



Section 319

NONPOINT SOURCE PROGRAM SUCCESS STORY

Oklahoma

Implementing Best Management Practices Restores Creek

Waterbody Improved

Little Wewoka Creek was impaired due in part to practices associated with wheat and cattle production, prompting Oklahoma to add the creek to the state's Clean Water Act (CWA) section 303(d) list of impaired waters for turbidity (1998) and dissolved oxygen (2006). Educating landowners and implementing best management practices (BMPs) to improve pasture and nutrient management led to decreased sediment in the creek. As a result, Little Wewoka Creek was removed from Oklahoma's 2006 CWA section 303(d) list for turbidity impairment. Water quality has continued to improve and Little Wewoka Creek has been nominated for removal from Oklahoma's 2010 CWA section 303(d) list for dissolved oxygen impairment. This brings the stream into full attainment of its fish and wildlife propagation designated use.

Problem

The 20-mile-long Little Wewoka Creek flows through Seminole, Okfuskee and Hughes counties in central Oklahoma (Figures 1 and 2). The majority of the land in the area is used for cattle and hog production, along with some wheat farming. Erosion of poorly maintained pasture areas (including overstocking and allowing brush and weed overgrowth) contributed large amounts of sediment to Little Wewoka Creek.

In the 1998 and 2002 water quality assessments, monitoring showed that 25 percent of Little Wewoka Creek's seasonal baseflow water samples exceeded 50 nephelometric turbidity units (NTU). A stream is considered impaired by turbidity if 10 percent or more of the seasonal base flow water samples exceed 50 NTU (based on 5 years of data before the assessment year). On the basis of the assessment results, Oklahoma added the entire length of Wewoka Creek (20 miles) to the 1998 and subsequent CWA section 303(d) lists for nonattainment of the fish and wildlife propagation designated use due to suspended solids/turbidity impairment.

In addition, the creek has been included on Oklahoma's CWA section 303(d) list since 2006 as not attaining its fish and wildlife propagation use because of low dissolved oxygen levels. In the 2006 and 2008 assessments, 15 percent of samples fell below the critical value of 5.0 milligrams per liter (mg/L) dissolved oxygen. A stream is considered impaired for dissolved oxygen if more than 10 percent of samples are below 5 mg/L. Runoff of wastes and sediment from poor pasture maintenance and improper management of cattle wastes may contribute nutrients to the creek. Excess nutrients may lead to the overgrowth of nuisance algae, and the subsequent breakdown of the algae may then cause dissolved oxygen levels to drop.

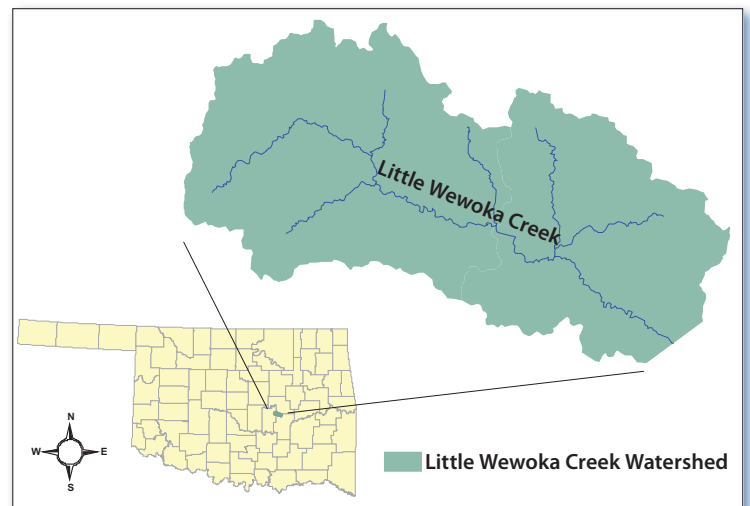


Figure 1. The Wewoka Creek watershed is in central Oklahoma.



Figure 2. Little Wewoka Creek flows through agricultural areas.

