

Stream Monitoring Program

By Greg Sykes (greg@grsykes.com)

Have you ever wondered what animals live in Royal Lake's two tributaries—Shanes Creek and Rabbit Branch? The Fairfax County Park Authority has a program where you can get a close look at these benthic dwellers! This biological monitoring assesses stream health using the critters that live in the water. Chemical monitoring is another way to determine a waterway's health, which includes measurements of parameters such as pH, dissolved oxygen, or nitrates.

Fairfax County's Stream Monitoring Program gauges a stream's health using the former approach: studying populations of macroinvertebrates (animals without a backbone seen with a naked eye). It is currently organized by Dr. Joanna Cornell of the Northern Virginia Soil and Water Conservation District. Basically, a group of volunteers goes to a stream site four times a year, positions a net in the brook, agitates the rocks a few feet upstream of the net, and counts the different invertebrates caught. These animals are arranged into broad groups, which include snails, clams, crayfish, and various insect larvae (e.g., dragonfly, damselfly, stonefly, and midges). After documenting the first 200 specimens, all animals are released back into the stream. The data are sent to Fairfax County.

More sensitive invertebrates, such as stoneflies and mayflies, are called indicator organisms. They act like the "canary in the coal mine," the streams where they live are typically clean and healthy. On the other hand, waters full of robust worms and midges suggest that the stream is stressed by pollutants. In a worst-case scenario, nothing is found, as happened in county creeks last year after swimming pool water was improperly dumped into a storm sewer.

Having participated in stream and river monitoring sessions, I can tell you they are loads of fun! Besides getting to splash around, you get an intimate glimpse of aquatic organisms you might otherwise overlook. Don't take my word for it—check it out yourself! Joanna has agreed to conduct a stream monitoring workshop this coming spring in KPW! A follow-up announcement will appear in *The Herald* once a time and date is settled. In this workshop, you learn about watersheds, basic stream ecology, macroinvertebrates identification, and how they are used to assess a stream's health. Those of you who noticed local streams drying up during the drought might like to know that life is back!

Besides collecting county data, this project is an excellent opportunity for KPW residents to see how we impact our streams. With Shanes Creek originating within our neighborhood and Rabbit Branch starting much farther away and having concrete erosion controls, the health of the two brooks should make an interesting comparison. Stream monitoring is a great project for anyone: people enjoying the outdoors, folks wishing to learn more about a seldom seen natural world, or a student(s) looking for a fantastic, long-term science project. Stream monitoring can even be taken to a higher level and developed into a thesis!

If you would like details about this project, please visit

<https://www.fairfaxcounty.gov/publicworks/stormwater/stream-quality-assessment-program>

For more information about stream monitoring, Joanna recommends the following websites:

<https://vasos.org/> - virtual training workshop

<http://www.dec.ny.gov/animals/35772.html> - aquatic insect photographs

<https://fergusonfoundation.org/bridging-the-watershed/interactive-lessons/> - interactive identification game

<http://www.fairfaxcounty.gov/dpwes/watersheds/> - to learn about what's happening in Fairfax County

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