NONPOINT SOURCE SUCCESS STORY

Mississippi

Implementing Conservation Practices Reduced Polluted Runoff, Restoring the Biological Integrity of Caney Creek

Waterbody Improved

Sedimentation and organic enrichment from silvicultural and agricultural activities impacted water quality in Mississippi's Caney Creek. As a result, the Mississippi Department of Environmental Quality (MDEQ) placed Caney Creek on the state's 2002 Clean Water Act (CWA) section 303(d) list of impaired waters for aquatic life use impairment. Implementing best management practices (BMPs) as part of the Pickwick Reservoir Tributaries Restoration and Protection Project significantly reduced sediment and nutrients entering Caney Creek. As a result, a 4.99-mile segment of Caney Creek was assessed as attaining the aquatic life use in the state's 2014 CWA section 305(b) report.

Problem

Caney Creek is in the Coke Creek–Caney Creek Watershed (HUC 060300051104) in northern Mississippi's Tishomingo County. The watershed spans approximately 22,202 acres, and is comprised primarily of agricultural land, timberland and pastureland (Figure 1). Pollution sources in Caney Creek included sedimentation from silviculture and agricultural practices, organic enrichment from agricultural processes, and habitat alterations.

Biological community data are routinely used by MDEQ to determine if streams are healthy enough to support a balanced aquatic community. Caney Creek (Waterbody ID: MS700312) was monitored in 2001 as part of Mississippi's biological monitoring program. Using MDEQ's index of biological integrity, the Mississippi Benthic Index of Stream Quality (M-BISQ), Caney Creek scored 48.14, less than the assessment threshold of 57.71 required to attain aquatic life use support for this region. Therefore, Caney Creek was placed on the 2002 CWA section 303(d) list for aquatic life use impairment; it was subsequently selected as a priority watershed for restoration activities by MDEQ.

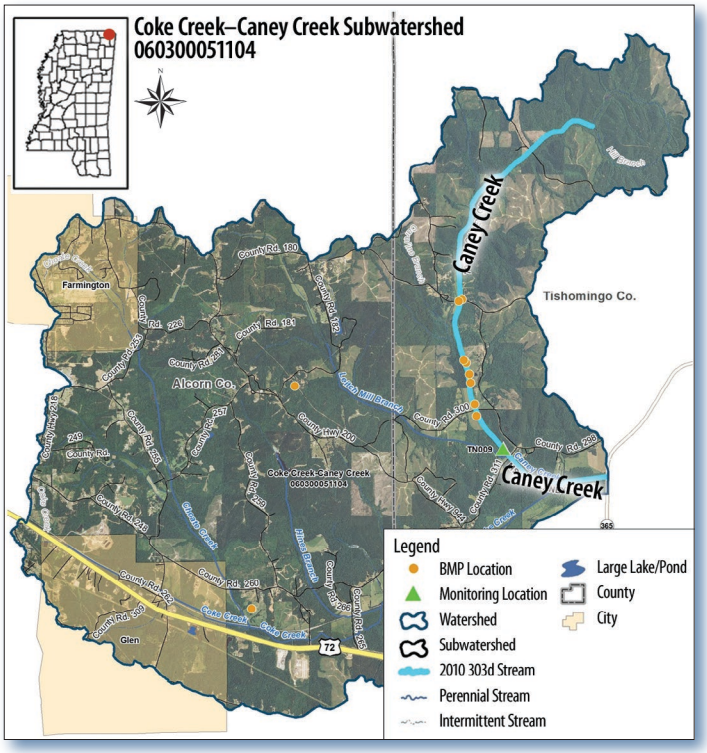

Figure 1. The 22,202-acre Coke Creek–Caney Creek subwatershed is in northern Mississippi.

Project Highlights

In 2007 MDEQ partnered with the Mississippi Soil and Water Conservation Commission, the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) and the Tishomingo County Soil and Water Conservation District to implement the Pickwick Reservoir Tributaries Restoration and Protection Project. BMP installations within the Coke Creek–Caney Creek watershed as part of this project began in 2009 and were com-

Figure 2. Grade stabilization structures in Caney Creek were used to prevent erosion and enhance the environmental quality of the creek.

Figure 3. Critical area planting along Caney Creek was necessary to establish permanent vegetation on sites that had high erosion rates.

pleted by the end of that year. The BMPs supported with CWA section 319 funds included over 40 acres of nutrient management, eight grade stabilization structures (Figure 2), one pond and one critical planting area (Figure 3) within the Caney Creek subwatershed. In addition, conservation practice systems were installed by NRCS in coordination with the watershed project ongoing in the Coke Creek–Caney Creek watershed, including four grade stabilization structures, 128 acres of prescribed grazing, 99 acres of nutrient management, 55 acres of tree/shrub establishment and one animal watering facility.

Results

In 2011 MDEQ returned to the original sampling location in Caney Creek to collect biological community data. The score was 87.92, above the threshold for attainment in this region. Using this 2011 data, a 4.99-mile segment of Caney Creek was assessed as attaining the aquatic life use in the 2014 CWA section 305(b) report.

Partners and Funding

The restoration of Caney Creek was a collective effort between the Mississippi Soil and Water Conservation Commission, MDEQ, U.S. Environmental Protection Agency, NRCS and the Tishomingo County Soil and Water Conservation District. The total cost of the overall Pickwick Reservoir Tributaries Restoration and Protection Project was $1,219,228, of which $720,900 was comprised of CWA section 319 funds. Section 319 funds were expended in the following way: $139,006 for technical assistance, $42,417 for education and information outreach, and $540,477 for BMP installation. Participating state and local stakeholders contributed a total of $498,328 towards the implementation of the watershed project.

U.S. Environmental Protection Agency
Office of Water
Washington, DC

EPA 841-F-15-001YY
November 2015

For additional information contact:

Ann Porter
Mississippi Department of Environmental Quality
Ann_Porter@deq.state.ms.us
601-961-5394