



Volunteer Lake Assessment Program Individual Lake Reports

STONE POND, MARLBOROUGH, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	704	Max. Depth (m):	14.6	Flushing Rate (yr ⁻¹)	1	Year	Trophic class	KNOWN EXOTIC SPECIES
Surface Area (Ac.):	65	Mean Depth (m):	6	P Retention Coef:	0.63	1979	OLIGOTROPIC	
Shore Length (m):	2,400	Volume (m ³):	1,570,500	Elevation (ft):	1296	1993	OLIGOTROPIC	

TROPIC CLASSIFICATION

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.

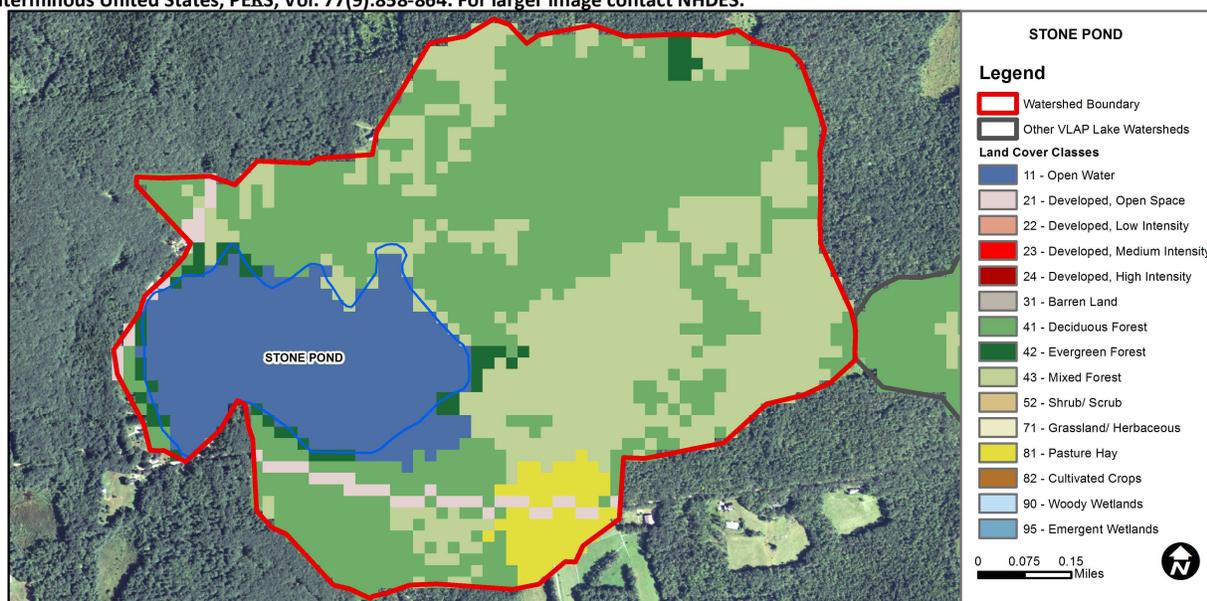
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. 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	No Data	No Data for this parameter.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

STONE POND - TOWN BEACH	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
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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	17.1	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	2.18	Deciduous Forest	45.64	Pasture Hay	3.34
Developed-Low Intensity	0	Evergreen Forest	2.46	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	29.5	Woody Wetlands	0
Developed-High Intensity	0	Shrub-Scrub	0	Emergent Wetlands	0



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2012 DATA SUMMARY

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

- ♣ **CHLOROPHYLL-A:** Chlorophyll levels were elevated in July and the 2012 average chlorophyll was the highest measured since monitoring began. Historical trend analysis indicates chlorophyll levels fluctuate from year to year.
- ♣ **CONDUCTIVITY/CHLORIDE:** Conductivity levels were relatively low and less than the NH lake median.
- ♣ **TOTAL PHOSPHORUS:** Epilimnetic (upper water layer) phosphorus levels were elevated in July, and average levels were the highest measured since monitoring began. This likely caused the elevated algal growth in July. Historical trend analysis indicates epilimnetic phosphorus fluctuates from year to year. Outlet phosphorus levels were slightly elevated in July and August and the turbidity of the samples was also slightly elevated indicating potential sediment contamination.
- ♣ **TRANSPARENCY:** Transparency decreased in 2012 due to the increased algal growth. Historical trend analysis indicates a relatively stable transparency since monitoring began.
- ♣ **TURBIDITY:** Hypolimnetic turbidity was elevated in August and sediment was noted in the sample. Outlet turbidity was elevated in July and August and sediment was noted in the August sample.
- ♣ **PH:** pH levels were generally lower than desirable and potentially critical to aquatic life.
- ♣ **RECOMMENDED ACTIONS:** Epilimnetic phosphorus levels have increased since 2009. Educate watershed residents on ways to reduce stormwater runoff from their properties utilizing DES' "Homeowners Guide to Stormwater Management". The pond receives stormwater runoff from gravel and dirt roads. Have the Town Road Agent assess the roads for areas of erosion and sedimentation into the pond or tributaries. Implement best management practices to reduce road runoff utilizing the U.S. Forest Services' "Environmentally Sensitive Road Maintenance Practices for Dirt and Gravel Roads".

Station Name	Table 1. 2012 Average Water Quality Data for STONE POND							
	Alk.	Chlor-a	Cond.	Total P	Trans.		Turb.	pH
	mg/l	ug/l	uS/cm	ug/l	NVS	VS	ntu	
Deep Epilimnion	1.2	5.42	25.4	14	4.68	5.70	0.84	6.21
Deep Metalimnion			25.0	13			1.14	6.61
Deep Hypolimnion			28.8	14			2.43	5.94
Inlet			25.0	5			1.08	6.49
Outlet			25.1	25			4.03	6.58

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.

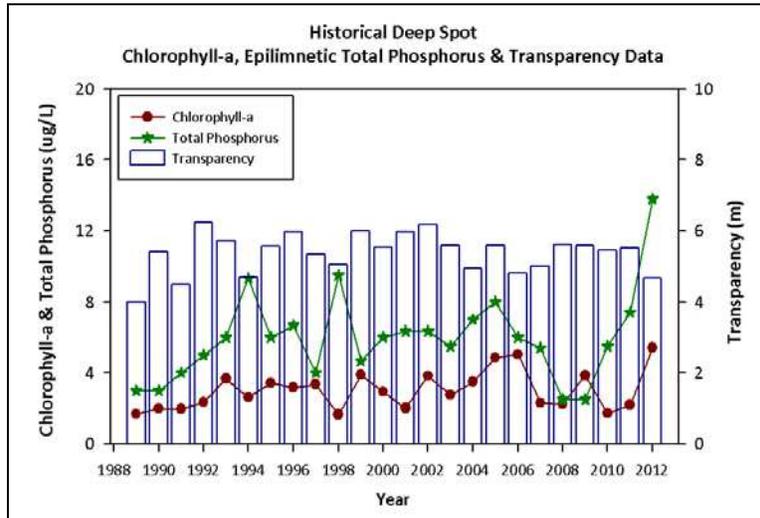
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m³
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

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
Chlorophyll-a	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.
Transparency	Stable	Data not significantly increasing or decreasing.
Phosphorus (epilimnion)	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.



This report was generated by the NH DES Volunteer Lake Assessment Program (VLAP). For more information contact:
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