



# NONPOINT SOURCE SUCCESS STORY

# Tennessee

## Habitat Restoration and Agricultural Best Management Practices Aid in Returning Rutherford Creek to Fully Supporting Status

### Waterbody Improved

Rutherford Creek was added to Tennessee’s 1996 Clean Water Act (CWA) section 303(d) list for impairment from inorganics and siltation due to major industrial point source and surface mining. In 2012, the causes and sources of pollution in Rutherford Creek was amended to loss of biological integrity due to siltation, nitrate+nitrite, and total phosphorus from pasture grazing and discharges from municipal separate storm sewer (MS4) areas. From 2002 to 2018, partners implemented habitat restoration practices and agricultural best management practices (BMPs), which improved water quality. As a result, a 12.5-mile segment of Rutherford Creek was removed from the 2016 impaired waters list for all sources and causes.

### Problem

Rutherford Creek (TN06040003034 – 3000; formerly listed as TN06040003034 – 2000 and 3000, TN06040003034 – 2000, and TN06040003034) is within the Rutherford Creek Lower watershed (060400030201), in Maury and Williamson counties, Tennessee (Figure 1). Recreational paddlers enjoy Rutherford Creek’s Class II and III rapids. The primary land cover in the Rutherford Creek Lower watershed is pasture and hay; however, both Maury and Williamson counties experienced significant population growth between 2010 and 2017 (13.9 percent and 23.5 percent, respectively), resulting in increased pressure from urbanization.

On Tennessee’s 1996 CWA section 303(d) list, Rutherford Creek was identified as impacted by inorganics and siltation from major industrial point sources and surface mining sources. By 2012, TDEC had amended the causes and sources of pollution on Rutherford Creek to be a loss of biological integrity due to siltation, nitrate+nitrite, and total phosphorus due to pasture grazing and discharges from an MS4 area. In 1999 the Tennessee Department of Environment and Conservation (TDEC) conducted a habitat assessment of Rutherford Creek and recorded a habitat score of 111 (114 being the minimum allowable score for meeting state criteria in ecoregion 71i). During 2003 sampling, the habitat score had fallen to 95. In 2005 TDEC completed a total maximum daily load (TMDL) for siltation and habitat alteration for

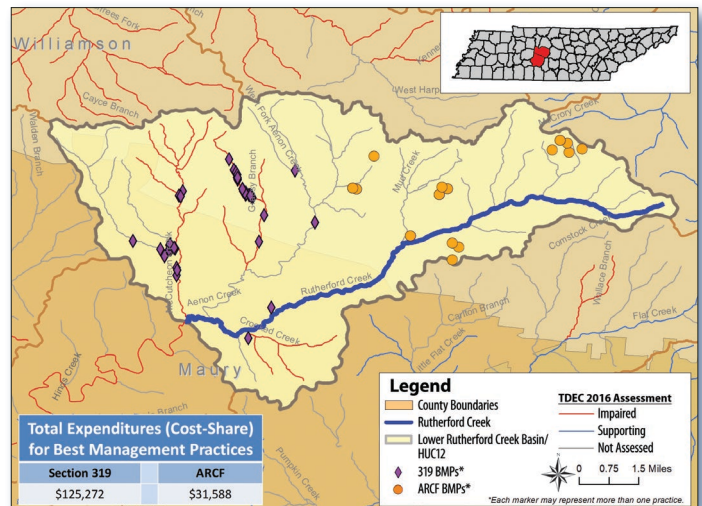


Figure 1. Map of Rutherford Creek (TN06040003034 – 3000) within the Rutherford Creek Lower watershed.

the Lower Duck River watershed (06030001), which includes Rutherford Creek. A goal of the TMDL was to reduce the overall siltation load on Rutherford Creek by 32.7 percent to improve aquatic habitat.

### Story Highlights

In 2004 the Tennessee Scenic River Association (TSRA) was awarded a CWA section 319 grant for restoration efforts along Rutherford and McCutcheon creeks and their tributaries (see Figure 2). The TSRA assisted with the implementation of six riparian forest buffers and one streambank protection project. The Tennessee



Figure 2. Partners established a riparian forest buffer in Jerry Erwin Park (left bank) along McCutcheon Creek, a tributary to Rutherford Creek.

Environmental Council (TEC) was awarded three CWA section 319 grants between 2006 and 2013 to implement BMPs along Rutherford Creek and its headwaters. Practices implemented by TEC include three rain gardens, two channel bank stabilizations, 19 riparian forest buffers, one stream habitat improvement and management project, 20 streambank protection projects, and two tree plantings.

The Tennessee Department of Agriculture's (TDA's) Agricultural Resources Conservation Fund (ARCF) program has supported the implementation of 29 agricultural BMPs along Rutherford Creek and its tributaries, including fencing, heavy use areas, and cropland conversion, among others.

## Results

Habitat assessments performed by TDEC in 1999 and 2003 indicated that Rutherford Creek was failing to meet water quality standards (habitat scores of 111 and 95, respectively, with 114 being the minimum allowable score for meeting state criteria). Sampling was performed in September 2014 and October 2015 by Development & Environmental Planning Associates, LLC (DEPA) on behalf of the city of Spring Hill as a permit requirement for the Spring Hill Sewage Treatment Plant. During the September 2014 sampling event, DEPA recorded that Rutherford Creek had a habitat score of 137 and 142; DEPA's October 2015 sampling event indicated a habitat score of 138.

As a result of the 2014 and 2015 habitat assessments, Rutherford Creek in the Lower Rutherford Creek watershed was removed from the impaired waters list

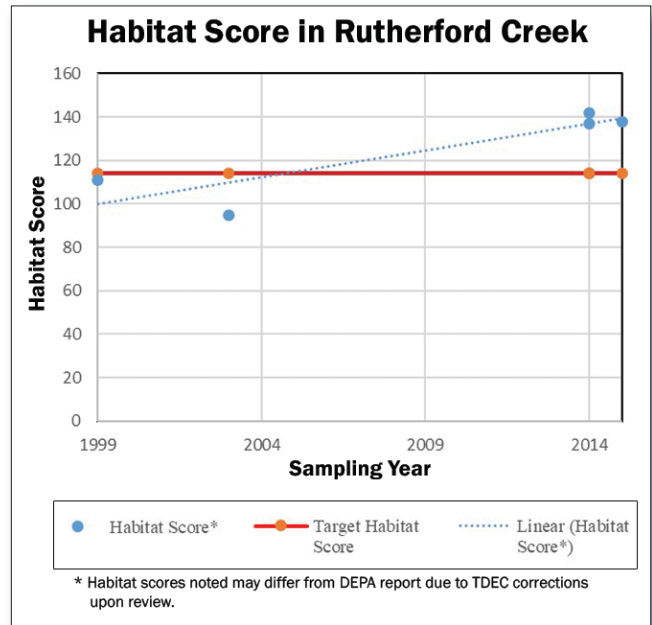


Figure 3. The habitat score in Rutherford Creek has improved over time.

in 2016. This portion of Rutherford Creek now fully supports all designated uses (Figure 3).

## Partners and Funding

The TSRA was awarded a CWA section 319 grant totaling \$22,500 in fiscal year (FY) 2003, with approximately \$9,317 provided as cost-share for projects within the Lower Rutherford Creek watershed. The TEC has received three CWA section 319 grants in phases in FY2006, FY2010 and FY2013 for \$150,000, \$50,000 and \$105,000, respectively. In total, TEC provided \$115,955 in cost-share assistance for practices along Rutherford Creek and its tributaries. Key partners with TSRA and TEC included the U.S. Department of Agriculture Natural Resources Conservation Service (USDA NRCS), the soil conservation districts (SCDs) in Maury and Williamson counties; Saturn Corporation (now General Motors Company); Tennessee Wildlife Resources Agency, and the city of Spring Hill.

Partners that worked with TDA to install BMPs through ARCF included USDA NRCS and the Maury and Williamson county SCDs. To date, the Tennessee's ARCF has contributed \$31,588 in cost-share assistance to implement agricultural BMPs in this watershed.



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

EPA 841-F-18-001X  
October 2018

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