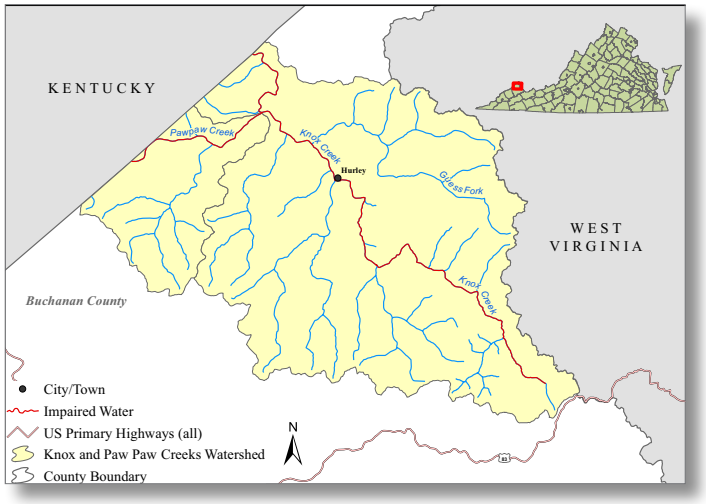
TMDL **Project Closeout Report**

KNOX & PAWPAW CREEKS

Virginia Nonpoint Source
MANAGEMENT PROGRAM

Project Location and Background

The Knox Creek watershed is primarily located in Buchanan County, Virginia with a small portion in Pike County, Kentucky. The 56,123 acre watershed is in the Tennessee/ Big Sandy River basin. The watershed is primarily forested, with a small amount of agricultural land (604 acres) and some active mining, abandoned mining and reclaimed mining land (3,710 acres). Pawpaw Creek is a tributary to Knox Creek. DEQ developed TMDLs for Knox and Pawpaw Creeks in 2006 including a bacteria TMDL for Pawpaw Creek, total dissolved solids (TDS) TMDLs for both creeks, and a sediment TMDL for Pawpaw Creek. DEQ developed a TMDL implementation plan in 2008. The Knox and Pawpaw Creek TMDL implementation project was supported by Section 319 (h) funds, and was administered by the Big Sandy Soil and Water Conservation District. The project started in July 2012 and ended December 2014.



Implementation Highlights

During the project period, the Big Sandy Soil and Water Conservation District received funding for both agricultural and residential septic best management practices that were listed in the approved TMDL implementation plan. The table on the right shows BMPs implemented in the watersheds during the project period. While progress was made with the residential septic program during the project period, participation in the agricultural program was lacking.

The total amount of federal 319 funding provided for cost-share to complete eleven onsite sewage system practices was $17,405. In addition, landowners and other funding sources were responsible for $11,404 in contributions to complete these practices. Section 319(h) funds also provided $7,000 for technical assistance funding through the Soil and Water Conservation District. In addition, $17,165 of 319 funds were spent on a mining project that was started but not completed. A total of $41,570 in 319 funds was invested in the Knox and PawPaw Creek TMDL implementation project.

Table 1: Knox and Pawpaw Creek BMP Summary: July 2012 – December 2014

Control measure	Units	Needed	Instal.	%
Agricultural				
Livestock exclusion systems	S	14	-	-
Improved pasture management	A	130	-	-
Waste storage (equine)	S	15	-	-
Manure incorporation	A	372	-	-
Vegetated stream buffer	A	41	-	-
Industrial				
Dirt road stabilization	A	39	-	-
Reclamation of abandoned mine land	A	2,085	-	-
Forest harvesting BMPs	A	7,470	-	-
Residential				
Septic tank pumpout	S	200	4	2
Septic system repair	S	100	4	4
Septic system installation	S	456	3	<1
Alternative waste sewage system	S	24	-	-
Education program	P	1	-	-
Infiltration trench	A	12	-	-
Erosion and sediment control	A	23	-	-
Vegetated stream buffer	A	44	-	-

A = Acres, S = System, P = Program

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Water Quality Improvements

The 2014 Integrated report (that analyzed data from 2007-2012) listed the following as still impaired:

Paw-Paw Creek

Benthic: VSCI Score of 50, 36 and 47 in 2004 and 2006 Pathogens: exceedances of 33%, 50%, and 41%

Knox Creek

Benthics: VSCI scores not listed in report, but all were indicating impairment

Due to limited amount of BMP implementation that was accomplished during the project period, additional water quality data was not analyzed.

Closeout Analysis

The Knox and Pawpaw Creek project period was 2 and a half years. DEQ decided to discontinue targeted 319 funding to the project as of December 2014 due to several reasons which included:

- No progress was made in the agricultural BMP program in the watershed. Much of this could be attributed to the limited amount of farmland in the watershed. No fencing practices were installed or waste storage systems for equine. The IP identified that 14 livestock exclusion systems and 15 waste storage systems (equine) were needed.

Lack of pre-project planning to gauge interest in adoption of agricultural BMPs referenced in IP.

- Implementation of residential septic practices was not successful with only 7 of 580 (1%) of the repairs and replacements of failing septic systems and straight pipes removed based on the IP were actually completed during the project period. 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 Knox and Pawpaw Creek watershed.

Due to local geology and topography in Buchanan County alternative discharging sewage systems are more commonly used as opposed to conventional sewage systems. Section 319 funds cannot be used to cost-share on sewage systems that require a VPDES permit. BSSWCD was not aware of this going into the grant funded project.

- Project was located in an area where even with 50% to 75% cost-share to repair and replace sewage systems property owners need additional assistance to correct the problems. In such cases, DEQ needs to work with the project sponsors to leverage additional funding from other sources to provide more financial assistance in order to be successful.

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/NonpointSourcePollutionManagement.aspx

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