

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

RIPARIAN HERBACEOUS COVER

(Acre)

CODE 390

DEFINITION

Riparian areas are ecosystems that occur along water courses or at the fringe of water bodies. Riparian herbaceous cover consists of grasses, grass-like plants, forbs, and occasional, intermixed shrubs.

PURPOSE

Riparian herbaceous cover areas serve the following functions or purposes:

- Provide wildlife habitat (food, shelter and water) for aquatic and terrestrial organisms.
- Provide food, in the form of plant detritus, for aquatic insects which are important food items for fish.
- Manage existing riparian herbaceous habitat to improve or maintain desired plant communities.
- Serve as corridors to provide landscape linkages between existing habitats.
- Intercept direct solar radiation, create shade and increase the depth to width ratio to help maintain or restore suitable water temperatures for fish and other aquatic organisms while providing a milder microclimate for wildlife.
- Protect and improve water quality by reducing the amount of sediment and other pollutants, such as pesticides, nutrients, and organic material in surface runoff as well as nutrients and chemicals in shallow groundwater flow.
- Stabilize the channel bed and streambank.
- Provide room for watercourses to establish geomorphic stability.

- Increase net carbon storage in the biomass and soil.

CONDITION WHERE PRACTICE APPLIES

Along watercourses or on the fringe of water bodies where the natural plant community is dominated by herbaceous vegetation.

Where the ecosystem has been altered and the potential natural plant community has changed as a result of cropping, haying, or grazing and the establishment of herbaceous cover is warranted.

CRITERIA

General Criteria Applicable to All Purposes

The location, layout and vegetative composition of the riparian herbaceous cover will accomplish the intended purpose and function.

All buffers will be a minimum of 20 feet wide at any point along the buffer measured perpendicular from the top of the bank or edge of the waterbody to the outside edge of the buffer.

Native species that are adapted to site conditions (soil type and duration of saturation and inundation) and provide a deep, binding root mass to strengthen streambanks and improve soil health are preferred.

The riparian vegetation will be protected and enhanced by reducing the use of that vegetation for haying and grazing until the desired plant community is well established or has recovered from historic degradation.

Any necessary site preparation and planting shall be done at a time and manner to ensure

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resource Conservation Service.

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survival and growth of selected species. Only viable, high quality and 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.

A plan for limited livestock grazing or haying will be designed to protect and enhance established and emerging vegetation and stream bank stability to meet the purpose of the practice.

Timing of haying or grazing will avoid periods when stream banks are saturated and vulnerable to livestock or mechanical damage.

Additional management systems applied will be designed to maintain the vigor, production, and diversity of the desired plant community.

The removal or control of invading tree species will be used as necessary to maintain the integrity of the desired plant community.

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

Additional Criteria to Protect or Improve Wildlife Habitat

The development and 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.

Plant Community Interspersion

The plant communities established and target successional stage will depend on wildlife needs, existing resources in the watershed, and local management objectives.

Sites should consist of a diverse mixture of grasses, forbs, and/or shrubs. Monotypic stands of exotic grasses do not provide quality wildlife habitat values.

Species composition of planted vegetation or on managed sites should incorporate a significant amount of broadleaf plants including native forbs and/or introduced legumes within the herbaceous cover.

Buffer Width

Riparian buffer widths will vary depending on the requirements of targeted wildlife species but a minimum average width of 50 feet is recommended for each side of the watercourse or the edge of the waterbody.

Buffer Management

Grazing activities are generally preferred to haying/mowing and should be used to create diversity of herbaceous vegetative structure, maintain plant vigor and plant community diversity, and/or shift species composition (e.g. cool-season vs. warm-season grasses and forbs) to obtain desired wildlife habitat objective.

Haying/mowing activities will occur after July 15 to protect nesting birds (refer to Upland Wildlife Habitat Management (645) for more information). Note: Periodic exceptions may be warranted to implement a specific management treatment to achieve a desired wildlife habitat objective.

The timing/duration of grazing or haying operations should allow for adequate residual vegetation or vegetative regrowth to accommodate nesting birds. Refer to Prescribed Grazing (528) or Forage Harvest Management (511).

Habitat Evaluation Worksheet

A score of 0.5 or greater is required on Appendix B – “Riparian Habitat Evaluation Worksheet” (NE-CPA-43) to meet the minimum acceptable wildlife habitat conditions for the site. In addition, a minimum score of 0.1 is required within the “Interspersion” category on the Riparian Habitat Evaluation Worksheet.

Additional Criteria to Protect or Improve Water Quality

Concentrated flow erosion or mass soil movement shall be controlled in the up gradient area prior to establishment of the riparian herbaceous cover.

The native or natural plant community should be managed and maintained to optimize functions of the riparian zone which control erosion and maintain water quality.

Refer to Filter Strip (393) for additional criteria for removing sediment, organic matter, and other pollutants from runoff and waste water. All requirements within the standard and specification will be met to achieve this purpose.

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.

CONSIDERATIONS

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

Corridor configuration, species planted and management should enhance habitats for threatened, endangered and other species of concern, where applicable.

Considerations should be given to how this practice will provide riparian habitat and linkage to other habitats.

Sites which are suited for predominantly herbaceous vegetation and occasional, intermixed shrub patches should be developed/managed to maintain and enhance those qualities and characteristics (See Appendix A for recommendations.)

Generally, sites that are/were naturally wooded with native tree species should be developed/managed using the Riparian Forest Buffer (391) standard. (See Appendix A for recommendations.)

Riparian herbaceous cover is the preferred practice around wetlands that were not historically wooded. This practice is also preferred around ponds unless shading is necessary for cold-water fish habitat.

Nebraska Biology Technical Note #65 – Terrestrial Natural Communities of Nebraska, Steinauer and Rolfsmeier 2003. – should be

used as a reference to determine sites which are suited for riparian herbaceous cover and should not be devoted primarily to tree cover using a Riparian Forest Buffer (391).

The following natural communities are critical habitat types that frequently occur adjacent to rivers and streams throughout Nebraska and should be developed or managed as riparian herbaceous cover:

- Western Alkaline March
- Eastern Saline Marsh
- Eastern Cordgrass Wet Prairie
- Eastern Saline Meadow
- Eastern Sedge Wet Meadow
- Northern Sedge Wet Meadow
- Northern Cordgrass Wet Prairie
- Western Streamside Wet Meadow
- Western Alkaline Meadow
- Wet-mesic Tallgrass Prairie
- Missouri River Floodplain Terrace Grassland
- Western Floodplain Terrace Grassland

The following natural communities are critical habitat types that frequently occur adjacent to rivers and streams throughout Nebraska and should be developed or managed as riparian forest buffers:

- Eastern Riparian Forest
- Western Riparian Woodland
- Eastern Cottonwood-Dogwood Riparian Woodland
- Eastern Cottonwood-Willow Riparian Woodland
- Paper Birch Springbranch Canyon Forest
- Lowland Bur Oak Forest
- Lowland Hackberry-Walnut Forest
- Green Ash-Elm Canyon Bottom Woodland

Each natural community description for these sites also contains detailed information related to herbaceous plant species composition which can be used to develop planting recommendations or management options.

Removal of invasive woody (tree) species, especially Russian olive or saltcedar, may be necessary to meet the objectives of this standard.

The location, layout and density of the buffer should compliment natural features. To a limited degree, the establishment of, or

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management for, small stands of mature trees may be appropriate within the larger context of riparian herbaceous cover in order to meet specific wildlife needs (e.g. cottonwood grove for bald eagle nesting site).

This practice can be combined with filter strips to improve water quality.

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

Consider the native plant species representative of the soil type when selecting species to be established. Refer to the Nebraska Range Site Descriptions or Ecological Site Descriptions for plant species that represent native vegetation in climax condition.

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

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

Plant species that could become invasive should not be selected (e.g. smooth brome or reed canarygrass).

Manage for or select plant species that are native and have multiple values such as those suited for biomass, nesting, aesthetics 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.

Channel and streambank stability must be considered in selecting this practice or determining that this practice may need to be combined with other practices such as Streambank and Shoreline Protection (580) and Stream Channel Stabilization (584) that better address stability issues.

Consider preparing seedbeds by chemical means and no-till drilling grass/forbs directly into the chemically prepared seedbed. Refer to

Nebraska Range and Pasture Technical Note No. 51 for additional information.

PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each site. Specification shall be recorded using approved job sheets, narrative statements in the conservation plan, or other acceptable documentation. Refer to Statement of Work documentation requirements and 390SOW for guidance on deliverables for design, installation, and checkout of this practice.

Sites that need development or enhancement activities such as herbaceous plantings should utilize Pasture and Hayland Planting (512), Range Planting (550), Filter Strip (393), and/or Upland Wildlife Habitat Management (645) as needed or appropriate.

For sites that require management to meet desired objectives, Early Successional Habitat Development/Management (647) – Disking Specification may be utilized. However, the 20' buffer immediately adjacent to the water course or waterbody should remain undisturbed.

Design parameters outlined in Filter Strip (393) should be used to implement a buffer intended to remove sediment, organic matter, and other pollutants.

Fence (382) may be needed to manage livestock use within the buffer zone.

An alternative water source may need to be established using one or more of the following standards: Dam, Multiple Purpose (349), Pond (378), Pipeline (516), Spring Development (574), Watering Facility (614), or Water Well (642).

For sites without an off-site water source, utilize Streambank and Shoreline Protection (580) to prevent excessive erosion where livestock enter the riparian corridor.

Shrub plantings shall be designed in "blocks" rather than linear "belts" to mimic natural settings and maximize diversity of wildlife habitat interspersion.

In limited situations where minor areas are devoted to tree cover, they should not exceed

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25% of the buffer area and should be designed with allowances for greater spacing to create a "savannah" rather than a "forest" habitat. (For example, tree density should be less than 50 trees per acre at no less than a 30-foot spacing. Small understory trees and shrubs are allowed in addition to this limitation.) *Additional details are provided in Riparian Forest Buffer (391) for "forest" habitat tree plantings within a portion of the site.

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 and maintained to protect 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.

As applicable, 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. Refer to the current Guide for Weed Management in Nebraska for herbicide use guidelines.

Refer to operation and maintenance recommendations within Filter Strip (393) for additional information.

Management is needed on certain sites to maintain vegetation, including the control of unwanted vegetation (e.g. undesirable tree cover in herbaceous communities).

Natural processes - Prescribed Burning (338) or Prescribed Grazing (528) - are preferred to accomplish management objectives where practical to compliment the plant community.

A riparian functional assessment can monitor the change in riparian health and direct future management needs.