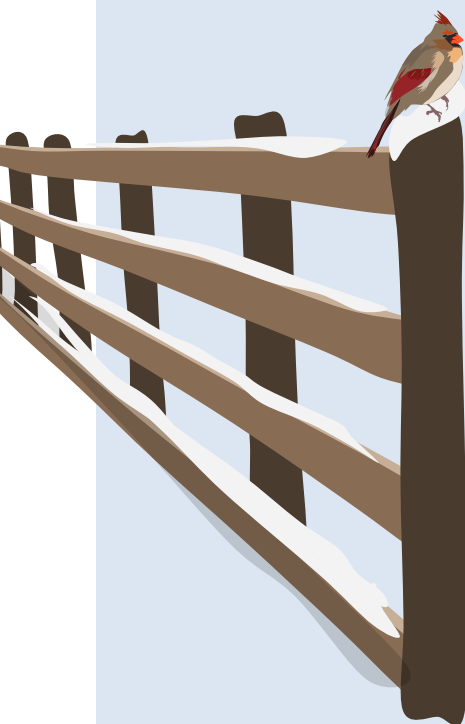




# down to earth

Environmental Restoration Quarterly • Winter 2021

- 1 Stream Buffer Planting at Gillis Falls
- 2 Citizen's Winter Guide to Water Quality
- 3 Stormwater Update
- 4 Piney Run Watershed Study
- 4 Meet the Staff



## Stream Buffer Planting at Gillis Falls

By Tracy Eberhard, Water Resource Specialist

The Bureau of Resource Management is working to plant an open space parcel off Gillis Road in Woodbine. The project is to perform streamside plantings on County-owned property in the South Branch Patapsco Watershed. The Gillis Falls stream is a Use III stream which is designated by the State of Maryland as nontidal cold water stream capable of growth and propagation of trout.

Gillis Falls bisects the open space parcel and has inadequate stream-side buffer. The parcel is currently unmaintained floodplain dominated by grasses. The project will reforest 22.41 acres of the parcel encompassing the stream with trees and shrubs. The result is a planting of 10.22 acres within 100 feet of the stream and 12.21 acres of upland planting establishing a 500-foot wide forested stream buffer that spans approximately 3,415 linear feet along Gillis Falls.

There are many benefits of establishing a streamside buffer, some of which include; filtering out sediments, removal of excess nutrients, stream bank stabilization, providing shade for cooler water temperatures, and establishing wildlife corridors. The planting on the open space parcel off Gillis Road will be especially beneficial in protecting the Use III stream by adding shade in an area that had little to none currently.

Additionally, the planting on the open space parcel will add to an existing forested area enhancing existing wildlife habitat and corridors.

This planting project is partially funded by the Department of Natural Resources Chesapeake & Coastal Service through a grant awarded to the County in the amount of \$200,000 for the Gillis Falls Reforestation project. This project will be planted in early 2021. Maintenance and inspections of the planting area will occur to ensure establishment.

Partial grant funding provided by:



Bureau of Resource Management (BRM) • 225 N. Center St., Westminster, MD 21157 • 410.386.2712  
<https://www.carrollcountymd.gov/government/directory/land-resource-management/resource-management/>

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

# Citizen's Winter Guide to Water Quality

By Glenn Edwards, NPDES Compliance Specialist

I really enjoy the beauty of snow... and then comes the challenge and reality of being able to "get out" safely so we can go to work or go about our everyday activities when the roads become passable. That usually means getting the shovel and deicer ready to apply at the right time to clear my sidewalk and gravel driveway. Many citizens are interested in what actions they can take around home or their workplace to help protect and improve local water quality during the winter season.

## Water Quality and Stormwater Runoff

**Pollution:** When it rains or when snow melts, stormwater washes away pollutants (excess fertilizers, deicers, sediment, yard waste, auto-fluids, etc.) that may have accumulated on lawns, driveways, roads, highways, and parking lots. These pollutants flow overland into storm drain systems and ditches, most often untreated, emptying into local streams and rivers. These pollutants can impair local and downstream waterbodies used for swimming, fishing, aquatic life, and drinking water.

**Chlorides (salt):** Twenty-eight rivers and streams in Maryland are impaired by chloride. Salts used as deicers, such as sodium chloride, may have contributed to these impairments. Chlorides in these bodies of water deplete our freshwater supply and are harmful to organisms that live there. (Source: Maryland Department of the Environment)

## What are the State, County and Municipalities doing to curb salt use?

While keeping road safety a top priority, the Maryland State Highway Administration, Carroll County and the eight municipalities in accordance with their National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System permits are making progress toward reducing salt usage through various maintenance best management practice methods. These include training and implementation of liquid salt brine



Photo Credit: DVE

application for pre-storm anti-icing, pre-wetting salt, salt truck calibration, employee training, tracking and real-time evaluation.

## What You Can Do! Tips to Winter Stormwater Pollution Prevention

### Spring/Summer/Fall

**Direct Your Downspout Rain Gutter Discharge** to your yard area to infiltrate into soil. Consider a rain garden in your landscape. Redirecting the discharge away from foot or road traffic areas can reduce the need for deicer.

## Winter

**Clear Walkways and Areas of Snow First Before It Turns to Ice:** Remove snow early and often. Whether using a shovel, ice chisel/scrapper, snowplow or snow blower taking the time to get to bare pavement or gravel will help avoid or minimize the need for chemical deicers afterwards.

### Apply the Amount of Deicer to Get the Job Done and Track the Weather:

Apply what you need for safety. Avoid overlap and do not overapply. Follow manufacturer directions. Sweep up left over deicer and store in a container for re-use.

**Know Your Deicer:** Salt and other deicers work at a specific range of temperatures from 20°F (sodium chloride/rock salt) to -25°F for others. Ice-melt comparison charts may be found online. At very cold temps some use kitty litter for traction. There are numerous products coming on the market solids and liquids. Be sure to read the contents on the label. *Environmentally Safe* is a relative term. Most chemicals in deicers are not. Child, pet and wildlife safety may also be a concern in your deicer selection. Do your research!

**Private Well:** If your source of drinking water is from your own private well, avoid applying salt near the well head.



Source: Maryland Department of the Environment

# Stormwater Update

By Janet O'Meara, Watershed Management Coordinator

The construction of the **Langdon Oil Company Stormwater Management Facility** in Westminster is complete. The fence around the facility was installed in December. The grading permit for this project will remain open until the project site has a 2" stand of grass. This project received partial grant funding from State Highway Administration's Transportation Alternatives Program and Department of Natural Resources, Chesapeake and Atlantic Coastal Bays Trust Fund.

The **Greens of Westminster Stormwater Facility** is located in Westminster. Construction began in August, work continues on excavation of the bottom. A clay liner will be installed across the bottom of the facility prior to the filter media being installed. A portion of the construction costs for this project are being paid for by Maryland Department of the Environment through the Bay Restoration Fund.

The **Twin Ridge Stormwater Management Facility** is located off of Deer Hollow Drive in Mount Airy. Construction began in August, the storm drain installation and pipe lining have been completed. The contractor is currently working on grading of the slopes. Planting of this facility was awarded to Williams Forestry & Associates and will be planted in the Spring. All costs associated with this project are being paid by the Town of Mount Airy.

The **Woodsyde Stormwater Management Facility and Stream Restoration** project was awarded to Magstone LLC. Construction began in October, and crews continue to work on storm drain extensions and excavation of excess material. A portion of the construction costs for this project are being paid for by Maryland Department of the Environment through the Bay Restoration Fund.

The **Bear Branch Stream Restoration** located in Westminster began construction in early January. Crews are currently onsite installing erosion and sediment control measures. A portion of the construction costs for this project are being paid for by Maryland Department of Natural Resources Chesapeake and Atlantic Coastal Bays Trust Fund.



Woodsyde



Grant funding for Woodsyde provided by the Maryland Water Quality Financing Administration Bay Restoration Fund





**Seeking Nominations!**

Carroll County



Environmental Action Awards

Accepting nominations for 2021 Environmental Action Awards. Deadline is March 1, 2021. Check the website for more details.

<https://www.carrollcountymd.gov/government/boards-commissions/environmental-advisory-council/environmental-action-awards/>

# Piney Run Watershed Study

By Christopher Heyn, P.E., Bureau Chief

The Piney Run Reservoir is the focal point of Piney Run Park in Carroll County. Used by citizens throughout the summer for boating and fishing, the reservoir is also an important resource to the County for flood control and potentially a future water supply. What many don't realize is that the water is held back by a 74-foot-tall earthen dam, the largest dam owned by Carroll County. Due to the size of the dam and the risk if something were to happen to it, the dam is classified by the Maryland Department of the Environment (MDE) as a "High Hazard Dam." This means that extra precautions are taken by the County and MDE to ensure that it is inspected annually and well maintained.

With changes to the climate and some failures of dams nationwide, MDE is evaluating dams around the state and has expressed concern that the Piney Run Dam may not meet current criteria. To address the MDE concerns, the County has hired AECOM, an international firm with resources specialized in dam engineering located in Germantown, MD. Over the past year, AECOM has performed detailed inspections, geotechnical investigations, and sophisticated hydraulic modeling to determine if there are any issues with the existing dam.

The analysis indicates that there are two primary concerns to be addressed. The first is the ability of the dam to withstand the required design storm. The design storm for this area would be 39.1 inches of rain over a 72-hour period. As a comparison, the largest storm that the dam has experienced is Hurricane Eloise in 1975 which was 14.3 inches over 72 hours. While this size design storm is extremely unlikely, it is possible, and the dam is required to be able to safely handle it. Analysis indicates that this storm would overtop the dam by 3 feet, which could lead to catastrophic failure.

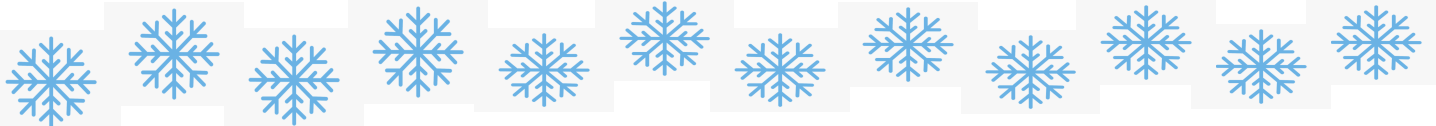
The second issue is the erodibility of the earthen spillway that is designed to handle very large storm events. In the life of the dam, this spillway has never been used, even during Hurricane Eloise. However, if a very large storm occurs, the spillway must be able to handle it safely. Analysis indicates that if a large storm flowed through the spillway, there is a high probability that severe erosion would compromise the integrity of the dam and potentially fail it.

The County is therefore currently investigating alternatives to address

these two issues. Regarding the capacity concern, a combination of widening the existing spillway and raising the dam is the prominent alternative being discussed. The goal would be to balance the site so that the amount of material being removed from the spillway is the same amount needed to raise the dam, thereby decreasing overall costs.

To address the erodibility issue, the prominent alternative being discussed is the installation of concrete at the downstream end of the spillway to armor it and protect it from erosion. Both aesthetics and long-term maintenance will be key considerations regarding the final design. The County must also ensure that any potential modifications proposed do not affect the potential of Piney Run Reservoir as a water supply.

County staff are currently working with AECOM to narrow down and document the acceptable alternatives that meet County long term goals and requirements. Those alternatives will then be presented to the County Commissioners as part of a public involvement process. The Commissioners will ultimately determine the alternative to proceed with so that the County can meet the MDE requirement of addressing these concerns by 2028.



## Meet the Staff

### Claire Hirt NPDES Compliance Specialist

*The primary role of the NPDES Compliance Specialist is to provide support to Carroll County and the incorporated municipalities for the Municipal Separate Storm Sewer System (MS4) Permit. This includes a wide variety of permit requirements, from conducting public outreach programs to managing GIS data, which all help the County to comply with regulations and provide a successful and productive stormwater management program to residents. Claire received her M.S. in Physical Geography from Penn State and her B.S. in Ecology and Evolution from UMD. In previous jobs she has been a field researcher, an aquatic taxonomist, and manager of entomology labs. She lives with her family here in Carroll County on their Christmas tree farm and enjoys all things outdoors – especially bug hunting around the farm with her two-year-old.*



### Elizabeth Spencer Watershed Restoration Engineer

*Elizabeth provides management of watershed restoration projects for the County, including stream restoration and stormwater management projects. Her role at Carroll County combines engineering, hydrology, hydraulics, and fluvial geomorphology to oversee watershed management projects from planning through design and construction phases. She received her Bachelor's Degree in Geology from University of North Carolina at Chapel Hill and her Master's Degree in Physical Geography from the University of Connecticut. She has worked in the consulting engineering industry designing stream restoration projects for eight years. On her time off, Elizabeth enjoys yoga, tacos, and planning outdoor adventures with her kids.*

