

UPPER YORK RIVER WATERSHED
ORANGE COUNTY

Project Location and Background

The Upper York watershed is located in Orange, Louisa, and Spotsylvania Counties, Virginia. Its subwatersheds Mountain Run and Beaver Creek flow south and drain into the North Anna River. Pamunkey Creek and Terry’s Run drain directly into Lake Anna. The 91,546-acre Upper York watershed is primarily forested (61%), with pasture/hayland as the second most predominant land use (30%). Cropland constitutes approximately 7% of the watershed, while residential and water/wetland land uses each constitute approximately 1% of the total watershed area.

Beaver Creek, Mountain Run, Pamunkey Creek, Plentiful Creek, and Terry’s Run were initially placed on the 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. Goldmine Creek was added to the List in 2002. A TMDL study was completed for the impaired stream segments in August 2005; a TMDL implementation plan was completed for the Upper York Watershed in August 2011 and approved by EPA in January 2012. An implementation project for the four watersheds in Orange County (not including Goldmine or Plentiful Creeks) commenced in July 2012.

Implementation Highlights

This implementation project is administered by the Culpeper Soil and Water Conservation District (CSWCD), which was contracted to provide technical assistance and educational outreach to farmers and homeowners for agricultural and residential BMP implementation within Orange County portions of the TMDL watershed. The table on the right shows BMPs implemented in the watersheds since the project began in 2012 and overall implementation goals for the IP. (continued on page 2)

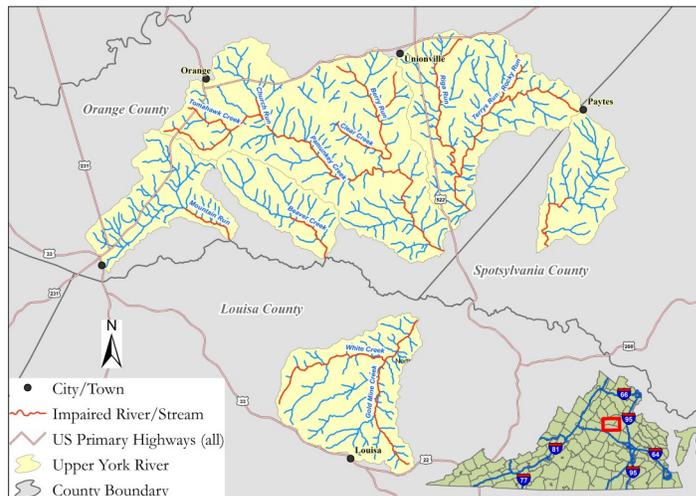


Table 1: Upper York River Watershed BMP Summary: Jan. 2012 – June 2019

Control Measure	Units	Goal	Installed*	%
Agricultural				
Stream Exclusion Fencing	F	744,480	270,274	36
Stream Exclusion Fencing	S	320	46	14
Stream Exclusion Maintenance	F	N/A	130,640	N/A
Reforestation	A	336	29	9
Small Grain Cover Crops	A	346	3,032	876
Harvestable Cover Crops	A	N/A	2,643	N/A
Pasture Management	A	26,966	4,014	15
Residential Septic				
Septic Tank Pump-out	S	514	179	35
Septic System Repair	S	302	23	8
Septic System Installation	S	152	28	18
Alternative Waste Treatment System	S	50	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. *Corrections have been made to numbers of installed BMPs provided in previous annual reports.

Implementation Highlights— Continued

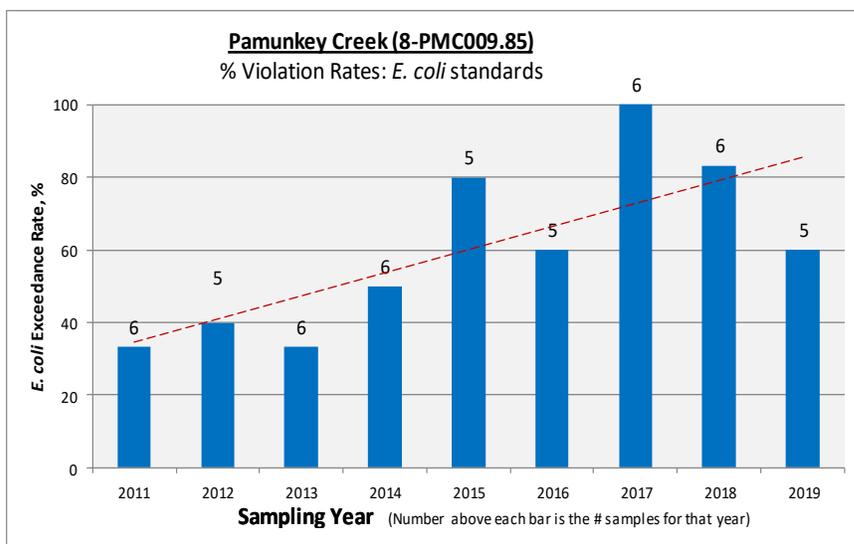
Outreach efforts for the project have included numerous meetings, newspaper articles, mailings to watershed land-owners, and presentations to community organizations. Between July 2018 and June 2019, four livestock stream exclusion systems were established, totaling 12,230 linear feet of fencing. In addition, maintenance work was completed on 7,470 feet of stream fencing and 177 acres were planted under small grain and mixed cover crop for nutrient and residue management. Under the residential septic BMP program, 20 septic tank pump-outs, one septic system repair, and four conventional septic system replacements were completed between July 2018 and June 2019. Bacteria reductions resulting from BMP installations are summarized in Table 2 below.

Period	Pathogens (Coliform) (CFU)
July 2012—June 2019	6.30E+15

Table 2: Pollution Reductions for Upper York River Watershed

Water Quality Monitoring Results

Water quality data collected by DEQ for the period of 2011 through 2019 were analyzed to determine *E. coli* violation rates in the project area relative to the water quality standard of 235 cfu/100 mL. The bar graph below shows the percent violation rate for samples collected annually at monitoring station 8-PMC009.58, located near the mouth of Pamunkey Creek (a subwatershed of the Upper York River Watershed). The number of samples collected each year is shown above each bar. The exceedance rate of the bacteria water quality standard has been quite high in recent years with a decrease in exceedance rates in 2019 from that of the prior two years. Continued BMP installations and monitoring of water quality over a longer period of time with consistent trends will be needed to corroborate water quality changes.



Graph 1: *E. coli* data for Pamunkey Creek (Station 8-PMC009.85), 2011-2019

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