



Eaton Water Quality Overview

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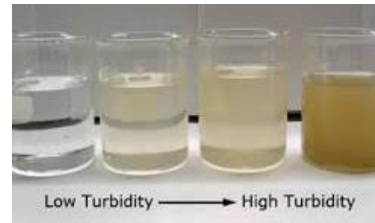
Green Mountain Conservation Group

RIVERS parameters

GMCG volunteers tested parameters

- **Turbidity**

- Clarity of the fluid
- Higher level of suspended particles = higher temperature



- **Temperature**

- Metabolism increases with higher temperatures, which can result in lower DO readings
- Different organisms prefer different temperatures

- **pH**

- Pure water is 7.0
- Most natural water in NH is slightly acidic
- Aquatic life prefers pH between 6.5 and 8.2



- **Dissolved Oxygen**

- Measures ability to support life
- VBAP school program looks for various macroinvertebrates which are intolerant to low DO readings

- **Conductivity**

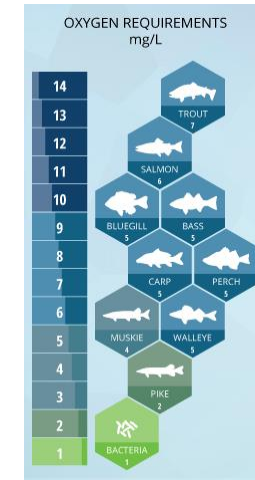
- Ability of water to pass an electrical charge
- Based on other elements in the water that have positive (Mg^+ , Ca^+) or negative (Cl^- , NO_3^-) charges
- Proxy for road salt ($NaCl$ or $CaCl_2$)

- **Total Phosphorus (TP)**

- With nitrogen, the two most important nutrients for plant and microbe life
- Environmental increases indicate decomposition (i.e. sewage)

- **General changes to their site**

- Road work
- New construction/demolition



Water Quality Standards – Acceptable limits

Either from NHDES or EPA*

- Dissolved O₂: between 6-11mg/L and between 75% and 120%
- Conductivity: below 100 uS/cm
- pH: between 6-8, preferably close to 6.5, unless naturally occurring as less, then no more than 1 pH shift
- Turbidity: less than 10 NTU, unless baseline data indicates naturally occurring turbidity, then standard is less than 10 NTU above background levels (in our cases, there are no sites with naturally occurring turbidity above 10 NTU)
- Temperature: No standard, but monitored for changes
- Total P: under 30ug/L, over this is considered “nuisance levels”

Each site we monitor will have naturally occurring differences due to geology, plant life, etc.

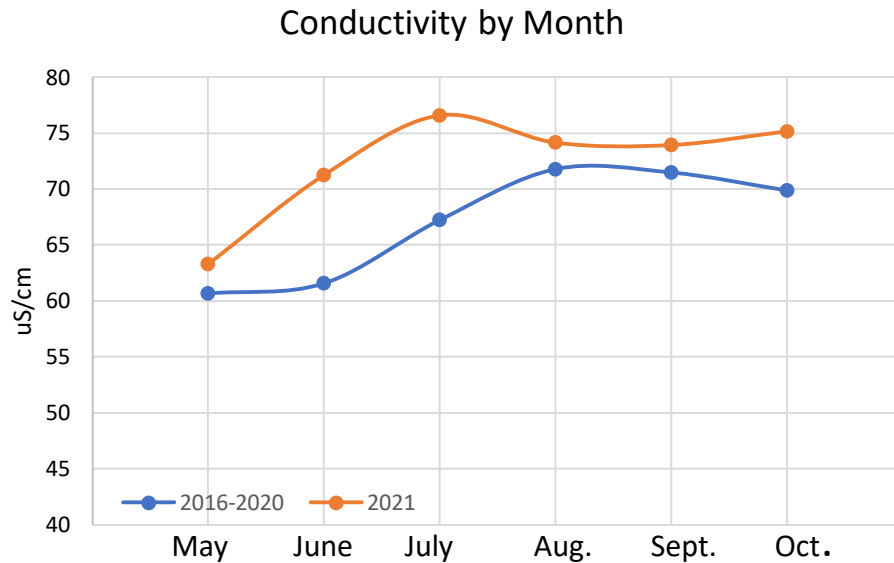
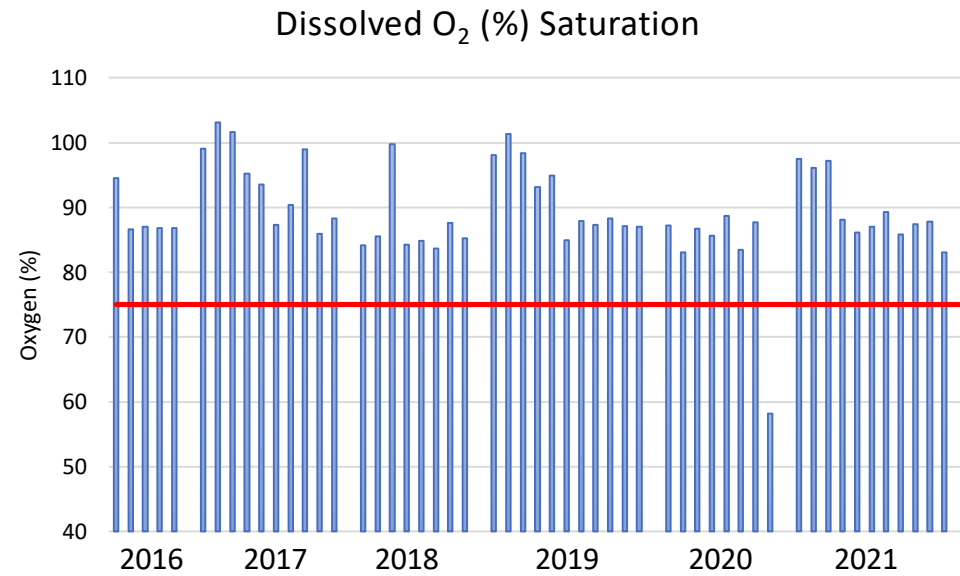
*The EPA and NHDES have slight differences between their acceptable limits

GEA-1 Long Pond Outlet (monitored since 2013) 2016-2021 Data Snapshot

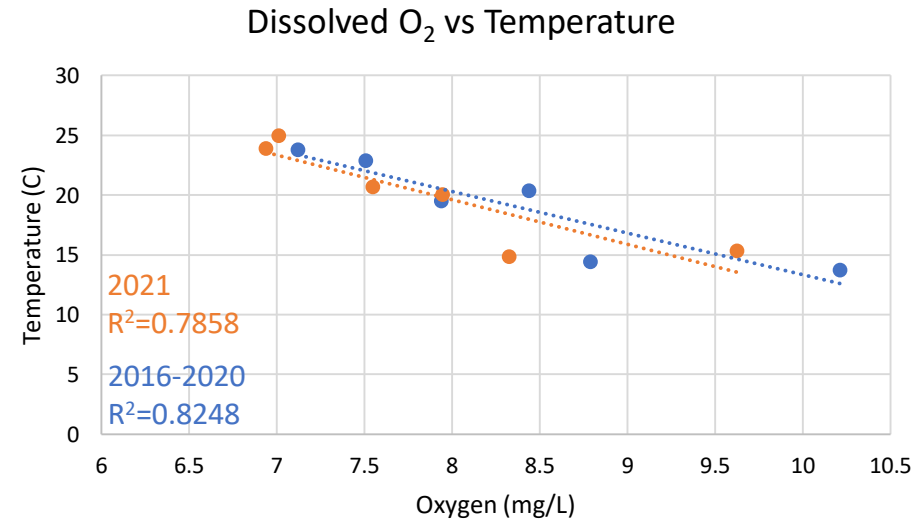
Collecting for: pH, turbidity, TP (*data through 2019), temperature, conductivity, dissolved O₂



| Parameter | Status |
|-----------|--------|
| pH | Stable |
| Turbidity | Stable |
| Total P* | Stable |



Conductivity shows a trend of slightly higher values at GEA-1 in 2021 compared to 2016-2020. Values are below 100 uS/cm which indicates good water quality in respect to salt levels.



Dissolved Oxygen (DO) has an inverse relationship with temperature: as temperature increases DO decreases. The R^2 values from 2021 (orange) show a similar value compared to combined 2016-2020 values (blue) which indicates not much change overall for DO levels.

Eaton Water Quality Summary

GMCG samples the Long Pond Outlet for the Town of Eaton. During the 2021 season, all of the tested parameters fell within the acceptable limits for surface waters put forth by the New Hampshire Department of Environmental Services (NHDES) and/or the Environmental Protection Agency. Conductivity levels were higher than in past years, but were still under 100 uS/cm.

Overall, the Long Pond Outlet has good water quality.

Things that Eaton can do to help protect its water quality:

- 1) Encourage residents to get their septic systems checked
- 2) Reduce salt usage in roadways, especially those near or around bodies of water
- 3) Maintain riparian habitats around bodies of water
- 4) Use best management practices (BMPs) for any home/business on or near surface waters
- 5) Monitor the effectiveness of culverts in your town and replace those as needed



Report respectfully submitted by J. Emerson and C. Noseworthy, Water Quality Coordinator and AmeriCorps Water Quality Resources Assistant at GMCG