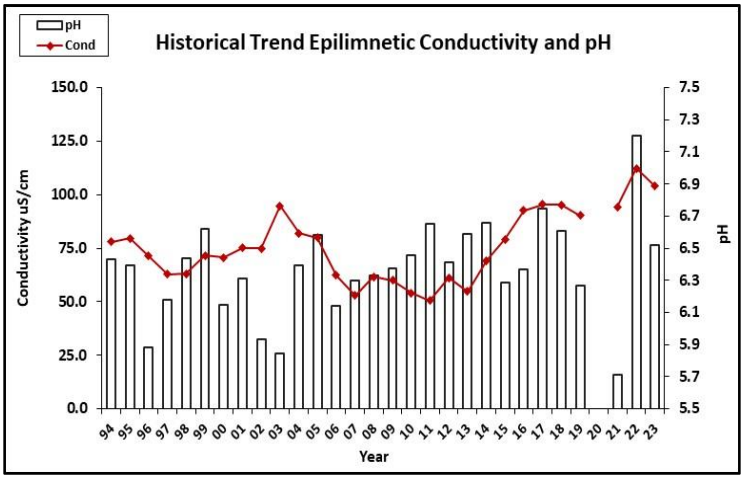
# 2023 VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
## JENNESS POND, NORTHWOOD

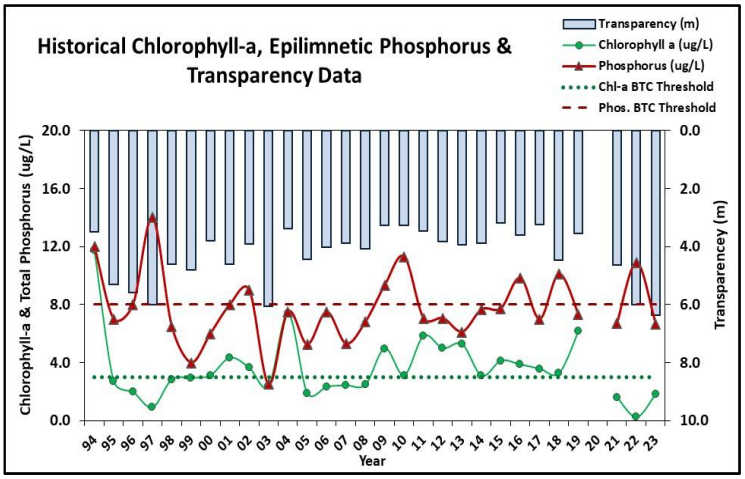
**Recommended Actions:** Great job sampling in 2023! Increase monitoring frequency to once per month, typically June, July and August, to better assess summer water quality and reduce variability within the data set. Sampling occurred in June of 2023 before excessive summer rainfall and there is no way to assess how that impacted the pond. Pond nutrient (phosphorus) levels and algal growth (chlorophyll) have historically fluctuated above the threshold for oligotrophic lakes and the phytoplankton population is typically dominated by cyanobacteria. Keep an eye on the pond for any signs of cyanobacteria blooms or intermittent surface scums and report them to the NHDES' Harmful Algal Bloom Program. The increased frequency and intensity of significant storm events, droughts and low water levels, earlier ice-out, and warmer water temperatures can influence nutrient levels and algal/cyanobacteria growth. Morse Spring Brook phosphorus levels continue to be elevated and it is recommended to conduct bracket sampling upstream to identify any potential sources of nutrients to the tributary. Contact the VLAP Coordinator for further information on bracket sampling. Educate lake and watershed property owners on ways to reduce stormwater runoff. NHDES' NH Homeowner's Guide to Stormwater Management, and NH LAKES' LakeSmart program are great resources. Keep up the great work!

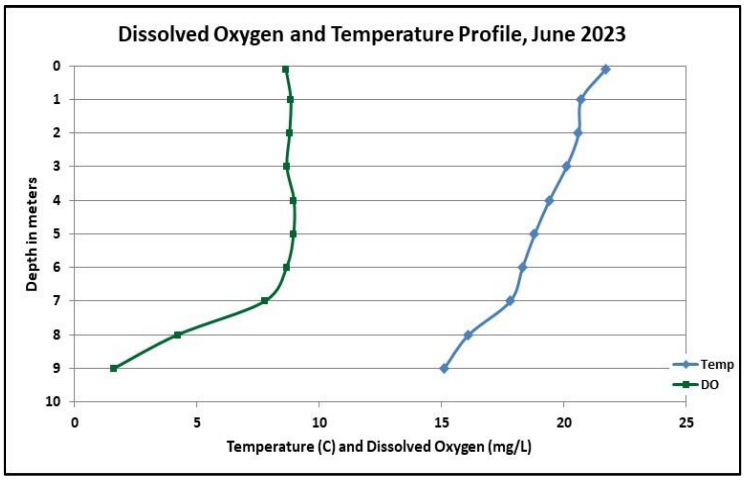
### HISTORICAL WATER QUALITY TREND ANALYSIS

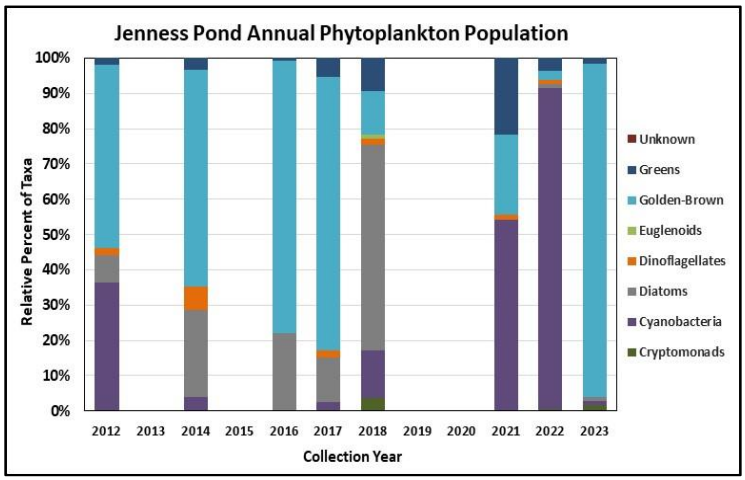
| PARAMETER | TREND | PARAMETER | TREND |
|---|---|---|---|
| **Conductivity** | Worsening | **Chlorophyll-a** | Stable |
| **pH (epilimnion)** | Stable | **Transparency** | Stable |
| **Phosphorus (hypolimnion)** | Stable | **Phosphorus (epilimnion)** | Stable |

### HISTORICAL WATER QUALITY GRAPHICS



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

- **CHLOROPHYLL-A:** Chlorophyll level within a low range in June, increased from 2022, but remained much less than the state median and the threshold for oligotrophic lakes. Historical trend analysis indicates stable, yet variable, chlorophyll levels since monitoring began.
- **CONDUCTIVITY/CHLORIDE:** Epilimnetic (upper water layer), Hypolimnetic (lower water layer), Hood Brook, Morse Spring Brook, and Tupelo Brook East conductivity levels were slightly elevated and greater than the state median. Chloride levels were also greater than the state median, yet levels were less than the state chronic chloride standard. Historical trend analysis indicates significantly increasing (worsening) 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 within a low range in June, decreased from 2022, and was less than the state median and the threshold for oligotrophic lakes. Hypolimnetic phosphorus level was also within a low range. Historical trend analysis indicates stable, yet variable, epilimnetic and hypolimnetic phosphorus levels since monitoring began. Hood Brook and Tupelo Brook East phosphorus levels were low. Morse Spring Brook phosphorus level was elevated, and the turbidity of the sample was also elevated.
- **TRANSPARENCY:** Transparency measured with (VS) and without (NVS) the viewscope was high (good) in June, increased (improved) from 2022, and was higher (better) than the state median. Historical trend analysis indicates relatively stable NVS transparency since monitoring began.
- **TURBIDITY:** Epilimnetic, Hypolimnetic, Hood Brook, and Tupelo Brook East turbidity levels were within a low range. Morse Spring Brook turbidity level was slightly elevated.
- **PH:** Epilimnetic, Hood Brook, Morse Spring Brook, and Tupelo Brook East pH levels were within the desirable range 6.5-8.0 units. Historical trend analysis indicates stable, yet variable, epilimnetic pH levels since monitoring began. Hypolimnetic pH level was slightly acidic and less than desirable.

Table 1. 2023 Average Water Quality Data for JENNESS POND - NORTHWOOD

| 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 | 2.3 | 1.84 | 27 | 20 | 103.9 | 7 | 6.38 | 6.75 | 0.49 | 6.52 |
| Hypolimnion | - | - | - | - | 105.1 | 9 | - | - | 0.87 | 6.24 |
| Hood Brook | - | - | - | - | 103.6 | 9 | - | - | 0.61 | 6.61 |
| Morse Spring Brook | - | - | 28 | - | 128.7 | 24 | - | - | 1.54 | 6.54 |
| Tupelo Brook East | - | - | - | - | 106.6 | 8 | - | - | 0.44 | 6.60 |

**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)