



# down to earth

Environmental Restoration Quarterly • Winter 2020

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## Happy Retirement

By Janet O'Meara, Watershed Management Coordinator

After 42 years of service with Carroll County Government, Gales Engles retired on December 31st. Gale started her career working at the Carroll County Soil Conservation District in 1977, where she assisted agricultural producers. When an opportunity arose to become a sediment control inspector, she took on the challenge of inspecting the County's busiest growth area. Her dedication and knowledge for the job led her to be the Chief Inspector, a role she enjoyed for many years. In 2007 she accepted the position as Bureau Chief for the Bureau of Resource Management.

Gale was a true leader, guiding her staff in the protection and improvement of the natural resources in the County through public awareness and education. Gale's ability to be consistent when interpreting County, State, and Federal laws and regulations concerning environmental protection was always something her staff could count on.



Gale had an energy and excitement for her job that her staff found contagious. The quantity and quality of work that she was able to accomplish with limited staff resources was outstanding.

Some highlights of her career:

- The completion of over 51 restoration projects from 2007-2019
- Obtaining approximately \$18 million dollars in grant funding
- Planting over 158 acres of trees from 2013-2019



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

# Floodplain Management—Did You Know...

By Pat Varga, Floodplain Management Specialist



... That all streams have a floodplain and all floodplains have natural, beneficial functions? Floodplains are the areas directly adjacent to streams and rivers. This is the area where water flows when streams overtop their banks due to heavy rains or snowmelt. They provide recharge areas for aquifers and storage of floodwaters.

... That flooding is the most common natural disaster nationally? Nearly 9 out of 10 presidential disaster declarations result from natural phenomena, of which flooding is a major component.

... Homeowners and renters insurance does not typically cover flood damage?

... That more than 20 percent of flood claims come from properties outside high-risk flood zones?

... That it typically takes 30 days from the day you purchase flood insurance for the policy to go into effect?

... That a new study by the National Institute of Building Sciences finds \$6 saved for every dollar invested in mitigation activities to reduce risk and disaster losses?

... That Carroll County has 16,556 acres of FEMA floodplain?

... That the original Flood Insurance Rate Maps for Carroll County were adopted in 1978? The original FIRMs were based on 20-foot contours and were highly inaccurate. They were only updated in 2015.

... That any property owner with a home or business in the floodplain and federally-backed mortgage must purchase flood insurance?

... That Carroll County has had a Floodplain Management ordinance since 2004, but Floodplain requirements in the Building Code were adopted much earlier?

... That even if the Bureau of Permits and Inspections does not require a permit for sheds or accessory structures, the development must be reviewed by Resource Management? The proposed improvements must be reviewed for compliance with local and federal floodplain code requirements.

... That floodplain easements are recorded as part of the development process on both public and private land? These easements protect the floodplain from future development and work in conjunction with forest conservation and water resource protection easements.

... That floodplain easements are inspected at least once every three years? Staff checks for compliance with the deed of easement which prohibits activities such as soil disturbance, excessive mowing, or construction.



# Plotting Their Escape... They Hide Below the Surface... Lying There in Wait...

By Zachary Neal, Hydrogeologist

The perfect invader: resilient, stealthy, silent. If this was a sci-fi alien invasion flick, we certainly would have met our match. Native to eastern Europe and western Asia, zebra mussels have been propagating across the United States for nearly three decades. Believed to have been introduced to the Great Lakes in the late 1980's through ship ballast water discharge, these masters of evolution now call 31 of the 50 states home.

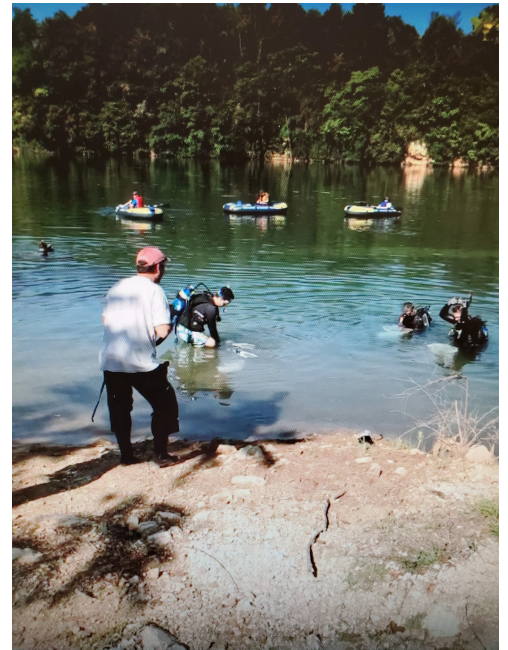
In May of 2018, the Maryland Department of Natural Resources informed Carroll County Government that zebra mussels were identified and confirmed present in Hyde's Quarry, marking the first time they've been found in Maryland, inland of the Chesapeake Bay.

"They're just mussels," some may claim. "Why the worry?" Zebra mussels, and their relatives, quagga mussels, who were also found in the Quarry, are master manipulators and colonizers. A single female mussel can produce more than 40,000 eggs per reproductive cycle, totaling up to more than one million in a spawning season. Upon hatching, the larvae (called veliger's), which are microscopic in size, are free-swimming for up to one month, before they settle on solid surfaces, including rocks, pipes, and even living creatures (mussels, crayfish). They can cluster in such dense colonies, that local species/animals can be smothered and outcompeted. Pipes and water intakes serve as suitable habitat, and so become clogged, requiring frequent and costly maintenance. And the effects don't stop there; these selective filter feeders have the ability to change algae species in water, altering the ecosystem and potentially causing harmful algal blooms. With the ability to survive out of water for more than a week, colonization of new water bodies is an easy feat for these species.

With the threat of their spread to adjacent waterways which serve as tributaries of other downgradient water suppliers a reality, the Commissioners of Carroll County opted to pursue eradication of this troublesome species. In August of 2019, and following a detailed permitting and review process with state and federal agencies, the County engaged a contractor to methodically add 460 tons of diluted liquid potash to the Quarry. Potassium, one of the two main ingredients in potash, serves to intoxicate the mussels, causing them to remain open, decreasing their resiliency to predators while also preventing them

from feeding. Importantly, potassium at the concentrations utilized, was determined to be safe to other species that call the Quarry home.

In November of 2019, the County contractor performed an assessment, in which baskets of live mussels placed throughout the Quarry following treatment were reviewed and analyzed. Preliminary results from the assessment revealed that none of the mussels observed had survived, suggesting that eradication has been achieved. The County expects to receive final results in early 2020.



# Stormwater Update

By Janet O'Meara, Watershed Management Coordinator

**Roberts Mill**—Construction is well underway on the **Robert's Mill Stormwater Management Facility** in Taneytown. This facility is located off of O'Brien Avenue. W.F. Delauter & Son, Inc. have been onsite for a couple months working to re-locate utilities and constructing the bridge footers. Once the new embankment for the facility is constructed, work can begin on removing the old facilities. The contractor has encountered a lot of water during the construction process that they have had to work around, this has slowed progress especially after rain events. This work is being performed in conjunction with the City of Taneytown. A portion of the construction costs for this project are being paid for by a grant received by the County from Maryland Department of Natural Resources, Chesapeake and Atlantic Coastal Bays Trust Fund.



Roberts Mill

Partial grant funding provided by:



**Elderwood**—Construction is wrapping up in Eldersburg on the **Elderwood SWM Basin #2/Oklahoma Phase IV Stormwater Management Facility**. The sand filter has been installed in the Oklahoma facility, work continues on the site specifically on the Elderwood facility, the filter media is being installed and the final grading around the facility is complete. The site will receive temporary stabilization, in March the contractor will come in to re-seed. This project received partial grant funding from Maryland State Highway Administration's Transportation Alternatives Program.



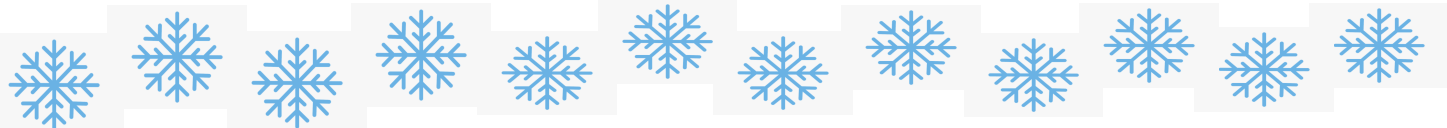
Elderwood

Partial grant funding provided by:



**COMING SOON!**

- Eden Farms—Willow Pond Stormwater Facility Retrofit
- Langdon Stormwater Management Facility in Westminster



## Piney Run Watershed Study Progresses

The Piney Run Watershed Study kicked off in early October. The dam saw several of the County's contractor scientists inspecting the dam, as well as taking soil and rock samples from the area. The scientists are analyzing this, and other data collected to determine how susceptible to erosion the dam and surrounding area might be.

On February 25, 2020, from 7:00 to 9:00 p.m. at the South Carroll Senior Center, the County will host its first public meeting for the project. During the meeting, the team will present the findings of the

field work and discuss the next steps in the study.

Both members of the County's Bureau of Resource Management and AECOM will be available to answer your questions and gather your input.

"We are excited to share the results of the work our contractor has been doing," said Chris Heyn, Bureau Chief for the Bureau of Resource Management. "This area is a key resource for our community and we want to ensure it remains that way for many years to come."

Grant funding for this project provided by:

