

Keys to Successfully Planting Longleaf Pine

Order seedlings ASAP. Due to a resurgence of interest in longleaf pine, the supply of longleaf seedlings has also increased. However, longleaf seedling supply will probably not be sufficient to meet demand over the next few years. Those waiting until mid-summer to order may have difficulty finding seedlings. For a comprehensive list of longleaf nurseries, call your local Georgia Forestry Commission office or the Longleaf Alliance, at 334-222-7779, and ask for a complimentary copy of the *Longleaf Nursery List*.

Container or bareroot? Cost conscious consumers may blanch at containerized seedling prices. However, cost incentive programs and increased survivability make this option very feasible. Results from a 1995 region-wide survey show containerized seedling survival averaged 85% and bareroot survival averaged 65%. Keep in mind, some planters consistently average 90% survival with bareroot seedlings, while others consistently average less than 50%.

There are several factors that come into play when making the containerized/bareroot decision. Do you want the seedlings planted in very straight rows with exact spacing? If so, you probably want your seedlings machine-planted. Bareroot seedlings are well suited for machine planting on intensively site prepared land. On most sites, machine planted bareroot seedlings will yield better depth control and better survival than hand planted bareroot seedlings.

Will you accept less than exact spacing and rows that are not quite as neat and straight? If so, hand planted containerized seedlings may be the best route for you. Hand planted containerized stock tends to have better survival rates than machine planted containerized seedlings.

Longleaf pine can be successfully planted using either bareroot or containerized seedlings if the proper care and techniques are applied. Repeated planting failures are generally the results of planting mistakes.

Two common reasons for longleaf planting failures are: 1) Incorrect planting depth (too deep or too shallow), and 2) Planting in established grasses (especially bermuda grass or bahiagrass).

Seedling Selection: Most seed sources are from Coastal Plains stands located in lower Alabama, the Florida Panhandle, and South Georgia. These sources are appropriate for the southern half of Georgia. When planting north of Atlanta, use a north Alabama/Georgia seed source commonly referred to as "mountain" or "montane" longleaf. Check the Longleaf Alliance's *Longleaf Nursery List* for nurseries that use these seed sources.

When purchasing bareroot seedlings consider the following:

- Seedlings should have been undercut and laterally root-pruned at least once in nursery beds.
- Should have at least six primary lateral roots and a highly fibrous root system with numerous feeder roots.
- Seedlings should be 0.4-inch in root collar diameter or larger.
- Roots should be moist but not too wet. A dry root system means a dead seedling.
- Seedlings should have healthy foliage and no evidence of disease problems.

Choosing a Tree Planting Contractor. This is one of the most important decisions you will make. Many planting failures can be traced to improper seedling handling and planting procedures by the planting crews. Make sure you pick the right contractor for the job. Choose one that has experience in successfully planting longleaf pine. Ask for references. Do not make your decision based upon per/acre cost of planting the seedlings. Paying \$5-\$10 per acre more for a good, reputable contractor may mean the difference between a successful planting, or buying more seedlings and replanting the following year. Make sure your contractor and seedlings are compatible. If you line up a contractor whose only experience is planting containerized seedlings, don't buy bareroot. If you purchase bareroot, find a contractor who has been successful with bareroot. A list of tree planting vendors is available through the Georgia Forestry Commission.

Maintain Oversight of the Planting Operation. You or your representative should be on site with the planting crew to ensure that the operation meets your quality standards. You may want to hire a forestry consultant to manage or procure the contractor and planting job. Some foresters are knowledgeable about longleaf. Some are not. For a list of Consulting Foresters contact your local Georgia Forestry Commission office or call the Longleaf Alliance and request this information. Also, some of the larger timber corporations have landowner-assistance foresters who can help you.

Rules of Thumb for Best Results:

- Plant early in the season; trees planted before Christmas tend to have better survival and growth rates than late planted seedlings.
- Do not plant in dry soils. Wait for adequate rain to wet at least the rooting zone (upper 6 inches of soil). You may plant as early as October provided the soil is moist.
- Do not plant if soils are frozen.
- High winds (15 mph or higher) and low humidity (30% or less) associated with high pressure-cold fronts may dry out exposed seedling roots, potentially leading to high mortality rates if extra care is not taken.
- The best weather conditions for planting have a temperature between 33° and 75° F with a relative humidity between 30% and 50%. Wind speed should be less than 10 mph.
- Plant seedlings soon after delivery. Try to have all bareroot planted within one week of lifting from the nursery. Don't waste your money buying leftover bareroot from other planting jobs. Containerized seedlings will store better, but the sooner they are planted after lifting, the better.
- Always protect bareroot seedling bags or bales, and boxes of container seedlings from freezing, excess heat, and exposure to the sun and wind.
- Bareroot seedling roots should not be exposed to the sun and air any longer than is absolutely necessary. Never wash or prune the roots of bareroot seedlings as these procedures will reduce survival.

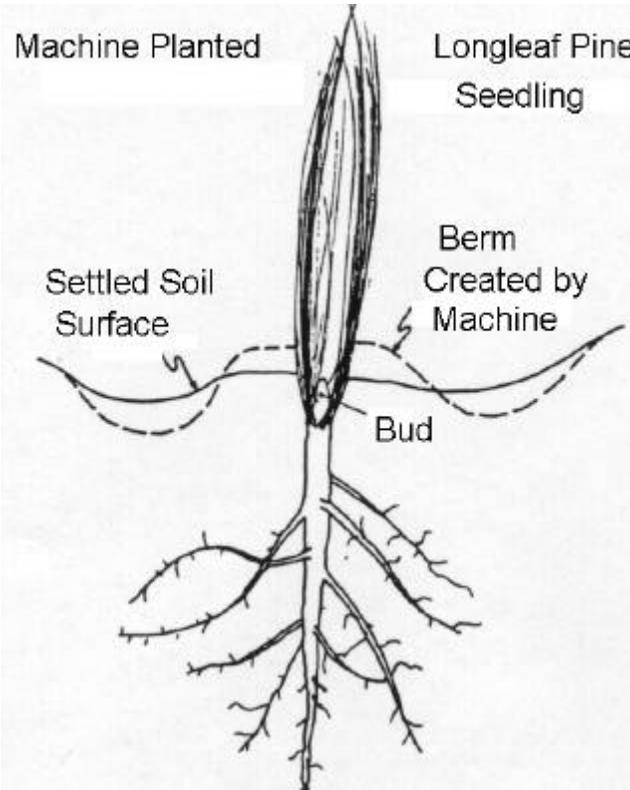
Planting longleaf on sites with bermuda grass or bahiagrass. It is critical to kill bermuda grass or bahiagrass **prior** to planting. These grasses are much more difficult to control after planting when chemical control options are severely restricted. For best survival in pastures, broadcast spray grasses in August prior to planting with one of the following: A) 5-6 qt. of Accord@/acre, or B) 3 qt. Accord & 2 oz. Oust/acre, or C) 16-24 oz. Arsenal@/acre. Other herbicides labeled for grass control may be used. As an additional step, scalping sites just prior to or during planting has increased survival in pastures. For information on herbicide applications, contact the Georgia Forestry Commission or the Longleaf Alliance.

To Rip or Not to Rip. Many agricultural fields and pastures have a hard, restrictive soil layer referred to as a plowpan or hardpan. In such cases, “ripping” or “subsoiling” will fracture the hardpan resulting in better planting conditions. Seedling root growth will also be greater resulting in better seedling growth. Ripping should be done several months prior to planting, as several rain events are necessary to settle the soil to eliminate air pockets. Rip along the contour of the land to avoid unnecessary erosion. Seedlings should be planted about 6” to the side of the rip. Do not plant directly in the rip because water will frequently use the rip as a channel, uncovering some seedlings and burying others. The taproot of the longleaf will find the rip and penetrate deeper into the soil, thus minimizing the chance of wind-throw and increasing water availability to the tree.

Planting Hints: When planting pastures or areas that will not erode, plant seedlings so that the root collar is directly at the soil surface. When planting cropland or other areas that have been heavily site-prepared, plant seedlings so that the root collar is about ¼-½” beneath the soil surface. Try to anticipate how much the soil will erode so that the root collar will end up at the soil surface. Planting too shallow will result in a seedling that dies quickly. Planting too deep will result in a seedling that dies slowly. Good compaction is needed to eliminate air pockets around seedling roots. Heavy-duty machines generally do a better job of packing than the typical hand planting crew.

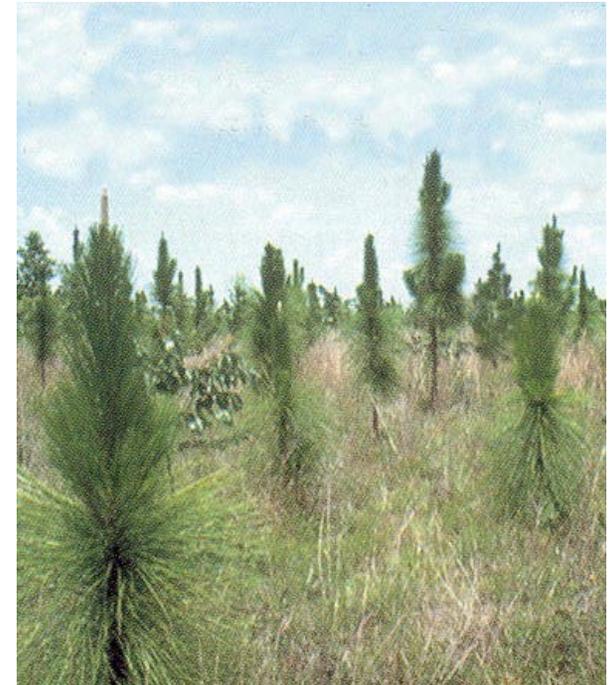
Hand Planting Tools: Use the correct tool when hand-planting. As bareroot seedling roots are very large, planting shovels work best in opening a planting hole large enough to accommodate the root system. Many containerized seedlings have tools designed especially for their plug size. Using the correct tool will result in less root deformation, better survival, and better long-term growth.

Be sure your planting contractor understands your CRP or WHIP contract. If you are contractually mandated to plant less than 500 trees/acre, the crew should know this. If not, they may do you a “favor” by planting leftover seedlings between previously planted seedlings. This would result in more than 500 trees/acre and could cause you to lose your funding.



Join the Longleaf Alliance and receive current information on the management of longleaf pine.

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