



Tree Planting Guidelines: Where and How to Plant

Planting Tips: Where to Plant

While overall your planting area may look uniform, small differences in soil structure, slope, and exposure create unique conditions that can vary significantly from location to location. Identifying the best “microsites”, or smaller planting sites within the larger landscape, can help us find locations that will increase the survival of our seedlings. Finding these planting sites, along with proper handling and planting, will help establish the seedlings and ensure good return on investment. Here are some basic tips when it comes to picking a spot and what to look for:

- Find good soil. If your planting tool goes in easily, the seedlings should find it easier to grow roots into the soil.
- Try to avoid locations that are very dry in the summer and/or areas that are likely to flood or erode severely during monsoons.
- Avoid steep, unstable slopes that appear likely to erode.
- Try to find locations with good shelter but minimal competition. If you’re planting soon after a fire, this may be less of an issue, but sites may require some clearing of vegetation around planted seedlings if there is heavy competition from grasses or other species. Planting on the north or downwind side of Gambel oak and other shrubs, logs, or rocks can provide shelter.
- Avoid rocky soil when possible, however when this isn’t possible avoid planting directly over rocks or where soils are too shallow for proper planting (see below).
- Make sure seedlings will get adequate sunlight while still being sheltered from heat and drying winds when possible. Sun requirements may vary depending on species, so make sure to discuss with the nursery or district forester for more specific information.
- Planting spacing may vary, typically somewhere between 12 to 18 ft depending on the species and management objectives. Average spacing can be roughly calculated based on the number of trees you intend to plant. It is recommended that planting density and spacing be discussed with your forester.
- Planting at the proper elevations is also important. See page 4 for elevation recommendations by species.

Planting Tips: How to Plant for Survival

Proper planting is a critical step in the reforestation process, as improper techniques can lead to poor survival and undo all the careful work and planning leading up to it. Here are some tips to make sure your seedlings have the best chances of establishment:

- While planting, protect seedlings (and especially their roots!) from direct sunlight and wind as these can dry them out quickly. **IMPORTANT:** Containerized seedlings that are waiting to be planted should be protected from the elements, especially direct sunlight, wind, and high temperatures. Reflective mylar blankets, reflective tarps, or pop-up shelters can help protect seedlings from the elements for short periods of time while they're waiting to be planted. Seedlings requiring storage for longer periods should be kept cool and their roots kept moist.
- Try to keep the root plug intact as much as possible during the process.
- Prepare the planting hole immediately before removing the seedling from the bag, box, or container, and then remove containers or other packaging from seedlings before planting.
- Seedlings should be planted so that the seedling is vertical and the entire root system is below ground and the base of the stem is at or slightly below ground level after planting. Do not bend or break the root system. No roots should be visible after planting!
- Completely close the planting hole and tamp down firmly to avoid air pockets around the root system.
- If possible, water seedlings after planting.
- Avoid planting seedlings too deeply and burying needles.
- Make sure you know how to use your equipment before starting.

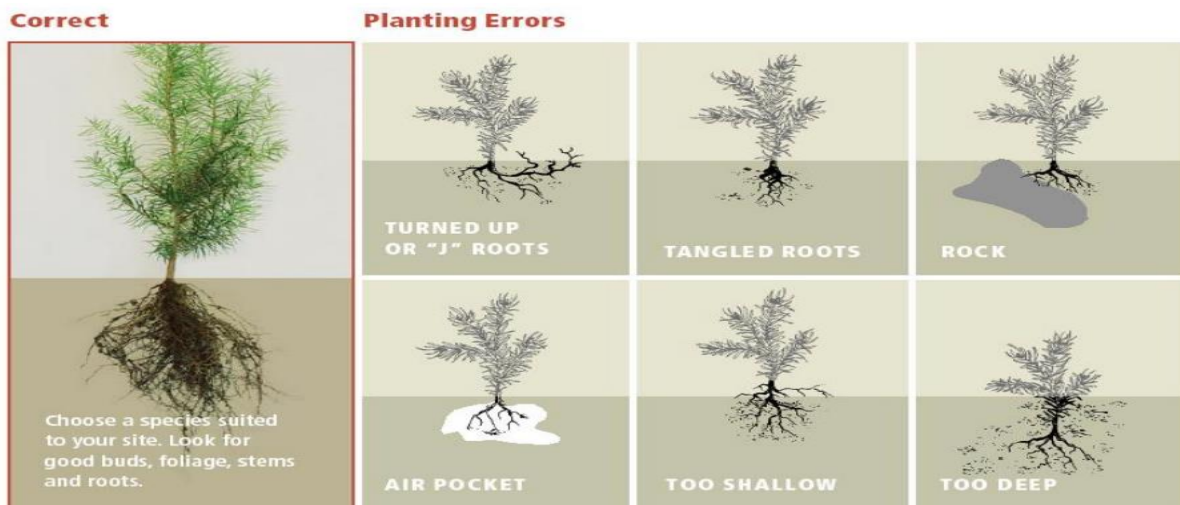


Figure 1 (EMNRD, 2008, "New Mexico Forest Practice Guidelines" pg. 110) The seedling depicted is bare root, however the same principles of proper planting apply to containerized seedlings as well.

Planting Bar Instructions:

Here in the Southwest, it is recommended to use a planting bar. Remember to make sure you're using the right equipment for the job! If you're unsure, ask your nursery or local forester for help.

1. Drive the planting bar straight into the ground with as little forward and backward movement as possible. You can stomp or stand on the planting bar and wiggle side to side if necessary to drive it into the ground.

IMPORTANT: Excessive forward and backward movement of the planting bar in the ground will create an hourglass shape that will expose the root system to air pockets. Try to disrupt the soil structure as little as possible!

2. Once the planting bar has reached the depth needed to plant the seedling, pull the planting bar towards you to about 45° to open the planting hole and then return the bar to the upright position. Ensure that the planting hole is wide and deep enough for your seedling. If it is not, you may need to repeat the above process.
3. Remove the planting bar and place the seedling in the hole. Make sure it is straight in the ground, and that the base of the stem will be at or just below ground level after planting.
4. Several inches away and parallel to the original hole, drive the planting bar into the ground. Once it has reached the same depth as the planting hole, push the bar back and forth to push the soil toward the seedling to close the original planting hole. Repeat if needed to ensure the planting hole is fully closed.
5. Finally, close the secondary hole by stomping or "chopping" with the planting bar and step gently but firmly around the base of the seedling to ensure the hole is fully closed.
6. After planting, pull upward on the seedling gently from the base of the stem to make sure the seedling is held firmly in the ground.

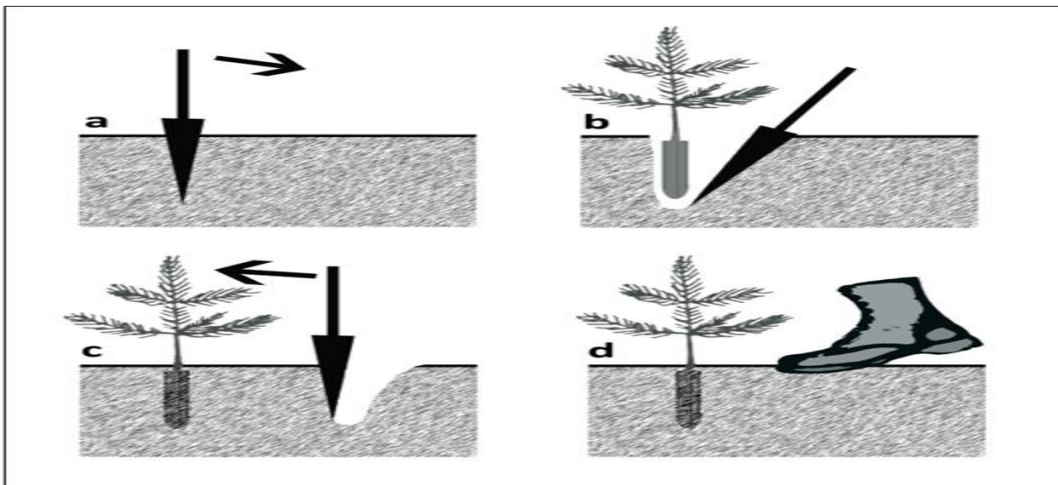


Figure 2 (Properly planted containerized seedling. (Owen T. Burney et al., "Guidelines for Planting and Handling for Forest Seedlings in New Mexico" pg. 11)

Hermits Peak Calf Canyon Fire Preliminary Species List

Ponderosa pine (6,000 - 9,500 ft.)

Douglas-fir (6,500 - 9,500 ft.)

White fir (8,000 - 12,000 ft.)

Limber pine (7,500 - 12,000 ft.)

Bristlecone pine (9,500 - 12,500 ft.)

Quaking aspen (6,500 - 10,000 ft.)

Gambel oak (5,000 - 8,500 ft.) *A deciduous shrub or a small tree, it regenerates vigorously post-fire in the lower and middle elevations of the fire. In some areas that were dominated by ponderosa pine before the fire, Gambel oak may become the dominant species for a long time if left unmanaged.

Woodland and transition zone species:

Piñon (5,000 - 8,000 ft.)

Rocky Mountain juniper (5,000 - 9,000 ft.)

Oneseed juniper (3,000 - 7,000 ft.)

Additional resources and contacts:

US Forest Service Reforestation, Nurseries, and Genetic Resources: <https://rngr.net>

EMNRD Forestry Division Seedling Program Manager, Carol Bada: carol.bada@emnrd.nm.us

EMNRD Forestry Division District 4, Las Vegas: 505-425-7472

NMHU Reforestation Trainer, Henry Robertson: hjrobertson@nmhu.edu