

# Desert-Adapted Tree Planting Guide

## Xeriscaping

The word xeriscape is derived from the Greek word *xeros* meaning dry. Xeriscape refers to water-conserving landscapes designed to harmonize with the existing environment. Xeriscape gardening recognizes native and other drought resistant vegetation as visually and aesthetically pleasing. Xeriscape plants are drought resistant, meaning they can survive extended periods of drought with little or no supplemental irrigation. Plants suitable for our desert climate include native plants — plants indigenous to the local area — and plants from other arid climates. These kinds of plants are tolerant of desert-like conditions — low humidity, low rainfall, and alkaline soils.

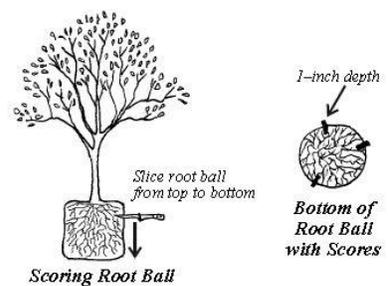
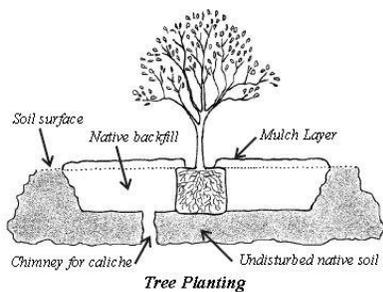
## When to Plant

Year-round planting in the desert is possible. The ideal planting time, however, is late fall (except for frost sensitive species) when soil temperatures are warm and air temperatures cooler. This encourages rapid root establishment. Late spring is also good, although root establishment may be slower. Consider the mature size of a plant before choosing its location. For example, a large tree should not be planted underneath an overhead utility line! If involved in an extensive planting project, call Blue Stake (1-800-782-5348) to determine the location of buried utilities to avoid unfortunate mishaps.

## Preparation of Planting Hole

Prepare a hole three to five times as wide as the diameter of the root ball and no deeper than its height. If this disturbs the roots of nearby plants, reduce the width to two times the diameter of the root ball. Before planting make sure that the sides of the hole are rough and sloping.

Fill the hole with water prior to planting to check the drainage. The water should drain within 12-24 hours. If *caliche* or hardpan is preventing drainage, dig a chimney or a channel through the *caliche* layer before planting.



## Soil Preparation

The addition of organic matter — compost, or forest mulch — is not necessary when planting native plants and plants from other arid climates because they are accustomed to alkaline soils (high pH) which naturally have a very low percentage of organic matter. To increase the water holding capacity of poor soils (very rocky and/or sandy), incorporate some fine-textured [native soil](#) into the planting hole.

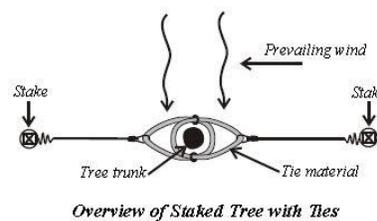
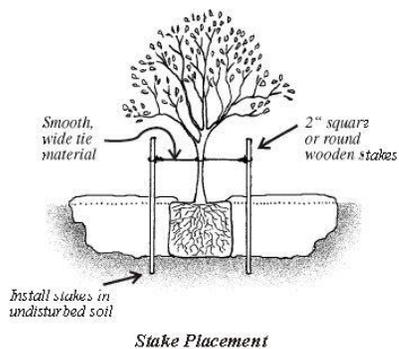
## How to Plant

Remove the plant carefully from the container without breaking the root ball. Cut off any girdled, kinked, or circling roots with a sharp knife or pruners. Slice the root ball lengthwise approximately one-inch deep in two or three places.

Place the plant in the planting hole and back fill with [native soil](#). The top of the root ball should be level with or slightly above the existing soil surface. Planting too deeply can cause crown rot. Do not compact the soil by standing on it, use water to settle the soil.

## After Planting

Irrigate the root ball and the planting area immediately, taking care that the root ball remains level with the soil surface even after irrigation. Remove the nursery stake. If necessary, re-stake the plant following the guidelines in the Tree Staking section. Avoid pruning at this time. Apply a fine organic [mulch](#) or a coarse mulch material, such as [wood chips](#) to maintain soil moisture, but keep it a few inches away from the base of the plant. Fertilizer is not required at planting. Nitrogen applications may actually delay root establishment.

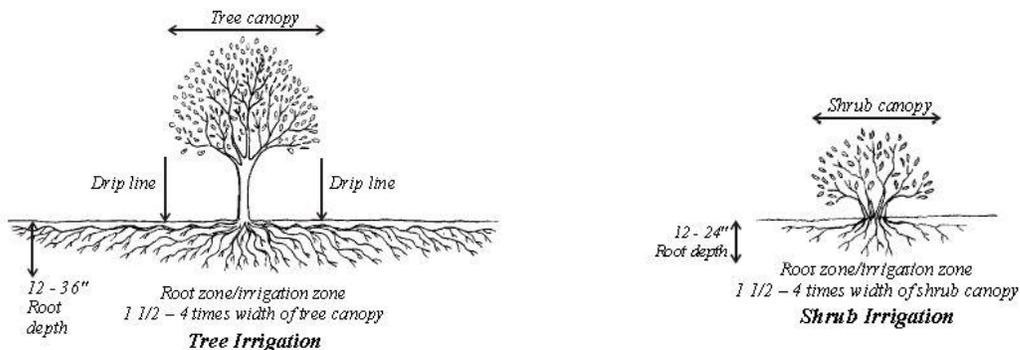


## Irrigation Practices

It is not easy to determine a plant's exact water needs, because many factors influence the amount of water a plant requires—plant type, soils, weather, location, and root depth. Although many desert-adapted plants can survive on rainfall, supplemental irrigation will be required for at least one growing season to promote establishment. Once established (approximately 2-3 years), irrigation may be necessary only during dry periods.

## How To Irrigate

**Light, frequent irrigations create shallow, weak root systems. Deep, less frequent irrigations encourage deep strong root systems that can tolerate longer periods of drought.** Mature root systems are typically  $1\frac{1}{2}$  -4 times wider than the plant canopy. Rooting depths vary depending on plant type. **Always irrigate the entire depth and width of the plant root zone regardless of the time of year.** Irrigation frequency is dependent on how quickly the soil dries out. Soil texture and plant rooting depth will determine the length of irrigation time; water will move down quickly in sandy soils and slowly in clay soils. Use a soil probe, a long screwdriver, or a piece of rebar to determine how deeply and widely the water has moved. When dry soil is reached the device should stop. To prevent runoff don't apply water faster than the soil can absorb it. Use drip irrigation, a soaker hose, or a slowly dripping garden hose to reduce the flow. Re-irrigate when the soil dries out half-way. Feeling the soil, using a soil probe, and observing plant stress will help determine when to re-irrigate. Stress will occur more rapidly during warmer summer months and less rapidly during spring and fall months. Evergreen plants will require infrequent, deep winter irrigations.

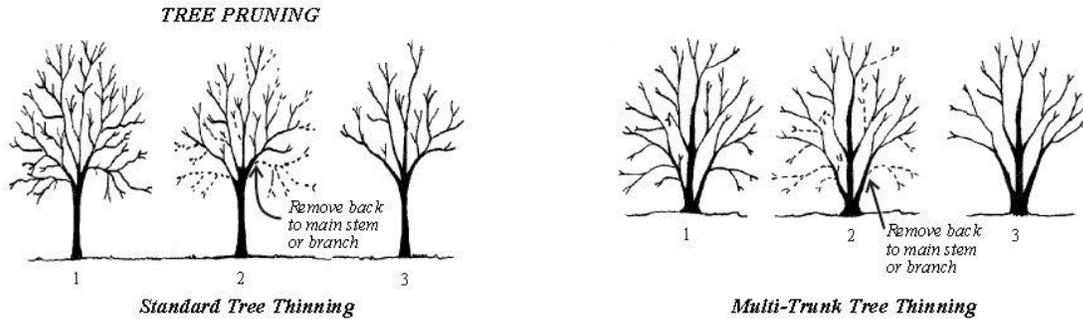


## Pruning

Little pruning is required to maintain the beauty and natural form of xeriscape plants. If plants are located in areas with adequate space, the need for regular pruning will be greatly reduced or eliminated. However, some minor pruning may be necessary at times and can be beneficial to the plant if done properly. **Plants should not be pruned immediately after planting except to remove dead, diseased or protruding branches.** Once a plant has become established — approximately 1-2 years — conservative pruning can begin. Always prune to retain the natural shape of the species. While pruning, stand back to view the developing shape. Never remove more than  $\frac{1}{3}$  of a plant during one season (the exception is rejuvenation of old plant material). If in doubt about what to remove, don't. **Trees:** Branches along the lower trunk should be allowed to grow for at least two years before removal because they encourage strong trunk growth, protect the trunk from sunburn and reduce resistance to wind.

## When to Prune

Light pruning may be done anytime if proper pruning techniques are followed. For deciduous plants, heavier pruning should be done when plants are dormant—after leaf drop in fall or before bud break in early spring; for evergreen plants, late fall or early spring is best. In general, avoid pruning when plants appear stressed or during periods of prolonged heat or high humidity.



**Trees:** Retain the strongest branches. Remove damaged, weak, crossed or narrow angled branches. Remove branches protruding into the canopy, growing downward from the canopy and suckers growing from the ground or base of the plant. Make smaller cuts first. For larger branches, make a three-point cut to prevent bark tearing. Do not prune into the branch bark ridge or collar. Prune close enough, however, to leave no stub behind. **Do not use pruning paint or any kind of sealant.**

**Xeriscape** plants usually do not require fertilizer unless nutrient deficiencies occur, which is uncommon. Fertilizing can be used to encourage rapid growth, but this will also increase water use and pruning requirements. Nitrogen and iron are the two nutrients most commonly lacking or unavailable in desert soils. Nitrogen levels are low because arid soils lack organic matter. Iron is plentiful but deficiencies occur because iron availability (solubility) in alkaline soils is limited. In addition, weather extremes (cold, wet, or extended dry conditions) can further reduce available iron. Both nitrogen deficiency and iron deficiency can produce chlorosis — yellowing of plant tissues. This is most typically seen in non-native plants. Nitrogen deficient plants require fertilization. When iron is deficient plant veins are green and the rest of the leaf is yellow. Plants with an iron deficiency may recover on their own when the weather is warmer and drier. If not, applications of chelated forms of iron may help. Although phosphorus and potassium are plentiful in desert soils, phosphorus can be incorporated into the soil at the time of planting to increase blooming of flowering plants.

## Fertilizer Types

There are two kinds of fertilizers: inorganic and organic. Inorganic fertilizers, such as ammonium nitrate, ammonium sulfate and urea are derived from natural mineral sources. They are highly soluble and release nutrients very quickly. Use an inorganic fertilizer on plants showing a nutrient deficiency because they release nutrients rapidly and uniformly. [Natural organic fertilizers](#) are derived from animal and

plant sources such as compost, blood and bone meal. Always use well-decomposed natural organic material. Synthetic organics include: ureaformaldehyde (UF), isobutylidene diurea (IBDU), and sulfur-coated urea (SCU). Organic fertilizers release nutrients less uniformly and more slowly depending on weather conditions. In general, organic fertilizers will need to be applied less frequently due to their slow release and inorganics more frequently due to their rapid release.

### **When to Fertilize**

Apply [fertilizers](#) just before or during a growth spurt. (Early spring to late summer) Avoid fertilizing in late fall. This stimulates tender growth that may be frost sensitive. Plants will not take up nutrients when they are not actively growing — during very hot, cold, or wet conditions. Fertilize before a scheduled irrigation, not after the soil is already wet.

### **How to Fertilize**

Always irrigate sufficiently when applying fertilizer. Nutrients must be dissolved in water to enter the roots of the plant. Watering too deeply can cause nutrients to move below the root zone. Phosphorus fertilizers are useless as topdressing and need to be incorporated into the soil. **Always read and follow the label directions for application rates and guidelines.**

### **Mulches**

A mulch is a layer of insulation between the soil surface and the atmosphere. Mulches can reduce evaporation, erosion and compaction; moderate soil temperatures; increase water penetration; protect roots from mechanical injury; and reduce weed growth. Mulches can be used to cover large areas, reducing the need for vegetation. There are two types of mulches: organic and inorganic. Organic mulches that work well in the landscape include coarse material, such as [wood chips](#) or bark, that will not blow away. Apply organic mulches 2 to 4 inches deep away from the base of the plant and out beyond the drip line. As organic mulches decompose, they need to be replaced. Examples of inorganic mulches include [decomposed granite](#), [pea gravel](#) and [river rock](#). Apply inorganic mulches 1/2 to 2 inches deep. All mulches should be kept 6 to 8 inches away from the trunk or base of the main stem.

### **Weed Control**

Consistent weed control is important because weeds compete with landscape plants for water, nutrients, and sunlight. Eliminate weeds before they set seed to reduce future weed problems. Manual weed removal can be effective when populations are low. In extreme cases, however, chemical control may be necessary. Black plastic is not recommended for weed control. To prevent future weed seeds from germinating, treat the soil with a pre-emergent. **Do not use pre-emergent in areas which contain seeds of desirable plants, such as wildflowers.** Mulches can reduce weed seed germination by preventing exposure to sunlight. If a weed problem seems to justify the use of chemicals, contact your local Extension Office to determine which to use and proper uses. **Always read and follow label instructions.**

