

Weather

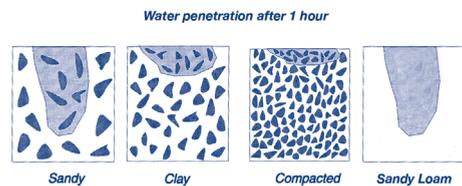
Plants use 3 to 5 times as much water during the hot, dry, windy seasons as they do during the winter. Adjust your watering schedule with the season and when there are significant changes in the weather.

Plant Maturity and Type

To prevent wilting, young plants should be watered more often than older plants. After they become established, in one or two-years, allow a slight drought between waterings. The plants will adapt to the stress and become more drought tolerant.

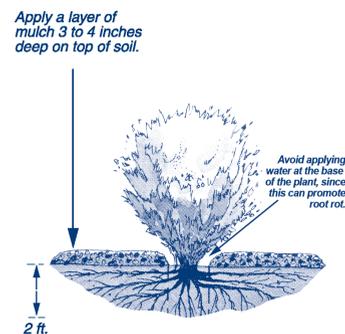
Soil Type

If your soil is shallow, compacted or sandy, irrigate more often but for less time. Clay soil can hold water more tightly and absorbs water slowly. Water clay soils slowly and less often. A sandy loam soil penetrates evenly.



Mulch

Keeping water from evaporating is key to keeping water in the ground for plant use. A 3" to 4" layer of an organic (for example shredded bark) or inorganic (rock) mulch on top of a plant's root zone will significantly reduce the frequency of watering. Keep mulch away from base of plant to avoid rot.



Signs of under- and over-watering

Under-watering

- Soil is dry.
- Older leaves turn yellow or brown and may even drop off.
- Leaves are wilted and/or curled.

Over-watering

- Soil is constantly damp.
- Young leaves become light green or yellow.
- Young shoots are wilted.
- Leaves are green yet brittle.
- Algae and mushrooms are growing.

Tips for efficient watering

- Control weeds. Do not lay plastic over the soil. Use mulch or porous landscaping fabric instead to allow water and air to circulate in the root zone.
- Avoid sprinkling tree and shrub leaves with water. Salts in the water can damage the foliage.
- If trees or shrubs are planted in turf, water them separately at the drip line.
- If you water by hand, install a faucet timer and use a soaker hose or in-line driphose.
- Once or twice a year water three times longer than normal to help leach salts out of the root zone.
- Move the 1 foot wide donut ring outward as the plants grow.
- Prevent runoff by retaining water in a "donut" basin around the plant's drip line or water at a slower rate.
- Watering in the early morning will be most efficient because of less wind and heat.
- Use rain and stormwater when possible to reduce tap water – it's better for your plants!

For more information

Visit cals.arizona.edu/pubs to view additional publications on:

- Low Water Use, Low-maintenance Landscaping
- Improving Irrigation Efficiency
- Plant Selection
- Water Harvesting
- Erosion Control
- Composting
- RainScapes
- Water Conservation
- Other topics

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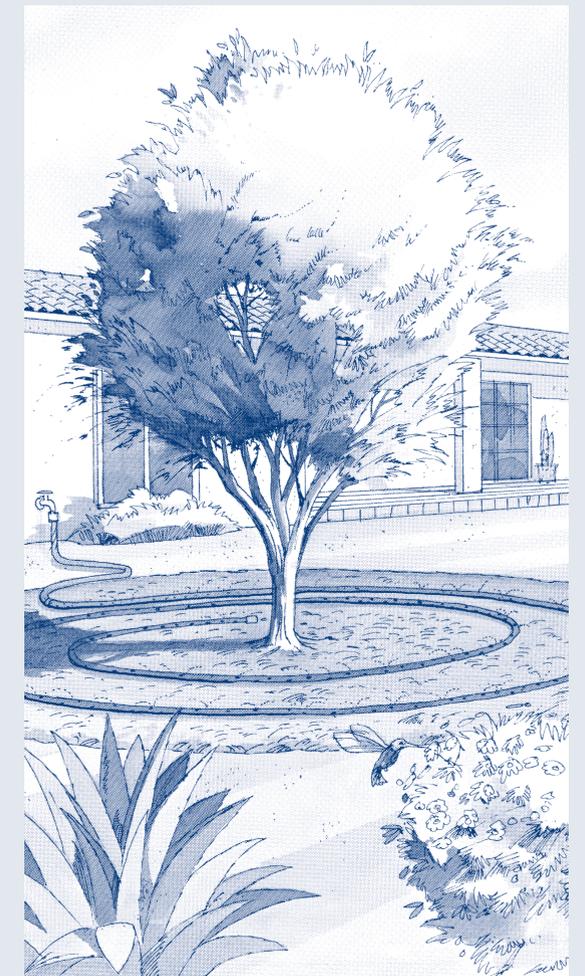
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THE UNIVERSITY OF ARIZONA
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Cooperative Extension

Watering Trees and Shrubs

Simple Techniques for Efficient Landscape Watering



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Plants don't waste water—people do!

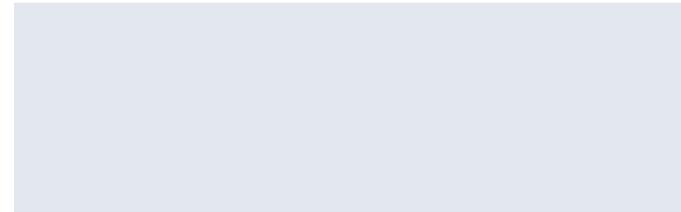
How much water do trees and shrubs really need? How often should they be watered? Where should it be applied?

Most people over water plants. Over-watering can damage or even kill plants, leaving you with high water bills.

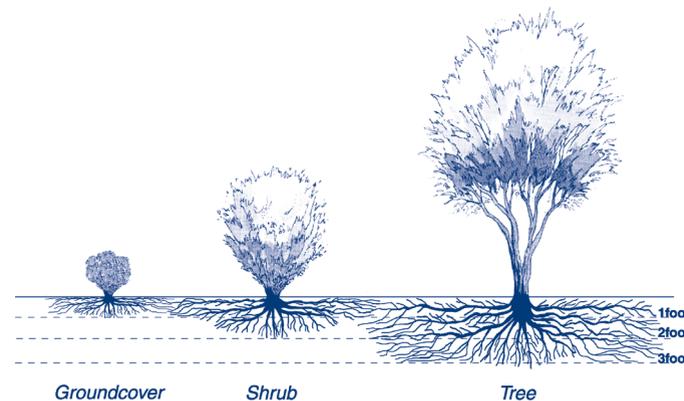
Learning to water efficiently and effectively is easy. This brochure provides some basic guidelines on how to properly water trees and shrubs.

Where should I water?

The soil surrounding the plant's roots, called the "root zone," serves as a storage tank from which the plant draws moisture and nutrients. Most trees and shrubs shed rain water to the "drip line" (the area below the edge of the plant's canopy), much like an umbrella. The most active water absorption area is at the drip line and beyond, not close to the trunk. This is where you should water. Most of the roots spread 1 ½ to 4 times as wide as the plant's canopy.



Suggested Watering Depth for Different Types of Plants



How should I water?

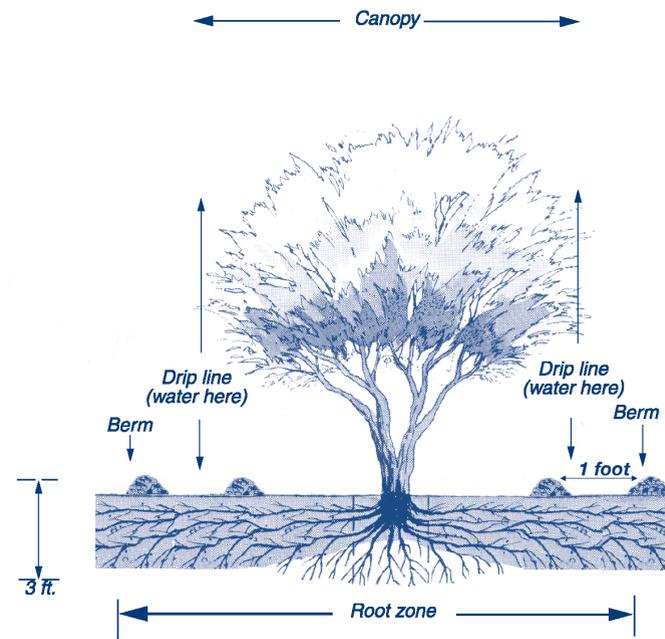
Drip Systems—Most drip systems do not have enough well placed and spaced emitters. Add emitters and move out to the drip line as the plants grow.

Bubblers—Be sure the basins are level and are a 1 foot wide "donut" just inside and outside the edge of the canopy. Do not water near the trunk.

Soaker Hoses—A perforated hose is a good device for watering, but can plug and emit water in a random pattern.

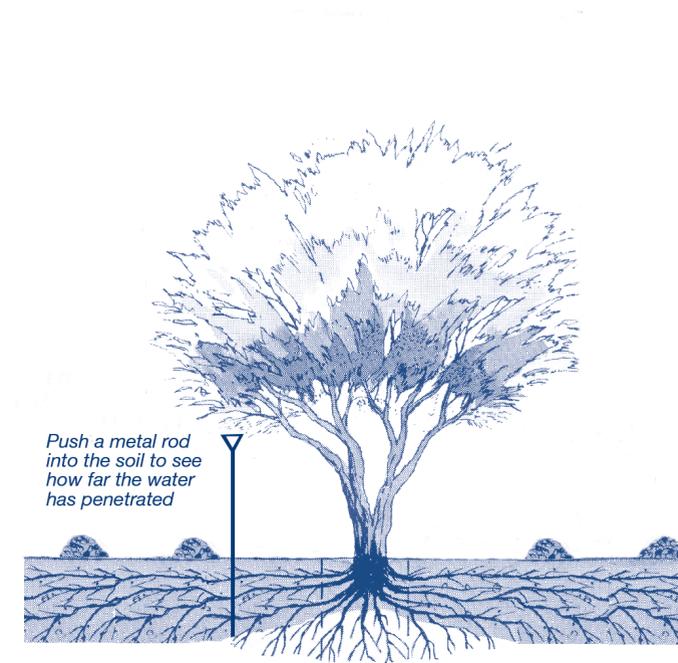
In-Line Drip—Poly tubing with drip emitters inside.

Sprinklers—Cover a large area but can be inefficient because of wind and evaporation. Not recommended for watering trees and shrubs.



How much should I water?

Be sure to water the root zone to the indicated root depth every time you water (see table below). How will you know this? Push a "soil probe," a smooth rod (¼ to ¾" diameter), into the ground soon after you irrigate. The soil probe should easily slide through the wet soil and become difficult to push when reaching dry soil. Watering deeper than the root zone only means you are wasting water.



Typical Root Zone Depth for Mature Plants

Lawn and Garden	6 - 12"
Shrubs	12 - 24"
Trees	18 - 36"

How often should I water?

Water consumption rates vary greatly among plant species. High water use plants like cottonwood and willow trees that grow naturally along waterways need much more water than established arid region plants. A good rule of thumb is to water when your soil probe won't penetrate the ground more than 3 to 4".

Root depth

Root depth has a major impact on how often plants need water. Deeper rooted plants need less frequent watering. Encourage a deep, drought-resistant root zone by watering deeply, infrequently and at the drip line where many fine roots can absorb more water.

How long should I water?

The amount of time needed to sufficiently water your plants depends on how much water your irrigation system delivers, root zone depth, weather, and type of soil. Monitor how quickly the water soaks into the soil using a soil probe. Remember, you want water to reach the full depth of your plant's root zone, but no deeper. Once you have determined how long it takes to fill the root zone, try to irrigate the same amount of time when watering.

Seasonal plant water use

