EATON WATER QUALITY REPORT 2025

Jill Emerson, *Staff Scientist*
Cassidy Gersten, *AmeriCorps Water Quality Resource Assistant*

RIVERS Parameters

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

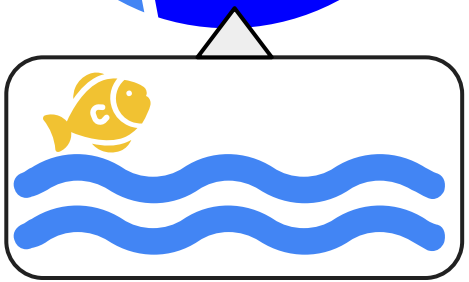
pH
- Pure water has pH 7
- Most NH streams have pH 6.5
- Ideal range for aquatic organisms is 6.5-8.2

Dissolved Oxygen (DO)
- Measure of how much oxygen is available to aquatic species
- Different species need different amounts

Stream & Site Characteristics
- Substrate (i.e. river bottom)
- Weather
- Water scent & appearance
- General observations

Temperature
Influences:
- Plant growth & animal activity
- DO levels
- Rate of chemical reactions

Conductivity
- Ability of water to pass electrical charge
- Based on amount of charged compounds or ions (Na+, Cl-, NO_3-, etc.)
- Can be used to interpret amount of salt in water



Phosphorus & Ions
- Critical nutrient for plant growth
- High levels indicate more decomposition (i.e. sewage)
- Other ions measured important for monitoring contamination

RIVERS Parameters - Water Quality Standards & Allowable Limits

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

- Based on NHDES & EPA criteria
- Each site will vary in these values due to differences in surrounding plant life, land use, riverbed geology, infrastructure, etc.

Also measure temperature to visualize its relationship with DO, which should be **negative** in a healthy stream (**as temp. increases, DO decreases**).

Dependent on what compound/ion is being tested.

RIVERS Parameters - Water Quality Standards & Allowable Limits

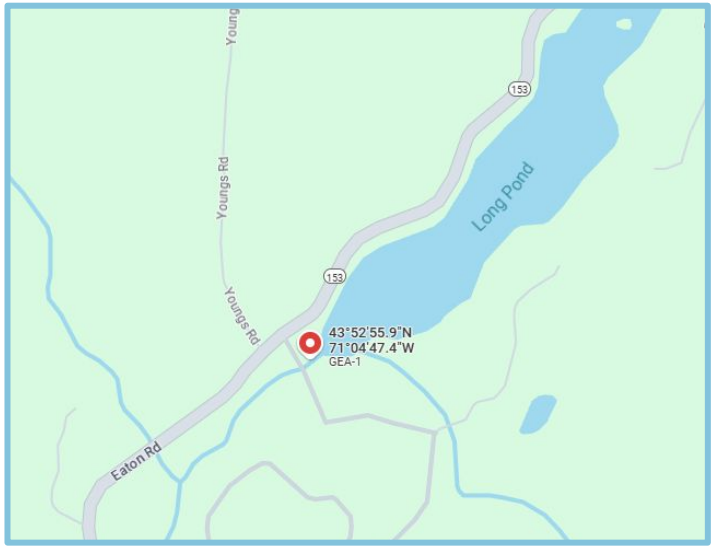
Parameter	Limit/Standard
Chloride	< 10 mg/L
Sodium	< 50 mg/L
Dissolved Organic Carbon	1-10 mg/L
Calcium	< 15 mg/L
Sulfate	< 80 mg/L
Magnesium	1-100 mg/L
Potassium	< 10 mg/L

- Based on NHDES & EPA criteria
- Each site will vary in these values due to differences in surrounding plant life, land use, riverbed geology, infrastructure, etc.

Long Pond Outlet (GEA-1)

Data analyzed from May 2020 - Oct 2025

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



Parameter	Status	Change
pH	Within ideal range	Small decrease from 2024
Turbidity	Within ideal range	Small increase from 2024
Total Phosphorus*	Within ideal range	Small decrease from 2024

Conductivity

2025 conductivity values generally followed the trend seen in 2020-24, increasing over the sampling period. All values stay within the ideal range for the parameter.

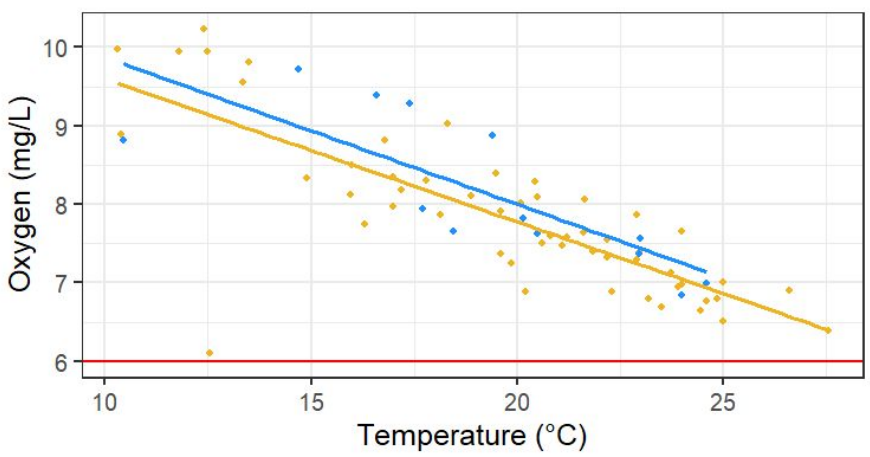
**values only available up to Nov 2025*

% Dissolved Oxygen

% DO in 2025 followed the same trend seen in 2020-24, with a steady decrease over the sampling period. All values fell within the ideal range for the parameter.

DO & Temperature

There is a consistent inverse relationship between parameters in 2020-24 and 2025. All values stayed within the ideal 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.

Parameter	Summary
Conductivity	Similar trend to previous years
Turbidity	Higher than 2024, although on the lower side compared to 2020-23
pH	Lowest median value since 2022
% Dissolved Oxygen	Similar trend to previous years
DO & Temperature	Consistent relationship to previous years
Total Phosphorus (TP)	Small decrease from 2024

What can Eaton do to protect its water?

In Towns

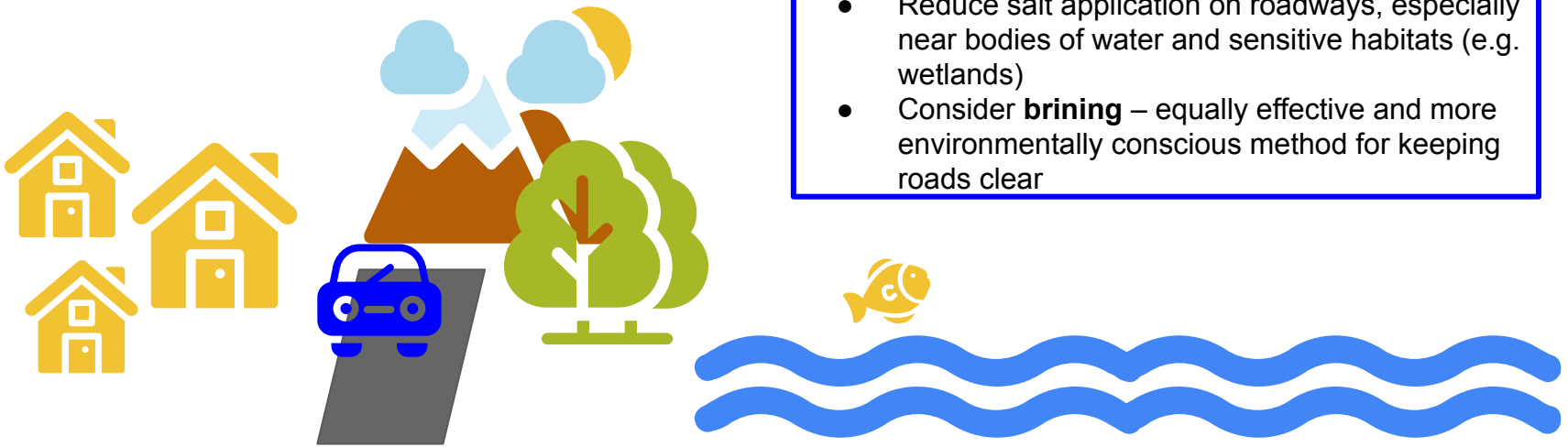
- Monitor the effectiveness of culverts
- Work to replace culverts posing as safety and environmental hazards
- Maintain riparian areas (Streamside Management Zones) and monitor habitats near bodies of water for major changes

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 (e.g. wetlands)
- Consider **brining** – equally effective and more environmentally conscious method for keeping roads clear



THANK YOU FOR YOUR TIME!

Report respectfully submitted by:

J. Emerson, *Staff Scientist*

C. Gersten, *Water Quality Resource Assistant*

AmeriCorps

GREEN MOUNTAIN CONSERVATION GROUP