

Project Location and Background

Flat, Nibbs, Deep, and West Creeks are located in Amelia and Nottoway Counties. They drain to the Appomattox River, which is part of the James River Basin. The Flat Creek watershed is 90,752 acres in size, the Nibbs Creek watershed encompasses 16,566 acres, the Deep Creek watershed includes 117,914 acres, and the West Creek watershed comprises 30,995 acres. All four creeks were listed as impaired on Virginia's 1996 *Section 303(d) Total Maximum Daily Load (TMDL) Priority List and Report* due to violations of the state's water quality standards for fecal coliform bacteria. (This standard was changed to *E. coli* in 2003.) A TMDL was approved by EPA in 2004, and a TMDL implementation plan was developed in 2006. The agricultural implementation project began in 2006, and the residential septic implementation project began in 2015.

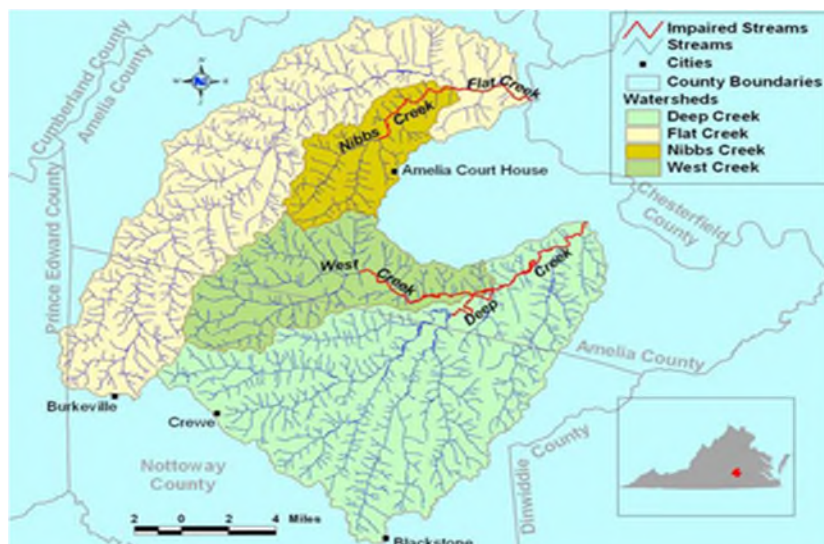


Table 1: Flat, Nibbs, Deep, and West Creeks BMP Summary: 2006-June 2021.

Control Measure	Unit	Goal	Installed	%
Agricultural				
Stream Exclusion Fencing	F	369,072	438,609	119
Stream Exclusion Fencing	S	268	137	51
Streamside Fence Maintenance	F	15,446	99,002	641
Improved Pasture Management	A	9,593	290	3
Animal Waste Control Facilities	S	10	5	50
Woodland/Vegetated Buffers	A	20.5	513	2,502
Afforestation of Erodible Crop and Pastureland	A	N/A	127	N/A
Long Term Vegetative Cover on Cropland	A	N/A	338	N/A
Legume Based Cover Crop	A	N/A	5,569	N/A
Small Grain and Mixed Cover Crop for Nutrient & Residue Management	A	N/A	18,161	N/A
Continuous High Residue Minimal Soil Disturbance or no Tillage System	A	N/A	434	N/A
Continuous No-Till System	A	N/A	258	N/A
Residential Septic				
Septic Tank Pump-out	S	2,740	61	2
Septic Tank System Repair	S	615	10	2
Septic Tank System Installation	S	616	23	4
Alternative Waste Treatment System	S	65	5	8

A = Acres, F = Linear Feet, S = System; **Note:** BMP counts only include 319-funded and state VACS. NRCS EQIP funded practices are not included.

Implementation Highlights

The Flat, Nibbs, Deep, and West Creeks agricultural implementation project was administered by Piedmont Soil and Water Conservation District (PSWCD) using targeted state funds. Agricultural funding was eventually discontinued in June 2015; however, agricultural BMPs continue to be implemented by PSWCD through other state programs. The table on the right shows overall BMP goals and implementation progress since the project began in 2006. From July 2019 through June 2021, 16 stream exclusion practices have been completed. This resulted in installation of 85,802 linear feet of stream fencing, excluding 623 livestock from stream access during the reporting period.

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The Virginia Nonpoint Source Management Program: The Virginia NPS Management Program is managed by the Virginia Department of Environmental Quality (DEQ) and is funded, in part, through grants from the U.S. Environmental Protection Agency, under the Clean Water Act Section 319(h). For more information regarding Virginia's Nonpoint Source Management Program, please visit us on the web at: <https://www.deq.virginia.gov/water/water-quality/nonpoint-source-management>. An electronic copy of this report can be found here: <https://www.deq.virginia.gov/water/water-quality/implementation/tmdl-implementation-projects>. General NPS Program questions? email: npsgrants@deq.virginia.gov.

Implementation Highlights— Continued

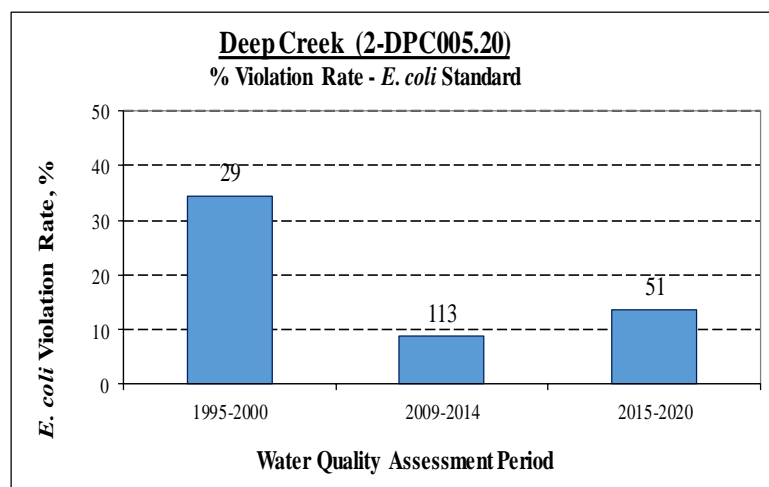
In addition to agricultural efforts, PSWCD was awarded 319(h) grant funds in July of 2015 to reduce residential septic-associated bacterial inputs from both Flat Creek and Nibbs Creek watersheds. This grant, which originally excluded Deep and West Creeks, was scheduled to end in December 2017. However, due to homeowner interest in those watersheds, the grant was expanded to include Deep and West Creeks and extended through at least 2022. From July 2019-June 2021, the residential septic grant program funded 14 septic tank pump-outs, eight septic system repairs, eight septic system installations and two alternative waste treatment system. PSWCD has additionally gathered information on the number of residential septic BMPs that have been installed since the development of the TMDL implementation plan in 2006. Bacteria reductions resulting from BMP installations are summarized in Table 2 below.

Period	Pathogens (Coliform) (CFU)
July 2006—June 2021	1.78E+16

Table 2: Pollutant Reductions for Flat, Nibbs, Deep, and West Creeks Watershed

Water Quality Monitoring Results

Water quality data collected by DEQ were analyzed to determine *E. coli* violation rates in the project area for the water quality standard of 235 cfu/100 mL and determine the impact of BMPs implemented in the watersheds on violation rates and associated long-term trends, if any, in water quality. The bar graph to the right shows the percent violation rates for samples collected annually at monitoring station 2-DPC005.20 in Deep Creek. The number of samples collected during the assessment period is shown above each bar. Data collected show higher violation rates in 2015-2020 assessment period compared to those during 2009-2014 assessment period. Monitoring over a longer period of time is needed to corroborate recent water quality changes.



Graph 1: *E. coli* data from Deep Creek (Station 2-DPC-005.20) for assessment periods 1995-2000, 2009-2014 and 2015-2020.

For More Information Please Contact:

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