



Volunteer Lake Assessment Program Individual Lake Reports

FROST POND, JAFFREY, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	314	Max. Depth (m):	3.7	Flushing Rate (yr ⁻¹):	0.8
Surface Area (Ac.):	103	Mean Depth (m):	2.1	P Retention Coef:	0.84
Shore Length (m):	3,100	Volume (m ³):	889,500	Elevation (ft):	1095

TROPHIC CLASSIFICATION

Year	Trophic class
1980	MESOTROPHIC
2001	MESOTROPHIC

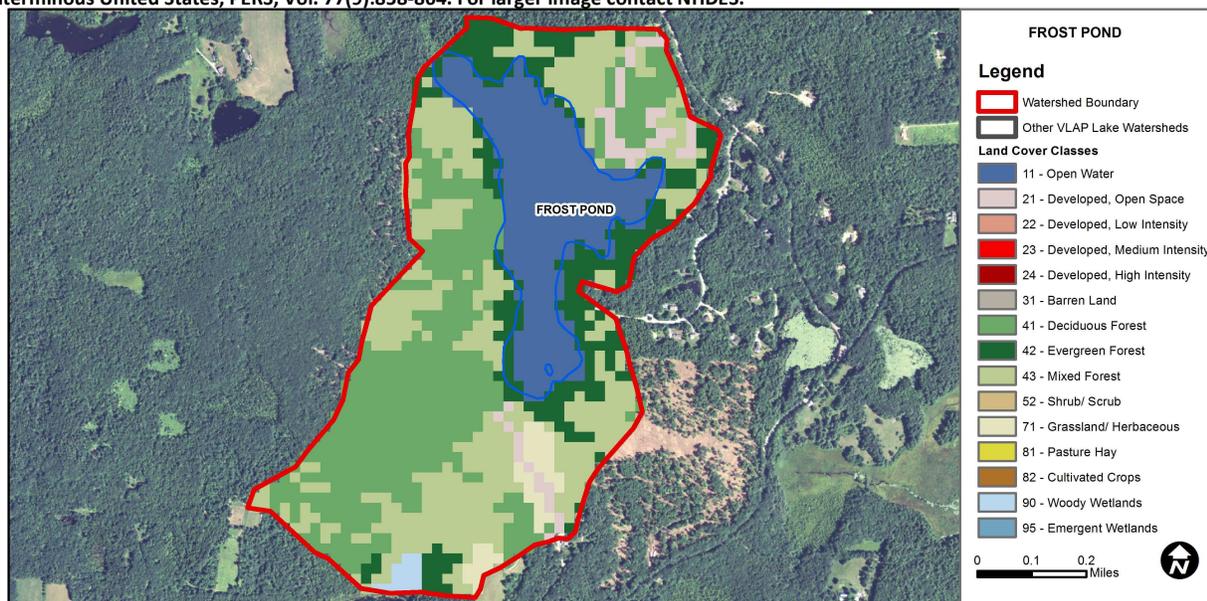
KNOWN EXOTIC SPECIES

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)	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)	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.

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	19.0	Barren Land	0	Grassland/Herbaceous	2.54
Developed-Open Space	3.22	Deciduous Forest	29.78	Pasture Hay	0
Developed-Low Intensity	0	Evergreen Forest	15.09	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	29.71	Woody Wetlands	0.89
Developed-High Intensity	0	Shrub-Scrub	0	Emergent Wetlands	0



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2013 DATA SUMMARY

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

- ♣ **CHLOROPHYLL-A:** Chlorophyll levels were slightly elevated in June and the highest measured since monitoring began. Above average rainfall in June may have washed in excess nutrients that promoted algal growth. Historical trend analysis indicates relatively stable chlorophyll with moderate variability between years.
- ♣ **CONDUCTIVITY/CHLORIDE:** Conductivity was low and well below the state median. Historical trend analysis indicates stable epilimnetic conductivity with low variability between years.
- ♣ **TOTAL PHOSPHORUS:** Phosphorus levels were low and below the state median. Historical trend analysis indicates relatively stable epilimnetic phosphorus with low variability between years.
- ♣ **TRANSPARENCY:** Transparency was good as the Secchi disk was visible on the pond bottom, despite the increased algal growth. Historical trend analysis indicates relatively stable transparency with moderate variability between years. The variability is related more to water level fluctuations than actual transparency.
- ♣ **TURBIDITY:** Turbidity was relatively low despite the increased algal growth.
- ♣ **pH:** pH was sufficient to support aquatic life, however has historically been at critical levels.
- ♣ **DISSOLVED OXYGEN:** Dissolved oxygen levels were high throughout the water column and sufficient to support aquatic life.
- ♣ **RECOMMENDED ACTIONS:** Increase monitoring frequency to three times per summer, typically June, July and August to better assess summer water quality and decrease variability.

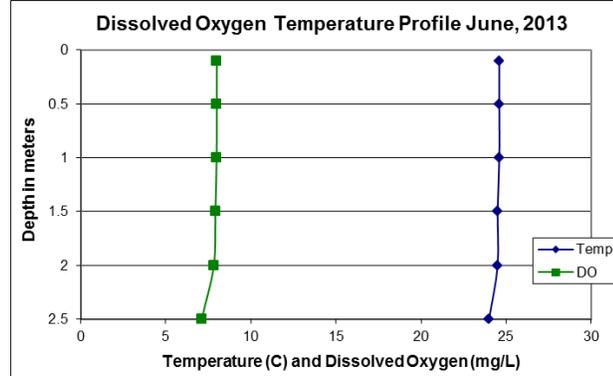


Table 1. 2013 Average Water Quality Data for FROST POND								
Station Name	Alk.	Chlor-a	Cond.	Total P	Trans.		Turb.	pH
	mg/l	ug/l	uS/cm	ug/l	NVS	VS	ntu	
Epilimnion	3.20	7.21	21.9	7	3.00	3.00	0.87	6.60

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	Parameter	Trend	Explanation
pH	Stable	Trend not significant; data show low variability.	Chlorophyll-a	Stable	Trend not significant; data moderately variable.
Conductivity	Stable	Trend not significant; data show low variability.	Transparency	Stable	Trend not significant; data moderately variable.
			Phosphorus (epilimnion)	Stable	Trend not significant; data show low variability.

