



Volunteer Lake Assessment Program Individual Lake Reports

OSSIPÉE LAKE, OSSIPÉE, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	209,595	Max. Depth (m):	18.5	Flushing Rate (yr ⁻¹)	4.6
Surface Area (Ac.):	3092	Mean Depth (m):	8.5	P Retention Coef:	0.39
Shore Length (m):	17,100	Volume (m ³):	108,421,500	Elevation (ft):	406

TROPHIC CLASSIFICATION

Year	Trophic class
1987	OLIGOTROPIC
2003	OLIGOTROPIC

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

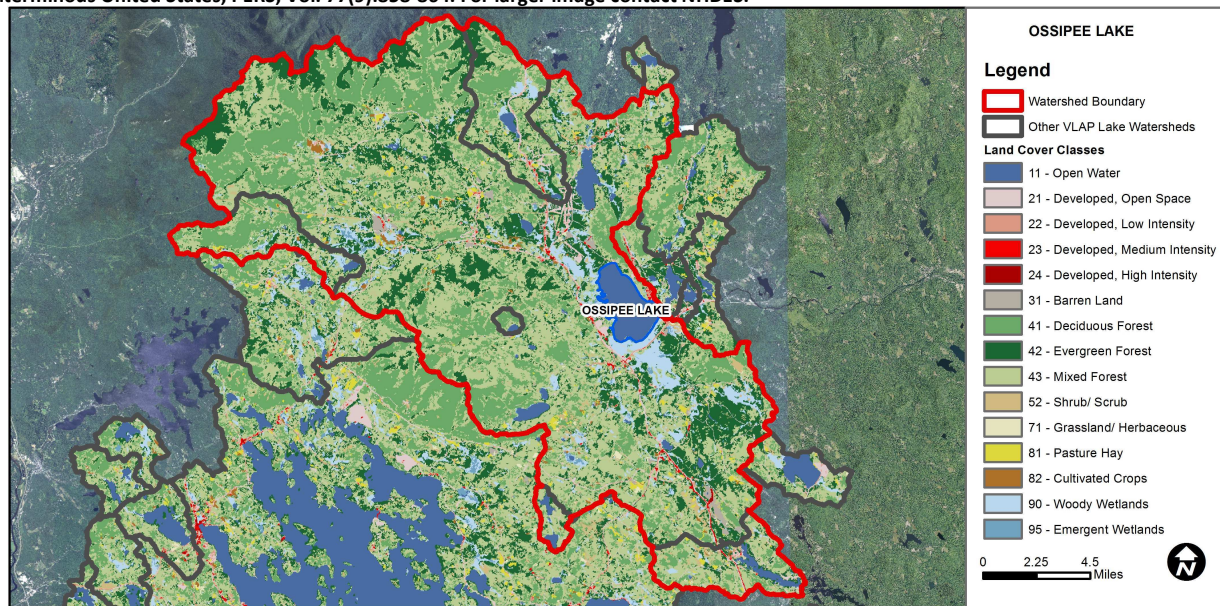
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	The calculated median is from 5 or more samples and is < indicator and > 1/2 indicator and the chlorophyll a indicator is okay.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	Oxygen, Dissolved	Very Good	There are a total of at least 10 samples with 0 exceedances of criteria.
	Dissolved oxygen saturation	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Chlorophyll-a	Good	The calculated median is from 5 or more samples and is < indicator and > 1/2 indicator.
Primary Contact Recreation	Escherichia coli	Encouraging	There are no geometric means or there are > 2 single samples but those samples are within 75% of the geometric means criteria. More data needed.
	Chlorophyll-a	Very Good	There are a total of at least 10 samples with 0 exceedances of indicator.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

Location	Parameter	Category	Comments
OSSIPEE LAKE - CAMP CODY FOR BOYS BEACH	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.
OSSIPEE LAKE - CAMP CALUMET BEACH	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.
OSSIPEE LAKE - OSSIPÉE LAKE NATURAL AREA	Escherichia coli	Slightly Bad	There are >=1 exceedance(s) of the geometric mean and/or >=2 single sample criterion exceedances. Exceedances are <2X criteria.
OSSIPEE LAKE - DEER COVE PB BEACH	Escherichia coli	No Data	No data for this parameter.

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	3.48	Barren Land	0.66	Grassland/Herbaceous	0.37
Developed-Open Space	2.87	Deciduous Forest	22.98	Pasture Hay	0.86
Developed-Low Intensity	0.75	Evergreen Forest	20.55	Cultivated Crops	0.51
Developed-Medium Intensity	0.25	Mixed Forest	38.67	Woody Wetlands	4.85
Developed-High Intensity	0.04	Shrub-Scrub	2.52	Emergent Wetlands	0.59

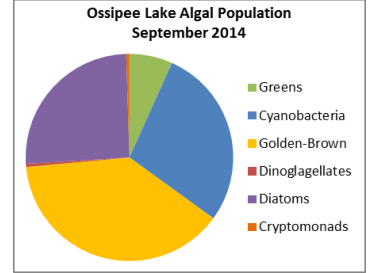
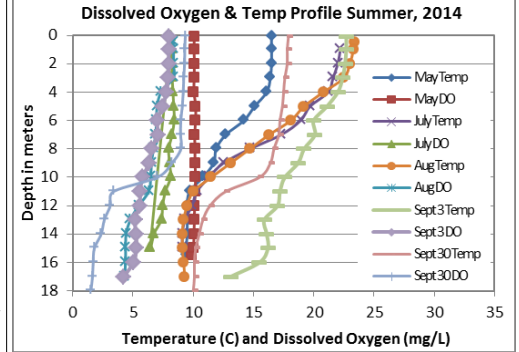


VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

OSSIPEE LAKE, OSSIPEE 2014 DATA SUMMARY

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

- CHLOROPHYLL-A:** Chlorophyll levels were slightly above average in May, then decreased to low levels from July through September. Average chlorophyll levels increased slightly from 2013 but remained less than the state median. Historical trend analysis indicates relatively stable chlorophyll with moderate variability between years.
- CONDUCTIVITY/CHLORIDE:** Deep spot conductivity and chloride levels remained average and approximately equal to the state medians. Historical trend analysis indicates stable epilimnetic (upper water layer) conductivity since monitoring began.
- TOTAL PHOSPHORUS:** Epilimnetic phosphorus levels remained between 6 and 8 ug/L between May and September. Average epilimnetic phosphorus decreased sharply from that measured in 2013 and was less than the state median. Historical trend analysis indicates highly variable epilimnetic phosphorus since monitoring began. Metalimnetic phosphorus levels were slightly less than epilimnetic and remained between 5 and 7 ug/L. Hypolimnetic phosphorus levels remained between 5 and 7 ug/L through the beginning of September and then increased to 9 ug/L at the end of September as dissolved oxygen levels started decreasing.
- TRANSPARENCY:** Transparency measured without the viewscope (NVS) was lower in May when algal growth was higher, but also when wind and wave conditions were unfavorable. Transparency remained lower than average through August and then improved in September when algal levels were at their lowest. Average NVS transparency remained stable from 2013 and was slightly less than the state median. Historical trend analysis indicates highly variable transparency since monitoring began. Transparency measured with the viewscope (VS) was generally better than that measured without. June and July VS transparencies were lower than average and then improved slightly in August, and improved again in September.
- TURBIDITY:** Epilimnetic and Metalimnetic turbidities remained relatively stable and low from May through September. Hypolimnetic turbidity was low from May through the beginning of September and then increased at the end of September as dissolved oxygen levels started decreasing.
- pH:** Epilimnetic pH levels were within the desirable range 6.5-8.0 units, however Metalimnetic and Hypolimnetic pH levels fluctuated below the desirable range. Historical trend analysis indicates relatively stable epilimnetic pH with moderate variability between years.
- RECOMMENDED ACTIONS:** Transparency measured with the viewscope is typically better than that measured without and likely a better representation of actual conditions; continue collecting viewscope transparency data. Hypolimnetic phosphorus and turbidity increased slightly in late September corresponding with a drop in dissolved oxygen levels in the hypolimnion. This may indicate that internal phosphorus loading may become more prevalent in the future. The development of a watershed management plan is underway; keep up the great work!



Station Name	Table 1. 2014 Average Water Quality Data for OSSIPEE LAKE								
	Alk. mg/l	Chlor-a ug/l	Chloride mg/l	Cond. uS/cm	Total P ug/l	Trans. m		Turb. ntu	pH
						NVS	VS		
Epilimnion	5.50	2.28	6	41.7	7	3.08	3.46	0.78	6.63
Metalimnion				39.0	6			0.75	6.39
Hypolimnion				36.2	7			1.43	6.15

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

HISTORICAL WATER QUALITY TREND ANALYSIS

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

