



NONPOINT SOURCE SUCCESS STORY

Tennessee

Riparian Restoration Supports McCutcheon Creek Recovery

Waterbody Improved

McCutcheon Creek was added to Tennessee's Clean Water Act (CWA) section 303(d) list in 2002 for siltation after a bioreconnaissance survey in 1999 yielded ambiguous results. Multiple nongovernmental organizations, municipalities, and a private industry partnered to assess the watershed and mitigate pollutant sources. Using private donations of time and money, as well as funding from CWA section 319 and the Tennessee Department of Agriculture's (TDA's) Agricultural Resources Conservation Fund (ARCF), the habitat improved. After a 2019 survey indicated a healthy habitat, all 12.27 miles of McCutcheon Creek were delisted for siltation/sedimentation on Tennessee's 2022 List of Impaired and Threatened Waters.

Problem

McCutcheon Creek (TN06040003034_0300) is in the Rutherford Creek Upper Watershed (TN0604000203) in Maury and Williamson counties, Tennessee (Figure 1). The designated uses for McCutcheon Creek include fish and aquatic life, recreation, livestock watering and wildlife, and irrigation. The headwaters of McCutcheon Creek are near the city of Spring Hill, Tennessee, which is one of the Top 10 fastest growing cities in the nation, according to U.S. Census Bureau 2020–2021 data. These data also show that Williamson County is experiencing the most rapid growth in Tennessee. Land use along McCutcheon Creek is evolving quickly from mostly agrarian to densely urban and residential, which is putting significant stress on the stream.

In October 1999, the Tennessee Department of Environment and Conservation (TDEC) performed a bioreconnaissance survey (biorecon or BR) which yielded an ambiguous result with a score of 9. (A biorecon is a screening tool used by TDEC to provide a quick evaluation of the relative health of the biological community. Biorecon scores of 5 to 9 indicate that more information is needed to determine impairment.) A habitat assessment conducted on McCutcheon Creek provided a habitat score of 119. Although a passing score for McCutcheon Creek for that time of year was 114, TDEC field staff noted the presence of sand and silt and high levels of turbidity. Based on these observations, the stream was added to Tennessee's CWA section 303(d) list in 2002 for siltation due to land development and urban runoff/storm sewers. A subsequent evaluation in 2003 indicated a slight decline,

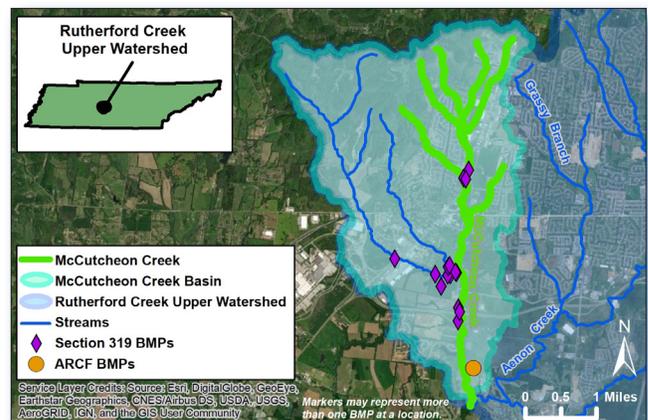


Figure 1. McCutcheon Creek is in central Tennessee.

with a habitat score of 111. In 2010, the habitat score indicated improvement (score of 132); however, due to rapid urbanization in the watershed, TDEC decided to continue surveillance prior to delisting the stream. In 2018, the sources of pollution were updated to site clearance (land development or redevelopment) and grazing in riparian or shoreline zones.

Story Highlights

In 2003, with the assistance of a CWA section 319 grant, the Tennessee Scenic Rivers Association (TSRA) began restoration work along McCutcheon Creek in Jerry Erwin Park in Spring Hill (Figure 2). In 2005, the Harpeth Conservancy (formerly known as the Harpeth River Watershed Association) was contracted to write a watershed-based plan for Rutherford Fork Creek and its tributaries to aid in focusing the efforts of multiple organizations. A third CWA section 319 grant

was awarded to the Tennessee Environmental Council (TEC) in 2010 to continue habitat restoration work in the watershed. In early 2019, the Maury County Soil and Water Conservation District used funds from ARCF to assist with several farm-based best management practices (BMPs). In total, 23 BMPs were installed with the support of CWA section 319 grants, and four BMPs were built using ARCF dollars in the McCutcheon Creek subbasin between August 2004 and August 2022. The CWA section 319 grants totaled \$92,500, with nearly 40% of the funds (\$35,574) used for on-the-ground projects. Additionally, \$12,815 was invested in the subbasin by ARCF. Projects included riparian forest buffers, streambank and shoreline protection, and agricultural practices such as alternative watering sources (Table 1).

Table 1. BMPs installed in the McCutcheon Creek subbasin.

BMPs	Amount installed	Funding source
Channel bank vegetation	528 feet (ft)	319 funds
Raingarden/bioretention basin	1	319 funds
Riparian forest buffer	11,081 ft	319 funds
Streambank/shoreline protection	1,441 ft	319 funds
Alternative water sources	2	ARCF funds
Heavy use area protection	2	ARCF funds
Pipeline	1,550 ft	ARCF funds
Fence	900 ft	ARCF funds

Results

During TDEC’s 2019 sampling cycle, a habitat assessment of McCutcheon Creek generated a habitat score of 124. In addition, a Semi-Quantitative Single Habitat (SQSH) sampling was performed, which measures the abundance and diversity of macroinvertebrates, and the macroinvertebrate community in the stream had recovered sufficiently to earn a Tennessee



Figure 2. The TSRA installed a riparian forest buffer along McCutcheon Creek at Jerry Erwin Park in the city of Spring Hill.

Macroinvertebrate Index (TMI) score of 36 (exceeding the passing score of 32). In Tennessee, the criteria for siltation/sedimentation impairment is quantitative and is based on habitat and the waterbody’s associated biology. Because both the habitat and biology had recovered, the criteria for siltation was no longer being violated. McCutcheon Creek is now fully supporting all its designated uses, and TDEC removed it from Tennessee’s 2022 List of Threatened and Impaired Waters for siltation/sedimentation from site clearance (land development or redevelopment) and grazing in riparian or shoreline zones.

Partners and Funding

McCutcheon Creek was restored to fully supporting status through the cooperative efforts of nongovernmental organizations, municipalities and private donations. A total of \$92,500 was provided through CWA section 319 grants. An additional \$55,284 was contributed by key partners, including TSRA, TEC, Harpeth Conservancy, Maury County School District (Spring Hill High School), the Saturn Corporation and private landowners. A private landowner enrolled in the ARCF program provided \$3,910 to complete practices along McCutcheon Creek, with additional, unquantified investment of time for education and outreach completed by TDA’s Nonpoint Source Program Watershed Coordinators and staff.



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