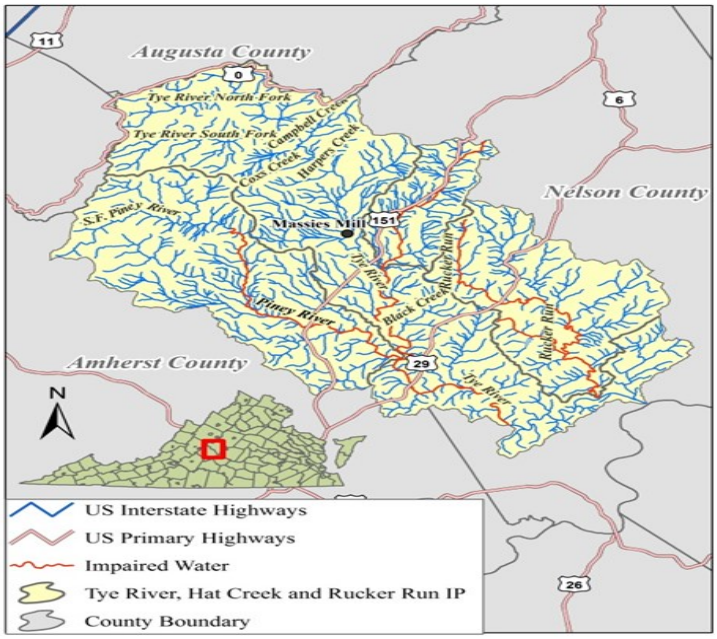
TYE RIVER WATERSHED

Virginia Nonpoint Source MANAGEMENT PROGRAM

Project Location and Background

The Tye River watershed is located in the James River Basin in Nelson and Amherst Counties, Virginia. The watershed is approximately 169,082 acres in size, and land use is predominantly forested (77%) and agricultural. The Tye River and its tributaries, Hat Creek, Rucker Run, and Piney River were listed as impaired on Virginia's *2006, 2004 (*Hat Creek and Rucker Run*), and 2008 Section 303(d) Total Maximum Daily Load (TMDL) Priority List and Reports,* respectively, due to violations of the state's water quality standards for fecal coliform bacteria. The Tye River TMDL was completed in September 2013, and a TMDL implementation plan was completed shortly thereafter in June 2014. The 319-funded implementation project started in July 2015; however, state funding started as early as July 2014.



Implementation Highlights

The Tye River TMDL implementation project is administered by the Thomas Jefferson Soil and Water Conservation District (TJSWCD). Table 1 shows BMPs implemented since the implementation plan was completed in 2014 and overall implementation goals for the project area. Both the agricultural and residential septic BMP programs have been successful during four years of implementation. All agricultural BMP funds included in TJSWCD's grant were allocated within the first year, even after the award of a supplemental grant exclusively for livestock exclusion BMP cost-share. In addition, TJSWCD has utilized VA Agricultural Cost-Share Program funds to complete a number of the projects shown in Table 1. Cumulatively, this has resulted in the implementation of over 38 miles of stream exclusion and 255 acres of riparian buffers. TJSWCD continues to see significant demand for technical and financial assistance for livestock exclusion projects and other agricultural BMPs.

(continued on Page 2)

Table 1: Tye River Watershed BMP Summary: July 2014—June 2019

Control Measure	Units	Goal	Installed	%
Agricultural				
Stream Exclusion Fencing	F	640,315	200,879	31
Stream Exclusion Fencing	S	225	40	18
Riparian Buffer	A	489	255	52
Improved Pasture Mgmt.	A	5,070	2,332	46
Reforestation of Highly Erodible Pasture	A	57	0	0
Continuous No Till	A	710	0	0
Small Grain Cover Crops	A	445	638	143
Residential Septic				-
Septic Tank Pump-out	S	454	34	7
Connection to Public Sewer	S	12	0	0
Septic System Repair	S	312	8	3
Septic System Installation	S	156	23	15
Alternative Waste Treat-ment System	S	106	0	0

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

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: http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/NonpointSourcePollutionManagement.aspx . An electronic copy of this report can be found here: http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/TMDL/TMDLImplementation/TMDLImplementationProjects.aspx General NPS Program questions? email: npsgrants@deq.virginia.gov

Implementation Highlights— Continued

The residential septic BMP program is on track to meet implementation targets, as well, with continued interest from landowners in the watershed. The residential septic BMPs shown in Table 1 include maintenance and replacement of multiple failing septic systems and the elimination of a straight pipe system. Cumulative bacteria reductions from BMP installations are summarized in Table 2 below.

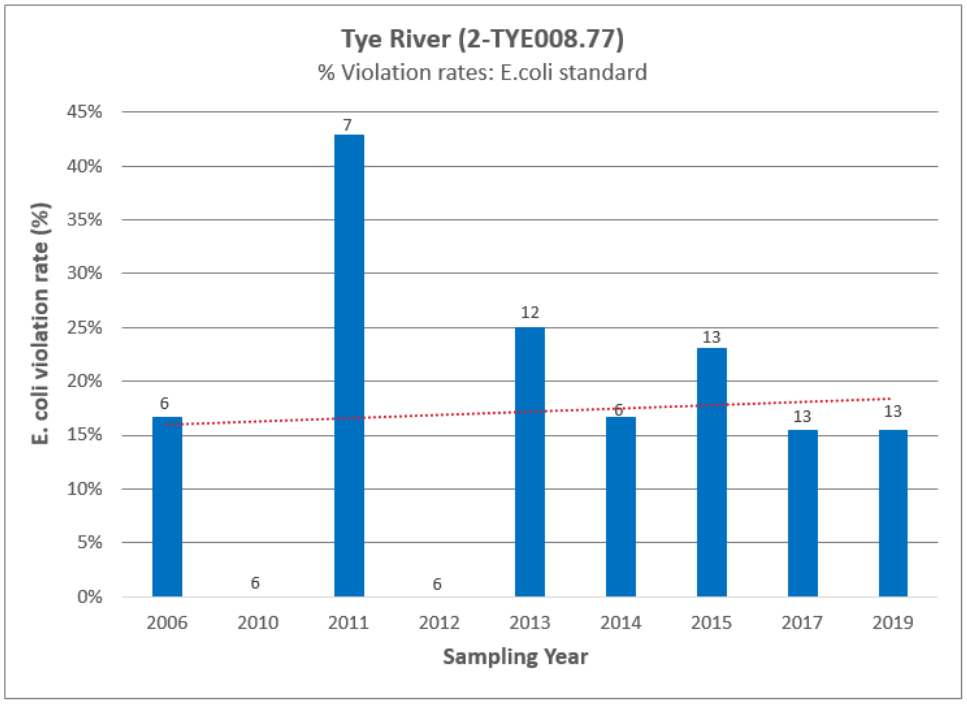
Period	Pathogens (Coliform) (CFU)
July 2014-June 2019	5.78E+15

Table 2: Pollution Reductions for Tye River Watershed

Water Quality Monitoring Results

Water quality data collected by DEQ for the period of 2006 through 2019 were analyzed to determine the impact of BMPs implemented in the project area on *E. coli* violation rates and associated long-term trends, if any, in water quality. The bar graph below shows the percent violation rate for samples collected annually at monitoring station 2-TYE008.77, which did not meet the water quality standard of 235 cfu/100 mL. The number of samples collected each year is shown above each bar. The linear regression fitted to the data shows a slight increase in bacteria violation rates over the sampling period, indicating a possible decline in water quality in the Tye River. However, the current increasing trend reflects a slower rate of increase than previous data.

Monitoring over a longer period of time with consistent trends is needed to corroborate water quality changes. Monitoring frequency has increased since 2012, which provides a more complete assessment of water quality.



Graph 1: *E.coli* data for the Tye River (Station 2-TYE008.77), 2006-2019

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