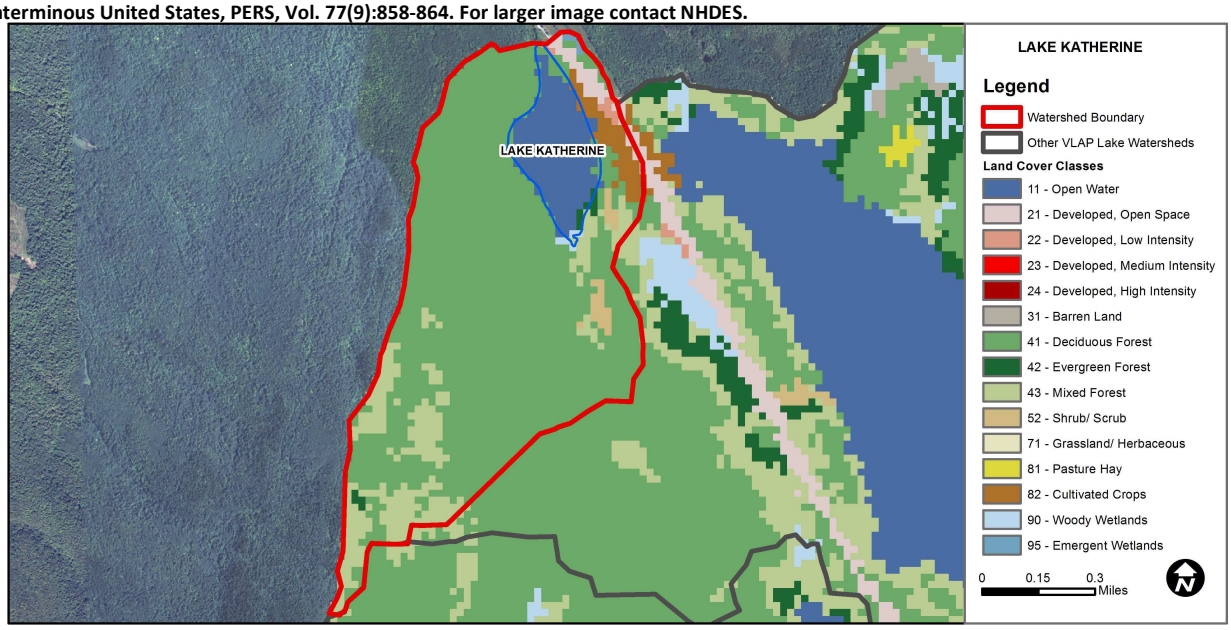
KNOWN EXOTIC SPECIES

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	Good	At least 10 samples with 1 sample but < 10% of samples exceeding criteria.
	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 geomertic 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.

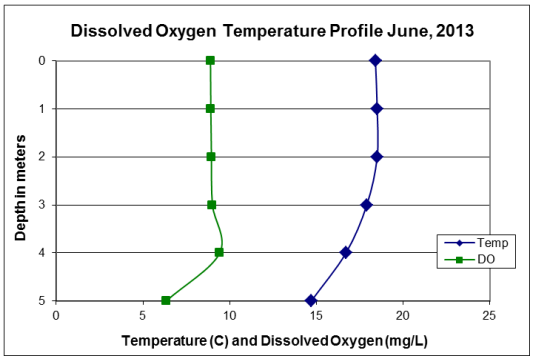


Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	8.94	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	1.47	Deciduous Forest	71.96	Pasture Hay	0
Developed-Low Intensity	0.44	Evergreen Forest	0.59	Cultivated Crops	2.7
Developed-Medium Intensity	0	Mixed Forest	12.08	Woody Wetlands	0.25
Developed-High Intensity	0	Shrub-Scrub	1.23	Emergent Wetlands	0.2

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
KATHERINE LAKE, PIERMONT, NH
2013 DATA SUMMARY

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

- **CHLOROPHYLL-A:** Chlorophyll levels were very low in June and well below the state median. Historical trend analysis indicates relatively stable chlorophyll with moderate variability between years.
- **CONDUCTIVITY/CHLORIDE:** Deep spot conductivity levels were average for NH lakes.
- **TOTAL PHOSPHORUS:** Deep spot phosphorus levels were low and well below the state median. Historical trend analysis indicates relatively stable epilimnetic phosphorus with moderate variability between years.
- **TRANSPARENCY:** Transparency improved slightly from 2012 and was deeper than the state median. Historical trend analysis indicates stable transparency with low variability between years.
- **TURBIDITY:** Deep spot turbidity was low.
- **PH:** Deep spot pH levels were sufficient to support aquatic life.
- **RECOMMENDED ACTIONS:** Overall water quality looks good. Maintain current monitoring program and keep up the great work!



Station Name	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	Total P ug/l	Trans. m NVS	Trans. m VS	Turb. ntu	pH
Epilimnion	5.50	0.33	51.3	4	4.50	4.50	0.37	6.83
Hypolimnion			46.1				0.50	6.76

Table 1. 2013 Average Water Quality Data for KATHERINE LAKE

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

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