

Watering Trees: An Overview

Most trees growing in the planted landscape need supplemental water throughout their lives. In the dry climate of Colorado, this means watering in winter months, as well as the rest of the year. Trees and lawns have different water needs at different soil depths and it is important to ensure that trees in lawns are not getting too little or too much water.

Where to Water

- At the dripline (not the trunk)
- If you had a drip system installed when you planted your tree, the water emitters were probably installed near the trunk. Be sure to move them out from the trunk and add additional lines to supply adequate water.
- Tree roots are in the top two feet of soil. In compacted soil, most roots may be in the top foot of soil. They can extend out from the trunk to several times the width of the tree canopy.

Not Sure if Your Tree Needs Water?

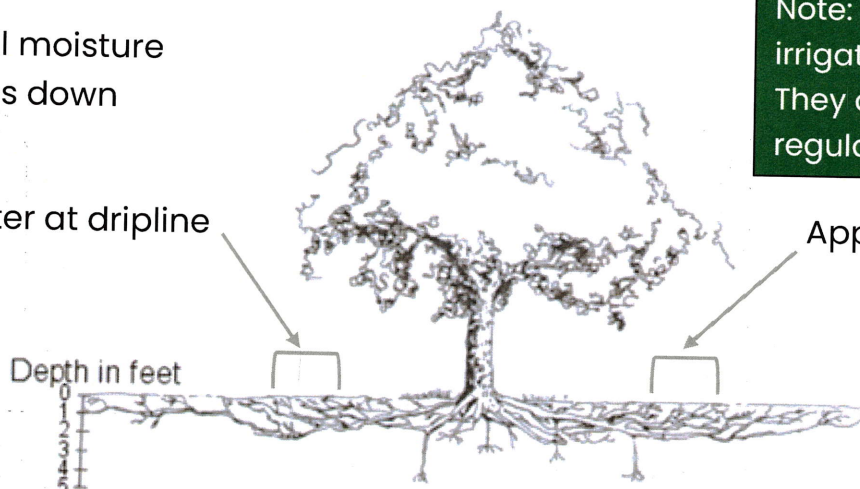
Check the soil moisture. Take a slender screwdriver or something similar, and poke it into the soil in several places around the tree—both inside and outside the dripline (where the canopy extends).

If the screwdriver can easily penetrate the soil to a depth of 6-8 inches, there is no need to apply water. (If your soil is sandy, this technique may not work as well.) You can also use a soil moisture meter.

Where to Apply Water for Established or Mature Trees

Check soil moisture
6-8 inches down

Apply water at dripline



Note: Do not regularly irrigate pinyon pines. They do not do well with regular irrigation.

Apply water at dripline

Frequent shallow watering for mature and established trees does not provide adequate water for their roots and frequent deeper watering may provide too much. Tree roots need oxygen to survive and if soil is too waterlogged, tree roots may die, and trees become stressed. Stressed trees are magnets for pests and diseases.

Watering Established or Mature Trees

- Water less frequently, but deeply
- 1-2 inches of water every two weeks during the growing season (approximately 10 gallons per inch of trunk diameter)
- Check soil moisture
- Water once or twice a month in winter if there has not been adequate moisture and the ground is not frozen. Start in the morning on a day when the high will be over 40° F.

Recently Planted Trees and Trees Not Yet Established

Regular irrigation after planting encourages root development, helping to successfully establish a tree. Generally, it takes one growing season per inch of caliper to establish tree. A two-inch caliper tree should be established in two to three growing seasons. If your area is cooler, it may take longer; if it is warmer it may take less time. For recently planted trees, the root ball can become dry in just a day. Frequent, light watering is critical for newly planted trees.

Table 1. Estimated irrigation of newly planted trees and shrubs during the growing season based on caliper.

Size of New Tree	Irrigation Need for Vigor	Amount of Water To Apply at Irrigation**
<2-inch caliper	<ul style="list-style-type: none"> Daily for 2 weeks Every 2-3 days for two months Weekly until established (one to two or more seasons) 	<ul style="list-style-type: none"> 1 inch caliper: 1-1.5 gallons 2 inch caliper: 2-3 gallons
3-4-inch caliper	<ul style="list-style-type: none"> Daily for 4 weeks Every 2-3 days for three months Weekly until established (two to four or more seasons). 	<ul style="list-style-type: none"> 3 inch caliper: 3-4.5 gallons 4 inch caliper: 4-6 gallons
>4-inch caliper	<ul style="list-style-type: none"> Daily for 6 weeks Every other day for 5 months Weekly until established (four or more seasons). 	<ul style="list-style-type: none"> 5 inch caliper: 5-7.5 gallons 6 inch caliper: 6-9 gallons

*Caliper is measured 6 inches above the top of the root ball.

**Check soil moisture and water as needed. If it is hot and windy, apply the higher amount at the more frequent recommendation.

Tips

- Check the actual water need before watering. A common mistake on compacted and clayey soils (with poor drainage) is to apply too much water per irrigation session, which can waterlog the planting hole. Never apply irrigation if soil is saturated.
- As a rule of thumb, establishment takes one season per inch of trunk caliper.
- Water once or twice a month in winter if there has not been adequate moisture and the ground is not frozen. Start in the morning on a day when the high will be over 40° F.
- In our dry, semi-arid climate, there is benefit from applying additional irrigation outside the root-ball area to maintain soil moisture in the rooting area. This can be done with a ringed soil berm that allows water to percolate into the soil or a soaker-type hose running around the backfill area.

For More Information

[Healthy Roots, Healthy Trees](#) (Fact Sheet 2.926)



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Adapted from the resources above by Mollie Freilicher, CSU Extension, Tri-River Area and Kamie Long, CO State Forest Service

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