

Tree Watering 101

How does excess water affect trees?

Soil saturation occurs when water fills in the spaces between soil particles that are normally occupied by air. When this happens, oxygen is no longer available to tree roots for respiration. If this occurs frequently, roots will eventually suffocate and die. Wet soil can also create favorable conditions for root rot organisms. Some trees such as bald cypress, river birch, and sycamore are tolerant of wet soils. In general, however, it is best to keep soils moist rather than wet and saturated, and to let them dry out some in between watering.

How can I tell if my tree is getting too much water?

Some symptoms of overwatering or prolonged flooded soils include:

- Yellow leaves, usually starting on the lower branches at the inside of the canopy
- Wilting of young shoots
- Green leaves that are brittle
- Black or dark brown roots (symptoms of root rot)
- Fungus or algae growing on the soil surface or on surface roots.

How often should I water my tree to avoid overwatering and drought stress too?

Generally, trees should be watered about once a week during the growing season. However, this really depends on weather conditions such as rainfall and temperature. Sometimes a tree may need more or less than this recommendation. The best way to judge water needs is by checking the soil around the tree. Dig into the soil about 1" deep and feel for moisture. If the soil is completely dry, it is time to water. If it is moist, wait another day and check again. If the soil is wet, there are probably several days to go before the tree needs more water. Watering in this state can lead to anaerobic soil conditions (where oxygen is excluded from the soil) and this can cause serious harm to trees over time. When it comes to watering (or planting for that matter), always [research the tree species](#) in question. Different species have very different water needs and some trees grow very well in conditions that others cannot tolerate.

How much water should I apply to my tree with each watering?

A general rule for watering trees is to apply 5 gallons per inch of trunk diameter. This is best applied at a slow rate. To encourage outward root growth, water at the edge of the root ball or at the drip line rather than right next to the trunk. An exception for this watering location is for newly planted trees that have not yet established any roots

outside of the planting hole area. They will benefit from watering at the drip line or edge of the root ball too, but it's a good idea to water on top of the root ball in addition to that. For established trees, watering only next to the trunk can encourage circling roots which can girdle and suffocate the tree later on. Deep watering/watering in the appropriate amount is important because it encourages deeper root growth. Roots generally grow within the top 18" of the soil, but when watered shallowly (or in too little quantities) many roots will only grow in the top 6". Deeper roots contribute to drought hardiness and anchorage strength.

What are some methods for watering trees?

- Automatic irrigation systems- drip application and bubbler heads
- Soaker hoses
- Regular garden hoses turned on at a slow rate
- Irrigation bags such as the Treegator or Oozetube. The bag is attached to the tree, filled with water, and water percolates slowly into the soil from small holes in the bottom of the bag.
- If trees are in a maintained lawn, water them separately from the grass (unless your turf watering technique is infrequent and deep as is optimal for trees). Avoid keeping soil surrounding the roots wet.

What can I do to water my tree most efficiently?

- Apply mulch around the tree under the drip line to conserve moisture.
- Water late at night when evaporation rates are lowest.
- Control weeds that compete for the water resource.
- Create a basin around the tree by building a berm at the drip line to keep water from running off.
- Do not use spray head sprinklers, since a great amount of water is lost to wind and evaporation through this method.

For more information about the relationship between trees and turf grass, view the International Society of Arboriculture article entitled [Trees and Turf](#).