

Longleaf Initiative - WHIP (Restoration of Rare and Declining Habitats)

S. C. Practice Job Sheet 643

Prepared for: _____

Prepared by: _____

Farm: _____ Tract: _____ Date: _____



DEFINITION

Restoring and maintaining a native longleaf pine ecosystem as well as the ecological maintenance processes to conserve biodiversity within the historic longleaf range in South Carolina.

PURPOSE

Provide habitat for rare and declining species associated with longleaf pine.

CONDITON WHERE PRACTICE APPLIES

Sites that previously or currently support declining longleaf pine habitats in South Carolina.

CRITERIA

Methods used will be designed to protect the soil resource from erosion and compaction.

Invasive species and noxious weeds shall be controlled. When possible, control will be done on a "spot" basis to protect native forbs and legumes that benefit native pollinators and other wildlife.

Use of fertilizers, pesticides and other chemicals shall not compromise the intended purpose of this practice.

Undisturbed areas shall be conserved on a sufficient extent of the area to sustain disturbance-intolerant species.

Species and seeding rate specifications will be prepared to achieve desired habitat condition.

Only high quality and ecologically adapted plant materials will be used. When feasible, only local ecotypes will be used.

Site preparation, planting dates and methods, and plant material care and handling shall optimize vegetation survival and growth.

A pretreatment assessment of the targeted habitat will be documented to provide a baseline for comparison with post-treatment habitat assessment.

Where disturbance is necessary (mowing, burning, grazing, soil movement) it must be scheduled to ensure optimum pollinator success.

Raking of pine straw is prohibited throughout the life of the contract and for lifespan of the practice due to negative impacts upon the plant community and wildlife habitats.

OPERATION AND MAINTNANCE

Vegetation management and maintenance activities shall not be conducted during the nesting season (April 1 – September 1) except when necessary to achieve the desired habitat condition (prescribed fire is beneficial during the growing season).

Habitat conditions should be evaluated on a regular basis to adapt the conservation plan and schedule maintenance to ensure the desired habitat condition.

Management and maintenance activities should be rotated to mimic natural disturbance regimes.



The Longleaf Pine Ecosystem

The longleaf pine ecosystem is characterized by a relatively sparse tree canopy and a very diverse herbaceous understory. Although it grows best on dry, infertile soils, longleaf pine is found on a variety of sites from dry, sterile ridges to wet, low flatwoods, and in sand, loam or clay. On a landscape level scale, the longleaf pine ecosystem contains innumerable embedded microhabitats, including but not limited to pitcher plant bogs, seepage slopes, wetland flats and scrub oaks. Abundant grasses promoted by open canopy provide fuel for the fires that maintain and enhance longleaf habitats. Prescribed fire promotes food plant growth, longleaf germination, cover, reduces woody competition, and reduces the risk of wildfires.

It is the nature of the longleaf pine to develop very little above ground for the first 2 to 6 years. During this time the longleaf is stemless and focuses on developing an extensive root system and the root collar increases in diameter. During this time, a dense clump of green needles is all that appears on the surface. This is the distinctive growth phase called the “grass stage” of a longleaf pine (Figure1). The seedlings, at this stage, are highly fire resistant. When the root collar diameter approaches 1 inch in diameter, height growth begins (Figure 2). Once height growth is initiated, a field-grown seedling may grow 10 feet in 3 years. Branch production is delayed until the seedling reaches 10 to 16 feet in height.

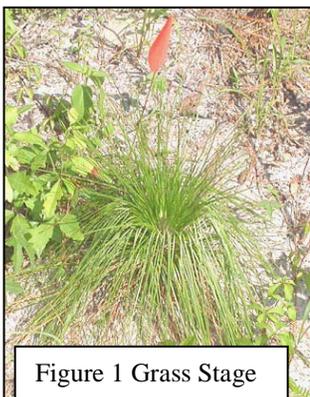


Figure 1 Grass Stage

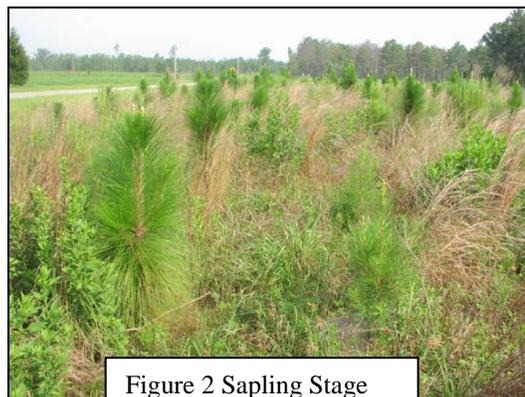


Figure 2 Sapling Stage

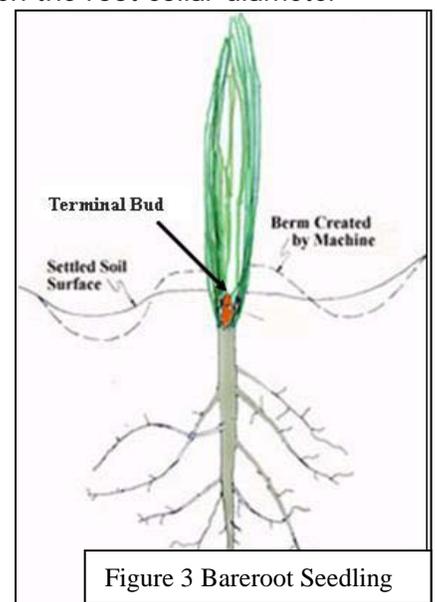


Figure 3 Bareroot Seedling

Longleaf Tree Planting Helpful Hints

Containerized seedlings

1. Plant the containerized longleaf pines in the late fall to early winter during the dormant season. 300-500 trees per acre shall be planted.
2. On many cutover sites where the presence of logging slash, stumps, or uneven terrain makes machine planting difficult, hand planting of container-grown seedlings is recommended. This method allows for better depth control on "trashy" sites as compared to machine-planting.
3. Plant with adequate soil moisture.
4. On flat planted sites, leave top of plug slightly exposed ABOVE the soil surface (not too deep).
5. If the area was cropland or a heavily prepared site, plant seedlings so the root collar is ¼ to ½ inch beneath the soil surface.
6. Plant the longleaf pine seedling as vertically as possible.
7. In areas that have been ripped, DO NOT plant in the rip. Plant 6 inches to the side of the rip.
8. DO NOT plant in unprepared areas of pasture grass like bahia or bermuda. Pasture grasses are extreme competitors and must be addressed prior to planting.

Bareroot Seedlings

1. Plant bareroot seedlings so that the terminal bud is at or slightly below the soil surface (Figure 3).
2. Plant seedlings as soon as they are lifted and not more than one week after they are lifted from the nursery. Keep seedlings cool and moist.
3. Bareroot seedlings are most effectively planted by machine but can also be planted with shovel or hoedad.
4. Avoid J-rooting seedlings.
5. Do not chop roots with machete just prior to planting. Instead, if a few pieces of lateral root stick out of the ground after planting, let them air prune.
6. Do not twist seedling into hole.

This jobsheet is supported by a conservation plan map that shows where the habitat will be restored through designated practices.

Core Practices for Longleaf Pine Habitat Restoration:	Check if planned
Tree and Shrub Establishment (612) Longleaf Pine (500 or less per ac.)	
Prescribed Burning (338)	
Forest Stand Improvement (666) Thinning pines and/or Controlling competing woody vegetation	
Restoration of Rare and Declining Habitats (643) Using Local Ecotype Plant Materials and/or Restoration of associated wetlands within longleaf stand	

Common Facilitating Practices for Longleaf Pine Habitat Restoration:	Check if planned
Firebreaks (394)	
Conservation Cover (327) Planting Native Herbaceous Vegetation	
Tree and Shrub Site Preparation (490)	
Brush Management (314) Controlling non-native invasive woody plants	
Herbaceous Weed Control (315) Controlling non-native invasive herbaceous plants	
Tree and Shrub Establishment (612) Native hardwood trees and shrubs	
Others (must be on WHIP Longleaf Initiative Cost List)	

Target Plant and Animal Species for Habitat Improvements:

1	6
2	7
3	8
4	9
5	10

Existing Plant Community Description:

Restored Plant Community Description:

Descriptions of Methods for Longleaf Pine Habitat Establishment (check planned methods)

- Plant Longleaf Pine Seedlings (612)**
 - Establish containerized or bareroot longleaf pine at a spacing of 10 ft. x 10 ft., 9 ft. x 10 ft. or greater (500 trees per acre or less). Planting may be uniform or preferably random and patchy with some areas left unplanted to mimic natural regeneration. Staggered plantings over several years will also create a more natural un-even aged longleaf pine stand.
 - Refer to the Tree and Shrub Establishment (612) Jobsheet for planting guidance

- Grasses or Forbs from Seed (327, 643)**
 - Establish local ecotype herbaceous groundcover at locations indicated on plan map. Use this method in patches throughout the planned area to supplement what natives may already be present in the seed bank; or use in conjunction with plugs. Refer to the Conservation Cover Technical Guide (327a) for planting guidance. Use the Plant Materials Information table below to plan the species mixture. Contact an NRCS Biologist for assistance in species selection.

- Grasses or Forbs from plugs (327, 643; wiregrass in particular, or other appropriate herbaceous plants)**
 - Establish local ecotype herbaceous groundcover at locations indicated on plan map. Use this method in patches throughout the planned area to supplement what natives may already be present in the seed bank; or use in conjunction with seeds. Use the Plant Materials Information table below to plan the species mixture. Contact an NRCS Biologist for assistance in species selection.

- Plant Appropriate Hardwood Trees and Shrubs (612)**
 - Establish native hardwoods appropriate for the target natural community type. Plant patches of trees and shrubs using material from local seed sources if possible. If burning is a management tool, protect planted hardwood area from fire until established. Refer to the Tree and Shrub Establishment Technical Guide (612) for guidance and lists of species. Contact and NRCS Biologist for assistance in species selection.

Plant Materials Information for herbaceous and woody species to be planted:								
Field	Ac	Species/cultivars	Ecotype/source	Plants/acre or seeding rate [^]	Total #	Kind of stock*	Planting Dates	Avg. spacing
								ft. x ft.
								ft. x ft.
								ft. x ft.
								ft. x ft.
								ft. x ft.
								ft. x ft.
								ft. x ft.
								ft. x ft.
								ft. x ft.
								ft. x ft.
								ft. x ft.
								ft. x ft.

[^] Pounds per acre of Pure Live Seed (PLS) where available;

*Seed, Plug, Cutting, Tubling, Container, Bareroot

Descriptions of Habitat Restoration and Management (check planned methods)

Implement one or more of the following management actions according to the plan's schedule to maintain desirable longleaf pine habitat characteristics and amounts in the planning area.

Burn (338)

- Use prescribed fire on a rotational basis every 2-5 years (according to the NRCS Prescribed Burning jobsheet (included in your plan) to control advance of succession and to maintain health of the native herbaceous groundcover.

Brush Management/Herbaceous Weed Control (314, 315)

- Apply an appropriate herbicide according to the product label's directions for controlling introduced grasses, non-native invasive species, or woody vegetation as soon as they are observed. Use Brush Management or Herbaceous Weed Control according to the NRCS Brush Management and/or Herbaceous Weed Control jobsheets included in your plan.
- Protect the habitat from herbicide damage, especially from adjacent cropland. When herbicide is used to manage the habitat, use directed sprays and management strategies to control drift as specified in the Brush Management and/or Herbaceous Weed Control specification included in this plan.
- Time the application to ensure the stage of plant growth maximizes control results.
Summer Treatment Needed for: Bahia grass, Bermuda grass, Dallisgrass, Vasey's grass, Johnsongrass, Sericea lespedeza and Bicolor lespedeza; deciduous woody plants like Chinese Tallow Tree

Fall Treatment Needed for: Tall fescue

Winter Treatment Needed for: Chinese or Japanese Privet

Forest Stand Improvement (666)

- Remove all planted loblolly pine trees or heavily thin to a basal area less than 60 sq. ft. per acre to allow for regeneration or planting of appropriate vegetation.
- Mechanically remove thick woody competition that inhibits the growth of desired herbaceous plant community by using chainsaws, Gyro-trac, bush-hogging or roller-chopping. Clean all equipment prior to use on restoration site to prevent the transfer of invasive plant materials.

Wetland Restoration (643)

- Restore hydrology to all wetland included areas through the installation of ditch plugs, berm removal, rock crossings, or microtopography

Habitat Management Schedule

<i>Note to Planners: You decide how to illustrate the plan in this table. Use of Field #s, Acres, or ✓ is o.k.</i>						
Action	Acres	1st Year	2nd Year	3rd Year	4th Year	5th Year
Forest Stand Improvement						
Brush Management						
Burn						
Herbaceous Weed Control						
Plant: _____						
Plant: _____						
Plant: _____						
Wetland Restoration						

Circle yes if additional plans included:

Brush Management or Herbaceous Weed Control Plan is attached:	Yes	Not Applicable
Prescribed Burning Plan is attached:	Yes	Not Applicable

Additional Operation and Maintenance requirements specific to this plan:

Prohibited: Raking of pine straw is prohibited throughout the life of the contract and for lifespan of the practice due to negative impacts upon the plant community and wildlife habitats.

Certification: Job Sheet 643

Prepared by: _____

Title: _____ Date: _____

Approved by: _____

Title: _____ Date: _____

Landowner signature (in agreement) _____ **Date:** _____

Installation

Meets NRCS Standards and Specifications? YES NO

Certification by: _____ Date: _____