

**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 habitat corridors.
- 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.

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.

Treatment specifications will be referenced to the best approximation of the desired plant community composition, structure, and function by referencing the following publications:

“A Guide to the Wildflowers of South Carolina” by Richard Porcher and Douglas Rayner; pages 65 through 106, in each field office, or Natural Communities of South Carolina found at the link below:

<http://www.dnr.sc.gov/wildlife/publications/pdf/natcomm.pdf>

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.

Refer to the following technical guides for a list of adapted native species, suggested seeding rates and seeding dates that are to be used for the establishment of vegetation:

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](#) for your state.

**South Carolina NRCS
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South Carolina Conservation Cover –
Technical Guidance (Using Native Species,
Wildlife Habitat Emphasis) 327 (a)

South Carolina Conservation Cover –
Technical Guidance (Using Introduced and/or
Native Species) 327 (b)

In areas where native seeds and propagules
are present, natural regeneration can be used
in lieu of planting. Planting is required if no
native seed bank is present.

Protect riparian vegetation and water quality by
reducing or excluding haying and grazing until
the desired plant community is well
established. Grazing of the riparian
herbaceous plant community should be part of
a prescribed grazing plan.

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.

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 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.

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.

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 should 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. 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.

Additional Criteria to Stabilize Streambanks and Shorelines

Select native local ecotype 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. Utilize a diverse
mix of native local ecotype plant species that
bloom at different times throughout the year.
Refer to South Carolina Conservation Cover –
Technical Guidance 327c, Pollinator Habitat,
for a list of native species that provide
seasonal food sources for pollinators.

Additional Criteria for Terrestrial Wildlife

Select native species adapted to the site.

Refer to the following technical guide for a list
of adapted native species, suggested seeding
rates and seeding dates that are to be used for
the establishment of vegetation:

South Carolina Conservation Cover –
Technical Guidance (Using Native Species,
Wildlife Habitat Emphasis) 327 (a)

South Carolina Conservation Cover – Technical Guidance (Native and Introduced Species for Wildlife Habitat) 327b

Density of the vegetative stand established for this purpose 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 nesting and fawning season and allow for adequate re-growth for winter cover. In South Carolina the primary nesting season is from April 1 – September 1.

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 re-colonization of pollinators from surrounding habitat.

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.

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. Treatment specifications will be referenced to the best approximation of the desired plant community composition, structure, and function by referencing the following publications:

“A Guide to the Wildflowers of South Carolina” by Richard Porcher and Douglas Rayner; pages 65 through 106, in each field office, or Natural Communities of South Carolina found at the link below:

<http://www.dnr.sc.gov/wildlife/publications/pdf/natcomm.pdf>

Treatments need to be congruent with dynamics of the ecological site(s) and keyed to states 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

Selection of native local ecotype plant species is preferred. 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)
- Range Planting – (550)
- Filter Strip – (393)
- Access Control – (472)
- Prescribed Grazing – (528A)
- Heavy Use Area Protection (561)
- Critical Area Planting (342)
- Riparian Forest Buffer (391)
- Early Successional Habitat Improvement Development and Management (647)
- Conservation Cover - (327)
- Restoration and Management of Rare and Declining Habitat - (643)
- Stream Crossing (578)
- Brush Management (314)
- Herbaceous Weed Control (315)

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

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.

Selection of native local ecotype plant species is recommended. Introduced species should not 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.

Herbaceous riparian areas 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 habitat, including patches of unshaded bare soil for ground nesting bees or where bumble bee conservation is a priority, clump forming warm-season native grasses. Establishing pollinator habitat should follow the requirements of Conservation Cover (327c) pollinator habitats. Refer to South Carolina Conservation Cover – Technical Guidance 327c, Pollinator Habitat, for a list of native species that provide seasonal food sources for pollinators.

Avoid plant species which may be alternate hosts to 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 complement 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.

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.

If herbicides are used to control invasive species, acceptable chemical treatment references for containment and management of target species are below:

- Document techniques to be used, planned dates and rates of application. Spot treatment is encouraged within the riparian zone.
- Evaluation and interpretation of herbicide risks associated with the selected treatment(s) using WIN-PST or other approved tools.
- Any special mitigation, timing considerations or other factors (such as soil texture and organic matter content) that must be considered to ensure the safest, most effective application of the herbicide
- Reference to product label instructions

OPERATION AND MAINTENANCE

The purpose of operation, maintenance and management is to insure that 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.

Document techniques to be used, planned dates and rates of application. Spot treatment is encouraged within the riparian zone.

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 nesting and fawning season and allow for adequate re-growth for winter cover.

REFERENCES

- FISRWG (Federal Interagency Stream Restoration Working Group). 1998. Stream Corridor Restoration: Principles, Processes and Practices. National Technical Information Service, U. S. Department of Commerce, Springfield, VA. Also published as NRCS, U.S. Department of Agriculture (1998) *Stream Corridor Restoration: Principles, Processes, and Practices*. National Engineering Handbook (NEH), Part 653. Washington, D.C.
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- Leopold, Luna.1994. A View of the River. Harvard University Press. Cambridge, MA.
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- United States Department of Agriculture, Natural Resources Conservation Service. 2008. General Manual: Title 190 – Ecological Sciences: Part 404 – Pest Management... Washington, DC.
- United States Department of Agriculture, Natural Resources Conservation Service. 2003. National Range and Pasture Handbook. Washington, DC.
- http://plants.usda.gov/pollinators/Using_Farm_Bill_Programs_for_Pollinator_Conservation.pdf
- Agroforestry Notes on supporting pollinators (General 6, 7, 8 and 9):
<http://www.unl.edu/nac/agroforestrynotes.htm>