Section 319
NONPOINT SOURCE PROGRAM SUCCESS STORY
Virginia

Concerted Watershed Effort Improves Several Streams

Waterbody Improved

Agricultural and residential activities in the Middle Fork Holston River watershed in southwestern Virginia have caused the river to become impaired by sediment and fecal coliform. Urban and agricultural activities—including targeting failing septic systems and excluding livestock from streams—helped reduce fecal coliform values to creeks draining into the River, and resulted in a 50 percent reduction of bacteria water quality violations in one of these creeks.

Problem

In 1998 four tributaries of the Middle Fork Holston River—Cedar, Hall, Byers, and Hutton Creeks—were identified as impaired and placed on the section 303(d) list for exceedances of the fecal coliform water quality standard. Land use in the Cedar, Hall, Byers, and Hutton Creek watersheds is predominantly agriculture, residential, and forest. Bacteria from more than 6,590 sheep, horses, beef cows, dairy heifers, and dairy cows and 1,139 septic systems contributed to high fecal coliform levels in the creeks. Fecal coliform total maximum daily loads (TMDLs) were approved in 2000, and benthic TMDLs were approved in 2003.

Project Highlights

In 2001 the Virginia Department of Conservation and Recreation (DCR) developed an implementation plan, with support from EPA's section 319 funding, with a goal of achieving the required reductions and restoring these waters to full health within 6 to 10 years. The Holston River Soil and Water Conservation District (SWCD) agreed to oversee implementation of both the agricultural and residential programs in accordance with the plan. Best management practices (BMPs) identified in the plan included excluding livestock from streams, identifying practices to correct failing septic systems and straight pipes conveying human waste to the streams, and reducing by 10 percent the fecal coliform runoff from pastures and hayfields in the Hutton Creek watershed.

The urban and agricultural BMPs implemented by homeowners and farmers in the watershed have helped tremendously in reducing loadings to the creeks. Residents have responded to educational efforts and are working to properly maintain their septic tanks. As of December 2004, 120 septic tanks have been pumped and 16 on-site sewage disposal systems have been upgraded. Farmers have installed 14.2 miles of stream fencing; implemented livestock grazing management systems, including watering sources and travel lanes; and improved 3,588 acres of pasture and 13 acres of riparian forest buffers along Hutton Creek. Approximately 70 percent of the agricultural producers in the watershed have been contacted about the goals of the implementation plan.

Results

The Virginia Department of Environmental Quality (DEQ) monitors the impaired streams through the agency's ambient monitoring program. Since the beginning of implementation efforts in 2001, high fecal coliform values have decreased in the Byers, Cedar, and Hutton Creek watersheds (Figure 1). Bacteria water quality violations of the 1,000 cfu/100 mL instantaneous standard for fecal coliform

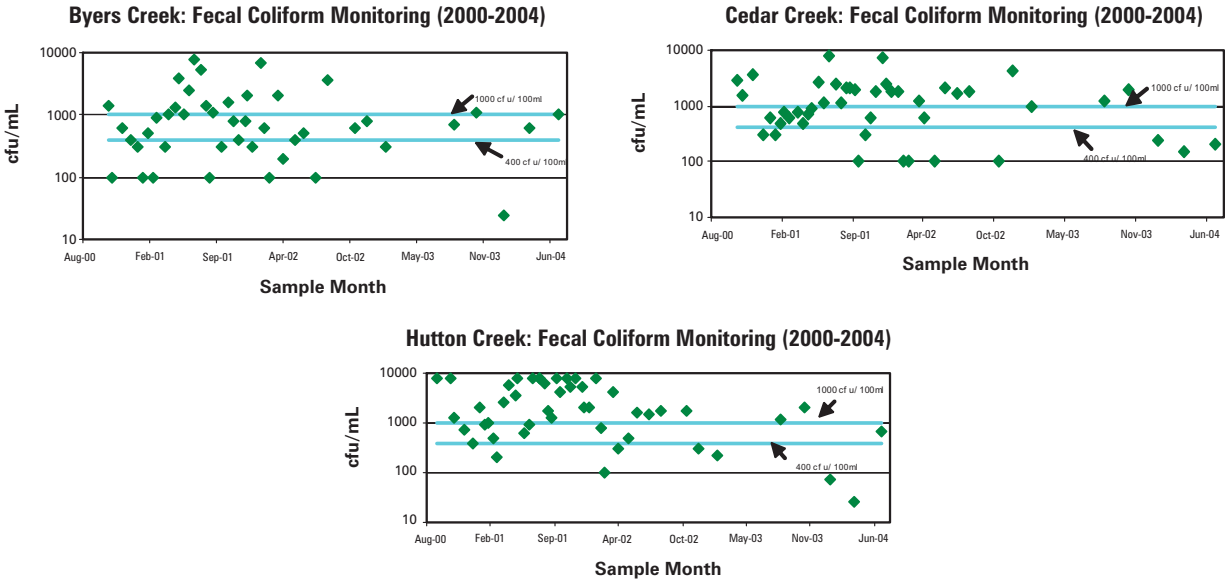

Figure 1

bacteria were reduced by an annual average of 50 percent during the period 2000 to 2004 in Hutton Creek. Ongoing monitoring will be necessary to verify a sustained decrease in fecal coliform concentrations and general overall improvement in water quality.

Partners and Funding

The Natural Resources Conservation Service, Tennessee Valley Authority, U.S. Fish and Wildlife Service, Virginia DEQ, Holston River SWCD, Virginia DCR, U.S. Environmental Protection Agency Region 3, and volunteers have contributed to the success of this project. To date, 54 long-term contracts with producers have been developed to allocate approximately $555,300 to install needed BMPs. From the start of the implementation project in September 2001 through December 2004, $607,068 from section 319 funding has been spent—$282,068 for technical assistance/educational activities and $325,000 for the installation of BMPs. Other funding was also obtained from the Environmental Quality Incentive Program ($1.4 million from approved contracts), the Conservation Reserve Enhancement Program ($101,822), the U.S. Fish and Wildlife Service, and the Tennessee Valley Authority. The U.S. Fish and Wildlife Service and the Tennessee Valley Authority provided a total of $23,111 in BMP funding.

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