

Riparian Forest Buffer

Vermont Conservation Practice Job Sheet 391

Client:	Tract Number:
Designed By:	Date:
Water body/course type and name/location:	
Pre-Planting Meeting Date:	



Example of a planted riparian forest buffer

Definition

A riparian forest buffer is an area of trees and shrubs located adjacent to streams, lakes, ponds, and wetlands.

Purpose

Riparian forest buffers intercept sediment and nutrients in surface runoff and reduce nutrients and other pollutants in shallow subsurface water flow. Woody vegetation provides food, cover and connectivity for wildlife, helps aquatic life by lowering water temperatures by shading the stream or waterbody, and slows out-of-bank flood flows. In addition, the woody buffer provides litter fall and large wood important to fish and other aquatic organisms. The woody roots increase the resistance of streambanks and shorelines to erosion caused by high water flows or waves.

Buffer Zones

A riparian forest buffer includes zone 1, the forested area 15 feet back from top of bank, and zone 2, the forested area adjacent to and up gradient of zone 1. Zone 3 is established if periodic and excessive water flows, erosion, and sediment from upslope fields or tracts are anticipated. Zone 3 generally consists of herbaceous plants or grass.

Where used

Buffers are located along or around permanent or intermittent streams, lakes, ponds, wetlands, and seeps in a variety of settings, such as cropland, rangeland, forest land, and urban areas.

Operation and maintenance

Excessive water flows and erosion must be controlled upslope of the riparian forest buffer. In all cases the buffer must be protected from grazing. While periodic harvesting of trees may be an important activity for plant health and buffer function, the activities should not interfere with the planned function(s) of the buffer.

Specifications

Site-specific requirements are listed on this jobsheet. Specifications are prepared in accordance with the VT NRCS Field Office Technical Guide. See practice standard and specifications sheets Riparian Forest Buffer, code 391, Tree/Shrub Establishment, code 612, and Forest Site Preparation, code 490 where appropriate.

Tree or Shrub Species List

The Planting Plan list of trees and shrubs below are listed strictly by common name except for two commonly confused species: *carpinus caroliniana* and *ostrea virginiana*. All species are native to Vermont except for Streamco Purpleosier willow which is commonly used in streambank stabilization projects. If there is any question as to the actual species the common name denotes, refer to the species scientific name in the [VT NRCS Forestry Technical Note 2: 'Vermont Trees and Shrubs For Conservation'](#)

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Purpose (check all that meet criteria in standard)	
Reduce excess sediment, organic material, nutrients, pesticides in surface runoff and excess nutrients/chemicals in shallow ground water flow	Create wildlife habitat, establish wildlife corridors and restore natural riparian plant communities (Note: RFB must be 50 feet wide or more).
Create shade to lower water temps and provide detritus/large woody debris to improve aquatic habitat	

Site Description

Establishment Method (planting, natural regen, etc.):

Buffer Layout and Size	
Riparian forest buffer is planned on: If one side of stream, which bank? (facing downstream)	Min. Buffer width: (ft) Avg. Buffer Width: (ft) Total Buffer Length: (ft) Total Acres: (ft)

Existing Conditions – List the existing conditions at the site to be established.					
Field No.	Buffer #	Land Use	Planned Buffer Acres	Soils Map Unit	Natural Community Type Likely to Occur

Filter Area – Check if required – Include establishment info or reference other source (e.g. Practice 393)
Buffer is adjacent to cropland and is receiving sediment and nutrients. An area consisting of perennial herbaceous cover must be maintained or established along the up gradient of the riparian forested buffer. Herbaceous strip width will be _____ feet wide (min width is 15 feet).
Filter Establishment Specs/Reference:

Natural Regeneration - Where used, specify existing species, woody stems/acre ¹ if known, and describe seed source nearby (age, size, distance, etc.) ² .

Site Preparation – Include any requirements or recommendations (Refer to VT Standard 490)
Remove debris and control competing vegetation to allow for planting and planting equipment. Pest Management including weed control may be required. The following method of site preparation is planned: Mechanical (e.g. plowing, disking or rototilling) Chemical control of vegetation Hand scalping the area where trees are to be planted Other:
Additional requirements:

¹ Refer to VT NRCS Forestry Technical Note #1

² Refer to the Seed Source section of the VT NRCS Tree and Shrub Establishment Specification Guide Sheet 612.

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Tree and Shrub Planting Information (Use additional sheets if necessary)						
Tree/Shrub Planting Date:			Vegetative Planting Date:			
Tree or Shrub Species	Type of Stock	Number to be Planted by Land Unit				Protection
		Buffer(s) #	Buffer(s) #	Buffer(s) #	Total	
<i>Vegetative (Live Stakes, wattles)</i>						
<i>Rooted Stock³</i>						
Total Number Of Rooted Stock To Be Planted:						

³ Include live stakes or other vegetative plant materials in this section when they will be used within and for the purpose of buffer establishment versus for streambank stabilization.

Site Planting Notes – Include information about different planting areas, elevations and communities clarifying why different mixes or species should be planted where specified

Plant Materials Summary – Specify desired sizes and collection info if necessary

Plant Protection Summary – Specify tube heights, brush mat sizes and numbers required by plant material type or by species (e.g brush mats on shrubs or tubes on maples)

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Planting Methods - # stems, spacing, arrangement (Refer to VT Standard and Specification 612)

For container and bare root stock, plant stock to a depth even with the root collar in holes deep and wide enough to fully extend the roots. Pack the soil firmly around each plant. Cuttings are inserted in moist soil with buds up and buried so that 75% of the stem is underground.

Number of Stems to be Planted per Acre and Spacing:

Planting Arrangement:

Additional requirements:

Operation and Maintenance

The buffer must be inspected periodically and protected from damage so proper function is maintained. Replace dead or dying tree/shrub stock to provide adequate plant densities as described in the 391 standard and specification and continue control of competing vegetation to allow proper establishment for at least 3 years. Keep large dead and dying trees for cavity nesting birds and as a source of large wood in aquatic habitats. Monitor site for invasive plants that may become established.

Additional requirements:

Planting Plan Map

Attach an aerial photograph based map of the buffer planting area. Delineate the buffer boundary and any different planting prescription areas based upon natural community, soils, wetlands, land unit, etc. so that it is clear to the landowner and planters. Other relevant information, complementary practices and measures, and additional specifications may be included. Note: The Conservation Plan Map may be sufficient depending upon the level of map detail of the buffer area.

Recommendation: Import digital photographs to indicate practice before and after effects. For instructions regarding graphics to importing this document go to:

ftp://ftp-fc.sc.egov.usda.gov/VT/Technical/Help/Adobe_PDF_Help_1.pdf

Information in this job sheet is considered to be part of the conservation plan.

Questions regarding the planting or maintenance of the buffer planting should be directed to:

_____ at _____
Name Telephone Phone Number

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