

FOREST INVENTORY AND ANALYSIS

Texas A&M Forest Service works in partnership with the U.S. Forest Service to inventory forestlands in the 211 counties of Central & West Texas. This joint effort is known as Forest Inventory and Analysis or FIA. Every year since 2004, highly-trained foresters and technicians have collected data on an average of 2,517 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 2011 inventory, which is based on data collected from 2004 through 2011.



TEXAS A&M
FOREST SERVICE

IN THIS REPORT

Topic	Page
Highlights	1
Area and Ownership	2
Forest Types	3
Productivity	4
Volume	4
Biomass	5
Down Woody Material	6
More Information	6

REGION



Area of Detail

HIGHLIGHTS

Resource Attribute	2011	2010	Change
Forestland area (million acres)	49.7	48.9	1.6% ↑
Number of trees (billions)	12.1	12.2	-1.1% ↓
Volume (billion cubic feet)	14.4	14.6	-1.1% ↓
Biomass (million tons)	416.1	419.5	-0.8% ↓

Estimates for the previous year are recompiled from the latest database and may differ from estimates in last year's report. Estimates are based on a sample. Sampling errors for the current year's estimates are: forestland area 1.0%, number of trees 1.7%, volume 1.6%, and biomass 1.5%.

Sustainable Forestry Department
200 Technology Way, Suite 1281
College Station, TX 77845-3424
Tel: 979/458-6630
Fax: 979/458-6633
<http://tfsweb.tamu.edu>

Visit TexasForestInfo.com to see maps depicting the distribution of Central & West Texas trees like mesquite, juniper, and live oak.

Family forest owners are families, individuals, trusts, estates, family partnerships, and other unincorporated groups of individuals.

Of the 5 regions in Central & West Texas, the Westcentral is the most heavily forested at 57 percent of total area and the Northwest is the least forested at 25 percent of total area.

FORESTLAND 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 & West Texas is estimated at 49.7 million acres, which is about 33 percent of the total area. The amount 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). Results of recent woodland owner surveys show family forest landowners accounting for about three-quarters of the forestland in Central & West Texas.

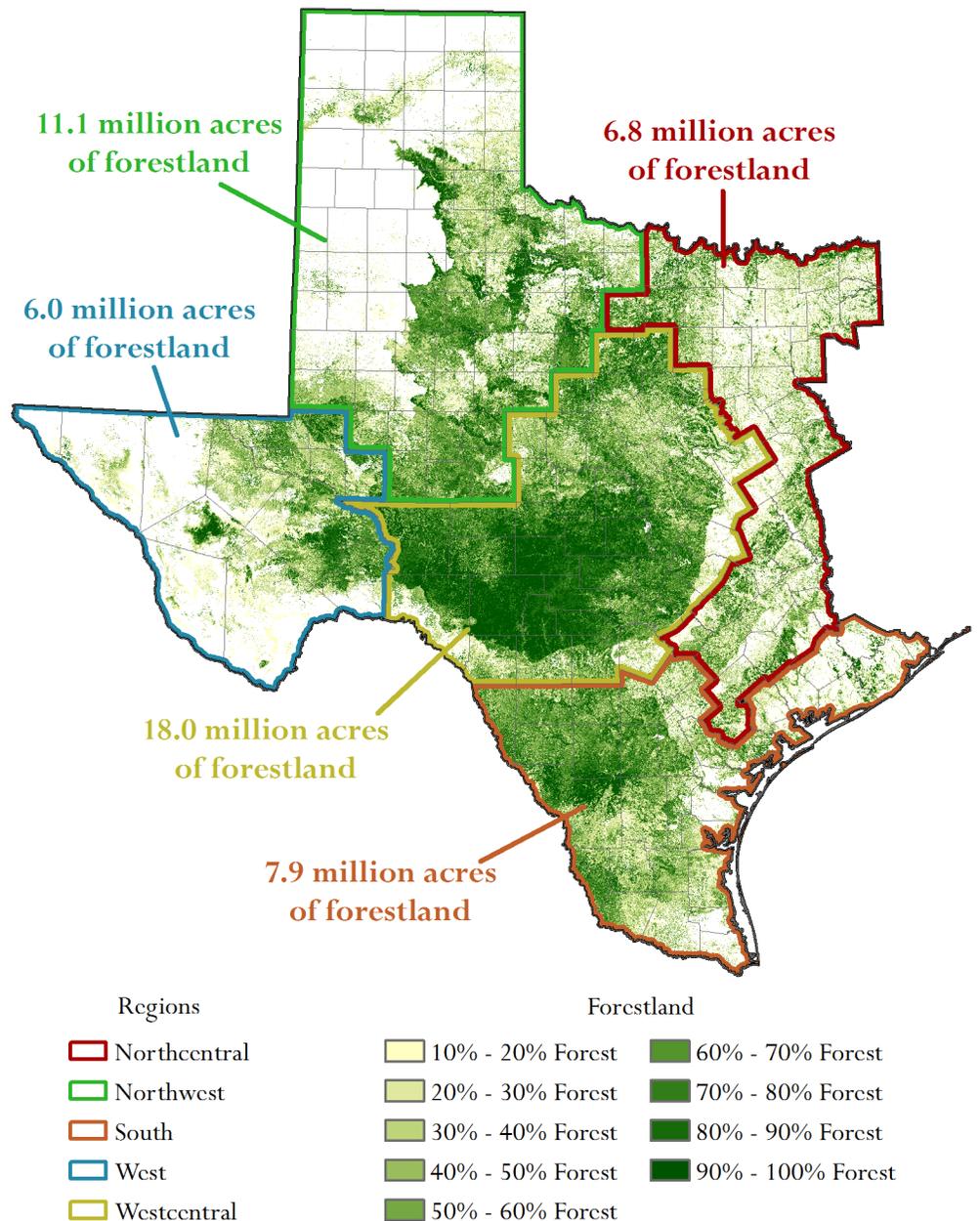


Figure 1. Amount of forestland area by region.

Sustainable Forestry Department
200 Technology Way, Suite 1281
College Station, TX 77845-3424
Tel: 979/458-6630
Fax: 979/458-6633
<http://tfsweb.tamu.edu>

There are 12.1 billion trees in Central & West Texas.

There is an average of 243 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 dominant forest type in the West, Northwest, and South Regions (Figure 3). Mesquite is present, but as a much smaller proportion of 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 type in the West and Northwest and nearly absent in the South Region.

Oak is a common type in the Westcentral and Northcentral Regions. Oak 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 forestland currently has less than 10 percent stocking but at an earlier time met the definition of forestland. The nonstocked type accounts for a small proportion of forestland in each region.

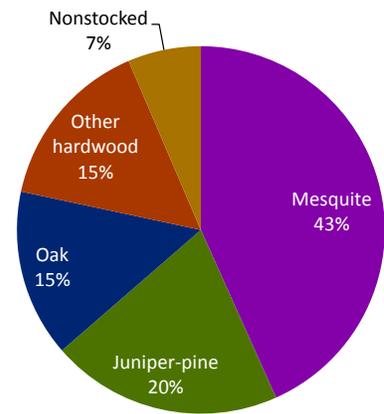


Figure 2. Forestland area by forest type.

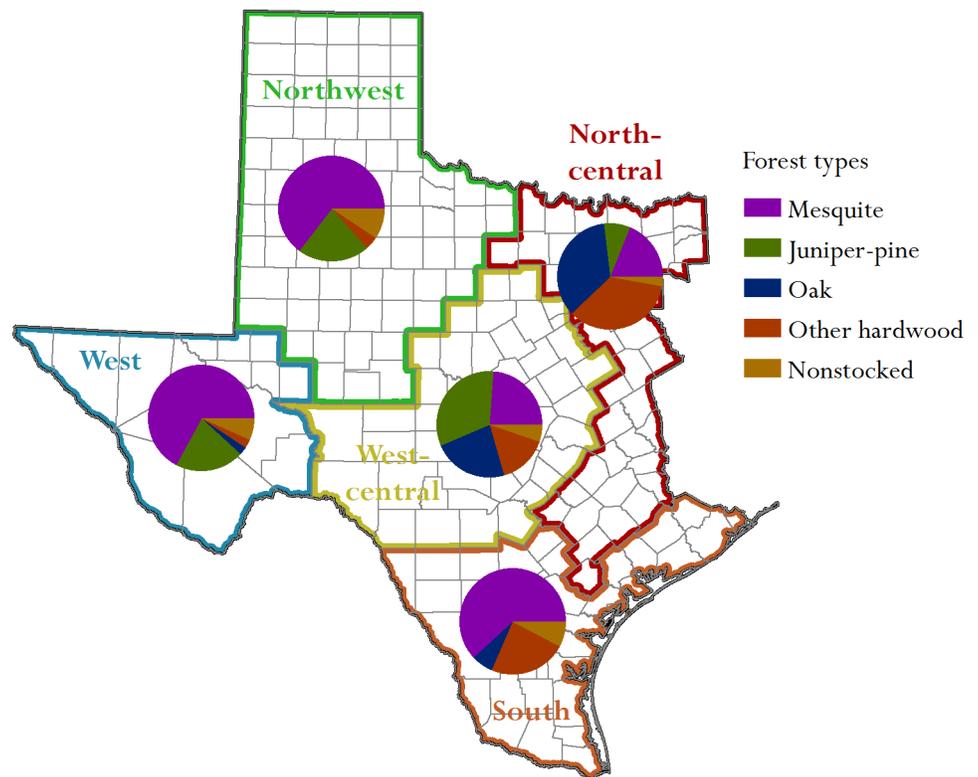


Figure 3. Forestland area by forest type for each region.

Sustainable Forestry Department
200 Technology Way, Suite 1281
College Station, TX 77845-3424
Tel: 979/458-6630
Fax: 979/458-6633
<http://tfsweb.tamu.edu>

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 290 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 2.4 million of the 49.7 million acres (5 percent) of forestland in Central & 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 forestland.

About 74 percent of the forestland is classified as xeric (see sidebar for definition). Mesic sites account for 26 percent of the total. Hydric sites are rare, accounting for less than 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).

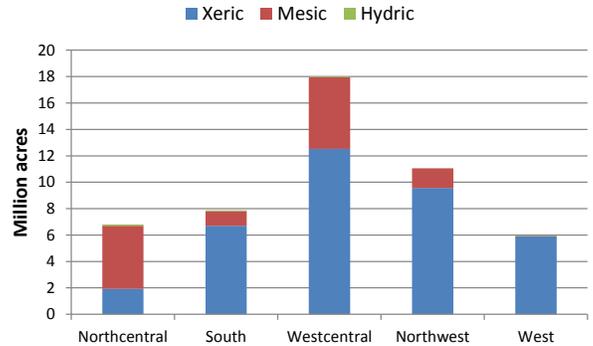


Figure 4. Forestland area by physiographic class and region.

VOLUME

There is 14.4 billion cubic feet of total volume in Central & West Texas. The Westcentral Region accounts for 43 percent of total volume. The West Region accounts for just 2 percent (Figure 5). At 615 cubic feet per acre, the Northcentral Region has the highest average volume per acre. Average values for the Westcentral, South, Northwest, and West are 346, 273, 140, and 51 cubic feet per acre, respectively.

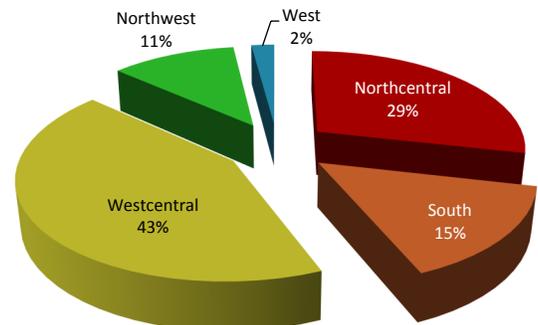


Figure 5. Percentage of total volume by region.

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 386, 392, 162, and 27 cubic feet per acre, respectively.

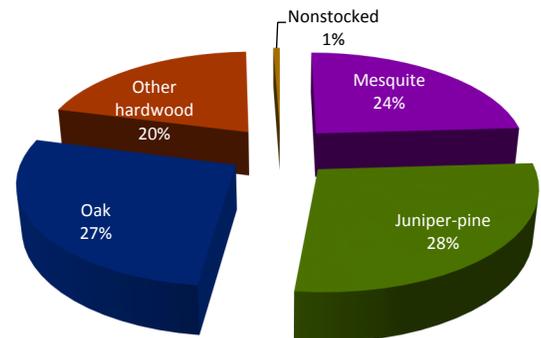


Figure 6. Percentage of total volume by forest type.

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

There is an average biomass of 8.4 tons per acre on forestland across Central & West Texas.

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

BIOMASS

There is an estimated 416 million tons (oven-dry) of aboveground biomass on forestlands in Central & 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 18.5 tons per acre in the Northcentral Region.

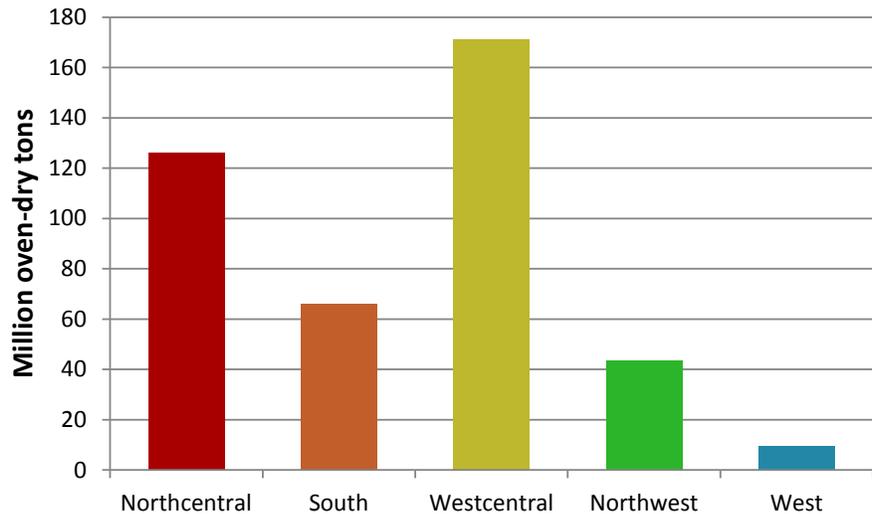


Figure 7. Biomass by region.

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.

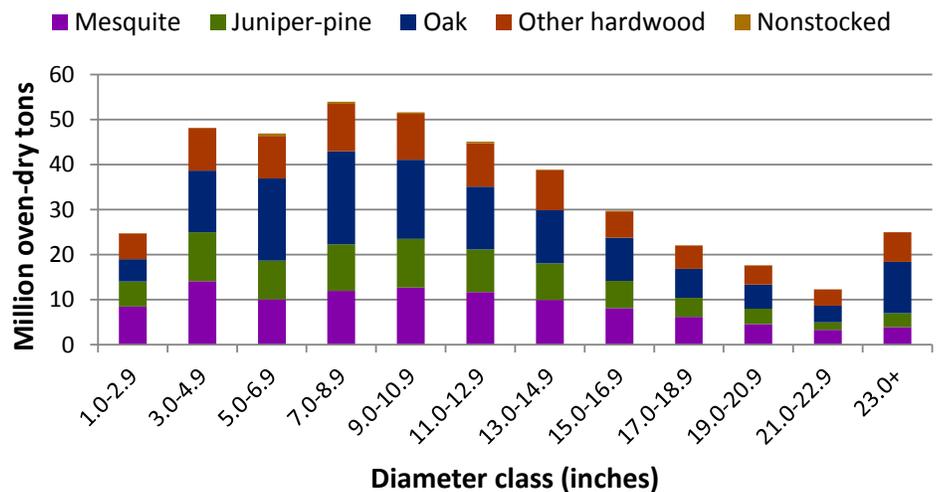


Figure 8. Biomass by forest type and diameter.

Sustainable Forestry Department
200 Technology Way, Suite 1281
College Station, TX 77845-3424
Tel: 979/458-6630
Fax: 979/458-6633
<http://tfsweb.tamu.edu>

Fine woody debris (FWD) are down pieces of wood with a transect diameter less than 3 inches. FWD are not connected to any standing tree or shrub.

Fine woody debris are separated into three diameter classes that match the components of the National Fire Danger Rating System.

Small / 0.00-0.24 in / 1-hr

Medium / 0.25-0.99 in / 10-hr

Large / 1.00-2.99 in / 100-hr

FIA data are available online at
<http://www.fia.fs.fed.us/tools-data/>

DOWN WOODY MATERIAL

At every forested inventory location in Central & West Texas, coarse woody debris, fine woody debris, duff, litter, shrubs/herbs, slash piles, and fuelbed depth data are collected. These data provide information on forest fuel conditions, wildlife habitat suitability, forest and woodland structure, and carbon accumulation.

Fine woody debris (see sidebar) averages vary by size and forest type (Figures 9-11). Averages are highest in oak forest types and lowest in nonstocked forest types. Mesquite and juniper-pine forest types have averages below oak and other hardwood but above non-stocked forest types. These patterns hold for all of the fuel classes (i.e. 1-hr, 10-hr, and 100-hr).

For every forest type, averages are highest in the 100-hr fuel class and lowest in the 1-hr fuel class. For example, the 1-hr, 10-hr, and 100-hr averages for juniper-pine are 0.02, 0.18, and 0.65 short tons per acre, respectively.

Note: Down woody material estimates are based on data collected 2004-2010.

1-hr

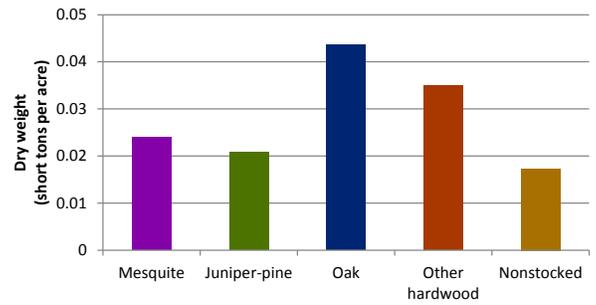


Figure 9. Average weight of 1-hr fine woody debris by forest type.

10-hr

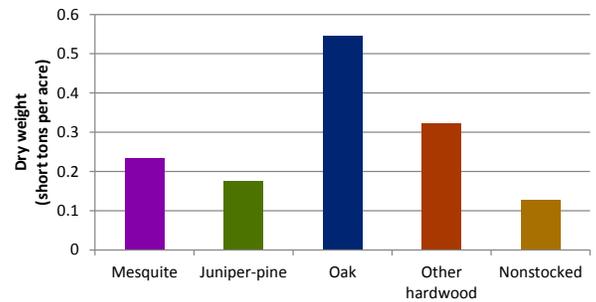


Figure 10. Average weight of 10-hr fine woody debris by forest type.

100-hr

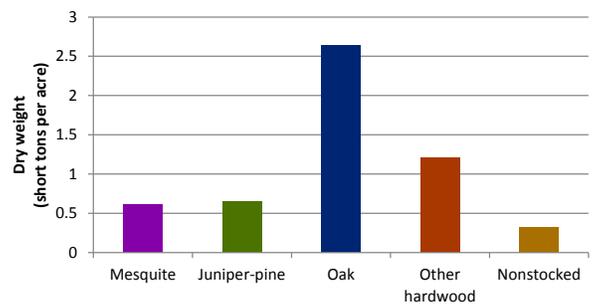


Figure 11. Average weight of 100-hr fine woody debris by forest type.

MORE INFORMATION

This report was prepared by Chris Edgar, Forest Resource Analyst, and Rebekah Zehnder, Geospatial Analyst, of the Texas A&M Forest Service. Feel free to contact either with questions about information in this report or about Forest Inventory and Analysis. They can be reached by phone at 979/458-6630 and by e-mail at cedgar@tfs.tamu.edu or rzhender@tfs.tamu.edu.