Texas Forest Service

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FOREST STEWARDSHIP BRIEFINGS

Timber ◊ Wildlife ◊ Water ◊ Soil ◊ Best Management Practices ◊ Forest Health ◊ Recreation ◊ Aesthetics

DROUGHT'S TOLL ON URBAN FOREST

by Pete Smith and Gretchen Riley, Staff Foresters, Urban and Community Forestry Program, TFS, College Station, TX

For more information:

- http://texasforestservice.tamu.edu/main/popup.aspx?id=14964

Last year, Texas was ravaged by an unprecedented, unrelenting drought that left its mark on nearly every part of the Lone Star State. In December, Texas Forest Service reported that 100 to 500 million forest trees may have succumbed to the drought. However, this estimate did not include trees in urban areas.

In January 2012, agency urban foresters conducted a follow-up study to determine tree mortality in the urban forests of the state. The trees that line your street, shade your home, and give you a quiet place to relax at your local park all are considered part of the urban forest.

Texas Forest Service estimates that 5.6 million of these trees that once shaded homes, streets, and parks in cities and towns across Texas now are dead as a result of last year's drought. The estimate is considered preliminary because trees continue to die from the drought. The figure is likely less than the number of trees that ultimately will succumb, which may not be known until the end of 2012, if ever.

Findings:

- An estimated **5.6 million trees** in urban areas were killed as a result of the drought. This figure may represent as much as 10 percent of the total number of trees that make up the urban forest.
- Because these dead trees are in populated areas, many now threaten buildings, roads, and walkways and will have to be removed. **The estimated cost to remove the 5.6 million dead trees is $560 million**.
- Shade trees not only beautify communities, they provide economic and environmental benefits such as cutting energy bills, cleaning pollution from the air, reducing stormwater runoff, storing carbon, and boosting property values. **The estimated loss in economic and environmental benefits is roughly $280 million per year**.

The study included all cities and towns in Texas with the exception of the Trans-Pecos region, where tree mortality was determined to be a result of a February 2011 cold snap, not the drought. Especially hard-hit areas include the pine forests of Harris, Montgomery, and Waller counties in Southeast Texas.

Foresters reviewed satellite imagery taken before and during the drought (2010 vs. Fall 2011) to estimate the number of drought-killed trees. They counted live and dead trees on randomly selected plots made up of both private and public lands.

Homeowners and public tree managers should pay close attention to tree health as spring approaches. Pine and cedar trees that have turned brown or red are dead; other shade trees that have lost bark or do not leaf out in spring can be removed.

When hiring a contractor to remove a dead tree, use a Certified Arborist—through the International Society of Arboriculture—and one that has an appropriate level of liability insurance. Local electric utility providers may also have programs to assist homeowners with removal of dead trees near powerlines.

INSIDE THIS ISSUE:

Feral Hogs vs. Ground-Nesters

from an article by Paul Schattenberg, AgriLife Communications, TAMUS, San Antonio, TX

For more information:

- http://agrilife.org/today/2011/05/10/feral-hogs-esting-birds/

Landowners should be aware that feral hogs not only damage crops and pastures, but also have a negative impact on ground-nesting birds, according to Texas AgriLife Extension Service experts. "Typically, feral hogs are not thought of as predators, but they fill that role as well," said Dr. Jim Cathey, AgriLife Extension wildlife specialist in College Station. "They are opportunistic omnivores, eating whatever plant or animal matter is available as they compete with other wildlife for food sources." Cathey said that means ground-nesting birds, like northern bobwhite quail and wild turkey, along with their eggs, are often on the feral hogs' menu.

The northern bobwhite has been declining over much of its historic range in Texas for several decades, according to Dr. Dale Rollins, an AgriLife Extension wildlife specialist in San Angelo. To better understand predation of northern bobwhite nests, Rollins has been teaming up with landowners and AgriLife Extension agents to monitor predation rates in the Rolling Plains area of the state, using simulated bobwhite nests to help determine the extent of feral hog predation. Rollins said during trials conducted in 1993 and 1994, he and the other participants found that on a ranch in Foard County, 23.5% of the simulated bobwhite nests he and others set out were consumed by feral hogs. They also found that 11.5% of simulated nests they had set out on a ranch in Shackelford County were depredated by feral hogs.

"This suggests that nest predation by feral hogs is conceivably a contributing factor to the northern bobwhite population decline," Rollins said. "Those experiments were conducted nearly 20 years ago, and the feral hog populations have increased substantially since that time."

Cathey noted that three subspecies of wild turkey are found in Texas, with the most common being the Rio Grande subspecies followed by the eastern subspecies. "Researchers have documented nest predation by feral hogs for each of these birds," Cathey said.

"To monitor movement and nest success, turkeys on the Gus Engeling Wildlife Management Area between Palestine and Corsicana were fitted with radio transmitters and nests were located and observed," Cathey said. "Observations showed that feral hogs, among other predators, consumed eggs from nests."

Tree Tips - Replacing Lost Trees

by Pete Smith and Gretchen Riley, Staff Foresters, Urban and Community Forestry Program, TFS, College Station, TX

For more information:

- http://texasforestservice.tamu.edu/
- http://www.treebenefits.com/calculator/

It is uncertain how long the current Texas drought and loss off trees will continue, but replanting is a good idea as long as regular watering of new trees can be accomplished. Even though it may have rained recently, low aquifer or lake levels may mean that local watering restrictions continue to be in effect. The ability to water during the summer is critical to deciding whether to plant now. For tips on watering yard trees during drought conditions, or to watch a video on the topic, go to the "Texas Drought" link on the Texas Forest Service website home page (see sidebar).

Certain species seemed to be especially vulnerable to the extreme drought (i.e. water oak, loblolly pine, and Ashe juniper), so take the opportunity to try other drought-tolerant species. The online *Texas Tree Planting Guide* (also on the Texas Drought page) provides recommendations on the best trees to plant in any area of the state. Selection options can be tailored to fit a variety of site conditions and homeowner preferences.

Environmental and economic values of trees can be calculated using the National Tree Benefit Calculator (see sidebar).

Water Demands in Texas

Without a doubt Texas is a fast-growing state, and every new Texan requires water to use. At the end of 2011 the Texas Water Development Board (TWDB) adopted the **2012 State Water Plan**. The plan is Texas' ninth state water plan and is designed to meet the state's needs for water during times of drought. According to the plan, the population of Texas is expected to nearly double by 2060, growing from 25.4 million (2010) to 46.3 million. Most of this growth will be concentrated in the major metropolitan areas of the state. The estimated water demand is anticipated to grow 22 percent by 2060, from 18 million acre-feet per year (2010) to about 22 million acre-feet per year.

Urbanization, to some degree, is likely to result in losses of forest land through conversion to urban land uses in the coming decades. In the absence of mitigating actions, conversion of forest lands to urban land uses leads to reduced water quality via a net increase in storm water runoff, soil erosion, downstream flooding, and the flow and concentration of nutrients and other pollutants into rivers and streams. According to the EPA, more than 60% of U.S. water pollution comes from runoff from lawns, farms, cities, and highways, as well as leachate from septic systems.

The loss of forest lands to development affects not only the quality of water, but the quantity as well. Urbanization results in increases of impervious areas (buildings and associated roads, parking lots, driveways, and rooftop). The conversion of permeable soil to impermeable surfaces reduces the amount of infiltration and increases storm water runoff and peak flows (the maximum channel flow during rain events). Decreases in water infiltration caused by urbanization can reduce the recharge of groundwater aquifers and lower local water tables.

To ensure that the benefits of forest will be experienced by future generations, the landowners and local and regional leaders of today must begin to develop long-range policies and plans for maintaining and expanding tree cover.

by Chuck Coup, Staff Forester, TFS, Temple, TX

For more information:

http://www.twdb.state.tx.us/wrpi/swp/swp.asp

Now Available on the Web . . .

Natural Resources Conservation Service (NRCS) has inventoried all the different soil types and their locations for all 254 counties in Texas. The soil inventory provides aerial maps with soil boundaries, soil descriptions, and tables of soil properties, and shows how the soil can be used. The soil data is available free of charge online on the Web Soil Survey (WSS) at http://websoilsurvey.nrcs.usda.gov/app/.

WSS can assist landowners in making decisions relative to farming, forestry, and ranching operations by listing the trees and other plants capable of growing on that site. WSS can also identify the most erosive soils and which soil sites will provide the greatest benefit from aerial spraying or other brush management practices. Interpretive maps provided through WSS can help the land user determine yield potentials when planting crops and implementing pasture and hayland plantings. The WSS can help producers maintain profits while reducing erosion and improving soil and water quality.

Topographic maps and measuring tools are available to help landowners manage their resources. Users have the ability to save and print information and maps.

WSS can help determine sites for homes, roads, and pipelines. It can be used in conservation plans, farm and ranch appraisals, nutrient management plans, and range and wildlife management. WSS can also help identify risks and hazards associated with different soil types.

from Central Texas Conservation Partnership publication; www.TexasConservation.org

For more information:

- http://websoilsurvey.nrcs.usda.gov/app/

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Feral Hog Publications

To help landowners in Texas understand more about feral hogs and the methods used to manage them, AgriLife Extension has developed publications in English and Spanish that can be downloaded at no charge.

The new fact sheets address topics ranging from recognizing evidence of feral hogs to methods of capturing these non-native animals. The publications include photographs, instructions on how to build traps, and tips for successful capture.

To view and/or download these publications, go to the Plum Creek Watershed Partnership website at http://plumcreek.tamu.edu/feralhogs.

Color versions of these publications may be obtained for a charge from the Texas AgriLife Extension Bookstore at https://agrilifebookstore.org, and are also available in Spanish from that site.

The first site also contains an on-line tool for reporting feral hog sightings or control measures, with one report for cooperating landowners and another for the general public.

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