Volunteer Lake Assessment Program Individual Lake Reports

TUREE POND, BOW, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	1,953	**Max. Depth (m):**	3	**Flushing Rate (yr^{-1}):**	9.5
Surface Area (Ac.):	47	**Mean Depth (m):**	1.9	**P Retention Coef:**	0.49
Shore Length (m):	1,800	**Volume (m^3):**	357,000	**Elevation (ft):**	328

TROPHIC CLASSIFICATION

Year	Trophic class
1989	EUTROPHIC

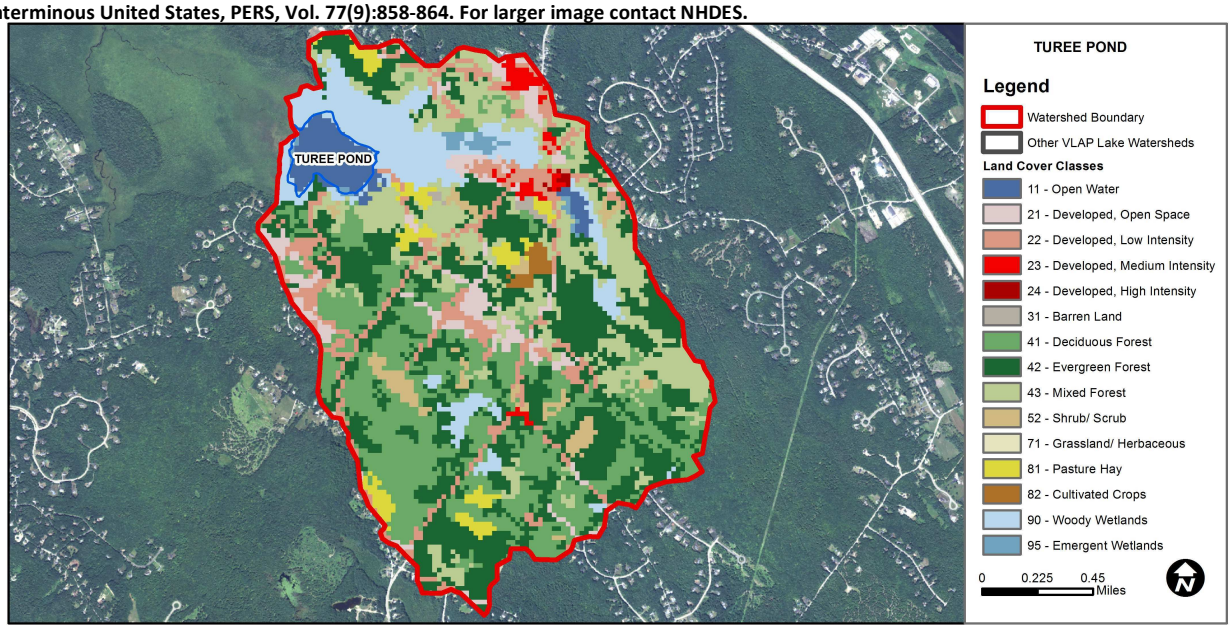
KNOWN EXOTIC SPECIES

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	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Cautionary	< 10 samples and 1 exceedance of criteria. More data needed.
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Very Good	>5 samples and median is < 1/2 threshold.
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.

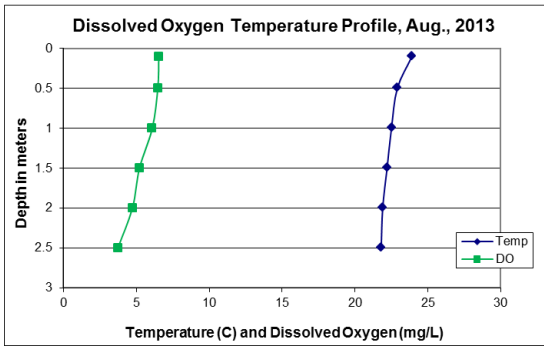


Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	3.29	Barren Land	0.29	Grassland/Herbaceous	0
Developed-Open Space	4.64	Deciduous Forest	22.25	Pasture Hay	2.66
Developed-Low Intensity	8.39	Evergreen Forest	27.92	Cultivated Crops	0.58
Developed-Medium Intensity	1.14	Mixed Forest	15.64	Woody Wetlands	9.78
Developed-High Intensity	0.13	Shrub-Scrub	2.5	Emergent Wetlands	0.78

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
TUREE POND, BOW, NH
2013 DATA SUMMARY

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

- **CHLOROPHYLL-A:** Chlorophyll levels were average in June and elevated in August, and 2013 average chlorophyll levels were the highest measured since monitoring began. Increased stormwater runoff from above average rainfall likely provided the extra nutrients required for accelerated algal growth in August.
- **CONDUCTIVITY/CHLORIDE:** Conductivity and chloride were elevated and much greater than the state medians.
- **TOTAL PHOSPHORUS:** Phosphorus levels were average in June and elevated in August, and 2013 average epilimnetic phosphorus was greater than the state median. Visual inspection of historical data indicates epilimnetic phosphorus levels have nearly doubled in the pond since monitoring began.
- **TRANSPARENCY:** Transparency was good in June and decreased in August when algal concentrations increased. Pond transparency has decreased gradually since 2007 and was the lowest measured since monitoring began.
- **TURBIDITY:** Turbidity was low in June and was elevated in August when algal concentrations were greatest.
- **PH:** pH levels were sufficient to support aquatic life however historically have been below the desirable range 6.5 – 8.0 units.
- **RECOMMENDED ACTIONS:** Phosphorus and chlorophyll were elevated in 2013, and phosphorus levels have increased greatly from the monitoring period 1996-2002. The increased frequency and intensity of storm events highlights the need to manage stormater runoff from lake and watershed properties, impervious surfaces and steep slopes. Consult a Certified Professional in Storm Water Quality (CPSWQ) to gain insight on ways to reduce stormwater runoff to the pond. Keep up the great work!



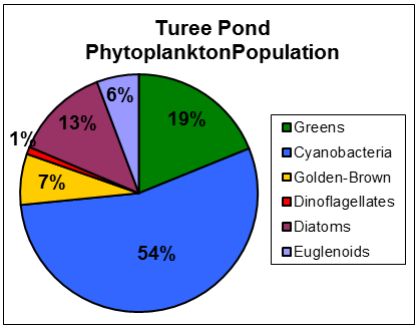


Table 1. 2013 Average Water Quality Data for TUREE POND

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	12.5	7.43	44	186.0	22	1.13	1.81	2.19	6.66

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	N/A	Ten consecutive years of data necessary.	Chlorophyll-a	N/A	Ten consecutive years of data necessary.
Conductivity	N/A	Ten consecutive years of data necessary.	Transparency	N/A	Ten consecutive years of data necessary.
			Phosphorus (epilimnion)	N/A	Ten consecutive years of data necessary.