

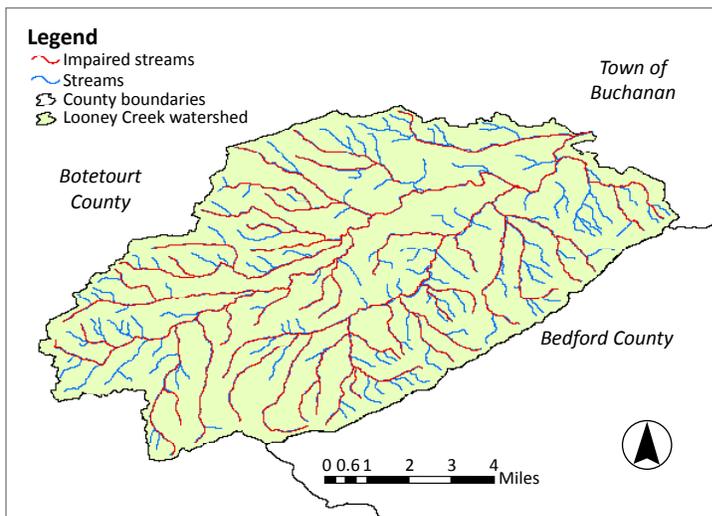
TMDL Project Closeout Report

LOONEY CREEK

Virginia Nonpoint Source MANAGEMENT PROGRAM

Project Location and Background

Looney Creek is located in Botetourt County, Virginia. The creek empties directly into the James River south of the Town of Buchanan. The Looney Creek watershed is approximately 40,000 acres with an estimated population of just over 4,100 people. The major land use in this watershed is forest. Looney Creek was listed as impaired on Virginia's 1998 303(d) list due to violations of the state's water quality standards for fecal coliform bacteria from the confluence of Mill and Back Creek to the James River confluence, a total of 2.48 miles. DEQ completed a bacteria TMDL for Looney Creek in May 2004, and the Virginia Department of Conservation and Recreation (DCR) completed the TMDL implementation plan in November 2007. An implementation project started in July 2009 and ended in June 2014.



Implementation Highlights

The Looney Creek TMDL implementation project was administered by the Mountain Castles Soil and Water Conservation District (MCSWCD). Table 1 shows BMPs implemented in the watershed over the project period from July 2009 through June 2014. Landowner participation in the cost share program was variable from year to year, with a considerable amount of livestock exclusion fencing going in between 2010 and 2011, and very little the following year. During July 2013 through June 2014 period, livestock exclusion fencing installed increased significantly compared to previous years.

Agricultural BMPs were focused on livestock exclusion systems excluding cattle from stream and establishment of grazing management systems. Fifteen livestock exclusion systems were installed in the watershed (34% of IP goal) resulting in 8.8 miles of stream fencing (68% of IP goal). Residential BMPs implemented included 17 septic tank pumpouts, 8 septic system repairs, 8 septic systems replaced and 2 alternative sewage systems.

Table 1: Looney Creek BMP Summary: July 2009 – June 2014

Control measure	Units	Need	Instal.	%
Agricultural				
Livestock exclusion fencing	F	68,583	46,474	68
Livestock exclusion systems	S	44	15	34
Riparian buffers	A	-	22	-
Waste storage facility	S	2	1	50
Small acreage grazing system	A	-	200	-
Extension of CREP watering sys.	S	-	80	-
Small grain cover crop	A	-	44	-
Residential				
Septic tank pumpout	S	100	17	17
Septic system repair	S	16	8	50
Septic system installation	S	77	8	10
Alternative waste sewage system	S	10	2	20

NOTE: BMP counts after 7/1/2009 only include 319 funded projects. BMPs funded by State CS, CREP or Federal EQIP are not included after this date (though they may have been included previously); A = Acres, S = System, F = Feet

Pollution Reductions

Pollution reductions for bacteria, nitrogen, phosphorus and sediment for BMPs installed during the project period are summarized in the table below.

Table 2. Pollution Reductions for Looney Creek: July 2009-June 2014

Pathogens: coliform (cfu/100mL)	Nitrogen (lbs/yr)	Phosphorous (lbs/yr)	Sedimentation-Siltation (tons/yr)
2.78E+15	22,008	3,392	2,152

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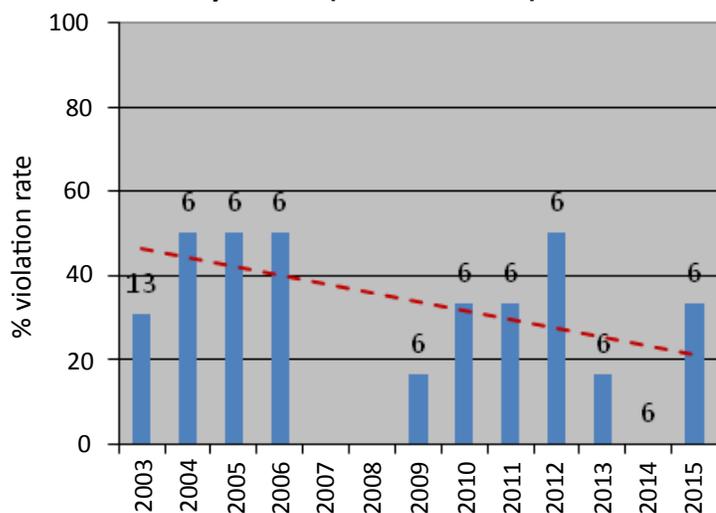
Project Funding

The total amount of cost-share provided for landowners during the project period totaled \$849,898 from both state and federal funding. State funding included cost-share through the Agricultural Cost-Share Program (\$433,495). Federal 319 funds provided \$416,403 in cost-share and \$227,613 in technical assistance funds for the MCSWCD staff to administer agricultural and residential programs in the Looney Creek project area. The landowner contributions to implement agricultural and residential BMPs totaled \$219,755. Total project funding was \$1,297,226.

Water Quality Monitoring Results

The Virginia Department of Environmental Quality (DEQ) monitors the water quality in Looney Creek and its tributaries at several stations through the agency's ambient monitoring program. The water quality data for the period of 2003 through 2015 was analyzed to determine the impact of implemented BMPs on reducing the *E. coli* violation rate and the long term trend, if any, in water quality condition.

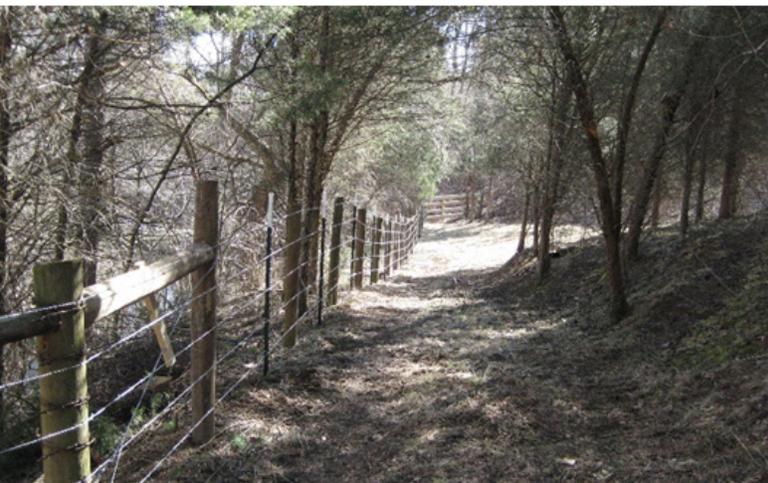
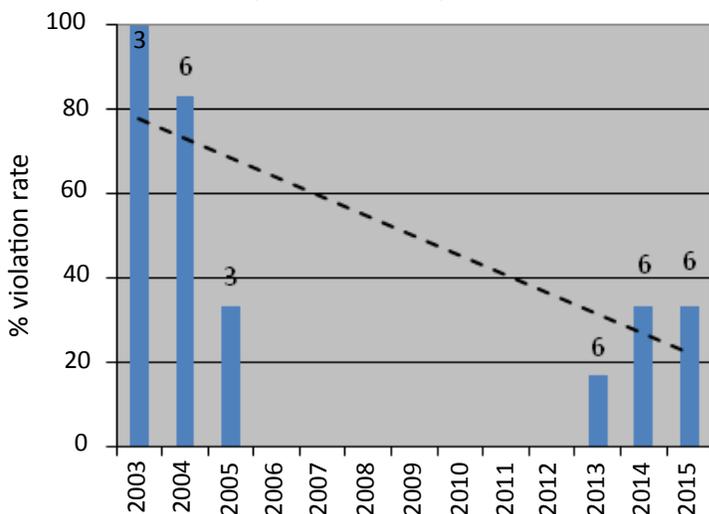
Looney Creek (2-LMC000.40)



The violation rate for Looney Creek for the 2010 water quality assessment period of 2004-2008 was 50%; the violation rate for the 2016 water quality assessment period of 2009-2014 is 25%.

The bar graphs here show the percent violation rates for samples collected annually at monitoring stations 2-LMC000.40 (Looney Creek) and 2-ELS000.08 (Ellis Run) that did not meet the *E. coli* water quality criterion of 235 cfu/100 mL. The number of samples collected each year is shown above each bar. The linear trends fitted to the data show decreasing trends in violation rates over the sampling period, indicating improvements in water quality conditions in the Looney Creek and the Ellis Run watersheds. Note no data was available for Looney Creek for 2007-2008 and for Ellis Run 2006-2012.

Ellis Run (2-ELS000.08)



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Closeout Analysis

The Looney Creek project period was for five years. DEQ decided to discontinue targeted 319 funding to the project in June 2014 due to several reasons which included:



There was a vacancy (2014) in the 319 grant funded position at MCSWCD that worked with landowners in the Looney Creek watershed promoting the implementation of agricultural and residential BMPs. MCSWCD and DCR mutually agreed that it was best to close the project instead of recruiting another local project manager.



Implementation of residential septic practices was not successful with only 18 of 103 (18%) of the repairs and replacements of failing septic systems needed based on the IP were actually completed over 5 years. Even septic tank pumpout a relatively inexpensive BMP (grant funds were available to pay 50% of the cost) was not an effective practice in the Looney Creek watershed.



This Virginia Nonpoint Source Management Program is managed by Virginia Department of Environmental Quality and is funded, in part, through grants from the U.S. Environmental Protection Agency, under the Clean Water Act Section 319.

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/Nonpoint-SourcePollutionManagement.aspx>



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