

Saving Your Trees in the Drought



University of California

Agriculture and Natural Resources

UCCE Master Gardener Program

We are in our fourth year of drought and everyone is trying to save water. Home gardeners have put off planting new plants; many are replacing their lawns with drought tolerant plants or just letting the lawns go dry. But what about our trees? Can they survive the drought? It's relatively easy to replace a lawn, a perennial, or a rose bush that has succumb to the drought. But it can be very expensive in time and money to replace a mature tree.

Trees should be a top priority as you make decisions about where to apply what little water you have for your landscape. Trees are more than a thing of beauty in our gardens. They provide food and habitat for birds and other animals. Trees provide summer cooling not only by providing shade but also with evaporation. As the tree breathes it releases moisture to the air and that cools the surrounding area. This cooling is important to reduce the urban heat-island* effect in our cities. Trees absorb carbon dioxide and other pollutants out of the atmosphere and put out oxygen. A healthy well-placed tree can add thousands of dollars to the value of your property. And if you grow fruit trees they provide food for you and your family. Trees are worth saving!



Monitor Your Tree

The first thing to do is pay attention to your tree. Where is it in your landscape? Is it in a lawn or flower bed that you've stopped watering or is it near large concrete surfaces or a south facing wall so being subject to a lot of heat. Look for signs of drought stress. These signs include:

- Wilting or drooping leaves that do not return to normal by evening
- Curled or chlorotic (yellow) leaves that may fold or drop
- Foliage that becomes grayish and loses its green luster
- New leaves that are smaller than normal

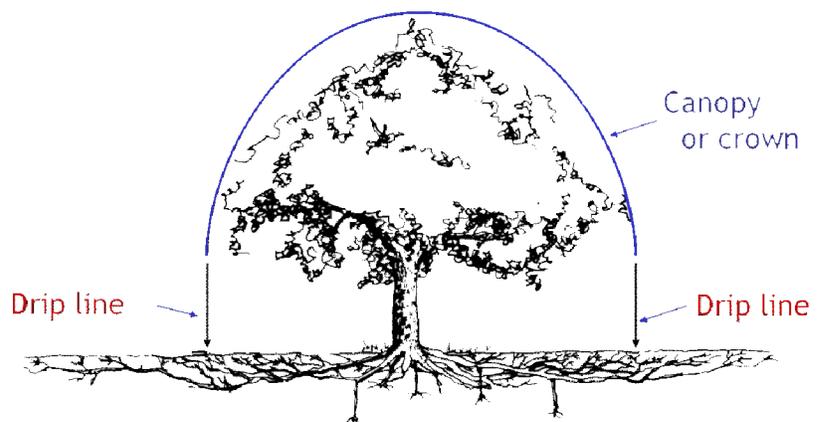
“Recognizing early signs of drought stress is important because irreversible damage can occur that no amount of watering will correct.” states Janet Hartin, UC Cooperative Extension advisor in a recent UC Agriculture and Natural Resources article, Save Water, But Also Save Trees During a Drought. Trees that are stressed are much more susceptible to diseases and pests. Deep irrigations several weeks apart during the summer can help keep your trees alive.

When, How Much, and How to Irrigate

Several factors will impact how much water your trees will need. The kind and size of your tree, its placement - heat absorbing surfaces nearby such as parking lots, large concrete surfaces or south and west facing walls can cause increase in water use while shady areas will reduce water needs. Temperature - trees in Livermore will need more water than trees grown near the bay. Everywhere in the Bay Area the peak demand for water by trees is in July. To water effectively it helps to know your soil type. Water drains through sandy soil quickly so you may need to water more frequently. Clay soils holds on to water and it can take several hours for it to reach deep in the soil.

A tree’s roots spread out from a tree to out past the tree’s canopy and the area at the drip line is where the most absorptive roots are located. Depending on the tree’s irrigation history the roots of a mature tree will go down into the soil 2-3 feet. Trees that received their water through lawn irrigation tend to have shallow roots and are more subject to drought stress.

Drip irrigation can be a very effective way to apply enough water to get to the roots. Soaker hoses work well too. These methods prevent runoff and allow the water to soak deep into the soil. Water should not be applied at the trunk.



Use a trowel or soil probe to dig down 8 to 12 inches. If the soil is crumbly - it's dry. If it is wet, sticky or can form a ball it has still has enough moisture. Wait until the soil reaches the crumbly state before watering.

If you have been providing your tree with regular irrigation and want to stop or reduce it do so gradually to let your tree adapt.

Resources such as Sunset Western Garden Book or Plants and Landscapes for Summer-Dry Climates provide water requirements for specific trees.

Young Trees

Young trees take time to get established and a couple of years after planting the roots may just be entering the native soil surrounding the root ball. They will need regular water to survive. The [Sacramento Tree Foundation](#) suggests drilling a small hole (1/8") in the bottom of a bucket. Place it near the trunk of your young tree. Fill the bucket with water you've collected from waiting for the water to get hot in your shower. The water will slowly drip into the soil. A young tree may need 10-15 gallons per week to get through the summer.

Fruit Trees

With early season irrigation deciduous fruit and nut trees can be kept alive. For crop production these trees will need regular irrigation from bloom to harvest. With reduced water there will be less and smaller fruit. Citrus need adequate moisture to set fruit then a regular supply to produce good quality fruit.

Other Steps You Can Take

- Do light pruning only. Heavy pruning tends to stimulate growth which will increase a tree's water demands.
- Minimal Fertilizer - fertilizer will also stimulate growth. If you fertilize use a low nitrogen fertilizer.
- Less water will be loss to evaporation if you irrigate early in the morning or in the evening.
- Apply a 3-4 inch layer of organic mulch such as bark. The mulch will reduce evaporation, insulate the soil and help keep down weeds. Keep the mulch several inches away from the trunk of the tree to prevent rot.
- And pull weeds. Weeds compete for water. Some have tap roots that go very deep in to the soil.

Be aware that if you have native trees like oaks that are established and adapted to dry summers adding summer water could cause them harm especially if you have clay soil. If you have questions about your large,

native trees or concern about the health of any tree, contact a Certified Arborist to assess your specific situation and individual tree needs.

*An urban heat island (UHI) is a city or metropolitan area that is significantly warmer than its surrounding rural areas due to human activities. Our streets, parking lots, and buildings all contribute to creating an urban heat island.



References: Save Water, But Also Save Trees During a Drought

<http://ucanr.edu/index4.cfm?blogpost=16005&blogasset=60503>

Sacramento Tree Foundation Drought Care for Trees
<http://sactree.com/drought>

Got home gardening questions?

The Alameda County Master Gardener's help line is staffed Monday, Wednesdays and Thursdays from 10 to 1, 510-639-1371 or email us at anrmgalameda@ucanr.edu If emailing please provide the following information:

- Name, phone number and city
- Problem description - name of plant if applicable, when the problem began, cultural history such as watering, fertilizing, pruning, pesticides, etc.
- Photographs of the problem, if possible