

Forests First: Water Wins!

in the

Banklick Creek Watershed

A handbook for
responsible management
of forest and water
resources



Kenton and Boone
Counties, Kentucky

Banklick Creek Watershed

A rich diversity of landscapes makes the Banklick Creek watershed a unique and wonderful place. It originates in central Kenton and eastern Boone Counties, Kentucky, among a vast array of forests, agricultural fields, and rural home sites, then flows north into the Licking River in a highly urbanized area in Covington.

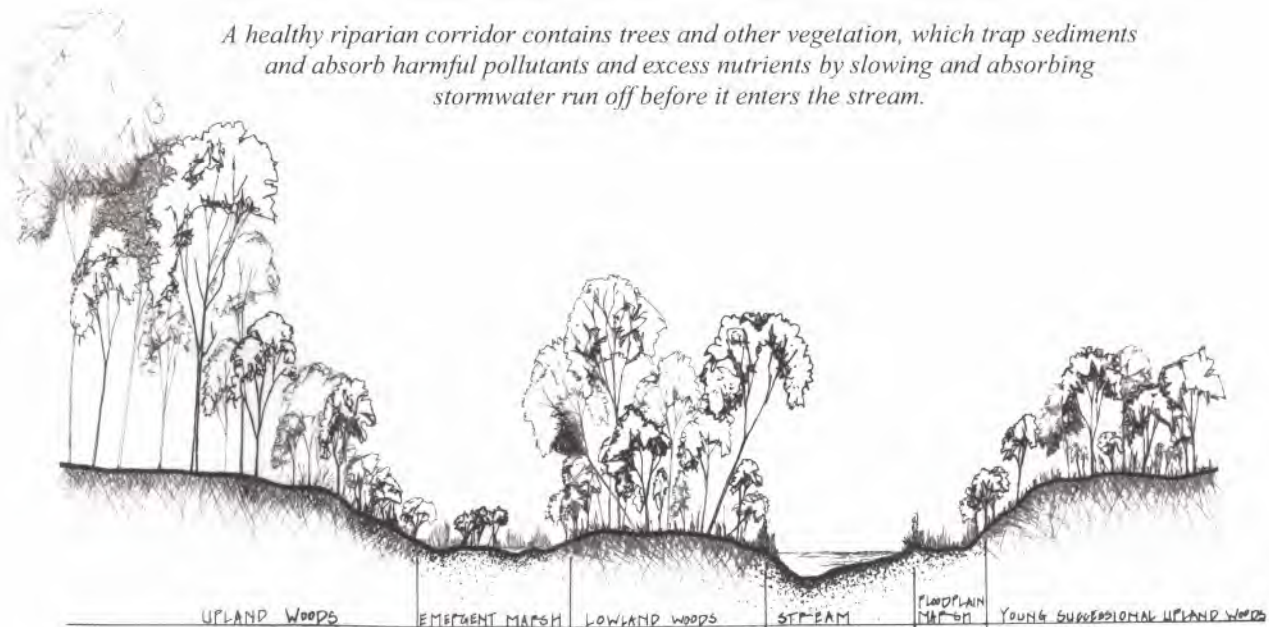
The Banklick Creek watershed consists of a variety of elements from forests, wetlands, and floodplains to homes, businesses, and people. All of these related parts are encompassed by the Banklick Creek watershed and directly influence flooding, erosion, water quality, and wildlife habitat within many communities of Kenton and Boone County.

The Banklick watershed is approximately 57 square miles, covering a large portion of Kenton County, and reaching into eastern Boone County. It includes the Banklick Creek's tributaries, as well as farms, woods, wetlands, cities, and growing suburbs.

Based on a four-year, interagency prioritization process coordinated by the Kentucky Division of Water, the Banklick Creek watershed was designated as one of the three "highest-priority" watersheds in the Licking River region. The severity of its problems, the multiplicity of stakeholders, the high rate of projected growth, and the large number water quality violations are all contributing factors warranting this designation.



A healthy riparian corridor contains trees and other vegetation, which trap sediments and absorb harmful pollutants and excess nutrients by slowing and absorbing stormwater run off before it enters the stream.



Banklick Creek Watershed Analysis and Issue Characterization Project for Education and Outreach (BACE)

BACE

The BACE project was developed by the Northern Kentucky Area Planning Commission with funding from the U.S. Forest Service to assist the Banklick Watershed Council to perform the studies that will lay the groundwork for a future watershed management plan for Banklick Creek.

From the southern portion of the watershed where agriculture dominates the horizon to the bustling cities of northern Kenton County, the Banklick Creek experiences a variety of stressors. Therefore, gathering and analyzing data to characterize and prioritize issues, set goals, and identify potential solutions to address watershed issues were key components of the project.

The BACE Mission:

Establishing the links between forests, water, and people to benefit the health and safety of built and natural environments

Banklick Creek Watershed Council

The Banklick Creek Watershed Council recognizes the critical connection between our landscape with its rolling hills, our vegetation that filters polluted run-off, and the beautiful 19-mile creek that is home to many species of Kentucky's wildlife.

The BACE findings are a tool for the Banklick Watershed Council to address issues of flooding and water pollution in Banklick Creek.

The Council's goal is to restore Banklick Creek to a safe, viable stream that offers ecological, recreation, and economic benefits to the community.

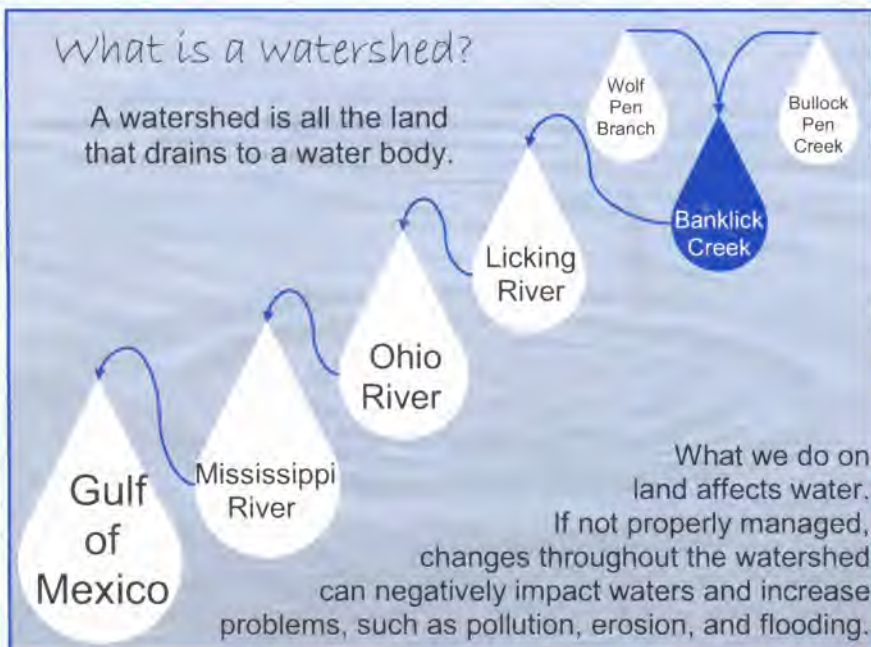
The Banklick Watershed Council:

Dedicated to preserving, protecting, and restoring Banklick Creek and its watershed

Some useful definitions...

What is a watershed?

A watershed is all the land that drains to a water body.



What we do on land affects water. If not properly managed, changes throughout the watershed can negatively impact waters and increase problems, such as pollution, erosion, and flooding.

Canopy Cover—Area where the predominate land cover is trees.

Impervious surface—Surface that does not allow liquid to filter through it, e.g., roads, parking lots, and rooftops.

Non-point Source Pollution—Pollution resulting from many diffuse sources caused by rainfall or snowmelt carrying natural and man-made pollutants to waterways.

Riparian Areas—Regions closest to the water's edge. Naturally vegetated and forested riparian areas provide many benefits to a stream such as absorbing and removing pollutants from runoff and reducing the stream's temperature extremes.

Runoff—The portion of precipitation that ultimately reaches streams, often containing dissolved or suspended materials.

Sedimentation—The process of depositing soils and other solid particles in waterways.

Stormwater—Water resulting from a storm event.

Why are trees important?

Urban and rural forests located in the Banklick watershed, particularly those in riparian areas, are sustainable forest ecosystems that provide direct benefits to not only waters of a watershed, but also to the overall quality of life.

Trees...

- Stabilize soils
- Improve air quality
- Mitigate water pollution
- Reduce energy costs
- Reduce visual and noise pollution
- Provide effective stormwater controls
- Provide a natural habitat for wildlife
- Provide welcome shade for people
- Add color and interest to the landscape

Forestry and Water Quality/ Quantity

The current and future forest cover in the watershed is a valuable natural resource for improving water quality and controlling excessive volume.

Issue: There is a lack of forest cover in the southern portion of the watershed, especially along headwater tributaries, which can reduce the benefits of forests in mitigating water quality and quantity problems. There may be restoration opportunities in these areas.

Issue: Almost 75 percent of the watershed can be classified as a riparian zone. The lack of forested stream buffers reduces the benefits trees provide to improve water quality and decrease excessive water quantity.

Issue: The forest canopy cover in the watershed lacks a significant amount of medium and large canopy trees; trees in these size classes and their associated ecosystems can have the greatest positive impact on improving water quality and moderating water quantity.

Issue: Increasing awareness and education for citizens, landowners, and government officials about forest management (e.g., planting and maintenance) will encourage protection of existing forests and favor growth of medium and large canopy forests.

Issues and O

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Banklick Cree

Through a series of task force meetings, a public o
watershed, four key issues and opportunities

Forestry and Water
Critical Areas for Protect
Land Devel
Need for Inr

The large crown trees located near Doe Run Lake are a unique forest system in the Banklick watershed. They not only bestow beautiful vistas for residents and visitors to this area, but also provide key functions in protecting the water quality and quantity of Banklick Creek.



Critical Areas for Protection and Restoration

Natural resource analysis has generally located and rated critical areas within the watershed best suited for protection or in the greatest need of restoration. This analysis was based on evaluating forest canopy cover, slopes greater than 20 percent, riparian corridors, floodplains, erosion potential, and impervious surfaces.

Issue: Efforts should be focused on preserving and protecting high quality forested areas where features are present that significantly contribute to protecting water quality and moderating water quantity in the watershed.

Issue: Restoration and enhancement efforts should be focused on unforested lands and poor condition forests within the watershed where water quality and quantity are compromised.

Opportunities

in the

Banklick Watershed

Public open house, and outreach to communities in the watershed in the Banklick watershed were identified:

Water Quality/Quantity
Protection and Restoration
Development
Innovation

Disturbed soil resulting from land development activities can negatively impact the water quality of a stream. These bare, disturbed soils may ultimately be deposited into Banklick Creek if rain storms occur before vegetation is established on exposed soils.



Land Development

Land use within the watershed is in transition from one land use to another. Generally, such transitions are from lower development intensities to higher intensities. This transitional period can be viewed as an important opportunity for affecting changes in policies, actions, and attitudes.

Issue: Innovative development techniques and policies that encourage forest cover preservation should be developed and utilized.

Issue: Impervious surfaces, both hardscapes and pseudo-impervious surfaces such as hillside cuts and compacted land, are continually expanding.

Issue: Actions and decisions made by developers, government agencies, and homeowners equally affect the quality of forests and water resources within the watershed.

Innovative designs, such as this example of a conventional development (top) in contrast with a conservation development (bottom), can allow development at equal densities yet provide community open spaces, preserved woodlands and wetlands, and amenities to the residents of the development such as trails.



Source of illustrations: Randall G. Arendt, *Conservation Design for Subdivisions*, Island Press © 1996.

Need for Innovation

Development and land use guidelines, policies, and regulations in relation to forest management are minimal and underutilized in the watershed. This, coupled with the lack of collaborative efforts and further data needs, inhibits efforts to enhance the watershed.

Opportunity: Innovative techniques such as low-impact development, conservation design, and riparian setbacks, are desired tools for development in the watershed. Revisions to the development review and approval process could increase the use of innovative techniques.

Opportunity: Enhanced tree preservation/replacement ordinances and management strategies for enhancing forests in the riparian areas are needed in the watershed.

Opportunity: More collaborative efforts between citizens, communities, and federal, state, and local governments are needed to promote the efficient use of limited resources and effectively use professional expertise to make significant improvements in the watershed.

Protecting Banklick Creek and Its Watershed

Who is responsible for the problems and solutions?

No single person or group is responsible for all the problems. Everyone who lives, eats, drives, does business, owns pets, raises crops, and feeds wildlife takes part in activities that may contribute to non-point source pollution and watershed degradation. Everyone is also responsible for helping to provide solutions to these problems.



Sedimentation, negatively impacts the water quality of the Banklick Creek. Throughout the Banklick's watershed, increased development, larger areas of impervious surfaces, and certain agricultural activities all contribute to the increased sedimentation of Banklick Creek and its headwater tributaries.

Historically, Banklick Creek was surrounded by trees and provided a clean, productive natural resource for the growing community. Over time, this resource had been degraded by the urbanization of the watershed. Revitalization of this resource will improve the communities where many of us live, work and play today.

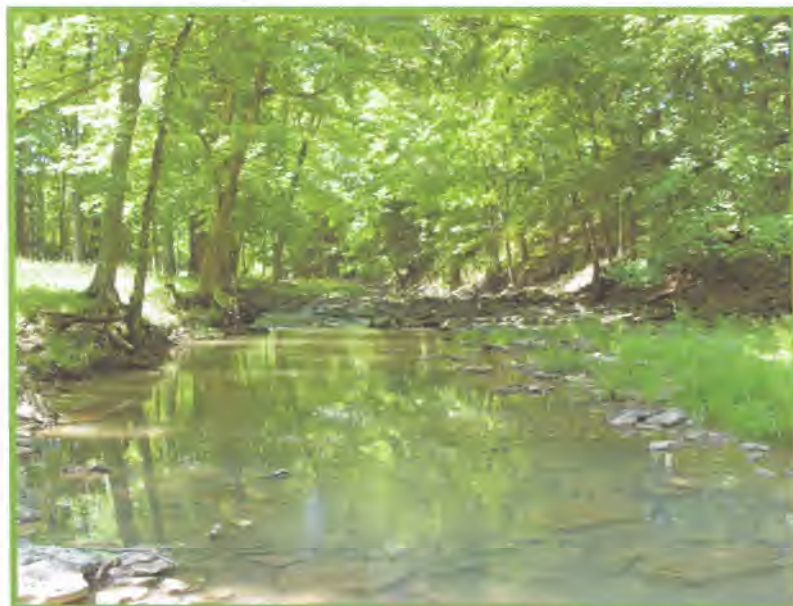


Practices to help protect Banklick Creek and its watershed.

There are many things that individuals, groups, and governments can do to protect the watershed and its resources, while allowing our continued use of the land for agriculture, business and home development, and our daily living. Taking care of Banklick Creek and its watershed can be as simple as cleaning up litter and pet waste, as involved as lobbying for new land use controls, as direct as planting trees along streams, or anything in between. For more ideas on what *you* can do, see the table on the following page.

Get to know your watershed. Become aware of the Banklick Creek, its wetlands, the waters flowing into it, the lands draining to them, and what is affecting the watershed and its streams.

Protecting these resources...



- Protects water quality
- Reduces erosion and flooding
- Provides plant and animal habitat
- Provides recreational opportunities
- Creates a sense of community

...improves our quality of life.

What can you do to help protect the Banklick Creek Watershed?

Problem	If you are a...	You can...
Public awareness	<ul style="list-style-type: none"> School Watershed Council Conservation District 	<ul style="list-style-type: none"> Hold watershed awareness events. Develop a watershed/water quality monitoring program. Educate children and adults about watershed protection.
Stormwater run-off	<ul style="list-style-type: none"> School Watershed Council Home/Business Owner Local/Regional Agency Local/Regional Government 	<ul style="list-style-type: none"> Properly store/dispose of waste oil, toxic materials, and other chemicals. Maintain forests and open natural areas on your property. Sweep and pick up debris in parking lots and streets. Develop spill prevention/clean-up plan. Establish toxic waste disposal sites and/or collection days. Stencil and maintain storm drains. Improve existing storm drains.
Pesticides and fertilizers	<ul style="list-style-type: none"> Farmer Home/Business Owner Local/Regional Agency 	<ul style="list-style-type: none"> Apply minimum amount necessary—follow instructions. Use organic practices. Implement integrated pest management. Leave vegetated buffer strips around streams.
Litter	<ul style="list-style-type: none"> School Watershed Council Local/Regional Agency 	<ul style="list-style-type: none"> Organize and perform clean-up events.
Preservation and/or restoration of natural areas	<ul style="list-style-type: none"> School Farmer Developer Land Trust Watershed Council Local/Regional Agency Local/Regional Government 	<ul style="list-style-type: none"> Establish or hold conservation easements. Purchase or establish conservation easements on key riparian parcels. Practice and/or encourage conservation development. Implement land use controls (e.g., riparian setbacks). Replant riparian buffers with trees. Fence streams to protect from agricultural practices. Maintain wooded riparian buffers.
Erosion	<ul style="list-style-type: none"> Farmer Developer Homeowner Local/Regional Agency Local/Regional Government 	<ul style="list-style-type: none"> Cover disturbed soils. Practice and/or encourage the use of conservation tilling. Limit development on steep slopes. Implement erosion control requirements for development. Provide public education.
Septic system failures	<ul style="list-style-type: none"> Home/Business Owner Local/Regional Agency Local/Regional Government 	<ul style="list-style-type: none"> Inspect and maintain septic systems. Investigate and encourage the use of alternative systems. Provide public education.
Uncontrolled development	<ul style="list-style-type: none"> Watershed Council Local/Regional Agency Local/Regional Government 	<ul style="list-style-type: none"> Evaluate and update comprehensive plans. Encourage and provide tools for resource protection. Provide education for public and officials.
Animal waste	<ul style="list-style-type: none"> Farmer Individual Local/Regional Agency 	<ul style="list-style-type: none"> Eliminate or limit areas for feeding waterfowl. Require removal and proper disposal of pet waste. Work with conservation district to alleviate animal waste problems on farms.

How YOU can get involved in protecting the Banklick watershed...



Banklick Watershed Council
322 East Third Street
Covington, Kentucky 41012
859-261-3880
www.banklick.org

Northern Kentucky Urban and Community Forestry Council
6028 Camp Ernst Road
Burlington, Kentucky 41005
www.nkyurbanforestry.org



Northern Kentucky Area Planning Commission
2332 Royal Drive
Ft. Mitchell, Kentucky 41017
859-331-8980
www.nkapc.org

Sanitation District No. 1
1045 Eaton Drive
Ft. Wright, Kentucky 41017
859-578-7450
www.sd1.org

Contact any of the following project partners to learn how you can help protect the Banklick Creek watershed:

Boone County Planning Commission
2995 Washington Street
Burlington, Kentucky 41005
859-334-2196
www.boonecountyky.org

Davey Resource Group
jgulick@davey.com
Walton, Kentucky 41094
859-384-8258
www.davey.com

Numerous other information resources exist to assist you with watershed and forestry management and protection. Contact any of the following organizations for assistance in your watershed:

Kenton County Conservation District
6028 Camp Ernst Road
Burlington, Kentucky 41005
859-586-7903
www.kentoncounty.org

Boone County Conservation District
6028 Camp Ernst Road
Burlington, Kentucky 41005
859-586-7903
www.boonecountyky.org

Kentucky Division of Forestry
627 Comanche Trail
Frankfort, Kentucky 40601
502-564-4496
www.forestry.ky.gov

The Kenton Conservancy
2332 Royal Drive
Fort Mitchell, Kentucky 41017
859-392-8358
www.kentonconservancy.org

The Boone Conservancy
P.O. Box 416
Burlington, Kentucky 41005
859-689-0834
www.thebooneconservancy.org

Kentucky Waterways Alliance
854 Horton Lane
Munfordville, Kentucky 42765
www.kwalliance.org

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Reprinting of this handbook is encouraged with credit given to the above groups.

