USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

**Helping People Help the Land**

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# The Virginia Chesapeake Bay Showcase Watershed:

# Smith Creek

USDA Natural Resources Conservation Service (NRCS) and more than 20 partners are helping farmers and residential landowners voluntarily implement conservation practices to reduce nutrient and sediment runoff into the Chesapeake Bay.

NRCS has established three Showcase Watersheds – Smith Creek in Virginia, Upper Chester River in Maryland, and the Conewago Creek in Pennsylvania.

These watersheds are designed to show what can be accomplished by bringing people and groups together to solve natural resource problems in a targeted area.

NRCS implemented the Smith Creek Watershed project using Farm Bill funds beginning in FY 2010. The goal of the project is to reduce nitrogen, phosphorous, and sediment contributions from soil erosion, over-application of nutrients, poorly managed pastures, and uncontrolled animal access to streams.

## Smith Creek Profile

The Shenandoah Valley is home to approximately 46 percent of Virginia's dairies and 75 percent of its poultry operations. This concentration of animal farms has contributed to nitrogen, phosphorus, sediment, and bacteria pollution in local streams, the Shenandoah and Potomac Rivers, and the Chesapeake Bay.

The Smith Creek Watershed covers 67,335 acres and includes four subwatersheds – Dry Fork, Smith Creek (Mountain Run), Smith Creek (War Branch), and Smith Creek (Gap Creek).

Seventy-five percent of the watershed is in Rockingham County and 25 percent is in Shenandoah County. Of 286.9 miles of streams, 52.54 miles (18 percent) are impaired.

Thirty-three percent of the land is prime or important farmland. Pastureland (16,393 acres) is the dominant agricultural land use. Forty-seven percent of this intensively farmed watershed is agricultural land with significant amounts of cropland (5,643 acres) and hayland (9,615 acres).

From 1992 to 2001, almost 2,300 acres of agricultural land were converted to other uses.

Karst topography dominates the area with 329 sinkholes and 35 caves.

## Supporting State Goals

NRCS is partnering with more than 20 groups and organizations in the watershed to improve water quality and support the current Smith Creek Total Maximum Daily Load (TMDL) Implementation Plan.

Best management practices to address resource concerns include installing riparian buffers, rotational grazing and alternative watering systems; constructing waste storage facilities; excluding livestock from streams; and implementing nutrient management practices.

Smith Creek is the only small watershed in Virginia where the U.S. Geological Survey (USGS) is monitoring progress as BMPs are installed. Over the next 10 years, the agency intends to show where the major nitrate sources are located throughout the watershed and how they are generated (i.e., manure, commercial fertilizer and septic fields) to focus further practice implementation.

***Riparian Buffers***

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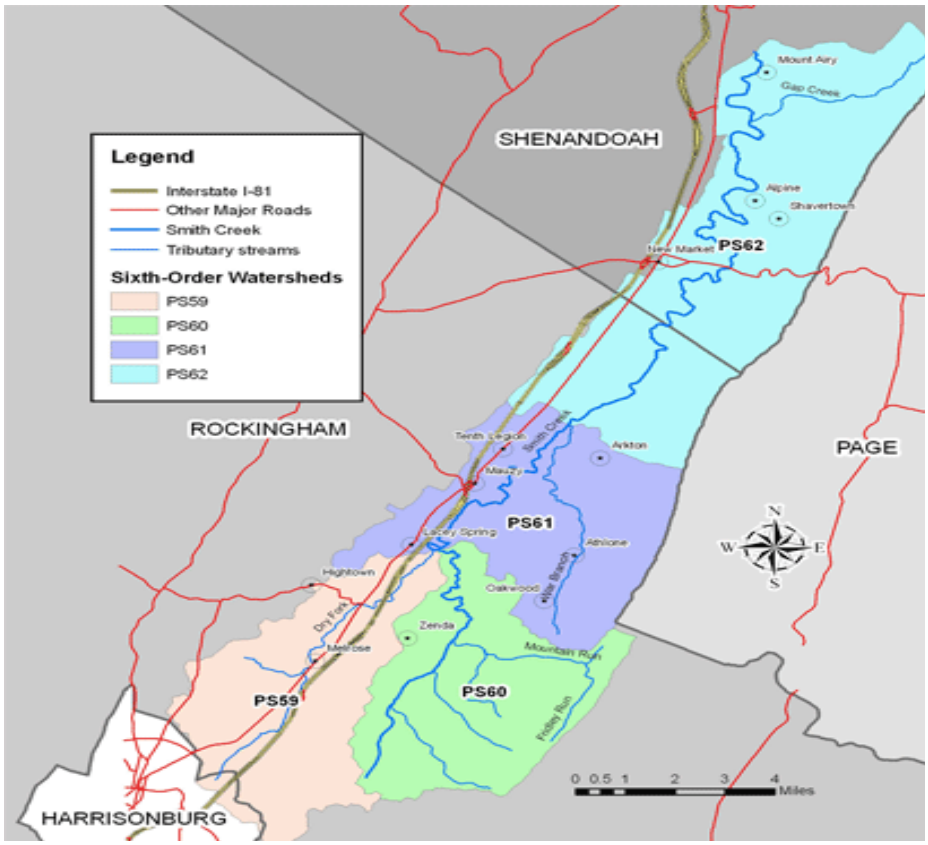
## Smith Creek Counties and Sub-Watersheds



Family Fun Day (Photo by Scott Jost)

## Outreach Success Story

Seeing was believing for about 137 local residents who attended **Family Fun Day on Smith Creek** in April 2012. New Market producer Bill Gallucci offered his neighbors a first-hand look at conservation practices he has installed on his 50-acre farm to improve water quality.

Learning stations featured hands-on activities for all ages, including:

**Water-Friendly Farming & Tree Planting** - District staff discussed projects done on Mr. Gallucci's farm to protect the health of Smith Creek and the county forester demonstrated how to plant trees.

With NRCS help, Gallucci has installed exclusion fencing, a watering system, and a stream crossing. He has also planted trees for a riparian buffer. Practices installed on the farm have already protected 8,000 feet of stream bank.

**Wildlife -** This station highlighted wildlife living near rivers/creeks using live animals and displays.

**Fishing & River Bugs -** Friends of the North Fork volunteers offered Benthic Macro Invertebrate (river bug) sampling and fishing demonstrations/lessons.

**Smith Creek Watershed Partnership -** This station provided information about Smith Creek and ongoing partnership activities.

## Highlights for 2010-12

The Smith Creek Partnership has conducted extensive outreach over the past three years, personally contacting more than 330 producers and landowners.

Across the watershed, NRCS and partners have completed 233 Farm Resource Inventories on 37 percent of the watershed's total acreage (24,810 acres). NRCS approved 44 contracts totaling $1,252,121 on 4,162 acres (FY11 and 12 only).

Farmers have helped to improve water quality by:

- Applying nutrient management practices on 2,590 acres
- Installing over four miles of livestock fencing
- Planting 1,491 acres of cover crops
- Developing plans for 11 waste storage facilities
- Implementing prescribed grazing on 103 acres

***Map Key:***

***PS59 - Dry Fork***
***PS60 - Mountain Run***
***PS61 - War Branch***
***PS62 - Gap Creek***

## Contact Information

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Rockingham County Landowners
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**Shenandoah Valley Soil & Water Conservation District** at (540) 433-2853, ext. 3 (NRCS) or ext. 4 (District)

Shenandoah County Landowners
**Strasburg NRCS Field Office**
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