



## Fast Facts About Watering Trees

- Water should be applied to established trees once a month during the winter and as often as once a week during the heat of the summer. Water should be applied at the tree's drip line and beyond.
- Trees adapted to drier climates need far less irrigation than other species.
- If Mother Nature provides enough precipitation to wet the soil two to three feet deep, don't apply additional water.
- If Mother Nature's precipitation falls short of a full soaking, apply only enough additional water to wet the soil two to three feet deep.
- Apply water slowly so that it sinks deeply into the soil. Soaker hoses, drip emitters, bubblers, and hand-held hoses are preferable to sprinklers.
- Mulch the soil around a tree trunk (but not so closely that the mulch touches the trunk). A layer of mulch keeps the soil moist and reduces weeds that compete for water. Organic mulches, such as bark or wood chips, keep the soil cooler but can absorb water that could otherwise get to tree roots. Inorganic mulches, such as gravel, are a fine choice for native and adapted trees that can tolerate the increase in soil and air temperature.

### For More Information

Want to know more about trees and tree care? Check out these helpful websites:

[www.treesaregood.com](http://www.treesaregood.com)  
[www.arboday.org/trees/nineThings.html](http://www.arboday.org/trees/nineThings.html)  
[www.thinktreesnm.org](http://www.thinktreesnm.org)  
[www.cahe.nmsu.edu/pubs/\\_h/h-420.html](http://www.cahe.nmsu.edu/pubs/_h/h-420.html)

### WATER USE AND CONSERVATION BUREAU

New Mexico Office of the  
State Engineer  
P.O. Box 25102  
Santa Fe, NM 87504-5102  
1-800-WATER-NM  
[www.ose.state.nm.us](http://www.ose.state.nm.us)



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# A Waterwise Guide to Trees



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New Mexico Office of the  
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# The Beauty and Benefits of Trees



Photo courtesy of Mountain States Wholesale Nursery.

**T**rees are the majestic giants of nature's plant palette. Trees help anchor a well-designed landscape by providing large forms as a visual contrast to the more numerous smaller plants. The towering height of mature trees literally draws our gaze upward and lifts our spirits. Indeed, there is something inherently soothing about the strength and stability of a tree, particularly in arid and semi-arid environments where trees can be a rarity.

## Trees are also a wonderful addition to a landscape for very practical reasons:

- Trees shade the soil, reducing heat and evaporation.
- Trees block wind, which also reduces evaporation.
- Trees provide cooling shade for people and wildlife.
- Trees also provide shade to cool homes, thus reducing energy and evaporative cooler water use.

Of course, trees also consume water. That's why it's important to use waterwise techniques when irrigating and caring for trees. By giving trees the proper amount of water—when and where they need it—you can ensure that the trees in your landscape will provide both practical and aesthetic benefits for years to come.

# How To Plant A Tree

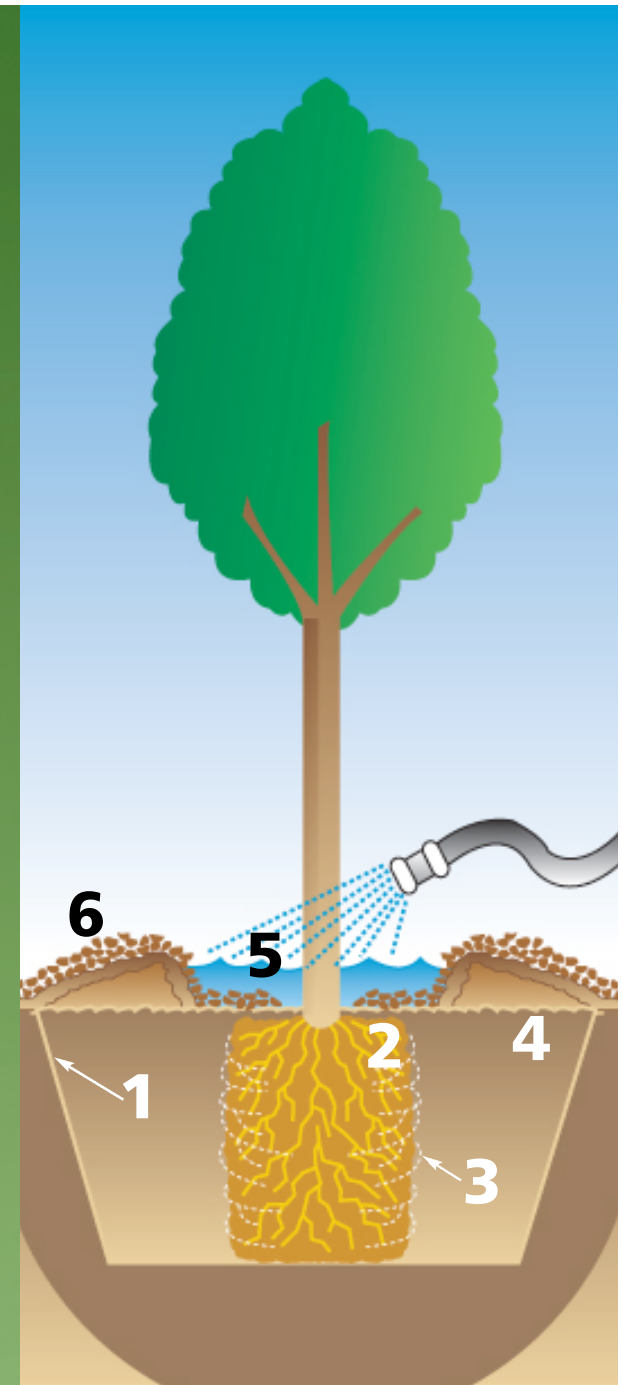
**A** correctly planted tree will grow more quickly, be healthier and more attractive, and probably live longer than an incorrectly planted tree. A healthy tree will also have a stronger and deeper root system that is better able to draw moisture from the soil. In the arid climates of New Mexico, a healthy tree that was properly planted is better able to withstand our periodic droughts.

To plant a containerized tree, just follow these steps:

- 1.** Loosen the soil three to five times the width of the root ball (or as wide as possible) and as deep as the root ball. Tree roots grow best in loosened soil that has pore spaces for water and oxygen. The walls of the hole should be tapered.
- 2.** Carefully remove the root ball from the container and set it on undisturbed soil in the center of the hole. The top of the root ball should be even with the soil level.
- 3.** Trim back roots that have begun to circle the root ball.
- 4.** Partially fill the hole with soil and firm it slightly. Water thoroughly and finish backfilling the hole with soil. Pack the soil firmly but not tightly around the root ball.
- 5.** Build a small berm of soil around the root ball. (It should look like a "soil donut" circling the tree trunk.) Fill the berm with water two or three times to make sure the soil is completely moist. Thereafter, begin regular watering schedule.
- 6.** Place a protective circle of mulch, three feet wide or wider, around the tree. The mulch should not touch the tree trunk.

### Tree Tip:

**If possible, plant trees in valleys and depressions in the landscape so rainwater will naturally collect and give the tree a good soaking.**



# Tips on Tree Watering in Dry Climates

## Watering Newly Planted Trees

Irrigate newly planted trees at the base, making sure to wet the entire root ball area. Water as needed, perhaps as often as twice a week during the first growing season. Young trees (up to two years after planting) should continue to be watered at the base, but the diameter of the zone of wetted soil should expand outward as the tree grows. Check the soil periodically to see if it is dry; allow the soil to dry moderately between waterings.

## Watering Established Trees

Established trees should not be watered at the trunk. Instead, irrigate from the dripline (the edge of the tree's leaves) outward. The distance will depend upon the size of the tree and the nature of the tree's root system. As a basic rule of thumb, apply water in a circular band that's at least half as wide as the distance from the trunk to the dripline.

How the water is applied is just as important as *where* the water is applied. Trees prefer to be watered slowly and deeply. Spray irrigation (sprinklers) is great for lawns but not for watering trees. Instead, use a bubbler, multiple drip emitters, or a hand-held hose to deliver water to the tree's root zone. Moisten the soil two to three feet deep each time you water, and let the surface dry between waterings. Use a soil probe to determine the depth of the moistened soil. If the soil is only moist to a depth of one foot, keep watering. Remember, deep watering encourages deep rooting—and deep roots are the best way for a tree to survive a drought. Irrigate established trees once every two weeks during the growing season and once a month during the dormant season.

## Anatomy of a Mature Tree

### Canopy

### Tree Basics

**Trees are slower to establish than most other landscape plants, so they need special consideration when it comes to irrigation. Newly planted trees will typically require more frequent watering than established trees. Although they don't need to be watered as often, large established trees need a larger volume of water (in gallons) than younger trees to stay healthy enough to avoid disease and resist insect pests.**

### Trunk

**Depending upon the type of tree, its age, its root structure, and the type of soil it is growing in, a tree's roots can extend more than three times wider than the height of the tree and grow three feet or more in depth. When watering trees, water slowly and deeply. It's important to get the water deep into the soil where the tree roots can absorb it.**

### Roots

### Root zone

## Irrigating Trees in Drought

During times of drought, a lack of moisture can cause trees to suffer from drought stress. One early sign of drought stress is wilted leaves. Another sign is leaf scorching, when the edges of leaves or the space between a leaf's veins turn brown. When a tree begins to exhibit signs of drought stress, irrigation must begin immediately to avoid long-term damage to the tree.

In times of drought and water restrictions, trees should be given priority over other landscape plants, including lawns. Why? It takes 20 years of growth for a newly planted tree to reach the size of an existing 20-year-old tree. A turfgrass lawn left unwatered will naturally go dormant for the season and turn brown, but it may turn green again when rain falls or irrigation is reintroduced. Even if reseeding or resodding is necessary, a lawn can often be re-established in a single season—a large tree cannot.

Remember: during a drought, the goal of irrigation should be *sustaining the tree*, not watering for maximum growth. To conserve precious water, stop all irrigation *during* precipitation! Then, before resuming a scheduled irrigation, check the depth of the wet soil and apply only enough water to moisten two or three feet deep.

Place emitters the width of the tree canopy in a circular star pattern.



Moisten the soil two to three feet deep. Most of a tree's water-absorbing roots are in the top 12 to 24 inches of the soil.

3 feet

**Tree Tip: Save water!** Trees that are adapted to dry climates need less irrigation once established.



## Is It Time to Water Yet?

The best way to determine if a tree needs to be watered is to check the soil with a soil probe. A soil probe can be inserted into moist soil, but it will stop when it hits dry soil. Measure how far the soil probe can penetrate the soil and you'll know how deeply the water has penetrated.

### How to Build a Simple Soil Probe

Get a four-foot-long piece of 1/2-inch thick steel rebar. (It's typically used to reinforce concrete.) Get a one-foot-long piece of one-inch diameter steel pipe. Drill a hole in the middle of one side of the pipe just big enough to insert the end of the rebar. Apply some epoxy or another type of heavy-duty glue to the end of the rebar and insert it into the steel pipe. Round the end of the rebar so it's not so blunt and will be easier to insert into the soil. Presto—the rebar is the probe and the steel pipe is the handle. To check the depth of moistened soil, simply push the probe into the ground. It will stop when it hits dry soil, tree roots, or irrigation lines—so be careful when you use it!

#### Tree Tip:

A long (18-inch) flathead screwdriver can also serve as a quick soil probe.



## Trees for New Mexico

What kinds of trees thrive in New Mexico's semi-arid climate? That's not as simple a question as it sounds because New Mexico has more than one climate. The trees that thrive in the cooler mountainous areas are dramatically different from those that thrive in the hot southern deserts.

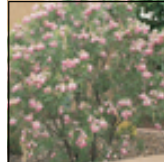
Here's a very small sampling of low-water-use trees that grow in the three major climate zones in the Land of Enchantment.



New Mexico Olive



Vitex



Desert Willow

### Northern/Mountain Zone

Bigtooth Maple (*Acer grandidentatum*), Cockspur Hawthorn (*Crataegus persimilis*), Gambel Oak (*Quercus gambelii*), Limber Pine (*Pinus flexilis*), New Mexico Olive (*Forestiera neomexicana*), and Western Hackberry (*Celtis douglasii*).

### Central Zone

Chinese Pistache (*Pistacia chinensis*), Desert Willow (*Chilopsis linearis*), Emory Oak (*Quercus emoryii*), Golden Raintree (*Koelreuteria paniculata*), Netleaf Hackberry (*Celtis reticulata*), and Vitex (*Vitex agnus-castus*).

### Southern Zone

Arizona Cypress (*Cupressus arizonica*), Desert Hackberry, (*Celtis pallida*), Desert Willow (*Chilopsis linearis*), Honey Mesquite (*Prosopis glandulosa*), Mexican Elder (*Sambucus mexicana*), and Vitex (*Vitex agnus-castus*).

## Questions and Answers

### Should trees be watered in the winter?

In New Mexico, trees should be given a deep watering once a month during the winter when temperatures are at or above 40° F. (5° C.) — but only if rainfall or snowfall doesn't provide enough natural moisture for a once-a-month soaking.



Photo courtesy of Mountain States Wholesale Nursery.

Use a soil probe—if it won't penetrate because the soil is frozen, don't water!

### When does the "growing season" for trees begin?

The active growing season begins in the late winter or early spring when the buds of deciduous trees (those that lose their leaves in the autumn) begin to swell. Water once when the buds have swelled. Begin regular watering when leaves appear.

### How often should trees be watered during the growing season?

A good rule of thumb is to make sure your trees get watered every two weeks during the growing season, from springtime to early fall. (Sometimes Mother Nature takes care of the watering for you, so don't water after a heavy soaking rain!) When temperatures begin to cool off around Labor Day, cut back your watering to once every three weeks.

### When does the active growing season end?

Typically, trees stop growing after the first frost (when temperatures dip below 32° F. at night). That's when you should cut back your watering to once a month, if nature doesn't provide the moisture for a good monthly soaking.

### How deeply should trees be watered?

The key to proper tree watering is to soak the soil slowly and deeply—at least 12 inches deep and up to 36 inches deep. Frequent sprinkling of the top inch or two of soil is not an efficient use of water, nor is it healthy for a tree.

### In a drought, should I water my trees or my lawn?

If you have to make the difficult choice of what plants to water, always choose trees and shrubs first. Trees take a long time to establish, so it can take many years (and sometimes many decades) of growth to replace a mature tree. Lawns and perennial flowers can much more easily be revived or replaced.

