KEYS TO SUCCESSFULLY Restoring Longleaf Groundcover



WHY RESTORE GROUNDCOVER?

A fully functioning longleaf ecosystem supports wildlife, creates a forest with economic benefits, and also maintains a habitat that is aesthetically pleasing to the landowner. The underlying force that drives these functions is the presence of healthy groundcover.

Specific Benefits of Restoring Groundcover



FIRE

Native groundcover species provide fine fuels that are necessary for prescribed burning, and can help deter invasive species that alter or preclude the natural role of fire.



Blazing star with tiger swallowtail.

PLANT DIVERSITY

The longleaf forest is one of the most diverse habitats in North America. This extraordinary diversity comes from the abundant plant life that is found in the groundcover of the longleaf ecosystem, and the species of plants and animals that naturally evolved together.

WILDLIFE DIVERSITY

Diversity in the plant community leads to diversity in the wildlife community. Many wildlife species require early successional habitats that prosper with frequent fire. These habitats are dominated by herbaceous grasses and wildflowers.



Each red pin flag marks a unique species in this longleaf savanna.



Gopher tortoise.

DEVELOP YOUR PLAN

Define your Goals & Objectives



The restoration plan should be driven by your long-term goals and objectives.

Assess the Site

required.

The condition of your site will dictate the level of restoration needed. Ask these important questions while developing your restoration plan:

Is it an agricultural site or cutover forest land? The site type and history of management will determine what kind of site preparation is

What is the soil type?

Consider the soil type when developing an herbicide plan. Soil moisture gradient will determine which groundcover species to plant.

Any invasive species?

Native groundcover species cannot compete with invasive species. Invasives must be eliminated prior to planting.

Develop Realistic Expectations

Understand that restoring groundcover is a multi-year process, requiring continued management and sometimes additional plantings.

The more degraded the site to begin with, the longer the process will be.

PREPARE THE SITE

Agricultural Fields & Pastures

Control Competition - Competition from agricultural weeds and pasture grasses is very problematic during establishment of native groundcover.

- Repeated herbicide applications may be required. Herbicide(s) selection and timing depends upon targeted plant species.
- Repeat disking can sometimes be used to eliminate weedy species.



Prepare the Seed Bed - If disking was used on site, firm the soil using a cultipacker or similar compaction equipment. Timing of disking helps to determine resulting germination of ruderal competitors.

Cutover Forest Land

Prescribed fire prior to planting may be the only preparation needed in cutovers with a history of burning. Burning removes excess litter and exposes the soil for optimum seed germination.



If possible, reintroduce fire in areas with heavy woody species competition due to fire exclusion. Alternatively, if there are insufficient fuels for fire, use cutting, chemical treatment, or a combination of both to reduce the woody species. Make sure to also address any problematic or invasive species before planting.

PLANTING

Selection of plant species depends on several factors:



Seed mixes are generally comprised of a combination of native warm season grasses and forbs. Species should naturally occur in the area and grow in similar habitats.

Contact The Longleaf Alliance for assistance with designing a seed mix that is appropriate for your site.

Where to find the seeds or plants?

Look for *local ecotype* plant material that is sourced from your area. Material can come from a variety of sources:



Seeds vs. Plugs

Plant material is available in two forms - seed and plugs.

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- + Economical + Simultaneously introduce multiple species with custom seed mixes
 - + Can be done concurrent with site prep
 - + Mechanized approaches can treat large areas

SEASON

- + Bulk seed is generally planted soon after collection in the fall
- Pure Live Seed can be planted anytime between fall and early spring
- Some species require cold stratification for germination



- Grasslander or TruAx grain drills - modified grain drills that are designed to deal with fluffy native grass and forb seed
- Broadcaster (any equipment that will blow or distribute seed evenly across a site)

CONS

- + Unreliable establishment requires large seed supplies
 + Special care needed to create seed mixes
 + Seeding rates difficult to determine to ensure outcome
 + Competition control essential
 RATES
 + Bulk seed - 10-15 lbs/acre
 + Pure Live Seed - varies based on species:
 + General rule: 15-60 seeds/ft²
 - Wiregrass:
 0.5-1.5 lbs/acre

PROS

- + No need for soil disturbance
- + Can be done on slopes where seeding equipment cannot be used safely
- + Reduced susceptibility to drought at early stages
- + Shorter period of competition control needed in many cases

SEASON

- Best to plant in cooler part of the year with consistent rainfall
- However, plugs may be planted in warmer months as long as site has sufficient soil moisture



CON

- + Expensive
- + Introduce only one species at a time
- Available stock may be limited by the need for hand-collecting seed and size of nursery

QUIPMENT NEEDED	RATES	
Plugs can be hand planted	+ Ranges from 5,000-12,000	
Mechanical tree planters	plugs/acre	
may be used	+ To establish dense	

 To establish dense wiregrass stand, general target is 3 plants/m² (spacing = 2ft)

MANAGING THE SITE



Prescribed Fire

Prescribed fire will be the primary management tool used to maintain the herbaceous groundcover.

- + Newly established plants need 1-2 growing seasons before burning.
- + Variation in season of burn will encourage higher plant diversity.
- + Maintain a burn interval of 2-5 years.

Chemical Control

With regular prescribed burning, use of herbicides should be minimal or unnecessary if competition was controlled during site prep. However, herbicides may be necessary for problem species that were either not controlled with site prep or were later introduced to the site. If so, select chemicals that will have little effect on desirable herbaceous species.



POST PLANTING

+Treat any weeds as needed with appropriate herbicide.

+Allow 1-2 growing seasons before burning to allow seedlings to become established.

Once native species are established, prescribed fire management promotes robust groundcover.

Mechanical Control

Suggestions for controlling common woody competitors:

- + Gallberry, yaupon, and other waxyleaved shrub species - Garlon[®] (Triclopyr) applied in the fall at 3-4 quarts per acre.
- + Scrub oaks on sandy soils Velpar® (Hexazinone) applied in spring at 11b/ acre of active Ingredient.

Mechanical controls (mowing, cutting, etc...) can be used as a substitute for or in combination with chemical controls, but are typically labor intensive, requiring repeated applications.



The Longleaf Alliance 12130 Dixon Center Road Andalusia, AL 36420 334.427.1029 Iongleafalliance.org © 2021 The Longleaf Alliance

