



Save Drought Stressed Landscape Trees: Farewell Lawns, Fare Better Trees!

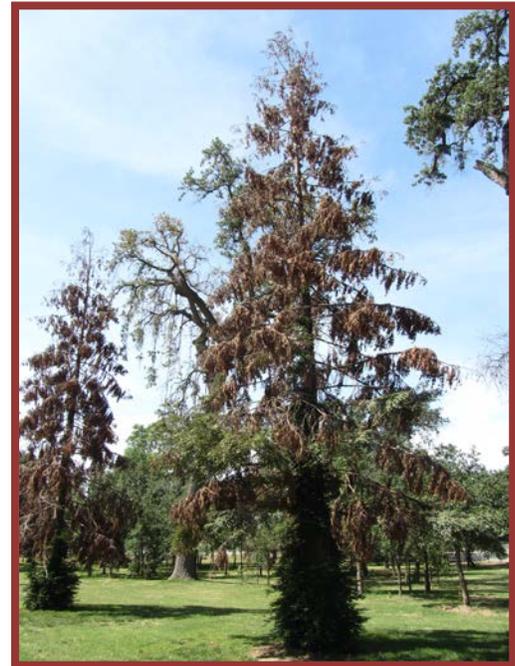
by Cathy Ronk, UC Master Gardener

DROUGHT STRESS...we're all feeling it: dirty cars, fallow fields, hurried showers, brown lawns, and now our landscape trees are suffering, too. Without trees, our ecosystem changes, creating a hotter valley with less oxygen, wildlife, privacy, and beauty. Because trees are also a valuable investment of money and time, priority should be given to trees when water supplies are limited.

“Mature landscape trees are worth saving! Recognizing early signs of drought stress is important because irreversible damage can occur that no amount of watering will correct,” says Janet Hartin, a Horticulture Advisor with UC Cooperative Extension. Most residential landscape trees are surrounded by lawns. When residents eliminate or reduce water for lawns, trees don't easily adapt because they never developed extensive, deep roots due to constant shallow irrigation.

Check trees regularly for common symptoms of drought including:

- wilting or drooping leaves that do not return to normal by evening,
- curled or yellow leaves that may fold or drop,
- foliage that becomes grayish and loses its green luster, or is already brown,
- new leaves that are smaller or stem sections that are closer together than normal.



Drought stressed redwood

Drought-stressed trees are more susceptible to damage from diseases and insects, especially during extended years of drought, as we're experiencing.

STRATEGIC TIPS

1. **PREVENT SOIL COMPACTION** around trees. Compaction restricts water movement and decreases oxygen needed for tree growth.
2. **REMOVE COMPETITION** from other plants by eliminating turfgrass and weeds under trees. Plants compete for water, nutrients, light, and space.
3. **APPLY ORGANIC MULCH** in a circle around the tree, 2 to 6 inches thick (depending on the material) and at least 3 feet out. Spread mulch like a donut, not like a volcano, by leaving an 8-inch circle clear around the trunk to discourage rot. Avoid using rocks as mulch since they absorb heat and stress roots.

4. **AVOID** pruning, fertilization and any other maintenance that encourages tree growth, which results in an increased need for water. Prune only to remove dead and diseased wood, dangerous branches, and suckers from the base of the tree.
5. **WATER** trees slowly and deeply to a depth of 2 to 3 feet. To check how deep the water is penetrating, push a metal rod, thick wooden dowel, soil probe, or straightened coat hanger into the soil a day or two **AFTER** watering. It will easily move through moist soil, but become difficult to push as the soil becomes drier, deeper down. Young trees need more frequent irrigation than mature trees. “You need to monitor the situation and stay in tune with your trees,” recommends arborist Roger Poulson.



Drought stressed oak

HOW TO WATER A TREE

The tree roots of a mature tree are found in the top 3 feet of soil and extend **OUTSIDE** of the tree’s canopy. This outside area of the tree roots is the most active water absorption area. Therefore, drought-stressed trees should be watered slowly, deeply, **AND** widely. Encircling a tree with a soaker hose is an inexpensive option. Space each circle ring 1 foot apart when wrapping the rings around the tree, starting about 2 feet from the trunk.

TREE RING IRRIGATION CONTRAPTION

A more precise method of water delivery is a unique watering system called the Tree Ring Irrigation Contraption (TRIC). It was recently developed by the California Center for Urban Horticulture (CCUH) at UC Davis, UC Division of Agriculture and Natural Resources (ANR) and Ewing Irrigation. TRIC uses previous data collected from Netafim drip tube tables and from the Irrigation Association Landscape Irrigation Auditor manual. Homeowners can put the kit together for about \$100 for one large tree.

When you include the TRIC Calculator, you take the guess work out of how long to irrigate. Dr. Loren Oki, UC ANR Horticulture Specialist created a “plug-in” calculator that helps determine the run-time for the device.

Learn more about the Tree Irrigation Contraption and Calculator by visiting the CCUH website: <http://ccuh.ucdavis.edu/public/drought/tree-ring-irrigation-contraption-tric-1/tree-ring-irrigation-contraption-tric>. A slide show presentation helps outline the entire process.

COAST REDWOOD TREES

Many tree varieties are showing signs of stress, particularly trees that are not native to our valley. Coast redwoods are similar to “a fish out of water” in the San Joaquin Valley. Our Tulare/Kings Master Gardener Ornamental Tree Guide lists them as “Problematic Trees: Proceed with Caution or Do Not Plant” because planting in the valley is risky. Coastal redwoods prefer acid soils, cool temperatures and high humidity in summer (the **OPPOSITE** of valley climate). Extreme salt sensitivity causes brown leaves. Trees typically perform well for 8-10 years; they require high amounts of summer irrigations; and they almost always show summer stress.

New studies by UC Berkeley Forest Experts show that even Redwoods in their native region (a narrow strip of coastal California from parts of Monterey County to the southwestern border of Oregon) are showing signs of distress due to the extensive drought. Several cities on the coast already use recycled water for landscape irrigation, but it usually has a higher salt content than well water, so they don’t use it on the redwoods.

Redwoods locally can experience die back during the heat of summer but often rebound in winter. However, our winter temperatures have also been increasing, so the trees don't completely rebound. Winter and spring rains, which are slightly acidic, not only provide distressed redwoods with moisture, but also help leach harmful salts away from the root zone.

Apply the above **Strategic Tips** to your redwoods. In addition, allow the branches to grow all the way to the ground to shade the roots. Redwoods lack a tap root and have a very wide network of fibrous surface feeder roots.

OAK TREES

Even some of our valued oak trees are exhibiting effects from the drought. William Tietje, Natural Resource Specialist with UCANR suggests these three options: deep water, mulch, or do nothing.

“If the soil under your oak 12 to 18 inches down is dry and crumbly, then the oak is out of water. A deep watering will invigorate the drought-stressed tree,” says Tietje. Water with a low flow that percolates into the soil. Do this once or twice during the summer.

The best mulch is the oak's natural leaf litter, but other plant-base mulches can be used. Cover the area under the tree canopy at least out to the drip line and keep mulch away from the trunk.

It may be best to do nothing if your tree appears healthy, with dense and green leaves in most of the canopy. Blue oak and valley oak are deciduous (drop their leaves in winter). Both can respond to drought by undergoing leaf browning and leaf fall as early as July. This is a natural, water conservation response. The tree is likely not dead and should be fine.

June 11, 2015