



# Section 319

# NONPOINT SOURCE PROGRAM SUCCESS STORY

## Tennessee

### New Grazing Practices Minimize Impacts on Little Shoal Creek

**Waterbody Improved** The Little Shoal Creek in south-central Tennessee was clogged with silt from pasture grazing and other agricultural activities. Pasture management practices were successfully implemented to reduce erosion and pollution transport to the creek, allowing the creek to be removed from Tennessee's 303(d) list.

#### Problem

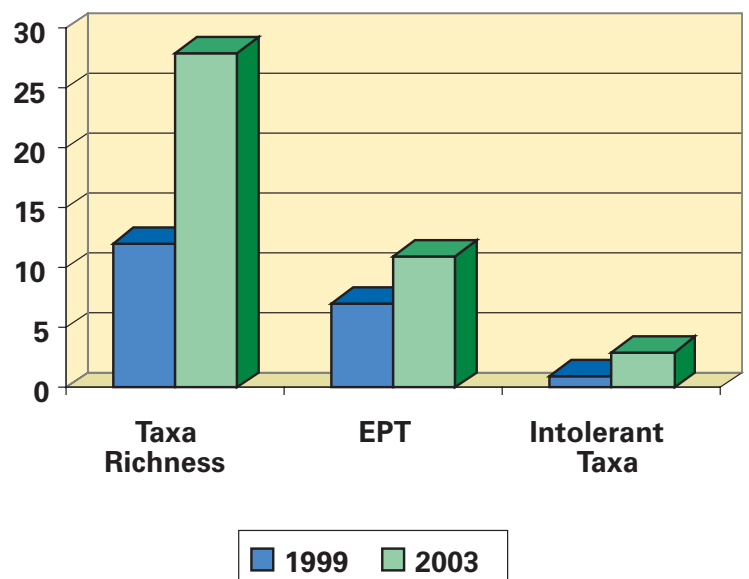
Overgrazing and poor pasture management caused heavy erosion in Little Shoal Creek in Lawrence County, Tennessee. A macroinvertebrate sample collected in 1999 demonstrated values below expectations for biological communities in the Western Highland Rim ecoregion. Based on these results, Little Shoal Creek was added to the state's 303(d) list in 2002 as impaired due to siltation from pasture grazing.

#### Project Highlights

To combat erosion, BMPs were implemented on the land surrounding Little Shoal Creek and its two tributaries, Crossfield Branch and Fourmile Hollow. To control and minimize the impacts of agriculture, farm conservation practices, including conservation tillage, cropland conversion, pasture renovation, and hay planting, were implemented. In addition, red clover and other legumes were introduced to improve ground cover in bare areas. Installing grassed waterways on 150 acres of farmland near streams and tributaries has helped to prevent gully erosion and reduce pollutants carried by runoff water to streams. Farmers also use the grassed areas periodically for grazing livestock.

#### Results

The increased ground cover and installation of grassed waterways have resulted in less soil erosion and siltation in the stream, reducing the amount of pollutants entering the streams and improving water quality. Another macroinvertebrate sample collected in 2003 demonstrated that taxa richness had more than doubled to 28, as compared to only 12 in 1999—an indicator of good water quality as measured by the higher diversity and types of organisms living in the stream. These metric values are within the guidelines for the ecoregion and would score 13 on the genus-level



Macroinvertebrate taxa groups found in 1999 and 2003 from Little Shoal Creek in Lawrence County.

biological reconnaissance (biorecon) index, which considers scores from 11 to 15 indicative of a non-impaired biological community. As a result of the restoration efforts, Little Shoal Creek was removed from Tennessee's 303(d) list in 2004.

## Partners and Funding

The U.S. Department of Agriculture Natural Resources Conservation Service and the Lawrence County Soil Conservation District spearheaded the effort to design and implement many of the BMPs. The project cost a total of \$44,800, including funding from the Agricultural Resources Conservation Fund (ARCF) and \$10,000 of Clean Water Act section 319 funding, which was used for pasture/hay planting.



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

EPA 841-F-05-004R  
August 2005

### **For additional information contact:**

**Sam Marshall, PhD**  
Tennessee Department of Agriculture  
615-837-5306  
[sam.marshall@state.tn.us](mailto:sam.marshall@state.tn.us)