



Section 319

NONPOINT SOURCE PROGRAM SUCCESS STORY

South Carolina

Homeowners and Agricultural Community Reduce Bacteria Levels in Two Oconee County Creeks

Waterbody Improved

Livestock operations and failing septic systems caused excessive fecal coliform levels in two rural South Carolina creeks. In 1998 the state placed three sites (i.e., waterbody segments) along Coneross and Beaverdam Creeks on its 303(d) list for violating bacterial indicator water quality standards. The three watersheds represented by these sites did not support recreational uses because of the bacterial impairment. The South Carolina Department of Health and Environmental Control (SCDHEC) developed total maximum daily loads (TMDLs) for fecal coliform for Beaverdam Creek and two sites within Coneross Creek. Public and private partners met these TMDLs by implementing several best management practices (BMPs) designed, in part, to help the creeks meet state water quality standards for fecal coliform. At the close of the project in December 2005, all three sites were meeting South Carolina's water quality standards for fecal coliform.

Problem

Coneross and Beaverdam Creeks flow through Oconee County in the northwest corner of South Carolina. Water quality monitoring data within the two rural watersheds showed that three sites consistently exceeded state water quality standards for fecal coliform. As a result, South Carolina placed two sites on Coneross Creek and one site on Beaverdam Creek on its 303(d) list for fecal coliform bacteria violations. These watersheds encompass 47,016 acres in Coneross Creek and 9,099 acres in Beaverdam Creek. Staff at SCDHEC attributed the violations to failing septic systems and runoff from animal management sites. South Carolina removed the Beaverdam Creek site from the 303(d) list in 2000 and the Coneross Creek site in 2002 because a TMDL had been developed and approved for each station. However, water quality standards were not met at any of the three sites until 2005.

Project Highlights

In 2002 South Carolina initiated a 3-year project to develop and implement three fecal coliform TMDLs for the creeks. To effectively meet the TMDLs, project partners developed a watershed-based plan that targeted the



This alternative watering source on the Hendrix Farm keeps cattle out of nearby creeks and ponds.

agricultural community and homeowners with septic systems needing repair or replacement.

The plan included an extensive community education component. Through various outreach efforts, project partners improved homeowner awareness of the importance of proper septic system maintenance. Outreach to the agricultural community included information about various BMPs to improve water quality.

By 2005, homeowners and farmers had taken many steps to improve Coneross and



This septic tank was completely filled with solids. Cooperators removed the solids and replaced the tank.

Beaverdam Creeks. Using the technical and financial support of project partners, homeowners repaired or replaced 38 failing septic systems. Likewise, project partners helped the agricultural community to adopt 80 BMPs, which included planting buffers and field borders, fencing cattle from creeks and providing alternative water sources, building waste-storage sheds, and installing compost facilities.

Results

Monitoring data from SCDHEC show that the efforts of the project team members, homeowners, and the agricultural community resulted in a measurable reduction in fecal coliform in Coneross and Beaverdam Creeks. By the end of the project in December 2005, data from each of the three stations showed that the water was meeting water quality standards for fecal coliform (South Carolina's water quality standard for fecal coliform bacteria allows for no more than 10 percent exceedances of the 400 cfu/100 mL instantaneous criterion). Monitoring will continue at all three stations to ensure that standards are maintained.

In addition to the obvious water quality benefits, the Coneross Creek and Beaverdam Creek project has resulted in many physical, economic, and social benefits to project participants. Agricultural producers, for example, discovered that implementing the



Waste stacking sheds, like this one, reduce the amount of fecal coliform that washes away after a rain event.

BMPs improved forage management and utilization, distributed livestock grazing patterns more evenly, and increased revenue from the addition of product lines such as compost.

Partners and Funding

The project was a partnership between SCDHEC, Clemson University, U.S. Department of Agriculture–Natural Resources Conservation Service, Oconee County Soil and Water Conservation District, and the Oconee County Cattlemen's Association. The project used just over \$583,000 in federal 319 funds (GRTS Grant # 994629020). The total cost for this project, including 319 funds, Environmental Quality Incentives Program (EQIP), and match, was over \$1,100,000.



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