

Oklahoma Farm Report

Water Quality in Lake Spavinaw and Eucha Improving- Conservation Practices Do the Trick!

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The Oklahoma Conservation Commission (OCC) has announced monitoring results that show continual improvement in water quality in the Spavinaw Creek watershed. The improvements result from programs offered through the Delaware County Conservation District and in cooperation with the USDA Natural Resources Conservation Service to help landowners install land management practices to keep nutrients, sediment and bacteria out of runoff into streams. Recent analysis of water quality monitoring data shows a 66 percent reduction in phosphorus loading into Beaty Creek in Delaware County compared to a nearby stream, according to the Oklahoma Conservation Commission. Beaty Creek is a subwatershed within the larger Spavinaw Creek watershed that supplies drinking water for much of the Tulsa area.

“The longer these land management practices are in place, the more improvement we see in the water quality in the watershed,” said Mike Thralls, executive director of the Oklahoma Conservation Commission.

In the 1990s Eucha and Spavinaw Lakes began to have algae blooms and with taste and odor problems in the city water supply. A Clean Lakes Study in 1997 concluded that the problems were due to excessive phosphorus loading from the watersheds and that animal waste was one of the likely sources. With nonpoint source program funding from the U.S. Environmental Protection Agency under Section 319 of the Clean Water Act, the Conservation Commission (OCC) began a demonstration project in the Beaty Creek watershed in 1998 to test the potential to improve water quality through implementation of best management practices (BMPs). The BMPs focused on establishing and protecting vegetated buffer areas along streams, establishing and maintaining good pastureland, proper disposal of animal waste, exporting poultry litter out of the watershed and upgrading or repairing septic systems. State regulation of litter application, and further reduction of litter application due to the 2003 settlement between the city of Tulsa and the poultry integrators, have also contributed to the reduction of phosphorus.

Throughout the project, water samples were taken from Beaty Creek and also from a nearby stream, Little Saline. Little Saline Creek served as the “control” watershed, where geographic conditions and potential pollution sources were similar to Beaty, but where BMPs were not installed. Monitoring this control stream allows analysis of water quality data that represents what would have happened without BMP implementation while compensating for environmental factors such as drought conditions or heavy rains.

The Beaty Creek demonstration project proved to be effective, and in 2003 OCC expanded the effort with a similar project under Section 319 of the federal Clean Water Act funded through the U.S. Environmental Protection Agency to encompass the entire Oklahoma portion of the Spavinaw Creek watershed. To date, the program has invested more than \$4 million in BMP implementation in the Spavinaw Creek watershed.

The benefits from BMP installation in Beaty Creek have continued to improve. In April 2005 OCC announced a 14 percent reduction in phosphorus loading into Beaty Creek. In May 2006 results climbed to a 31 percent reduction. Latest monitoring results, which includes four years of data after BMP installation, show that the program has resulted in a 66 percent reduction in phosphorus loading into Beaty Creek.

“We expect that similar results will be obtained in the larger Spavinaw Creek watershed, and eventually Lakes Eucha and Spavinaw, after the recently installed BMPs have been in place for at least a couple of years, and with continued efforts in the watershed” said Shanon Phillips, acting director of OCC’s Water Quality division.