

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD**

**RIPARIAN HERBACEOUS COVER**

(Ac.)

**CODE 390**

**DEFINITION**

Grasses, grass-like plants and forbs that are tolerant of intermittent flooding or saturated soils and that are established or managed in areas adjacent to watercourses or water bodies in the transitional zone between terrestrial and aquatic habitats.

**PURPOSE**

To provide the following functions:

- Provision of food, shelter, shading substrate, access to adjacent habitats, nursery habitat and pathways for movement by resident and nonresident aquatic, semi-aquatic and terrestrial organisms.
- Improve and protect water quality by reducing the amount of sediment and other pollutants, such as pesticides, organic materials, and nutrients in surface runoff as well as nutrients and chemicals in shallow ground water flow.
- Help stabilize streambanks and shorelines.

**CONDITIONS WHERE PRACTICE APPLIES**

- Areas adjacent to perennial and intermittent watercourses or water bodies where the natural plant community is dominated by herbaceous vegetation that is tolerant of periodic flooding or saturated soils. For seasonal or ephemeral watercourses and water bodies, this zone extends to the center of the channel or basin.
- Where the riparian area has been altered and the potential natural plant community has changed or converted to cropland,

pastureland, hayland or other commercial/agricultural uses.

- Where channel and streambank stability is adequate to support this practice.
- On areas specified by local ordinance as adopted pursuant to the Chesapeake Bay Preservation Area designation and Management Regulation (9 VAC 10-20-10) effective November 15, 1990; or any other local or state ordinance or regulation. (See Considerations and Practice Narratives for options.)

**CRITERIA**

**General Criteria Applicable to All Purposes**

Minimum buffer width is the larger of 35 feet or 1.5 times the stream width (based on the horizontal distance between bankfull elevations.) Wider buffer widths will provide greater environmental benefits.

Select perennial plants (native plant species if possible) that are adapted to site and hydrologic conditions, provide the structural and functional diversity preferred by fish and wildlife.

Use of the riparian herbaceous cover for hay production is allowed, however reducing the harvest or mowing will protect riparian vegetation and maintain water quality.

Livestock are to be excluded and grazing is not permitted on any part of the riparian cover.

Site hydrology must be considered. Plant species selected must be adapted to the projected duration of saturation and inundation of the site.

Harmful pests present on the site will be

controlled or eliminated as necessary to achieve and maintain the intended purpose.

Management systems applied will be designed to maintain or improve the vigor and reproduction of the desired plant community. Timing of haying periods will avoid periods when streambanks are vulnerable to mechanical damage.

Necessary site preparation and planting shall be done at a time and manner to ensure survival and growth of selected species. Only viable, high quality and site-adapted planting stock will be used. Site preparation shall be sufficient for establishment and growth of selected species and be done in a manner that does not compromise the intended purpose. See the *Plant Establishment Guide for Virginia*.

Existing underground functional drains shall be replaced with rigid, non-perforated pipe through the buffer or equipped with a management regulating structure to allow control of overflow.

#### **Additional Criteria to Protect or Improve Water Quality**

Minimum width shall be the greater of 2.5 times the stream width (based on the horizontal distance between bankfull elevations) or 35 feet. Concentrated flow erosion or mass soil movement shall be controlled in the up gradient area prior to establishment of the riparian herbaceous cover.

Species selected shall have stiff stems and high stem density near the ground surface.

#### **Additional Criteria to Stabilize Streambanks and Shorelines**

Select native or accepted introduced species that provide a deep, binding root mass to strengthen streambanks and improve soil health.

#### **Additional Criteria for Increasing Net Carbon Storage in Biomass and Soils**

Maximize width and length of the herbaceous riparian buffer to fit the site.

Plant species used will have the highest rates of biomass production for the soil and other

site conditions, consistent with meeting fish and wildlife habitat requirements for the site.

#### **Additional Criteria for Terrestrial Wildlife**

Select native species adapted to the site. Density of the vegetative stand established for this purpose shall consider targeted wildlife habitat requirements and encourage plant diversity.

Mowing necessary to maintain herbaceous cover will occur outside the nesting season (April 15 – August 15) and allow for adequate re-growth for winter cover.

#### **CONSIDERATIONS**

Preference should be given to native, locally adapted species of plants.

Other conservation practices that may facilitate the establishment of Riparian Herbaceous Cover or enhance its performance include:

- Streambank and Shoreline Protection - (Code 580)
- Stream Channel Stabilization - (Code 584)
- Fence - (Code 382)
- Animal Trails and Walkways - (Code 575)
- Riparian Forest Buffer - (Code 391)
- Pasture and Hayland Planting - (Code 512)
- Filter Strip - (Code 393)
- Use Exclusion - (Code 472)
- Brush Management - (Code 314)
- Upland Wildlife Habitat Management - (Code 645)

Considerations should be given to how this practice will complement the functions of adjacent riparian, terrestrial and aquatic habitats.

Control of trees and shrubs may be required to prevent dominance of the riparian zone by woody plants and maintain openness in the riparian system.

Consider making width wider than the minimum to increase environmental and wildlife benefits.

Establish alternative water sources or controlled access stream crossings to manage livestock access to the stream and riparian area.

Selection of native plant species is recommended but tame, introduced species may be used. All selected species should have multiple values such as those suited for biomass, wintering and nesting cover, aesthetics, forage value for aquatic invertebrates, and tolerance to locally used herbicides.

Avoid plant species which may be alternate hosts to undesirable pests. Species diversity should be considered to avoid loss of function due to species-specific pests.

The location, layout and vegetative structure and composition of the herbaceous cover should complement site specific natural features and topography.

Corridor configuration, establishment procedures and management should enhance habitats for threatened, endangered and other plant or animal species of concern, where applicable.

Use plant species that provide full ground coverage to reduce particulate matter generation during establishment and maintenance operations.

Consider streambank stability when using this practice and consider other practices that may be required to address stability issues.

Certain state or local programs and ordinances, such as the Chesapeake Bay Preservation Act (CBPA), require riparian buffers of various widths be installed, or natural buffers be maintained, based on associated conservation management systems on the adjacent land area. These program requirements are addressed in the Practice Narrative descriptions, and are for use ONLY with CBPA sites.

## PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each site. Specifications shall be recorded using approved specification sheets,

job sheets, narrative statements in the conservation plan, or other acceptable documentation. Specifications will include location, length, width, vegetative requirements and associated practices, i.e. *Virginia Conservation Practice Standard Fence (Code 382)*, *Virginia Conservation Practice Standard Use Exclusion (Code 472)*, etc. for all herbaceous riparian cover planned. Refer to the *Plant Establishment Guide* for Virginia for seeding recommendations.

## OPERATION AND MAINTENANCE

The purpose of operation, maintenance and management is to ensure that the practice functions as intended over time. The riparian herbaceous cover will be inspected periodically and managed to maintain the intended purpose from adverse impacts such as excessive vehicular and pedestrian traffic, pest infestations, and pesticide use on adjacent lands, livestock damage and fire.

Any use of fertilizers, pesticides and other chemicals to assure riparian area function shall not compromise the intended purpose.

## REFERENCES

Schultz, R.C., J.P. Colletti, T.M. Isenhardt, W.W. Simpkins, C.W. Mize, and M. L. Thompson. 1995. Design and placement of a multi-species riparian buffer strip. *Agroforestry Systems* 29:201-225.ts.

National Engineering Handbook, Part 653 "Stream Corridor Restoration: Principles, Processes, and Practices", 1998.

Virginia NRCS FOTG, Section I & IV.

Virginia Agricultural BMP Manual, DCR, June 2005

NRCS/RCA Issue Brief 13 Riparian Areas: Implication for Management.

Plant Establishment Guide for Virginia.

Chesapeake Riparian Handbook, USDA-NA/TP-0297, "Guide for Establishing and Maintaining Riparian Forest Buffers".

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