



## Volunteer Lake Assessment Program Individual Lake Reports

### WINNEPOCKET, LAKE, WEBSTER, NH

#### MORPHOMETRIC DATA

Watershed Area (Ac.):	1,728	Max. Depth (m):	20.4	Flushing Rate (yr <sup>-1</sup> )	0.6
Surface Area (Ac.):	227	Mean Depth (m):	5.8	P Retention Coef:	0.73
Shore Length (m):	5,000	Volume (m <sup>3</sup> ):	5,315,500	Elevation (ft):	452

#### TROPHIC CLASSIFICATION

Year	Trophic class
1982	OLIGOTROPHIC
1998	OLIGOTROPHIC

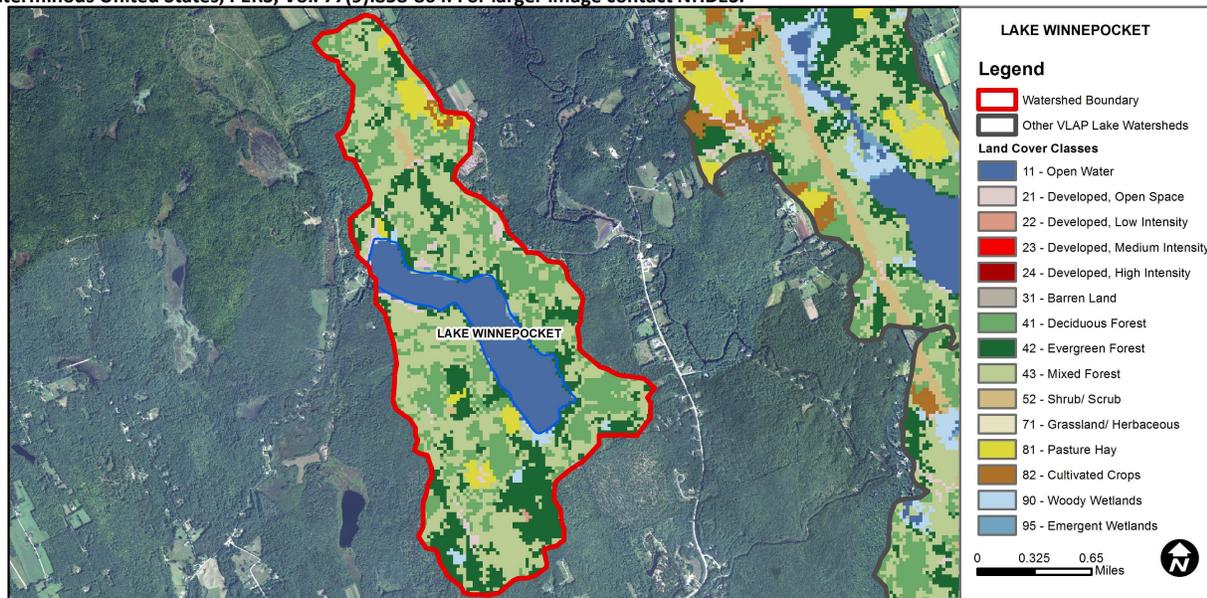
#### KNOWN EXOTIC SPECIES


The Waterbody Report Card tables are generated from the DRAFT 2014 305(b) report on the status of N.H. waters, and are based on data collected from 2004-2013. Detailed waterbody assessment and report card information can be found at [www.des.nh.gov/organizations/divisions/water/wmb/swqa/index.htm](http://www.des.nh.gov/organizations/divisions/water/wmb/swqa/index.htm)

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	The calculated median is from 5 or more samples and is > indicator and the chlorophyll a indicator is exceeded.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Oxygen, Dissolved	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Dissolved oxygen saturation	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Chlorophyll-a	Slightly Bad	The calculated median is from 5 or more samples and is > indicator.
Primary Contact Recreation	Escherichia coli	Very Good	Where there are no geometric means, all bacteria samples are < 75% of the geometric mean. Where there are geometric means all single bacteria samples are < the SSMC and all geometric means are < geometric mean criteria.
	Chlorophyll-a	Very Good	There are a total of at least 10 samples with 0 exceedances of indicator.

#### 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	13.1	Barren Land	0	Grassland/Herbaceous	0.01
Developed-Open Space	1.82	Deciduous Forest	22.29	Pasture Hay	3.36
Developed-Low Intensity	0.09	Evergreen Forest	19.05	Cultivated Crops	0.38
Developed-Medium Intensity	0	Mixed Forest	37.97	Woody Wetlands	0.97
Developed-High Intensity	0	Shrub-Scrub	0.65	Emergent Wetlands	0.22



# VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

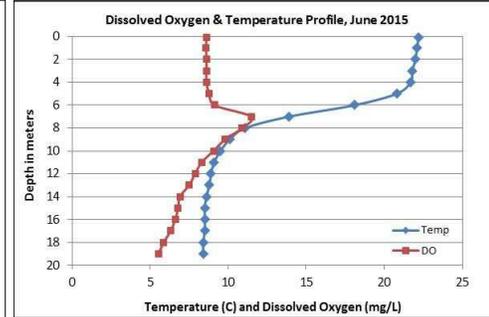
## WINNEPOCKET LAKE, WEBSTER

### 2015 DATA SUMMARY

**RECOMMENDED ACTIONS:** Water quality remained good in 2015 and was indicative of Oligotrophic or high quality conditions. The stable and improving historical water quality trends are a good sign and we hope to see this continue. The increased frequency and intensity of storm events highlights the importance of managing stormwater runoff from lake front and watershed properties to maintain good water quality. DES' "NH Homeowner's Guide to Stormwater Management" is a great resource for lake and watershed residents. Keep up the great work!

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

- **CHLOROPHYLL-A:** Chlorophyll levels were low in June and increased to average levels in August. The 2015 average chlorophyll level was low and much less than the state median. Historical trend analysis indicates relatively stable chlorophyll with moderate variability between years.
- **CONDUCTIVITY/CHLORIDE:** Deep spot, nearshore and tributary conductivity and chloride levels remained low and approximately equal to the state medians. Conductivity levels were generally higher in June at all stations likely due to spring snow melt and runoff. Historical trend analysis indicates significantly decreasing (improving) epilimnetic (upper water layer) conductivity since monitoring began. We hope to see this continue!
- **E. COLI:** E. coli levels were low at all stations on each sampling event and were much less than the state standards for public beaches (88 cts/100 mL) and surface waters (406 cts/100 mL).
- **TOTAL PHOSPHORUS:** Epilimnetic phosphorus was stable and low from June to August and average phosphorus levels were much less than the state median. Historical trend analysis indicates relatively stable epilimnetic phosphorus with moderate variability between years. Metalimnetic (middle water layer) and Hypolimnetic (lower water layer) phosphorus levels were low in June and then increased slightly in August. Tributary and nearshore station phosphorus levels remained in a low range from June to August.
- **TRANSPARENCY:** Transparency was high (good) and remained stable from June to August. Average transparency was much better than the state median and historical trend analysis indicates stable transparency since monitoring began.
- **TURBIDITY:** Deep spot, nearshore and tributary turbidity levels remained within a low range from June to August.
- **pH:** Epilimnetic, Metalimnetic, nearshore, and tributary pH levels were within the desirable range 6.5-8.0 units. Historical trend analysis indicates relatively stable epilimnetic pH with moderate variability between years. Hypolimnetic pH continues to be less than desirable.
- **DISSOLVED OXYGEN/TEMP:** Dissolved oxygen levels were within a good range throughout the entire water column in June. However, historical data indicate dissolved oxygen levels tend to decrease in hypolimnetic waters as the summer progresses.



Station Name	Table 1. 2015 Average Water Quality Data for WINNEPOCKET LAKE									
	Alk. mg/l	Chlor-a ug/l	Chloride mg/l	Cond. uS/cm	E. Coli #/100ml	Total P ug/l	Trans. m		Turb. ntu	pH
							NVS	VS		
Epilimnion	8.8	2.47		47.1		6	6.45	6.81	0.56	7.05
Metalimnion				45.5		7			0.73	6.67
Hypolimnion				48.1		9			0.79	6.21
Baston Pt.			4	46.7	20	3			0.63	6.93
Boxlet Inlet 2				46.7	10	8			0.72	6.88
Dawe Point				48.9	10	3			0.60	6.93
Outlet				47.0		5			0.61	6.78
West End Beach			3	47.3	6	5			0.65	6.88
West Wind Village			4	45.4	10	4			0.63	6.90

**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:** between 6.5-8.0 (unless naturally occurring)

**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

### HISTORICAL WATER QUALITY TREND ANALYSIS

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

