

down to earth

Environmental Restoration Quarterly • Spring 2025

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**EARTH DAY
APRIL 22**



Spring MBSS Sampling

By: Byron Madigan, Water Resource Supervisor

April 30th officially wraps up the spring macroinvertebrate sampling season. Each year between March 1-April 30, staff from the Bureau of Resource Management, collect and preserve samples in accordance with the Maryland Biological Stream Survey (MBSS) protocols. Biological sampling involves collecting benthic macroinvertebrates from riffles, leaf packs, root wads and woody debris over a 75-meter stretch of stream to assess the overall biological health of the stream by accounting for the presence or absence of species and species diversity. In addition to the total species diversity, percent abundance of pollution-sensitive or pollution-indicative organisms, and total organism abundance of the macroinvertebrate communities all factor into the overall biological health of the watershed and the MBSS index of biotic integrity (IBI). The IBI is based on a 1-5 scale, whereas a score of 4 and above indicate a watershed with "good" biological health and a score below 1 indicates a watershed that is in "very poor" biological condition.

The goal of the MBSS survey is to provide an inventory of biodiversity in our streams, assess the current condition and identify the impacts of stressors on ecological resources in Maryland's streams and rivers, and further assess the efficacy of watershed restoration and conservation efforts, while building a long-term database to document changes over time of the ecological condition and biodiversity of Maryland's streams.

Staff from the Bureau of Resource Management attend the annual certification training by the Maryland Department of Natural Resources in late February to maintain familiarity with protocols and sampling techniques required to perform MBSS sampling. Annual renewal of training and a field audit every 3 years ensures consistency and accuracy for all persons who perform macroinvertebrate sampling across Maryland.



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<https://www.carrollcountymd.gov/government/directory/planning-land-management/resource-management/>

Protecting and managing Carroll County's natural resources for the pleasure and enjoyment of its Citizens

Spring MBSS Sampling Continued ...

Carroll County has been macroinvertebrate sampling throughout the County since 2003, with a focus primarily on stormwater retrofits and restoration sites pre- and post-implementation. This year, based on recent updated guidelines from the Maryland Department of the Environment, sampling will be performed at randomly selected locations across the County, with approximately 30 locations being sampled each year.

After all samples have been collected, they will be sent off to a certified taxonomic lab for sorting and identification of the taxa collected during the sampling, which will assist in determining overall stream health.



Fall 2025 Tree Plantings

By: Byron Madigan, Water Resource Supervisor

This project has been funded wholly or in part by the United States Environmental Protection Agency under assistance agreement 4I-95300101 to the Maryland Department of Natural Resources.

The Bureau of Resource Management continues to implement their tree planting program, installing riparian and upland plantings throughout the County, and to date, the County has worked with most of the municipalities, as well as dozens of landowners to plant over 64,000 trees on 250+ acres across seven watersheds. Plantings implemented during the fall of 2024 by the Bureau included an additional 3.90 acres, 2.20 of which were along 350-feet of a first order stream within the Bear Branch Watershed, a tributary of Double Pipe Creek. The remaining 1.70 acres consisted of an upland planting at Krimgold Park, in the headwaters to Buckhorn Run within the Piney Run Reservoir Watershed.

Maintenance of these plantings will occur annually during the growing season by the install contractor for a minimum of 3 years. Additionally,

inspections of survivability by Resource Management staff will also occur annually for 3 years, and tri-annually thereafter to ensure the establishment of a successful planting.



Double Pipe Creek

The Krimgold Park planting is located within a Use III-P stream, which is classified as non-tidal cold water, capable of growth and propagation of adult trout. The Double Pipe Creek planting is adjacent to the County's maintenance facility, and is located within a Use IV-P stream, which are classified as recreational trout waters and are capable of supporting adult trout for a put and take fishery. Successfully establishing upland and riparian tree plantings will help remove excess nutrients from stormwater runoff, as well as provide shade for cooler water temperatures.

Krimgold Park



Restoration Update

By: Claire Hirt, Watershed Management Coordinator

Construction has been completed at the Oklahoma Outfall Stabilization project in Eldersburg. Prior to this work, stormwater from the outfall flowed through a highly unstable channel and caused severe soil loss from erosion. To solve this issue, we extended the storm drain system all the way down to the Oklahoma stormwater facility, allowing the energy of the water to be dissipated within pipes and drop structures instead of through the vulnerable soils. A grass swale was also constructed to convey additional overland flow into the storm drain system. April showers and sunshine will help the site green up, and we hope to strategically replant some trees on the site this fall. Thank you to our construction contractor, C. J. Miller, for all their work through the cold and snow of the winter months!

Our next project to go under construction will be the Melstone Valley restoration project in Eldersburg, which will convert an existing stormwater facility into a submerged gravel wetland to enhance the stormwater management for the watershed. The streams in this watershed are classified as cold-water streams (i.e. Use Class III), where populations of trout or other thermally sensitive aquatic organisms are present. The submerged gravel wetland holds stormwater in an underground gravel bed that mimics the low oxygen conditions of a natural wetland, where beneficial microbes process and remove pollutants. Wetland plants growing on the surface also tap their roots into this stone reservoir, providing additional treatment and uptake of stormwater. Most important to Use Class III watersheds, this underground storage protects the water from surface sunlight and heat, leading to colder discharges that are critical to heat-sensitive aquatic organisms. State and Local Fiscal Recovery Funds (FRF) are providing the funding for construction, and Magstone will be the contractor. We expect to begin construction late spring or early summer.



Eroded gully prior to construction at Oklahoma



New graded and stabilized swale at Oklahoma awaiting turf growth



Existing Melstone Valley Stormwater Facility to be retrofitted

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For more information:
Call 410-386-2510 or email
recycling@carrollcountymd.gov.
Visit us online: RecycleCarroll.org

Carroll County Water Resource Team



Invites you to check out these events:

April

- 4/19 - Earth Day at Bear Branch Nature Center (10 a.m. - 2 p.m.) <https://www.friendsofhhbb.org/events/earth-day>
- 4/25-4/28 - City Nature Challenge <https://aaua.org/support/conservation/city-nature-challenge-baltimore>
- 4/26 - Earth Day at Piney Run Nature Center (10 a.m. - 2 p.m.) <https://carrollcountytourism.org/event/carroll-county-master-gardeners-host-earth-day-invest-in-our-planet/>
- 4/27 - Order deadline for Rain Barrel and Compost Bin Sale (pickup 5/3 at County Office Building) <https://enviroworld.us/carrollcountymd>

May

- 5/10 - Westminster Flower and Jazz Festival (10 a.m. - 4 p.m.) <https://www.westminstermd.gov/flowerjazz>

Meet the Staff

Connor Figue - Intern



Connor grew up in Hampstead and just completed the engineering course at the Career and Technology Center. He is in his final semester at Manchester Valley High School where he is a member of the National Honor Society, Environmental Committee, and he plays lacrosse. Connor plans to major in aerospace or environmental engineering at Tennessee, Clemson, or Maryland, as well as play club lacrosse. He loves watching sports, hanging out with friends and family, and lifting weights. Connor is excited to learn more about how we keep the environment clean through his internship with the County.