

Pond Creek Water Quality Improvement Project: 2001 through 2006

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The Pond Creek Watershed Project was developed to improve water quality in this agricultural watershed. Pond Creek has been placed on the 303(d) list as being above acceptable levels in pathogens, sediment, and nutrients. The project coordinator works with landowners and partnering agencies to promote and install Best Management Practices. The University of Tennessee conducts stream-side tests, takes samples, conducts laboratory tests, and collects data on eight sites throughout the watershed monthly.

The 303(d) List contains streams and lakes carrying excess pollutants over levels determined safe by the state and therefore need additional pollution controls. According to the State of Tennessee, "Once a stream has been placed on the 303(d) List, it is considered a priority for water quality improvement efforts. These efforts include traditional regulatory approaches such as permit issuance, but also include efforts to control pollution sources that have historically been exempted from regulations, such as certain agricultural and forestry activities." For more information, including the list of streams, go to: <http://www.state.tn.us/environment/wpc/publications/303d2006.pdf>

When sampling the creek, meters are placed in the stream to determine flow, water temperature, turbidity (suspended solids), dissolved oxygen, and pH. The water samples taken from the creek go to the University of Tennessee for tests on bacteria, nutrients, biological oxygen on demand, and pH. Some samples are tested even further to determine whether the bacteria came from human waste or cattle manure.

Pond Creek Watershed covers 23,579 acres of land that drains into Pond Creek in McMinn, Monroe, and Loudon Counties. The creek flows into Watts Bar Reservoir just south of the I-75 bridge over the Tennessee River in Loudon County. The area is rural agricultural land with very little development. Most of the watershed consists of dairy and beef operations. Livestock have been determined to be the major cause of pathogens in the stream. Excessive sediment comes mostly from fair, poor, and overgrazed pastures. Nutrient levels are also from agricultural sources.

This watershed has received numerous grants monies from state and federal agencies. April 1, 2007 will mark four full years of work in this watershed. Tennessee Valley Authority conducted their Inventory of Biotic Integrity last year, and raised Pond

Creek from Poor/Fair to Fair due to an increase in fish species from 13 to 17, and an increase in fish numbers from 214 to 718. The monthly stream testing does not show consistent improvement in bacteria levels. It has been determined that two sites that have been high in pathogens were determined to be from human sources. Therefore, work is being done to improve septic systems.

Change is slow to be adopted by landowners and farmers. However, new animal waste systems are installed and operating on three dairies, with upgrades soon to begin on another. Some livestock producers have fenced along their streams, while others have not, often due to deep flooding at those sites. Heavy use areas have been installed along with alternative watering sites to reduce cattle traffic in the stream, and improve quality of water consumed. Educational events have been held to provide information for the general public and local landowners. The Pond Creek Newsletter goes to over 500 resident addresses twice a year. The website contains much information on work done in the watershed, along with the Watershed Restoration Plan recently accepted by the Tennessee Department of Agriculture. The plan is an extensive government document allowing the opportunity to receive further grant monies. It also lists future work to be done and the expected improvement in water quality.