TMDL **Project Closeout Report**

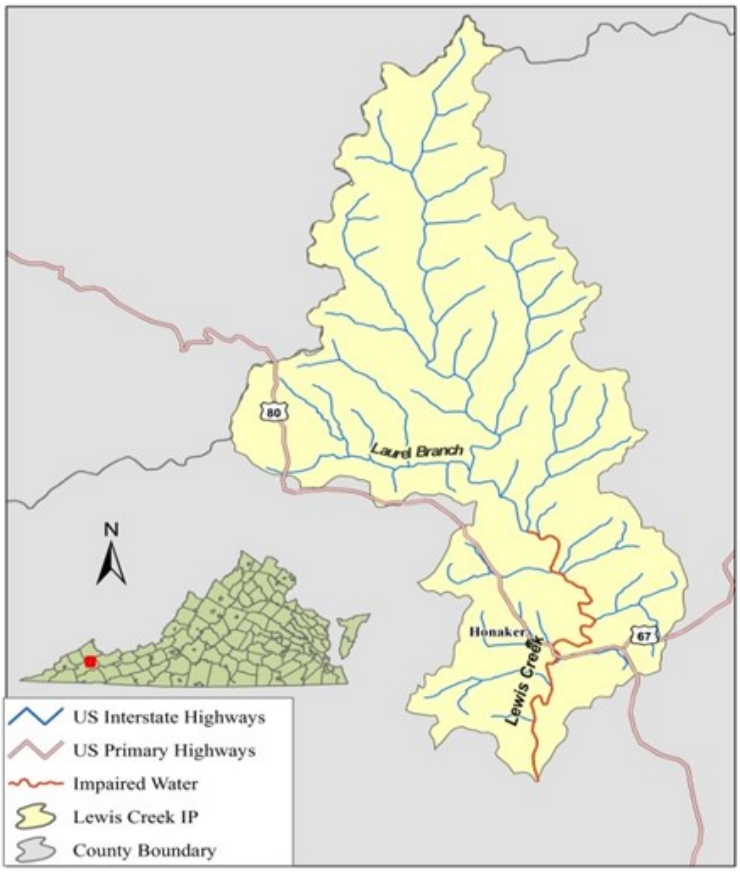
LEWIS CREEK WATERSHED—

Russell County, Virginia

Virginia Nonpoint Source
MANAGEMENT PROGRAM

Project Location and Background

The Lewis Creek watershed is part of the Tennessee/Big Sandy River basin, located in Russell County, Virginia. The watershed area is approximately 13,960 acres, with forest as the primary land use (82%), followed by agricultural (13%), barren/transitional/quarries (3%), and urban (2%) land uses. The "barren/transitional/quarries" land use category primarily represented previously mined land and abandoned mine land (AML) in the Total Maximum Daily Load (TMDL) study. Lewis Creek was listed as impaired on Virginia's *1998 Section 303(d) Total Maximum Daily Load Priority List and Report* due to violations of the General Standard (benthic). A TMDL study, completed in March 2004, identified excessive sediment as the pollutant causing the aquatic life impairment. The impaired segment is 4.84 miles in length and extends from the Lewis Creek confluence with Stone Branch downstream to its confluence with the Clinch River. With extensive input from local stakeholders, a TMDL implementation



Implementation Highlights

Agricultural The Clinch Valley Soil and Water Conservation District (CVSWCD) commenced an implementation project in 2012 to reduce sedimentation levels in Lewis Creek through installation of agricultural and urban BMPs. The implementation project ended in June 2015. Through the joint efforts of the Virginia Department of Conservation and Recreation (DCR) and the CVSWCD, as well as other stakeholders, various agricultural and urban BMPs were installed in the Lewis Creek watershed.

Overall, the CVSWCD installed a total of 9,836 linear feet of stream exclusion fencing, and three animal waste control facilities were completed in the watershed with 319 (h) funds. Funds from the Virginia Enhanced Conservation Initiative and Farm Service Agency's Conservation Reserve Program were utilized to leverage investments and enhance on-the-ground implementation. In total, 675 acres of grazing land improvement, 34 acres of buffer area, and 8,300 feet of stream exclusion were installed. Education and outreach materials were also developed to inform landowners of the cost-share program and encourage agricultural BMP implementation. continued on page 2)

Table 1: Lewis Creek BMP Summary: July 2012-June 2015

Control Measure	Units*	Goal	Installed	%
Agricultural				
Stream Exclusion Fencing	F	58,080	18,136	32
Stream Exclusion Fencing	S	31	9	29
Reforestation of Erodible	A	6	0	0
Grazing Land Improvement	A	N/A	675	N/A
Veg. Cover on Cropland	A	110	0	0
Vegetated Buffers	A	N/A	34	N/A
Harvestable Cover Crop	A	N/A	53	N/A
Animal Control Facilities	S	N/A	3	N/A
Urban/Residential				
Streambank Stabilization	F	500	0	0
Street Sweeping	CM	80	650	813

A = Acres, F = Linear Feet, S = System, CM = Curb Miles

Implementation Highlights— Continued

Additional educational outreach was conducted to train Honaker High School students in stream monitoring methods. For the urban BMPs, the Town of Honaker purchased a street sweeper to address stormwater pollution, and between July 2014 and June 2015, it collected a total of over 181 cubic yards of debris and 30 tons of gravel distributed on town streets for wintery conditions. During that time period, it is estimated that the Town will have swept 650 curb miles. Stakeholders also worked to identify interest and funding for rain gardens and installed them at Honaker Elementary School, Honaker High School, and the New People's Bank in Honaker.

Table 2: Pollution Reductions for Lewis Creek July 2012-June 2015

Time Period	Pathogens - Coliform (CFU)	Nitrogen (lbs/year)	Phosphorus (lbs/year)	Sedimentation (tons/year)
July 2012-June 2015	2.05E+15	3,568	649	656

Partnerships

Agricultural and urban conservation successes have largely been the result of partnerships between the CVSWCD and several state agencies including DCR, Natural Resources Conservation Service, Farm Service Agency, Upper Tennessee River Roundtable, and Town of Honaker. Numerous outreach events were held to promote the agricultural and urban BMPs offered under the TMDL implementation project, along with presentations at civic clubs throughout the watersheds, postcard mailings advertising the program, personal contacts with farmers and residents, and meetings updating the community on the water quality improvements.

Project Funding

The total cost of all agricultural BMPs was $865,372. Of this, $565,494 was provided as cost-share to landowners from both state and federal funding. State funding sources included Virginia Agricultural Cost-Share, Virginia Natural Resources Conservation Fund, and Water Quality Improvement Fund. Federal 319(h) funds provided $105,000 in cost-share funding and $51,000 in technical assistance funds for staff to administer the agricultural programs in the Lewis Creek watershed.

Photos: (Left) City of Honaker Street Sweeper, (Right) City of Honaker Street Sweeper in action.

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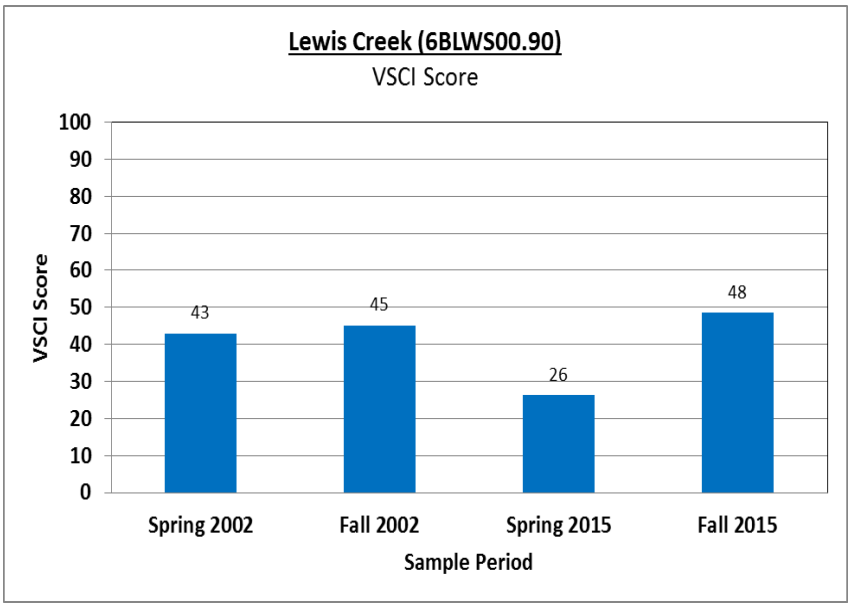
Water Quality Monitoring Results

DEQ monitors water quality at several stations throughout the Lewis Creek watershed. The Virginia Stream Condition Index (VSCI) is used to designate biological impairment of a stream. Streams with VSCI scores greater than 60 are considered non-impaired, whereas streams scoring less than 60 are considered impaired. DEQ conducted biological water quality sampling at monitoring station 6BLW000.90 (located on Route 624) in the spring and fall seasons of 2002 and 2015; the results are shown in the graph below. The number above each bar shows the VSCI score. Though VSCI scores remain below the water quality standard of 60, monitoring over a longer period of time with consistent trends is needed to corroborate water quality changes.



Graph 1: Biological monitoring data collected at Station 6BLWS000.90.

Photos: (Left Top) Town Honaker rain barrel workshop; (Right Top) Hydroseeding area of erosion on bank; (Right Bottom) Vegetation 15 days after planting.

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

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Photos: (Above) Placement of reservoir for watering facility; (Below Top) watering facility near completion; (Below Bottom): barrier fence around downhill side of watering facility to prevent animal traffic causing erosion.

Closeout Analysis

The Lewis Creek Implementation Project continued for 3 years and ended June 30, 2015. The project was very successful in working collaboratively with various partners to see work to address sediment in Lewis River was addressed, however. Ultimately not enough work could be accomplished to show measurable progress in meeting key implementation goals that could impact water quality conditions. Highlights of the Lewis Creek Implementation Project assessment included:

⇒ Active partnerships with the Virginia Enhanced Conservation Initiative, Farm Service Agency's Conservation Reserve Program, and Town of Honaker enabled CVSWCD to strengthen their on-the-ground implementation and overall results.

⇒ The street sweeper for the Town of Honaker was a unique solution to address stormwater runoff into Lewis Creek. Removing debris from town streets was an effective way to decrease the amount of sediment going into Lewis Creek. The Town took ownership of and pride in maintaining the street sweeper and continues to use it.

⇒ In addition, the rain garden at New Peoples Bank in Honaker is a good example of a private-public partnership to address stormwater issues in urban areas. Because of the bank's location next to Lewis Creek, they were able to eliminate erosion and stormwater runoff into the creek by installing a rain garden.

⇒ Interest in the agricultural BMPs needed and identified in the IP were limited.

⇒ Significant accomplishments related to resource extraction were limited.

⇒ Tracking the accomplishments by the Partnership was a difficult to document.

For More Information Please Contact:

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DEQ
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY