



CONSERVATION ENHANCEMENT ACTIVITY

E391A

CONSERVATION STEWARDSHIP PROGRAM

Increase riparian forest buffer width for sediment and nutrient reduction

Conservation Practice 391: Riparian Forest Buffer

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

RESOURCE CONCERN: Water

PRACTICE LIFE SPAN: 15 Years

Enhancement Description

Where an existing forested riparian area is located along a river, stream, pond, lake, or other waterbody, increase the width of the buffer in order to allow a greater percentage of sediment and nutrient removal from surface and subsurface flows.

Criteria

- Existing buffer width shall be at least 35 feet or (if applicable) the minimum State buffer-width requirement, whichever is greater. Maximum enhancement buffer width may be increased up to the greater of 180 feet or the State-allowed maximum width.
- To the extent possible, the buffer area and extended buffer will be shaped and vegetated to increase overland flow interception.
- Excessive sheet-rill and concentrated-flow erosion will be controlled in the areas immediately adjacent and up-gradient of the buffer site. Overland flow through the riparian area will be maintained as sheet flow.

E391A-Increase riparian forest buffer width for sediment and nutrient reduction	January 2022	Page 1
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CONSERVATION STEWARDSHIP PROGRAM

- Existing functional underground drains through the riparian area will be plugged, removed or replaced with perforated pipe/end plugs or water control structures.
- Dominant vegetation will consist of existing, naturally regenerated, or seeded/planted trees and shrubs suited to the soil and hydrology of the site and the intended purpose of nutrient reduction.
- Use tree and shrub species that are native and non-invasive. Substitution with improved and locally accepted cultivars or purpose-specific species is allowed. For plantings and seeding, only viable, high-quality and adapted plant materials will be used.
- Favor tree and shrub species that have multiple values such as those suited for timber, nuts, fruit, florals, browse, nesting, and aesthetics.
- Periodic removal of some forest products such as high value trees, medicinal herbs, nuts, and fruits is permitted provided the buffer area is not compromised by the loss of vegetation or harvesting disturbance.
- Necessary site preparation and planting shall be done at a time and manner to insure survival and growth of selected species.
- Harmful plant and animal 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.
- Livestock shall be controlled or excluded as necessary to achieve the buffer's water quality improvement purpose. If livestock is present, follow a Prescribed Grazing Plan (CPS 528) and defer grazing for a minimum of two years.
- Design the expanded buffer enhancement for an expected life of at least 15 years.
- The enhancement will comply with all applicable federal, state, and local laws and regulations, and with States' Forestry Best Management Practices for Water Quality.



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Documentation and Implementation Requirements

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Participant will:

- Prior to implementation, prepare the planned buffer area according to the planting plan NRCS has developed with you. Refer to NRCS Conservation Practice Standard Riparian Forest Buffer (Code 391). (NRCS will provide technical assistance)

- Prior to implementation, select planting date, method, and density/spacing appropriate for the site and soil conditions. (NRCS will provide technical assistance.)

Planting Date	
Planting Method	
Density and spacing	

- Prior to implementation, work closely with NRCS to select plant species that are adapted to your specific site and meet the goals of this enhancement.

Species	Vegetative or Rootstock	Size	Protection (tubes, mats, nets)

- During implementation and before planting, grade the site, as needed, to eliminate concentrated flow through the buffer including water coming from uphill of the buffer.
- During implementation and before planting, replace underground tile drains that pass through the buffer with rigid, non-perforated pipe or install a water control device that allows for overflow management.
- During implementation, install and maintain erosion control measures as needed, such as silt fencing and mulching.
- During implementation, conduct planting of selected species according to dates, methods, spacing and other requirements listed in the planting plan.
- During implementation, notify NRCS of any planned changes to allow NRCS to verify that the changes meet NRCS enhancement criteria.



CONSERVATION STEWARDSHIP PROGRAM

- ❑ After Implementation, control harmful pests and vegetation and in a manner that limits effects to pollinators. Inspect and maintain tubes and protection measures regularly.
- ❑ After implementation, livestock and wildlife may need be controlled or excluded to achieve the buffer’s water quality improvement purpose. If livestock are present, follow a Prescribed Grazing Plan (Code 528) and defer grazing for a minimum of two years. Wildlife may need to be controlled during establishment of vegetative treatments. Temporary and local population control methods should be used with caution and within state and local regulations.

NRCS will:

- ❑ Prior to implementation, verify the enhancement is planned for cropland.
- ❑ Prior to implementation, provide and explain NRCS Conservation Practice Standard Riparian Forest Buffer (Code 391) to show how it relates to this enhancement.
- ❑ Prior to implementation, verify no plants on the Federal or state noxious weeds list are included in the planting list.
- ❑ Prior to implementation, NRCS will provide technical assistance on:
 - Preparing a site preparation and planting plan that meets NRCS Conservation Practice Standard Riparian Forest Buffer (Code 391) and lists the species, vegetation type, density, protection measures, and planting dates.
 - Selecting planting techniques and timing appropriate for the site and soil conditions.
 - Assessing impacts of drainage removal/plugging on adjacent land units and uses.
 - 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, review any planned changes to ensure they meet the enhancement criteria.

E391A-Increase riparian forest buffer width for sediment and nutrient reduction	January 2022	Page 5
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CONSERVATION STEWARDSHIP PROGRAM

- During implementation, verify all erosion control needed for the site is functioning and is maintained to specifications provided to the participant.
- After implementation, verify that any underground drains through the riparian area, if they exist, were plugged, removed or replaced with perforated pipe/end plugs or structures for flow control.
- After implementation, verify the vegetation was established and any protections required are being maintained according to the specifications provided to the participant.
- After implementation verify livestock are controlled or excluded as necessary to achieve the buffer’s water quality improvement purpose. If livestock are present, verify a Prescribed Grazing Plan (Code 528) is being followed and that grazing is being deferred for a minimum of two years.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

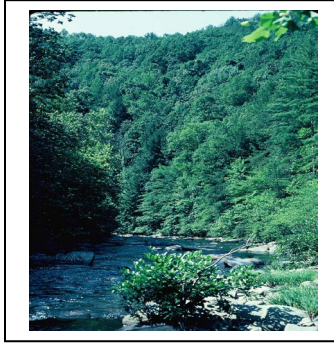
Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature Date

2024 CSP ENHANCEMENTS – GUIDANCE & PERFORMANCE CERTIFICATION

E391A – Increase Riparian Buffer Width for Sediment and Nutrient Reduction

Conservation Practice 391: Riparian Forest Buffer



Increase Riparian Buffer Width for Sediment/Nutrient Reduction

Adding and increasing the width of riparian forest buffers will reduce in-stream water temperature, sedimentation, pesticides, and excess nutrients in the stream, which will benefit declining aquatic species, improve drinking water quality for animals and humans and help stabilize streambanks. This enhancement is applicable where existing riparian forest buffers are located along rivers, streams, ponds, lakes or other water bodies that have adjacent open land within 180 feet of the streambank. Additional areas on that stretch of stream that do not have an existing riparian forest buffer with open farmland adjoining the creek are also eligible if the base buffer is established at the landowner's expense.

Benefits

Alabama has the most diversity in aquatic species of any state in the nation. Many of these species are declining due to water quality issues. Adding this enhancement will greatly improve habitat quality for these species. In addition, many species of wildlife use riparian areas for travel corridors, food and shelter.

Enhancement Criteria

- I. **Riparian Buffer Width:** This enhancement requires increasing the existing riparian buffer on each side of a defined waterway. If a stream has an existing buffer in one segment with eligible land, then an adjacent segment that has no buffer (open land all the way to the creek bank) can be enrolled along with the original segment. In those areas with no existing buffer, only the additional increased width is eligible. The base 35 feet next to the stream must be established at the landowner's expense before approval of this enhancement. If both sides of the creek are not under the control of the participant, then they can enroll only one side. Buffer width shall be increased to a minimum of 70 feet but may be extended to 180 feet. If a wider floodplain exists, then the state-allowed maximum width will be 300 feet or the width of the floodplain, whichever is less.
- II. **Length of Stream to be Treated:** Treat the stream reach within the PLU to meet the planning criteria. Full stream reach (length) must be planned including both sides of the stream if landowner owns both sides. Partial stream reach work for this enhancement does not fully treat the resource concern and is not eligible for this enhancement.
- III. **Qualifying Streams:** Those identified on topographic maps as having a solid or dashed blue line. Other streams substantially affected by presence of water with soils,

Alabama Supplemental Guidance for CSP Enhancement

vegetation, and landform indicative of high soil moisture or frequent stream flows or flooding may be included if approved by an NRCS employee with demonstrated experience with riparian buffers. Examples include intermittent streams with defined bed and bank and intermittent streams in karst topography showing evidence of strong flow during rain events. Man made field ditches will not be eligible unless they meet the definition of an intermittent stream.

- IV. Eligible Land: This practice is eligible where open farmland lies within 180 feet of an eligible stream.
- V.
 - A. Wildlife Plantings: Up to 10% of the riparian buffer acreage can be in herbaceous or shrub plantings that benefit pollinators and other wildlife. Annual or perennial herbaceous plants are acceptable. Shrubs or herbaceous plants must produce flowers preferred by pollinators during spring, summer or fall. Plantings cannot be more than 50% of the width of the buffer at any one spot. Plantings cannot contain any area within the base SMZ (first 35 feet from the stream bank). Favor species that have multiple values such as timber, nuts, fruits, browse, nesting and aesthetics.
 - B. Tree Plantings: Tree planting is required on pasture, hayland, fallow or cropland. Trees selected for planting should be suited to the soils and hydrology of the site. Spacing density should be 500 trees per acre or less. Favor species that have multiple values such as timber, nuts, fruits, browse, nesting and aesthetics, with a heavy emphasis on wildlife.
- V. Invasive Plants: Control of invasive plants within the riparian buffer is **required**. “Alabama’s Ten Worst Invasive Weeds” publication lists the following species to be controlled: kudzu, tallowtree, cogongrass, Chinese privet, tropical soda apple, Japanese climbing fern, invasive roses, Eurasian water milfoil, hydrilla and alligator weed. When herbicides are used, follow label restrictions.
- VI. Livestock Grazing: If the riparian buffer is part of a livestock operation, the area shall be fenced out and grazing shall be limited to periodic flash grazing as prescribed in the Grazing Plan (CPS 528).
- VII. Periodic Removals: Harvesting selected forest products such as high value trees, medicinal herbs, nuts and fruits is permitted provided the buffer areas are not compromised by the loss of vegetation or harvesting disturbance. Follow Alabama BMPs for Forestry if timber is to be harvested within the 15-year lifespan of this practice. (No clearcutting allowed during practice lifespan). For more details, see Streamside Management Zones Minimum Standards:
http://www.forestry.alabama.gov/Pages/Management/Forms/2007_BMP_Manual.pdf

E391A JOB SHEET

TASK	Artificial Regeneration	Invasive Species
Date(s) Planted/Treated		
Species Planted Or Treated		

March 2024

Alabama Supplemental Guidance for CSP Enhancement

Invasive Treatment Type (foliar, basal bark, etc)	XXXXXXXXXXXXXXXXXXXX	
Invasive Percent Controlled	XXXXXXXXXXXXXXXXXXXX	
Trees per Acre & Spacing		XXXXXXXXXXXXXXXXXXXX
Notes		

ATTACH COPIES OF REQUIRED DOCUMENTS AS NOTED BY THE ENHANCEMENT JOB SHEET. CHECK THE BOX OR OTHERWISE IDENTIFY THE SUPPORTING DOCUMENTATION.

- A COMPLETED E391A JOB SHEET
- MAPS OF THE AREA or LOCATION(S) OF THE STANDS
- PHOTO DOCUMENTATION OF ENHANCEMENT
- DATES OF COMPLETION

The attached documents support the full implementation of this Conservation Stewardship Enhancement. This information should be submitted after the practice is completed.

CSP Participant Name

Date