



CONSERVATION ENHANCEMENT ACTIVITY

E393A

CONSERVATION STEWARDSHIP PROGRAM

Extend existing filter strip to reduce water quality impacts

Conservation Practice 393: Filter Strip

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial); Associated Ag Land

RESOURCE CONCERN: Water

ENHANCEMENT LIFE SPAN: 10 Years

Enhancement Description

Extend existing filter strips for water quality protection. Extend the existing buffer for a total of 60 feet or more to enhance water quality functions. The extended buffers must be composed of at least 5 species of non-noxious, wildlife friendly grasses and/or perennial forbs best suited to site conditions. Include species that provide pollinator food and habitat where possible.

Criteria

- Extend existing filter strip for water quality protection.
- Extend the existing buffer for a total of 60 feet or more to enhance water quality functions.
- Overland flow entering the filter strip shall be uniform sheet flow. Concentrated flow shall be dispersed before it enters the filter strip.
- The maximum gradient along the leading edge of the filter strip shall not exceed one-half of the up-and-down hill slope percent, immediately upslope from the filter strip, up to a maximum of 5%.
- Filter strips shall not be used as a travel lane for equipment or livestock.

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- The filter strip will be designed to have a 10-year life span, following the procedure in the Agronomy Technical Note No. 2 (Using RUSLE2 for the Design and Predicted Effectiveness of Vegetative Filter Strips (VFS) for Sediment), based on the sediment delivery in RUSLE2 to the upper edge of the filter strip and ratio of the filter strip flow length to the length of the flow path from the contributing area.
- The filter strip shall be located immediately downslope from the source area of contaminants.
- The drainage area above the filter strip shall have a slope of 1% or greater.
- The extended buffers must be composed of at least 5 species of non-noxious, wildlife friendly grasses and/or perennial forbs best suited to site conditions. Include species that provide pollinator food and habitat where possible. State-listed noxious or invasive plants will not be established in the filter strip.
- The filter strip shall be established to permanent herbaceous vegetation. Species selected shall be:
 - able to withstand partial burial from sediment deposition and
 - tolerant of herbicides used on the area that contributes runoff to the filter strip.
- Species selected shall have stiff stems and a high stem density near the ground surface.
- Species selected for seeding or planting shall be suited to current site conditions and intended uses.
- Selected species will have the capacity to achieve adequate density and vigor within an appropriate period to stabilize the site sufficiently to permit suited uses with ordinary management activities.
- Species, rates of seeding or planting, minimum quality of planting stock, such as pure live seed or stem caliper, and method of establishment shall be specified before application. Only viable, high quality seed or planting stock will be used.
- Site preparation and seeding or planting shall be done at a time and in a manner that best ensures survival and growth of the selected species. What constitutes successful



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establishment, e.g. minimum percent ground/canopy cover, percent survival, stand density, etc. shall be specified before application.

- Planting dates shall be scheduled during periods when soil moisture is adequate for germination and/or establishment. Seeding shall be timed so that tillage for adjacent crop does not damage the seeded filter strip.
- The minimum seeding and stem density shall be equivalent to a high-quality grass hay seeding rate for the climate area or the density of vegetation selected in RUSLE2 to determine trapping efficiency, whichever is the higher seeding rate.



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Documentation and Implementation Requirements

Participant will:

- Prior to implementation, prepare the planned acres for vegetation establishment. Refer to NRCS Conservation Practice Standard Filter Strip (Code 393). (NRCS will provide technical assistance, as needed.) Total planned amount of filter strip extension = _____ feet

- Prior to implementation, select at least 5 species of non-noxious, wildlife friendly grasses and/or perennial forbs best suited to site conditions. (NRCS will provide technical assistance, as needed.)

Species	Seeding Rate (lb/ac pure live seed)	Note specific species characteristic(s)

- Prior to implementation, select planting technique and timing appropriate for the site and soil conditions. (NRCS will provide technical assistance, as needed.)

Planting Date	
Planting Technique	

- During implementation, install and maintain erosion control measures as needed for the site. (NRCS will provide technical assistance, as needed.)
- During implementation, notify NRCS of any planned changes to verify changes meet NRCS enhancement criteria.
- During implementation, protect the planting from plant and animal pests and fire.
- After implementation, maintain and protect the planting from plant and animal pests and fire.
- After implementation, verify the total amount of filter strip implemented. Total implemented amount of filter strip extension = _____ feet



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NRCS will:

- Prior to implementation, verify the enhancement is planned for cropland.
- Prior to implementation, provide and explain NRCS Conservation Practice Filter Strip (Code 393) as it relates to implementing this enhancement.
- Prior to implementation, verify the enhancement is planned for acres that have been appropriately prepared for filter strip establishment. Total planned amount of filter strip extension = _____ feet
- Prior to implementation, verify no plants on the Federal or state noxious weeds list are included.
- As needed, prior to implementation, NRCS will provide technical assistance:
 - Planning site preparation meeting NRCS Conservation Practice Standard Filter Strip (Code 393).
 - Selecting the wildlife friendly grasses and/or perennial forbs best suited to site conditions.
 - Selecting planting techniques and timing appropriate for the site and soil conditions.
 - Planning the use of additional erosion control, as needed for the site.
 - Preparing specifications for applying this enhancement for each site using approved state implementation requirements, national technical notes, appropriate state technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
- During implementation, evaluate any planned changes to verify they meet the enhancement criteria.
- After implementation, verify the vegetation was established to specifications developed for the site.
- After implementation, verify the planting is protected from pests and fire.

ALABAMA – E393A Supplement- Extend existing filter strip to reduce water quality impacts

Enhance **existing** filter strips to a width of at least 60 ft by establishing perennial native grasses and forbs for the purpose of enhancing water quality functions. Must have documentation that existing filter strip is functioning and meets minimum width requirements and has not been receiving applications of nutrients or pesticides. This enhancement is not applicable where nutrients and pesticides are/were not applied on the field providing runoff across the filter.

Requirements:

1. Plan map will show all fields and locations of the filter strips that are to be extended along with extents (width and length). Filter strips will be a minimum of 60 ft. and a maximum of 120 ft. OR width that will include no more than half the acres in the field.
2. Existing introduced perennial grasses must be eradicated before establishment of the filter strip. A minimum of two herbicide applications will likely be required the year prior to establishment. Must be native warm-season perennial grass and forb mix. Seeding rates for filters strips are higher than for wildlife-only plantings. Native grass and forb choices are on the list below. Must choose a minimum of 3 grasses and 2 forbs. The maximum gradient along the leading edge of the filter strip shall not exceed one-half of the up-and-down-hill slope percent, immediately upslope from the filter strip, up to a maximum of 5%.
3. Locate filter strips where runoff water leaves the field. The leading edge should follow the contour as much as possible. Concentrated flow shall be dispersed before entering the filter strip.
4. Filter strips should not be used as storage areas or travel lanes.
5. No herbicide overspray should occur on filter strips when spraying field crops. Any vegetation destroyed by herbicides or tillage must be re-established.
6. Burning is the recommended form of maintenance. Maintenance shall be completed on these areas beginning the second winter after establishment. Some form of maintenance must be completed on all acres at least once every 3 years. The best regime is to implement maintenance on 1/3 of the acreage annually. Prescribed burning is the recommended form of maintenance, but mowing high (12 inches) is acceptable. Mowing could allow a duff layer to develop and potentially limit pollinator plant growth and survival. Therefore, if mowing is the main form of maintenance, then either fire or light disking must be used at least once every 3rd maintenance cycle to break the duff layer. Spot spray invasive or woody vegetation. Follow all herbicide label requirements.
7. No fertilizer will be applied at planting. Commercial fertilizer may be applied after vegetation is established in order to maintain stand.
8. Receipts for seed and lime (if needed) are required. Seed tags should include species and variety, germination, and purity. Complete all documentation on the national jobsheet.

Native Warm Season Grasses (*Choose a Minimum of 3 AND 2 Forbs*)

Big Bluestem**	2.5 pounds pls per acre
Eastern Gamagrass (best in higher moisture sites)	2 pounds pls per acre
Indiangrass**	2.5 pounds pls per acre
Little Bluestem	2.5 pounds pls per acre
Splitbeard Bluestem	1 pound pls per acre
Switchgrass (Do NOT use "Alamo" variety)	2 pounds pls per acre

Purpletop

2 pounds pls per acre

*PLS = Pure Live Seed (% purity x % germination = % pure live seed)

Example: Where Purity is 90% (meaning 90% of the weight being purchased is actual seed) and where Germination is 70%, (meaning 70% of the actual seed are guaranteed to be viable). In this Example PLS = .90 X .70 = **63 percent**

So, in this example, every 100 pounds of bulk seed you get actually contains 63 pounds in pure, viable seed.

As you can see, PLS is NOT the same as bulk seed. Buyer should ensure pricing is based on pls pounds!

** It is recommended that these species are purchased in “debearded” form with the fluffy awn removed.

Pollinator Habitat Plant List

Choose a Minimum of 2 Forbs AND 3 native grasses

Early Flowering Species (Choose 3)

Smooth Beardtongue (<i>Penstemon digitalis</i>)	3/16 pound pls* per acre
Butterfly Weed (<i>Asclepias tuberosa</i>)	1/4 pound pls per acre
Lanceleaf Tickseed (<i>Coreopsis lanceolata</i>)	1/2 pound pls per acre
Blue False Indigo (<i>Baptisia australis</i>)	1 pound pls per acre
Common Milkweed (<i>Asclepias syriaca</i>)	1/4 pound pls per acre
Plains Coreopsis (<i>Coreopsis tinctoria</i>)	3/16 pound pls per acre
Purple Prairie Clover (<i>Dalea purpurea</i>)	3/16 pound pls per acre
Pale Purple Coneflower (<i>Echinacea pallida</i>)	1/4 pound pls per acre
Spotted Beebalm (<i>Monarda punctata</i>)	1/8 pound pls per acre
Black-Eyed Susan (<i>Rudbeckia hirta</i>)	1/4 pound pls per acre
Golden Alexander (<i>Zizia aurea</i>)	1/4 pound pls per acre

Mid-Season Flowering Species (Choose 3)

Large Flower Partridge Pea (<i>Chamaecrista fasciculata</i>) use Lark Selection large partridge pea)	1/4 pound pls per acre (Do NOT
Small Flower Partridge Pea (<i>Chamaecrista nictitans</i>)	1/4 pound pls per acre
Slender Mountain Mint (<i>Pycnanthemum tenuifolium</i>)	1/8 pound pls per acre
Illinois Bundleflower (<i>Desmanthus illinoensis</i>)	1/2 pound pls per acre

Purple Coneflower (<i>Echinacea purpurea</i>)	1/2 pound pls per acre
Blue Verbena (<i>Verbena hastata</i>)	5/16 pound pls per acre
Yellow Giant Hyssop (<i>Agastache nepetoides</i>)	1/4 pound pls per acre
Golden Wave Tickseed (<i>Coreopsis basalis</i>)	1/8 pound pls per acre
Rattlesnake Master (<i>Eryngium yuccifolium</i>)	3/8 pound pls per acre
White Prairie Clover (<i>Dalea candida</i>)	1/4 pound pls per acre
Boneset (<i>Eupatorium perfoliatum</i>)	1/8 pound pls per acre
Roundleaf Thoroughwort (<i>Eupatorium rotundifolium</i>)	1/8 pound pls per acre
Lance-Leaved Goldenrod (<i>Euthamia graminifolia</i>)	1/16 pound pls per acre
Rosemallow (<i>Hibiscus moscheutos</i>)	1/4 pound pls per acre
Violet Lespedeza (<i>Lespedeza violacea</i>)	1/4 pound pls per acre
Spiked Blazing Star (<i>Liatris spicata</i>)	1/4 pound pls per acre
Lupine (<i>Lupinus perennis</i>)	5/8 pound pls per acre
Bergamot (<i>Monarda fistulosa</i>)	1/8 pound pls per acre
Mexican Hat (<i>Ratibida coumnaris</i>)	1/8 pound pls per acre
Greyheaded Coneflower (<i>Ratibida pinnata</i>)	1/4 pound pls per acre
Clasping Coneflower (<i>Rudbeckia amplexicaulis</i>)	1/4 pound pls per acre
Passion Flower (<i>Passiflora incarnate</i>)	1/2 pound pls per acre
Wild Quinine (<i>Parthenium integrifolium</i>)	3/16 pound pls per acre

Late Flowering Species (Choose 3)

Joe-Pye Weed (<i>Eupatorium fistulosum</i>)	1/8 pound pls per acre
Sweet Joe-Pye Weed (<i>Eupatorium purpureum</i>)	1/8 pound pls per acre
Swamp Sunflower (<i>Helianthus angustifolius</i>)	3/16 pound pls per acre
Maximilian Sunflower (<i>Helianthus angustifolius</i>)	3/16 pound pls per acre
Cardinal Flower (<i>Lobelia cardinalis</i>)	1/8 pound pls per acre
Butterfly pea (<i>Centrosema virginianum</i>)	1/8 pound pls per acre
Heath Aster (<i>Aster pillosus/Symphotrichum pilosum</i>)	1/8 pound pls per acre
Wand Goldenrod (<i>Solidago stricta</i>)	1/8 pound pls per acre
Pine Barren Goldenrod (<i>Solidago fistulosa</i>)	1/8 pound pls per acre

Tall Goldenrod (<i>Solidago altissima</i>)	$\frac{1}{8}$ pound pls per acre
Gray Goldenrod (<i>Solidago nemoralis</i>)	$\frac{1}{8}$ pound pls per acre
Rough Goldenrod (<i>Solidago rugosa</i>)	$\frac{1}{8}$ pound pls per acre
Swamp Milkweed (<i>Asclepias incarnata</i>)	$\frac{3}{8}$ pound pls per acre
Smooth Aster (<i>Aster laevis</i>)	$\frac{1}{8}$ pound pls per acre
Showy Tickseed (<i>Bidens aristosa</i>)	$\frac{3}{8}$ pound pls per acre
Tall Tickseed (<i>Coreopsis tripteris</i>)	$\frac{1}{8}$ pound pls per acre
Florida Beggarweed (<i>Desmodium floridanum</i>)	$\frac{5}{16}$ pound pls per acre
Dixie Tick Trefoil (<i>Desmodium tortuosum</i>)	$\frac{5}{16}$ pound pls per acre
Perplexed Tick Trefoil (<i>Desmodium perplexum</i>)	$\frac{5}{16}$ pound pls per acre
Pine Barren Tick Trefoil (<i>Desmodium strictum</i>)	$\frac{5}{16}$ pound pls per acre
Indian Blanket (<i>Gaillardia pulchella</i>)	$\frac{3}{8}$ pound pls per acre
Sneezeweed (<i>Helenium autumnale</i>)	$\frac{1}{8}$ pound pls per acre
Evening Primrose (<i>Oenothera biennis</i>)	$\frac{1}{8}$ pound pls per acre
Yellow Wingstem (<i>Verbesina alternifolia</i>)	$\frac{5}{16}$ pound pls per acre
White Wingstem (<i>Verbesina virginica</i>)	$\frac{5}{16}$ pound pls per acre
Iron Weed (<i>Vernonia altissima</i>)	$\frac{3}{16}$ pound pls per acre
Alabama Iron Weed (<i>Vernonia noveboracensis</i>)	$\frac{3}{16}$ pound pls per acre