



Section 319

NONPOINT SOURCE PROGRAM SUCCESS STORY

Tennessee

Bedford County Improves Water Quality Through Waste Management Systems

Waterbody Improved

Polluted runoff from pasture grazing caused nutrients and sediment to enter into Fall Creek, which led to the listing of a 11.4-mile segment of Fall Creek as impaired in 2002 and 2004. Using section 319 funding, the Bedford County Soil Conservation District installed two major Waste Management Systems on tributaries to Fall Creek in 1999. This resulted in water quality improvements of the 11.4-mile segment of Fall Creek and its removal from the 2006 303(d) list of impaired waters.

Problem

Fall Creek is located in the Duck River watershed in Bedford County. This specific segment is impaired from Duck River to the headwaters in EcoRegion 71I. Fall Creek was listed as impaired on the 2002 and 2004 303(d) lists due to nutrients, loss of biological integrity, and habitat alterations from pasture grazing. Fall Creek has many designated use classifications including fish and aquatic life, recreation, livestock watering and wildlife, and irrigation. It was listed as impaired for not fully supporting the fish and aquatic life and recreation beneficial uses due to siltation altering the habitat and excess nutrients resulting in low dissolved oxygen.

Two total maximum daily loads (TMDLs) were established for Fall Creek in 2006 by the Tennessee Department of Environmental Conservation for low dissolved oxygen caused by excess nutrients and habitat alteration caused by siltation.

Project Highlights

The local Soil Conservation District offices in Bedford County administered the Clean

Water Act section 319 funding to allocate funding assistance. Using a combination of 319 funding as well as state funds through the Agricultural Resources Conservation Fund (ARCF) they installed Waste Management Systems on tributaries to Fall Creek in 1999. These systems included two litter storage units for chickens with the capacity to store and compost 199 acres on Parch Corn Creek, which runs into Fall Creek (Figure 1).

The installation of these poultry composters and animal waste systems minimized the potential for contamination of streams. The waste facilities also reduce the pollution potential of organic agricultural wastes to surface and ground water.

Results

The Tennessee Macroinvertebrate Community Assessment is used to calculate the Tennessee Stream Condition Index (TSCI), which is a measure of biological health of an aquatic system. This index is used by the state in determining a waterbody's compliance to state water quality standards for the beneficial

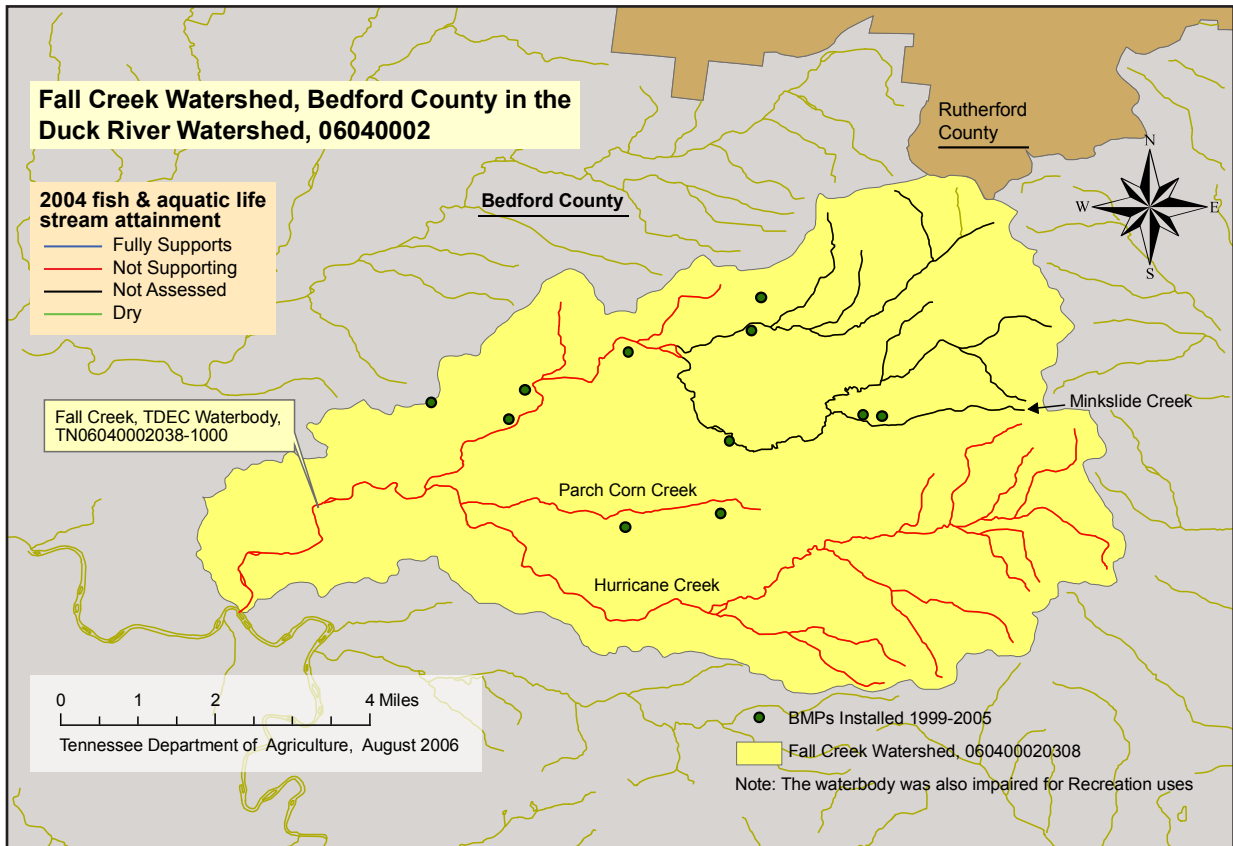


Figure 1. Locations of BMPs installed from 1999–2005

use of fish and aquatic life. The TSCI was used to compare subregions and determine a score, for a total possible score of 42.

Chemical and biological stations were established on this stream in 2004. While the stream was found to still be impacted by pathogens and will remain listed on that basis, Rapid Bioassessment Protocol (RBP III) sampling at two different locations documented TSCI scores of 36 and 32, which met Tennessee's biological integrity goals.

Therefore Fall Creek has been removed from the 303(d) list in 2006 for nutrients, biological loss due to siltation, and habitat alteration.

Partners and Funding

Fall Creek has benefited from a total of \$13,861.47 provided through cost-share from section 319 grant pool projects. In addition, \$94,747.00 was provided by a Tennessee State ARCF grant and local match.



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