



Volunteer Lake Assessment Program Individual Lake Reports

BLAISDELL LAKE, SUTTON, NH

MORPHOMETRIC DATA
TROPHIC CLASSIFICATION
KNOWN EXOTIC SPECIES

Watershed Area (Ac.):	448	Max. Depth (m):	13.1	Flushing Rate (yr⁻¹)	0.3	Year	Trophic class	
Surface Area (Ac.):	158	Mean Depth (m):	5.4	P Retention Coef:	0.85	1990	OLIGOTROPHIC	
Shore Length (m):	4,700	Volume (m³):	3,479,500	Elevation (ft):	827	2005	MESOTROPHIC	

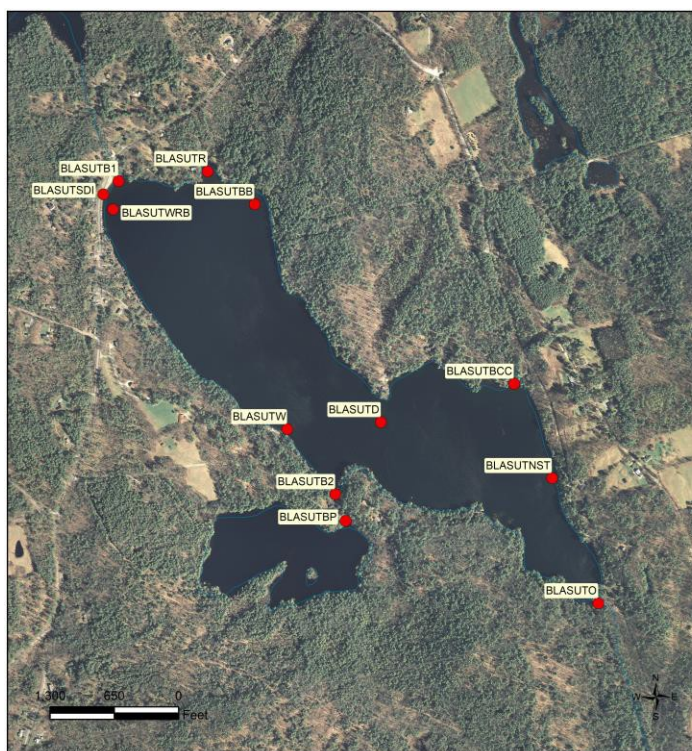
The Waterbody Report Card tables are generated from the DRAFT 2020 305(b) report on the status of New Hampshire waters, and are based on data collected from 2010- 2019. Detailed waterbody assessment and report card information can be found at [NHDES' Water Quality Assessment Webpage](#).

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	Slightly Bad	Data periodically exceed water quality standards or thresholds for this parameter by a small 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	Good	Sampling data is 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.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

BLAISDELL LAKE - CAMP WABASSO BEACH	Escherichia coli	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.
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VLAP SAMPLE STATION MAP: This map depicts the location of routine sampling stations discussed on page two of the report.



BLAISDELL LAKE SUTTON

VOLUNTEER LAKE ASSESSMENT PROGRAM

STATIONID	STATION NAME
BLASUTB1	BROWN INLET
BLASUTB2	BILLINGS INLET
BLASUTD	DEEP SPOT
BLASUTO	OUTLET
BLASUTR	RUSSELL INLET
BLASUTBB	BAILEY BEACH
BLASUTWRB	WRIGHTS BEACH
BLASUTW	WABASSO
BLASUTNST	NORTH SHORE TRIB
BLASUTBCC	BUM CARTER COVE
BLASUTBP	BILLINGS POND
BLASUTSDI	SHEEP DIP INLET

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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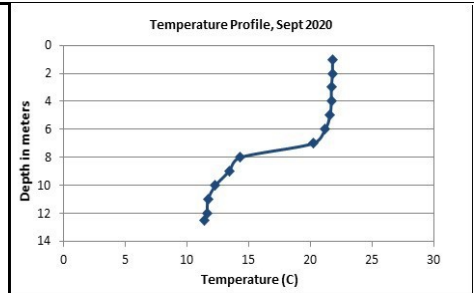
Blaisdell Lake, Sutton

2020 Data Summary

Recommended Actions: Great job sampling in 2020! Pond quality remained representative of oligotrophic, or high quality, conditions and the improving phosphorus and transparency (clarity) conditions are a positive sign. Drought conditions and subsequent low flow and stagnant conditions in many tributaries resulted in organic matter in samples which contributed to higher phosphorus levels. Only sample tributaries with adequate flow and depth to obtain samples free of sediment and/or organic matter. Russell Inlet and Russell Pond phosphorus levels have been above average in recent years potentially due to changes in the sub-watershed. Consider walking the tributary and conducting bracket sampling to help to identify any potential sources. Encourage local winter maintenance companies to become certified salt applicators through UNH Technology Transfer Center's Green SnowPro certification program. Keep up the great work!

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

- ◆ **Chlorophyll-a:** Chlorophyll level was low in June and then increased to a slightly elevated level in September. Average chlorophyll level remained stable with 2019, was less than the state median, and was approximately equal to the threshold for oligotrophic lakes. Historical trend analysis indicates stable, yet variable, chlorophyll levels since monitoring began.
- ◆ **Conductivity/Chloride:** Deep spot, Billings Inlet, Billings Pond, Outlet, Russell Inlet, and Sheep Dip Inlet conductivity and/or chloride levels were slightly greater than the state medians yet less than a level of concern. However, historical trend analysis indicates significantly increasing (worsening) epilimnetic (upper water layer) conductivity levels since monitoring began. Brown Inlet conductivity and chloride levels were approximately equal to the state medians. Russell Pond conductivity and chloride levels were slightly elevated but chloride levels remained much less than the state chronic chloride standard.
- ◆ **Color:** Apparent color measured in the epilimnion indicates the water was clear with very little tea, or brown, coloring in September.
- ◆ **Total Phosphorus:** Epilimnetic and Hypolimnetic (lower water layer) phosphorus levels were low in June and increased to a slightly elevated range in September. Average epilimnetic phosphorus level increased from 2019, was less than the state median, and was approximately equal to the threshold for oligotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) epilimnetic phosphorus levels since monitoring began. Metalimnetic (middle water layer) and Outlet phosphorus levels were stable and low. Billings Inlet, Brown and Sheep Dip Inlet phosphorus levels were also within a low range. Billings Pond phosphorus levels were elevated in September during low flow conditions and lab data note organic matter in the sample. Russell Inlet phosphorus level was elevated in June during low flow conditions. Russell Pond phosphorus levels were slightly elevated in June and September and organic matter was noted in the samples.
- ◆ **Transparency:** Transparency measured without the viewscope (NVS) was high (good) in June and remained stable in September. Average NVS transparency increased (improved) from 2019 and was much higher (better) than the state median. Historical trend analysis indicates significantly increasing (improving) 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, Billings Inlet, Outlet, and Sheep Dip Inlet turbidity levels fluctuated within a low range. Hypolimnetic turbidity level was slightly higher but within a normal range for this station. Billings Pond turbidity level was slightly elevated in June when water flow was stagnant and organic matter was noted in the sample. Brown Inlet and Russell Inlet turbidity levels were also slightly elevated in June and organic matter was noted in the samples. Russell Pond turbidity levels were elevated in June and September due to organic matter.
- ◆ **pH:** Deep spot and tributary pH levels were within the desirable range 6.5-8.0 units. Historical trend analysis indicates stable epilimnetic pH levels since monitoring began.



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:** 4.5 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

Station Name	Table 1. 2020 Average Water Quality Data for BLAISDELL LAKE - SUTTON									
	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	11	3.14	11	20	65.6	8	6.38	7.42	0.77	7.27
Metalimnion					63.7	6			0.98	7.17
Hypolimnion					64.5	11			1.62	6.65
Billings Inlet			9		64.7	10			1.31	6.69
Billings Pond			8		50.8	26			1.63	6.84
Brown Inlet			3		37.8	10			1.44	7.06
Outlet			10		64.6	6			0.56	7.12
Russell Inlet			12		70.4	28			1.64	6.61
Russell Pond			28		143.8	24			5.94	7.10
Sheep Dip Inlet			4		66.6	10			1.16	7.23

Historical Water Quality Trend Analysis

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

