

Mississippi Technical Requirements for CRP CP36, LONGLEAF PINE

This practice is to re-establish and manage Longleaf pine stands at densities that benefit wildlife species and protect water quality. This includes re-establishment or regeneration of the native vegetative understory component of the longleaf ecosystem, including native warm season grasses (NWSG). Establishment of tree species other than Longleaf pine is not permitted. Portions of fields, where it is infeasible to establish Longleaf are not eligible for enrollment.

Establish Longleaf Pine:

Site specific actions, as applicable, will be indicated in the conservation plan.

1. Control all tall fescue, Bermudagrass, bahiagrass, smut grass, cogongrass, Johnsongrass, dallisgrass, sericea lespedeza, privet (*Ligustrum spp.*), Chinese tallow, other exotic invasive species, and/or aggressive native woody competition, such as yaupon and gallberry. Use appropriate herbicides and follow label instructions. Where heavy Bermudagrass, cogongrass, sericea lespedeza, or woody competition occurs, two growing seasons may be required for control.
2. Leave field un-cropped (fallow) for one growing season before planting Longleaf to aid with establishment. This will also allow all crop herbicide residues to breakdown.
3. Lightly scalp tree planting rows to a depth <3-5", if determined necessary.
4. Sub-soil tree planting rows to relieve compacted layer. Plant seedlings 4" to 6" off the rip.
5. Band spray (maximum 48" wide band) herbicide to control competition in rows during trees 1st year. (The remainder of the row will be planted to and/or managed for NWSG.)
6. Containerized seedlings are highly recommended for planting. Bare-root seedlings will only be allowed when containerized seedlings are unavailable from vendors. Plant Longleaf seedlings as follows per acre on a minimum of 12 ft spacing between rows to allow for the development of native grasses and forbs. The trees spacing may be:

Spacing between trees	Containerized Seedlings			Bare-root Seedlings	
	As specified	9'	8'	7'	6'
Trees Per Acre with 12' row spacing		403	454	519	600
Trees Per Acres with 4'X24' spacing	454				
Trees Per Acres with 4'X8'X40' spacing	454				

7. Establish firebreak according to NRCS standards.
8. Band spray herbicide (max. 48" wide) to control competition in rows during trees 2nd year.
9. Conserve wildlife cover in the unplanted space between trees- DO NOT MOW BETWEEN ROWS OR BROADCAST SPRAY HERBICIDE UNLESS TO CONTROL COMPETITION DURING NWSG ESTABLISHMENT.

Establish Native Vegetative Understory, including Native Warm Season Grasses:

Site specific actions, as applicable, will be indicated in the conservation plan.

Under normal conditions, acreage offered will be established in native understory vegetation by the end of the second year after enrollment. Therefore, all tall fescue, Bermudagrass, bahiagrass, smut grass, cogongrass, Johnsongrass, dallisgrass, sericea lespedeza, privet (*Ligustrum spp.*), Chinese tallow, other exotic invasive species, and/or aggressive native woody competition, such as yaupon and gallberry, will be controlled during the establishment period, regardless of establishment method (natural regeneration or planting).

Option 1 – Natural regeneration of eligible species

Natural regeneration of native herbaceous or shrubby vegetation with required management may be permitted. Cost share is not authorized for natural regeneration of vegetation. The producer will plant the approved cover at no cost to USDA if the practice is not certified as established by NRCS or TSP spot check within 2 years from the CRP-1 effective date. If field is cropped the growing season before the CRP-1 effective date, then the spot check will be conducted within 3 years after enrollment to allow all crop herbicide residues to breakdown.

Option 2 - Planting of eligible species

Refer to Table 1 for eligible species and recommended seeding mixtures. Leave field un-cropped (fallow) for one growing season before planting NWSG to aid with establishment. This will also allow all crop herbicide residues to breakdown. After longleaf pine is established - plant strips of NWSG's between each longleaf pine row. Where pines have been established on 12 foot row spacing with scalping and herbicides that disturb about 2 feet on each side of the row of pines, no more than 8 feet should be planted to NWSG's. NOTE: With a 12 ft row spacing for the longleaf pines, NWSG will be planted in the rows between the longleaf pine at a maximum planting width of 8 ft. This will only be 66% of the field planted to NWSG. For cost share, assume that only 50% of the field is planted.

Selecting Sites to be Treated for Vegetative Competition During the Establishment Period:

The conservation plan may need revision if it is determined there is a need for controlling vegetative competition before longleaf and NWSGs are planted.

At least two scenarios are possible that address the need for vegetative competition control before longleaf pine and NWSGs are planted.

1. Field fallowed and invasive species present. The field has been fallow for one or more growing seasons but still meets the FSA eligibility years for cropping. The current ground cover is broomsedge, forbs and legumes, but with introduced invasive species such as Bermudagrass, bahiagrass, tall fescue, cogongrass or greater than 10% woody shrub/tree encroachment occurring throughout the field OR the coverage is spotty, but there is a high likelihood that invasive species and/or woody competition will become a significant component of the ground cover during the life of the contract. Therefore, competitive vegetation will need to be treated with herbicides before longleaf pines and NWSGs are planted / regenerated.

2. Recently cropped with potential exotic grass problem. The field was in crop production last growing season and exotic grasses such as Bermudagrass, bahiagrass, tall fescue, and/or cogongrass occur throughout the field, OR the coverage is spotty, and there is a high likelihood that they will become a significant component of the ground cover during the life of the contract. Therefore, exotic grasses will need to be treated with herbicides before longleaf pines and NWSGs are planted / regenerated.

If one of these field conditions occur, then the following management actions are recommended.

If condition 1 is occurring then the actual time when the longleaf pines and NWSGs are planted may take up to two years. The exotic grasses/woody competition must be treated with the appropriate herbicide at the recommended rates. This will probably eliminate broomsedge that has grown over the area where herbicides are used. The area will need to be prescribed burned the winter prior to herbicide treatment to remove any heavy thatch. In late summer following the prescribed burn, treat competitive vegetation with appropriate selected herbicide. A second treatment will be needed the following year in early summer after green-up. The winter following this last treatment, plant longleaf pine. Woody shrubs/trees should be treated according to Quality Vegetation Management guidelines with the addition of any herbicides or surfactants needed for waxy cuticled species. After planting longleaf, then NWSGs can be planted or allowed to naturally regenerate between the pine rows.

If condition 2 is occurring then the actual time when the longleaf pines and NWSGs are planted may take up two years. The area will not need prescribe burning since it has only recently come out of crop production and the exotic grass thatch has not developed.

Options for Required Mid-Contract Management for Wildlife Habitat:

Cost share is authorized for the following **required** activities:

Prescribed burn twice during 10-yr. contract, or 3 times during 15-yr. contract following this schedule: and refresh firebreak prior to each burn.

1st prescribed burn scheduled in contract year 1-4 during October-March,

2nd prescribed burn in contract year 5-9 during October-March,

3rd prescribed burn in year 10-14 of 15 yr. contract during October-March;

If prescribed burning cannot be used, disking or chemical methods will be used to substitute for fire to manage the vegetative understory and reduce woody competition.

Disk every 3rd inter-row (space between rows of trees) to a depth of 3-5" during October-March of each year. Rotate the disking so it occurs in each inter-row once every three years.

Cost share is authorized for the following **optional** activities:

A one time application in contract year 4- 9 of selective herbicides for control of aggressive woody understory species, such as yaupon or gallberry or a maximum of two consecutive annual applications for cogongrass. A second herbicide application is authorized in year 10-14 of a 15 yr. contract for aggressive woody understory species, such as yaupon or gallberry or a maximum of two consecutive annual applications for cogongrass for years 11-14.

TABLE 1
CRP - EXAMPLE NATIVE GRASS & WILDLIFE MIXTURES
**FOR CP 36, LONGLEAF PINE UNDERSTORY PLANTING 1/
Mississippi**

Species	PLS/Ac <u>2/</u>	Species	PLS/Ac <u>2/</u>	
Example for Wildlife and Grassland Nesting Birds 1/		Example for Erosion Control/ Critical Area Only (Limited Application)		
Little Bluestem	1.5 – 3.0	Switchgrass	2.0	1/ For additional aesthetic and wildlife benefits, 0.5 pounds of wildflower seeds may be added to the mixture. 2/ Pounds of Pure Live Seed (PLS) planted per acre. Note: *Seeding Rates for Partridge Pea are listed in pounds per acre <u>not</u> PLS.
Big Bluestem	0.5 - 1.5	Indiangrass	1.0 - 2.0	
Indiangrass	0.5 - 1.5	Big Bluestem	1.0 - 2.0	
(Total NWSG's)	4.0 – 6.0	Little Bluestem	3.0 - 4.0	
Partridge Pea	4.0*	(Total NWSG's)	8.0 – 10.0	
		Partridge Pea	4.0*	

Note: Consult a qualified natural resources professional to select appropriate rates, species and cultivars/varieties of available NWSG seed and forbs that best fit objectives.

Recommended Native Warm Season Grass Varieties for Mississippi
(bold varieties indicate proven performance at sites in Mississippi)

Common Name	Scientific Name	Varieties or Cultivars
Big Bluestem	<i>Andropogon gerardii</i>	Kaw, Earl , Pawnee, Rountree
Little Bluestem	<i>Schizachyrium scoparium</i>	Aldous , Cimmaron, Camper, Blaze
Indiangrass	<i>Sorghastrum nutans</i>	Lometa, Osage , Americus, Cheyenne, Rumsey
Switchgrass	<i>Panicum virgatum</i>	Alamo , Blackwell, Pathfinder

Other Native Forbs and Legumes Recommended for Mississippi

Common Name	Scientific Name	Form	Soil adaptation**
Ragweed	<i>Ambrosia artemisiifolia</i>	broadleaf forb	L, M, H
Blazing star	<i>Liatris spp.</i>	broadleaf forb	M, H
Purple cone flower	<i>Echinacea purpurea</i>	broadleaf forb	M, H
Coneflowers	<i>Ratibida spp.</i>	broadleaf forb	M, H
Coreopsis	<i>Coreopsis spp.</i>	broadleaf forb	M, H
Compass plant	<i>Silphium laciniatum</i> and other <i>Silphium spp.</i>	broadleaf forb	H
Maximilian sunflower	<i>Helianthus maximiliani</i>	broadleaf forb	M, H
Common sunflower	<i>Helianthus annuus</i>	broadleaf forb	M, H
Narrow leaved sunflower	<i>Helianthus angustifolius</i>	broadleaf forb	L, M
Butterfly milkweed	<i>Asclepias tuberosa</i>	broadleaf forb	M, H
Blackeyed susan	<i>Rudbeckia hirta</i>	broadleaf forb	L, M, H
Illinois bundleflower	<i>Desmanthus illinoensis</i>	legume	H
Florida beggarweed	<i>Desmodium tortuosum</i>	legume	L, M, H
Smooth ticktrefoil	<i>Desmodium laevigatum</i>	legume	L, M, H
Stiff ticktrefoil	<i>Desmodium obtusum</i>	legume	L, M, H
Partridge pea (Lark)	<i>Chamaecrista fasciculata</i>	legume	L, M, H
Roundhead lespedeza	<i>Lespedeza capitata</i>	legume	L, M, H
Slender lespedeza	<i>Lespedeza virginica</i>	legume	L, M, H
White indigo	<i>Baptisia alba</i>	legume	L, M

** L = Light soils include dry, sandy soils; M = Medium soils are well-drained loam and clay soils; H = Heavy soils are moderately- to poorly-drained, heavy clay soils (prairie or Delta soils)