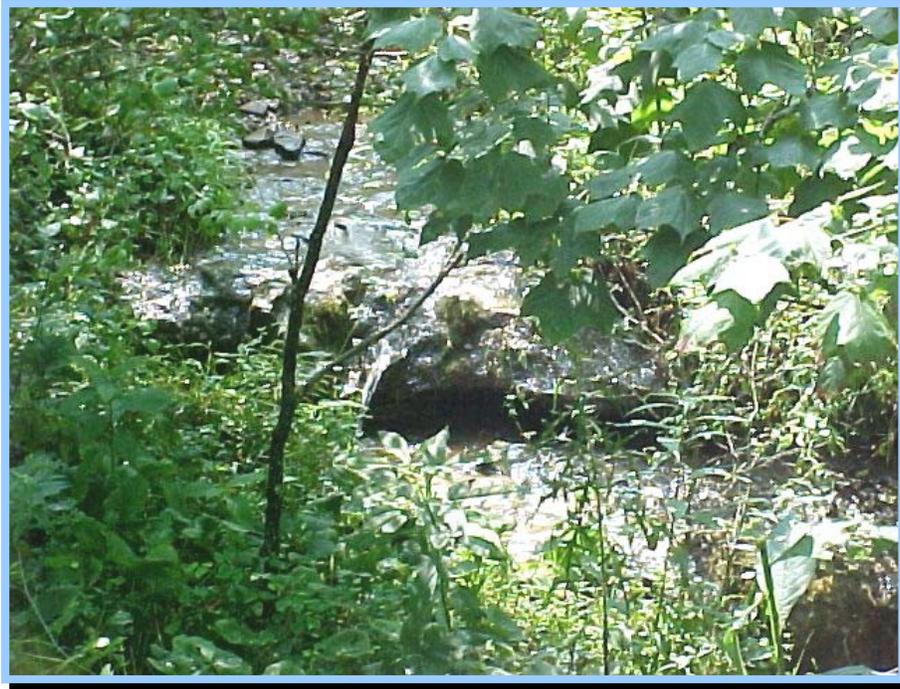


Riparian Forest Buffer

Conservation Practice WV Job Sheet

Code 391



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. They should be of sufficient width to intercept sediment, nutrients, pesticides, and other materials in surface runoff and reduce nutrients and other pollutants in shallow subsurface water flow. 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.

Also, the woody roots increase the resistance of streambanks and shorelines to erosion caused by high water flows or waves. Some species established or managed in a riparian forest buffer can be managed to provide timber, wood fiber, and horticultural products.

Riparian forest buffers are normally established concurrently with other practices as part of a resource management system. In most cases, a riparian area may consist of several different component 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.

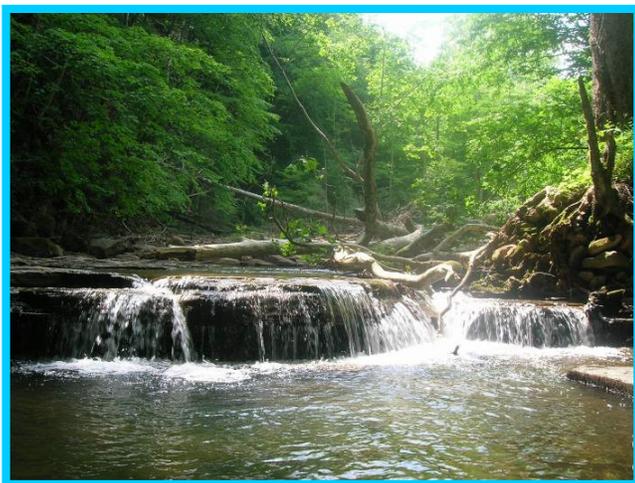
INFORMATION ON THIS JOB SHEET IS CONSIDERED TO BE PART OF CONTRACT AND/OR CONSERVATION PLAN

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:

- The quality and spacing of seed trees (within 250 feet)
- Condition of existing seed bed
- Landowner objectives
- The potential effects of wildlife browsing
- The potential of invasive species to interfere with the purpose of the buffer
- Cost
- Soil type

Site preparation will most likely be necessary for planting or natural regeneration. It should be done at a time and manner to insure survival and growth of selected species.



When planting trees and shrubs, select three (3) or more (preferably native species) that are adapted to the site. Hardwood species should be the predominant species in riparian forest buffers. 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.

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.

Site-specific requirements are listed on the following pages of this job sheet. Specifications are prepared in accordance with the WV NRCS Field Office Technical Guide. If site preparation or tree/shrub establishment is necessary see the WV conservation practice standard for Tree/Shrub Site Preparation (490) and/or Tree/Shrub Establishment (612) for specific requirements.

The riparian forest buffer should be inspected periodically, especially 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. A 60% survival rate of planted materials after two years is considered satisfactory if trees/shrubs are well distributed over the planted area. Evaluate the planted area to determine whether to replant failed areas or if natural regeneration will meet the objectives of the landowner.

Control or exclusion of livestock and harmful wildlife shall continue.

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 (March 15 - July 15). 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.

For the purposes of reducing excess pollutants in surface runoff and shallow groundwater or providing habitat and corridors for wildlife, manage the canopy to maintain maximum vigor of the overstory and understory species.

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



C. Shrader

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.

Riparian Forest Buffer – WV Job Sheet

Client:	Date:	Farm #:
Designed By:	Tract #:	
Water body/course type and name/location:		
Min. Buffer Width: _____(ft)	Avg. Buffer Width: _____(ft)	Total Buffer Length: _____(ft)
Total Acres: _____		
Riparian Forest Buffer planned on (check all that apply): <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"/> Increase carbon storage in plant biomass
<input type="checkbox"/> Restore riparian plant communities	<input type="checkbox"/> Create shade to lower or maintain water temperatures to improve habitat for aquatic organisms
<input type="checkbox"/> Is this buffer associated with the Conservation Reserve Program (CRP) or the Conservation Reserve Enhancement Program (CREP) <input type="checkbox"/> YES <input type="checkbox"/> NO	If YES, refer to the Riparian Forest Buffer Management/Maintenance Job Sheet Supplement for additional information.

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"/> Critical Area Planting (342) <input type="checkbox"/> Riparian Herbaceous Cover (390)

Existing Conditions – List the existing conditions of the site to be established.							
Field No.	Landuse ¹	Livestock Present	Dominant Vegetative Species	Percent Cover	Noxious or Invasive Plants Present	Percent Cover	Remarks

¹ Landuse – Identify the current landuse as either: **Pasture, Crop, Forest, Associated Ag Land, Designated Protected Area, Developed Land, Farmstead, Other, Water**

Tree and Shrub Information (Use additional sheets if necessary)							
Field No.	Desired Species	Min. Buffer Width (ft)	Est. Method ¹	Seed Source Present	Planting Arrangement ²	Site Prep. Required ³	Method of Exclusion ⁴

¹ **Establishment Method: Planting or Natural Regeneration.** Refer to the WV Conservation Practice Standard Tree/Shrub Establishment (612) and Tree/Shrub Site Preparation (490) and their associated job sheet(s). NOTE: If planting, three (3) or more species are required.

² **Planting Arrangement: N/A, Linear, Clump, or Interplanting;** for additional planting information establishment refer to the WV Conservation Practice Standard (612) Tree/Shrub Establishment and their associated job sheet(s).

³ **Site Preparation Necessary:** If YES, refer to the WV Conservation Practice Standard (490) Forest Site Preparation and associated job sheet(s).

⁴ **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").

Riparian Forest Buffer – WV Job Sheet

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.

Refer to the conservation plan map for locations

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 or provided on additional documents. **A 60% survival rate of planted materials after two years is considered satisfactory if trees/shrubs are well distributed over the planted area. Evaluate the planted area to determine whether to replant failed areas or if natural regeneration will meet the objectives of the landowner. It is crucial to control competing vegetation around planted trees/shrubs for at least the first three (3) years.**

Additional Notes:

Additional Specifications and Notes

Tree protection from deer browse must have an effective height of 5 feet.

Questions regarding the planning, establishment or maintenance of the Riparian Forest Buffer (391) Practice should be directed to:

_____ at _____

Planner Certification		
This plan meets the requirements of West Virginia NRCS Conservation Practice Standard – Riparian Forest Buffer (391).		
Signature_____	Title_____	Date_____
Certification of Practice Completion		
This practice has been completed according to NRCS plans and specifications. (Indicate in Practice Specifications if there were any changes to the planned practice and amount.)		
Signature_____	Title_____	Date_____

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