

## Introduction

Oak Wilt Specialists of Texas (OWST) conducted a survey of Barton Creek Lakeside and Golf Course (BCL) on September 6-9, 2016. OWST was also granted permission by the Peninsula Villa HOA (at the end of Catamaran Court) to inspect their properties and did so. The primary purpose of this inspection was to determine the extent of Oak Wilt in BCL and to propose remediation options.

## The Oak Wilt Disease

This document is not intended to provide the reader with a complete understanding of the disease. However, a brief summary follows.

Oak Wilt is caused by a fungus (*Ceratocystis Fagacearum*). This disease is a serious problem in Central Texas. The mortality rate is 100% for members of the Red Oak family (e.g. Texas Red Oak, Shumard Oak, and Spanish Oak) and 85% for Live Oaks. Much of the population of the forest in Central Texas is comprised of these trees.

The disease can spread in two ways; via sap feeding insects (Nitidulid beetles) carrying spores on their bodies (overland transmission) and via interconnected roots among trees (root transmission). Other methods of transmission may be possible but have not been scientifically proven.

Overland transmission of Oak Wilt begins with an infected Red Oak. When the tree dies, one or more fungal spore mats may form under the bark. The mat grows and expands causing the bark to crack open. The spore mat emits an odor that attracts Nitidulid beetles. The beetles enter the spore mat to feed and spores stick to the insect. These beetles then travel to other trees to feed. The insects are attracted to fresh wounds emitting sap. The Oak Wilt spores may then infect these other trees, starting a new disease center. Experiments have shown that under their own power these insects can travel a mile or more.

Root transmission is largely a problem for Live Oaks. The root system of one Live Oak is highly interconnected to its neighboring Live Oaks. The fungus travels through the roots from one Live Oak to the next. The disease can spread in this manner out from an infected tree, on average, 100 feet per year. Due to the high concentration of Live Oaks in Central Texas, root system transmission destroys large areas of Live Oak forest. Spore mats **do not** form on Live Oaks as they do on Red Oaks.

Contrary to popular belief, removing dead trees either by cutting them down or bulldozing them over will not eliminate root transmission of the disease. The only way to prevent root transmission is to completely sever the root system. This technique is described below.

More information on the disease can be found at [www.StopOakWilt.com](http://www.StopOakWilt.com) (the OWST web site) and [www.TexasOakWilt.org](http://www.TexasOakWilt.org) (a Texas Forest Service web site).

## Human Activity and Oak Wilt

Oak Wilt is a naturally occurring disease. However, human activity greatly enhances the spread of the disease. This primarily occurs through the wounding of Oak trees by pruning and equipment contact. Our activity generates a great number of wounds that attract the Nitidulid beetles therefore providing many more opportunities for infection than would occur naturally. Simply covering all wounds with pruning sealer as they occur can greatly reduce the chance of starting a new infection. It is important to cover the wounds immediately as the Nitidulid beetles are omnipresent and can be on a new wound in a few minutes.

The correlation of tree wounds inflicted by human activity and the occurrence of Oak Wilt is well proven and cannot be overstated. While most of the pruning cuts examined by OWST were painted, OWST did encounter several locations in BCL where pruning on oaks were **not** painted.

## Oak Wilt Prevention

Nothing can completely stop new Oak Wilt infections, as it is impossible to avoid branch breakage from wind and other natural occurrences. The Nitidulid beetles cannot be eliminated, as they are too numerous. However, several things can be done to reduce the number of new infections. First, immediately cover all fresh wounds that occur on Red Oaks and Live Oaks. Second, immediately cut down and destroy any Red Oaks that are suspected to have died from Oak Wilt. The removal and destruction of the Red Oaks that have succumbed to Oak Wilt is important in that it eliminates the spore mats that source the overland transmission of the disease. Live Oaks that die from Oak Wilt are *not* required to be immediately cut down and destroyed, as the spore mats do not form on them. Finally, be knowledgeable about firewood that is brought in. If you are not absolutely certain that a spore mat is not present on a piece of firewood, cover the firewood with clear plastic for one year before using it. This will cause any spore mats in the wood to completely dry out and become benign.

## Oak Wilt Treatment

There are two primary methods employed to deal with the Oak Wilt problem. The first addresses the root transmission of the disease. Known as *trenching*, this method involves the severing of the root system between infected trees and healthy trees. The strategy is to cut all the roots between the disease area and the healthy area. Guidelines developed over the last 20 years indicate that the trench be installed at least 100 feet from the nearest diseased tree at a depth of at least 48 inches. In order for the trench to be effective all of the roots between diseased and healthy trees must be severed. This means that depths greater than 48 inches must be dug in certain areas. The best case occurs if the disease center can be encircled or completely blocked off. This is known as a suppression trench. Sometimes it is desirable to save a group of trees but not possible to completely encircle the disease. A blocking trench can be

installed around the group of trees to save. Trenching is the most economical method of dealing with Oak Wilt as the number of trees saved per dollar can be quite high.

Trenching is priced on a per foot basis. If a rock saw cutting a 60-inch deep trench is used, the cost is typically \$3.50 per linear foot. Additional fees apply for items such as buried obstacles, extremely deep soils (which require additional equipment), and pavement crossings. Repair of landscaping is generally not included in per foot price. In order to obtain a firm price, the trench path must be mapped and obstacles identified.

The other common method of mitigating Oak Wilt is to inject trees subject to disease pressure with a fungicide that is toxic to the Oak Wilt fungus. The fungicide is injected into the tree in the flare root area of the tree. The tree's normal transpiration carries the fungicide up into the tree. Fungicide treatments are highly effective if applied to trees that are not already compromised by the disease. There are some facts about fungicide treatments that should be considered:

1. The treatments must be repeated every two years until the disease has progressed past the immediate area (usually 2 to 3 treatments required).
2. The fungicide treatment only helps the tree that it is injected into. Treatments do *not* stop the progression of the disease through the root system.

Treatment costs are based on the size of the tree (diameter measure at 48 inches from the ground). The typical cost for treatment is \$14.00 per diameter inch. Discounts may apply to large projects.

Even though the science for Oak Wilt treatment is well established, neither trenching nor fungicide injections are 100% effective. The long-term remediation of Oak Wilt requires vigilance and quick response on an ongoing basis.

## Oak Wilt in Barton Creek Lakeside

There are five distinct Oak Wilt disease centers in BCL. These five centers have been present for many years and have all been examined and work performed on them by OWST in the past. Fortunately, no new disease centers were identified by this survey.

### Oak Wilt Center 1 – West

This disease center is located along the western edge of BCL primarily to the west and north of Hidden Hills Drive. OWST installed a trench in 2010 along the southern edge of this disease center. Inspection of the trench line indicates that the disease is contained for the entire length of the trench. Most of the disease center is quiet at this point with disease activity noted in two locations. The first being well inside the trench in the southern portion of the disease center. The other location of activity is at the north east reach of the disease center just east of the intersection of Waterfall Parkway and Hidden Springs Court. This area of activity represents a fairly good size expansion of the disease in this direction.

Trees located in the median of Waterfall Parkway and in front of the home located on the corner are now in a high risk area for infection. Trench installation in this area is probably not feasible due to infrastructure. There is a relatively small number of susceptible trees beyond the home and near the risk area. OWST recommends that susceptible trees in this area be treated with fungicide fairly soon.

#### [Oak Wilt Center 2 – 27426 Waterfall Hill Parkway](#)

This disease center is fairly small in size and is situated around the home at 27426 Waterfall Hill Parkway. There is disease activity along the southeast edge of the center. Susceptible trees in the risk area should be treated with fungicide. Due to the low number of susceptible trees and the topography of the area, advancement of this disease center is not expected to be quick. However, as with all Oak Wilt disease centers, regular monitoring should be performed.

#### [Oak Wilt Center 3 – Golf Course](#)

This disease center is the largest and most destructive in BCL. Oak Wilt has been present in this area for over 20 years. The center runs from the end of Founders Place at the lake due east to the back yards of the homes at the far east end of Founders Circle. All of Keel Court is involved. The southern edge of the disease center roughly follows Sailboat Pass. There are four risk areas associated with this center that should be addressed.

Active disease has been found in trees on the steep slope behind the home at 26709 Founders Place. Trees can be treated in this area but trenching is not possible due to the extreme topography. Ultimately, expansion of the disease in this area could end run the trenching recently installed at 2705 and 2703 Sailboat Pass. The only solution for trees in this risk area is fungicide injection.

There is active disease along the edge of the golf course and lots 17, 18 and 19 on the north side of Sailboat Pass. The risk area for this activity is along and on both sides of Sailboat Pass in this area. There is no indication that Oak Wilt has crossed Sailboat Pass in this area, but the possibility exists. A trench could be installed to protect most of the susceptible trees in the properties south of Sailboat Pass. The path of the proposed trench in this area is called "P3" on the map. P3 connects to the eastern end of the trench recently installed at 2703 Sailboat Pass and extends about 1100 feet to the west. This trench would cross several paved driveways, buried utility lines and other obstacles. Because of these difficulties this project may not be feasible. However, trees in the risk area should be treated with fungicide soon.

There is a risk area at the southwestern corner of the disease center. This risk area encompasses susceptible trees on the golf course. The best approach in this area is fungicide injection.

Disease activity along Founders Place on the north edge of the disease center results in two more risk areas. The first at 27101 Founders Place and the second on the north side of Founders Place (26902 and 26904). The disease has crossed Founders Place and could move into the Live Oaks along the street at these locations. OWST has proposed two trenches to protect against disease advancement in this area. P1 (1000 feet) and P2 (800 feet) in combination could block the advancement of the disease to the north and northwest from its current position. P1 does not appear to interfere with infrastructure. P2 crosses a paved driveway at 26904 Founders Place and most probably the utilities serving that residence. However, this trenching project may be feasible and if successful, the number of trees saved north of Founders Place is substantial. As with other risk areas, the susceptible trees in the risk areas should be treated with fungicide.

The western edge of the disease center appears to be inactive at this time. This is fortunate, as there is not feasible trenching option in this area.

#### [Oak Wilt Center 4 – Countryside Drive](#)

This is small disease center that has not expanded much. A single brown symptomatic leaf was found at 26308 Countryside Drive. Trenches were installed by a vendor other than OWST at the approximate locations shown on the map in 2004. Due to the lack of activity no further action at this center is recommended at this time. As with all Oak Wilt centers, regular monitoring of the trees is highly recommended.

#### [Oak Wilt Center 5 – East Masters Parkway](#)

This is a small disease center where OWST treated trees nearly 9 years ago. There does not appear to be any active disease at this time and the disease center does not appear to have expanded. As far as OWST can determine, no trenching was ever installed at this center. Due to the lack of activity no further action at this center is recommended at this time. As with all Oak Wilt centers, regular monitoring of the trees is highly recommended.

#### [TFS Watch Areas](#)

During our review of historical maps from the Texas Forest Service, OWST noted two small locations where it appears the TFS thought there might be Oak Wilt. The first is in a group of trees near the southeast corner of Masters Parkway and Ballinger Drive. The other location is behind the home at 27112 Founders Place. OWST inspected both areas and found no evidence of current or prior Oak Wilt.

## Dead Trees

As part of this survey, BCL requested that if OWST came upon dead trees, they be noted for subsequent removal.

The following table contains a list of the dead trees found on our survey. Some of the locations may be incorrect as some of the trees in question are near the boundary between one property and another. Abbreviations are: L for lot number, S for section number, B for block number and P for phase number.

Number	Street	Description
Cart Path	Clubhouse Hill Drive	Bradford Pear
L39	Majestic Hills Blvd	Live Oak
L5 P3-S4	Hidden Hills Drive	Spanish Oak
L5 P3-S2	Hidden Hills Drive	Live Oak
L4	Waterfall Hill Parkway	Cedar Elm
L22A	Waterfall Hill Parkway	Cedar Elm
L21A	Waterfall Hill Parkway	Live Oak, Cedar Elm
L17	Waterfall Hill Cove	Cedar Elm (6)
L16	Marina Shores Drive	Cedar Elm
L15	Marina Shores Drive	Cedar Elm
L8	Marina Shores Drive	Ashe Juniper (cedar)
L10	Catamaran Court	Cedar Elm (2)
Golf Course	Founders Place	Live Oaks (several) between L14 and L22
2705	Sailboat Pass	Live Oak (several)
L19	Sailboat Pass	Cedar Elm
L13	Sailboat Pass	Live Oak – may be on golf course
Golf Course	Sailboat Pass	Live Oak, Cedar Elm - between L14 and L13
L14	Sailboat Pass	Live Oak (2)
L9	Sailboat Pass	Cedar Elm (2)
L8	Sailpoint Drive	Pecan
L3 S10-B3	Masters Parkway	Cedar Elm
L26 S10-B2	Masters Parkway	Shin Oak – in ROW
L2	Ballinger Drive	Pecan, Cedar Elm – corner w/Masters Parkway
L21	Ballinger Drive	Gum Bumelia, Cedar Elm narrow portion of lot
L4	Madison Drive	Cedar Elm (3), Live Oak
L5	Chipshot Court	Live Oak



877 - 842 - 8733

[www.StopOakWilt.com](http://www.StopOakWilt.com)

**Barton Creek Lakeside  
Oak Wilt Survey**

*DRAFT - September 10, 2016*

We hope this document provides you with more information and background about Oak Wilt and how to be good land stewards of the subject property. Please feel free to contact OWST if further information or assistance is required.

Sincerely,

Paula H. Johnston

President and Certified Arborist  
TX-3552A; TOWC-0126  
Oak Wilt Specialists of Texas  
512-750-6403 cell  
512-842-8733 office