

Honey Creek Water Quality Project in Oklahoma

Honey Creek is a tributary to and a major cove on Grand Lake. Honey Creek is affected by NPS pollution from residential and development sources as well as having pollution problems typical of agricultural areas of northeastern Oklahoma. Many streams and lakes in this area are threatened or impaired by nutrients. Riparian areas in this region are frequently compromised, either through removal of protective vegetation or through uncontrolled access by live-stock. The result is streambank erosion, habitat loss, and increased sediment transport in streams.

A 1999-2000 USGS reconnaissance study in the Cave Springs Branch watershed of Honey Creek found that bacteria in groundwater and surface water in the basin were from bird, cow, horse, dog, deer, and human sources. Sampling at the state line suggested that much of the bacteria were from cows and horses. Sampling in well water indicated human and dog feces as bacteria sources, suggesting that onsite wastewater treatment may not always be adequate in the region's highly permeable soils. In addition to being impaired by bacteria, Grand Lake and several streams in the Honey Creek watershed are impaired by sulfate, total dissolved solids, chloride, and low dissolved oxygen (due to high levels of nutrients).

Based on the knowledge gained through similar watersheds in this portion of the State, the Honey Creek project was planned as a watershed scale effort to reduce NPS loading and eliminate threats and impairments in the Honey Creek Watershed, which should subsequently improve conditions in Grand Lake. In late 2006, the Oklahoma Conservation Commission initiated the Honey Creek Watershed Implementation Project. This project provides funding to landowners on a cost-share basis to implement Best Management Practices (BMPs) that will help reduce erosion and runoff of bacteria and nutrients into streams.

The Project's cost-share funding was made available from the U.S. Environmental Protection Agency, through Section 319 of the Clean Water Act, and by matching funds from the State of Oklahoma. A Watershed Advisory Group determined that the project should offer a variety of Best Management Practices (BMPs), including:

- Riparian area incentive payments
- Off-site watering facilities
- Establishment of buffer strips and stream bank protection
- Riparian forest buffers
- Critical area improvement
- Composters/animal feeding and waste storage facilities
- Pasture establishment and management, including cross-fencing, watering facilities, wells and pipeline
- Proper waste utilization for poultry waste
- Heavy use areas
- Replacement of rural waste septic systems

The Watershed Advisory Group also determined what percentage of a BMP's cost would be reimbursed to a program participant. The Natural Resources Conservation Service's EQIP

Practice Payment Rates are the basis of computing the cost of installation of each BMP.

Between 2007 and December 31, 2009, \$902,701.52 was reimbursed to participants for installation or construction of 10 ponds. 13,551 feet of riparian fencing, two cake-out litter storage buildings for poultry, 20 animal feeding/waste storage facilities, 117 acres of pasture planting (Bermudagrass and fescue), 93,971 feet of cross-fencing, 78 watering facilities, 25,867 feet of pipeline, 30 wells for livestock, 114 heavy use areas, 8 replacement rural waste septic systems, 196 acres of riparian area exclusion, and payments for proper poultry waste utilization. Participants paid \$473,093.84 for their shares of the BMP installations, bringing the total spent on BMPs in this project to \$1,375,795.36.



Demonstration Farm. The Honey Creek Demonstration Farm was established by the Oklahoma Conservation Commission and the US Environmental Protection Agency, in cooperation with the Delaware County Conservation District. The farm, which is located approximately 15 miles east of Grove, showcases management practices such as cross-fencing, heavy use areas, feeding and waste storage facilities, partial exclusion from areas along streams, and providing alternative watering sites.

A separate Honey Creek Restoration Project was undertaken by the EPA, OK Conservation Commission, and the OK Department of Wildlife Conservation. This project was initiated to demonstrate the application of restorative technologies for stream aquatic resources. Two areas with extensive erosion problems were restored using applied fluvial geomorphology techniques. These projects included construction of additional wetland and backwater habitats. Planting of trees and other vegetation was included in this project.



Contact the Honey Creek Project Coordinator—Marti Mefford, at 918-253-8550—for more information concerning this water quality improvement project or to schedule tours of the demonstration farm and/or restoration projects.