Partnerships and Cooperation Combat Oak Wilt in Texas

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Central Texas, well known for its scenic hill country, wildflowers, crystal-clear rivers, and large cattle ranches, is facing a myriad of challenges. Where bison once roamed, retirees and others are seeking home sites with elbow space, creating problems with fragmentation of large ranches, increasing demands for water, and threats of wildfires. Furthermore, live oaks, prized in this arid part of Texas for their stately beauty and welcomed shade, are being threatened by a destructive disease – oak wilt. For the past 30 years or so, the Texas Forest Service (TFS), the USDA Forest Service, Forest Health Protection (USFS/FHP) and others have been managing the oak wilt problem through a program of partnerships and local cooperation.

Oak wilt is caused by a native fungus, *Ceratocystis fagacearum*, a vascular pathogen that kills susceptible trees by blocking the water conducting system. Live oaks and red oaks are most vulnerable, while post oaks and other oaks in the white oak subfamily are more resistant. Historically, oak wilt also has been a destructive disease problem in the eastern states and Lake States. But the greatest impact has been in Central Texas, where oak wilt has killed thousands of live oaks and red oaks in both rural and urban areas within some 60 counties.

New infections of oak wilt occur when spore-bearing insects carry the fungus from infected red oaks to fresh wounds on live oaks. Once a live oak becomes infected with oak wilt, the fungus may spread rapidly from tree to neighboring tree, aided by the interconnected root system that characterizes the live oak stands or "motts" in Central Texas. If not stopped, infection centers may spread 75-100 feet per year, killing or drastically affecting every live oak in their path. Losses are both aesthetic and economic, particularly to urban residents. In cities like Austin and San Antonio, the live oak trees may represent 20% of a property's value.

To address the oak wilt problem in Texas, TFS initiated an oak wilt demonstration project in 1982 within selected counties of Central Texas, with funding from USFS/FHP. After about 5 years, the project became a federal suppression project and has expanded to about 40 counties. A cadre of TFS foresters was established throughout Central Texas to combat oak wilt. This was the first presence of TFS in this portion of the state. In 2012, the Oak Wilt Suppression Project will have completed 25 years, one of the longest-lasting federal suppression projects on record. The seven TFS foresters in Central Texas, each responsible for multiple counties, have expanded their duties in recent years to also include forest stewardship, tree planting, invasive species monitoring, and other forestry activities, in addition to oak wilt management.

Goals of the Suppression Project have focused on increasing public awareness about oak wilt, identifying and mapping active oak wilt infection centers, and partnering with landowners to contain oak wilt spread. More than 2.8 million dollars of federal cost shares have been delivered to participating landowners since 1988 as an incentive to treat expanding oak wilt centers or remove infected red oaks. Suppression treatments, consisting of trenching to a depth of 4 feet at a distance of 100 feet in front and completely encircling expanding oak wilt centers, have been successful in halting oak wilt spread in 3 out of every 4 cases. Re-infections or breakouts are often the target of a second treatment.

Digging a 4-foot trench in Central Texas is a costly and arduous task, since the trees typically grow on top of nearly solid limestone. Massive rock saws or back hoes are often required and costs may range up to $35 per foot. Individual, high-value trees threatened by oak wilt may be protected with injections of fungicide containing the active ingredient propiconazole, but such treatments are not 100% effective nor do they halt tree-to-tree spread.

To date, the Suppression Project has installed more than 3.8 million feet (728 miles) of cost-shared trenches to control more than 2700 oak wilt centers. This is equivalent to a single trench extending from Houston to El Paso. Achievements in public awareness also have been substantial. An Internet web page devoted to oak wilt management in Texas (http://www.texasoakwilt.org) has been developed and recently redesigned, representing a partnership among the Lady Bird Johnson Wildflower Center in Austin, the Texas Chapter of International Society of Arboriculture (ISA), USFS/FHP and TFS. Last year, some 400,000 persons visited the oak wilt web page. Talks to community and neighborhood groups, responding to phone and e-mail inquiries, news releases, and one-on-one site visits are among the many other ways that TFS foresters have spread the word about oak wilt.

In an on-going effort to get the word out to landowners throughout Central Texas, specialists with TFS, Texas AgriLife Extension Service, and Texas Agricultural Experiment Station have trained various groups of Master Gardeners/Master Naturalists and ISA-certified arborists on the basics of oak wilt identification and management. These volunteers and professionals are now intercepting many of the numerous public inquiries about oak wilt, lessening the burden on the few TFS foresters that deliver the Suppression Project.

On June 22-25, 1992, the first National Oak Wilt Symposium (NOWS) was held in Austin, Texas. The second NOWS was held in Austin from June 4-7, 2007. These conferences brought together qualified speakers from across the nation to discuss oak wilt biology, research and management. The symposium held field tours to observe oak wilt impacts and management in both urban and rural settings. Proceedings for these two symposia are available on oak wilt partnership web page.

Clearly, oak wilt is a long-term problem in Central Texas, one of many challenges facing this region of the state. But, federal and state agencies, in partnership with non-

governmental organizations and concerned landowners, are learning to cope with this devastating disease.

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