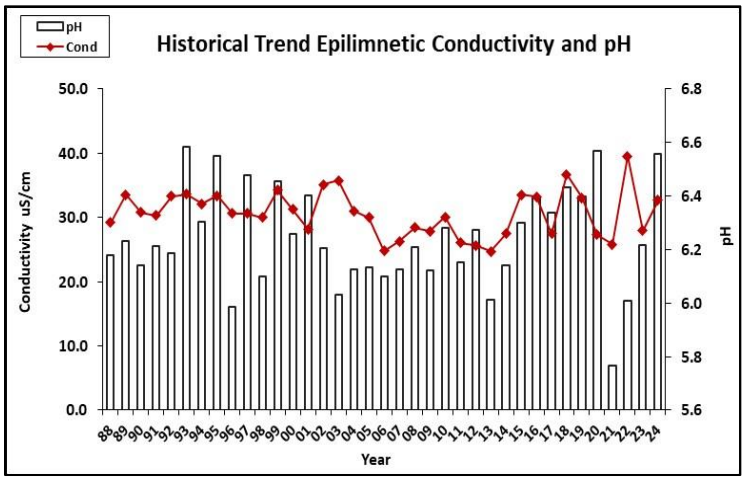
2024 VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
ISLAND POND, STODDARD

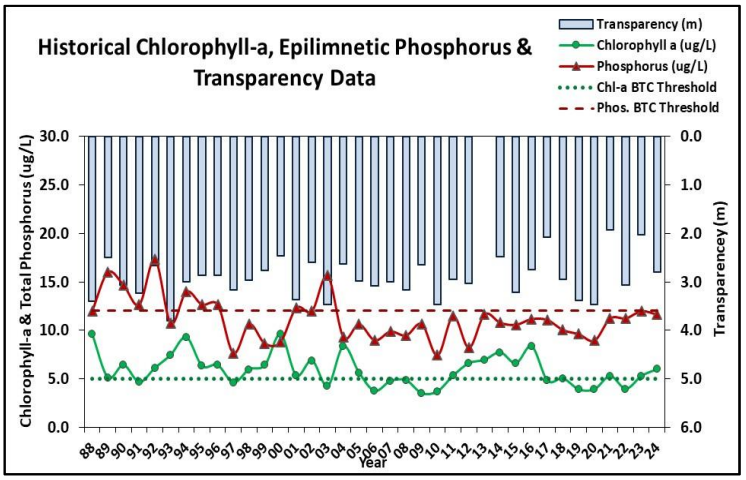
Recommended Actions: Great job monitoring water quality in 2024! The improving phosphorus and chlorophyll trends are encouraging; however, phosphorus levels have remained within a higher range since 2021 and we should carefully watch how this impacts algal and/or Cyanobacteria growth. Lake clarity improved in 2024 and water color was much lighter due to drier conditions. Factors related to climate change such as shorter periods of winter ice cover, warmer water temperatures, drought conditions, and the increased intensity of storm events are creating an environment more suitable for cyanobacteria growth. Continue monitoring the pond in late spring/early summer for cyanobacteria blooms. Great job adding dissolved oxygen monitoring in 2024! This will help us to better understand if the hypolimnion experiences anoxia as the summer progresses and to what extent that occurs. Consider development of a watershed management plan to identify and quantify nutrient (phosphorus) loads to the pond and make recommendations on ways to reduce nutrient loading. If interested contact the NHDES Watershed Assistance Program. Encourage shoreline property owners to be certified LakeSmart through NH LAKES' lake-friendly living program. Keep up the great work!

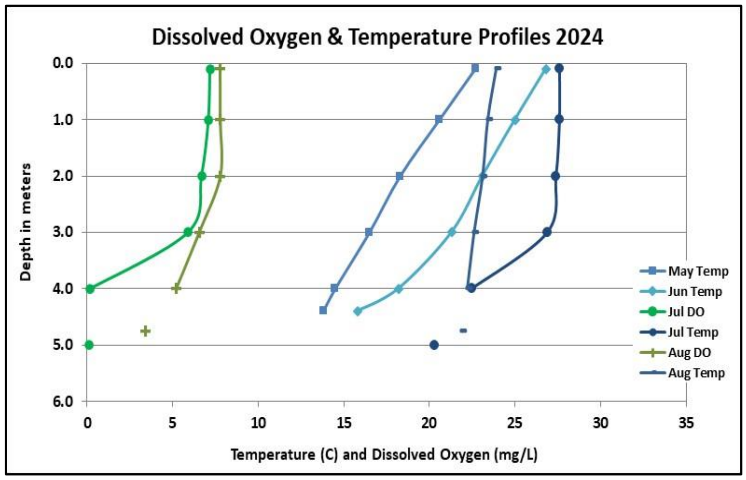
HISTORICAL WATER QUALITY TREND ANALYSIS

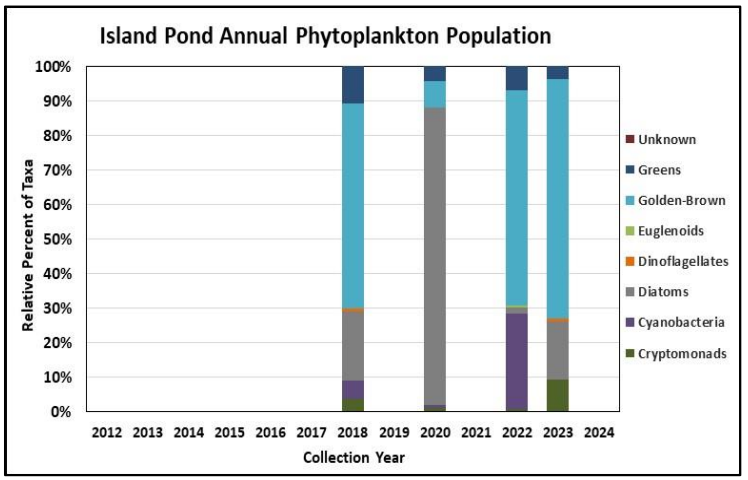
PARAMETER	TREND	PARAMETER	TREND
Conductivity	Stable	**Chlorophyll-a**	Improving
pH (epilimnion)	Stable	**Transparency**	Stable
Phosphorus (hypolimnion)	Stable	**Phosphorus (epilimnion)**	Improving

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 mid-July, decreased to a low level at the end of July, and increased to an elevated level in August. Average chlorophyll level remained stable with 2023 and was greater than the state median and the threshold for mesotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) chlorophyll levels since monitoring began.
- **CONDUCTIVITY/CHLORIDE:** Epilimnetic (upper water layer), Hypolimnetic (lower water layer), Inlet, and Outlet conductivity and/or chloride levels remained low and less than or approximately equal to the state medians. Historical trend analysis indicates stable epilimnetic conductivity levels since monitoring began.
- **COLOR:** Apparent color measured in the epilimnion indicates the water was moderately tea colored, or brown, from June through August. Average color decreased (lightened) from the highly tea colored conditions measured in 2023.
- **E. COLI:** Epilimnetic, Inlet, Outlet, and Town Beach E. coli levels were very low and less than the state standards for public beaches and surface waters.
- **TOTAL PHOSPHORUS:** Epilimnetic phosphorus level was stable and low from May through July and increased to an elevated level in August when algal growth was elevated. Average epilimnetic phosphorus level remained stable with 2023, was slightly greater than the state median, and was approximately equal to the threshold for mesotrophic lakes. Historical trend analysis indicates significantly decreasing (improving) epilimnetic phosphorus levels since monitoring began. Hypolimnetic phosphorus level was low in May and June and elevated in July and August, potentially due to phosphorus released from bottom sediments under anoxic (no dissolved oxygen) conditions. Historical trend analysis indicates relatively stable Hypolimnetic phosphorus levels since monitoring began. Inlet phosphorus levels fluctuated within a slightly elevated range for that station. Outlet phosphorus levels were slightly elevated in May.
- **TRANSPARENCY:** Transparency measured without the viewscope (NVS) was average in May, increased (improved) in June, decreased (worsened) in July, and improved slightly in August. Average NVS transparency increased from 2023 but was lower (worse) than the state median. Historical trend analysis indicates stable, yet variable, NVS transparency since monitoring began. Viewscope (VS) transparency was higher (better) than NVS transparency and a better measure of actual conditions.
- **TURBIDITY:** Epilimnetic and Outlet turbidity levels fluctuated within an average range for that station. Hypolimnetic turbidity levels were slightly elevated in July and August and lab data noted colored water conditions. Inlet turbidity level was slightly elevated in May following a storm event.
- **PH:** Epilimnetic and Outlet 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. Inlet pH levels were approximately equal to the low end of the desirable range. Hypolimnetic pH levels were slightly acidic and less than desirable.

Table 1. 2024 Average Water Quality Data for ISLAND POND - STODDARD

Station Name	Alk. (mg/L)	Chlor-a (ug/L)	Chloride (mg/L)	Color (pcu)	Cond. (us/cm)	E. coli (mpn/100mL)	Total P (ug/L)	Trans. (m)		Turb. (ntu)	pH
								NVS	VS		
Epilimnion	3.2	5.98	8	59	32.7	4	12	2.79	3.25	0.80	6.56
Hypolimnion	-	-	-	-	33.2	-	14	-	-	1.15	6.11
Inlet	-	-	-	-	32.6	9	14	-	-	0.80	6.49
Outlet	-	-	-	-	33.3	1	10	-	-	0.57	6.62
Town Beach	-	-	-	-	-	12	-	-	-	-	-
Town Beach Deep	-	-	-	-	-	2	-	-	-	-	-

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)