



*THE KISSING TREE: When a convenience store owner planned to uproot a 150-year-old tree to make room for an entrance, a grassroots community effort brought the issue to the attention of Harris County Precinct 4 Commissioner R. Jack Cagle, who not only prevented the tree's destruction, but also purchased the surrounding four acres to create Kissing Tree Park. ([the rest of the story](#))*

# LOSING LEAVES

## A POTENTIAL OAK PROBLEM

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In order to address any tree problems, it is critical to first understand tree decline.



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When identifying a cause for progressive loss of tree health in the urban landscape, it is important to note that insects and fungi are mostly secondary problems on already stressed trees. While in some instances insects or fungi may be alleviated, the tree will continue a downward spiral if the primary factors, typically caused by a range of poor site conditions, are not addressed.

Overtime, causal factors and processes ranging from nonliving and living sources predispose trees into a slow-decline which may unfortunately not become visible to the untrained eye until it is too late!

Imagine a large healthy oak suffering chronic construction damage from root loss with trunk wounds and compacted soil while progressively diminishing its ability to uptake nutrients and water over the years. The homeowner heavily waters long after damage has been done, but the tree's vascular system fails to absorb the water.

A root rot fungus like *Armillaria* becomes established from the waterlogged soil conditions, and a storm event knocks the tree down from lack of supporting roots. How many people could look beyond the honey-colored fruiting fungal bodies on site and trace back the cause to construction?

Further, these causes of decline manifest differently across regions and species in urban and forest applications. For example, the red oaks, such as the water oak species (*Quercus nigra*), are more severely damaged by drought than the white oak group. This type of damage has been observed as an uniform pattern, particularly amongst groups of oaks as they readily graft between roots while sharing common soil conditions.

Severely stressed deciduous species may drop all their leaves once some moisture becomes available to complete the process of leaf abscission. It is also possible that heat stress will trigger early dormancy.

On the other hand, consider also that leaf drop is expected from February to early March for the live oak, belonging to the white oak group, with its semi-evergreen qualities. Upon a closer look, this may misconstrue diagnosing potential diseases until leaves fully form later in spring.

Overall, drought has played a role in triggering decline episodes of the Coastal Plain forests of the South. In fact, oak decline in North America has been a topic of concern since the 1950s. Symptoms include:

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- Sparse, undersized, or chlorotic leaves
- Death of scattered twigs
- Progressive dieback of branches and limbs
- Strip cankers on trunks
- Adventurous sprouts on the trunk
- Large limbs following dieback
- Slow growth as a result of depleting photosynthetic reserves

Common factors that stress the Quercus species particularly in urban environments include but are not limited to:

- Root death caused by soil changes from construction
- Weed and feed chemical injuries
- Improper planting methods or poor species selection,
- Drought
- Nutrient deficiency (backfill alkalinity creates iron deficiencies)
- Salinity stress (built up irrigation salts)
- Root rots caused by Ganoderma or other fungi
- Phytophthora causing cankers on oak trunks and root collars.

When it comes to general tree health, it is safe to say that a tree has long been declining before someone says that it has suddenly died overnight.

For the best care, it is important to apply good cultural practices for planting, pruning, mulching, fertilizing, and irrigating you tree. Seeking further assistance from Certified arboricultural companies will provide the proper tree care by professionals who are trained and knowledgeable for meeting tree care needs.

**Source: Sinclair, Wayne A, and Howard H Lyon. Diseases of Trees and Shrubs. 2nd ed., Cornell University Press, 2005.**