

2023 Water Quality Monitoring Summary of Work



Bacteria monitor team:
Lucas Forman & Thom Gentle

Bacteria Testing: There is no tolerable level of E.coli in drinking water. Over 235mpn will close a public freshwater beach in MA. MPN stands for most probable number. The number reported means there are that many E. coli per 100ml sample. This year we tested 6 sites we had from last year as they continue to be of concern for high E.coli counts and added 5 new sites to assess bacteria levels due to their proximity to agriculture and/or unofficial swimming areas. Some sites continually experience high bacteria levels, with some worse than last year, probably due to so many heavy rain events. One exception is a site below an old dairy farm that improved, not just from last year but also, except for 1 time, numbers were under 100mpn. We also tested downstream of Linear Park's unofficial swimming area, which showed to be under 100mpn except for 1 time when it was over 1000mpn. At the request of Trout Unlimited and with TU Taconic Chapter volunteers, we added 2 North Branch sites which tested under 100mpn. ~ Arianna Collins, HooRWA ED

Benthic Macroinvertebrate Sampling: Comparison of the 2023 water quality assessments to prior year assessments indicates, largely, that water quality remains similar to previous years. Of note: the station just above Bridge Street bridge in Johnsonville, NY reached a new high category of non-impacted water quality. Go to [HooRWA Hoosic River Report Card 2023](#) to read the full report.
~ Watershed Assessment Associates

Chemical Analysis: This year we joined the LaRosa Partnership Program of the Vermont Agency of Natural Resources Department of Environmental Conservation to take water samples to test for phosphorus and chloride levels at 4 sites in the VT section of the Watershed. 2 sites are below wastewater treatment facilities, where collecting background data informs the wastewater facility permitting process that regulates wastewater discharges. The purpose of monitoring phosphorus and chloride is to assess the presence of pollutants. Sources can range from direct discharges, eroding banks and roads, stormwater runoff, and atmospheric deposition. When the full report is complete, VT DEC will share it with HooRWA and we will post the report to: hoorwa.org/monitoring/ ~ Arianna Collins, HooRWA ED



LaRosa team: Mark Merrill,
Wendy Hopkins, Thom Gentle



Dan Gura with temperature
sensor equipment

Temperature summary: In May, our team placed temperature data loggers at ten locations in the watershed. We placed half of the loggers in Notch Brook, which runs down the north side of Mt. Greylock before it reaches the Hoosic. Our other loggers were placed at two distinct confluences: Phillips Creek, where it meets the Hoosic's South Branch and Canyon Brook, where it meets the North Branch.

We monitor water temperature during the summer to determine how the cold-water tributaries fare in hot months. The cold water running down our mountain ranges plays an important role in keeping the Hoosic cool – which in turn helps to support river health. Notch Brook yielded the coldest water. Our highest elevation site came in with a chilly mean daily average of 55°F for the season. (The low daily average for this site? A frigid 42°F).

Continued on next page.

Unsurprisingly, the torpid waters of the South Hoosic came in the warmest, a balmy 64-degrees (mean daily average) six degrees above the next warmest result. The warmest day at the warmest field site? Just under 71°F on the South Hoosic. Warm, but cool enough: 75°F is the temperature at which the water becomes lethal to trout. ~ Dan Gura, HooRWA Board

What Is a Benthic Macroinvertebrate?

Benthic means bottom-dwelling and a macroinvertebrate is an animal, visible to the naked eye, lacking a backbone, such as an insect, spider, or snail. Aquatic benthic macroinvertebrates you may find in a river include insects such as dragonflies, damselflies, stoneflies, mayflies in their nymph stage, and caddisflies in their larval stage. You may also find crayfish and mollusks such as fresh water snails, clams, and mussels.



These species offer a good method for assessing stream health due to their tolerance or intolerance of pollution. The more abundant and diverse benthic macroinvertebrates present, the healthier the waterbody. For example, stoneflies can live in their nymph stage on the bottom of a flowing waterbody for 1-3 years before they climb out of the water, shed their last exoskeleton (they molt several times as they grow), pump air into their wings, and fly off to find a mate. Because stonefly species spend so much of their life underwater and they need unpolluted streams to thrive, their order *Plecoptera* is an indicator of a healthy riverine habitat.



Evidence of these creatures living in the Hoosic, besides observing them, can include finding insect exoskeletons, caddisfly casings, shells. An exoskeleton is an external covering which provides both support and protection for an arthropod.

**Many thanks to our business sponsors for supporting
HooRWA's water quality monitoring work!**

Ridgetop Society
Allen & Company Inc.
Whipstock Hill Preservation Society
MountainOne

Watershed Guardian
Greylock Federal Credit Union

Stream Advocate
A-1 Septic * Adams Community Bank * Atlantic Equipment Corporation East
Beck's Printing * Berkshire Photovoltaics * Cain Hibbard & Myer PC
Caretaker Farm * Jack Miller Contractors * North Point Brands, LLC
Pioneer Fish & Game Club * rk MILES * Tri State Area Federal Credit Union
West Oil Company

General Support
Al's Auto Body * Hoosick True Value * Waubeeka Golf Links LLC