Volunteer Lake Assessment Program Individual Lake Reports

DUBLIN POND, DUBLIN, NH

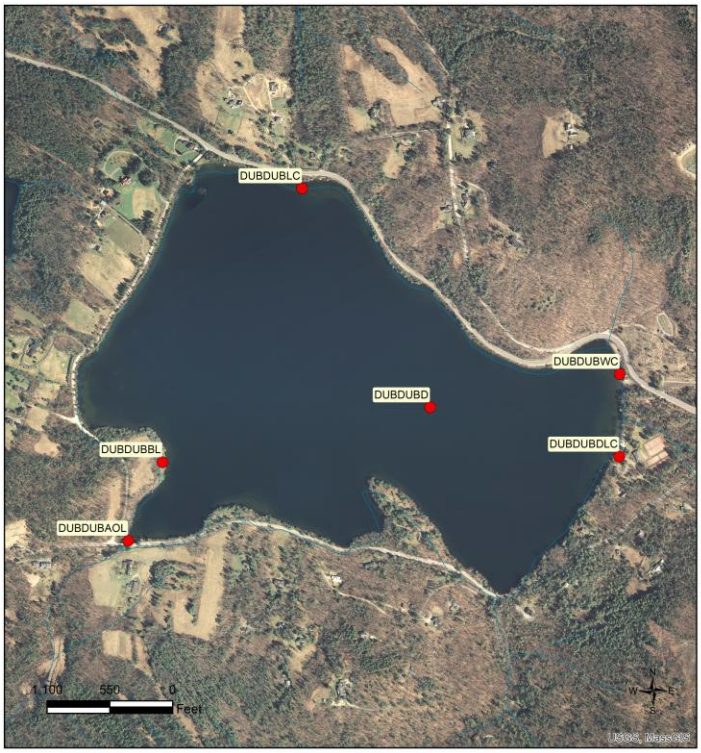
MORPHOMETRIC DATA | **TROPHIC CLASSIFICATION** | **KNOWN EXOTIC SPECIES**

Watershed Area (Ac.):	750	**Max. Depth (m):**	31.1	**Flushing Rate (yr^{1})**	0.2	**Year**	**Trophic class**	Variable Milfoil
Surface Area (Ac.):	239	**Mean Depth (m):**	10.1	**P Retention Coef:**	0.84	1991	OLIGOTROPHIC	
Shore Length (m):	4,500	**Volume (m^3):**	9,798,500	**Elevation (ft):**	1479	2001	OLIGOTROPHIC	

The Waterbody Report Card tables are generated from the DRAFT 2020 305(b) report on the status of N.H. waters, and are based on data collected from 2010-2019. Detailed waterbody assessment and report card information can be found at NHDES' Water Quality Assessment Website.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	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.
	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	Very Good	All sampling data 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.

VLAP SAMPLE STATION MAP: This map depicts the location of routine sampling stations discussed on page two of the report.



DUBLIN LAKE
DUBLIN
VOLUNTEER LAKE ASSESSMENT PROGRAM

STATIONID	STATION NAME
DUBDUBD	DEEP SPOT
DUBDUBAOL	NEAR OUTLET IN LAKE
DUBDUBBL	BOAT LANDING
DUBDUBLC	LATCHIS COVE
DUBDUBDLC	DUBLIN LAKE CLUB
DUBDUBWC	WOMENS CLUB

Source: The data layers are derived from NHDES data and are under constant revision. NHDES is not responsible for the use or interpretation of this information. Not intended for legal use NHDES Watershed Management Bureau Date: 2/17/2021

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Dublin Lake, Dublin
2020 Data Summary

Recommended Actions: Great job sampling in 2020! Lake quality continues to be representative of oligotrophic, or high quality, conditions, however nutrient (phosphorus) levels were elevated above the threshold for oligotrophic lakes in 2020. Several factors likely influenced nutrient levels such as summer drought conditions, a significant storm event prior to sampling and increased recreational use. The elevated nutrient levels and known history of cyanobacteria blooms highlights the delicate balance of the lake ecosystem. Efforts should continually be made to reduce stormwater runoff and erosion and stabilize shorelines. NHDES' "Homeowner's Guide to Stormwater Management" is a great resource. Encourage shoreline properties to become certified LakeSmart through NHLAKES lake-friendly living program www.nhlake.org/lakesmart/. Consider development of a watershed management plan to identify and quantify pollutant loads to the lake and make recommendations on ways to reduce loading. For more information contact Watershed Specialist katherine.zink@des.nh.gov. Keep up the great work!

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

- **Chlorophyll-a:** Chlorophyll level was within a low range in August, remained stable with 2019, and was much less than the state median and the threshold for oligotrophic lakes. Historical trend analysis indicates relatively stable chlorophyll levels since monitoring began.
- **Conductivity/Chloride:** Epilimnetic (upper water layer), Metalimnetic (middle water layer) and Hypolimnetic (lower water layer) conductivity levels were slightly greater than the state median. Epilimnetic chloride level was also slightly 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 clear with little to no tea, or brown, coloring.
- **Total Phosphorus:** Epilimnetic phosphorus level was elevated in August, increased greatly from 2019, was approximately equal to the state median, and was greater than the threshold for oligotrophic lakes. Historical trend analysis indicates stable, yet variable, epilimnetic phosphorus levels since monitoring began. Metalimnetic, Dublin Lake Club and Women's phosphorus levels were also slightly elevated and above average for those stations. Hypolimnetic phosphorus level was within an average range for that station. Boat Landing phosphorus level was within a low range.
- **Transparency:** Transparency measured without the viewscope (NVS) was within an average range for the lake in August, decreased from 2019 likely due to wind and wave action during sampling, and was much higher (better) than the state median. Historical trend analysis indicates relatively stable NVS transparency since monitoring began. Viewscope transparency (VS) was much higher (better) than NVS transparency and likely a better measure of actual conditions.
- **Turbidity:** Epilimnetic, Metalimnetic and Hypolimnetic turbidity levels were within a low range.
- **pH:** Epilimnetic and Metalimnetic pH levels were within the desirable range 6.5-8.0 units. Historical trend analysis indicates significantly increasing (improving) epilimnetic pH levels since monitoring began. Hypolimnetic pH level was slightly less than desirable.

Station Name	Table 1. 2020 Average Water Quality Data for DUBLIN POND - DUBLIN									
	Alk. mg/l	Chlor-a ug/l	Chloride mg/l	Color pcu	Cond. us/cm	Total P ug/l	Trans. m		Turb. ntu	pH
							NVS	VS		
Epilimnion	5.9	1.26	19	20	65.1	11	6.50	8.25	0.24	7.31
Metalimnion					62.5	9			0.17	7.29
Hypolimnion					63.8	8			0.18	6.40
Boat Landing						6				
Dublin Lake Club						8				
Women's Club						8				

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	Stable	Trend not significant; data moderately variable.
pH (epilimnion)	Improving	Data significantly increasing.	Transparency	Stable	Trend not significant; data moderately variable.
			Phosphorus (epilimnion)	Stable	Trend not significant; data highly variable.