



Landowners Guide to Riparian Buffers



Purpose of the Guide

This document is intended to provide the landowner with information to help guide them in the maintenance of the riparian buffer planting project installed on your property. This project was not intended to limit landowner access to the stream. In fact, it is important to the success of the project that you continue to enjoy the experience and benefits of living on the stream.

This booklet includes brief descriptions and photos of the plants that were installed within the riparian buffer on your property. This will help you identify the plants as they leaf out, bloom and mature. There are also some important guidelines to follow with regards to caring for and maintaining the plants and the project area. The landowner plays an extremely important role in the success of this planting project. Proper maintenance is important to ensure the long-term effectiveness and sustainability of a restored riparian buffer. We hope you this guide will help you learn about and understand and appreciate these native plants and riparian habitat. This document is not intended as a complete list of plants native to the area, but only those installed during the planting project.

This *Landowner's Guide* offers a list of different native plant species, which serve specific buffer and ecological benefits, and are aesthetically pleasing for the landowner.

Benefits of Riparian Buffers

A *riparian ecosystem* can be described as the area between the water and upland which also includes the stream, streambanks, floodplain, and wetlands. It is a transitional area between the water and upland, and contains a variety of vegetation which is adapted to periodic flooding.



Riparian Buffers provide a number of important functions and benefits, both environmental and economic.

A well and diversely vegetated riparian buffer plays a critical role in the health and stability of streams ultimately in water quality. Because of the nature of periodic flooding in these areas, the species identified in this plan and used in the plantings are all classified as species adapted to wetland or flood condition. Some require wet conditions to thrive, while others can tolerate flood conditions for extended periods during periods of high water.



When trees, shrubs, and grass are planted together, their combined root systems form a mosaic capable of holding the soil both at the surface, as well as deep into the soil layers. Vegetation also reduces water velocities and, therefore, erosion from surface runoff as it finds its way to the stream. It provides a natural filter for runoff water and protects and improves water quality-by absorbing nutrients, pesticides, sediments, and other pollutants.

Vegetated buffers provide wildlife habitat for both terrestrial and aquatic wildlife. The structure, leaves, flowers, seeds, berries and other fruits of these plants provide food and shelter for a variety of birds and other wildlife. Overhanging streamside vegetation offers shade to the stream and reduce water temperatures, improving both the fishing and recreational habitat. They offer a food source for terrestrial and aquatic species. Organic material, in the form of leaf litter, provides essential nutrients to aquatic insects - a basic food of native fish. They attract birds, butterflies and other wildlife.

A healthy riparian buffer can reduce maintenance time and other related costs to the property. Native riparian buffers require less maintenance than lawns, once established, and reduce the need for gas-powered equipment. Over time, desired plants spread to fill gaps and natural cycles can reduce the introduction or spread of invasive plants.

The region's wildlife, plants, habitats and network of streams within our watershed are tremendous resources. As the human population throughout the Delaware County watersheds grows and land-use pressures intensify, it is increasingly important to protect our remaining natural areas and wildlife, and restore and create habitat.



Why Use Native Plants?

Native plants offer a natural beauty to the property. They are also adapted to the specific local conditions of this region, and are therefore more tolerant of local environmental conditions. They are naturally more tolerant of drought and extreme temperatures. They are also adapted to more acidic soil or nutrient poor conditions. They require less, or no, fertilizer thus reducing the chemicals we need to put into our streamside environment. They are also naturally resistant to pests and diseases.



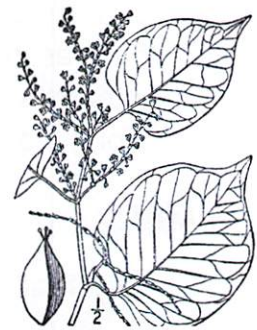
Native or indigenous plants naturally occur in the region in which they evolved. They are adapted to local soil, rainfall and temperature conditions, and have developed natural defenses to many insects and diseases. Because of these traits, native plants will grow with minimal use of water, fertilizers, and pesticides. Wildlife species evolve with plants; therefore, they use native plant communities as their habitat. Using native plants helps preserve the balance and beauty of natural ecosystems.



Native plants offer increased biodiversity and native wildlife habitat, both food and shelter, for songbirds, mammals, fish, pollinating insects, amphibians, reptiles, etc.

Avoid Invasive Non-Native Plants

Non-native or exotic plants introduced from other parts of the world or other parts of the country have degraded many natural ecosystems. Although many non-native plants do not escape into the natural environment, some of these introduced plants are invasive, meaning that there are few or no naturally occurring measures such as insects or competitors to control them. Invasive plants can spread rapidly and smother or out-compete native vegetation. Ecosystems impacted by invasive, non-native plants have a reduced ability to clean our air and water, stabilize the soil, buffer floods, and provide wildlife food and shelter. Non-native plants to be aware of and to avoid in your landscape are included in a section at the end of this manual.



Japanese Knotweed

More information on invasive species in NY can also be found at <http://newyorkinvasivespecies.info>.



How to Maintain Your Buffer

Following the principles of proper riparian stewardship will not only ensure the preservation of riparian buffer health, aesthetics, recreational opportunities, water quality, and aquatic habitat, but will also reduce or prevent costly restoration and repairs stemming from damages caused by unstable stream systems.

The purpose of this section is to help landowners maintain the vigor of the streamside vegetation on the project reach. By keeping riparian vegetation healthy, the landowner is ensuring that the vegetation functions effectively to keep streambanks stable and enhance the quality of the aquatic habitat.

Mowing:

No mowing activities should be conducted within the planted riparian buffer area.

After planting is complete, mowing should be restricted around the plantings and along the edge of the stream and streambank.

Degrading riparian buffer zones can be improved by allowing vegetation to grow naturally along the streambank. Refraining from mowing activities along the streamside area, especially around the planted vegetation and along the stream, can improve several natural functions of the riparian buffer. Leaving vegetation such as grasses, wildflowers, shrubs and trees increases the stability of the streambank, filtering function of the vegetation, and quality of wildlife habitat along the stream.



Mulching:

Mulch around planted vegetation using a standard material such as bark chips or shredded cypress bark.

Newly planted vegetation can benefit protection from competing vegetation to achieve acceptable growth rates. The use of mulches around new plantings, such as bark chips or shredded cypress bark will help to preserve soil moisture and inhibit competition from grasses and weeds. Use of these mulches around the will increase the success of the tree and shrub plantings.

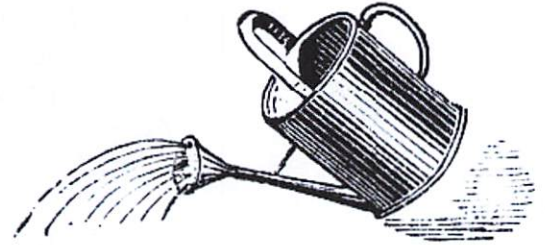
Mulch should be applied approximately 1-2 inches in depth, and 2 feet in diameter around the base of newly planted vegetation. Mulches should be checked regularly and replaced as needed.



Watering:

Watering of newly planted vegetation may be necessary, especially during the first growing season, after plants are installed.

If there is a water source, such as a garden hose or similar source, monitoring of vegetation during dry periods and subsequent watering of planted vegetation will increase the success rate of the plantings.



Shrub and Tree Maintenance:

Pruning of vegetation is not necessary for riparian vegetation to grow and remain healthy.

A healthy buffer zone along streambanks consisting of trees and shrubs helps to minimize erosion and protect property, filter pollutants, and increase habitat value. Most riparian vegetation is best left to grow without significant trimming or pruning. Top pruning or shearing of shrubs will promote lateral growth, and is appropriate once the shrub has reached a height of 4 to 5 feet. This should not be required until the 3rd or 4th year for bare-root plantings, but may be required sooner for transplants or potted plantings. Please contact the DCSWCD for advice on proper pruning and maintenance techniques.

Fertilizer:

No additional fertilizer is required for riparian plantings.

It should not be necessary to use fertilizer, herbicides, or pesticides on any of the plantings. Native vegetation is adapted to low nutrient levels. Application of fertilizers or pesticides has the potential to enter the stream, thus reducing water quality, adversely affecting fish populations and even damaging the vegetation.

Debris disposal:

Do not dump or dispose of any yard waste or debris along the streambank.

Dumping of debris on or along the streambank acts only to smother and kill the vegetation below it and destabilize the soil. Any debris from land clearing and cutting can be disposed of by taking it off site. If the amounts are small it can be spread away from the stream side of the property, and allowed to deteriorate naturally. This will also add to the wildlife quality by providing for hiding spaces as well as providing for food supply from insects within the decomposing plant material.



Access to the Stream:

This project is not intended to limit landowner access to the stream. In fact, it is important to the success of the project that you continue to enjoy the experience and benefits of living on the stream. We recognize that

establishment of thick shrub vegetation along the stream may present an obstacle to stream access. We have observed in some cases where trails to the water can become a primary source of stream bank instability. However, with the use of

selective thinning of the shrubs to create a path, along with the use of stones to prevent soil

disturbance in the path, a stable access point can be maintained. The DCSWCD will work with you to establish safe and stable access points along your property.

Additional plantings:

Landowner plantings: If interested, the landowner may plant additional vegetation throughout the riparian buffer area, or in adjacent areas. Landowners can supplement the trees and shrubs planted as this activity would only benefit the function of the buffer. The landowner can use any of the species identified within this booklet, or other species native to the Catskill region, to supplement the buffer planting. If the plant is not included in this book, the landowner should check with DCSWCD to ensure that the plant species is compatible with the site conditions as well as the designed planting strategy.

Only Catskill native species should be used in this enhancement effort. It is important to maintain a mix of trees, shrubs, and grasses to provide the best protection against soil erosion.



Future Activities and Monitoring:

As a participant in the Catskill Streams Buffer Initiative, DCSWCD requests that landowners take responsibility in monitoring the general condition of the vegetation and to report any problems to this office at (607) 865-5223. This will allow us to react quickly to identify and repair unforeseen any problems and address any other potential issues.

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Catskill Streams Buffer Initiative

At the Root of Streamside Protection

