Section 319
NONPOINT SOURCE PROGRAM SUCCESS STORY
Tennessee

Revegetation and Streambank Restoration Reduce Siltation and Improve Water Quality

Waterbody Improved

Polluted runoff from non-irrigated crop production resulted in excess sediment in Lick Creek. This resulted in a loss of biological integrity and physical substrate habitat alterations due to siltation, which led to the listing of a 20-mile segment of Lick Creek as impaired in 2002 and 2004. Using section 319 funding, McNairy County Soil Conservation District planted pasture and hay to revegetate the pasture and protect the streambank. These efforts resulted in the removal of the impaired 20-mile segment of Lick Creek from the 2006 303(d) list of impaired waters.

Problem

This 20-mile segment of Lick Creek extends from Snake Creek to the headwaters in the Snake Creek Watershed, McNairy County in Ecoregion 65e. Lick Creek was listed as impaired due to siltation and habitat alteration, resulting in a loss of biological integrity. Polluted runoff carrying sediment from non-irrigated crop production was the source of this pollution and prevented Lick Creek from meeting state water quality standards to fully support its designated beneficial use for fish and aquatic life. The standard states that there shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character that may be detrimental to fish and aquatic life.

Project Highlights

The local Soil and Water Conservation District office in McNairy County administered the funding for this project. Using a combination of section 319 matched funding and state funds through the Agricultural Resources Conservation Fund (ARCF), the Conservation District offices worked with local landowners to plant pasture and hay to act as a covercrop and reduce erosion of non-irrigated croplands, as well as provide streambank protection to reduce siltation and improve the habitat of Lick Creek (Figure 1).

Results

Lick Creek was reassessed in 2004 using the biological reconnaissance (biorecon) survey, which is used to measure water quality compliance for the beneficial use of fish and aquatic life. Biorecon is one tool used to recognize stream impairment as judged by species richness measures, emphasizing the presence or absence of indicator organisms without regard to relative abundance. The biorecon index is scored on a scale from 1 – 15. A score less than 5 is regarded as very poor. A score over 10 is considered good. The principal metrics used are the total macroinvertebrate families (or genera), the number of families (or genera) of mayflies, stoneflies, and caddisflies (EPT), and the number of pollution intolerant families (or genera) found in a stream. The biorecon results for Lick Creek indicated 4 EPT genera, 2 pollutant intolerant genera, and 15 total genera.

The resulting score of 11 for this subecoregion (65e) is within the "non-impaired" range. In addition, Lick Creek met the narrative criteria for turbidity and total suspended solids of no observed presence of solids, floating materials and deposits of such a size or character that may be detrimental to fish and aquatic life. Therefore, 20 total previously-impaired miles were delisted from the 2006 303(d) list.

Partners and Funding

Since 2004, Lick Creek has benefited from $7,805.97 provided through cost-share from section 319 Grant Pool Projects. In addition, $3,121.71 was provided by the Tennessee State ARCF. Additional matching funds (state and local) amounted to a total of $10,237.03. Another key partner in this effort was the Chickasaw-Shiloh Resource Conservation and Development Council.

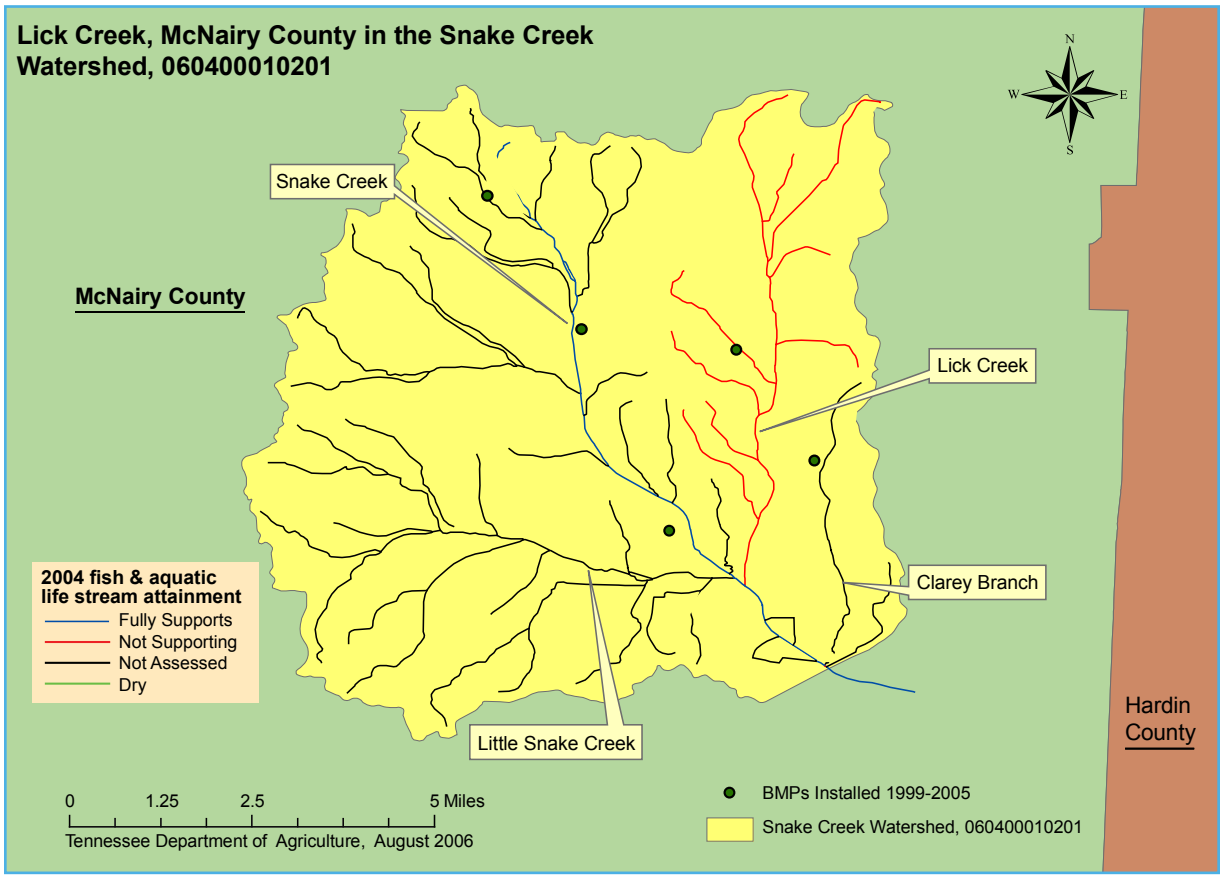

Figure 1. Location of Implemented Best Management Practices (BMPs)

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

EPA 841-F-07-001T
September 2007

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