

FOREST INVENTORY AND ANALYSIS

Texas Forest Service works in partnership with the U.S. Forest Service to inventory forestlands in the 211 counties of Central and West Texas. This joint effort is known as Forest Inventory and Analysis or FIA. Every year since 2004, highly-trained foresters and technicians have measured an average of 2,471 plots placed throughout the region. Data collected are used to estimate acres of forestland, numbers and types of trees, and the volumes and weights of those trees. This report presents results for the 2009 inventory, which is based on data collected from 2004 through 2009.



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HIGHLIGHTS

- * 51.2 million acres of forestland
- * 95 percent of forestland is private
- * 12.5 billion live trees
- * 15.1 billion cubic feet of volume
- * 435.5 million tons of biomass

AREA AND OWNERSHIP

Forestland is land with at least 10 percent cover by live trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. The amount of forestland in Central and West Texas is estimated at 51.2 million acres, which is about 35 percent of the total area. The amount of forestland by region is shown in Figure 1.

In terms of ownership, 95 percent of the forestland is privately owned and the balance publicly owned (i.e., federal, state, and local governments). Surveys of woodland owners suggest there are 257,000 private landowners. Most of these, an estimated 239,000, are family forest owners.

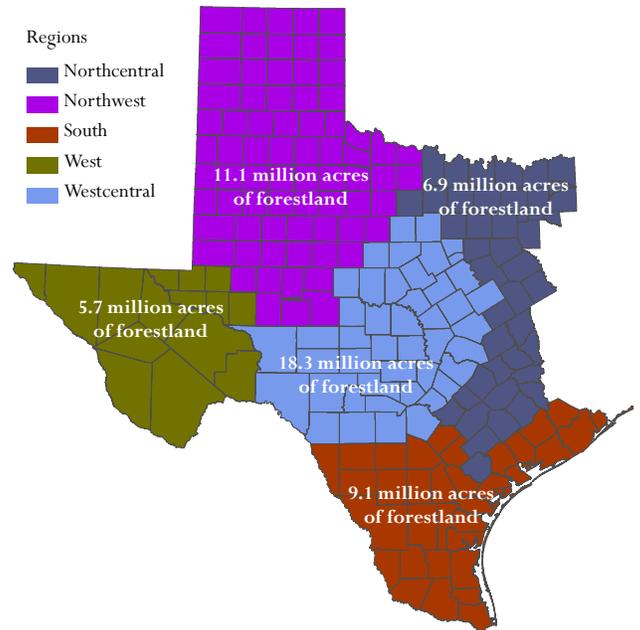


Figure 1. Amount of forestland area by region.

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There are 12.5 billion trees in Central & West Texas.

There is an average of 244 trees per acre of forestland.

Foresters and technicians observed more than 110 different species of trees on the inventory plots.

Honey mesquite and Ashe juniper together account for just under one-half of all trees.

FOREST TYPES

Mesquite is the most abundant forest type in Central and West Texas (Figure 2). Forest types juniper-pine, oak, and other hardwood are also abundant.

Mesquite is the dominate forest type in the West, Northwest, and South Regions (Figure 3). Mesquite is present, but as a much smaller proportion of the total forest area, in the other two regions.

Juniper-pine is the most common type in the Westcentral Region. It is the second most common, behind mesquite, in the West and Northwest Regions. Juniper-pine is nearly absent in the South Region.

Oak is a common type in the Westcentral and Northcentral Regions. The type forms small proportions of forestland in the other regions.

Other hardwood is a common type in the Northcentral, South, and Westcentral Regions. It is a minor type in the West and Northwest Regions.

Nonstocked forest land is land that currently has less than 10 percent stocking but at an earlier point met the definition of forestland. The nonstocked type accounts for a small proportion of forestland in each region.

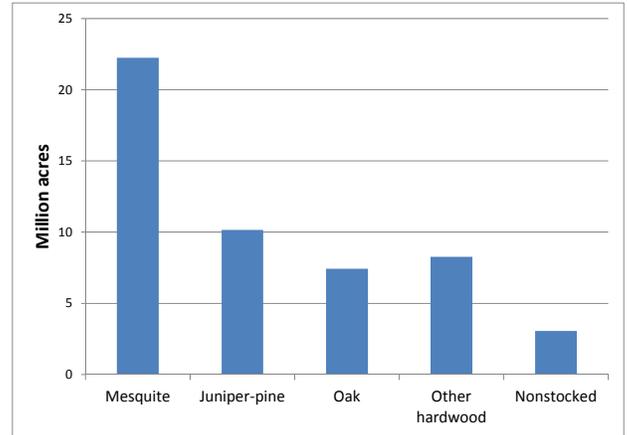


Figure 2. Forestland area by forest type.

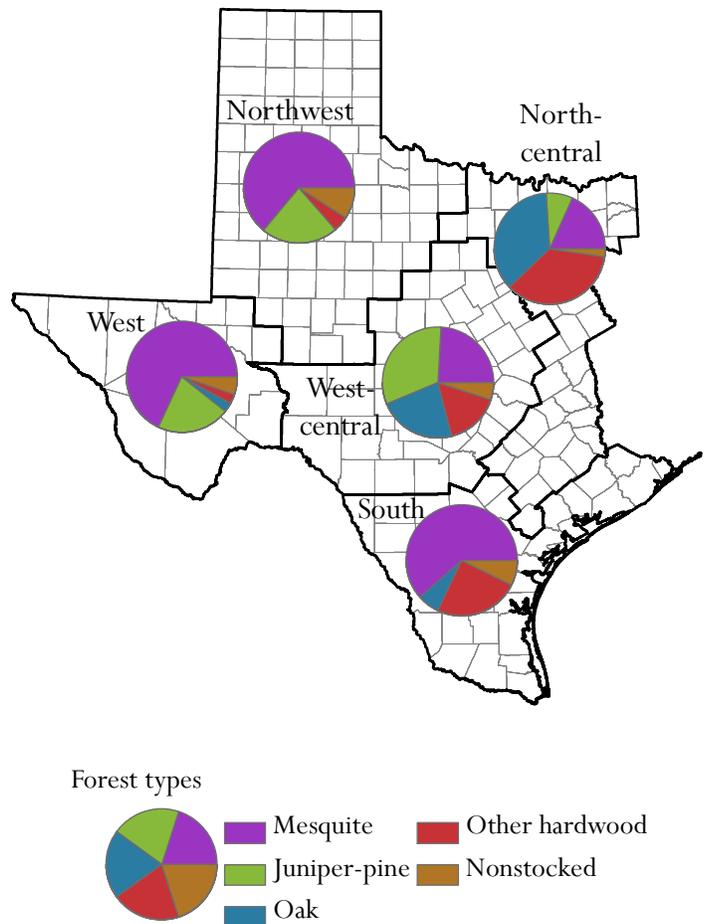


Figure 3. Forestland by forest type for each region.

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Xeric sites have low or deficient available moisture.

Mesic sites have moderate but adequate available moisture.

Hydric sites have abundant or overabundant moisture all year.

Volume reported here is net cubic foot volume from a 1-foot high stump to a minimum 4-inch top diameter outside bark in trees with a minimum diameter of 5 inches.

There is an average volume of 295 cubic feet per acre across all regions and forest types.

PRODUCTIVITY

“Productive” forestland is land capable of producing at least 20 cubic feet per acre per year. Only 2.5 million of the 51.2 million acres (5 percent) of forestland in Central and West Texas meets this criterion. However, it is important to keep in mind that many services and benefits, such as wildlife habitat, clean air, soil stability, and aesthetics, are generated from all forestland.

About 68 percent of the forestland is classified as xeric (see sidebar for definition). Mesic sites account for 31 percent of the total. Hydric sites are rare, accounting for just 1 percent of total forestland area. As expected, xeric sites increase as a proportion of total forest area as one moves from east to west (Figure 4).

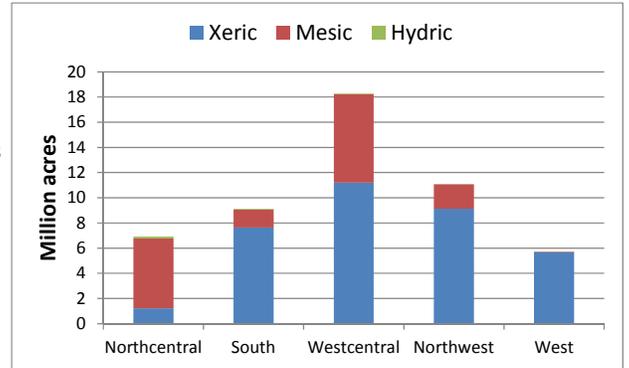


Figure 4. Forestland area by physiographic class and region.

VOLUME

There is an estimated 15.1 billion cubic feet of total volume in Central and West Texas. The Westcentral Region accounts for 41 percent of total volume. The West Region accounts for just 2 percent (Figure 5). At 619 feet per acre, the Northcentral Region has the highest average volume per acre. Average values for the Westcentral, South, Northwest, and West are 341, 290, 146, and 50 cubic feet per acre, respectively.

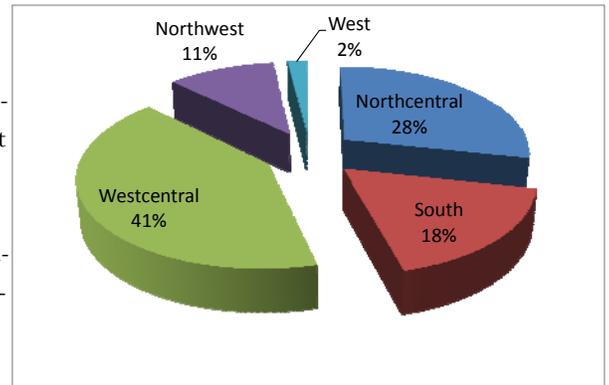


Figure 5. Percentage of total volume by region.

Volume is fairly evenly distributed across forest types, excluding the nonstocked type (Figure 6). At a value of 540 cubic feet per acre, the oak group has the highest average volume per acre. Averages for other hardwood, juniper-pine, mesquite, and nonstocked types are 392, 392, 168, and 30 cubic feet per acre, respectively.

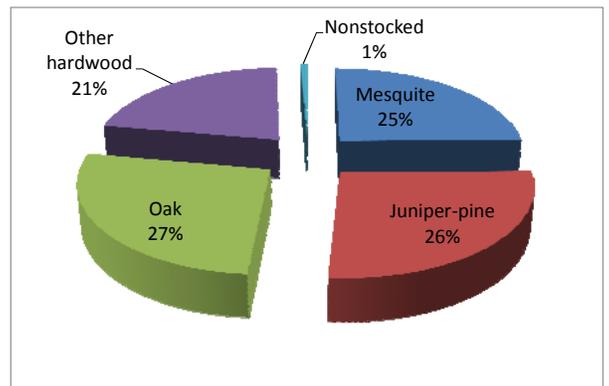


Figure 6. Percentage of total volume by forest type

Biomass reported here is aboveground oven-dry weight of live trees with a diameter of at least 1 inch.

There is an average of 8.5 tons per acre of forestland across Central & West Texas.

Data by forest type and county/region are reported in the appendix.

FIA Data is on-line at
<http://www.fia.fs.fed.us/tools-data/>

BIOMASS

There is an estimated 436 million tons (oven-dry) of aboveground biomass on forestlands in Central and West Texas. The Westcentral Region has the most biomass and the West Region has the least (Figure 7). Averages range from 1.6 tons per acre in the West Region to 18.6 tons per acre in the Northcentral Region.

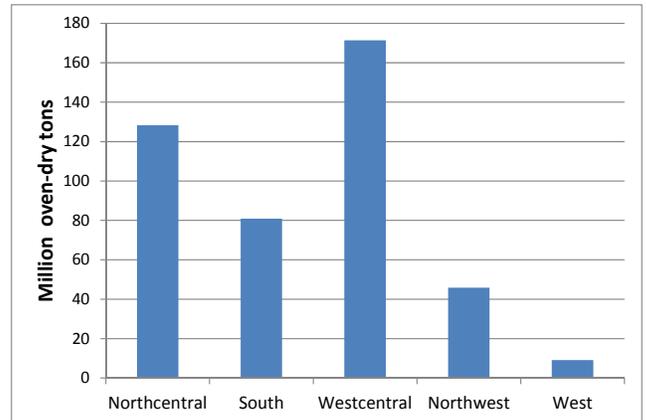


Figure 7. Total biomass by region.

The distribution of biomass by forest type and diameter class is displayed in Figure 8. There is more biomass in the 8-inch diameter class than any other class. There is very little biomass in nonstocked stands as expected. The other four forest type groups contribute substantial amounts of biomass to every diameter class.

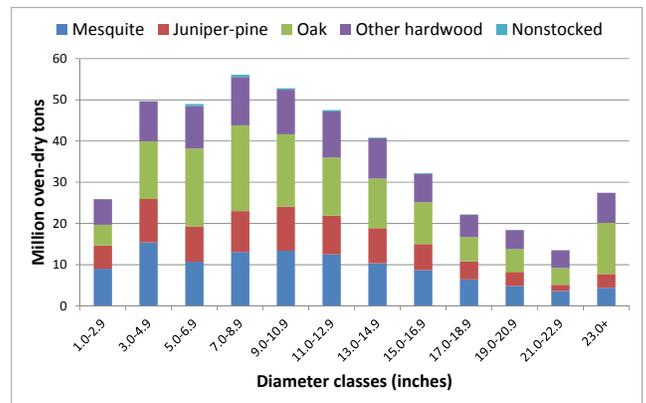


Figure 8. Biomass by forest type and diameter.

NOTES

- **Family forest owners** are families, individuals, trusts, estates, family partnerships, and other unincorporated groups of individuals.
- **Diameter** is the most common measurement foresters make. Diameter is measured at breast height, d.b.h., or at root collar, d.r.c., depending on species.
- Inventory estimates are from custom queries of FIADB Version 4.0 Microsoft Access 2007 database that was loaded to the FIA DataMart (<http://199.128.173.17/fiadb4-downloads/datamart.html>) on 01-31-2011.
- Estimates are based on a sample and are therefore subject to sampling error.

MORE INFORMATION

Texas Forest Service staff can assist with questions about information in this report or about Forest Inventory and Analysis. Contact Chris Edgar, Forest Resource Analyst, by phone at 979/458-6630 or by e-mail at cedgar@tfs.tamu.edu.