



# BARTLETT TREE EXPERTS

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April 13, 2012

Randy Bell, Director  
Williamson County Parks and Recreation  
219 Perry Mayfield  
Leander TX 78641

RE: Dead Trees at Williamson County Regional Park

Dear Mr. Bell:

This letter, including attachments, constitutes my report regarding the dead trees at the Disc Golf Course located in Williamson County Regional Park. Recently, I visited the site and observed the, approximately, 250 dead trees that populate the area used by park visitors to play disc golf. Approximately 90% of the trees are post oaks, and others include blackjack oak, live oak, and cedar elm.

Upon observing these trees and the hypoxylon canker present on most of them, I am confident that the severe drought of 2011, on the heels of about three additional years dominated by drought conditions in our area, is the cause of tree death in this native, non-irrigated site.

## **Hypoxylon Canker Significance**

A weak fungus, hypoxylon is not prone to attack healthy trees; rather, it requires that a tree be in stressed condition to infect it and attack the sapwood. Trees victimized by severe drought provide ideal conditions for this pathogen to become active. Unfortunately, once cankers from the fungus are observable on the stem, the tree is in the process of dying (or is dead). Furthermore, hypoxylon decays sapwood rapidly, so tree failure is a concern – in this case, for both park visitors and anyone charged with removing the trees. No known treatment is available other than keeping trees healthy. I am attaching an article from the Texas Forest Service that provides more details on hypoxylon canker.

## **Site & Species Concerns**

In a natural setting away from visitors, allowing dead and dying trees to fail on their own makes more sense and might even provide a pleasant habitat for wildlife. The disc golf course is not such a setting. This increasingly popular sport attracts a regular flow of park visitors. I observed that many of the dead trees are near the pathways and disc stations; a number of dead branches extend over these areas, and some of the trees already exhibit failed limbs. Additionally, post and blackjack oaks tend to drop dead branches sooner than do live oaks. Since most of the dead trees are post oaks, this increases concern for public safety.

## **Photo Documentation**

I have attached photos of some of the dead trees to accompany this report.

THE F. A. BARTLETT TREE EXPERT COMPANY  
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**Conclusion & Recommendation**

The unusually high number of dead trees in this high-use site makes it imperative that prompt measures be taken to protect the safety of park visitors. I recommend that the dead trees be removed and that the disc golf course be closed until the removals can be completed.

Please let me know if you have any questions. I appreciate the opportunity to assist you with your tree-care concerns and public safety regarding them.

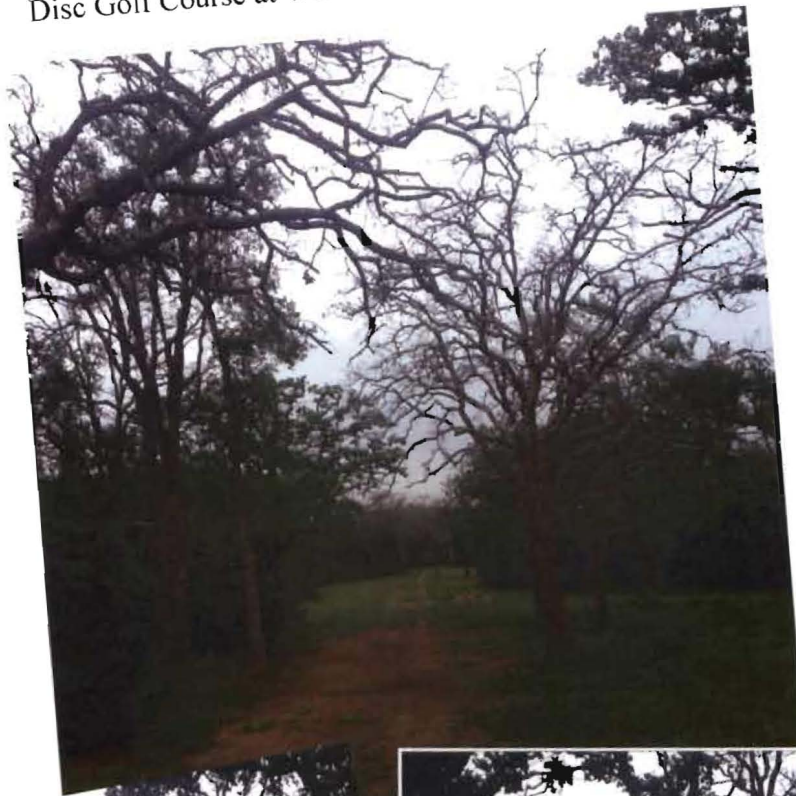
Sincerely,



Matthew Tobola, Local Manager  
ISA Certified Arborist #TX-3396A

Attachments

PHOTO DOCUMENTATION  
Disc Golf Course at Williamson County Regional Park



Evidence of dead trees, over-hanging and over-extended branches.





Hypoxylon Canker Detail



Example of branch failures



## HYPOXYLON CANKER

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Hypoxylon canker is a fungus that causes cankers and death of oak and other hardwood trees. The disease is common in East Texas and all across the southern United States. Relatively healthy trees are not invaded by the fungus, but the hypoxylon fungus will readily infect the sapwood of a tree that has been damaged, stressed, or weakened. Natural and man-caused factors that can weaken a tree include defoliation by insects or leaf fungi, saturated soil, fill dirt, soil compaction, excavation in the root zone of the tree, removal of top soil under the tree, disease, herbicide injury, drought, heat, nutrient deficiencies, competition or overcrowding, and other factors. The hypoxylon fungus is considered a weak pathogen in that it is not aggressive enough to invade healthy trees. In addition to the hypoxylon fungus, weakened and stressed trees may become susceptible to a host of other insect and disease pests.

Hypoxylon canker activity usually increases when prolonged drought occurs. When drought stresses trees, the fungus is able to take advantage of these weakened trees. The moisture content of living wood in live, healthy trees is typically 120% - 160%. It is difficult for hypoxylon canker to develop in wood that has a normal moisture content. However, any of the factors listed above could weaken or stress trees causing the moisture content of the wood to reach levels low enough for the hypoxylon fungus to develop. When this happens, the fungus becomes active in the tree and invades and decays the sapwood causing the tree to die. Once hypoxylon actively infects a tree, the tree will likely die.

An early indication that hypoxylon canker may be invading a tree is a noticeable thinning of the crown. Also, the crown may exhibit branch dieback. As the fungus develops, small sections of bark will slough from the trunk and branches and collect at the base of the tree. Where the bark has sloughed off, tan, olive green, or reddish-brown, powdery spores can be seen. Different tree species that are infected with hypoxylon canker will produce the different colors of spores. By the time the spores become visible, the tree is dead. In four to eight weeks, these tan areas will turn dark brown to black and become hard. They have the appearance of solidified tar. After several months, the areas will become a silver-gray color.

Once the fungus invades the tree, the sapwood begins to rapidly decay. Dark decay lines can be seen running through the wood. Trees that have died from hypoxylon canker and are located in an area where they could fall on structures, roads, fences, powerlines, etc., should be removed as soon as possible. During removal, it is very dangerous to climb trees killed by hypoxylon canker. Because the fungus decays the wood so rapidly, the tree may not support the weight of a climber. Instead, use bucket trucks or other mechanical lift devices.

Probably all oak trees are susceptible to hypoxylon canker. In addition, elm, pecan, hickory, sycamore, maple, beech, and other trees may be infected. The fungus spreads by airborne spores that apparently infect trees of any age by colonizing the inner bark. The fungus is known to be present in many healthy trees and can survive for long periods of time in the inner bark without invading the sapwood. As mentioned earlier, when a tree is weakened or stressed, the fungus may then invade the sapwood and become one of several factors that ultimately cause the tree to die.

There is no known control for hypoxylon canker other than maintaining tree vigor. Apparently the spores of this fungus are so common in most areas that removing trees infected with hypoxylon canker is of little value in controlling the spread of the disease. Also, infected fire wood is not considered to be a source of inoculation. The fungus does not kill groups of trees by spreading from tree to tree. There is usually little that can be done to avoid naturally occurring stress factors, but many man-caused stress factors can be avoided. During drought periods, supplemental watering is recommended, if the tree is near a water source. Damage to tree roots around construction areas commonly predisposes a tree to infection by hypoxylon canker.