Volunteer Lake Assessment Program Individual Lake Reports

KILTON POND, GRAFTON, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	4,480	**Max. Depth (m):**	3.1	**Flushing Rate (yr^{-1})**	34.7
Surface Area (Ac.):	68	**Mean Depth (m):**	1.2	**P Retention Coef:**	0.39
Shore Length (m):	4,000	**Volume (m^3):**	318,500	**Elevation (ft):**	850

TROPHIC CLASSIFICATION

Year	Trophic class
1979	OLIGOTROPHIC
1993	MESOTROPHIC

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.

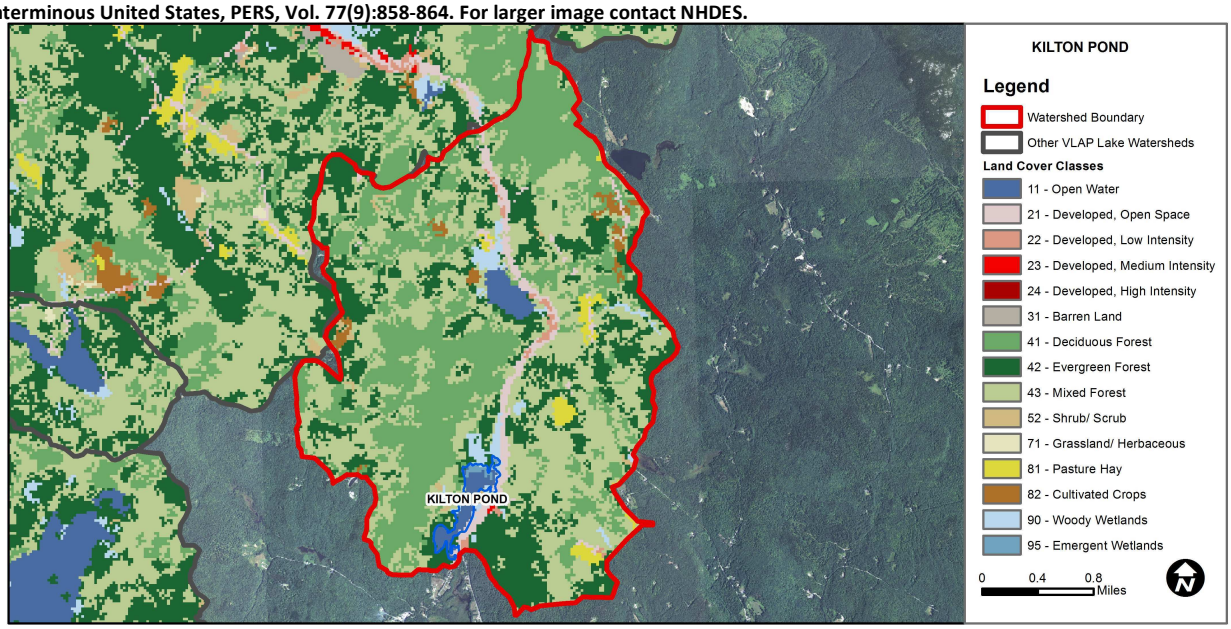
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Cautionary	<5 samples and median is > threshold. More data needed.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. 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.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

KILTON POND - HUFF BEACH	E. coli	Cautionary	One exceedance of single sample criteria but not enough data to calcuate geometric mean. 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.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	2.14	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	3.14	Deciduous Forest	30.3	Pasture Hay	1.29
Developed-Low Intensity	0.5	Evergreen Forest	21.99	Cultivated Crops	1.1
Developed-Medium Intensity	0.03	Mixed Forest	37.14	Woody Wetlands	1.81
Developed-High Intensity	0	Shrub-Scrub	0.38	Emergent Wetlands	0.17

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
KILTON POND, GRAFTON, NH
2013 DATA SUMMARY

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

- **CHLOROPHYLL-A:** Chlorophyll levels were low throughout the summer and below the state median. Historical trend analysis indicates stable chlorophyll with low variability between years.
- **CONDUCTIVITY/CHLORIDE:** Deep spot (Epilimnion) and tributary conductivity and chloride were slightly greater than the state median, however not at a level of great concern. Historical trend analysis indicates significantly decreasing (improving) epilimnetic conductivity since monitoring began. We hope to see this continue!
- **TOTAL PHOSPHORUS:** Deep spot phosphorus decreased from 2012 and was low throughout the summer. Tributary phosphorus levels were also low. Historical trend analysis indicates relatively stable epilimnetic phosphorus with low variability between years.
- **TRANSPARENCY:** Transparency was good throughout the summer and the Secchi disk was visible on the pond bottom in June and July. Historical trend analysis indicates stable transparency with low variability between years.
- **TURBIDITY:** Deep spot and tributary turbidity were low throughout the summer.
- **PH:** Deep spot and tributary pH levels were sufficient to support aquatic life, however deep spot pH has historically been less than desirable range 6.5 – 8.0 units. Historical trend analysis indicates stable epilimnetic pH with low variability between years. It is also important to note that the epilimnetic pH has increased since 2010.
- **RECOMMENDED ACTIONS:** Deep spot phosphorus levels returned to a low range in 2013 which is encouraging considering the significant rainfall received at the beginning of the summer. Water levels remained normal throughout the summer and the high flushing rate likely helped to reduce deep spot phosphorus. Continue to educate watershed residents on ways to reduce stormwater runoff and phosphorus loading from their properties. Keep up the great work!

Table 1. 2013 Average Water Quality Data for KILTON POND

Station Name	Alk.	Chlor-a	Chloride	Cond.	Total P	Trans.		Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	ug/l	m		ntu	
						NVS	VS		
Epilimnion	9.67	3.01	7	53.2	8	2.86	3.00	0.66	6.90
Smith River 1				67.1	7			0.66	6.72
Smith River Inlet			9	66.5	9			1.32	6.75

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