Section 319
NONPOINT SOURCE PROGRAM SUCCESS STORY

Georgia

Using Agricultural Best Management Practices Restores Creek

Waterbody Improved

Fecal coliform from animal agriculture areas, failing septic tanks and impervious surfaces caused Georgia's Reedy Creek to violate water quality standards. As a result, Georgia's Environmental Protection Division (EPD) added a 13-mile segment of Reedy Creek to Georgia's Clean Water Act (CWA) section 303(d) list of impaired waters for fecal coliform bacteria in 2000 and 2004. Using CWA section 319 and Environmental Quality Incentives Program (EQIP) funds, farmers installed numerous best management practices (BMPs) on pasturelands adjoining the creek's impaired segments. Water quality improved, prompting Georgia EPD to remove the 13-mile segment of Reedy Creek from the list of impaired waters for fecal coliform in 2006.

Problem

Reedy Creek's 13-mile-long impaired segment flows through Wayne and Appling counties, north of where Reedy Creek joins the Satilla River in southeastern Georgia (Figure 1). Cropland is mostly on the well-drained soils on long, narrow and flat-to-gently-sloping-ridges paralleling many of the stream courses. The broad flats of the watershed are often poorly drained and support pine trees, and the wet, narrow floodplains support bottomland hardwood forests. Pastures, cropland and hayfields cover approximately 22 percent of the area.

Monitoring data collected in the late 1990s show that Reedy Creek violated the fecal coliform water quality standard for its fishing designated use classification (its most stringent classification). The standard requires that fecal coliform levels not exceed a geometric mean (four samples collected over a 30-day period) of 200 colony forming units (cfu) per 100 milliliters (mL) in the summer and 1,000 cfu/100 mL in the winter.

Data show that Reedy Creek violated water quality standards for fecal coliform in one of four geometric mean sampling sets in 1998. Because Reedy Creek did not meet criteria to support its fishing designated use classification, Georgia EPD added a 13-mile-long segment of the creek to Georgia's 2000 CWA section 303(d) list of impaired waters for high fecal coliform levels. Georgia EPD identified the primary sources as animal waste from upslope practices and stormwater runoff on land without BMPs in place.

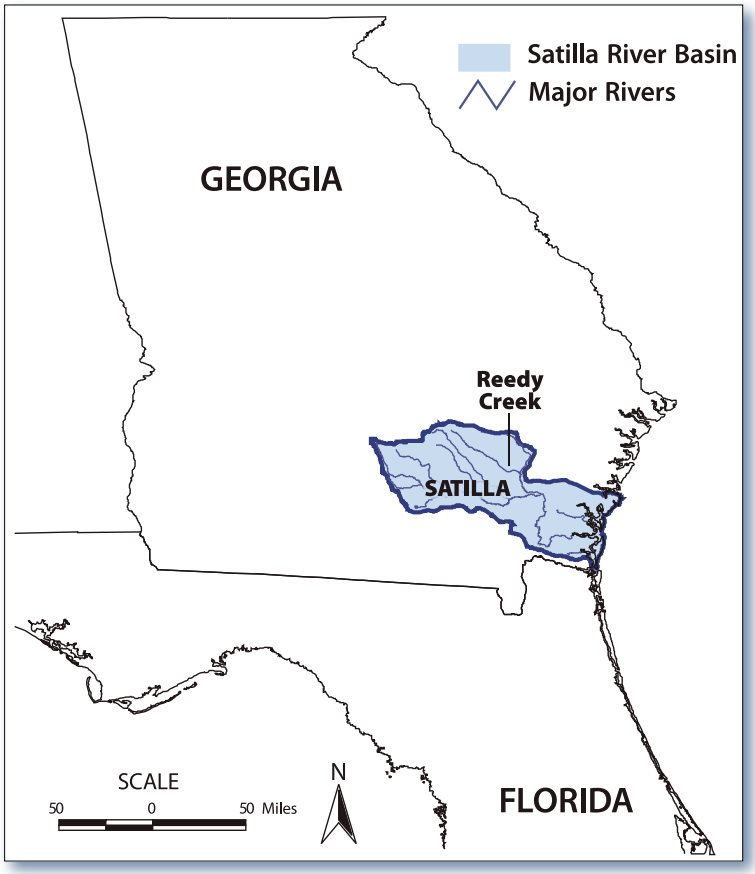

Figure 1. Reedy Creek is a tributary of Georgia's Satilla River.

Figure 2. This farmer combined heavy use area protection with an alternate watering source.

Figure 3. This farmer is planting a pasture as a cover crop on a critical watershed area.

Georgia EPD developed a total maximum daily load (TMDL) study for pathogen loads in the Satilla River watershed; the U.S. Environmental Protection Agency approved the TMDL in 2000. The TMDL determined that pathogen loading into Reedy Creek must be reduced by 92 percent to meet water quality requirements for fishing. The TMDL attributed the pathogen loading to agriculture.

Project Highlights

Using a combination of CWA section 319 and EQIP funding, the Seven Rivers Resource Conservation and Development Council worked with local landowners to install BMPs that reduce pathogen runoff into Reedy Creek and improve the landowners' operations. The U.S. Department of Agriculture's Natural Resources Conservation Service offices in Wayne and Appling counties provided additional technical assistance and support.

CWA section 319 funds paid for several BMPs along Reedy Creek, including installing two foundations to support cattle and soil in heavy-use areas (places where cattle gather for watering and feeding) to prevent erosion (Figure 2), adding two grade-stabilization structures to prevent stream bank failure, seeding pastures and planting riparian zones to protect critical areas at three locations (Figure 3), installing pipelines and other alternative water structures such as wells and ponds at two sites to keep livestock out of streams, and building one poultry litter stackhouse. Those water quality control measures also provide livestock health benefits and improve area aesthetics. Local agriculture agency partners advised landowners on the technical design and specifications of BMPs and provided oversight and expertise during installation. Landowners participated voluntarily and provided partial labor and funds for the BMPs, which were installed between 2000 and 2005.

Results

Georgia EPD collected monitoring data on Reedy Creek in 2003 as part of a larger effort to update the Satilla River fecal coliform TMDL. These data show that Reedy Creek no longer violated standards in 2003. In January and July 2003, the geometric mean values were 101 cfu/100 mL and 89 cfu/100 mL, respectively—well below water quality standards. The revised TMDL, approved in 2006, found that Reedy Creek met water quality standards for its designated use and required no additional load reductions. On the basis of that information, Georgia EPD removed the 13-mile segment of Reedy Creek from the state's list of impaired waters in 2006.

Partners and Funding

A total of $29,946 in CWA section 319 funding supported projects in the Reedy Creek watershed. Producers provided the remaining 40 percent of BMP construction costs for a total of $49,910. EQIP funding was provided to producers at a 50-50 cost-share ratio. Key partners in this effort include the Wayne and Appling counties' Soil Conservation Districts, Seven Rivers Resource Conservation and Development Council, and the Natural Resources Conservation Service. Agents of these generous partners provided technical expertise and labor. Landowners in the Satilla River watershed contributed in-kind labor hours and some funding.

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