



2023 VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

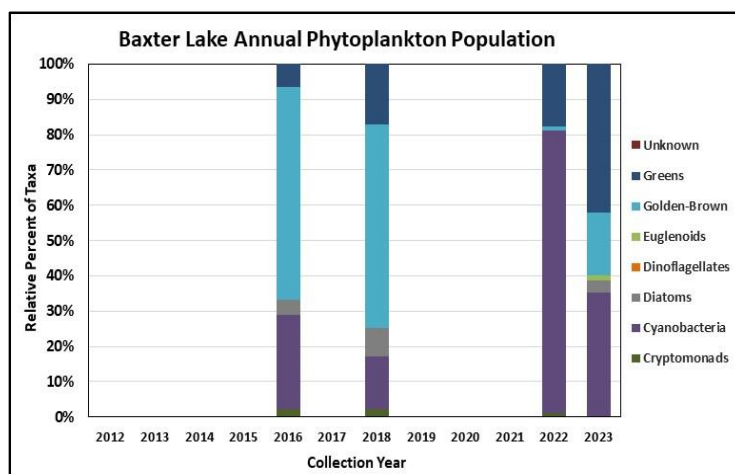
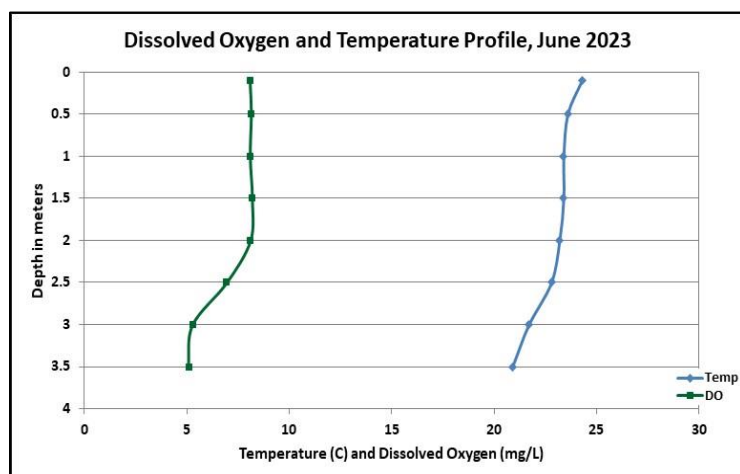
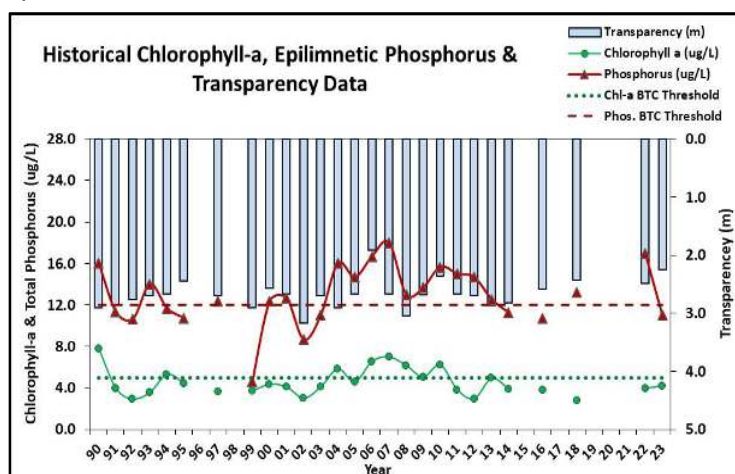
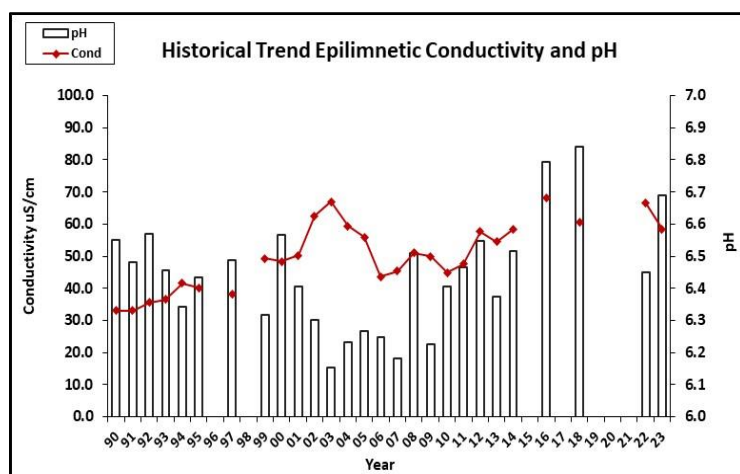
BAXTER LAKE, FARMINGTON

Recommended Actions: Great job sampling in 2023! Lake phosphorus levels improved in 2023, however excessive summer rainfall and associated stormwater runoff and flushing of systems rich in dissolved organic matter resulted in darker water color and poor water clarity. Stormwater runoff is the leading cause of nutrient (phosphorus) pollution to our lakes. Educate watershed residents on ways to reduce stormwater runoff from their properties. NHDES' [NH Homeowner's Guide to Stormwater Management](#) is a great resource. Other sources of nutrient pollution to lakes are [septic systems](#), waterfowl, fertilizers, and irresponsible boating practices. NHDES has several [fact sheets](#) to educate watershed residents on these issues and best practices to reduce nutrient pollution. We look forward to gathering more data on lake conditions in the future. Contact the [VLAP Coordinator](#) in the spring to schedule a biologist visit to refresh sampling skills.

HISTORICAL WATER QUALITY TREND ANALYSIS

PARAMETER	TREND	PARAMETER	TREND
Conductivity	N/A	Chlorophyll-a	N/A
pH (epilimnion)	N/A	Transparency	N/A
		Phosphorus (epilimnion)	N/A

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 June, increased slightly from 2022, but was less than the state median and the threshold for mesotrophic lakes. Visual inspection of historical data indicates relatively stable chlorophyll levels since monitoring began.
- ◆ **CONDUCTIVITY/CHLORIDE:** Epilimnetic (deep spot) conductivity levels were within an average range for NH lakes and slightly greater than the state median. Epilimnetic chloride levels were greater than the state median yet much less (better) than the state chronic chloride standard. Visual inspection of historical data indicates slightly increasing (worsening) epilimnetic conductivity levels since 1990. Cruze Cove, Dinneen Brook and Outlet conductivity and chloride levels were also slightly greater than the state medians but within an average range for NH lakes.
- ◆ **COLOR:** Apparent color measured in the epilimnion indicates the water was moderately tea colored, or brown, and water color was twice as dark as that measured in 2022.
- ◆ **TOTAL PHOSPHORUS:** Epilimnetic phosphorus level was within a low range in June and decreased slightly in August. Average epilimnetic phosphorus level decreased from 2022, was approximately equal to the state median, and was slightly less than the threshold for mesotrophic lakes. Visual inspection of historical data indicates stable, yet variable, epilimnetic phosphorus levels since monitoring began. Cruze Cove and Dinneen Brook phosphorus levels fluctuated within a low to moderate range. Outlet phosphorus level was slightly elevated in August.
- ◆ **TRANSPARENCY:** Transparency measured with (VS) and without (NVS) the viewscope was high (good) in June and decreased slightly in August. Average NVS transparency decreased from 2022 and visual inspection of historical data indicates relatively stable NVS transparency since monitoring began.
- ◆ **TURBIDITY:** Epilimnetic turbidity level fluctuated within a slightly elevated range potentially due to excessive rainfall and stormwater runoff. Cruze Cove, Dinneen Brook and Outlet turbidity levels fluctuated within an average range for those stations.
- ◆ **pH:** Epilimnetic, Cruze Cove, Dinneen Brook, and Outlet pH levels were within the desirable range of 6.5-8.0 units. Visual inspection of historical data indicates stable, yet variable, epilimnetic pH levels since monitoring began.

Table 1. 2023 Average Water Quality Data for BAXTER LAKE - FARMINGTON

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	5.1	4.20	10	70	58.4	11	2.25	2.80	1.44	6.69
Cruze Cove	-	-	9	-	62.1	10	-	-	1.14	6.68
Dinneen Brook	-	-	9	-	64.8	13	-	-	1.19	6.63
Outlet	-	-	-	-	61.2	12	-	-	1.14	6.70

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)