

United States
Department of
Agriculture

Forest Service

Intermountain
Region

Bridger-Teton
National
Forest



Transplanting Trees and Shrubs from the Wild



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IN GENERAL

Before selecting a plant for transplanting from the wild, remember that when you move a plant from a wild to a cultivated environment, you may be changing its habitat to such an extent that the plant may be unable to adapt and will die. For example, if you move a wild tree that is adapted to a lot of shade and shelter in the woods to an open, sunlit spot, it may die through overexposure.

Many candidates for transplant are on lands administered by federal and state agencies. Most land management agencies have a permit process which you should acquire prior to transplanting.

Your trees will grow better and be more likely to survive if you plant them properly. Most trees grow best in fertile, well-drained soil, with a high proportion of organic material. Improve clay soils by adding coarse materials such as sand or humus (decomposed vegetable or animal matter). Improve sandy soils by mixing in organic matter such as peat moss or compost.

A good way to tell if your soil has the correct mixture of organic matter, clay, and sand is to wet a small amount of soil and allow it to dry. If the soil crumbles easily between the fingers, the mixture is good. Otherwise it needs corrective measures.

If in doubt about soil fertility, have the soil tested. This test will tell you how much of each kind of fertilizer to add and what other steps to take to prepare the soil. Contact your local Extension Agent about taking soil tests and where to send them.

When planting trees, do not place commercial fertilizers or barnyard manure directly on the roots. If needed, add a commercial fertilizer to the soil surface after transplanting and soak in with water.

Evergreen Trees

Evergreen trees contain resin. When the roots are left exposed to the air even for short intervals, this resin hardens. Water will not dissolve it. If tree roots are exposed to the air while planting or transplanting, the leaves will hold their color for the first season. The tree will undoubtedly die during the following winter, however, because it cannot get the needed water and food from the soil.

- * Take great care to keep plenty of soil around the roots when moving evergreen trees.

You may move them in any season, but October to May is considered the best time. When the ground is not frozen is the best time to dig trees, where the soil is free from rocks. It is impossible to keep a ball of dirt intact when your shovel strikes rocks as you dig a trench around the tree. It is comparatively easy to keep a ball of dirt intact when the ground is frozen, particularly if root pruning procedures had been instituted earlier.

Root Pruning

In root pruning, a trench is dug at the same distance from the trunk as when digging a root ball. Go out from the trunk one foot for each inch diameter of the trunk before cutting the existing roots. Refill the trench with topsoil. The plant will then be able to form a dense mass of new fibrous roots. When the tree or shrub is transplanted the following year, these roots will help hold the root ball together and will provide a sufficient root system for the plant in its new location.

When root pruning a smaller plant, a trench is unnecessary. A sharp spade can be used to cut the roots to the depth of the spade, while leaving the plant in place. Transplanting should then be done during the spring or fall.

The size of the root ball will vary with the size of the plant and the type of soil around it. Normally, a root ball of one foot in radius to each inch of trunk diameter is recommended. A tree with a "trunk" which is one inch thick should have a two-foot diameter root ball. It takes a large and strong person to lift this without extensive disturbance of the root ball.

- * Your best success will be with trees that are less than a foot high. The ball of soil around the roots of trees that size should measure about six to twelve inches.

It is not advisable to prune back the top of the tree. In fact, such an operation is harmful because when you cut back the main stem, you form a crook in the trunk which never will correct itself. The tree thereby becomes more susceptible to disease and insect attack. Never cut off the lower branches of an evergreen because in so doing you ruin the tree's natural growth habit and appearance.



Digging the Tree

The first step is to dig a circular trench, one foot deep around the root ball. Be sure root ball is adequately sized, and avoid disturbing it. Push the spade down with its back toward the tree; pry gently away from the tree. Clean out the trench, leaving a solid block of soil around the tree roots.

Rip open a burlap sack and place the folded edge around the ball of dirt. Pull the inner flap tightly around it; lace it through with nails or sack thread to hold it securely. The last step is to tunnel under the ball of dirt and cut it loose. Gradually pull the outer flap of the sack under the tree, taking special care not to break the ball of dirt. Pull the burlap as tight as possible and lace it through with nails as before. In the absence of burlap grain sacks, burlap material is often available in fabric stores.

Planting Balled and Burlapped Stock

- * Lift and move plants only by the ball — never by the top.
- * Do not prune back balled and burlapped or container plants except to remove damaged parts.
- * Do not remove the burlap.
- * Do not plant trees too deep or in too small a hole. Plant stock at the same depth that it grew in the nursery or in the forest, and place it in a hole twice the size of the ball.
- * Pack soil two-thirds of the way up the ball.
- * Untie top of the ball and add water.
- * Fill remaining hole with soil.
- * Make a depression around the tree so you can water it easier.
- * Soak well and deep.
- * Do not add fertilizer.



Cottonwoods, Willows, Aspen, and Other Deciduous Trees

Cottonwoods and willows are easily propagated by cuttings. Place cuttings in constantly damp soil and they may take root.

Transplanting Native Plants

When moving native broadleaf trees, it is best to dig small plants. If you select a large tree, root prune it the year before moving. To root prune, draw a circle on the ground about five inches from the trunk for each inch of trunk diameter. Dig a trench deep enough to cut all roots and refill the trench with well rotted manure or commercial fertilizer mixed with the soil you dug out. You can transplant the tree the following year.

Bare-Root

Move deciduous plants in early spring before they leaf out. The plants are dormant then and less likely to suffer from the shock of being moved. Dig out the tree with as many roots as possible. Start digging from the outer edge of the crown, and carefully remove the soil while working toward the trunk until the main roots are found.

Dig the soil from around the roots, without completely baring them and with a minimum of bruising and cutting. Any extra soil will help to retain the fine "hair" roots, which absorb moisture from the soil. Cover the roots immediately with damp sacks to help prevent them from drying out. If roots are exposed to air for even a few minutes, they may be damaged or dry out enough to kill the plant.

Planting Bare-Root Stock

If replanting of bare-root stock is delayed, heel in the plant. First, choose a shady area from drying winds. Then, dig a trench to accommodate the roots and slope one side 45 degrees or lower. Place the roots in the trench and rest the trunk or stem against the sloping side. Cover the roots with loose soil and keep them moist. Evergreens should be heeled in upright and placed close together if there are more than one.

Do not bunch or crowd roots into a small hole. Spread roots carefully in a natural position. Leave a slight depression or saucer around the tree to make future watering easier.

Center plant in the hole and fill with good, loose topsoil. **DO NOT PLANT TREES OR SHRUBS DEEPER THAN THEY GREW BEFORE!** Firm in the soil around the roots. Soak well and deep.

NATIVE SHRUBS

Shrub collections should be made in early spring and planted in a home-nursery plot.

You can divide some shrubs into a number of small plants after you take them up. A sharp spade is best for loosening dirt around the plant and saving as much of the root system as possible. Do not injure the roots.

Place the shrubs in your vehicle and cover the roots with wet burlap to keep them from drying out. It is better still to throw soil over the roots to keep the air from getting to them. Never leave the roots exposed where the sun can shine on them!

If the plants are large, divide them and plant them immediately in the home nursery. Cultivate regularly and water when necessary, so that they will grow well. Keep out all weeds, as you do in the garden. Set shrubs two feet apart.

It is always advisable to trim back shrub tops severely the first year so that they will send out new shoots from the ground. If these shoots grow rapidly, they will be ready to plant around the house at the beginning of the second year. If they do not grow much, leave them in the home nursery for another year before transplanting.



Stakes, Mulches, Water and Fertilizer

Some newly planted trees need to be staked and wrapped. Stake any newly planted tree which has a tall, spindly trunk or a small root system. Put the stake in the hole before back-filling. The stake should be on the side toward the prevailing wind. Tie the trunk to the stake with a soft material—not with wire.

Young, deciduous trees should have their stems wrapped for the first year or more. Start at the soil level and wrap up at least to the first branches.

Newly planted trees are helped by a surface mulch. This keeps the soil cool and saves water. Use a material which will cover the surface, retard evaporation and cut down on weed growth.

Newly planted trees should be watered well when they are planted. Deciduous trees do not often need additional water until they leaf out. Lawn watering is usually not good enough for trees and shrubs. Their deeper roots need a thorough soaking when the soil gets dry. This may be every one to four weeks, depending on the soil and how you manage the watering of your lawn. Do not keep the soil continually soggy.

Early in your transplant's life, the humus and organic material in the soil you used to backfill should provide sufficient nutrition. Over application of commercial fertilizers can be detrimental. If used prudently, commercial fertilizers can be useful where soil fertility is low. When selecting commercial fertilizers for your trees and shrubs, look for those with higher proportions of phosphorous and potassium than the more common, high-nitrogen, lawn fertilizers.



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Visit out web site at: www.fs.fed.us/btnf

**This publication was adapted from information produced
by the Wyoming Cooperative Extension Service, Sublett
County Wyoming.**

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