

Riparian Forest Buffer

Conservation Practice KY Job Sheet

Code 391

INFORMATION ON THIS JOB SHEET IS CONSIDERED TO BE PART OF THE CONTRACT AND/OR CONSERVATION PLAN.



Definition

An area of predominantly trees and/or shrubs located adjacent to and up-gradient from watercourses or water bodies

Purpose

Riparian forest buffers start at the top of the streambank. Woody vegetation in buffers provides food and cover for wildlife, helps lower water temperatures by shading the waterbody, and slows out-of-bank flood flows. In addition, the vegetation closest to the stream or waterbody provides litter fall and large woody debris important to aquatic organisms. The woody roots increase the resistance of streambanks and shorelines to erosion caused by high water flows. Some trees established or managed in a riparian forest buffer can be managed to provide timber, wood fiber, and horticultural products. In most cases, a riparian area is a system and consist of several different practices such as fencing, tree and shrub planting, stream crossings and water developments. In some cases, eroding streambanks or shorelines will need to be stabilized before or in conjunction with the establishment of the riparian buffer.

Considerations for Wildlife

Riparian forest buffers provide critical habitat for many types of wildlife because of their diverse plant communities, complex structure, and close proximity to water. Wildlife may be permanent residents of the riparian area or occasional visitors

that use the area for food, water, connective corridors or temporary shelter. Although riparian areas can support many types of wildlife, the importance of a particular riparian area will depend on the surrounding land uses, the vegetation and animal populations present. Selection of planting material should be based on wildlife needs for food, cover and shelter for a variety of species.

Considerations for Establishment

Riparian forest buffers may be established through either natural regeneration or tree and shrub planting. A number of factors must be evaluated before determining which method is appropriate for a particular site including:

- quality and spacing of any seed trees
- existing seed bed
- objectives
- potential effects of wildlife browsing
- potential for invasive species to interfere with the purpose of the buffer
- cost
- soil type
- flooding

When planting trees and shrubs, select native species that are adapted to the site. Hardwood species should be the predominant species in riparian buffers. Where possible select species that have multiple values such as those suited for timber, biomass, nuts, fruit, browse, nesting and aesthetics. In areas where wildlife browse may be a problem, appropriate protection measures will be required.

Site Preparation

Refer to conservation practice 490 Tree/Shrub Site Preparation.

Site preparation for tree planting may include mowing, disking, and/or herbicide application. Mowing heights shall be 8 inches or shorter. Mowing or disking shall be done in the late summer or fall prior to planting and before any planned herbicide application. If herbicide application is planned, allow at least 4-6 inches of re-growth after mowing prior to applying herbicide to ensure adequate uptake. Herbicide application for burn down purposes should be done when vegetation is actively growing. Herbicides must be used according to label recommendations.

Seedling Planting

Refer to conservation practice 612 Tree/Shrub Establishment.

1. Trees will be planted when the ground is not frozen between November 15th and April 15th in western Kentucky and between November 15th and May 1st in eastern Kentucky.
 2. Planting rates for trees and shrubs should be between 605 seedlings per acre (approximately 6' x 12' spacing) and 681 seedlings per acre (approximately 8' x 8' spacing). Consider using the 12' row widths for equipment access during post planting management activities. Use the 8' x 8' spacing when it is anticipated that the planting will not receive mechanized post planting management activities.
 3. At least 80% of the tree species planted shall consist of three hard mast species equally distributed by number. To ensure interspersions, rows may contain the same species but the same species shall not be planted in two consecutive rows. To achieve optimum interspersions, plant at least 2 species per row alternating species within the row. See Table 4 for the tree species that are planned.
2. Trees shall be planted with conventional planting equipment such as the dibble or planting bar, spade, mattock, shovel, or mechanical tree setter.
 3. Plants shall be placed in a hole or slit of sufficient depth and width that the root system is fully accommodated in its natural form and position. They shall be set deep enough that the root collar is at or slightly below ground level. Soil shall be packed firmly around the roots. Plants will be carried so roots remain moist during planting.

Herbaceous Establishment

Additional herbaceous vegetation may be desired or required up-gradient to the riparian forest buffer depending on the purpose. Examples include:

- when adjacent to cropland or other sparsely vegetated areas
- highly erosive areas to filter sediment
- to address concentrated flow erosion
- to maintain sheet flow.

Refer to (393) Filter Strip, (390) Riparian Herbaceous Cover and/or (342) Critical Area

Treatment, (327) Conservation Cover, (386) Field Border as applicable.

Operation and Maintenance

Excessive water flows and erosion must be controlled upslope of the riparian forest buffer. In all cases the riparian forest buffer must be protected from grazing.

As the buffer matures, periodic harvesting of some of the trees becomes an important activity for maintaining plant health and buffer function. Forest management activities should not interfere with the planned function of the buffer.

Activities that result in the removal or disturbance of vegetation and leaf litter should be avoided.

The riparian forest buffer should be inspected annually and after heavy storm events; and protected from impacts such as excessive vehicular and pedestrian traffic, pest infestations, concentrated flows, pesticides, livestock or wildlife damage and fire. Check for areas where water is concentrated and take appropriate actions to disperse flows.

Replacement of dead trees or shrubs and control of undesirable vegetative competition should be continued until the buffer is, or will progress to, a fully functional condition.

Control or exclude livestock and harmful wildlife.

Fertilizers, pesticides and other chemicals used to maintain buffer function shall not impact water quality.

Where practical, management activities will be performed outside the primary nesting season of May 15th and August 1st. An exception may be for mowing or cultivation to control vegetative competition.

For the purpose of moderating water temperatures and providing detritus and large woody debris, riparian forest buffer management must maintain a minimum of 50 percent canopy cover.

Additional operation and maintenance requirements may apply depending on site conditions to assure performance of the practice as intended.

Specifications

Site-specific requirements are listed on the specification sheet. Additional provisions are entered on the job sketch sheet. Specifications are prepared in accordance with the NRCS Field Office Technical Guide and the Riparian Forest Buffer practice standard (391). Information in this job sheet is considered to be part of the conservation plan.

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Client:		Date:		Farm #:	
Water body/course type and name/location:				Tract #:	
Min. Buffer Width: _____ (ft.)	Avg. Buffer Width: _____ (ft.)	Total Buffer Length: _____ (ft.)		Total Acres: _____	
Riparian Forest Buffer planned on: <input type="checkbox"/> one side of stream <input type="checkbox"/> both sides of the stream <input type="checkbox"/> lake or pond					

Purpose (check all that apply)	
<input type="checkbox"/> Reduce excess sediment, organic material, nutrients, pesticides in surface runoff and excess nutrients/chemicals in shallow ground water flow	<input type="checkbox"/> Create or improve riparian habitat and provide a source of detritus and large woody debris
<input type="checkbox"/> Create wildlife and/or pollinator habitat and establish corridors	<input type="checkbox"/> Reduce Pesticide Drift
<input type="checkbox"/> Restore riparian plant communities (may include interplanting)	<input type="checkbox"/> Increase carbon storage in plant biomass
	<input type="checkbox"/> Create shade to lower or maintain water temperatures to improve habitat for aquatic organisms

Layout
<input type="checkbox"/> An area consisting of perennial sod/herbaceous cover must be maintained or established along the up-gradient of the riparian forest buffer. Refer to: <input type="checkbox"/> Filter Strip (393) <input type="checkbox"/> Riparian Herbaceous Cover (390) <input type="checkbox"/> Other (specify)

Field No.	Desired Species	Min. Buffer Width (ft.)	Establishment Method ¹	Site Prep. Required ²	Method of Exclusion ³	Up-Gradient Herbaceous Strip

¹ **Establishment Method: Planting or Natural Regeneration.** Refer to the KY Conservation Practice Standard (612) Tree/Shrub Establishment and their associated job sheet(s). NOTE: Natural regeneration requires approval for areas greater than ½ ac.

² **Site Preparation Necessary:** If YES, refer to the KY Conservation Practice Standard (490) Forest Site Preparation and associated job sheet(s).

³ **Method of Exclusion:** List the method of exclusion of livestock as: **fence, removal, or other** (specify in the in the section of this document entitled "Additional Specifications").

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If needed, an aerial view or a side view of the practice can be shown below. Other relevant information, complementary practices and measures, and additional specifications may be included.

Operation and Maintenance

Operation and maintenance will be performed in accordance with the section of this document entitled “Operation and Maintenance” and any additional criteria specified below. **Additional Notes:**

Certifications

Job Sheet	Prepared By:	Title:	Date:
	Approved By	Title:	Date:
Installation	Meets NRCS Standards and Specifications		
	Certification by:	Title:	Date:

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