USDA United States Department of Agriculture

Welcome to the first e-newsletter for the Smith Creek Watershed Partnership. Inside, you'll find information on our work to improve local water quality through the power of Conservation, Collaboration and Community. Feel free to forward the newsletter to others who may be interested in our work to make this a showcase for locally-led conservation.

NEWS FROM THE FIELD

Our multi-agency team has successfully collaborated with local farmers and landowners for 10 years to implement conservation practices that work together to address water quality issues in the Smith Creek Watershed. In that time, the Natural Resources Conservation Service (NRCS) and local Soil and Water Conservation Districts (SWCDs) have helped producers:

- Apply nutrient management practices on over 6,400 acres.
- Install more than 35 miles of livestock fencing.
- Plant over 3,300 acres of cover crops.
- Develop plans for 35 waste storage facilities.
- Implement prescribed grazing on over 1,000 acres.

The National Water Quality Initiative (NWQI) helps agricultural producers accelerate voluntary, on-farm conservation investments and focuses water quality monitoring and assessment resources where they can deliver the greatest benefits. Virginia NWQI funding is limited to the Smith Creek Watershed with $600,000 available for FY2020.

More than 8,115 acres in the watershed have been treated with financial assistance from Farm Bill programs, which also include the Environmental Quality Incentives Program (EQIP), Conservation Stewardship Program, and the Regional Conservation Partnership Program (RCPP).

Between fiscal years 2010 and 2018, the NRCS funded 137 Farm Bill contracts (NWQI, EQIP and RCPP), obligating $4.83 million in total funding. In the last two years alone, conservationists worked with local farmers to treat 643.8 total acres through 18 Farm Bill contracts valued at $814,000.

Smith Creek partners visit demonstration plots on a local farm that highlight the benefits of no-till corn planting versus conventional tillage and cover crops versus no cover crops.

DID YOU KNOW?

A March 2019 survey found:

- 100 percent of respondents would recommend NRCS to others.
- The top motivating factors for participating in NRCS programs are monetary benefits and conservation beliefs.

SHOWCASE CONSERVATION

Innovation in Action

Ridge to Reefs Woodchip Bioreactor

A woodchip bioreactor is an edge-of-field practice designed to treat agricultural water from drainage tile lines, drainage ditches, springs or ponds. A buried trench filled with woodchips is the main component of this system.

An in-line water control structure diverts the water to the woodchip trench, which provides the proper environment (carbon from woodchips, nitrate-nitrogen from agricultural drainage and low dissolved oxygen) to promote denitrification.

Denitrification converts nitrates to harmless nitrogen gas that makes up 78 percent of the air we breathe. Water quality data shows that this innovative technology is highly effective at reducing nitrates with a greater than 90 percent removal rate.

Benefits of Woodchip Bioreactors

- **Passive**. Construction of the practice creates conditions that biologically convert nitrate to nitrogen gas.
- **Contained in a small footprint**. Most installations are about 100 to 120 feet long and 15 to 30 feet wide, taking very little tillable land out of production.

Contractors spread woodchips in the trench to treat agricutural water in this construction photo from another Ridge to Reefs bioreactor project (photo courtesy of Ridge to Reefs).

- **Low maintenance**. Sediment must be cleaned out of the diversion box once or twice a year.
- **One of the most cost-effective agriculture best management practices (BMPs) available**. The estimated cost of nitrogen reduction is $7-10 per pound.

For more information on woodchip bioreactors, contact Drew Koslow at drew@ridgetoreefs.org or (410) 533-2753.

SMITH CREEK SNAPSHOTS

Local landowners are installing groups of practices that offer combined benefits for the operation and the watershed. Riparian forest buffers and nitrogen scavenging cover crops are just a few examples of conservation measures that are very effective for enhancing water quality.

Volunteers plant trees on a farm in the Gap Creek Subwatershed that will act as natural water filters, trapping excess nitrogen and phosphorus in the soil.

Nitrogen fixing cover crops are another recommended practice to improve soil health and water quality in the watershed.

Landowner Spotlight

Peyton and Myra Yancey

In Rockingham County, Peyton Yancey continues to conserve land that has been in his family for generations. His property is located in the Mountain Run Subwatershed and a large spring on site is considered to be the headwaters of Smith Creek.

Yancey researched conservation programs that meshed with his belief that taking care of springs, creeks and other natural waterways is extremely important for future generations.

After several visits and conversations with local NRCS staff, Yancey decided to sign up with NRCS and partners for both Farm Bill and state cost-share programs to continue to conserve and improve the natural resources on the family property and in Virginia waterways.

Working with NRCS and partner agencies, Yancey has now transformed his land with rotational grazing and an alternative watering system to reduce erosion and improve water quality. This management approach allows for hay making and crop planting, depending on the weather.

The Shenandoah Resource Conservation and Development Council (RC&D) provided funding through the Flexible Fencing Program to install additional fences on the farm and the Shenandoah Valley Soil and Water Conservation District (SVSWCD) offered assistance to rotate row crops to hay/pasture forages. The Chesapeake Bay Foundation also provided some financial assistance for the project.

Yancey and his wife are planning to implement some innovative approaches on the farm too. They are currently working with nonprofit group Ridge to Reefs to install a denitrifying bioreactor that will help reduce nitrogen levels in the spring and discharge the treated water back into Smith Creek.

Virginia Tech and the National Fish and Wildlife Foundation (NFWF) are funding the project with construction slated to begin later this year. Tech will also monitor bioreactor usage to assess how well it is working.

The restored streambanks along this well-established riparian buffer help reduce nutrient and sediment runoff into Smith Creek.

A rotational grazing system with an alternative watering system and stream crossings installed on the Yancey property offer numerous conservation benefits.

For more information about the projects mentioned above, contact the following partners:

NRCS	(540) 433-2901
SVSWCD	(540) 433-2853
Chesapeake Bay Foundation	(804) 780-1392
Ridge to Reefs	(410) 533-2753
National Fish and Wildlife Foundation	(202) 857-0166

SHOWCASE COMMUNITY

Educational Partners

James Madison University

In January 2019, NRCS partnered with a group of James Madison University graduate students on a new initiative to showcase and highlight NRCS collaborations to clean up the Smith Creek Watershed. Students in Dr. Corey Hickerson's Stakeholder Engagement class put their skills to work to develop a proposal for sharing information and resources with the community, producers and partners.

The class focused on three identified stakeholders: Rockingham County farmers and landowners, partners and youth/potential volunteers. Students then reached out to the identified stakeholders via telephone and email surveys to determine the best methods of engagement with them.

On April 29, the students presented their findings along with recommendations on messaging, tools and tactics that included print materials, a podcast, social media posts and promotional items imprinted with this new logo highlighting a shared vision of conservation, collaboration and community.

Showcase Conservation
Showcase Collaboration
Showcase Community

For more information on conservation programs and services offered in the City of Harrisonburg and Page and Rockingham counties, call or visit the Harrisonburg Service Center at 1934 Deyerle Avenue, Suite B, Harrisonburg, Va. 22801-3484.

NRCS Contact
Cory Guilliams, District Conservationist
PH: (540) 534-3048

SVSWCD Contact
Megen Dalton, District Manager
PH: (540) 534-3049

MTC and Valley View Farms' Working Land Laboratory

Massanutten Technical Center Agriculture Production Class

Students in the Massanutten Technical Center's (MTC's) Agriculture Production Class receive supervised agricultural experience and leadership training with a focus on beef and dairy cattle, swine and sheep production. The program emphasizes animal, plant and soil science along with business management and agricultural mechanization. Agri-science internships and on-farm experiences are cornerstones of the course with the majority of the instruction provided on-site at the MTC Working Land Laboratory in partnership with Valley View Farms.

Last year, the program received statewide recognition with a Creating Excellence Award from the Virginia Department of Education and the Virginia Community College System. On June 13, 2019, the school was among 15 exemplary career and technical education (CTE) programs and partnerships honored during the annual awards program in Richmond. Congrats to the MTC Agricultural Production Technology Advisory Committee and Rockingham County Public Schools for winning a Secondary CTE Award in the Advisory Committee category.

Virginia Natural Resources Conservation Service
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