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 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 stream bank and shorelines.
- Increase net carbon storage in the biomass and soil.

CONDITION 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 waterbodies, 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, grazing land or other commercial/agricultural uses.
- Where channel and stream bank stability is adequate to support this practice.

This practice does not apply to:

Woody establishment in riparian areas for which the conservation practice standard (391) Riparian Forest Buffer is applicable.

Plantings for which the primary purpose is to remove sediments, organic matter and other pollutants from runoff and wastewater where conservation practice standard (393) Filter Strip is applicable.

CRITERIA

General Criteria Applicable to All Purposes

The location, layout, and width of the buffer will be selected to accomplish the intended purpose and function.

Select perennial plants that are adapted to site and hydrologic conditions and provide the structural and functional diversity preferred by fish and wildlife. 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.

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

Protect riparian vegetation and water quality by reducing or excluding the use of that vegetation for haying and grazing until the desired plant community is well established.

Harmful pests present on the site will be controlled or eliminated as necessary to achieve and maintain the intended purpose. ***Refer to WV Conservation Practice Standard (595) Pest Management for more information.***

Necessary site preparation and planting shall be done at a time and manner to insure 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.

Riparian widths will vary depending on the requirements of wildlife species and associated environmental concerns. Minimum width should include the first bench of the floodplain or be at least 1.5-times the stream width (based on the horizontal distance between bankfull elevations or 15 feet for water bodies.

If used in conjunction with conservation practice standard (391) Riparian Forest Buffer, the minimum width will correspond to Zone 3 identified in that standard.

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. ***Refer to WV Conservation Practice Standard (606) Subsurface Drain and/or (587) Structure for Water Control.***

A plan for limited livestock grazing or haying based on the carrying capacity of the area may be designed to protect and enhance established vegetation, stream bank stability or wildlife habitat. Timing of haying or grazing will avoid periods when streambanks are saturated and vulnerable to livestock or mechanical damage. This plan will insure that livestock are excluded from the stream during critical periods for aquatic species; and where wildlife is a primary concern, during critical nesting seasons (March 15 – July 15). Refer to WV Conservation Practice Standard (528) Prescribed Grazing – Riparian Grazing Management or (511) Forage Harvest Management for additional information.

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

- Streambank and Shoreline Protection – (580)
- Stream Channel Stabilization – (584)
- Fence – (382)
- Riparian Forest Buffer – (391)
- Pasture and Hayland Planting – (512)
- Filter Strip – (393)
- Use Exclusion – (472)
- Prescribed Grazing – (528)
- Brush Management – (314)
- ***Critical Area Planting – (342)***
- ***Nutrient Management – (590)***

For establishment of warm season grasses refer to the FOTG reference Vegetating with Native Grasses in Northeastern North America; and for seeding mixtures use Appendix D. Tables: "Basic Warm Season Grass Mixture" and "Great Lake States – Michigan, Minnesota, Indiana and Wisconsin". The use of other approved references and job sheets may be appropriate if available.

For cool season grass mixtures, and rates of single specie stands of warm season grasses refer to guidelines in Table 2 of the conservation practice (342) Critical Area Planting; and/or (512) Pasture and Hayland Planting. The use of other approved references and job sheets may be appropriate if available.

Additional Criteria to Protect or Improve Water Quality

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

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.

Refer to conservation practice standard (512) Pasture and Hayland Planting or (342) Critical Area Planting for a list of species suitable for planting.

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 carbon sequestration and biomass production for the soil and other site conditions, consistent with meeting fish and wildlife habitat requirements for the site. ***Consult the staff biologist or agronomist to identify these species.***

Operations which set back succession should not be undertaken if utilizing this purpose (e.g. disking, mowing, etc.)

Additional Criteria for Terrestrial Wildlife

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

If mowing is necessary to maintain herbaceous cover it will occurs outside the nesting season and allow for adequate re-growth for winter cover.

Refer to Conservation Practice Standard (645) Upland Wildlife Habitat Management for plant species that benefit certain wildlife species.

CONSIDERATIONS

Site hydrology must be considered.

Consider the use of disturbance regimes in conjunction with a management plan (i.e. disking and strip mowing) to meet the intended purpose.

Consider the use of (391) Riparian Forest Buffer for increased diversity.

Consider the placement and size of herbaceous vegetation to minimize predation, increase diversity, and inhibit nuisance species.

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 riparian zone by woody plants and maintain openness in riparian system.

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

The management plan shall consider habitat and wildlife objectives such as habitat diversity, habitat linkages, daily and seasonal habitat ranges, limiting factors and native plant communities.

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 buffer should compliment natural features.

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.

If the resource concerns being addressed are for surface water contaminants by nutrients, pathogens, etc., consider widths of 50 feet or greater. Refer to Section V of the FOTG (393) Filter Strip for benefits that are provided by wider buffer widths.

PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each site. Specification shall be recorded using approved specifications sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation.

At a minimum the following will be identified (as appropriate):

- ***purpose of buffer***
- ***method of establishment***
- ***species selection and rates***
- ***site preparation***
- ***soil amendments***
- ***size of planting including the width length and total acres of planting***
- ***competition suppression methods***
- ***planting date(s)***
- ***any required permits including WVCPA-052 or similar environmental evaluation documentation;***
- ***Operation and Maintenance Plan***

OPERATION AND MAINTENANCE

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

The riparian area will be inspected periodically and protected to maintain the intended purpose from adverse impacts such as excessive vehicular and pedestrian traffic, pest infestations, pesticide use on adjacent lands, livestock damage and fire.

The buffer should be inspected after heavy storm events and floods. Check for areas where water is concentrated and if necessary, take appropriate measures to disperse flows.

An operation and maintenance schedule which includes acceptable compatible uses including, but not limited to: grazing, haying, timing and intensities of the area.

Control of concentrated flow erosion or mass soil movement shall be continued in the up-gradient area to maintain riparian function.

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

Additional operation and maintenance specifications may be required on a site specific basis to maintain the intended purpose of the practice.

REFERENCES

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

Federal Interagency Stream Restoration. 1998. Stream Corridor Restoration: Principles, Processes and Practices. U.S. Department of Agriculture, et al. Washington, DC

U.S. Department of Agriculture, Forest Service, Northeastern Area State and Private Forestry. 1997. Chesapeake Bay Riparian Handbook: A guide for Establishing and Maintaining Riparian Forest Buffers. NA-TP-02-97. Prepared by Palone, R.S., and Todd, A.H.

U. S. Department of Agriculture, Natural Resources Conservation Service. 1997. Riparian Areas: Implications for Management.. RCA Issue Brief 13.

Cooper, J.R., Gilliam, J.W., and Jacobs, T.C., Riparian Areas as a Control of Non-Point Pollutants., Journal Series of the North Carolina Agricultural Research Service., No.10107

**** Bold italics is information added by West Virginia to the national standard.***