Section 319
NONPOINT SOURCE PROGRAM SUCCESS STORY

Georgia

Repairing Failing Septic Systems and Installing Best Management Practices Restore Rubes Creek

Waterbody Improved

Leaking septic tanks in residential areas and polluted runoff from impervious surfaces caused abnormally high fecal coliform (FC) bacteria levels in Georgia's Rubes Creek. As a result, the Georgia Environmental Protection Division (GEPD) placed a 7-mile segment of the creek on its Clean Water Act (CWA) section 305(b)/303(d) list of impaired waters in 2003. Using CWA section 319 and third-party grant funding, stakeholders installed a number of best management practices (BMPs), including septic system repairs, on properties adjoining the creek's impaired segment. Water quality improved, prompting GEPD to remove the 7-mile segment from the state's 2010 CWA section 305(b)/303(d) list of impaired waters for FC bacteria.

Problem

Rubes Creek flows through Cherokee and Cobb counties in northwest Georgia's Coosa River watershed (Figure 1). Rubes Creek is in the Blue Ridge ecoregion. One of the most floristically diverse areas in the eastern United States, the southern Blue Ridge is home to Appalachian oak forests; shrub, grass and heath balds; and hemlocks, cove hardwoods and oak-pine communities.

Rubes Creek is designated for fishing use (i.e., secondary contact recreational use). To support that designated use, the FC geometric means in Rubes Creek must remain below 200 colony-forming units (cfu) per 100 milliliters (mL) of water in the summer (May to October) and below 1,000 cfu/100 mL in the winter (November to April). A single-sample maximum criterion of 4,000 cfu/100 mL for the winter months also applies. Water quality data collected in Rubes Creek from 1993 to 2003 showed that four of five FC summertime geometric means exceeded the state's bacteria water quality criteria for fishing use (Table 1). As a result, GEPD added a 7-mile segment to the 2003 CWA section 305(b)/303(d) list of impaired water for high FC bacteria levels. GEPD identified urban runoff, animal waste, sanitary sewer leaks, and failing septic systems as likely bacteria sources.

A total maximum daily load (TMDL) study for pathogens in 58 stream segments in the Coosa River watershed, which includes Rubes Creek, was

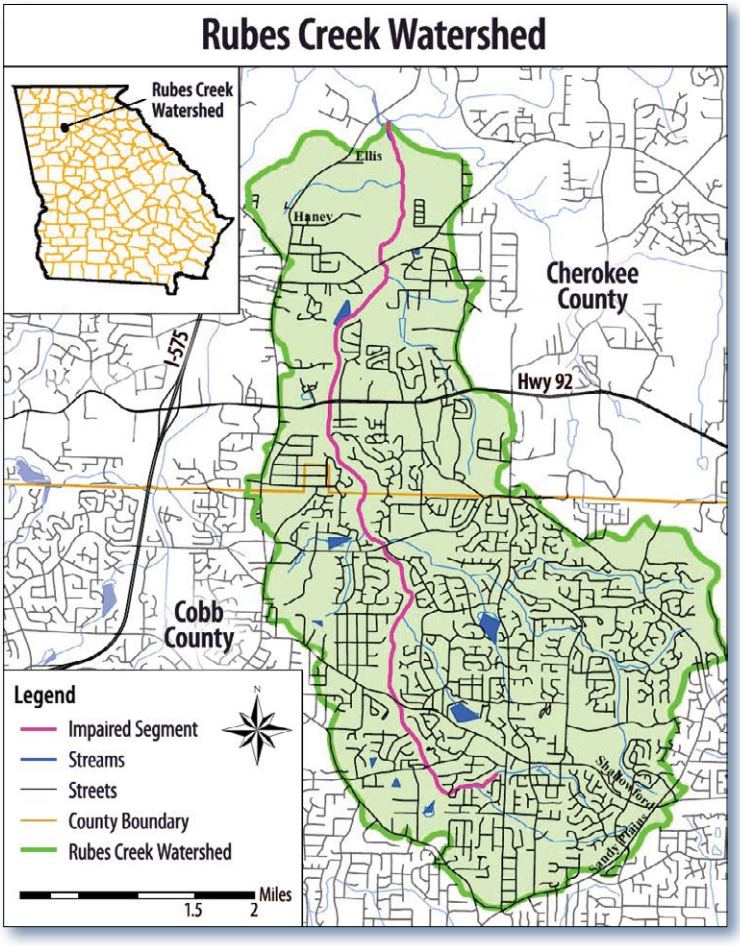

Figure 1. Rubes Creek is in northwest Georgia.

Figure 2. Watershed partners worked with a residential landowner to repair a failing septic system (left: before, right: after).

established by the GEPD and approved by EPA in 2004. GEPD cited runoff from failing septic systems as the primary source of FC bacteria and urban runoff as a secondary source. The TMDL noted that bacteria levels would need to be reduced by 50 percent to allow Rubes Creek to meet the water quality criterion necessary to support the fishing designated use.

Project Highlights

Using a combination of CWA section 319 funding and additional funds obtained through Cherokee County, The Nature Conservancy, the Wildlife Fund, and the City of Canton, the Limestone Valley Resource Conservation & Development Council (RC&D) worked with local stakeholders to promote and install BMPs that would reduce pathogen runoff into Rubes Creek. Partners used 2006 CWA section 319 funds to repair a failing septic system that was contributing high levels of bacteria to the stream (Figure 2). CWA section 319 funds also supported the installation of approximately 250 feet of grassed swales (vegetated channels designed to treat and attenuate stormwater runoff), which helped reduce bacteria loading into the creek from agricultural lands. Stakeholders participated voluntarily, providing partial labor and funds for the BMPs. The agricultural BMPs were installed in 2009, and they continue to help meet the load reduction allocations established by the TMDL.

Results

In the most recent (2008–2009) FC bacteria sampling of the 7-mile segment of Rubes Creek, state scientists found that all four FC bacteria geometric means complied with the state-established water quality criteria for both summer and winter (see Table 1). The FC data indicate that the stream now supports its fishing designated use, prompting the GEPD to remove the segment from the state's 2010 CWA section 305(b)/303(d) list of impaired water for FC bacteria.

Table 1. Rubes Creek seasonal monitoring data[a] (1995–2009)

Date	FC Bacteria Geometric Mean (cfu/100 mL)
Sept 1995	**482 (S)**
Nov 1995	111 (W)
Oct 1999	108 (S)
Apr 2001	101 (W)
June 2001	**281 (S)**
Feb 2003	138 (W)
May 2003	**245 (S)**
Aug 2003	**342 (S)**
Winter 2008	103(W)
Summer 2008	149 (S)
Winter 2009	92 (W)
Summer 2009	153 (S)

[a] Bold values indicate exceedances of the applicable seasonal standard:
- S = summer (May–Oct): Must be less than 200 cfu/100 mL geometric mean
- W = winter (Nov–Apr): Must be less than 1,000 cfu/100 mL geometric mean

Partners and Funding

Rubes Creek has benefitted from $2,760 of CWA section 319 funding. Homeowners provided the remaining 40 percent of BMP costs for a total of $4,600 directed toward BMP construction. An additional $6,000 in federal CWA section 319 funds was provided for additional BMPs, implemented after monitoring was completed, to ensure continued protection of the creek. Between 2004 and 2008, the U.S. Department of Agriculture provided more than $124,900 in Natural Resources Conservation Service Environmental Quality Incentive Program funds and $30,000 in Farm Service Agency funds to farmers in Cherokee County. Key partners in this effort include the Upper Etowah River Alliance, the Limestone Valley RC&D, and the Cherokee County Environmental Health Department. Agents of these generous partners provided technical expertise and labor. Landowners in the Coosa River watershed contributed in-kind labor hours and some matching funds.

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