Volunteer Lake Assessment Program Individual Lake Reports

DUBLIN POND, DUBLIN, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	750	**Max. Depth (m):**	31.1	**Flushing Rate (yr^{-1}):**	0.2
Surface Area (Ac.):	239	**Mean Depth (m):**	10.1	**P Retention Coef:**	0.84
Shore Length (m):	4,500	**Volume (m^3):**	9,798,500	**Elevation (ft):**	1479

TROPHIC CLASSIFICATION

Year	Trophic class
1991	OLIGOTROPHIC
2001	OLIGOTROPHIC

KNOWN EXOTIC SPECIES

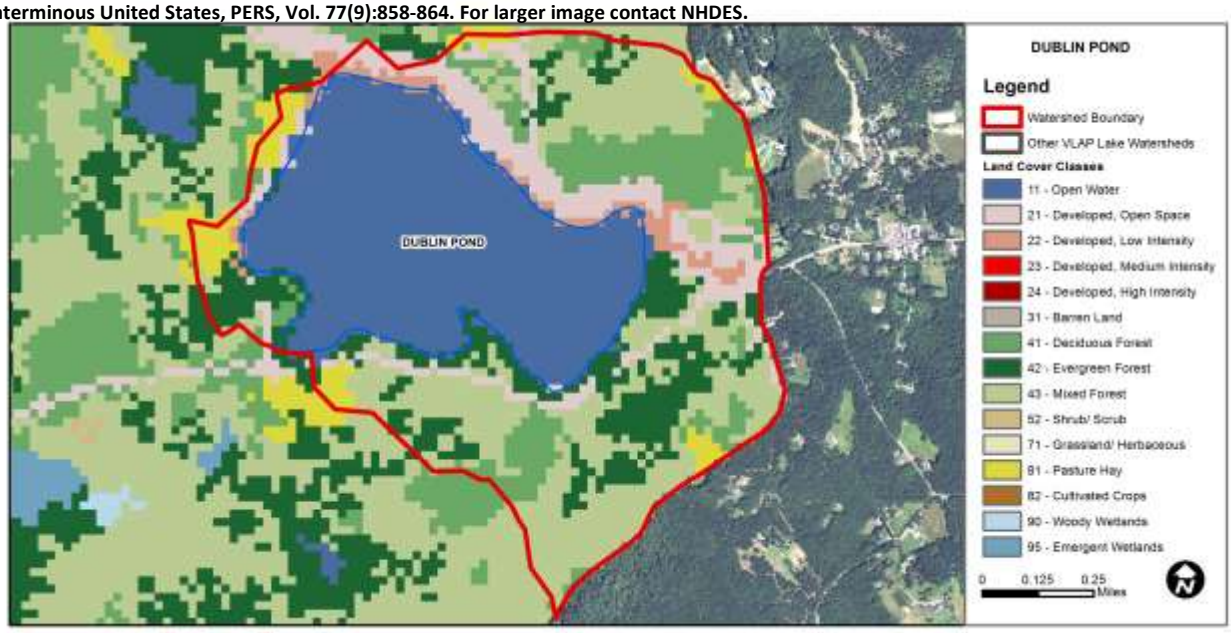
Variable Milfoil

The Waterbody Report Card tables are generated from the DRAFT 2018 305(b) report on the status of N.H. waters, and are based on data collected from 2008-2017. Detailed waterbody assessment and report card information can be found at www.des.nh.gov/organization/divisions/water/wmb/swqa/index.htm

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	Sampling data is better than the water quality standards or thresholds for this parameter.
	pH	Bad	Data periodically exceed water quality standards or thresholds for this parameter by a large margin.
	Oxygen, Dissolved	Encouraging	Limited data for this parameter predicts water quality standards or thresholds are being met; however more data are necessary to fully assess the parameter.
	Dissolved oxygen satura	Encouraging	Limited data for this parameter predicts water quality standards or thresholds are being met; however more data are necessary to fully assess the parameter.
	Chlorophyll-a	Very Good	Sampling data is 50 percent better than the water quality standards or thresholds for this parameter.
Primary Contact Recreation	Escherichia coli	Good	Sampling data commonly meet water quality standards or thresholds for this parameter.
	Chlorophyll-a	Very Good	All sampling data meet water quality standards or thresholds 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.



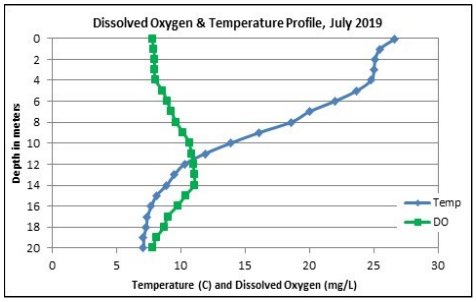
Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	34.6	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	10.1	Deciduous Forest	11.18	Pasture Hay	3.3
Developed-Low Intensity	2.82	Evergreen Forest	13.45	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	24.63	Woody Wetlands	0
Developed-High Intensity	0	Shrub-Scrub	0	Emergent Wetlands	0

Volunteer Lake Assessment Program Individual Lake Reports
Dublin Lake, Dublin
2019 Data Summary

Recommended Actions: Lake water quality was representative of oligotrophic, or high quality, conditions. The improving chlorophyll levels are a great sign and may be contributing to the improved water clarity. Epilimnetic conductivity and chloride levels are slightly higher than desirable suggesting potential impacts from road salts. Encourage local road agents and winter maintenance companies to obtain a NH Voluntary Salt Applicator License through the UNH Technology Transfer Center's Green SnowPro Certification program. For more information visit www.t2.unh.edu/road-salt-reduction. The improving pH levels are encouraging and likely the result of surface water recovery from historical acid precipitation. For more information on how New Hampshire's waters are recovering see the "Acid Rain Status and Trends" report at www.des.nh.gov/organization/divisions/water/wmb/index.htm. Consider monitoring the deep spot once per month during the summer to better assess seasonal and historical water quality trends. Keep up the great work!

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

- **Chlorophyll-a:** Chlorophyll level was low in July and much less than the state median and the threshold for oligotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) chlorophyll levels since monitoring began.
- **Conductivity/Chloride:** Epilimnetic (upper water layer), Metalimnetic (middle water layer) and Hypolimnetic (lower water layer) conductivity levels remained slightly greater than the state median. Epilimnetic chloride level was also greater than the state median, yet remained much less than the state chronic chloride standard. Historical trend analysis indicates stable epilimnetic conductivity levels since monitoring began.
- **Color:** Apparent color measured in the epilimnion indicates the water was borderline clear to lightly tea colored.
- **E. coli:** Boat Landing, Dublin Lake Club and Women's Club E. coli levels were very low and much less than the state standards for public beaches and surface waters.
- **Total Phosphorus:** Epilimnetic, Metalimnetic and Hypolimnetic phosphorus levels were very low in July, decreased from 2018, and were much less than the state median and the threshold for oligotrophic lakes. Historical trend analysis indicates relatively stable epilimnetic phosphorus levels since monitoring began.
- **Transparency:** Transparency measured with (VS) and without (NVS) the viewscope was high (good), increased (improved) from 2018, was much higher (better) than the state median, and was the best measured since monitoring began. Historical trend analysis indicates relatively stable transparency since monitoring began.
- **Turbidity:** Epilimnetic turbidity level was very low in July and the lowest measured since monitoring began. Metalimnetic and Hypolimnetic turbidity levels were also very low.
- **pH:** Epilimnetic pH level was invalidated due to suspected cross-contamination in laboratory. Metalimnetic pH level was within the desirable range 6.5-8.0 units. Hypolimnetic pH level was slightly acidic and less than desirable. Historical trend analysis indicates significantly increasing (improving) epilimnetic pH levels since monitoring began. We hope to see this continue!



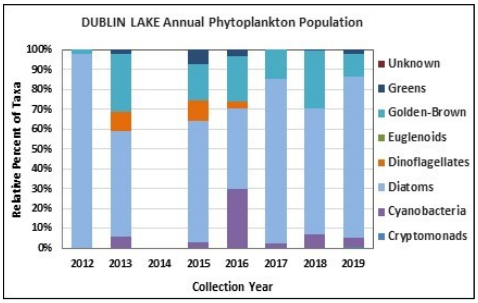


Table 1. 2019 Average Water Quality Data for DUBLIN LAKE - DUBLIN

Station Name	Alk. mg/l	Chlor-a ug/l	Chloride mg/l	Color pcu	Cond. us/cm	E. coli mpn/100ml	Total P mg/l	Trans. m		Turb. ntu	pH
								NVS	VS		
Epilimnion	5.6	1.17	18	30	71.8		3	8.75	8.75	0.31	
Metalimnion					70.9		3			0.34	6.77
Hypolimnion					72.8		3			0.34	6.28
Boat Landing						2					
Dublin Lake Club						0					
Women's Club						0					

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.5 mg/L
Chlorophyll-a: 4.39 ug/L
Conductivity: 42.3 uS/cm
Chloride: 5 mg/L
Total Phosphorus: 11 ug/L
Transparency: 3.3 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	Improving	Data significantly decreasing.
pH (epilimnion)	Improving	Data significantly increasing.	Transparency	Stable	Trend not significant; data moderately variable.
			Phosphorus (epilimnion)	Stable	Trend not significant; data moderately variable.