

South Carolina Guidance for Longleaf Pine Understory Restoration (Natural Regeneration vs. Planting Native Grasses and Forbs) in CRP Practice CP36 Longleaf Pines

Long leaf pine forests and savannas once covered approximately 92 million acres across the Southeast. Today, less than 3 percent of this habitat remains, and what is left is being lost at an estimated rate of 100,000 acres per year.

The CCRP practice CP36 was created to help re-establish longleaf pine and the native herbaceous ground cover that accompanies this ecosystem.

After an application is received from FSA, they will forward to the SCFC and NRCS for field validation of the practice. The SCFC will determine if the site is suitable for long leaf pine and recommend a planting spacing plus other practices necessary for establishment. NRCS is responsible for pre-determining if after 2 years of the contract, natural regeneration will have established an “adequate understory” comprised of native warm-season grasses and forbs (NWSG+F). The Conservation Plan will be written by the NRCS based on the recommendations made by the SCFC.

The following guidance is intended to help the planner predetermine whether NWSG+F planting is recommended (restoration needed) or whether there is adequate native herbaceous vegetation present to allow natural regeneration to occur (no restoration needed). The bases of this decision is centered on the ability of the vegetation on site to provide adequate fuel to support the application of a **prescribed fire**, while providing wildlife habitat for ground nesting birds, pollinators and small mammals.

During a field visit, at least four scenarios are possible that will be used to assess the integrity of native plant communities and burnability of each field.

Use the South Carolina “CRP-CP36 FIELD CHECK GUIDE FOR NATIVE AND EXOTIC VEGETATION” to document the species present at the project site and help you decide what the dominate species on the site are.

1 **High Native Plant Integrity and High Burnability. (Fallowed or Planted Pines and No Restoration Needed)**. The field has been fallow for several years, but still meets the FSA eligibility years for cropping or is expiring CRP pines that were thinned and burned. The current ground cover is broom sedge bluestem (*Andropogon virginicus*) and weedy herbs. The broom sedge is uniform enough to carry a prescribe burn during the winter months. Bermuda grass, Bahia or fescue do not occur.

2 **Low Native Plant Integrity and High Burnability. (Fallowed or Planted Pines and Needs Restoration)**. The same situation as number 1, but with Bermuda, Bahia or fescue occurring throughout the field OR the coverage is spotty, but there is a high likelihood that they (Bermuda, Bahia or fescue) will become a dominate component of the ground cover during the life of the contract OR the pines were not thinned and no prescribed burns have been applied and there is a lot of duff on the ground. If an herbicide control treatment to control exotic grasses will eliminate the broom sedge, then **NWSG+F should be planted**.

3 **Low Native Plant Integrity and Low Burn Burnability. (Recently Cropped or Planted Pines and Needs Restoration)**. The field meets the FSA eligibility years for cropping or is expiring planted pines and exotic grasses such as Bermuda, Bahia and or fescue occur throughout the field, OR the coverage is spotty, and there is a high likelihood that Bermuda, Bahia or fescue will become a dominate component of the ground cover during the life of the contract. Also, the native broadleaf weeds that have become established following crop production are not suitable as a carrier for fire. Examples of weed species that are not acceptable for prescribe fire include: dog fennel, horseweed, ragweed and pigweed or any other weed that grows tall and shades out low growing ground cover that would normally carry a fire. The herbicide histories of the site and crop residue on the soil are also important to understand when making this determination.

4 **High/Moderate Native Plant Integrity and Low Burnability. (Recently Cropped or Planted Pines and Needs Restoration.)** The field meets the FSA eligibility years for cropping or is expiring planted pines and there is no evidence of exotic grasses such as Bermuda, Bahia and or fescue in the field. If Bermuda, Bahia and or fescue do occur, they only occur in only a place or two, and there is a very low probability that these grasses will become a significant ground vegetation cover during the life of the contract. Also, the broadleaf weeds that have become established following crop production are not suitable as a carrier for fire. The weed species that are not acceptable for prescribe fire include: dog fennel, horseweed, ragweed and pigweed or any other weed that grows tall and shades out low growing ground cover. The herbicide histories of the site and crop residue on the soil are also important to understand when making this determination.

Once the field condition is determined, then select the appropriate management action.

The following management actions should be considered for each scenario:

If Scenario 1 best describes the field conditions: then longleaf pine can be planted during the following fall according to the NRCS job sheet and SCFC recommendations. **NWSG+F planting will not be needed.**

If Scenario 2 best describes the field conditions: then the actual time when the longleaf pines are planted may take up to **two years**. If it is determined that dominate species present are not sufficient as a carrier for fire, then **NWSG+F should be planted.**

The exotic grasses must be treated with the appropriate herbicide at the recommended rates. The most effective herbicide for Bermuda is Imazapyr used at post-emergent rates. The area may need to be prescribed burned the winter prior to herbicide treatment to remove any heavy thatch. In late summer following the prescribed burn, treat Bermuda with Imazapyr. A second treatment will be needed the following year in early summer after green-up using Glyphosate. The planting of Long Leaf pine would take place the winter following the last herbicide treatment.

Consider what level of understory has naturally regenerated. Supplemental planting of native warm season grasses and forbs may be needed for the desired understory. Plantings should be in rows in the pines as follows; plant three or four rows of long leaf pine trees and skip a row. In the skipped row, plant the warm season grasses. This will provide adequate seed stock to naturally fill in under the trees. This also provides adequate space to establish the grasses without damage to the newly planted pine seedlings.

If Scenario 3 best describes the field conditions: then, just like in condition 2, the actual time when the longleaf pines are planted may take up **two years**. If it is determined that dominate species present

are not sufficient as a carrier for fire, then **NWSG+F should be planted.**

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If Scenario 4 best describes the field conditions: then longleaf pine can be planted during the following fall according to the NRCS job sheet and SCFC recommendations. If it is determined that the dominate species present are not sufficient as a carrier for fire, then **NWSG+F should be planted.**

The NWSG will be planted after the long leaf pines are planted. Consider what level of understory has naturally regenerated. Supplemental planting of native warm season grasses and forbs may be needed for the desired understory. Plantings should be in rows in the pines as follows; plant three or four rows of long leaf pine trees and skip a row. In the skipped row, plant the warm season grasses. This will provide adequate seed stock to naturally fill in under the trees. This also provides adequate space to establish the grasses without damage to the newly planted pine seedlings.

Planners need to remember that this document is a general planning guide. It is not intended to be a CRP programmatic document. The time frames mentioned are for the successful establishment of long leaf pines and NWGS+F. They may not be synchronized with CRP program rules.

*****Planners also need to remember that Imazapyr herbicide has a half life of 90 days (see the label of Arsenal or Chopper) and may have a negative effect on newly sprouting grass seedlings. If Imazapyr is applied on the land and NWSG+F are planned for establishment, then the planting of the NWSG+F must be at least 90 days or more after the herbicide application.**