



**Stream
Setbacks
Are
A
Stream
Saving
Measure**

Streams, a Natural Resource

Streams are such a natural part of our landscape we tend to take them for granted. A healthy stream is pleasing to look at with its clear, cool water flowing through the lush green plants, protected and shaded by tall trees along the bank. The things that make a stream enjoyable to be around are the things that make it healthy. A stream and all the vegetation on its banks is known as a *riparian zone*. Ideally, this zone continues along the length of the stream and is called the *stream corridor*. If the land area surrounding the stream is

In order to maintain a healthy stream, stream setbacks can protect the area on both sides of the stream by preventing soil erosion and controlling flooding due to development or heavy rainfall. Disturbing a stream's ability to flow naturally can be responsible for losing the things that make a stream so special in the first place.

The Little Miami State and National Scenic River is located in Warren County. It is the primary waterway in the County with a watershed that covers two thirds of the

**WE FORGET THAT THE WATER CYCLE
AND THE LIFE CYCLE ARE ONE.**

~ JACQUES COUSTEAU

covered with trees and plants it is called the *buffer* and provides streambank stability. These stream features lie within a *flood plain*, the widest area beside the stream that carries and holds water during flooding.

Land owners that have a stream on their property, either in a town or a rural area, can protect their stream and the streams down the channel from them by following stream setback guidelines and management practices.

area. This booklet explains how stream setbacks work and why creating or maintaining a riparian zone along your stream can enhance the value of your property and allow the stream to function naturally.

The single best management plan for a healthy stream is to avoid building too close to the stream and to keep a buffer of a set width on either side of the stream . Then let nature do the rest.

The Reason for Stream Setbacks

A stream setback is the measured distance from the streambank to an area that is safe for human activity without disturbing the stream. The distance is calculated from the size of the watershed that drains into the stream. Keeping human activity outside of the setback area will help prevent the streambank from eroding as will having a buffer of trees and plants. Vegetation is effective in reducing the amount of exposed soil that can be scoured from the banks and washed away.

Streams are naturally changing systems that respond to disturbances caused by human activities. When left undisturbed, a stream will change its channel, floodplain, etc. without affecting the health of the stream or

involvement, will force the stream to find its balance by putting stress on the natural flow. This stress results in ruining the streams structure beginning at the point of disruption and continuing down the stream channel. The effect on one part of a stream is carried along to areas down stream, creating a cascade of drainage and flow problems.

An undisturbed, vegetated stream corridor can reduce the force, height, and volume of floodwaters by allowing them to spread out horizontally and relatively harmlessly across the floodplain. Water that floods vegetated floodplains is absorbed by floodplain wetlands and streamside vegetation, allowing the water to flow back into the main channel slowly. This slower flow can lower flood depth,

**ALL THE WATER THAT WILL EVER BE IS,
RIGHT NOW**

~ NATIONAL GEOGRAPHIC , OCTOBER 1993

streams down the channel. Streams are able to maintain and reach a natural balance, but changes to a stream's natural system, due to construction or any other disruption from human

reduce the swiftness of the moving water, refresh local groundwater aquifers, and provide temporary water storage.

Little Miami River Watershed



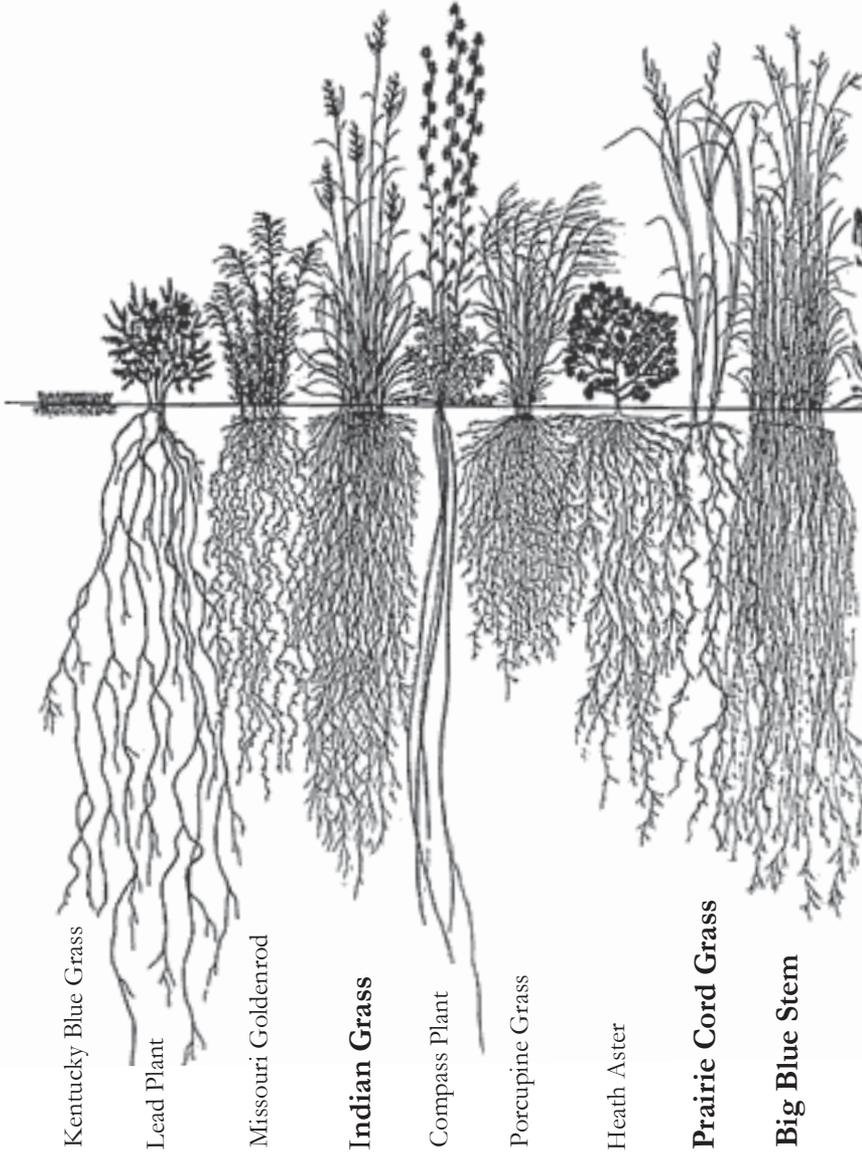
The Little Miami River watershed is situated within the Ohio River watershed and is located in parts of 12 Ohio counties. Although, the Little Miami National Scenic River flows through only 5 of those counties. The area affected by this river gives you some idea of how important it is to protect all the tributaries in this watershed as well as the main river.

A WATERSHED IS THE LAND AREA THAT DRAINS TO A COMMON BODY OF WATER, SUCH AS A STREAM, LAKE, ESTUARY, WETLAND, OR EVEN THE OCEAN.

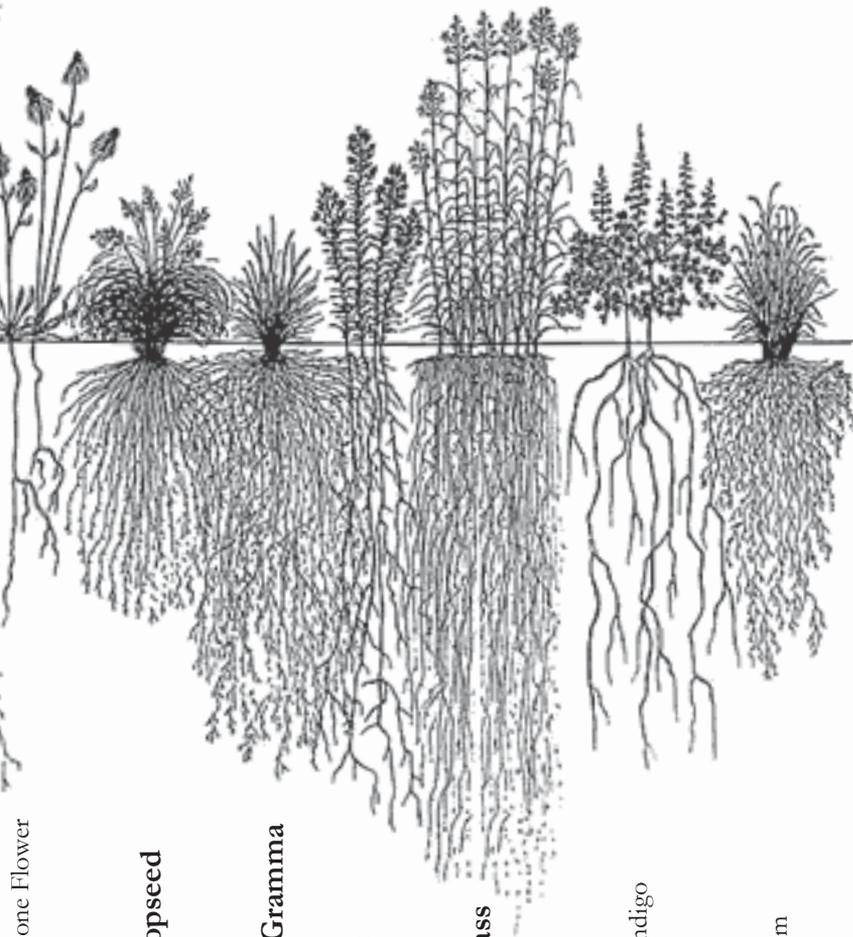
~ CENTER FOR WATERSHED PROTECTION

Native Vegetation

Ideally a mix of dominant tree species, understory trees and shrubs, and native plants and grasses should be planted as they are valuable resources for protecting streambank stability. Removing native vegetation and replacing it with turf grass usually results in speeding up the erosion process and decreases water quality in the stream.



Turf grasses (far left in picture) do not provide the ability to slow runoff as well as native grasses and their root systems are too shallow to stabilize the streambank. Native grasses have a root structure that is much deeper and denser than turf grass; therefore they are much more effective in preventing erosion. By using stream setbacks you can protect your stream and property in positive and productive ways. Plant names in bold are native to Ohio.



Pale Purple Cone Flower

Prairie Dropseed

Side Oats Gramma

False Boneset

Switch Grass

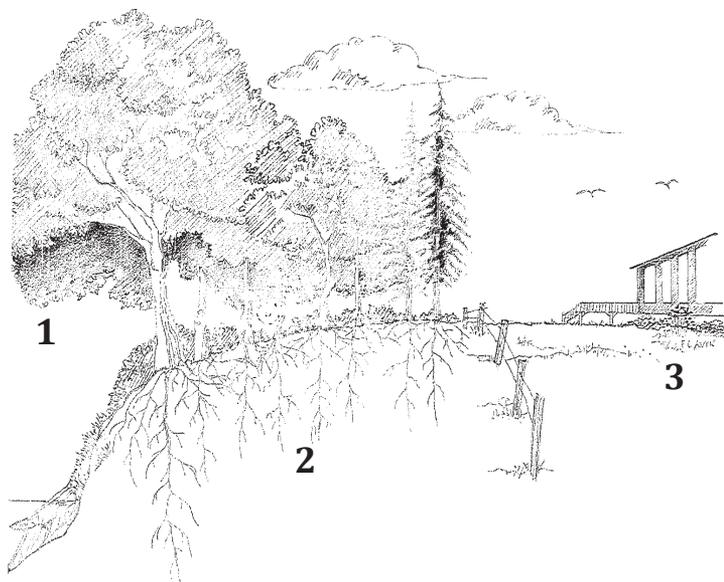
White Wild Indigo

Little Blue Stem

Benefits of Stream Setbacks

A stream setback can benefit the stream and surrounding land in many ways. Every piece of property is unique and may require special attention to create an effective riparian buffer zone. Property owners that want to protect and preserve their streams will find a riparian zone of native vegetation is the most reliable way to achieve their goal. The benefits of riparian plants are:

- Roots prevent erosion and undercutting of stream banks.
- Branches, stems, and leaves absorb the impact of raindrops.
- Ground cover (decaying leaves and low-growing vegetation) slows runoff by helping to increase water absorption.



Healthy Streambank

1. Overhanging branches provide nesting places and shade to keep the stream cool for aquatic life during the summer.
2. Tree roots filter pollutants before water enters the stream and provide streambank stability.
3. Building away from the stream allows floodplain to function effectively.

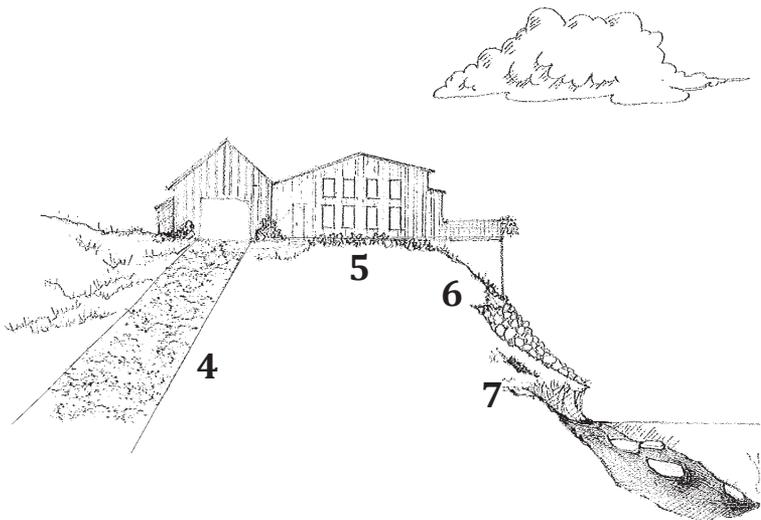
Stream setbacks can:

- Increase property value
- Reduce property loss from excessive erosion
- Protect water quality
- Enhance wildlife habitat
- Contribute to the natural beauty of the land
- Reduce maintenance time and related costs

These benefits are not only related to property value, but also to the value added by creating wildlife habitat that will provide food, shelter, clean water, and nesting sites for a variety of insects, amphibians, reptiles, songbirds, mammals and fish.

Unhealthy Streambank

4. Solid surfaces like driveways and roofs create runoff that can cause erosion.
5. Building too close to the floodplain can result in property loss.
6. Hardened shoreline eliminates natural filtering.
7. Lawns along water's edge lack deep roots, lead to erosion.



Source: Catskillstreams.org

Stream Setback Distances

Recommended Stream Setback Distance based on contributing watershed size:

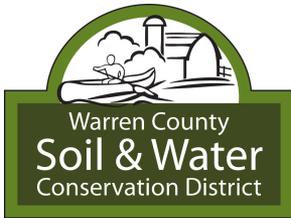
Setback	Contributing Watershed Size
50 feet	Up to 320 acres
75 feet	320 acres to 3200 acres (5 square miles)
100 feet	5 square miles to 20 square miles
300 feet	20 square miles and up

The setback distance is on each side of the streambank. Your ideal setback distance can be determined by contacting the Warren County Soil and Water Conservation District.

Natural Stream Balance

Our natural resources are an important part of our lives. Streams are one of the resources that are vital to the health of our environment and natural habitat. By taking responsibility for our actions and being conscious of our actions and the way they impact the natural environment, we can help to preserve our natural resources. Water is vital to the survival of every living thing and clean water is extremely important. How our streams are treated and cared for will impact life along the stream and in the stream. ***Remember, by practicing recommended building setbacks from streams, you allow natural and effective management to occur with little to no maintenance required.***

All the water we will ever have on Earth is here now. We can not make new water, so we must protect the streams and all bodies of water to ensure we keep what we have in a useable state for the future.



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Mission Statement

The Warren County SWCD mission is to promote wise stewardship of our natural resources through cooperative partnerships, educational programs and technical assistance in land and water management.