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We work with the people who work the land.

## Magical Milk

by Rich Wood, Education & Outreach Coordinator



As I've grown older, there are many food and drink items that I no longer consume like I did when I was a kid. But one thing that has never changed for me, is that I still enjoy a glass of cold milk! Whether it's with a fresh-baked chocolate chip cookie, or poured over my morning cereal, I really do love milk!

While we have been drinking milk from cows for thousands of years, modern dairy farming didn't begin until the late 1800s after pasteurization and other inventions were developed and utilized. Immigrants coming to North America in the early 1600s brought cattle from Europe for meat and dairy products for their families. By the 1800s, cattle breeds were specifically developed for dairy production.

During this time, milk and other dairy products were produced for the family and for local consumption. The need to mass produce and improve quality came when people began moving into cities in the late 1800s. Pasteurization equipment, milking machines, refrigerated milk tank cars, automatic bottling machines, commercial milk bottles, and tuberculin tests for cattle were developed during this time, creating the growing dairy industry.

We recently visited a couple of our local dairy farms to ask them a few basic questions about their operations, and milk production in general. It was very educational, and really enjoyable! Here's a little of what we learned:

**Q: How long have you been farming? How long has the farm been in your family?**

A: Both farms have been operating for over 150 years, including a 6th generation farm.

**Q: On average, how many gallons of milk do you get from one cow, at each milking?**

A: The larger farm, with a larger herd, milks 3 times/day. Their cows average about 4 gallons/milking, for about a total of 12 gallons/day. The cows on the smaller farm get milked 2 times/day. Their cows average about 5.25 gallons/milking, or about 10-11 gallons/day.

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## Magical Milk

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**Q: What breed of cows do you have, and why?**

A: Both farms have Holsteins because of their high milk production, overall health and adaptability.

**Q: How often is your milk picked up?**

A: The milk on the larger farm is picked up every day, and on the smaller farm the milk is picked up every other day.

**Q: Where does your milk go when it leaves your farm?**

A: All milk goes to be processed after leaving their farms. Some of it goes to *Maola Dairy* in Newport News, VA, some of it is transported to Winston-Salem, NC, where they have a contract with *Chipotle* to make fresh cheese, and some of it stays local, and goes to *Shamrock Farms* in Verona.

**Q: What are your biggest challenges being a dairy farmer?**

A: The cost of production and labor, the variable prices of milk, keeping their cows healthy, and keeping their cows productive as long as they can.



We also learned that milk is measured in pounds, not gallons. The industry average is 1 gallon of whole milk equals about 8.6 pounds. There are a variety of factors that may influence how much dairy farmers are paid for their milk, but many of them are paid by the hundredweight (100 lbs). Milk consists of water, carbohydrate (in the form of lactose, a type of natural sugar), fat (unless non-fat), vitamins, minerals and protein. Dairy products are rich in essential nutrients that support overall health and well-being. Here are some of the key benefits:



1. **Protein:** Supports muscle growth and repair
2. **Calcium:** Essential for strong bones and teeth
3. **Vitamin B12:** Important for nerve function and red blood cell production
4. **Vitamin D:** Helps the body absorb calcium and supports bone health
5. **Vitamin A:** Supports vision, immune function, and skin health
6. **Zinc:** Important for immune function and healing wounds
7. **Selenium:** Acts as an antioxidant to protect cells from damage

As most people know there's a variety of dairy products, including whole milk, reduced fat milk, skim milk and flavored milk (like chocolate milk), natural cheeses, ice cream, cottage cheese, yogurt, butter, cream (heavy cream, light cream and sour cream) and whey, a byproduct of cheese-making that is also used in protein supplements.

The importance of dairy farms in agriculture can't be overstated. It not only provides a livelihood for farmers, but also bolsters the economy by creating jobs and aiding rural communities. Furthermore, dairy farming caters to the increasing demand for dairy products, which are packed with essential nutrients like calcium, protein and vitamins. Let's hear it for milk!

*We would like to thank Big Rock Farm and North Point Farms for providing some of the information for this article, as well as the USDA and U.S. Dairy.*



# Ag News

## Conservation on the Farm 2024 Clean Water Farm Awards

Each year, Headwaters Soil & Water Conservation District recognizes two local producers who demonstrate a strong conservation ethic on their operations. These individuals have worked with the District to install Best Management Practices on their farms that reflect their exceptional commitment to improving water quality and protecting the soil.

For 2024, we would like to congratulate **Dennis Miller & Family from Sunrise Farms in Greenville** as our *Shenandoah River Basin* Clean Water Farm, and **Tom Peters & Family from Creekside Farm in Deerfield** as our *James River Basin* Clean Water Farm.

**Creekside Farm** (right) partnered with the District to install fencing along a section of the Hamilton Branch, which kept the livestock out of the stream, and, added new watering systems in the pastures. In addition, division fencing was also installed so that rotational grazing can now be utilized for 20 cow/calf pairs and goats. Due to enhanced grazing and watering systems, Mr. Peters is able to use 48 acres to graze livestock. These acres may also be used for hay production.



**Sunrise Farms** (left) has 40 cow/calf pairs of beef cattle that rotationally graze 68 acres on their farm near Greenville. The Millers use portable watering troughs so cattle have fresh grass, while keeping waterways clean. The farm worked with Headwaters SWCD to exclude cattle from their streams, which are tributaries of the South River Watershed. By excluding livestock from the waterways, they have improved the soil and water quality. In addition, they increased rotational grazing, thus lowering farm inputs while protecting areas of environmental concern.

Both Sunrise Farms and Creekside Farm have proven their operations are excellent examples of how agricultural best management practices can help your farm in conserving the land's natural resources for the next generation, as well as protecting the water quality of our local streams and rivers. If you are interested in learning more about the conservation practices available through the Headwaters Soil & Water Conservation District, please reach out to our office! Once again, congratulations to both of our 2024 Clean Water Farm Awardees!

## Backyard Conservation

by Eric Heberling, Conservation Technician



## Virginia Conservation Assistance Program

Presented by Virginia Association of Soil & Water Conservation Districts

What in the world is a VCAP? VCAP stands for *Virginia Conservation Assistance Program*-a cost share (reimbursement) geared towards homeowners who want to improve stormwater runoff and erosion on their property. When it rains, all of that water has to go somewhere. What you do on your property absolutely has an effect on you, and your neighbors. VCAP can provide technical and financial assistance to those who are interested in stewardship of their property and their community, and wanting to reduce non-point source pollution from entering our waterways.

If a pipe discharges pollutants directly to a stream or water, we can determine the exact point of where it's coming from. That is called point source pollution. However, when rainwater hits your roof, it falls to the ground and may travel a far distance. This is called runoff. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into many waterways, including groundwater. This is called non-point source pollution. Stormwater runoff is a type of nonpoint source pollution that involves rain and melting snow flowing off building rooftops, driveways, lawns, streets, parking lots, construction sites, and industrial storage yards. We usually can't point to one discreet location of nonpoint source pollution like we can with a discharge pipe from a factory. Would you want your neighbor dumping used motor oil in their backyard? That oil could percolate down into the groundwater, possibly contaminating you, or your neighbor's well-even if they're a half-mile down the road from you! Non-point source pollution is the leading cause of water pollution in the U.S.

VCAP is a state program that uses several Best Management Practices (BMPs) to restore problem areas, minimize erosion, conserve water within your landscape, and promote wildlife habitat. VCAP helps to reduce non-point source pollution for homeowners. Some of the common BMPs in our district are rainwater harvesting, conservation landscaping, and rain gardens. But there are many other BMPs offered in the cost-share program.

The rainwater harvesting practice is exactly what it sounds like-it collects, or "harvests" excess rainwater. However, it usually involves capturing a lot more water than a regular, 55-gallon rain barrel can hold. The practice calculates how many gallons your roof will interact with during a one-inch rain event. The average roof size in the U.S. is 1700 sq. ft. In a one-inch rain event, that roof will yield approximately 1000 gallons of harvestable water that you can use however you see fit. You may choose to water your garden, water livestock, or even use it as non-potable water for your house. This practice is structural and will have the cistern, gutter fittings, and an overflow discharge included.

Conservation landscaping comes in a variety of forms, but usually includes prepping a site by removing sod/turfgrass, and replacing it with native plants. The most common may include filter strips and buffers: meadows, mulch beds, and tree plantings. After a soil assessment is done, a landscape plan and erosion control plan are created. The sod is removed and herbicides are commonly used to eliminate any remaining invasive plants. Soils may need to be amended, mulch added, then a selection of native perennials, shrubs, and trees are planted. The goal is to get rid of invasive species that aren't supposed to be there.



An example of conservation landscaping -before (L) & after (R) -



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## Backyard Conservation

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*An example of a rain garden used at a private residence.*

For rain gardens, you'll need to have an inlet and an outlet (from your gutters) to allow native plants/pollinators to absorb the rainwater coming from your roof. The roots of plants that grow in rain gardens are very effective at absorbing excess water. Once again, a design will need to be created. Materials needed may include soil amendments, wood mulch, native plants, stone, and non-woven geotextile fabric.

So how does the VCAP process work? Technicians from our Headwaters SWCD office will conduct a site visit with the homeowner to discuss their problem areas and their goals for that area. We will then work

with the homeowner to recommend feasible solutions to the problem, and determine a cost estimate. The project is then ranked on a state ranking form. If the plan moves forward, next, it will need state board approval. Once approved, construction may begin. During construction, technicians will make visits to ensure the project is built to specifications and to photograph and document progress. Upon completion, technicians will make a final inspection, then the homeowner will be reimbursed. Projects are cost-shared at various rates, with most receiving 80% reimbursement. These rates are established by the state. Communications with the Conservation Technician, throughout the duration of the project, is very important!



We work with the people who work the land.

**Want learn more about VCAP?**

**Give us a call! We'd love to talk with you about how we may be able to help!**

**Headwaters Soil & Water Conservation District  
Eric Heberling - (540) 248-0148 Ext. 3**

## Education News

### Attention Educators! EnviroScape Is Here!

Headwaters SWCD is excited to announce that through a grant by the Shenandoah Valley Pure Water Forum, we have purchased a new **Watershed/Non-Point Source Pollution EnviroScape Model!** This model is part of our watershed classroom program for grades 4-12, and is aligned with the Virginia Standards of Learning (SOL). For more information about scheduling a watershed program with the model, please contact Rich Wood, Education & Outreach Coordinator at (540) 248-0148 ext. 8, or email: [rwood@co.augusta.va.us](mailto:rwood@co.augusta.va.us). The program is free.



# Education News



We work with the people who work the land.

*Headwaters*



2025  
**SCHOLARSHIPS**  
Available



*Educational Foundation*

**Two scholarship opportunities available in 2025!** Headwaters SWCD is offering one \$1,000 scholarship and the Virginia Association of Soil & Water Conservation District's Educational Foundation is offering four \$2,000 scholarships. Students can apply for both, on one application. Information, guidelines, and application is available on our website under "Education & Outreach." <https://headwatersswcd.org/scholarships/>

**Opportunities for students!**

Virginia Tech Campus - Blacksburg, VA.  
Apply through your local Soil & Water Conservation District.

**JULY 13-19**  
**2025**



## Youth Conservation Camp



Join us for a week of outdoor, hands-on learning from conservation professionals and Virginia Tech faculty about natural resources.

Open to all Virginia High School students currently enrolled in grades 9-12th in 2025.

Contact your local SWCD to learn more about how to apply. Scholarship funding to cover registration may be available.



[VASWCD.ORG/CONSERVATION-CAMP](https://vaswcd.org/conservation-camp)

Questions? Contact:  
[byron.minson@vaswcd.org](mailto:byron.minson@vaswcd.org)



# Education News



HEY VIRGINIA RESIDENTS!

## CAMP WOODS AND WILDLIFE

Do you know teens  
who love the  
outdoors?

This field-based residential camp introduces students to natural resource careers, through hands-on classes on the Appomattox-Buckingham State Forest.



Applications open  
Feb. 1- Apr. 11

- Sustainability
- Forest Management
- Forest Ecology
- Mapping
- Urban Forestry
- Forest Health
- Wildlife Management
- Tree Identification



June 16th-20th

For 13-16  
Years Old

More info:  
<https://dof.virginia.gov>

Contact:  
[Ellen.Powell@dof.virginia.gov](mailto:Ellen.Powell@dof.virginia.gov)

# Critter Corner

by Loren Ramos, Conservation Education Intern

## A Misssstaken Identity

*Background information provided by the National Wildlife Federation and Virginia Herpetological Society*

Have you ever spotted a snake near the water and immediately panicked? You are not alone! The Northern Water Snake (*Nerodia sipedon*) is one of the most feared snakes in North America, yet it is completely harmless. As the most common water snake in the United States, it is very often mistaken for the venomous Water Moccasin (cottonmouth) due to its similar coloring and behaviors. Found in freshwater habitats, this snake plays a key role in the ecosystem. Unfortunately, its mistaken identity frequently leads to unnecessary fear and harm.

The Northern Water Snake is easy to distinguish from cottonmouths - if you know what to look for. These snakes range from 2 to 4.5 feet long, with females typically grow larger than males. Their bodies can be gray, tan, brown, or reddish, and the adults have dark bands. Juveniles have more vibrant coloration. One key difference between a Northern Water Snake and a cottonmouth is head shape. Northern Water Snakes have round heads while cottonmouths have distinctly angular, triangular heads. Another way to differentiate them is their swimming behavior. Northern Water Snakes swim with their bodies just below the surface of the water, while cottonmouths float on top of the water. However, this method of identification is not foolproof, as other harmless species, like the Eastern Hog-nosed snake, also swim like the venomous cottonmouth.



Two Northern Water Snakes - notice the distinctive bands.  
photo by Rich Wood

The Northern Water Snake is found throughout eastern and central North America. Here in Virginia, it can be found in every county, whereas the Water Moccasin can only be found in the southeast part of the state. Northern Water Snakes live in a variety of habitats, such as streams, lakes, rivers, vernal pools, ponds and marshes, as well as tidal creeks and brackish marshes. They are most active in the spring and fall, when they can often be seen basking in the sunlight with other water snakes. In the hottest months of the year, they are primarily nocturnal. During the day, retreat to vegetation or structures to avoid overheating. Northern Water Snakes are skilled hunters, primarily feeding on fish and amphibians. Unlike constrictors, they capture and swallow their prey whole. By preying on these species, they help regulate fish and amphibian populations, making them an essential part of freshwater ecosystems.

As mentioned earlier, Northern Water Snakes are often mistaken for cottonmouths, or venomous Water Moccasins, leading to unnecessary killings. When threatened, they hiss, flatten their bodies, and often bite repeatedly, but these bites are harmless.

Although the Northern Water Snake is classified as a stable species by the National Wildlife Federation, they still face challenges. Their habitats are shrinking due to infrastructure development, and many are unnecessarily killed due to fear and misidentification. To help with these issues, you can do your part by educating others on how to identify the Northern Water Snake and avoid harming or disturbing this magnificent creature when you see it. Lastly, you can support conservation efforts that aim to protect aquatic habitats throughout the state.

Next time you see a snake near the water, take a closer look – it might just be a Northern Water Snake doing its part to keep nature in balance!



# Pollinator Planning Time

by Loren Ramos, Conservation Education Intern

Background information provided by the United States Department of Agriculture.

Did you know that 75% of flowering plants and 35% of our food crops depend on animal pollinators to reproduce? Pollinators are essential creatures that not only support nature's beauty but are crucial to putting food on our plates, making them the unsung heroes of the environment. One way to support pollinators is by providing enticing habitats for them through pollinator gardens. The transition between winter and spring is the perfect time to plant your own pollinator garden, and this article will guide you through understanding pollinators and creating a thriving pollinator habitat in your yard.



Photo by Rich Wood

## What is the Importance of Pollinators?

Pollinators are animals such as birds, bees, butterflies, moths, beetles, and other insects that carry pollen from flower to flower, which enables plant reproduction and fruit formation. This aids not only the crops that we benefit from, but also native plants that provide important ecosystem services. These native plants give food and shelter for other wildlife and help control erosion. Presently, pollinators face many challenges. Pollinator populations are declining at an alarming rate due to habitat destruction, pesticide use, and climate change, which disrupts natural bloom cycles.



Virginia's state insect, the Tiger Swallowtail, loves Joe-Pye-Weed. - photo by Rich Wood

## What to Plant

Native plants are the best resources for local pollinators. They evolved alongside the local pollinators making them the perfect fit for their needs for nectar, pollen, flower shape, and blooming time.

Examples of plants that are native to Virginia are:

- **Flowers:** Coneflower, Black-eyed Susan, Bee Balm
- **Shrubs:** Buttonbush, Elderberry, Spicebush
- **Trees:** Redbud, Tulip Poplar
- **Grasses:** Little Bluestem, Switchgrass

## Planning a Pollinator Garden

When planning a pollinator garden, start by assessing your available space. The ideal location for a pollinator garden is somewhere that gets full sun, and if possible, can be protected from strong winds. Next, you should select a variety of native plants that bloom at varying times throughout the season, as this will help to attract more pollinators throughout the year and ensure nectar is available. When placing these native plants in your garden, grouping plants of the same species together. This will help the pollinators notice the flowers and obtain the nectar better. Additionally, incorporating hardscapes such as rocks, logs, or shallow water sources to your garden. Not only will this add aesthetic interest, but they will also provide shelter and water for the pollinators. Lastly, consider converting unused lawn areas into pollinator gardens. By doing this conversion, you'll have less grass to maintain, and your backyard ecosystem will benefit.

Pollinators play a vital role in our ecosystem by supporting biodiversity and ensuring the reproduction of crops and native plants. You can help them by planting a pollinator garden, no matter how small. Over time, your yard can become a thriving haven for pollinators. Take the first step today – choose a few native plants, find a sunny spot, and start your pollinator garden this season!

# Upcoming Events

Mark your calendars for these upcoming events, and stop by to meet some of the HW SWCD staff!!



## Earth Day Staunton

Saturday, April 26th, 2025 (11am-3pm)  
Gypsy Hill Park Bandstand - Staunton  
(Rain Location - Gypsy Hill Park Gym)

## Riverfest

SATURDAY, MAY 3, 2025 • 10AM-4:30PM  
AT CONSTITUTION PARK - WAYNESBORO (RAIN OR SHINE)

*Promoting environmental conservation and watershed stewardship in the Shenandoah River Basin.*

## Now Taking Reservations for 2025!



### Mobile Soils Education Trailer



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Drop an email to: [rwood@co.augusta.va.us](mailto:rwood@co.augusta.va.us)

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[www.headwatersswcd.org](http://www.headwatersswcd.org)

Join our mailing list! It's FREE!



*"I bequeath myself to the dirt, to grow from the grass I love; If you want me again, look for me under your boot-soles." - Walt Whitman*