

Landowner \_\_\_\_\_



## WHAT IS TREE/SHRUB ESTABLISHMENT?

Establishing woody plants by planting seedlings or cutting, direct seeding, or natural regeneration.

### PURPOSE

Establishing woody plants for:

- Forest products (timber, pulpwood, etc.)
- Wildlife habitat
- Erosion control/water quality
- Treating waste
- Storing carbon
- Reducing energy use
- Developing renewable energy systems
- Improving/restoring natural diversity
- Enhancing aesthetics.

## WHERE THE PRACTICE APPLIES

Tree/shrub establishment can be applied on any appropriately prepared site where woody plants can be grown.

### WHERE TO GET HELP

For assistance and additional information on planning tree/shrub establishment, contact your local Natural Resources Conservation Service or your local Conservation District office.

### APPLYING THE PRACTICE

Proper site preparation prior to planting trees and shrubs is critical to their survival and growth. Properly prepared sites shall be free of competitive vegetation and plow pans. Mechanical, manual, or chemical methods may be used for site preparation.

Inspect seedlings immediately upon receipt. Add just enough water to moisten the packing medium, if dry.

Packaged seedlings can be stored for 2 weeks in a cool, damp location. **DO NOT** store packages where

they will freeze or where the temperature will exceed 70° F.

For large plantings, coordinate with the nursery and accept delivery of only enough trees for a one or two week supply at a time. Although not ideal, seedlings can be heeled in when it is necessary to store them longer than 2 weeks. To heel in, remove seedlings from the bundle, spread them out in a trench (plow furrow) with a 30 to 40 degree slope from the vertical, and cover the roots with soil. The trees shall be placed in the trench so that the roots and 1 - 2" of root collar are below ground line. Pack soil firmly around the roots to eliminate air pockets. The trench should be located in a cool, shady place, and the soil around the roots shall be kept moist.

Bare root seedlings shall be planted after December 1 and prior to bud break of native tree and shrub vegetation (usually March 15 to April 1).

Spacing trees too close will retard their growth and result in mortality before merchantable material can be harvested or the intended purpose is accomplished. Spacing which is too wide may result in development of heavy limbs and delayed natural pruning. Spacing depends on the planting purpose, species being planted, expected survival, and planned maintenance after planting.

Machine or hand planting is acceptable as long as the seedlings are planted properly.

Planting should be done under optimum moisture conditions, when soil is neither too dry nor too wet. Do not plant when the ground is frozen or during periods of freezing weather. Avoid planting under dry, windy or very warm conditions.

Exercise extreme caution while planting bare root seedlings, to keep the roots from being exposed to open air.

Seedlings shall be planted at the same depth or slightly deeper than they grew in the nursery. Roots must be planted straight down, not twisted, balled, 'J' or 'L' shaped. Do not force roots into too shallow a hole or furrow.

Soil around the planted roots must be gently but firmly packed to remove air pockets. With hand planting, use your shoe to pack the soil firmly around the roots. If planting with a machine, make sure the packer wheels have the proper tension and are in the proper alignment in relation to the tree. Seedlings should be tight enough to resist withdrawal.

### MAINTAINING THE PRACTICE

Livestock grazing should be excluded until newly planted trees are tall enough that the lowest limbs are above grazing height.

If needed, competing vegetation will be controlled until the woody plants are established.

Supplemental water will be provided as needed.

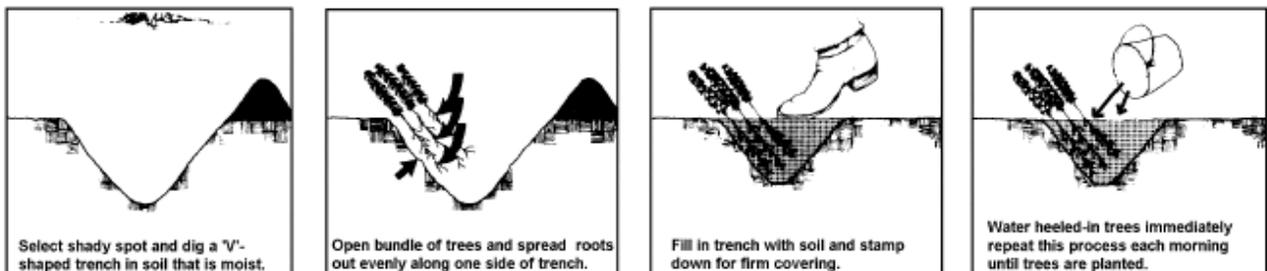
Periodic applications of nutrients may be needed to maintain plant vigor.

Access by vehicles or equipment during or after tree/shrub establishment shall be controlled to protect new plants and minimize erosion, compaction and other site impacts.

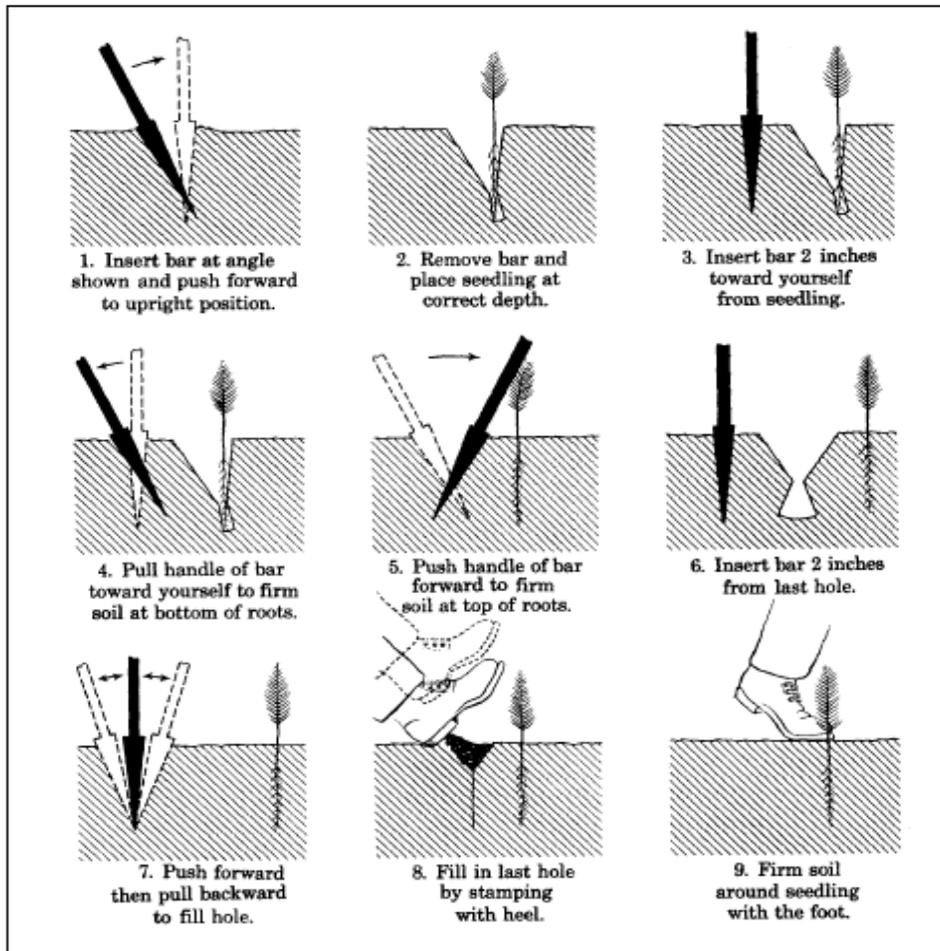
The trees and shrubs will be inspected periodically and protected from adverse impacts including insects, diseases or competing vegetation, fire and damage from wildlife.

Replanting will be required when survival is inadequate.

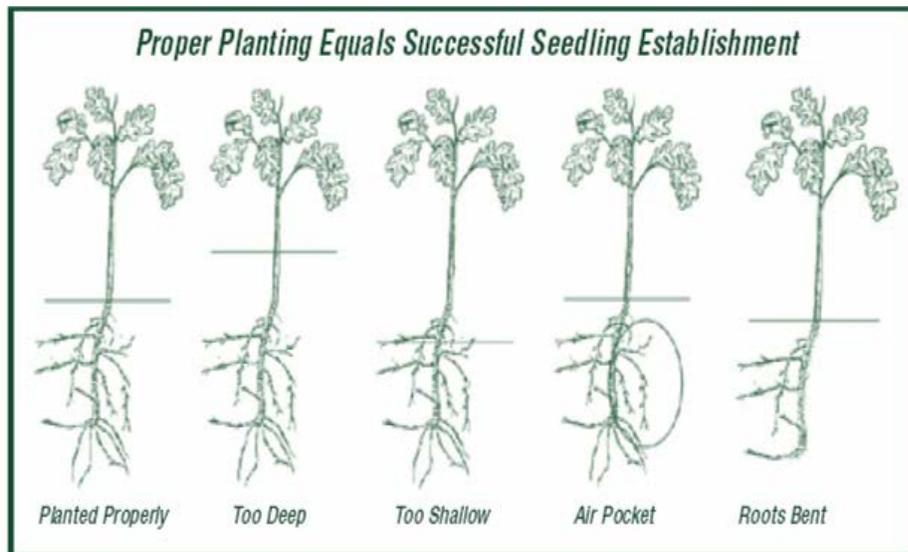
## HEELING IN SEEDLINGS TO PROTECT ROOTS



# USING A DIBBLE (PLANTING BAR) TO PLANT SEEDLINGS



## PROPER SEEDLING PLANTING



## Tree/Shrub Establishment – Job Sheet

Landowner \_\_\_\_\_ Acres \_\_\_\_\_ Field number \_\_\_\_\_

Purpose (check all that apply)	
<input type="checkbox"/> Forest products (timber, pulpwood, etc.)	<input type="checkbox"/> Reduce energy use
<input type="checkbox"/> Wildlife habitat	<input type="checkbox"/> Develop renewable energy systems
<input type="checkbox"/> Long-term erosion control and improvement of water quality	<input type="checkbox"/> Improving or restoring natural diversity
<input type="checkbox"/> Treating waste	<input type="checkbox"/> Enhancing aesthetics
<input type="checkbox"/> Storing carbon in biomass	<input type="checkbox"/>

Species to be Planted	Planting Material*	Trees/Ac	Spacing (ft)	Planting Method

Bare root seedlings, containerized seedlings, cuttings or seed.

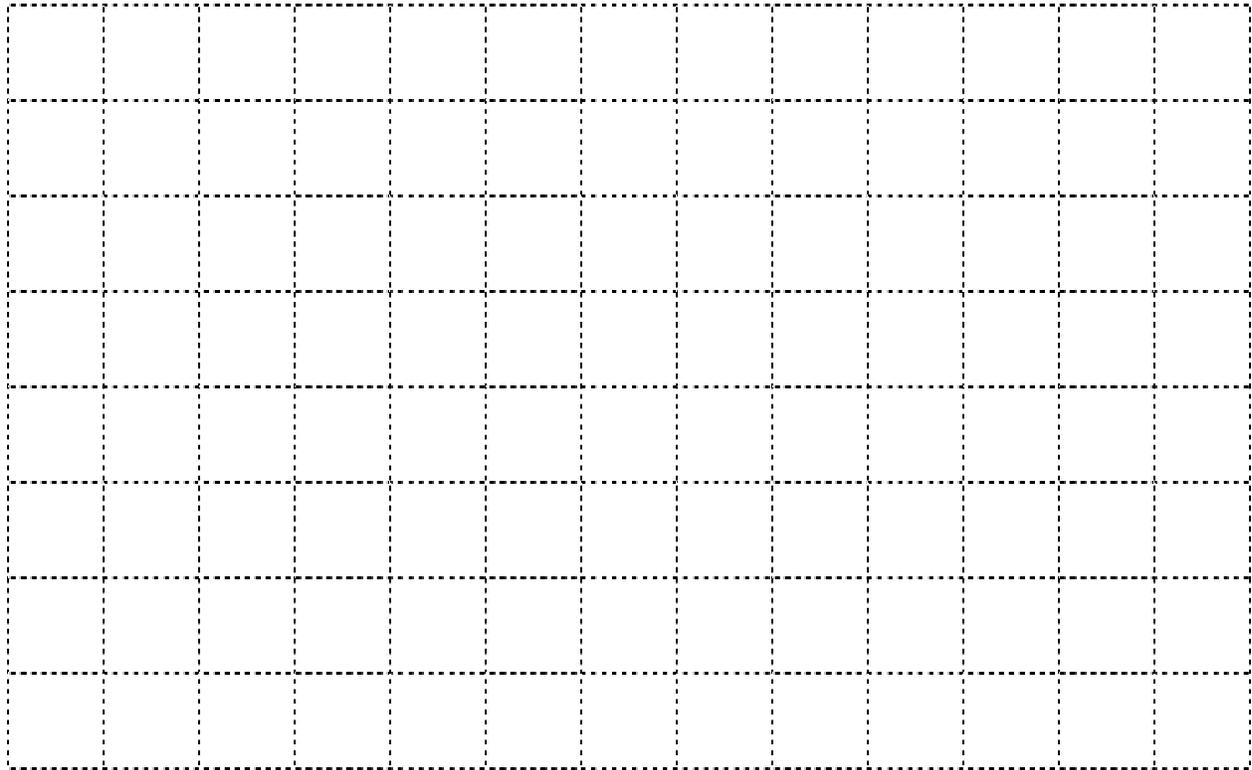
Timing of Planting: \_\_\_\_\_

Temporary Storage Instructions
<p><i>Planting stock that is dormant may be stored temporarily in a cooler or protected area. For stock that will not be planted within 2 weeks, dig a V-shaped trench (healing-in-bed) sufficiently deep and bury seedlings so that all roots are covered by soil. Pack the soil firmly and water thoroughly. Additional requirements:</i></p>
Site Preparation
<p><i>Remove debris and control competing vegetation to allow enough spots or sites for planting and planting equipment. Prepare supplemental moisture materials for installation if required by trees and/or shrubs. Additional requirements:</i></p>
Planting Methods
<p><i>For container and bareroot stock, plant stock to a depth even with the root collar in holes deep and wide enough to fully extend the roots. Pack the soil firmly around each plant.</i></p>
Operation and Maintenance
<p><i>Inspect periodically and protect from damage so proper function is maintained. Replace dead or dying tree/shrub stock and continue control of competing vegetation to allow proper establishment. Install and begin supplemental irrigation if required. Additional requirements:</i></p>

**Tree/Shrub Establishment – Job Sheet**

If needed, an aerial view or a side view of the practice can be shown below. Other relevant information, complementary practices and measures, and additional specifications may be included.

Scale 1"= \_\_\_\_\_ ft. (NA indicates sketch not to scale: grid size=1/2" by 1/2")



Additional Specifications and Notes:

**Client Signature, as needed** \_\_\_\_\_

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