

# 68 Days of Summer

by Mark W. Smith, RLA, ISA

*Relocated live oaks at Mueller in Austin, Texas*

**D**ry as a Bone! That's a sentiment we've heard a lot down here in Central Texas as the drought of 2007-2009, one of the worst in Austin history, drags on. We're used to heat, and our trees are too, but temperatures exceeded 100 degrees on 68 days this summer and August was the hottest month ever recorded in this area. The damage caused by a drought this severe is difficult to quantify but, in the end, droughts can cause millions of dollars worth of damage to trees and destroy the visual beauty of our natural landscape.

Droughts of this magnitude pose serious challenges for trees. Considering the immense aesthetic and economic value that trees provide and the high cost of replacements, a concerted effort to keep them healthy during drought just makes good sense. Towards that end, it's important to work with landscape architects, arborists, and landscape contractors that have experience dealing with drought. RVi has been involved with many projects during drought in which historic trees have been preserved, large existing trees have been relocated, and of course, countless container-grown and B&B trees have been planted.

The massive 400 year-old live oak at the north entry to the *Blanco Vista Master Planned Community* (developed by Carma Texas; planning and design by RVi) in San Marcos, Texas is a wonderful case in point. Located at the main entry to this 550-acre community, the tree serves as a rooted reminder of the property's past and, as an icon, is instantly associated with Blanco Vista. Situated in a generous median, construction of Blanco Vista Boulevard disconnected the tree from its natural source of water. To compensate for the loss and ensure the tree's continued health, supplemental irrigation was provided, an arborist was consulted to provide monthly monitoring of the tree, a mulch layer has been properly maintained below the dripline, and a carefully controlled fertilization program was developed specifically for the tree. Today, as the drought relinquishes its hold on Central Texas with early

fall rain and cooler temperatures, the tree enters the autumn season in absolutely beautiful condition.



*400 year-old live oak at the entry to Blanco Vista*

## **Preventing Drought Damage**

We can't prevent droughts but we can manage tree care to minimize the damage they cause. Regrettably, the approach I see all too often is to just not worry about it. There's a persistent myth that tree roots penetrate the soil so deeply that they find plentiful water even in times of drought. Not true! For most trees, the bulk of their roots are in the top 8"-18" of soil, making them very susceptible to changes in soil moisture. Consequently, most preventative measures are best focused in and around the root zone. Let's take a look at some of the steps we can take to minimize drought damage:

### **Water**

Water is THE most important component of any drought survival plan. Unfortunately, water for outdoor use is also the first resource to be restricted during a drought. What can we do to utilize our limited water resources most effectively?



Preserved trees at Central Market in Austin.

- Understand and work within established water restrictions.
- Establish watering priorities: **Recently planted trees** should be your highest priority. They go through tremendous stress during installation and are under duress even without a drought. On new projects with irrigation systems, install irrigation bubblers (ideally two per tree) for each tree... spray heads will not apply enough water to the root zone where it is needed. **Protected/Preserved existing trees** are well-established and are better able to deal with drought but are often cut off from their traditional surface or subsurface water sources by grading and new construction. Supplemental water must be provided. Install irrigation bubblers or temporary equipment, such as soaker hoses, to provide a reliable source of water. **Lawns, groundcovers, and shrubs** should be a lower priority.
- Water before 7am or after 7pm to minimize evaporation.
- Slowly soak the root zone of every tree within its dripline or its watering saucer to promote percolation and minimize runoff.
- For trees in isolated areas, such as in large parks or conservation easements, consider watering trucks with special tree watering attachments.
- Monitor tree health regularly to confirm that all trees are receiving adequate water.

### Mulch

Organic mulch placed in the root zone provides numerous benefits for trees during droughts. Mulch retains soil moisture in the root zone, keeps roots cool, and controls weeds that might otherwise compete for water. As mulches decompose, they also add nutrients to the soil and improve its structure.

- Maintain a 3"-4" layer of organic mulch within the dripline of existing trees.
- Mulch beyond the edge of the planting hole on newly planted trees.
- Keep mulch 3"-4" away from the base of the trunk to reduce likelihood of insect infestations and disease.

### Maintenance

Maintenance is an important on-going process that starts before droughts occur and continues after they end. A regular maintenance program maintains a tree's healthy vigor and best prepares it for drought.

- Monitor weather and respond early to drought conditions.
- Consult with a landscape architect and/or arborist to prepare a 12-month tree care program for watering, mulching, pruning, and fertilization.
- If you already have one, adjust your maintenance program for drought.
- Monthly visits to assess tree health, particularly for existing trees during construction periods, can help ensure that protection is in place and that the maintenance program is effective.

### Pruning

Removing live branches and foliage to compensate for root loss causes trees to expend energy at pruning cuts and the loss of foliage reduces the tree's ability to grow when growing conditions return to normal.

- Avoid unnecessary pruning during droughts.
- Prune only to remove dead, broken, insect-infested, and diseased branches that may weaken the tree. Branches that may be damaged by construction equipment at project sites may also require trimming to avoid physical damage.

### Fertilizers

Excessive fertilizers in the root zone actually draw moisture out of the roots, resulting in fertilizer burn if adequate water is not made available. Fertilizers also encourage top growth and increase a tree's need for water at a time when little is available.

- Avoid applying fertilizers during droughts.
- Fertilizers, if used below a tree's canopy, should be in a slow-release form applied only at recommended rates.
- Micro-nutrients, if needed, should be applied by an Arborist only as required.

### Herbicides and Pesticides

Herbicides used in the lawn under the tree's dripline migrate down to tree roots and can be harmful to drought-stressed trees.

- Avoid heavy herbicide applications during droughts.
- Use pesticides to treat for infestations only as needed.

Until that wonderful day in the future when cloud seeding and other weather modification techniques predictably bring us all the rain we need, droughts will just be something that we have to contend with. With a good understanding of how trees are affected by drought and how they react, we can be better prepared to promptly diagnose symptoms and develop effective tree care programs.

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