

Specifics On Tree Limb Breakage During Wind And Ice Storms in the Southern Cross Timbers

There are two major factors to consider in determining the likelihood of tree limb breakage in our current tree repertory and arrangement in the Southern Cross Timbers during severe weather.

First -

The tensile strength in wood is different in every species of tree yet the pressure of weight and wind on tree limbs created by these occurrences on a trees' diffuse or dense canopy play a significant role in whether a limb will remain in tact or break during severe weather.

Second -

The tensile strength of wood is effected by whether the tree and its specific species is taking in the optimum amount of wood water required for that species of tree to maintain its characteristic tensile strength.

In 'unrestored' Nature Preserves in the Southern Cross Timbers the trees by population are – the post oak tree, the cedar elm tree, the black jack oak tree, the hackberry tree and the honey locust tree. There are other native oaks in riparian areas and pioneer species trees in these woodlands yet they are much less in population.

Of the above trees listed the post oak wood is the strongest with a life expectancy of 450+ years if trees of other species are not allowed in their root zones.

The second strongest tree wood listed is the black jack oak tree. Its life expectancy is longer than the hackberry and honey locust and has much less high surface root density characteristics than the cedar elm, hackberry or honey locust trees.

We know through early explorers journals that the Southern Cross Timbers Woodlands were populated with trees that were primarily post oak trees and that what was on the prairie floor was primarily native prairie grass.

The early explorers writings also made us aware that lightening strike fire occurred every 2 to 14 years and that the thick cork like bark on the post oak trees allowed these trees to withstand the heat from fire better than trees with thin bark that would ignite at a lower temperature.

It was lightning strike fire that kept the trees with thin bark and high surface root density characteristics, cedar elms etc., to a low population allowing the post oak, with its small diameter and diffuse root system to thrive.

We know this through the written observation the early explorers gave us and we also know this through more recent observation of a higher population of trees with thin bark and high surface root density characteristics, some pioneer species, allowed to grow because of fire suppression and watching the native post oak trees' roots to rescind from the more aggressive roots of these other species of trees growing within the post oaks root zones causing the post oak tree population to decline.

These 'other species' of trees would only be in *much* smaller numbers if lightning strike fires were still allowed to burn or if managing the land emulated the burn off from the natural fires.

These trees, with high surface root density characteristics, absorb ground water through their roots more quickly and disproportionately than the native post oaks creating chronically dry soils and leave little moisture in the soils for the post oak trees to have enough wood water to maintain the optimum and strong tensile strength post oak trees and their limbs are known to have.

Post oak trees, densely populated or not, that do not have trees of other species within their root zones in nature areas almost always do not have a tree limb or tree trunk breakage issue during wind or ice storms because of their diffuse canopy and the post oak trees' roots are generally able to grow as nature intended in this region; unfettered.

The issue described above in nature preserves in the Southern Cross Timbers with native trees and pioneer species trees is also a problem on homeowner lawns, managed parks and commercial property.

The larger the trees become with incompatible root systems, even with irrigation systems, the post oak roots will begin to rescind causing loss of wood water and loss of wood tensile strength in the post oak tree wood.

It is typical to see trees with dense canopies – the live oak, red oak, cedar elm tree, etc. to have limbs that break during wind and ice storms because the wind catches the dense small limbs and leaves, and the weight from ice or snow creates enough pressure to break a limb.

Proper management of post oak trees by insuring post oak trees have healthy root systems, ***by reducing tree roots from 'other' species within their root zone***, will protect the long term health of our native woodlands of the Southern Cross Timbers.

City of Arlington, Texas Tree Ordinance Proposal

In considering to further regulate tree inventory and tree canopy on public and private property here are a few things to consider -

The City Of Arlington, Texas Parks and Recreation Website should offer information on the virtues and *how to take care* of the native Post Oak Tree.

Because municipal tree inventory and canopy is linked to funding some of the funds gained by regulation should be ear marked for establishing a number of Native Post Oak Tree Orchards in Arlington to be managed by the Parks Department.

Information should be available to coach citizens on the best place to plant the trees in relation to homes, commercial property and their improvements.

The City Of Arlington and the Parks Department should have available these Post Oak Trees for citizens to plant on their private and commercial property.

The Arlington Parks Department and City Hall should *'get the word out'* to homebuilders, remodelers, homebuyers and current homeowners that of all species of trees Post Oak Trees are less likely to heave concrete driveways, sidewalks and home foundations.

The Arlington Parks Department and City Hall should *'get the word out'* to homebuilders, remodelers, homebuyers and current homeowners that of all species of trees Post Oak Trees are easiest on lawn turf because of their diffuse, small diameter root system.

Post Oak Trees' characteristics help to insure the integrity of homes, commercial property and the improvements on their property.

The successful results of this effort will increase property values in Arlington, Texas.

Many trees currently growing in Arlington, Texas are trees with high surface root density characteristics. These trees are growing on private lawns, commercial property and public parks.

Many of these high surface roots density characteristic trees on private lawns and commercial property have filled the turf area with so many heavy roots the lawn won't grow and the tree roots are cracking the concrete improvements in close proximity.

Telling a property owner that they cannot remove a tree on their property is inappropriate for many reasons including the above reason.

Removing a tree costs money. Grinding the tree stump and roots costs money.

It may not be in the homeowners' or commercial property owners' best interest or budget to remove a tree and grind the stump at same time.

In many cases all of the tree roots are not removed after a tree is removed and the tree roots, along with their carbohydrates, need to be decomposed before adding another tree for the new trees' health and for the health of the adjacent soil and lawn turf.