NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

RIPARIAN HERBACEOUS COVER

(Acres)

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.

PURPOSES

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

Use of this standard requires compliance with all applicable federal, state, and local laws and regulations.

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.

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service State Office, or download it from the electronic Field Office Technical Guide for Indiana.

Native plant species will be used whenever possible. Known invasive species will not be used.

Select perennial plants that are adapted to the soils on the site, hydrologic conditions, and provide habitat for the target wildlife species.

Seedbed preparation, species selection, seeding mixes, seeding rates, dates, depths, fertility requirements, site adaptation and planting methods will be consistent with the Indiana (IN) NRCS Seeding Tool, found in Section IV of the Field Office Technical Guide (FOTG).

Existing underground functional drains that pass through these areas will be replaced with non-perforated pipe through the buffer as appropriate.

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. A plan for limited livestock grazing or haying will be designed to protect and enhance established and emerging vegetation, streambank stability, and wildlife habitat. Livestock will be kept out of the stream during critical periods for aquatic species.

Harmful pests present on the site will be controlled or eliminated as necessary to achieve and maintain the intended purpose. Spraying or other control methods will be performed on a "spot" basis, and conducted in a manner to protect forbs/legumes that benefit native pollinators and other wildlife.

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

Necessary site preparation and planting will 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 will 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. The minimum width per side will be 20 feet.

Additional Criteria to provide or improve food and cover for fish and wildlife; establish and maintain habitat corridors; and/or enhance pollen, nectar, and nesting habitat for pollinators

Vegetation established for this purpose will be managed for the targeted wildlife habitat requirements and will encourage plant diversity. See IN FOTG (645) Upland Wildlife Habitat Management, or IN Biology Technical Note Upland Wildlife Habitat for more information.

When disturbance management is necessary to maintain the health of the plant community or habitat needs, see IN FOTG Standard (647) Early Successional Habitat Development/ Management. Management practices and activities will take into consideration the life cycle needs of target and non-target species to minimize negative impacts, such as nest disturbance or reduction in winter cover.

Additional Criteria to Improve and Maintain Water Quality

Where the site conditions are suited to IN FOTG Standard (393) Filter Strip, that standard will be used.

Minimum width will be increased to 2.5 times the stream width (based on the horizontal distance between bank full elevations), with a minimum width of 35 feet. Concentrated flow erosion or mass soil movement will be controlled in the up gradient area prior to establishment of the riparian herbaceous cover.

Species selected will have stiff stems and high stem density near the ground surface to reduce water velocities and facilitate infiltration into the floodplain.

Additional Criteria to reduce erosion and improve stability to stream banks and shorelines

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

Additional Criteria to increase net carbon storage in the biomass and soil

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.

Additional Criteria to restore, improve or maintain the desired plant communities

Base design criteria on best approximation of the desired plant community composition, structure, and function.

CONSIDERATIONS

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

Consider the use of other conservation practices that may facilitate the establishment of Riparian Herbaceous Cover or enhance its performance.

Target riparian buffer restoration on a watershed basis to:

- Reduce habitat fragmentation and
- improve connectivity to other habitats
- Provide corridors for wildlife by maintaining continuous streamside vegetation.

When selecting appropriate plants:

- Encourage plant diversity by adding ¼ to 1 pound of native forbs (minimum 5 species) to the planting mix.
- Consider the impact of the vegetative structure on the targeted wildlife habitat requirements. Most grassland birds, for example, will benefit from short-stature native warm-season grasses including Prairie Dropseed (*Sporobolus heterolepis*) and Little Bluestem (*Schizachyrium scoparium*).
- 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.

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

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

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

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.

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

Plans and specifications will be prepared for the practice site. Plans will include the following:

- Plan view
- Location of excavation or borrow (if applicable)
- Species of plants to be established.
- Seeding rates.
- Seeding dates.
- Establishment procedure.
- Planned rates and timing of nutrient application.
- Other information pertinent to establishing and managing the species

or species of plants to be established.

- If grazed, use a prescribed grazing plan according to NRCS IN FOTG Standard (528) Prescribed Grazing.

Plans and specifications for the establishment and management of the plants to be established may be recorded in narrative form, on job sheets, or on other forms.

OPERATION AND MAINTENANCE

Any plant species, whose presence or overpopulation may jeopardize this practice, will be controlled. Spraying or other control methods will be performed on a "spot" basis to protect forbs/legumes that benefit native pollinators and other wildlife.

An operation and maintenance plan will be provided to and reviewed with the landowner. The plan will include the following items and others as appropriate.

1. Fertilize to maintain a vigorous vegetative cover in protected area. Caution should be used with fertilization to maintain water quality.
2. Promptly repair eroded areas.
3. Reestablish vegetative cover immediately where scour erosion has removed established seeding.
4. 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, pesticides use on adjacent lands, livestock damage and wildfire.

5. Control of trees and shrubs may be required to prevent dominance of the riparian zone by woody plants and maintain openness in riparian system.
6. Control of erosion or mass soil movement will be continued in the up- gradient area to maintain riparian function.
7. Periodically inspect the area for any new maintenance items and take immediate action to protect from further damage or deterioration.

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.

USDA Natural Resources Conservation Service, Indiana Biology Technical Note: *Wetland Plantings for Wildlife,* October 2007

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