



Longleaf Pine

Pinus palustris Mill

Planting Density Fact Sheet

Purpose

The purpose of this fact sheet is to provide a general overview of the advantages and disadvantages of different planting densities. Spacing varies greatly depending on the landowners objectives and so do the benefits and outcomes from the density of the stand.

Objectives

Longleaf pine is planted to achieve many different objectives and often multiple objectives are desired. Objectives range from wildlife habitat, quality timber, pine straw production, restoration of the longleaf ecosystem, silvopasture and more.

Density

The spacing between rows and the spacing between trees in the row will ultimately determine density. Below are some common tree spacing combinations:

In row	Row spacing	Trees/ac
10	12	363
10	10	436
8	12	454
8	10	545
6	12	605
8	8	681
6	10	726
6	8	907



Restored longleaf pine forests provide habitat for many native plants and animals and opportunities for wildlife associated recreation.



Frequent prescribed burning is essential for longleaf pine management and ground cover restoration.

Row Spacing

After determining optimal density, consideration must be given to providing access to equipment for future management and harvest. Space between rows should provide long-term access for maintenance equipment such as tractors with mowers and harvesting equipment for future thinnings. Discuss row width with your local forester(s).

Survival It is important to note that longleaf survival has typically been low, especially on agricultural sites where competition from grass is heavy.

Recommendations

A planting density of 400 to 600 trees per acre is appropriate for multiple resource objectives (timber and wildlife). When wildlife habitat is the primary objective, planting

at lower densities of 400-500 seedlings per acre is an option. When timber and/or pine straw production are the primary objectives, planting at higher densities of 500-900 seedlings per acre is appropriate.

Wide Planting	
Advantages	Disadvantages
<p>Savanna appearance is pleasing to many</p> <p>Potential for extending wildlife habitat value in the early years of stand development</p> <p>Higher potential for silvopasture or woodland grazing</p>	<p>Greater need for controlling invading brush and trees</p> <p>Reduced income potential from thinning</p> <p>Seedling mortality may result in plantation failure, little margin for error</p> <p>reduced potential for high value timber products such as poles</p> <p>Reduced potential for pine straw production</p> <p>Fewer future management options</p>
Close Planting	
<p>Less need for controlling invading brush and trees for a short time during management cycle</p> <p>Increased income potential from thinning</p> <p>Increased value of timber products such as poles</p> <p>Increased potential for pine straw production</p> <p>Hedge against unexpected seedling mortality</p> <p>Provides maximum management options in meeting multiple resource objectives</p>	<p>Not as aesthetically pleasing to many compared to a savanna</p> <p>Need for management (thinning) to maintain optimum habitat</p> <p>Less potential for silvopasture or woods grazing</p>

For more information about Forest and Wildlife Management see: <http://sref.info/>. Click on your state and then Forestry and Wildlife Extension, Publications. Also see: Longleaf Partnership Council White Paper, "Longleaf Pine Planting Density", February 2013.

