

Forest Management Information Sheet



Longleaf Pine Management

Establishment & Early Management

Do you want an absolutely beautiful park-like forest with great wildlife habitat? Does this sound like the forest you have always wanted on your property? Are you ready to establish or re-establish the timber type on your property that will provide you with that park-like beauty? Longleaf pine, whose stands can result in just such scenery, was once a dominant timber type that covered much of Southeast Texas. It was largely removed from the landscape through years of harvesting and because fire exclusion made it hard for it to survive. If you want to put this type of natural forest back on your landscape and benefit from its wildlife habitat, high quality timber products, and its fire, pest, and disease resistance, then longleaf pine is the right choice for you.

LONGLEAF PINE QUICK FACTS

WHERE TO PLANT

Well drained sandy and sandy loam sites in the southern half of East Texas

SEEDLING OPTIONS

Bare root form
Containerized seedlings

WHEN TO PLANT

November - February

SITE PREP OPTIONS

Shearing
Raking
Piling
Bedding
Ripping
Herbicides

Contact the Texas Forest Service

Professionals at the Texas Forest Service can assist you with evaluating your site to help determine the right areas to plant on your property to reach your goals.

Sustainable Forestry
John B. Connally Building, Suite 364
301 Tarrow Street
College Station, TX 77840
979-458-6630

The best locations for growing longleaf pine are moderately well-drained to well-drained sandy and sandy loam sites located in the southern half of East Texas. Lower sites with less drained soil types may require more treatments to achieve successful longleaf regeneration. Since this habitat is a fire dependent ecosystem, the right sites to plant will be areas that can be treated with prescribed fire while not negatively impacting neighboring communities. Texas Forest Service or your professional resource manager can assist you with evaluating your site to help determine the right areas to plant on your property to reach your goals.

The best selection for the sources of longleaf seedlings will be ones suited to our Texas climate, which is on the western edge of the longleaf pine range. Landowners are encouraged to find Texas seed sources for pro-

necessary to control competition from the seedling grass stage through maturity. In the past, naturally occurring fires every two to seven years kept stands free of hardwoods and helped maintain the open park-

February for containerized seedlings and January - February for bare root seedlings. It is highly recommended that landowners work with a professional resource manager to help with specific site prescriptions. There

Harvested Site Tree Establishment		
Treatment	Timing	Cost
Herbicide Site Preparation	September - October	\$70 - \$90 per acre
Burn Herbicide-Treated Site	October - December	\$15 - \$25 per acre
Burn Site Preparation	July - December	\$15 - \$25 per acre
Shear Only	May - December	\$90 - \$160 per acre
Shear, Rake, and Pile	May - December	\$250 - \$350 per acre
Shear, Rip, Bed, or Combination	May - December	\$100 - \$175 per acre
Plant Containerized Seedlings	November - February	\$95 - \$110 per acre
Plant Bare Root Seedlings	January - February	\$55 - \$70 per acre
Spring Herbicide Treatment	March - April	\$45 - \$55 per acre

jects, but this should not be a limiting factor in reforesting the property. The seedlings are available in either a bare root form or a containerized plug that has a small amount of soil surrounding the roots of the seedling. Containerized seedlings generally offer better survival and initial growth as well as an earlier and longer tree-planting season, which will improve the chances of a successful and well-established stand of timber. Once planted, the seedlings will remain in a grass stage while a sufficient root system is being established. This grass stage may last up to seven years depending on the degree of competition with other plants for resources.

Longleaf pines are the most shade intolerant of the southern pines; therefore, it is absolutely

like appearance. If longleaf pine is your tree of choice, prescribed fire is absolutely necessary to control the competition in order to establish and maintain a healthy forest. Prescribed fire can be used before planting for debris removal (as a stand-alone site preparation tool or following mechanical or chemical preparation) or after planting while the trees are still in the grass stage, which will help control brown spot needle blight. It is required after establishment to maintain health and control competing vegetation. Since using prescribed fire carries risks and requires careful planning, landowners are encouraged to work with professional resource managers when utilizing prescribed fires.

Tree planting season in East Texas runs from November -

are three components to establishing longleaf pine on each site: site preparation, tree planting, and maintenance.

Site preparation is very important on areas to be replanted with longleaf pine. Longleaf pine requires a fairly clean seedbed without much competing vegetation. Site preparation can be accomplished either mechanically, with herbicides, or a combination of both. In most cases site preparation treatments should be followed by a prescribed burn to remove debris.

Mechanical site preparation consists of using heavy equipment (predominately large dozers or farm tractors) to clean up or cultivate the areas designated for tree planting.

Shear only is a type of mechani-

cal site preparation that is conducted on harvested sites and requires a large dozer with a cutter/v-blade. Remaining vegetation and debris are cut off at ground level in parallel rows 10 to 12 feet apart. This pro-

vested sites that have either tight or wet soils. In open fields this can be completed with either a large farm tractor or a dozer, but when dealing with harvested tracts it requires a large dozer to pull the ripper, which is a long

the area. This technique works well on tight soils or a combination of wet and tight soils. Bedded areas need rainfall on them before planting to settle the soil. Seedlings are then planted on the top of the

Open Pasture Tree Establishment		
Treatment	Timing	Cost
Herbicide Site Preparation	September - October	\$50 - \$60 per acre
Burn Site Preparation	October - December	\$15 - \$25 per acre
Rip, Bed, or Combination	May - December	\$100 - \$175 per acre
Plant Containerized Seedlings	November - February	\$95 - \$110 per acre
Plant Bare Root Seedlings	January - February	\$55- \$70 per acre
Spring Herbicide Treatment	March - April	\$45 - \$55 per acre

duces a clean bed in which seedlings are planted with small piles of debris between the rows. The debris that resides in the rows between the beds can be burned off or remain in small piles for wildlife purposes.

Shear, rake, and pile is another type of mechanical site preparation that is usually a two dozer operation; one with a cutter/v-blade and one with a rake. Remaining vegetation and debris are cut off at ground level with the cutter blade, then all the debris is raked into long parallel piles known as windrows. Though longleaf pines are fire dependent, these windrows need to be burned before planting to reduce the risk of the piles catching on fire during burning operations following planting as too much heat might damage young trees.

The final types of mechanical site preparation, known as bedding and ripping, can be used individually or in combination on both open fields and har-

vested sites that have either tight or wet soils. In open fields this can be completed with either a large farm tractor or a dozer, but when dealing with harvested tracts it requires a large dozer to pull the ripper, which is a long blade that is pulled behind the equipment. The ripper loosens tightly packed soils and is most often used in open field situations. When trees are planted near these rips, the roots will penetrate the soil more easily, thereby increasing survival and growth. A bedding plow pulled behind a dozer or tractor will create a raised bed 12 to 18 inches higher than the surrounding ground. This method is used most often on wet open fields with loose soils. A site can be ripped and bedded with the same piece of equipment. It is most often pulled by a large dozer with a cutter/v-blade on the front. When used on a harvested site it can shear remaining vegetation off at ground level with the cutter blade and then rip the soil and pull a bed up on top off the rip with the ripper/bedding plow combo. This is called a 3-in-1 treatment (shear, rip and bed).

In open field situations the cutter blade is not used and the plow simply rips and beds

beds where they do not stand in water. Standing water can cause mortality in longleaf pines.

Herbicide site preparation refers to a situation in which herbicides are applied to the site by ground or aerial application. This component is one of the most crucial elements in reforestation strategy. Herbicide treatments vary from tract to tract because of different species that may be present that you are trying to control or because of different soil characteristics; therefore different combinations of herbicides are often used to accomplish your goals. Timing of applications after establishment is critical to minimize impacts on your trees. No herbicide work should be done without first consulting your professional resource manager and coming up with the right prescription for your property. Whatever prescription is required, we recommend that it be broadcast over the entire tract if possible.

This will give you the most coverage for the money spent and keep encroaching vegetation at bay for a longer period of time. The best herbicide for your project will be one that provides residual herbaceous weed control for the next growing season. Site preparation

treated with herbicides prior to tree planting season and can be burned following the application once the herbicide has taken effect. If marginal soil conditions are present, additional mechanical tillage treatments may be needed to facilitate survival and growth.

gram on a two to three year rotation. An additional herbicide treatment can be used after the second growing season if the stand contains a high component of hardwood.

Tracts without hardwoods should be started on a cool sea-

Maintaining a Healthy Longleaf Pine Stand	
Treatment	Timing
Monitor Survival & Health	Year Round
Seek Professional Guidance on Herbicide or Burning Options	June - August of Year 2
Herbicide Treatment	September - October of Year 2 <i>if needed</i>
Cool Season Prescribed Burning	January - February of Year 2 <i>if needed</i>
Alternations of Cool & Warm Season Burns <i>beginning Year 10</i>	January - February; April - May <i>conducted every 2-3 years</i>

sprays are conducted before planting and will control most competing species and prepare a site for burning and/or planting. Sprays are generally done in late summer or early fall. If the site is not treated in the fall for residual herbaceous weed control, the site will need to be treated following the planting of the trees.

The trees should be planted on an 8x10 foot spacing (545 trees per acre) by your tree planting vendor. It is important to note that hand planting will facilitate planting the seedling at the right depth. Containerized seedlings should be planted with the top of the plug 1/4-1/2 inch above ground level. For best results, tree planters should use a tool specifically designed to plant containerized seedlings.

Planted trees cannot compete with established grasses on open field settings. Therefore, the fields will need to be

Longleaf seedlings require a fairly clean seedbed for successful establishment; therefore, harvested sites require more work than open fields. They can either be treated with a site preparation herbicide or can be mechanically prepared using one of the previously-mentioned techniques. Once site preparation is completed, any remaining debris should be removed with a site preparation burn. Treatments vary from tract to tract, so landowners should work with professional resource managers to come up with a plan that best fits the individual site.

An established longleaf stand must be maintained until it is ready for its first harvest at age 16 or older. During these pre-commercial years, periodic prescribed burns will control competing vegetation and lead to the park-like appearance for this forest type. This means establishing a prescribed burn pro-

gram. Cool season burns should be completed while trees are dormant, usually in January or February. Seedlings should not be burned if the buds are beginning to show new growth because even though longleaf are fire dependent they can be damaged by fire until they reach 15 to 20 feet tall. Continue cool season burns on a two or three year rotation.

At around age ten, the trees in the stand should be tall enough to support a warm season burn without being damaged. This timing decision should be made with input from your professional resource manager. If it is decided that they are large enough to sustain a warm season burn, this should be conducted in April or May. After the initial warm season burns, burns should be alternated between warm and cold season burns until it is time to thin the stand.