

Introduction

The Dry Creek Watershed-based Plan (WBP) will outline all point and non-point pollution sources in the watershed, quantify the pollution coming from each source, and will make recommendations for Best Management Practices (BMPs) to improve water quality in Dry Creek.

Watershed

The Dry Creek watershed is approximately 7,500 acres in size and is located in Rowan County, Kentucky (Figure 1). It is a major tributary to the Triplett Creek. This HUC 14 (05100101130120) watershed is mainly forested, with hay/pasture fields located along most of the creeks and residential and business development concentrated at the mouth of the watershed (see map and table on Land Use and Land Cover in the section on Nonpoint Sources in Chapter 2). Because of the steep terrain, road and housing construction are concentrated along the creek and its tributaries. Apartment construction has been accelerating in the area along Dry Creek in recent years. Approximately half of the recent residential development has occurred outside of the area served by Morehead Utility Plant Board's sewer lines. In addition, many of the disturbed hill slopes have not been reseeded, contributing to visible erosion.

According to the Kentucky Division of Water's 2006 Integrated Report, Dry Creek is on the state's second priority list for only partially supporting aquatic life due to excess sedimentation. This designation was based on field work completed in 2005 by the US Forest Service (USFS) and the Kentucky Department of Fish and Wildlife Resources (KDFWR). The Division of Water has also collected samples from Dry Creek and determined that it is polluted by sediment (dirt) and sewage. This pollution prevents the creek from supporting all of the aquatic creatures, such as fish and insects, which are supposed to live in the water. Dry Creek is also polluted by nutrients (i.e., phosphorous and nitrogen from sources such as fertilizer).

Ongoing and recently initiated water quality monitoring efforts by faculty, staff and students in Morehead State University's Institute for Regional Analysis and Public Policy, Biology, Environmental Sciences, and Earth System Science programs provide or will provide data on bacteria (i.e., *E. coli*), nutrients, wildlife habitat and biological assessments, discharge (stream flow), streambank instability, and sediment for the Dry Creek watershed. Measurements of discharge, suspended sediment concentrations (SSC) and geomorphic assessment of bank instability are in progress. Nutrient data from 1998-1999 and limited summer data from 2007 suggest that excess nutrient input into the creek exists. Most of the bacteria data was collected prior to the installation of sewer lines and indicates bacteria contamination in Dry Creek. Collaborative sampling events, where water samples are simultaneously collected for sediment, nutrients, and bacteria will be

completed as part of this project. Simultaneous sampling will provide a better ‘snapshot’ of the watershed’s influence on water quality and will assist in identifying potential sources of pollution. To further assist in this effort, and to facilitate the development of best management practices, the field data will be used to provide inputs for a load estimation analysis via the PREdiCT model.

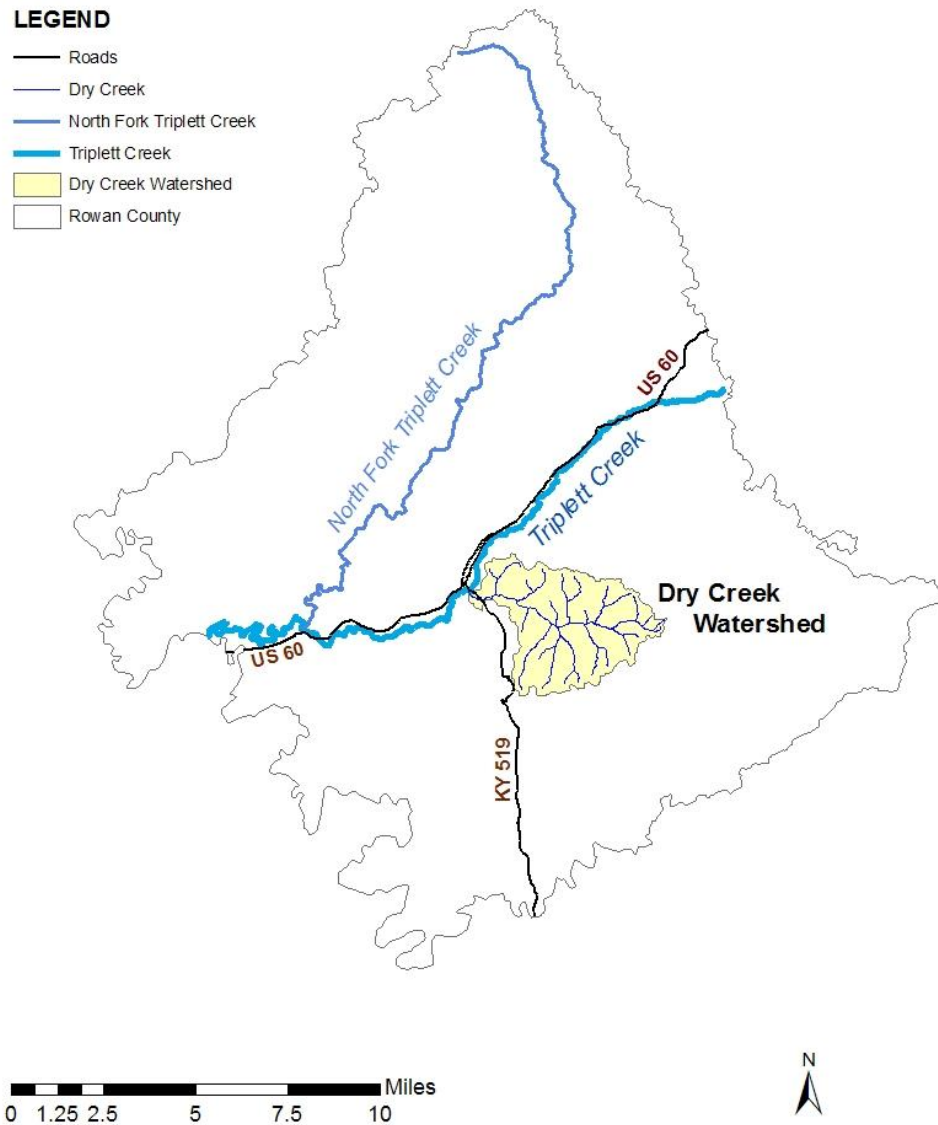


Figure 1. Location of Dry Creek watershed in Rowan County, Kentucky (sources: Kentucky Geological Survey, Kentucky Division of Geographic Information).

Goals

The goals presented below are separated into two sections. “Short-term” or project goals are those that will be completed by March 2010, when the 319 (h) funding from the Kentucky Division of Water expires for this project. “Long-term” goals are those goals related to implementing the actual WBP for Dry Creek following the completion of this project.

The major goals of this project are to develop a WBP for the Dry Creek Watershed, educate the community about the need for and usefulness of a WBP, and identify best management practices that will improve water quality to the point that Dry Creek meets all water quality standards and can be removed from the impaired waterways list (i.e., the Integrated Report Volume II).

The short-term goals of the project, then, are those that can be completed within the time frame of the Memorandum of Agreement between the Kentucky Waterways Alliance (KWA) and Morehead State University. The project’s short-term goals are:

Goal 1: Conduct community outreach to inform members of the Dry Creek watershed and Public Officials of the water quality issues in Dry Creek.

Measurement:

1. Conduct two roundtable meetings.
2. Present a status report to the Morehead City Council and Rowan County Fiscal Court on a quarterly basis.
3. Conduct regularly scheduled meetings.
4. Speak to at least two organizations that are interested in improving water quality.
5. Utilize the local paper and radio station to inform area citizens on the status of the project.

Goal 2: Identify a number of Best Management Practices (BMPs) that are economically and socially feasible to implement.

Measurement:

1. Develop a functional list of BMPs, including cost estimates for their implementation.
2. Prioritize the BMPs based on their potential ability to improve water quality.
3. List possible agencies that could assist with the funding and technical aspects of BMP implementation.
4. Present the BMP list (with costs) to the watershed team, City Council, Rowan County Fiscal Court, and concerned citizens.

Goal 3: Complete a comprehensive monitoring and assessment plan that identifies the causes and sources of impairments.

Measurement:

1. Completion and approval of a QAPP that outlines a monitoring plan.
2. Completion of a comprehensive report on the results of the monitoring and assessment.

The Dry Creek Watershed Team has also established some initial long-term goals based on participant input from the first two Community Roundtable events, which were held on February 5 and 9, 2008 at the Clearfield Elementary School (in the Dry Creek watershed). A report of these roundtable discussions can be found in an Appendix A. The initial long-term goals are:

Goal 1: Decrease the severity and frequency of flooding.

Goal 2: Decrease the sediment loads in Dry Creek.

Goal 3: Decrease nutrient loads in Dry Creek.

Goal 4: Decrease bacteria levels to meet Primary Contact standards.

Goal 5: Improve water quality so that Dry Creek can be safely used as a recreational resource (i.e. fishing, swimming hole, and canoeing/kayaking).

These long-term goals will be refined as the data collection and analysis is completed.

Partners and Stakeholders

The watershed planning effort is funded in part by a grant from the U.S. Environmental Protection Agency under 319(h) of the Clean Water Act through the Kentucky Division of Water to the Kentucky Waterways Alliance.

Approximately two years ago, a group of citizens complained about an increase in the frequency and severity of flooding on the west end of Morehead and in the Clearfield area. As citizens and local officials began to discuss the issue and possible solutions, it became apparent that no simple, one-time fix existed. In response, the City of Morehead formed the Triplett Creek Committee, which consists of citizens from both Morehead and Clearfield; a biologist and geologist from MSU; the Rowan County Solid Waste and Flood Plain Manager; representatives from the United States Forest Service, KDFWR, US Division of Agriculture Natural Resources Conservation Service; and the Licking River Basin Coordinator. This committee will serve and assist with the development of the Dry Creek WBP along with KWA and the Kentucky Division of Water.

Since a group had already been established these members were asked to participate in creating the Dry Creek WBP. The official representation on the team is Morehead State University (faculty, staff and students), Morehead Utility Plant Board, Licking River

Basin Coordinator, Rowan County Fiscal Court, City of Morehead, USFS, Rowan County Extension Service, citizens living in and near the Dry Creek watershed, and a community representative. This list may grow as the planning process continues and the watershed team identifies more partners and stakeholders. KWA will serve as a non-voting member. The primary role of KWA is to provide guidance during the process of developing the WBP. The attendance of at least six members of the watershed team is required in order to have a quorum. Major decisions will require an 80% majority vote. The team will use the “spirit” of Roberts Rules of Order to conduct its meetings. The stakeholder contact list currently consists of 33 people. This stakeholder list has been developed from phone conversations, as well as one-on-one conversations with those interested in the process. In addition to the stakeholder list, the Rowan County Fiscal Court and City Council are regularly updated on the planning process via briefings during regularly scheduled meetings. Kentuckians for the Commonwealth and the Morehead New Cities committee have also been provided regular updates on the WBP process.

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