NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

RIPARIAN HERBACEOUS COVER

(Ac.)

CODE 390

DEFINITION

Grasses, sedges, rushes, ferns, legumes, and forbs tolerant of intermittent flooding or saturated soils, established or managed as the dominant vegetation in the transitional zone between upland and aquatic habitats.

PURPOSE

This practice may be applied as part of a conservation management system to accomplish one or more of the following purposes:

- Provide or improve food and cover for fish, wildlife and livestock.
- Improve and maintain water quality.
- Establish and maintain corridors and connectivity with similar cover types.
- Increase water storage on floodplains.
- Reduce erosion and improve stability to stream banks and shorelines.
- Increase net carbon storage in the biomass and soil.
- Enhance pollen, nectar, and nesting habitat for pollinators.
- Restore, improve or maintain the desired plant communities.
- Dissipate stream energy and trap sediment.
- Enhance stream bank protection as part of stream bank soil bioengineering practices.

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 channel and stream bank stability is adequate to support this practice.
- Where the riparian area has been altered and the potential natural plant community has changed.
- Along watercourses or on the fringe of water bodies where the plant community is dominated by herbaceous vegetation because the establishment of woody vegetation is not in keeping with the landowner's objectives.
- Where the natural plant community has changed or has been converted to cropland or introduced grasses, and a native herbaceous plant community will be established.
- Where the herbaceous vegetative zone fails to meet the Filter Strip (393) standard based on plant densities or the lack of pollutants in runoff.

This practice should not be used in lieu of the Riparian Forest Buffer (Code 391) standard when buffering of stream temperatures is desired, especially cold-water streams.

CRITERIA

General Criteria Applicable to All Purposes

Where available, use Ecological Site Description to guide restoration to appropriate vegetative community phase and include appropriate vegetative functional groups.

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact your Natural Resources Conservation Service State Office or visit the Field Office Technical Guide.

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Select perennial plants that are adapted to site and hydrologic conditions and provide the structural and functional diversity preferred by fish and wildlife likely to benefit from the installation of the practice.

In areas where native seeds and propagules are adequate, natural regeneration can be used in lieu of planting.

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

Stream type and site hydrology must be considered. Selected plant species 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.

No plant listed as “Rank 1” by the Tennessee Exotic Pest Plant Council shall be established on the site.

Pest management will be conducted in a manner that mitigates impacts to pollinators.

Management systems applied will be designed to maintain or improve the vigor and reproduction of the desired plant community.

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. Refer to Tennessee’s “Native Warm Season Grasses Establishment” Job Sheet.

Determine the width of the riparian herbaceous cover planting based on the geomorphic potential of the site and project purposes, including the life history requirements of local fish and wildlife species, including pollinators.

Appropriate reviews and consultation must be completed when this practice addresses resource concerns affecting federally or state protected plant and animal species.

Minimum width per side shall include the lesser of the first bench of the floodplain or at least 1.5 times the stream width (based on the horizontal distance between bank full elevations). Fifteen feet is the minimum width for water bodies.

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

Domestic grazing shall be deferred for a minimum of two years or until such time as the desired plant community is established.

Additional Criteria to Maintain or Improve Water Quality and Quantity

Minimum width shall be increased to 2.5 times the stream width (based on the horizontal distance between bank-full elevations) or 35 feet for water bodies. For streams, the stated width is for one side of the channel.

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 to reduce water velocities and facilitate infiltration into the floodplain.

Channel and streambank stability shall be addressed prior to or in conjunction with the installation of this practice. Alternative water sources or controlled access stream crossings shall be implemented as necessary to protect water quality.

The native or natural plant community shall be managed and maintained in a manner that controls erosion and maintains water quality.

Additional Criteria to Stabilize Streambanks and Shorelines

Select native 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 cover 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.

Additional Criteria for Pollinator Habitat

Include forbs and legumes that provide pollen

and nectar for native bees. Use a diverse mix of plant species that bloom at different times throughout the growing season.

To protect pollinators and maintain habitat with a diversity of plant structure, a third or less of the site should be disturbed (mowed, grazed, burned, etc.) each year, allowing for recolonization of pollinators from surrounding habitat.

Additional Criteria for Terrestrial Wildlife
Select native species adapted to the site.

Density of the vegetative stand established for this purpose shall be managed for targeted wildlife habitat requirements and shall encourage plant diversity.

Establish plant communities to target wildlife needs, existing resources in the watershed, and local management objectives. Refer to the Upland Wildlife Habitat Management standard (Code 645), job sheets, and technical notes to determine wildlife needs for target species.

If mowing is necessary to maintain herbaceous cover, it will occur outside the primary nesting and fawning season from April 15 to August 15 and allow for adequate re-growth for winter cover.

The management plan shall consider wildlife objectives, such as vegetation heterogeneity and connectivity, daily and seasonal habitat movement patterns of focal wildlife species, limiting factors, and native plant communities.

Fifty feet (one side of stream channel from top of bank) is the minimum required width for reptiles and amphibians dependent on the water.

One hundred feet (one side of stream channel from top of bank) is the minimum required width for terrestrial wildlife (avian and large mammals).

Additional Criteria to Provide Corridors and Connect Landscapes
Riparian zones shall connect with existing native plant communities to facilitate wildlife movement and improve access to other areas.

Additional Criteria for Restoring Desired Plant Community
Use Ecological Site Description (ESD) State and Transition models, where available, to determine if proposed actions are ecologically sound and defensible. Treatments need to be congruent with dynamics of the ecological site(s) and keyed and plant community phases that have the potential and capability to support the desired plant community. If an ESD is not available, base design criteria on best approximation of the desired plant community composition, structure, and function.

CONSIDERATIONS

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.

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

- Stream Habitat Improvement and Management (395)
- Streambank and Shoreline Protection (580)
- Fence (382)
- Pasture and Hayland Planting (512)
- Filter Strip (393)
- Access Control (472)
- Prescribed Grazing (528A)
- Brush/Shrub Management (314)
- Herbaceous Weed Control (315)
- Heavy Use Area Protection (561)
- Critical Area Planting (342)
- Riparian Forest Buffer (391)
- Early Successional Habitat Development and Management (647)
- Conservation Cover (327)
- Restoration and Management of Rare and Declining Habitat (643)
- Stream Crossing (578)
- Watering Facility (614)

Considerations should be given to how this practice will complement the functions of

adjacent riparian, terrestrial and aquatic systems.

Consider the effects of upstream and downstream conditions, structures, facilities, and constraints on the planned activities.

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

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

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.

Herbaceous riparian buffers can function to link pollinators with adjacent fragmented habitat, and can serve as a conduit to move pollinators into areas requiring insect pollination. Different flower sizes and shapes appeal to different categories of pollinators. To support many species, consider establishing the greatest diversity possible. Consider incorporating nesting cover, including patches of unshaded bare soil for ground nesting bees or where bumble bee conservation is a priority, and native warm-season grasses.

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

The location, layout and vegetative structure and composition of the buffer should complement natural features.

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

Considerations should be given to how this practice will provide riparian habitat and linkage to other vegetation types. This should include minimizing gaps and maximizing connections with other existing landscape features such as abandoned fields, wetlands, rare vegetation types, and non-riparian buffers such as field borders. However, connectivity may not be desirable for isolated areas containing rare species.

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

When considering wildlife, increase the width to reduce predation impacts. Narrower zones may become “sinks" where mortality exceeds reproduction. A minimum width of 50 feet is recommended.

Target riparian buffer restoration on a watershed basis to address habitat fragmentation, connectivity, and provide corridors for wildlife by maintaining continuous native streamside vegetation.

For first- and second-order streams, consider selecting taller varieties over shorter varieties of native grasses to provide more shade and buffering of stream temperatures.

Avoid plant species that 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 density of the buffer should complement natural features.

Minimize driving farm equipment through the site.

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.

OPERATION AND MAINTENANCE

The purpose of operation, maintenance and management is to ensure the practice functions as intended over time.

The riparian area will be inspected periodically in order to detect adverse impacts and make adjustments in management to maintain the intended purpose.

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.

Harmful pests present on the site will be controlled or eliminated as necessary to achieve and maintain the intended purpose.

Pest management will be conducted in a manner that mitigates impacts to pollinators.

Avoid haying or grazing when streambanks and riparian areas are vulnerable to livestock or mechanical damage.

Manage grazing to sustain riparian functions and values.

Management systems will be designed and applied to maintain or improve the vigor and reproduction of the desired plant community, e.g., the riparian functions and values.

Where the primary purpose of the practice is to provide terrestrial wildlife habitat, the density of the vegetative stand shall be managed for targeted wildlife habitat requirements and shall encourage plant diversity. If mowing is necessary to maintain herbaceous cover, it will occur outside the primary nesting and fawning season from April 15 to August 15 and allow for adequate re-growth for winter cover.

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