



Volunteer Lake Assessment Program Individual Lake Reports

BAXTER LAKE, FARMINGTON, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	2,439	Max. Depth (m):	4.6	Flushing Rate (yr ⁻¹)	1.9
Surface Area (Ac.):	295	Mean Depth (m):	2.1	P Retention Coef:	0.7
Shore Length (m):	7,200	Volume (m ³):	2,452,500	Elevation (ft):	405

TROPIC CLASSIFICATION

Year	Trophic class
1979	MESOTROPIC
1995	MESOTROPIC

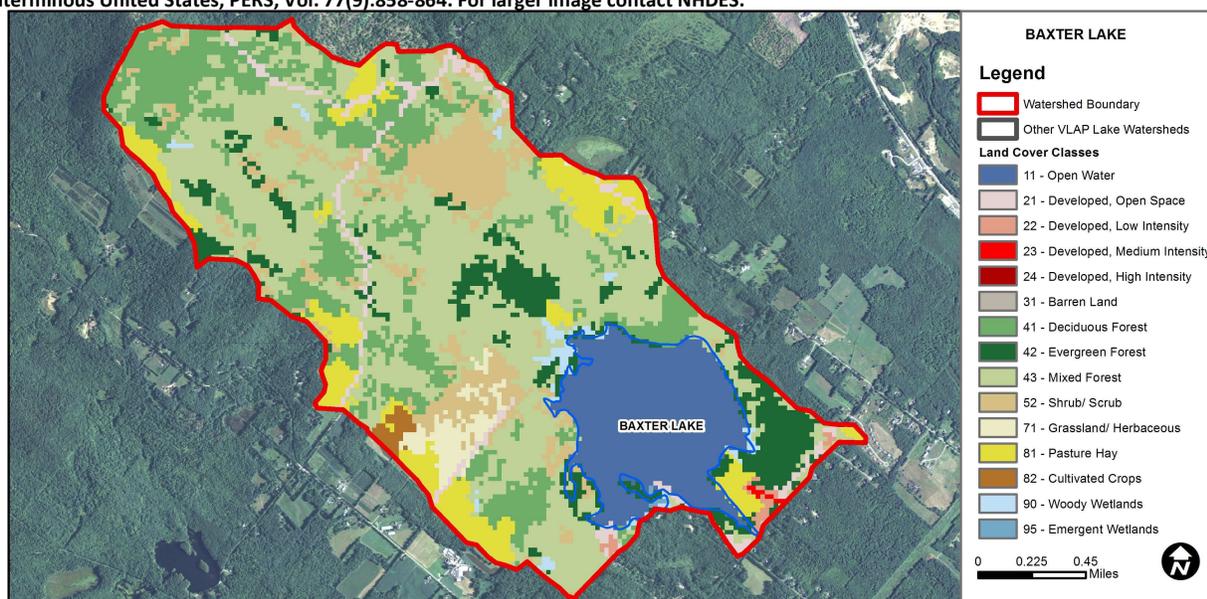
KNOWN EXOTIC SPECIES

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)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Good	>=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	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.
	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	12.1	Barren Land	0	Grassland/Herbaceous	1.76
Developed-Open Space	2.97	Deciduous Forest	16.84	Pasture Hay	8.1
Developed-Low Intensity	0.46	Evergreen Forest	8.75	Cultivated Crops	0.53
Developed-Medium Intensity	0.1	Mixed Forest	37.43	Woody Wetlands	1.17
Developed-High Intensity	0	Shrub-Scrub	9.71	Emergent Wetlands	0.07



VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

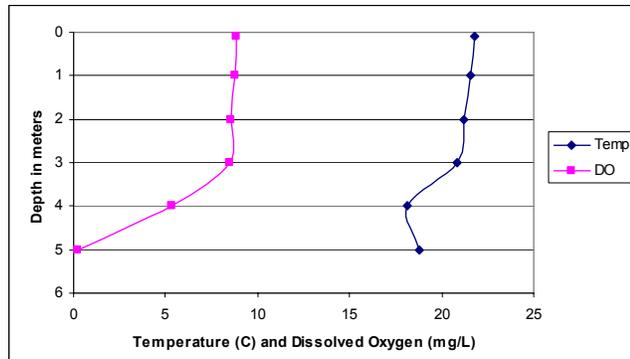
BAXTER LAKE, FARMINGTON, NH

2012 DATA SUMMARY

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

- ♣ **CHLOROPHYLL-A:** Average chlorophyll levels were the lowest measured since monitoring began. We hope to see this continue! Historical trend analysis indicates chlorophyll levels tend to fluctuate from year to year.
- ♣ **CONDUCTIVITY/CHLORIDE:** Conductivity was elevated in Dinneen Brook and Cruze Cove.
- ♣ **E. COLI:** Average E. coli levels were low and much less than the state standard for public beaches.
- ♣ **TOTAL PHOSPHORUS:** Tributary phosphorus levels were average. Deep spot phosphorus levels were slightly elevated and great than the NH lake median. Historical trend analysis indicates significantly increasing (worsening) epilimnetic (upper water layer) phosphorus level since 1999.
- ♣ **TRANSPARENCY:** Transparency was normal for the lake and historical trend analysis indicates a relatively stable transparency since 1999.
- ♣ **TURBIDITY:** Average deep spot turbidity was slightly elevated in July and August.
- ♣ **pH:** Average pH levels are typically lower than desirable.
- ♣ **RECOMMENDED ACTIONS:** Conduct chloride monitoring in the lake and tributaries to assess elevated conductivity levels. Identify potential phosphorus sources in the watershed and utilize best management practices and stormwater reduction through DES' "NH Homeowner's Guide to Stormwater Management."

Dissolved Oxygen & Temperature Profile



Station Name	Table 1. 2012 Average Water Quality Data for BAXTER LAKE								
	Alk.	Chlor-a	Cond.	E. Coli	Total P	Trans.		Turb.	pH
	mg/l	ug/l	uS/cm	#/100ml	ug/l	m		ntu	
						NVS	VS		
Beach 1				4					
Beach 2				25					
Beach 3				28					
Cruze Cove			88.8		12			0.44	6.5
Dinneen Brook			120.0		7			0.77	6.63
Deep Epilimnion	4.3	2.96	57.7		15	2.7	2.91	1.28	6.55
Deep Hypolimnion			56.3		13			1.33	6.61
Outlet			57.9	15	13			1.46	6.62

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

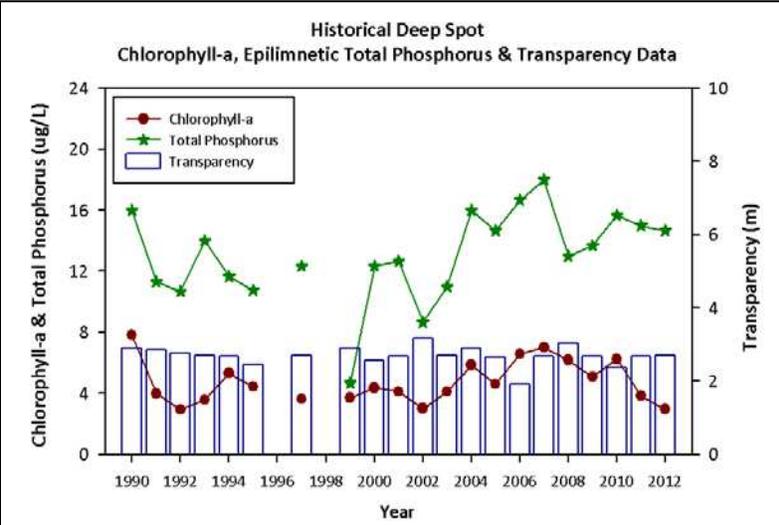
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m³
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

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.
Transparency	Stable	Data not significantly increasing or decreasing.
Phosphorus (epilimnion)	Degrading	Phosphorus significantly worsening since monitoring began.



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