

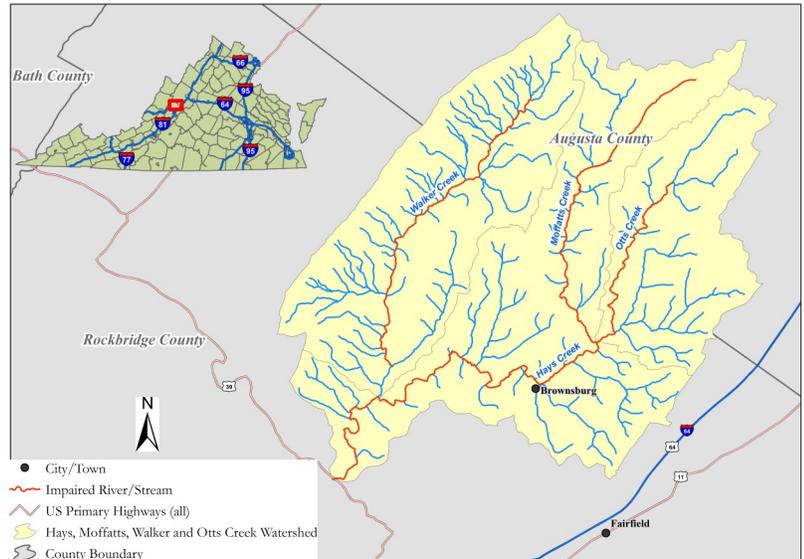
# TMDL Project Closeout Report

## HAYS, MOFFATTS, OTTS & WALKERS CREEKS

# Virginia Nonpoint Source MANAGEMENT PROGRAM

### Project Location and Background

The Hays Creek watershed is located in the Upper James River Basin in Augusta and Rockbridge Counties, Virginia. The watershed is approximately 51,500 acres in size, and land use is predominantly forested and agricultural. Hays Creek and its tributaries (Otts, Moffatts, and Walker Creeks) were listed as impaired on Virginia's 1998 Section 303(d) Total Maximum Daily Load (TMDL) Priority List and Report due to violations of the State's Water Quality Standard for fecal coliform bacteria. The Hays Creek TMDL was completed in January 2008, and a TMDL implementation plan was completed for the watershed in December 2010. The implementation project started in July 2012.



### Implementation Highlights

The Hays Creek TMDL implementation project was administered by the Natural Bridge Soil and Water Conservation District (NBSWCD) in partnership with the Headwaters Soil and Water Conservation District (HSWCD). The project area spans the coverage areas of the two SWCDs, allowing for a collaborative approach to implementation. The table on the right shows BMPs implemented since the project began in July 2012 and overall implementation goals for the project area.

The agricultural program was well-received in the watersheds, particularly with respect to livestock exclusion practices offered with 100% cost-share early in the project period. NBSWCD was awarded additional funds to support the agricultural program in 2015 after expending all of their allocated cost-share funds for livestock exclusion practices. However, once the offer of 100% cost-share for exclusion practices was no longer available, many producers who had intended to sign up with the NBSWCD opted to go with another program offered through the Natural Resource Conservation Service.

**Table 1: Hays, Moffatts, Otts and Walkers Creeks BMP Summary: July 2012—June 2017**

Control Measure	Units	Goal	Installed	%
<b>Agricultural</b>				
Stream Exclusion Fencing	F	353,062	31,544	9
Stream Exclusion Fencing	S	115	19	17
Riparian Buffer	A	275	24	9
Improved Pasture Management	A	23,356	0	0
Aforestation of Highly Erodible Pasture	A	1,000	0	0
Sod Waterways	A	49	0	0
Continuous No-Till	A	502	0	0
Vegetative Buffer on Cropland	A	73	0	0
Long Term Vegetative Cover on	A	N/A	159	N/A
Manure Storage	S	11	1	9
<b>Residential Septic</b>				
Septic Tank Pump-out	S	66	12	18
Septic System Repair	S	90	0	0
Septic System Installation	S	28	1	4
Alternative Waste Treatment System	S	57	1	2

A = Acres, F = Linear Feet, S = System; Note: BMP counts only include 319-funded and state VACS.

(continued on page 2)

**Implementation Highlights— Continued**

While this meant that much of the additional 319 funding received in 2015 went unspent, the NBSWCD provided technical assistance in the form of outreach and planning that resulted in additional livestock stream exclusion in the watershed.

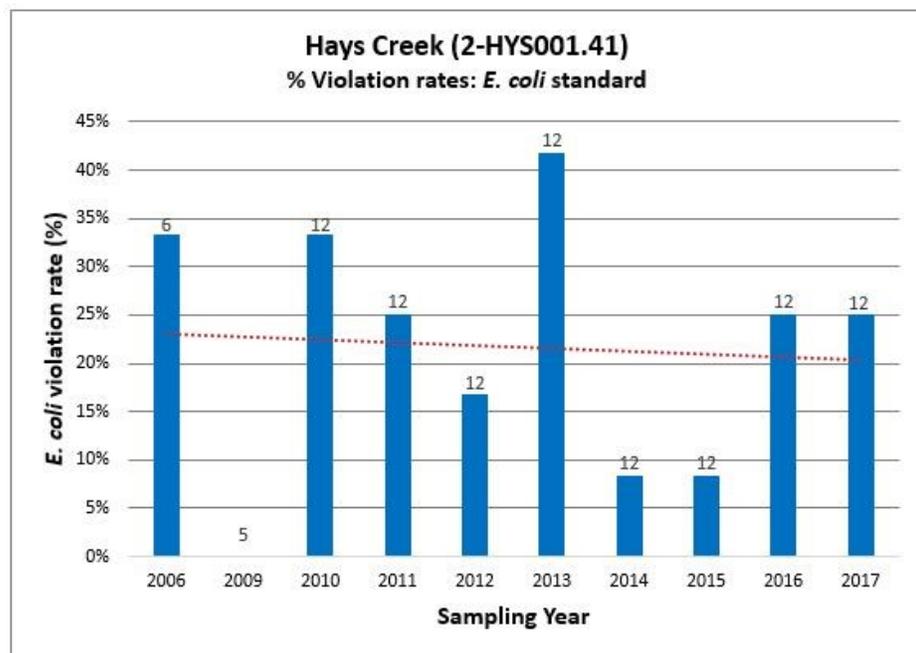
The residential program had comparatively low participation in the watershed. Outreach efforts to promote landowner participation in septic workshops were largely unsuccessful. Pollution reductions resulting from agricultural and residential septic BMP installations are summarized in Table 2 below.

Period	Pathogens (Coliform) (CFU)	Nitrogen (lbs/year)	Phosphorus (lbs/year)	Sedimentation (tons/year)
January 2012-June 2017	3.56E+14	4,762	609	629

**Table 2: Pollution Reductions for Hays, Moffatts, Otts, and Walkers Creeks Watershed**

**Water Quality Monitoring Results**

Water quality data collected by DEQ for the period of 2006 through 2017 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 graph to the right shows the percent violation rate for samples collected at monitoring station 2-HYS001.41, located near the mouth of Hays Creek, 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 potentially decreasing trend in violation rates over the sampling period, indicating possible improvements in water quality in Hays Creek.



**Graph 1: *E. coli* data for Hays Creek (Station 2-HYS001.41), 2006-2017**

### ***Closeout Analysis***

The Hays, Moffatts, Otts, and Walkers Creeks Project was funded for five years. Public participation and overall achievement of implementation goals was moderately successful. Highlights of the project include the following:

- ⇒ As shown in Table 1, stream exclusion fencing (linear feet) and the number of system installed met 9% and 17% of the IP goals, respectively. Nine percent of the riparian buffer and manure storage goals, respectively, were also achieved. Under the residential program, 18% of septic tank pump-outs, 4% of septic system installation/replacement, and 2% of alternative waste treatment system installation goals were met.
- ⇒ The agricultural program was well-received, especially when 100% cost-share was offered on exclusion practices early in the project period. NBSWCD expended all funds allocated for livestock exclusion practices; however additional funds awarded in 2015 went largely unspent. Still, landowners in the watershed continued to pursue other funding opportunities, namely through programs offered by the Natural Resource Conservation Service, and NBSWCD provided technical assistance on additional exclusion projects. The competition for 100% funding from other sources made utilization of federal 319(h) funds less attractive as funding was only for 85% of a practice. This project was also impacted by the fact that there were a few very large landowners, often an absentee landowner, that may have decided not to participate in the program due to the cost or the desire to sell the property.
- ⇒ An active partnership developed among state, federal and local agencies and stakeholders contributed to the completion of various agricultural projects.
- ⇒ Despite outreach efforts, the residential program had relatively low participation in the watershed.

Photo 1 (bottom left): Site tour of stream exclusion practice; Photo 2 (bottom right): Site tour of stream restoration and fish sampling



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