



# 2023 VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

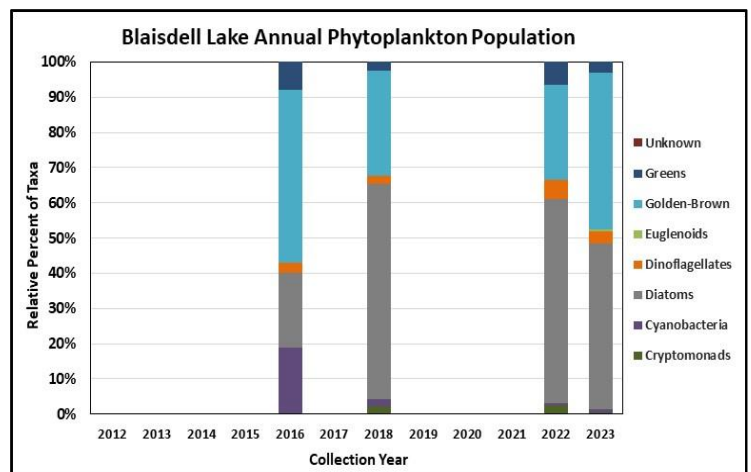
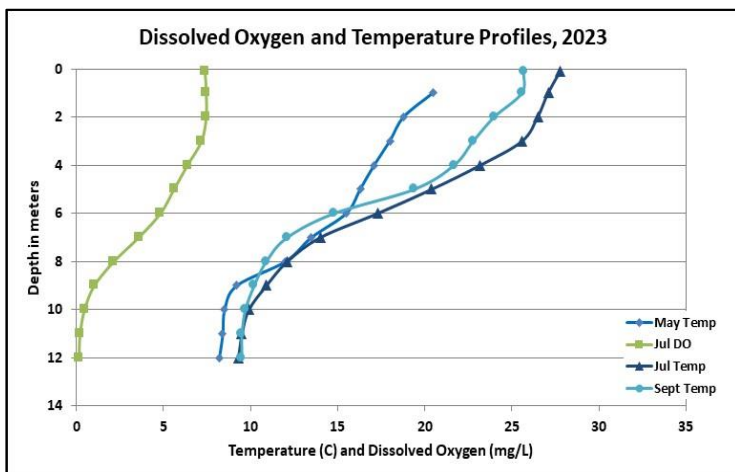
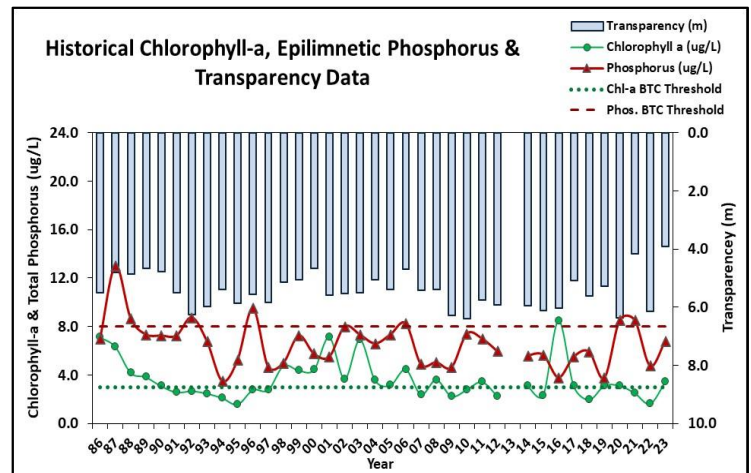
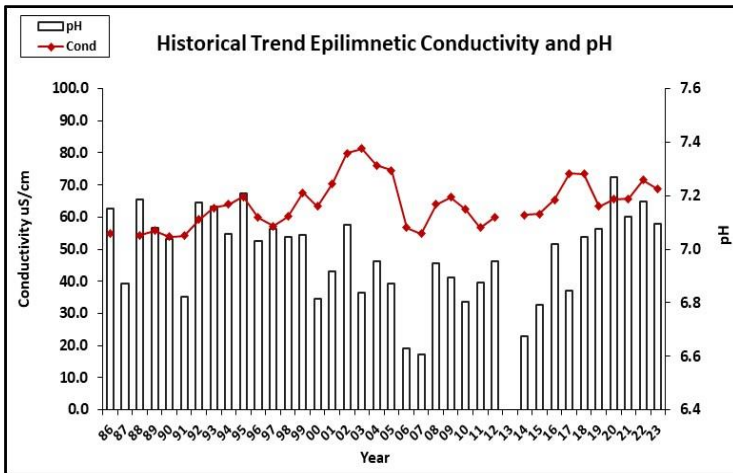
## BLAISDELL LAKE, SUTTON

**Recommended Actions:** Great job sampling in 2023! Overall, pond quality remains representative of oligotrophic, or high quality, conditions. Excessive summer rainfall resulted in higher lake nutrient (phosphorus) levels, higher levels of algal growth, darker water color, and poor water clarity (transparency). Several Inlets experienced elevated phosphorus and/or turbidity in July and/or September particularly Brown Inlet, Bum Carter Cove, Billings Pond, Russell Inlet and Russell Pond. This highlights the importance of managing stormwater runoff and erosion within these sub-watersheds. Identify areas prone to stormwater runoff/erosion and implement best management practices to minimize impacts. Consult NHDES' [stormwater](#) resources for more information. Encourage local winter maintenance companies and road agents to obtain [Green SnowPro Certification](#). For more information about road salt, refer to [WMB-4 Road Salt and Water Quality](#). Continue collecting a dissolved oxygen profile to track changes in dissolved oxygen levels in bottom waters throughout the summer to better understand dynamics between oxygen, phosphorus, pH, and turbidity. Keep up the great work!

### HISTORICAL WATER QUALITY TREND ANALYSIS

PARAMETER	TREND	PARAMETER	TREND
Conductivity	Worsening	Chlorophyll-a	Stable
pH (epilimnion)	Stable	Transparency	Stable
Phosphorus (hypolimnion)	Stable	Phosphorus (epilimnion)	Improving

### HISTORICAL WATER QUALITY GRAPHICS





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

- ◆ **CHLOROPHYLL-A:** Chlorophyll level was low in May, increased to a slightly elevated level in July, and decreased in September. Average chlorophyll level increased from 2022, was less than the state median, and was slightly greater than the threshold for oligotrophic lakes. Historical trend analysis indicates relatively stable chlorophyll levels since monitoring began.
- ◆ **CONDUCTIVITY/CHLORIDE:** Deep spot, Billings Pond, Bum Carter Cove, North Shore Trib., Outlet, 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 low. Russell Inlet and Pond conductivity and chloride levels were greater than the state medians, yet chloride levels remained less than the state chronic chloride standard.
- ◆ **COLOR:** Apparent color measured in the epilimnion indicates the water was lightly tea colored, or light brown.
- ◆ **TOTAL PHOSPHORUS:** Epilimnetic (upper water layer) phosphorus level fluctuated within a low range. Average epilimnetic phosphorus level increased from 2022 but remained less than the state median and the threshold for oligotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) epilimnetic phosphorus levels since monitoring began. Metalimnetic (middle water layer) phosphorus level was slightly elevated in July. Hypolimnetic (lower water layer) phosphorus levels fluctuated within a slightly elevated range. Historical trend analysis indicates relatively stable hypolimnetic phosphorus levels since monitoring began. Brown Inlet, Billings Pond and Russell Pond phosphorus levels were elevated in July following excessive monthly rainfall amounts. Bum Carter Cove and Russell Inlet phosphorus levels were elevated in September following a rain event. North Shore Trib., Outlet and Sheep Dip Inlet phosphorus levels were low.
- ◆ **TRANSPARENCY:** Transparency measured with (VS) and without (NVS) the viewscope was average in May, decreased (worsened) by over one meter in July, and remained stable in September. Average NVS transparency decreased from 2022, was slightly higher (better) than the state median, but was the lowest (worst) measured since monitoring began. Historical trend analysis relatively stable NVS transparency since monitoring began.
- ◆ **TURBIDITY:** Epilimnetic and Metalimnetic turbidity levels were slightly elevated in September. Hypolimnetic turbidity levels were elevated in July and September and high levels of organic matter were noted in the September sample. Brown Inlet and Bum Carter Cove turbidity levels were slightly elevated in July and/or September following rainfall. Billings Pond and Russell Inlet turbidity levels were slightly elevated in May. North Shore Trib, Outlet and Sheep Dip Inlet turbidity levels were low. Russell Pond turbidity levels were elevated on each sampling event and sediment and/or organic matter was noted in the samples.
- ◆ **PH:** Epilimnetic, Metalimnetic and tributary pH levels were within the desirable range of 6.5-8.0 units. Historical trend analysis indicates relatively stable epilimnetic pH levels since monitoring began. Hypolimnetic pH levels were slightly acidic.

Table 1. 2023 Average Water Quality Data for BLAISDELL LAKE - SUTTON

Station Name	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	6.3	3.45	12	37	68.7	7	3.93	4.68	1.09	7.09
Metalimnion	-	-	-	-	71.6	7	-	-	0.86	6.72
Hypolimnion	-	-	-	-	78.9	13	-	-	4.63	6.30
Billings Pond	-	-	9	-	48.6	19	-	-	1.70	6.58
Brown Inlet	-	-	2	-	41.2	28	-	-	1.82	7.12
Bum Carter Cove	-	-	14	-	80.8	56	-	-	5.30	6.57
North Shore Trib.	-	-	5	-	66.9	13	-	-	0.97	6.77
Outlet	-	-	12	-	69.3	6	-	-	0.83	7.07
Russell Inlet	-	-	36	-	155.4	71	-	-	2.64	6.90
Russell Pond	-	-	36	-	165.4	46	-	-	12.23	6.93
Sheep Dip Inlet	-	-	13	-	72.6	15	-	-	1.04	7.04

#### NH Median Values

Median values 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. Water quality violation if thresholds exceeded.

**Chloride:** > 230 mg/L (chronic)      **Turbidity:** > 10 NTU above natural  
**E. coli:** > 88 cts/100 mL (beach)  
**E. coli:** > 406 cts/100 mL (surface waters)  
**pH:** between 6.5-8.0 (unless naturally occurring)