

Sustainable Landscaping – Tree Watering

By the time this article reaches you, we will be in the heat of the summer and there is a good chance that your trees and shrubs will be experiencing some level of moisture stress, **which may be hard to believe after the prolonged rainy week we experienced in mid-May**. Moisture stress is something that most established and healthy trees can tolerate for short periods of time without long term implications. However, the real concern is for newly planted trees and shrubs that have not yet become established. You may be asking yourself, what does “established” actually mean? An “established” tree or shrub has regrown roots lost during nursery production and is now better able to withstand moisture stress. Most landscape trees take 2-3 years to become established after planting, so watering during that period is the critical.

When to Water

Watering frequency depends on rainfall received and soil drainage. Sandy soils (not typical of Lake Ridge) are quick draining and doughtier than a typical loamy or clay based soil, which are more common in our area and better at retaining moisture, so require less frequent watering. Not providing enough water is harmful to trees, but providing too much water is bad as well. Over watering is actually a common mistake. When a tree is over watered, the pore space normally filled with air becomes filled with water, which does not allow oxygen to penetrate the soil. **Over watering is harmful because an ideal un-compacted soil contains 50% pore space. This 50% pore space consists 25% filled with air and 25% filled with water. The remaining 50% of the soil contains 45% minerals and 5% organic matter.** This hinders respiration, which can kill root tissue and damage trees. A damp, but not soggy soil that is allowed to dry for a short period, will allow adequate oxygen to fill 25% of the pore space.

Generally speaking, non-established trees should be watered when we do not receive at least 1-1.5 inches of rain over a week during the active growing season and into dormancy (March 15 – November 30). Soil moisture can be checked by inserting a trowel to a depth of at least 2 inches under the drip line of the tree. If the soil does not feel moist to the touch, it is likely that the tree needs water.

How Much to Water

Frequent light watering should be avoided, because it does not reach into most of the rooting zone and may cause roots to actually grow shallower. Instead, water deeply once a week. Avoid watering the leaves, which can cause fungal diseases. Watering systems range from automatic tree irrigation systems to watering bags/doughnuts to a simple garden hose. If using a garden hose, turn it on and let it run slowly under the drip line/canopy of the tree, moving it around occasionally. At a medium pressure it will take about 7 minutes to produce 15 gallons of water. Your flow rate can be verified using a bucket with calibrated increments. It is recommended to build a small doughnut berm around the tree or create a slight depression when planting to help hold water over the root system. This should be at least 3 times as wide as the root ball.

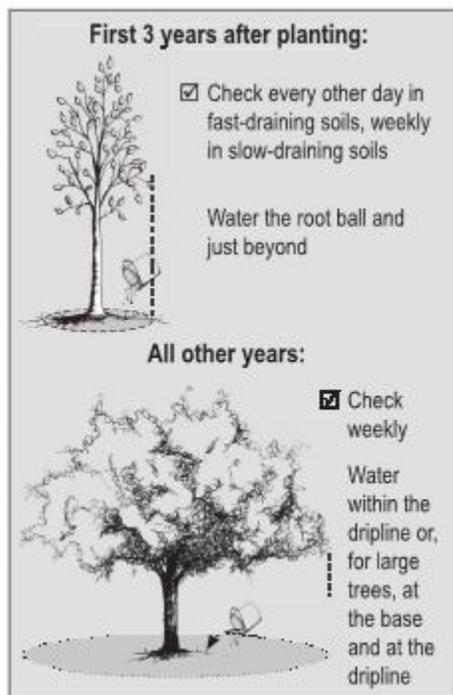
Mulch

Adding a layer of organic mulch, such as shredded hardwood helps the soil retain moisture longer. Apply a 1-2 inch layer of mulch over at least the entire dripline of the tree, keeping it 3 inches away from the trunk.

Established Trees

Once trees are established, they are much better able to tolerate moisture stress than non-established trees. However, watering trees during periods of drought can become important for established trees, especially ones that are more drought sensitive. This can be done in the same manner as with non-established trees, but will require a greater volume of water for a longer period, depending on the size of the tree. It should be done every 10-14 days within the entire dripline. **It may be easier to use a sprinkler, but is not necessary to water the leaves, which so a soaker hose or a hose left open may be a better option. If using a sprinkler, a small container can be placed under the dripline. Once it fills with 1-2 inches of water, there should be sufficient moisture in the root zone.**

The US Department of Agriculture has drought map that is released once a week. This map is broken down by county and can be a good indication if our region is experiencing any level of drought. <http://droughtmonitor.unl.edu/>



US Forest Service Tree Owners Manual.