

Hardwood Tree Planting

Conservation Reserve Program Job Sheet

CP3A

INTRODUCTION

Trees and shrubs may be planted to reduce soil erosion and sedimentation, improve water quality, and provide wildlife habitat.

This job sheet provides instructions for planting and maintaining trees and shrubs so that they can serve their intended purpose. Using proper planting and management techniques, especially during the establishment years, will significantly improve plant health and survival.

SITE PREPARATION

Before planting, it is essential to reduce competition from other vegetation that may be present, such as grasses or broadleaved weeds. The type and density of existing vegetation will determine how much pre-planting control is needed.

It's important to allow adequate time to complete this process. If significant amounts of noxious or aggressive weeds or invasive plants are present, be aware that you may need a year or more to control them before planting, especially if you will be planting a large area.

For more information about tree and shrub plantings, contact your local office of Pennsylvania Bureau of Forestry Service Forester.

Sites without Existing Vegetation

If the seedling trees and shrubs will be planted into a clean, relatively weed-free area (such as cropland that was planted during the previous growing season), then competition from existing vegetation should not be a concern.

Take into account any noxious or aggressive weeds that might have been suppressed (but not killed) with previous herbicide applications. If live root systems are present, these weeds may be very difficult to kill in a new planting. If you think you have a significant weed problem, it may be prudent to plant a temporary cover crop such as clover or spring oats and use an appropriate herbicide to treat weeds for one full growing season. Then plant the trees and shrubs the following year.

Sites with Existing Vegetation

If trees and shrubs are going to be planted into existing vegetation such as grasses or broadleaved weeds, you will need to reduce competition before planting. For sites that need extensive preparation, much of the work can be done during the fall prior to spring planting. Mow the field or just strips where the trees and/or shrubs will be planted. Then either treat the area with an appropriate herbicide or cultivate the planting area to reduce competition

Using herbicides. Choose a non-selective herbicide such as glyphosate. A selective herbicide such as 2,4-D may be used instead, if you only need to control broadleaved weeds. Follow all label directions when using herbicides, and consider herbicide persistence (carryover) as it may affect new plantings.

For extremely vigorous sod or weeds, you should plan to make one application of herbicide in early fall, followed by another the next spring before planting. Do not plant seedling trees and shrubs until the competing vegetation is sufficiently controlled. It is much easier to control the competition before planting than afterward.

Using cultivation only. If you do not want to use herbicides, then you will need to cultivate the field or planting strips. Cultivation is usually less effective than herbicides for killing heavy sod or persistent weeds. Also, the bare ground produced by cultivation may be subject to erosion and can provide a good seedbed for more weed growth.

Herbicide Carryover

Carryover from herbicide treatments in prior years can pose a threat to new plantings. Seedlings are particularly sensitive to herbicide carryover. Herbicides such as glyphosate have a very short persistence and do not pose a risk for carryover. Herbicides such as atrazine have medium to long persistence and can pose a risk of carryover. The persistence of herbicides is directly affected by factors such as soil pH and moisture. To assess risks before planting, read the herbicide label or contact the manufacturer for specific information on persistence.

PLANTING TREES AND SHRUBS

Trees and shrubs that are planted correctly will grow faster, and are much more likely to survive, than ones planted incorrectly. Always check for utility lines (water, gas, electric, cable) before planting. Avoid planting on top of buried utility lines or below overhead lines. When planting along property lines, consider using a setback for the first row of seedlings to avoid potential conflicts with neighbors. If the planting is adjacent to cropland, consider using shorter trees or just shrubs in one or two rows next to the field to reduce future problems with overhanging branches.

Plant Availability and Planting Dates

Bare-root seedlings are typically only available late winter to early spring, and must be planted during quickly unless properly stored (see below). For recommended tree and shrub planting dates for your area, contact your local NRCS Field Office.

Storing and Planting Techniques

Bare-root seedlings must be properly handled and stored to ensure a successful planting. When the seedlings arrive, open the nursery bales and check the plants for overheating, molding, or dryness. If they are satisfactory, store them in a cool, shady place with the roots protected, and plant within just a few days. If the seedlings cannot be planted immediately, dig a trench about a foot deep and bury the seedlings' roots in soil. This is called "heeling-in". Pack the soil firmly, water thoroughly, and make certain all roots are covered. The seedlings may also be stored well wrapped in a refrigerator as long as the plants are still dormant (buds have not opened).

Evergreens require very careful handling. When heeling-in evergreens, split the small bundles and spread out the seedlings in a trench to make sure the root system of each seedling is protected by soil. Bare-root seedlings can be machine planted, or hand planted with a planting bar or dibble. See Figure 1 for hand planting information.

Lime and Fertilizer

Newly planted trees and shrubs should not be limed and fertilized, unless soil tests show that pH and nutrients are extremely low. It is better to allow the root systems of new plantings to become established before applying lime and fertilizer.

PROTECTING PLANTS

Plants should be protected from damage by wildlife, human activities, or livestock by using rodent guards, repellents, tree shelters, fences, and/or other exclusion measures.

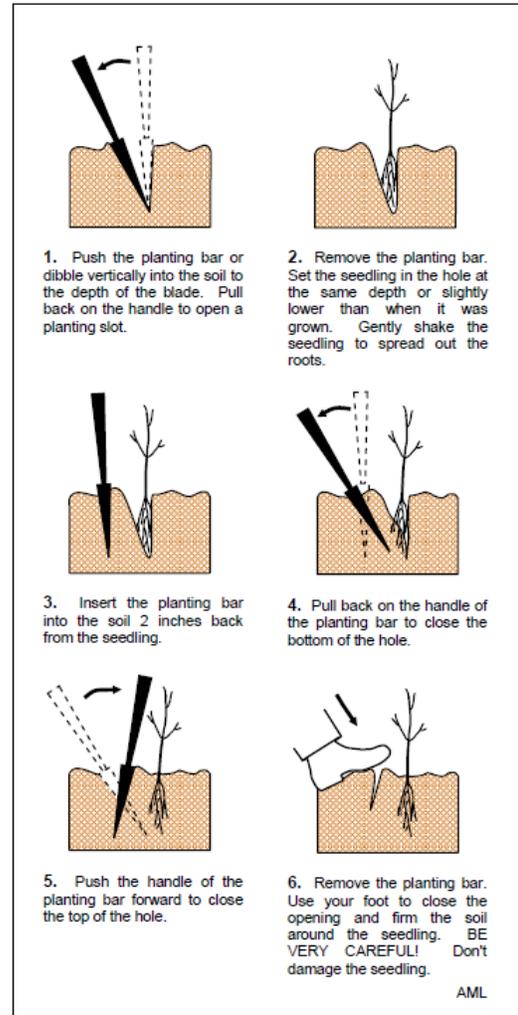


Figure 1. Hand planting bare-root tree and shrub seedlings using a planting bar or dibble.

Rabbit and Rodent Damage

Rabbits and rodents can use tall grasses and weeds for protection while gnawing on tree and shrub plantings. Mow, mulch, or use herbicides as needed to control vegetation around plantings. Follow recommendations from Pennsylvania Cooperative Extension when using repellents or poisons to protect plantings from mice and voles.

Tree Shelters

Tree shelters may be used to protect seedlings from competition from weeds, damage by deer and small mammals, and damage by people while mowing, trimming, or spraying around plants. Solid tubes with a continuous vertical perforations are recommended. Shelters should be a minimum of four feet tall to

protect seedlings from deer damage. Use shelters that are at least five feet tall if the potential for deer damage is severe. Push each shelter into the soil to a depth of at least 1 inch to exclude rodents.

Stake each shelter with a wooden stake (minimum 1-inch thickness), or a plastic or fiberglass post, that is at least the same height as the tree shelter being used. Metal stakes should only be used in flood prone areas, and placed on the upstream side of the shelter (and must be removed after the tree is large enough to support itself). Install and maintain bird netting on the tops of shelters until the seedlings emerge from the tops of the shelters.

Fences and Use Exclusion

Fences and other exclusion devices may be an option, depending on the size, shape and location of the planting. Contact your local NRCS Field Office for recommendations.

ESTABLISHING THE PLANTING

Planting Year

Control weeds by mowing or treating with an appropriate herbicide. Nesting season restrictions do not apply during the establishment period. Mowing should be done with extreme caution to avoid damaging the stems or bark of plantings, especially on seedlings. Vegetation not immediately adjacent to the plantings, such as between rows, can be left for wildlife food and cover (except for noxious weeds, which must be controlled as required by state law and CRP contract). If you need assistance identifying noxious weeds, contact your local NRCS Field Office or Pennsylvania Cooperative Extension.

Herbicides may be spot-sprayed around plantings or applied to the planting strip. Follow specific label instructions to reduce or eliminate damage to trees and shrubs. Do not apply herbicides on windy days when spray drift can damage nearby plantings. If tree shelters are used, periodically check to make sure that shelters are upright and the bird exclusion netting is in place.

Second Year After Planting

Continue to control weeds by mowing or treating with an herbicide. Always avoid damaging the plantings during mowing and herbicide application. Continue to inspect tree shelters and make sure they are upright and functioning as intended.

MAINTAINING ESTABLISHED PLANTINGS

Trees and shrubs should be well established by the third or fourth year after planting.

CRP Participants must maintain enrolled practices for the life of the contract. "Maintenance" refers to activities that are carried out as needed to keep plantings in good condition so they will continue to function as planned.

Control noxious weeds by spot treatment, using mechanical methods or appropriate herbicides. If it becomes necessary to control noxious weeds during the nesting season, contact the FSA County Committee. Spot treatment is limited to the immediate area of infestation. In an established planting, you must request and receive approval from the FSA County Committee before spraying or mowing during the nesting season.

For more information about controlling specific weeds, contact your local office of Pennsylvania Cooperative Extension; the Pennsylvania Bureau of forestry Service Forester.

Periodic mowing for cosmetic purposes is prohibited at all times, and annual mowing for generic weed control is also prohibited. If natural regeneration of native trees and shrubs occurs, do not cut them or spray them with herbicides. Allow a natural forested community to develop.

If tree shelters were used, shelters with a continuous vertical perforation may be left on the plants. Shelters without perforations will be removed when sapling trunks are 1-1/2 inches in diameter at the top of the shelters.

