

Fencing Livestock to Prevent Stream Access

The Problem Livestock farms are often located near small streams allowing the animals to drink directly from the stream. This results in water pollution because manure is deposited directly in or near the stream, the animals trample the banks of the stream which causes the banks to break down and releases soil into the water. Also, animals can become sick if they drink water that is polluted.

How will fencing livestock help? Fencing livestock keeps them out of the streams which saves the banks from being trampled, and keeps the manure out of the water. This helps improve the water quality and it keeps the animals healthy by not drinking dirty water.

Our Plan for Banklick The council will use the grant money to help farmers fund fencing and related pasture improvements, as well as educate farmers on pasture management and resources available to them.

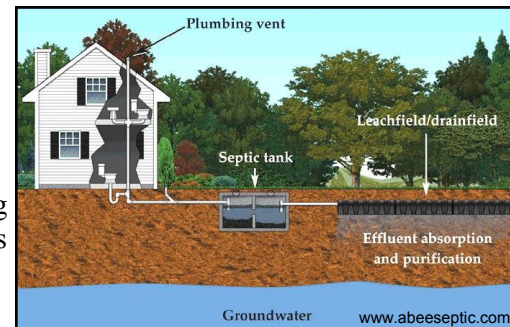


Improving Failing Septic Systems

The Problem Houses that are not connected to public sewer have septic systems on their land that treat their wastes. If these systems are old, not properly maintained, or installed in inappropriate soils they can fail and human waste can pollute surrounding land and the streams. Failing septic systems can also cause sewage to back up into these houses.

How will fixing septic systems help? Fixing or replacing failing septic systems can prevent residential sewage from entering the streams, this can improve water quality in the Banklick Watershed.

Our Plan for Banklick The 319 funds will be used to assist with replacement or repair of several failing systems in the watershed and educate septic system owners on proper system care.

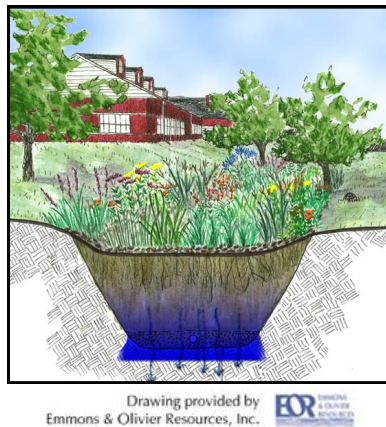


Increasing Infiltration (Water Soaking into the Ground)

The Problem As the land in the Banklick Watershed is developed, less rain water is able to soak deep into the soil (which is called infiltration). This causes more pollution to runoff with the stormwater into the streams, and it causes the streams to dry up when it is not raining rather than having a constant water level to support fish life.

How will infiltration help? Increasing infiltration will help to naturally remove pollution from water before making its way into streams. It will also recharge groundwater levels giving streams year-round water supplies, even during dry months.

Our Plan for Banklick To increase infiltration in the Banklick Watershed, land owners need to install controls that allow the water to collect and infiltrate deep into the soil before it can runoff to the stream, such as the rain garden shown at right. The council plans to use 319 grant money to fund infiltration controls in the watershed.



Will this Plan Really Improve the Water Quality in the Banklick Watershed?

Yes! Studies have been completed to show that these proposed changes in the watershed can make a very big difference in the water quality and stream condition. Water pollution is a big problem, but every improvement is one step closer to the goal of clean safe streams in the Banklick Watershed. The 319 grant is a good start, and the funding from this grant can be used to pay for the installation of these controls on your land! For more information on how you can help, contact Sherry Carran, president of the Banklick Watershed Council at carranbs@fuse.net or (859) 491-0722.

A more detailed and technical version of this watershed plan is available. To obtain a copy of the extended version, please contact the Banklick Watershed Council at www.banklick.org.
"This work was 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 Banklick Watershed Council (Grant # C9994861-07)."



The Banklick Watershed Plan

Watershed Plan Summary — November 2009

The Banklick Watershed is defined as all the of the land area that drains to the Banklick Creek (see map below). This includes the land drained by tributary streams such as Fowler Creek, Bullock Pen, Horse Branch, Holds Branch, Brushy Fork, Wolf Pen Branch, etc. that eventually flow into the Banklick Creek. The Banklick Watershed area includes parts of Fort Wright, Taylor Mill, Lakeside Park, Crestview Hills, Edgewood, Elsmere, Florence, Covington, Independence, and even parts of Boone County. All of the water from the Banklick Creek Watershed eventually empties into the Licking River.

Many of the streams in the Banklick Watershed have been negatively impacted by high levels of bacteria, sediments, and other pollutants. This pollution makes our streams unsafe for swimming and other recreational enjoyment. Additionally, much of the critical habitat for the animals that live in and around the streams is being destroyed. In fact, the water in the Banklick Creek is so polluted that the creek is in violation of a federal water quality regulation known as the Clean Water Act. Currently, the entire Banklick Creek is listed as an "impaired (polluted) stream" by the Kentucky Division of Water. In addition to the water quality problems, the Banklick Creek also experiences flooding problems and significant stream bank erosion. These problems may affect you! Look at the map below, and the map on page 2—do you live in the Banklick Watershed? If you do, there may be things that you can do to help solve these problems!

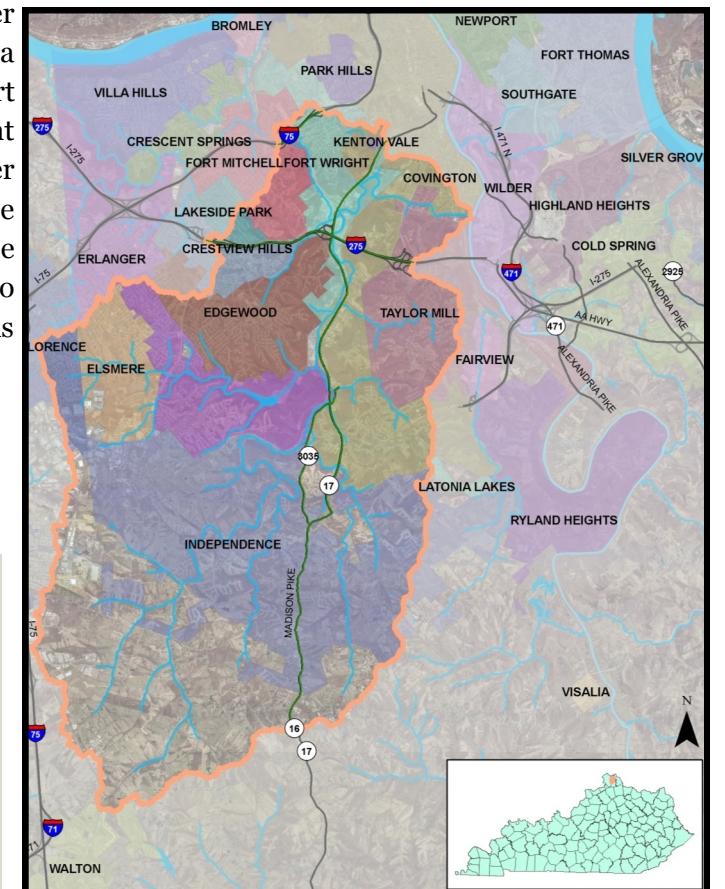
In an effort to protect and improve the streams in the Banklick Watershed, a citizen group called the Banklick Watershed Council was created in 2002. This group has established four goals to guide their efforts: Clean the Water, Reduce Flooding, Restore the Banks, and Honor the Heritage.

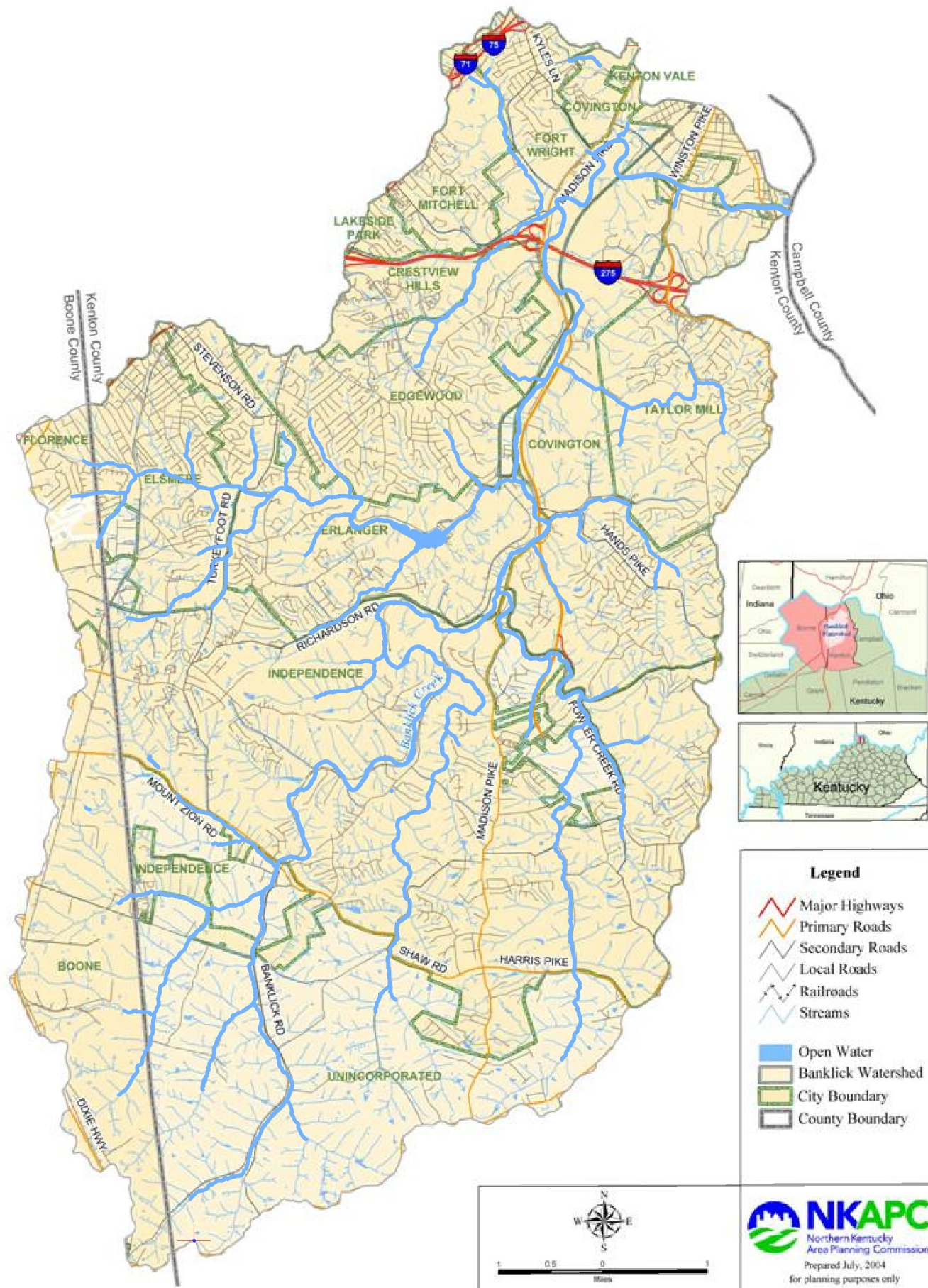
Recently, the Banklick Watershed Council received a grant from the U.S. Environmental Protection Agency (EPA) through the Kentucky Division of Water (KDOW) to develop and begin implementing a watershed plan. The goal of the Council is to use part of the federal grant to identify and prioritize pollutant sources within the watershed and to use the remainder of the funds to implement projects to improve the overall health of the stream. Details of the probable sources of pollution, and the proposed solutions to these problems can be found in the remainder of this summary. You will also find examples of how you can help improve the water quality and protect the Banklick Watershed.



Goals of the Council

CLEAN THE WATER
REDUCE FLOODING
RESTORE THE BANKS
HONOR THE HERITAGE





Where Is All The Pollution Coming From?

The pollution in the Banklick Watershed comes from many different places. When it rains the stormwater washes across the land carrying soil from farmland, oil from roadways, chemicals from lawns, pet waste from parks, and many other pollutants into the streams. Pollution can also get to the streams from broken septic systems, construction sites, livestock walking through streams, etc. All of these things are called *nonpoint source pollution*, or runoff pollution. One common form of stream pollution occurs when sewers carrying wastewater get filled with rainwater causing them to overflow into streams before the sewage is treated at a Wastewater Treatment Plant. This is called *point source pollution*. In the Banklick Watershed, Sanitation District No. 1 is working to improve the sewer systems, and reduce stream pollution from sewer overflows. Since the Sanitation District is focused on fixing the sewers, the Banklick Watershed Council is focusing their efforts on improving water quality by reducing the nonpoint source pollution. To make the council's efforts more effective, they will focus on the southern half of the watershed where nonpoint source pollution is more predominant, as shaded in the map below.



What is the Plan to Improve the Water Quality?

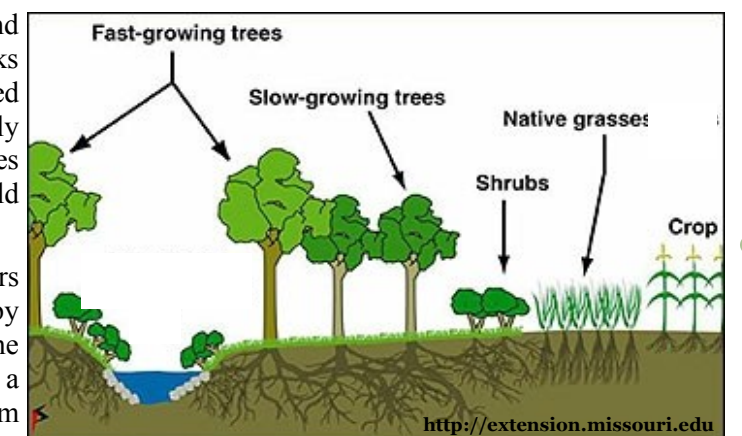
The Banklick Watershed Plan was developed through a detailed analysis of water quality data and the sources suspected of causing the most pollution. This assessment resulted in the following four control measures that will be implemented throughout the Banklick Watershed to improve water quality:

- Establishing Streamside Vegetated Buffers
- Fencing Livestock to Prevent Stream Access
- Improving Failing Septic Systems
- Increasing Infiltration

Establishing Streamside Vegetated Buffers

The Problem When land is used for farming and development, the trees and vegetation along the stream banks are often removed. This exposes the stream to polluted stormwater and can make stream banks more easily eroded. Also, the stream which was once shaded by trees now gets very hot in the sunlight and the water cannot hold enough oxygen for fish to survive.

How will buffers help? Streamside vegetated buffers as shown in the figure at right, will help protect the stream by filtering the pollution from the runoff before it reaches the stream. This vegetation also shades the stream to create a cool environment for aquatic life, and stabilizes the stream bank soil with its roots to prevent erosion.



Our Plan for Banklick Ultimately, the goal is to have vegetated buffers, protecting all streamside land in the Banklick Watershed. Buffers are one of the most critical improvements that will improve water quality. The Council has established a goal of protecting or restoring 10,000 linear feet of streamside vegetated buffers in the southern half of the watershed. If you own streamside land in this area, this federal grant money could be used to create or restore vegetated buffers on your land! This includes removing invasive species of plants, planting native trees, shrubs, and grasses, and ensuring that the stream is protected.