Lightning Hits A Favorite Tree!

When we first bought our Hill Country property, nearly 20 years ago now, we spent a lot of time visiting the property and planning where the house would be and how it would fit between trees. There was a huge old live oak just off what we planned to be our bedroom window. I called it our Louisiana Tree because it reminded me of so many of the trees I saw in Louisiana when I lived there years ago.

We eventually decided to build the house at another location, but I have frequently visited that tree on my many walks over the years, so it is still one of my favorites.

But a few days ago on a walk I noticed some missing patches of bark and on further inspection it became obvious that the tree had been struck by lightning. Patches of bark from high up on a limb down the trunk and even on one of the flare roots at ground level had been blown off revealing reddish patches and some pieces of bark hanging by fibers. Further up the tree on one side I could see that all of the leaves had already turned brown. The other half of the tree appeared to be fine.

When lightning hits a tree, the energy frequently travels down the moisture, sugar and mineral containing parts of the tree, the xylem and phloem channels just under the bark. The energy of the lightning bolt frequently boils (vaporizes) the moisture in these structures causing an explosion which blows off the bark on the outside. It also destroys the structures that conduct water up and down the tree from the roots to the leaves, at least along the path of the lightning bolt.

My hope is, since the leaves on about half of the tree appear to still be OK, that those xylem and phloem channels are still functional and if so that half of the tree will survive, at least for some time. The dead leaves on the other half of the tree tell me that the vascular tissues on that part of the tree have been destroyed and therefore the leaves cannot obtain moisture or minerals and cannot make new leaves.

For many folks, including myself, trees are a big part of what made us fall in love with the Hill Country. So we all hate to see trees die, even if it is just part of nature, which this certainly was, but for trees to which we have a special attachment, it is even more painful to see.

In the larger picture, however, trees struck by lightning are just a very tiny part of the total number of trees that we lose every year to various causes, including drought, hypoxylon and oak wilt.

The 2011 drought, as well as subsequent low rainfall years since, has been at least partially responsible for the death of a number of trees of various species. We have lost a number of blackjack oaks beginning in 2012, all of them showing signs of hypoxylon

fungus. Hypoxylon is an ever-present fungus that only damages stressed trees, so when drought stresses trees we may not see any signs of it initially, but once hypoxylon establishes itself in the vascular tissues of a stressed tree, the tree usually dies. Signs of this are a sloughing of the bark showing fuzzy brown spores in the area where the bark was which eventually turns to a silver-gray. My experience is that blackjack and post oaks are most susceptible to hypoxylon, although most any tree can succumb to it.

Oak wilt is primarily a disease that kills live oaks, Spanish oaks and blackjack oaks in our area, with the vast majority of trees killed being live oaks. Live oaks tend to be interconnected to the roots of neighboring live oaks and the fungus can travel from one tree to another via the roots. Spanish and blackjack oaks tend to not be interconnected.

The final problem with trees in the Hill Country is the lack of replacement hardwoods to replace the oaks, cedar elms, cherries, hackberries and other trees. And the cause of the lack of replacement is the excessive deer and exotic populations which eat every young hardwood tree down to nothing before it can grow to maturity.

There is not much we can do about drought, stress and hypoxylon, only a limited number of things we can do to prevent oak wilt, and as of now we have no effective way to manage the deer population. So unfortunately we will have to get accustomed to losing trees.

Until next time…

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