

2025 Volunteer Lake Assessment Program

Individual Report: Stocker Pond – Grantham

Water Quality Summary: Pond quality is generally representative of mesotrophic, or average, conditions, with moderate levels of phosphorus and algal growth. Pond nutrient (phosphorus) levels and algal growth (chlorophyll) have remained within a higher range since 2022. Historical trend analysis indicates worsening epilimnetic (upper water layer) conductivity levels, stable epilimnetic pH, water transparency, epilimnetic phosphorus and hypolimnetic (bottom water layer) phosphorus levels and improving chlorophyll levels since monitoring began. On average, Stocker Pond has similar or slightly lower (worse) water quality compared to the median NH lake but doesn't exceed any NH water quality standards.

Recommended Actions: The increased intensity of storm events and associated stormwater runoff and fluctuating climate conditions resulting in shorter periods of ice cover, warmer water temperatures and longer periods of thermal stratification can impact pond quality over time. [Stormwater](#) runoff is the leading contributor to nutrient pollution in our surface waters. Identify areas prone to stormwater runoff and erosion and implement best practices to reduce runoff and erosion. Encourage shoreline property owners to be certified [LakeSmart](#) through NH LAKES lake-friendly living program. Increase sampling frequency to once per month, typically June, July and August, to better assess seasonal variations in water quality and historical water quality trends. Keep up the great work and thank you for your continued participation in VLAP!

Historical Water Quality Trend Analysis

Table 1. Historical Water Quality Trends for Stocker Pond – Grantham

Parameter	Trend
Conductivity (Epilimnion)	Worsening
Chlorophyll-a (Composite)	Improving
pH (Epilimnion)	Stable
Transparency	Stable
Phosphorus (Epilimnion)	Stable
Phosphorus (Hypolimnion)	Stable

Historical Water Quality Graphics - Deep Spot

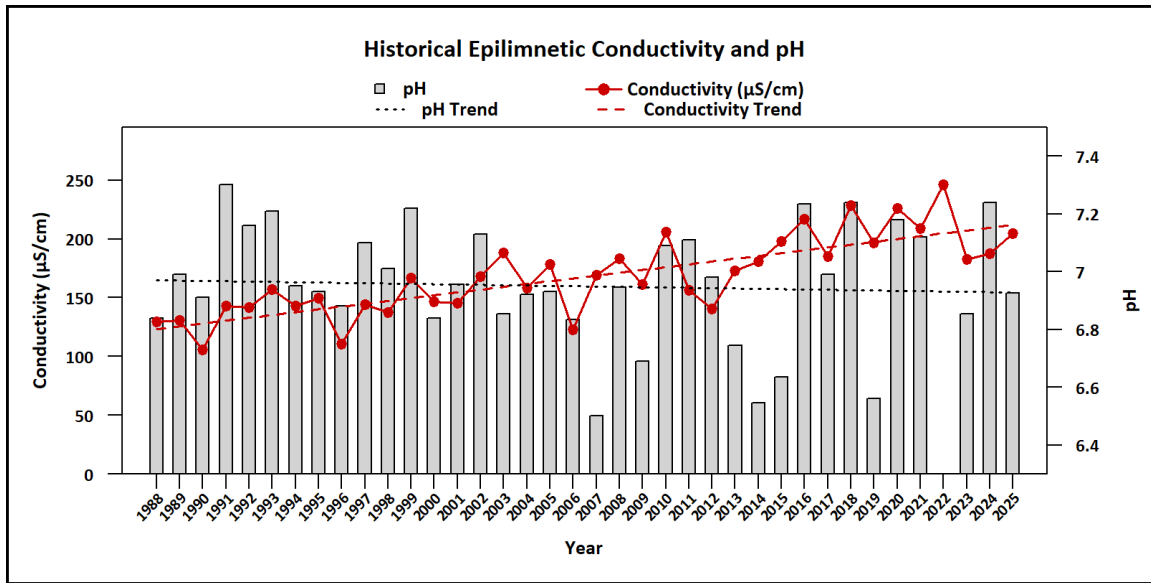


Figure 1. Median epilimnetic conductivity (red points) and pH (gray bars) by year, with corresponding trend lines shown as red and black dashed lines, respectively. Epilimnetic pH is stable and conductivity is worsening since monitoring began.

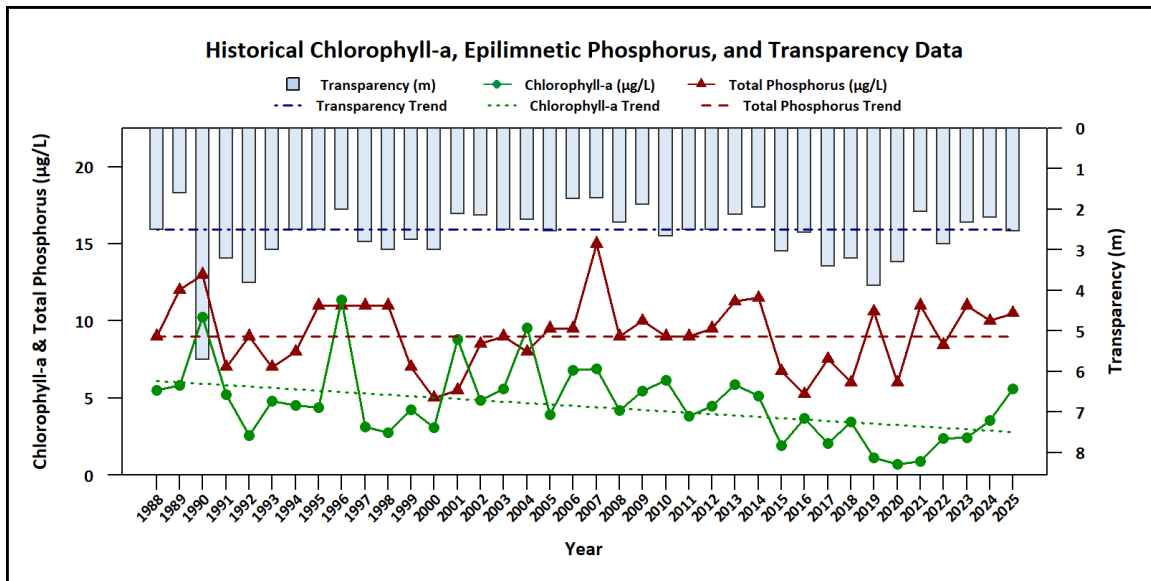


Figure 2. Median Secchi disk transparency (blue bars), epilimnetic phosphorus (red triangles), and chlorophyll-a (green points) by year, with corresponding trend lines shown as blue, red, and green dashed lines, respectively. Water transparency is stable, phosphorus is stable, and chlorophyll-a is improving since monitoring began.

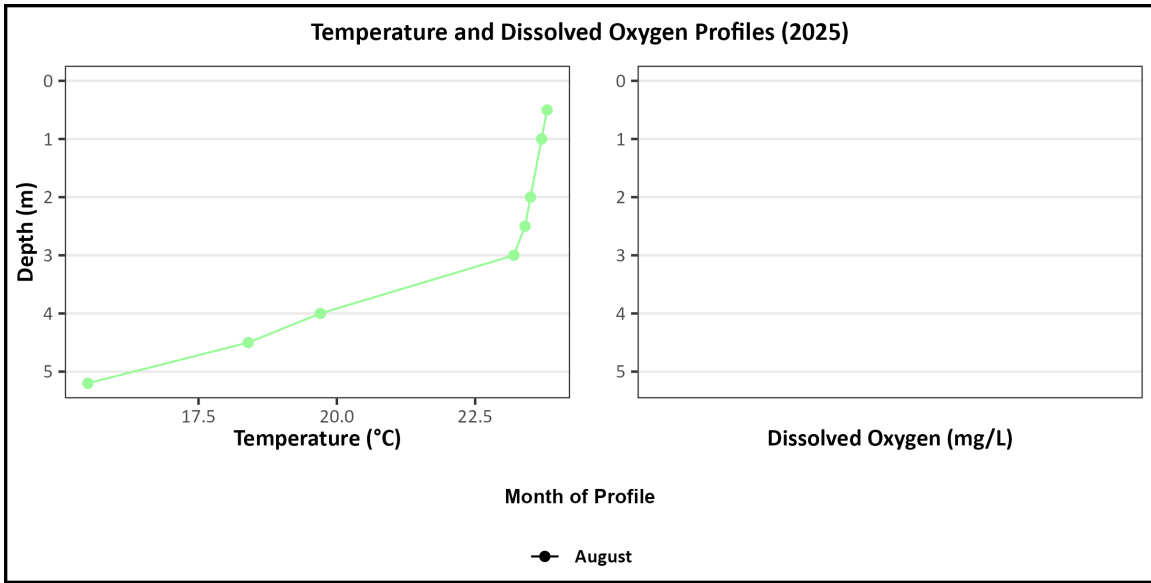


Figure 3. 2025 vertical profiles of temperature (°C; green points, left plot) plotted against depth (m). Dissolved oxygen data were not collected.

Table 2. 2025 Average Water Quality Data for Stocker Pond – Grantham

Station	Alk. (mg/L)	Chlor-a (µg/L)	Chloride (mg/L)	Color (pcu)	Cond. (µS/cm)	Total P (µg/L)	Trans. NVS (m)	Trans. VS (m)	Turb. (ntu)	pH	E. coli (mpn/100 mL)
Epilimnion	12.35	5.61	45.25	86	204.85	10.5	2.53	3.24	1.05	6.92	No Value
Metalimnion	No Value	No Value	42.70	No Value	226.80	9.0	No Value	No Value	1.50	6.98	No Value
Hypolimnion	No Value	No Value	47.80	No Value	195.80	22.0	No Value	No Value	1.20	6.44	No Value
Inlet	No Value	No Value	45.20	No Value	202.30	10.5	No Value	No Value	0.88	6.88	73.65
Outlet	No Value	No Value	44.55	No Value	208.90	14.5	No Value	No Value	1.69	6.68	No Value

Observations (Refer to Table 2 and Historical Deep Spot Data Graphics):

- Chlorophyll-a (Chlor-a):** Chlorophyll level was within a low range in June but increased to an elevated level in August. The median chlorophyll level increased from 2024 and was greater than the state median and the threshold for mesotrophic lakes. However, historical trend analysis indicates significantly improving (decreasing) chlorophyll levels since monitoring began.
- Conductivity (Cond.)/Chloride:** Deep Spot, Inlet and Outlet conductivity and/or chloride levels remained elevated and much greater than the state medians; however, chloride levels were less than the state chronic chloride standard. Historical trend analysis indicates significantly worsening (increasing) epilimnetic conductivity levels since monitoring began.
- Color:** Apparent color measured in the epilimnion indicates the water was highly tea colored, or brown, in June, but lightened to moderately tea colored in August.

- **Total Phosphorus (Total P):** Epilimnetic phosphorus level was within a low range, slightly increased from 2024 and was less than the state median and the threshold or mesotrophic lakes. Historical trend analysis indicates stable, yet variable, epilimnetic phosphorus levels since monitoring began. Inlet and Outlet phosphorus levels were also within a low to average range for the pond.
- **Transparency (Trans.):** Transparency measured without the viewscope (NVS) was below average (worse) in June and slightly improved (increased) in August. The median NVS transparency worsened (decreased) from 2024 and was lower (worse) than the state median. Historical trend analysis indicates relatively stable NVS transparency since monitoring began. Transparency measured with the viewscope (VS) was higher (better) than NVS transparency and a better measure of actual conditions.
- **Turbidity (Turb.):** Deep Spot turbidity level was slightly above average in June. Inlet and Outlet turbidity levels were within low to average ranges for those stations.
- **pH:** Epilimnetic, Metalimnetic, Inlet and Outlet pH levels were within the desirable range of 6.5-8.0 units. Historical trend analysis indicates stable, yet variable, epilimnetic pH levels since monitoring began. Hypolimnetic pH levels were slightly more acidic than desirable.
- **E. coli:** Inlet E. coli levels were within an elevated range and were approaching the state standards for public beaches but were much less than state standards for surface waters.
- **Temperature/Dissolved Oxygen (DO) Profile:** The lake was thermally stratified in August at the time of sampling. Record dissolved oxygen concentrations when collecting a temperature profile to track changes in oxygen levels in the water column.

How does your lake compare to New Hampshire lakes and water quality standards?

Table 3. New Hampshire Median Lake Water Quality Values. Median values generated from historic lake monitoring data.

Parameter	Median Value
Alkalinity	4.5 mg/L
Chlorophyll-a	4.39 µg/L
Chloride	5 mg/L
Conductivity	42.3 µS/cm
Total Phosphorus	11 µg/L
Transparency	3.3 m
pH	6.6

Table 4. New Hampshire Water Quality Standards. Numeric criteria for specific parameters. Water quality violation occurs if thresholds are exceeded.

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