



CONSERVATION ENHANCEMENT ACTIVITY

E612B

CONSERVATION STEWARDSHIP PROGRAM

Planting for carbon sequestration and storage

CONSERVATION PRACTICE: 612 - Tree/Shrub Establishment

APPLICABLE LAND USE: Forest

RESOURCE CONCERN: Air

ENHANCEMENT LIFE SPAN: 15 years

Enhancement Description

Plant tree species and/or shrubs to sequester and store carbon. Forest stands will be managed for longer rotations and/or enhanced composition diversity to improve carbon storage.

Criteria

- States will apply criteria from the NRCS National Conservation Practice Standard Tree/Shrub Establishment (Code 612), and any additional criteria as required by the NRCS State Office.
- Species will be selected for their rate of growth, lifespan, historic range, mature size, suitability for retention as wildlife or legacy species, and/or suitability for use in long-lived sustainable wood products as well as their adaptability to current and future site conditions, including soil type.
- To support forest-level carbon sequestration and storage, native plant communities, soil organic matter, standing and down woody material should be properly maintained.
- Selection of species should also be chosen according to the site's natural disturbance regime. Species should be selected based on traits, successional status, structure, and composition.
- Build forest resilience by favoring existing species that are better adapted to projected future climate conditions, and by enhancing relative compositional and structural diversity.
- Do not plant species on the Federal or State invasive species or noxious weed lists.

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- Only viable, high-quality, and site-adapted planting stock or seed will be used.
- A precondition for tree/shrub establishment is appropriately prepared sites. Refer to criteria in NRCS Conservation Practice Standard Tree/Shrub Site Preparation (Code 490).
- Implementation and timing of planting will be appropriate for the site and ensure successful establishment.
- Planting must be protected from unacceptable adverse impacts from insects, disease, wildlife, and/or fire. Apply supporting practices and treatments to protect establishing trees and shrubs, as necessary.
- Each site will be evaluated to determine if mulching, supplemental water, or other treatments (e.g., tree protection devices, shade cards, weed mats) will be needed to assure adequate survival and growth.
- The enhancement will comply with all applicable federal, state, and local laws and regulations, and with States’ Forestry Best Management Practices for Water Quality.

Documentation and Implementation Requirements

Participant will:

- Prior to implementation:
 - provide an updated Forest Management Plan that documents intended objectives for carbon sequestration and storage.
 - select a combination of species with longer life spans that are suitable for their rate of growth, historical range, mature size, suitability for retention as wildlife or legacy species, and/or suitability for use in long-lived sustainable wood products as well as their adaptability to current and future site conditions, including soil type.
 - select planting technique, arrangement and spacing design, and timing appropriate for the site conditions.

Species	Note selected species characteristic(s)



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- During implementation:
 - install and maintain erosion control measures as needed for the site.
 - protect the planting(s) from plant and animal pests and fire.
 - notify NRCS in writing of any planned changes to verify changes meet NRCS enhancement criteria.

TASK	Species	Species	Species
Planting date			
Planting Technique			
Arrangement/Spacing			

NRCS will:

- Prior to implementation:
 - provide and explain NRCS Conservation Practice Standard Tree/Shrub Site Preparation (Code 490) as it relates to implementing this enhancement. Verify the enhancement is planned for acres that have been appropriately prepared for tree/shrub establishment.
 - verify the enhancement is planned for the appropriate land use.
 - provide and explain NRCS Conservation Practice Standard Tree/Shrub Establishment (Code 612) as it relates to implementing this enhancement.
 - verify no plants on the Federal or state noxious weeds list are included.
 - NRCS will provide Technical Assistance, as needed, in the following:
 - Selecting a combination of species to meet enhancement criteria.
 - Selecting planting techniques, arrangement and spacing design, and timing appropriate for the site and soil conditions.
 - Planning the use of additional erosion control, as needed for the site.
- During implementation:
 - evaluate any planned changes to verify they meet the enhancement criteria.
- After implementation:
 - verify the planned trees and shrub species were established to specifications developed for the site.
 - verify all erosion control needed for the site is functioning and is maintained to specifications developed for the site.



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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

Alabama Supplemental Guidance for CSP Enhancement
E612B

2023 CSP ENHANCEMENTS – GUIDANCE

ENHANCEMENT NUMBER AND TITLE:

E612B – Planting for carbon sequestration and storage

Conservation Practice 612: Tree/shrub Establishment



Planting for high carbon sequestration rate
Plant tree species to sequester and store carbon. Forest stands will be managed for longer rotations and/or enhanced composition diversity to improve carbon storage.

Benefits
Planting trees with a longer life span or improved genetics with a relatively fast growth will contribute to the long-term storage of atmospheric carbon. This

activity will also encourage sustainable management of forestlands for production of durable manufactured products.

Enhancement Criteria

- I. Species guidance. This enhancement requires the selection of trees with a relatively fast growth rate, suitability for production of durable manufactured products, and adaptability to site conditions. To ensure that carbon sequestration gains are realized, selected species must have a long life span, a long harvest interval, or be from genetically improved pine stock that will be sequestered in lumber used in construction.

For Alabama the following species are allowed for this enhancement:

Species	Note selected species range and acceptable sites
Genetically Improved Loblolly Pine	Require MCP (mass control pollinated) or CMP (controlled mass pollinated) or higher technology container seedlings. MCP/CMP means trees are manually pollinated to ensure top genetics from two known parents. Statewide.
Genetically Improved Slash Pine	Require MCP (mass control pollinated) or CMP (controlled mass pollinated) or higher technology container seedlings. MCP/CMP means trees are manually pollinated to ensure top genetics from two known parents. Eligible within natural slash pine range.
Longleaf Pine	Containerized seedlings planted within the longleaf range
American Sycamore	Moist, rich soil on margins of streams or rich bottoms
Sweetgum	Prefers moist rich soils, typically a bottom-land tree
Yellow Poplar	Prefers moist, rich soil along streams and moist slopes
Laurel Oak, Live Oak, Northern Red Oak,	Must be planted in suitable soils and adapted sites, such as: Laurel Oak & Southern Red Oak – Coastal Plain & Piedmont

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Southern Red Oak, Scarlet Oak, Shumard Oak, Cherrybark Oak, Swamp Chestnut Oak	Live Oak – Coastal plains Northern Red Oak & Scarlet Oak – Prefers Piedmont & Mountains Swamp Chestnut Oak & Cherrybark Oak – Prefers bottomlands and river terraces
White Oak Mixture	White Oak must not make up more than 50% of the stand. May be planted with any tree on this list, provided the site is suitable.
Bald cypress	Acceptable sites include wet, riverine swamps and floodplains
Black Cherry Black Walnut	North Alabama; only to be used as a trainer tree not planted alone. Not more than 50% of the stand may be cherry or walnut.

- II. *Tree Spacing Guidance:* Pine or hardwood trees will be planted for production of wood products and carbon storage. Seedlings will be planted at spacings which allow between 403 and 622 trees per acre, **except longleaf, which must be planted at spacings over 500 trees per acre** unless NRCS state staff forester approves lower density on a case by case basis.

Some acceptable spacings include:

$$9 \times 12' = 403$$

$$15 \times 7' = 414*(\text{hardwood only})$$

$$10 \times 10' = 435$$

$$8 \times 12' = 454$$

$$9 \times 10' = 484$$

$$7 \times 12' = 518$$

$$9 \times 9' = 537$$

$$8 \times 10' = 545$$

$$6 \times 12' = 605$$

$$7 \times 10' = 622$$

- III. Additional requirements for this enhancement. **1)** All appropriate site preparation required for good survival of planted trees will be implemented. At a minimum, herbicide site prep application will be completed. Additional site preparation, determined by a conservation planner with expertise in tree planting site preparation, will be required if the planner determines it necessary. These could include mechanical site preparation and/or prescribed burning. **2)** A fuelbreak (30 ft minimum width) will be required around the outside of the planned tree planting area. This fuel break will not be included inside the tree planting planned acres, but will be required for tree planting approval at check out. At a minimum, a dozer, forestry mulcher or similar will be used to clear out brush inside the fuel break. Stump removal within the fuel break will not be required.

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TASK	Species	Species	Species
Planting Date			
Planting Technique (hand or machine)			
Arrangement and Spacing			

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

- A COMPLETED E612B JOB SHEET (this page of this Guidance Document)
- MAPS OF THE AREA or LOCATION(S) OF THE STANDS
- PHOTO DOCUMENTATION OF ENHANCEMENT
- FOR LOBLOLLY OR SLASH PINE, DOCUMENTATION OF GENETICALLY IMPROVED CONTAINERIZED SEEDLINGS
- DATES OF COMPLETED PLANTING

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