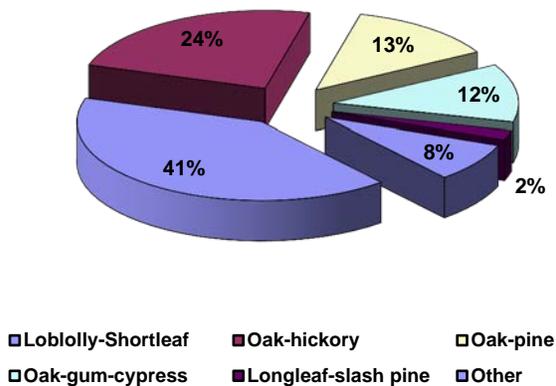


### The Resource

Texas' forests are prized for their scenic beauty, supporting tourism and outdoor recreation and providing wildlife habitat throughout eastern Texas. Texas' forests cover 63.3 million acres. Of this, 12.1 million acres are in East Texas where the climate supports commercial forest. Trees are harvested from these lands for a myriad of forest products. The majority of the forest land in East Texas, some 92%, is in non-industrial private ownership, while approximately 6% are in national forests, and 2% in other public ownership. Major forest types in East Texas include loblolly-shortleaf pine, longleaf-slash pine, mixed oak-pine, oak-hickory, and oak-gum-cypress (see pie chart). Forest land in Central/West Texas is almost all non-commercial and is 95% privately owned.. Only 2.5 million acres are classified as commercial, 5% of the total.



East Texas Forest Type Distribution



### Forest Influences and Programs

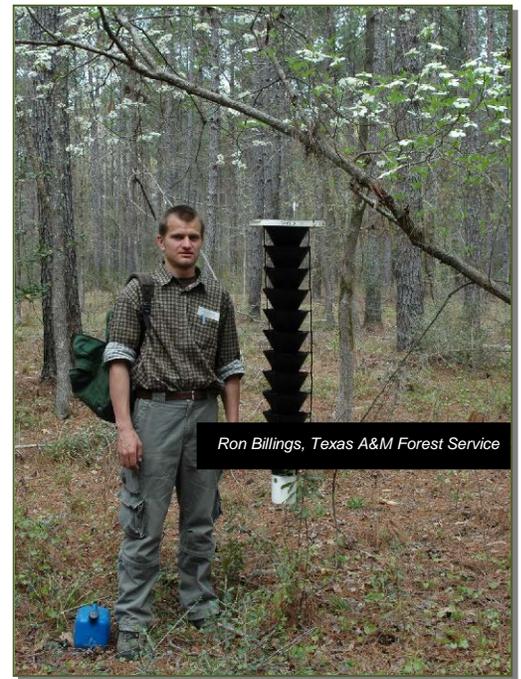
The Southern pine beetle (SPB) is the most important forest insect pest in Texas. Historically, the most severe SPB problems in the South have occurred here. However, since 1994, SPB populations in Texas have been very low. No SPB infestations were reported on state, private, or federal lands in Texas in 2012. Indeed, no SPB spots have been reported in Texas since 1998, despite several droughts, hurricanes, and wet years. A trapping system developed by the Texas A&M

Forest Service and now used in 16 southern and northeastern states is used to forecast annual SPB infestation trends. Multi-funnel survey traps baited with SPB pheromones (see photo) are deployed in the early spring to predict SPB infestation levels for that year. Early indications are that southern pine beetle activity in 2013 will continue to be very low in Texas. Also, private landowners in East Texas have been participating in the Southern Pine Beetle Prevention Project since 2003. This project provides cost-share funds to landowners for first thinning of pine stands determined to be high hazard to SPB. Since the project began, over 100,000 acres have been thinned or approved for thinning. In FY 2012, 182 new cost-share cases were approved for thinning almost 11,000 acres.

### **Drought and pine engraver beetles dominated the forest health scene in**

#### **TX in 2012:**

Pine engraver beetles dominated the forest health scene in Texas in 2012, as the state recovered from the worst drought on record. An improved estimate of tree losses to the 2011 drought, considered the worst in Texas history, was obtained in 2012. A recent survey by Texas A&M Forest Service (formerly Texas Forest Service) of hundreds of forested plots scattered across the state showed 301 million trees (6.2 %) across the state were killed as a result of the devastating 2011 drought. This includes an estimated 65.5 million hardwood and conifer trees killed in East Texas, the region with commercial forests (see map). The number was determined by a study of both



Ron Billings, Texas A&M Forest Service

on-the-ground tree health assessments collected during a three-month period (June –August 2012) and satellite imagery from before and after the drought. Ashe juniper trees around the town of Junction in central Texas suffered high rates of mortality (see photo).



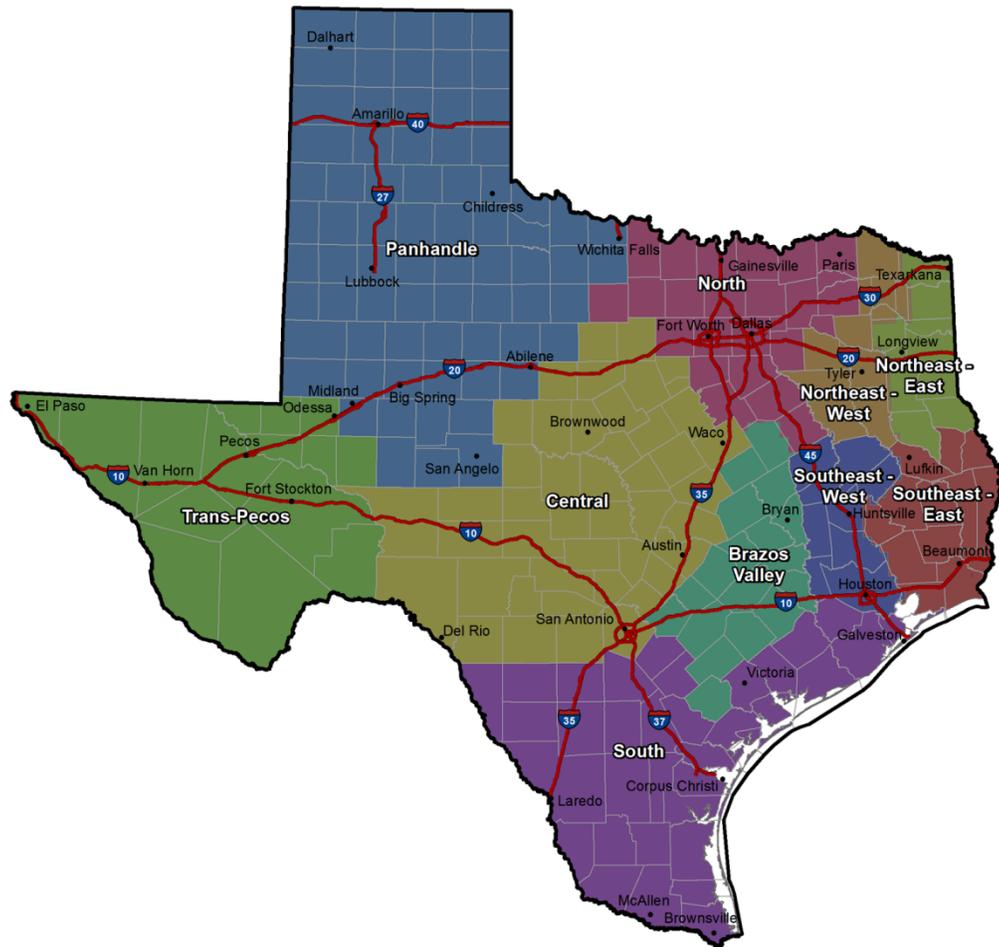
Ron Billings, Texas A&M Forest Service

The drought assessment of rural, forested areas was done in cooperation with the U.S. Forest Service Forest Inventory and Analysis program and the Texas A&M University Ecosystem Science and Management Department. As part of the analysis, the state was divided into 10 sections: Panhandle, Trans Pecos, North, Central, South and the Brazos Valley, as well as four East Texas regions. (See map.) Some forested areas suffered worse than others. The Brazos Valley region was hit the hardest, losing almost 10 percent of its trees on forested land. North Texas and western Northeast Texas suffered similar fates, losing 8.3 percent and 8.2

percent, respectively. Trees in far East Texas seemed to fare the best with just 1.3 percent of trees succumbing to the drought in eastern Southeast Texas and just 3.9 percent dying in eastern Northeast Texas.

In a separate survey of East Texas pine forests, young pine plantations, particularly that were thinned recently as part of the Southern Pine Beetle Prevention Program, were found to fare better than did mature pines during the 2011 drought. Whereas an average of 4.0 percent of unthinned pulpwood pine stands had drought losses, the extent of losses in thinned pulpwood stands averaged just 1.2%.

The drought figure mentioned above does not include trees in cities and towns. Another 5.6 million trees in urban areas — along streets and in yards and parks — also died as a result of the drought, according to a study done earlier this year by the Texas A&M Forest Service Urban Forestry program. In Houston, for example, 90% of the mature pines on popular Memorial Park were killed as a result of the drought or related engraver beetle attacks (see photo).

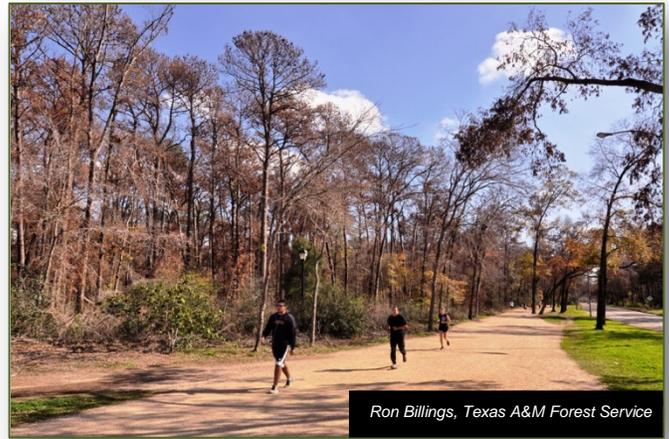


Region	Live trees prior to the drought (million trees)	Drought-related mortality (million trees)	Drought-related mortality (percentage)
Southeast - East	597.1	7.5	1.3
Southeast - West	289.7	18.8	6.5
Northeast - East	356.0	13.9	3.9
Northeast - West	309.4	25.3	8.2
North	370.5	30.9	8.3
Brazos Valley	256.4	24.9	9.7
South	431.2	31.7	7.4
Central	1,540.0	102.3	6.6
Panhandle	556.3	33.1	6.0
Trans-Pecos	163.4	12.2	7.5
<b>Total</b>	<b>4,869.9</b>	<b>300.6</b>	<b>6.2</b>

With the exceptional drought conditions across most of the state in 2011, pine engraver beetles began attacking drought-stressed pine trees in East Texas and the Lost Pines area of Bastrop County. Presently, it is impossible to estimate pine tree mortality caused by pine engraver beetles. Without doubt, 2012 has been another bad year, but tree losses to Ips were less severe than in 2011. Actual losses will be determined eventually by FIA crews evaluating permanent plots.

**Exotic invasive species** are gaining increased attention as a serious problem impacting forests. The new *Invaders of Texas* program is taking the message of exotic invasive pests to the general public by enlisting the aid of trained citizen scientists to detect and report invasive species in their neighborhoods (see [www.texasinvasives.org](http://www.texasinvasives.org)).

Numerous articles about exotic pests that are present or are potential Texas invaders have been prepared by Texas A&M Forest Service Forest Health specialists and others and are posted at the Texas invasives partnership web site (<http://www.texasinvasives.org>) and/or published in the Texas Forestry Association's newsletter *Texas Forestry*.



With funding from the USDA Animal Plant Health Inspection Service (APHIS), TFS, and collaborators installed and monitored some 1400 detection traps for **emerald ash borer** in 2012. To successfully conduct this survey, volunteer groups (Master Naturalists and others) were solicited and trained in counties not covered by TFS staff. Large, purple tri-panel traps (see photo) were installed on ash trees in 110 counties in late February or March and monitored in June and August. Fortunately, no EAB were found, indicating that this invasive pest has not yet arrived in Texas.

A project to reduce the abundance of invasive plants, particularly **Chinese tallow** (*Triadica sebifera*) and **Japanese climbing fern** (*Lygodium japonicum*), was initiated on the Jones State Forest in Montgomery County. Herbicide sprays were used to treat a dozen acres, particularly along roads and in other high use areas. Japanese climbing fern was added to the Texas Department of Agriculture's list on noxious invasive

plants, upon request of the Texas Invasive Plant and Pest Council.

**Oak wilt** (*Ceratocystis fagacearum*) continues to occur in over 70 counties in Texas, mostly between Dallas and San Antonio. Urban and rural oaks are affected. Trenches placed between diseased and healthy trees sever interconnected root systems and halt the spread of the disease. Texas Forest Service personnel contribute technical assistance to landowners to help minimize the impact of this tree disease. Technical information on oak wilt is made available via a web page devoted exclusively to oak wilt in Central Texas ([www.texasoakwilt.org](http://www.texasoakwilt.org)), developed by the Houston Advanced Research Center (HARC), the USGS National Biological Information Infrastructure (NBII), USDA Forest Service Forest Health Protection, the Lady Bird Johnson Wildflower Center, and the Texas Forest Service.



## Forest Health Assistance in Texas

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