



## Volunteer Lake Assessment Program Individual Lake Reports

### GRANITE LAKE, STODDARD, NH

#### MORPHOMETRIC DATA

Watershed Area (Ac.):	2,432	Max. Depth (m):	33.6	Flushing Rate (yr <sup>-1</sup> ):	0.7
Surface Area (Ac.):	228	Mean Depth (m):	9.8	P Retention Coef:	0.61
Shore Length (m):	4,500	Volume (m <sup>3</sup> ):	9,027,000	Elevation (ft):	1278

#### TROPHIC CLASSIFICATION

Year	Trophic class
1996	OLIGOTROPIC
2006	OLIGOTROPIC

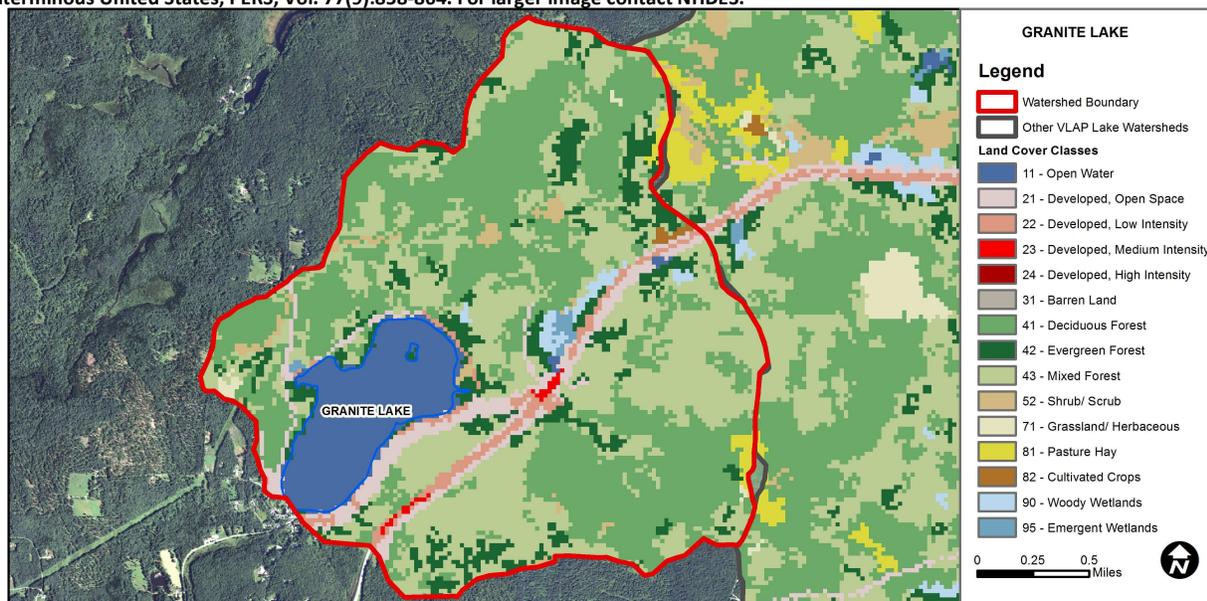
#### KNOWN EXOTIC SPECIES


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	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 geometric mean. No single sample exceedances. More data needed.
	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).
	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	9.46	Barren Land	0	Grassland/Herbaceous	0.3
Developed-Open Space	5	Deciduous Forest	36.11	Pasture Hay	0.67
Developed-Low Intensity	2.11	Evergreen Forest	8.75	Cultivated Crops	0.19
Developed-Medium Intensity	0.27	Mixed Forest	34.65	Woody Wetlands	0.87
Developed-High Intensity	0	Shrub-Scrub	1.22	Emergent Wetlands	0.36



# VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

## GRANITE LAKE, STODDARD, NH

### 2013 DATA SUMMARY

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

- 🔥 **CHLOROPHYLL-A:** Chlorophyll levels were low in July and August and much less than the state median. Historical trend analysis indicates relatively stable chlorophyll with moderate variability between years.
- 🔥 **CONDUCTIVITY/CHLORIDE:** Deep spot, Inlet, Logging Road, North Shore End, Nye Meadow Outlet, Outlet In Stream, and South St. Bridge conductivity and chloride were relatively low and some only slightly greater than the state medians. Townline Inlet conductivity and chloride increased in August likely due to low stream flow. Historical trend analysis indicates relatively stable epilimnetic conductivity with moderate variability between years.
- 🔥 **TOTAL PHOSPHORUS:** Deep spot phosphorus increased slightly from 2012, but remained low throughout the summer. Inlet phosphorus levels were elevated in August and the turbidity was also elevated. Nye Meadow Outlet phosphorus was slightly elevated in July, however greatly elevated in August due to stormwater runoff from significant storm events and logging operations in the watershed.
- 🔥 **TRANSPARENCY:** Transparency was good and well above the state median. Historical trend analysis indicates relatively stable transparency with moderate variability between years.
- 🔥 **TURBIDITY:** Deep spot turbidity was low throughout the summer. Inlet, Logging Road and Nye Meadow Outlet turbidities were slightly elevated in July following significant storm events. Inlet and Nye Meadow Outlet turbidities were greatly elevated in August following a significant storm event. Logging operations in the Inlet and Nye Meadow Outlet watershed contributed silt and sediment to the sample from stormwater runoff.
- 🔥 **pH:** pH levels were lower than desirable range 6.5 – 8.0 units at every station.
- 🔥 **RECOMMENDED ACTIONS:** If not done already, contact the DES Land Resource Management Bureau to address the stormwater runoff and sedimentation issues due to the logging activity in the Inlet/Nye Meadow Outlet watershed. Keep up the great work!

Station	Table 1. 2013 Average Water Quality Data for GRANITE LAKE								
	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	1.75	1.85	10	55.5	5	7.30	7.43	0.44	6.09
Metalimnion				59.3	6			0.71	6.19
Hypolimnion				60.0	5			0.65	5.90
Inlet			9	51.2	26			7.53	6.17
Logging Road			4	30.9	15			2.65	5.93
North Shore End				17.0	8			0.80	5.79
Nye Meadow Outlet			4	31.8	38			11.06	5.73
Outlet In Stream				55.4	3			0.37	6.45
South St Bridge				19.5	6			0.43	6.20
Townline Inlet			18	99.4	3			0.22	5.29

**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<sup>3</sup>  
**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 highly variable.	Chlorophyll-a	Stable	Trend not significant; data moderately variable.
Conductivity	Stable	Trend not significant; data moderately variable.	Transparency	Stable	Trend not significant; data moderately variable.
			Phosphorus (epilimnion)	Stable	Trend not significant; data highly variable.

