EATON WATER QUALITY REPORT 2024

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RIVERS Field Sampling Parameters

Conductivity

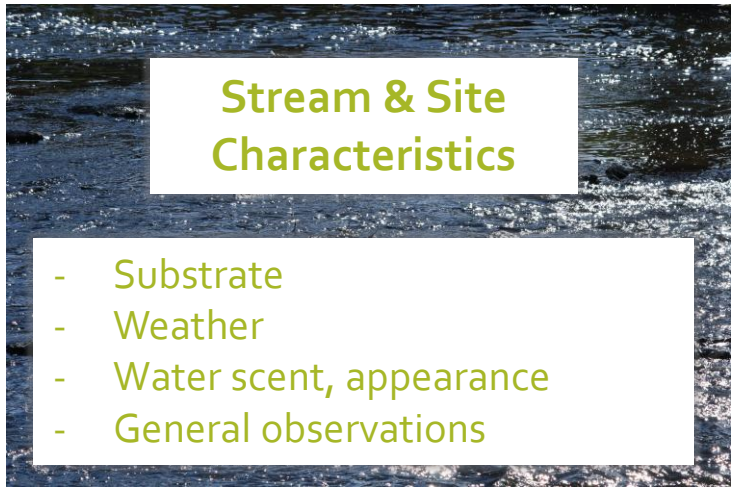
- Ability of water to pass an electrical charge
- Based on amount of charged elements [Mg+, Ca+, Cl-, NO_3-, etc.]
- Can be useful in interpreting salt loads in water bodies

Total Phosphorus

- Critical nutrient for photosynthesis and algae/plant growth
- High levels indicate elevated decomposition (including sewage inputs)

Dissolved Oxygen (DO)

- Measure of how much oxygen is available to aquatic organisms – different species require different amounts

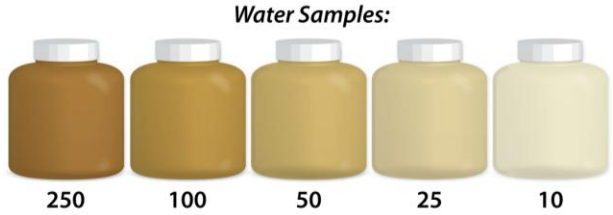


Stream & Site Characteristics

- Substrate
- Weather
- Water scent, appearance
- General observations

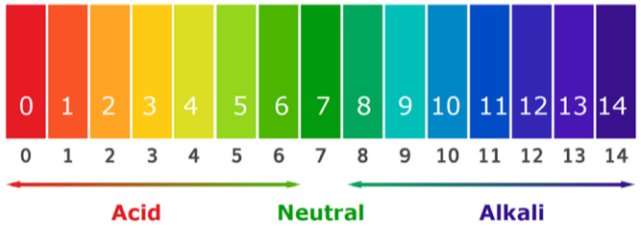
Turbidity

- Water clarity
- Determined by the amount of suspended particles and sediment



pH

- Pure water has a pH of 7, although most water in NH is closer to 6.5 (more acidic)
- The optimal range for aquatic organisms is 6.5 to 8.2



Temperature

- Influences…
  - Amount of dissolved oxygen
  - Rate of chemical reactions in water
  - Plant and algal growth
  - Activity and life cycles of aquatic organisms

Water Quality Standards & Allowable Limits

Parameter	Limit/ Standard
Conductivity	< 100 µS/cm
Total Phosphorus (TP)	< 30 µg/L
Dissolved Oxygen (DO)	6-11 mg/L , 75%-120%
Turbidity	< 10 NTU
pH	6-8, preferably close to 6.5 in NH
Temperature	No standard, but monitored for major changes

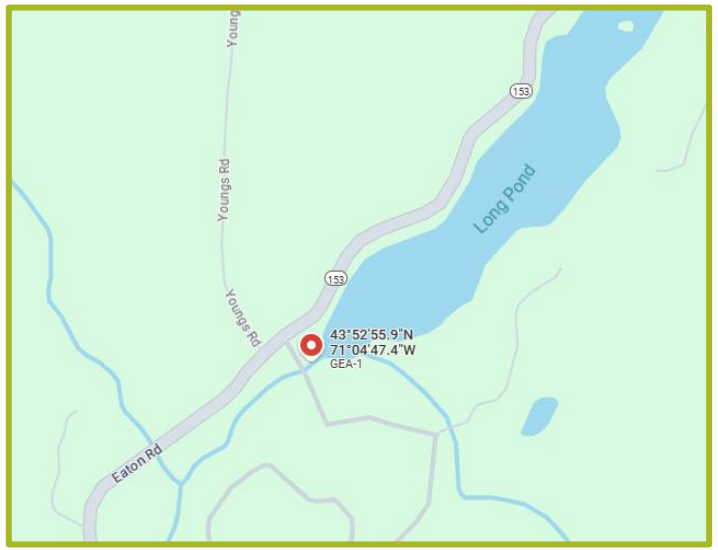
Based on NHDES and EPA Criteria

Anything above is considered "nuisance levels"

****Each site we monitor will vary in these values- a normal occurrence- due to differences in surrounding plant life, land use, infrastructure, geology, etc.**

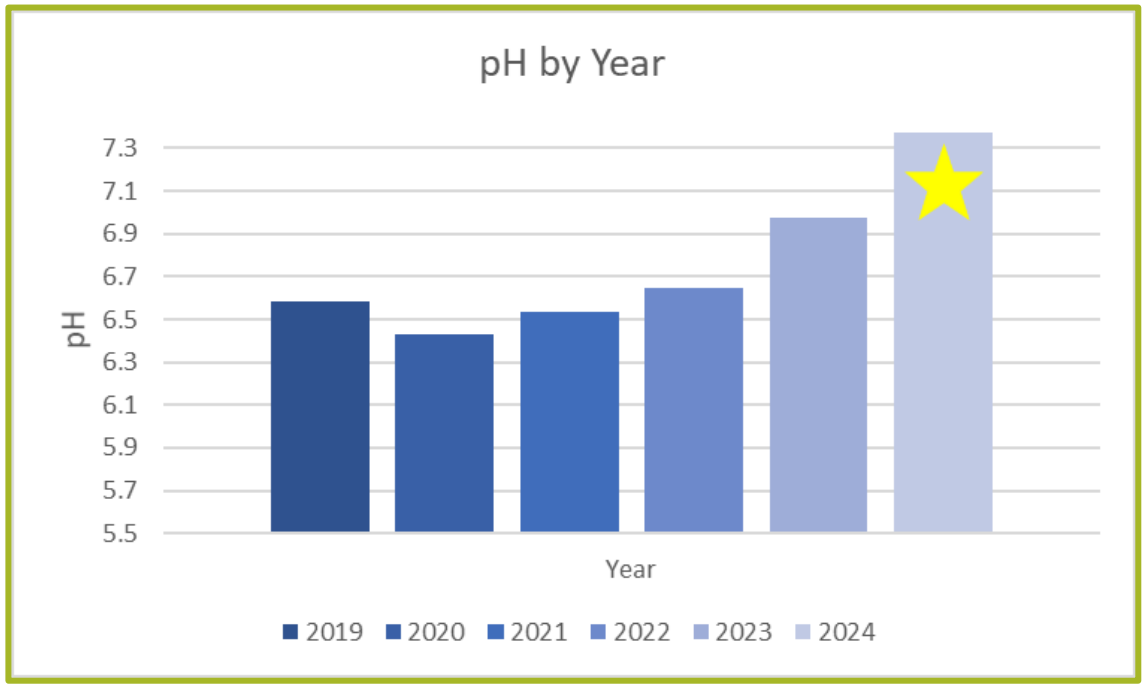
GEA-1 Long Pond Outlet: May 2019-Oct 2024

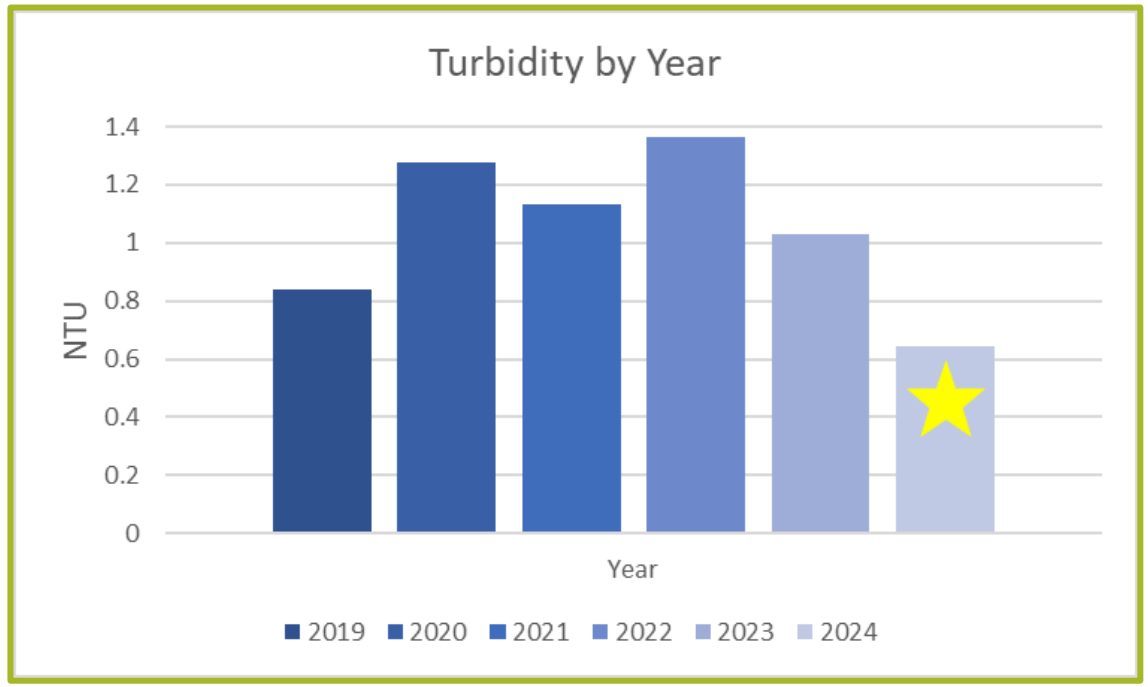
- Monitored since 2013
- Parameters measured: pH, turbidity, temperature, conductivity, DO, TP



Parameter	Status
Temp.	Stable.
TP	TP in 2024 was lower than it had been from 2019-2023. All values were well within acceptable limits.

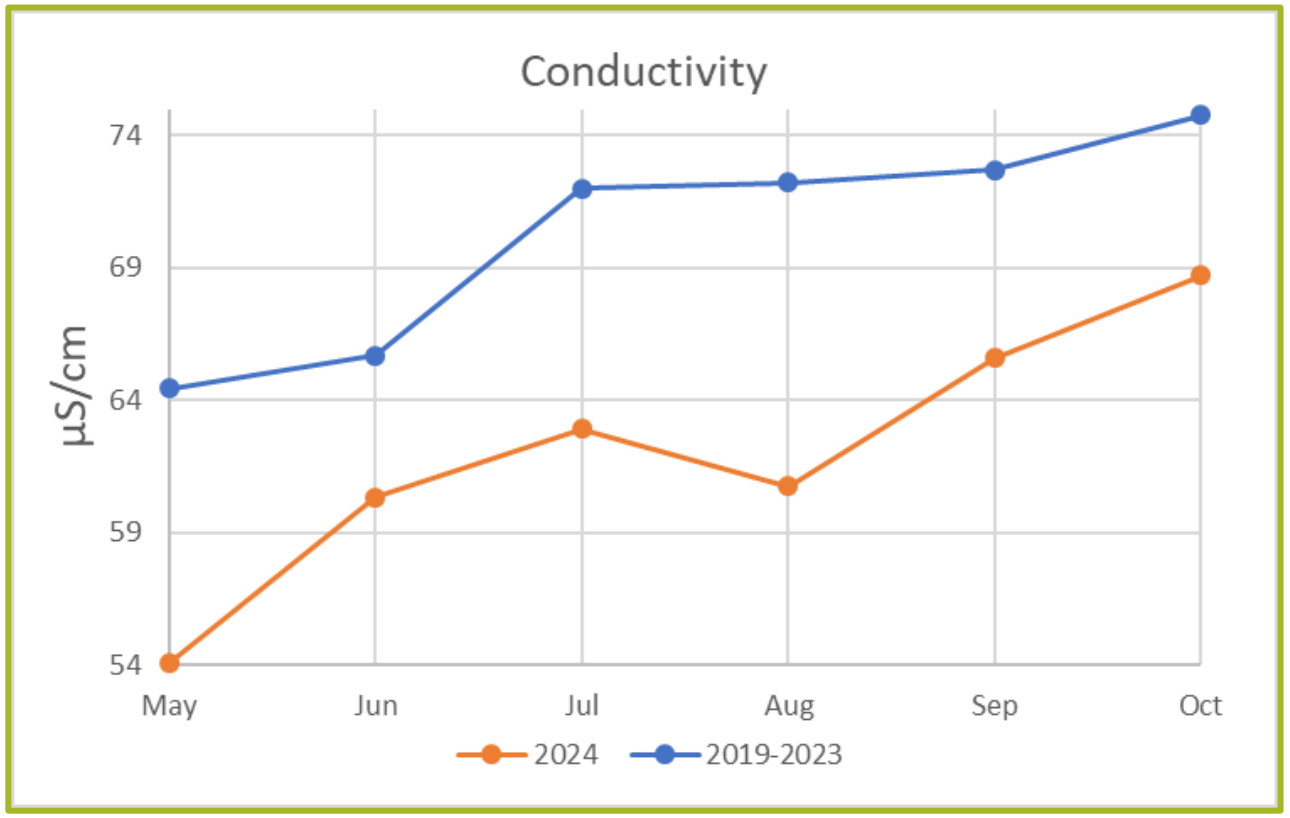
GEA-1 Long Pond Outlet: May 2019-Oct 2024





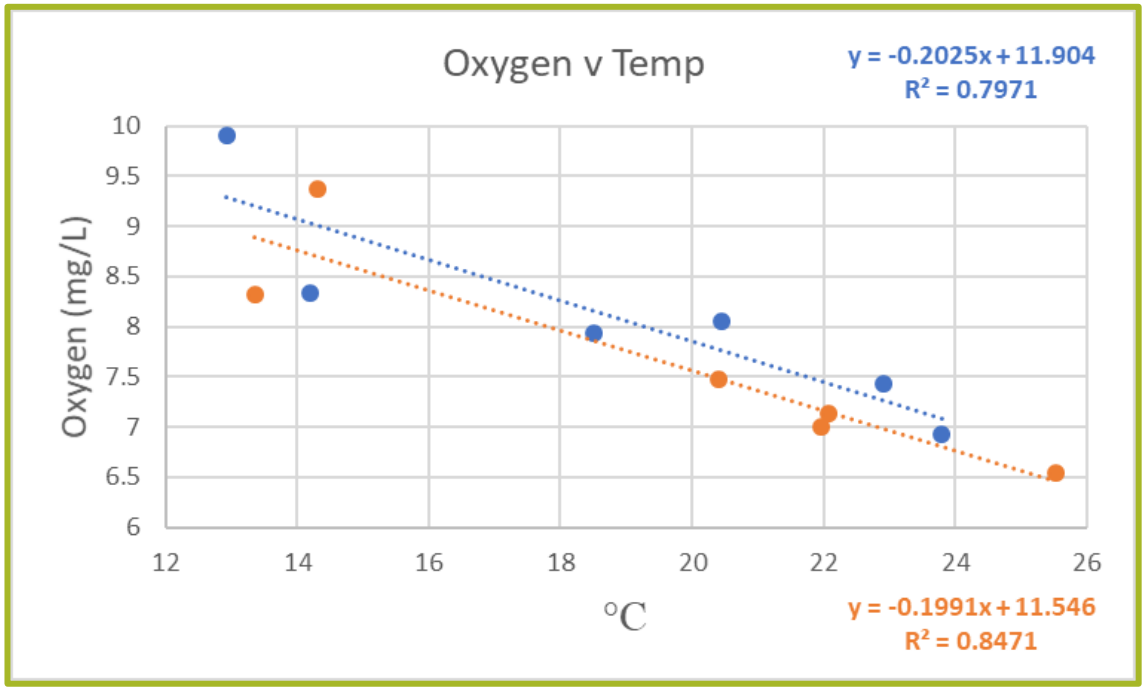
Parameter	Status
pH	pH was higher than it had been for the past five years, although all values were within a healthy range.
Turbidity	Turbidity was lower than it had been for the past five years, with all values well below the threshold of 10 NTU.

GEA-1 Long Pond Outlet: May 2019-Oct 2024

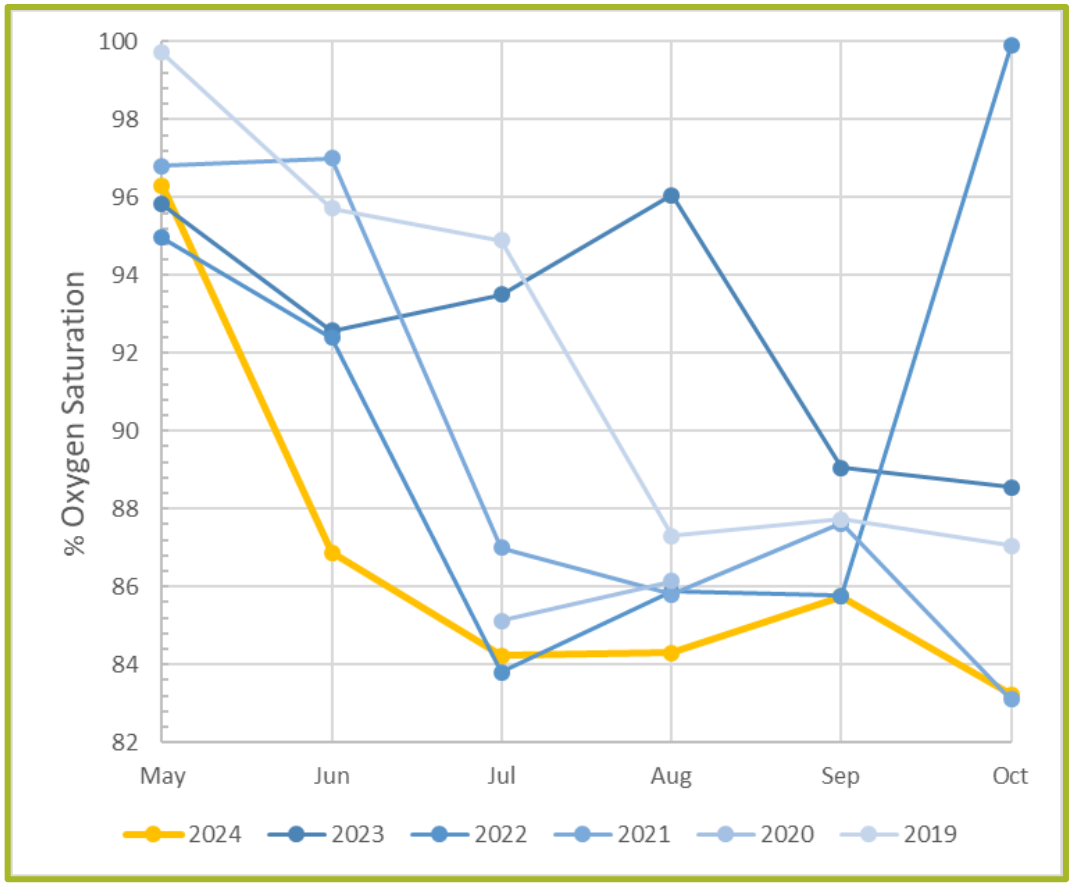


Parameter	Status
Conductivity	Conductivity in 2024 was lower than combined conductivity values from 2019-2023. Values in 2024 varied similarly to the combined 2019-2023 values, with the lowest conductivity in May and a peak in October.

GEA-1 Long Pond Outlet: May 2019-Oct 2024



DO should have an inverse relationship with temperature- colder water can dissolve more oxygen.



Parameter	Status
DO (mg/L)	The R^2 value from 2024 (orange) was similar to the R^2 value from 2019-2023 (blue) which indicates a consistent relationship between parameters at this site. 2024 DO (mg/L) was lower than the combined values from 2019-2023, although all were within a healthy range.
DO (%)	In 2024, DO % was lower than values from 2019-2023 most months, although all were within a healthy range.

Overview of Findings

The majority of parameters tested fell within the acceptable limits for surface waters set by the New Hampshire Department of Environmental Services (NHDES) and/or the Environmental Protection Agency. Our findings do not indicate any trends or incidences of acute concern.

DO (mg/L and %) values were lower in 2024 than they had been from 2019-2023, with only a few exceptions. However, these values were all within a healthy range.

pH was higher in 2024 than in the previous five years. However, there were no instances of pH values falling outside of the healthy range.

Conductivity in 2024 was lower than combined values from 2019-2023 during every month sampled, as was Total Phosphorous. Turbidity was also lower in 2024 than it had been in the previous five years.

What steps can Eaton take to protect its waters?

At Home

- Encourage residents to get their septic systems regularly checked and maintained
- Use Best Management practices (BMPs) for proper disposal of chemicals and waste materials

On Roads

- Reduce salt application on roadways, especially near bodies of water and sensitive habitats, like wetlands
  - Consider brining: an equally effective and more environmentally conscious method for keeping roads clear

In Town

- Monitor the effectiveness of culverts, and work to replace those posing as safety and environmental hazards (frequent flooding, erosion of surrounding earth, partial collapse, etc.)
- Maintain riparian areas(aka Streamside Management Zones) and monitor habitats near bodies of water for major changes

THANK YOU FOR YOUR TIME!

AmeriCorps

GREEN MOUNTAIN CONSERVATION GROUP

Report respectfully submitted by:
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