

# East Texas, 2012

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## FOREST INVENTORY & ANALYSIS FACTSHEET

### Introduction

This science update summarizes the findings of the statewide annual inventory of the forest resource attributes in Texas conducted by the Southern Forest Inventory and Analysis (FIA) Program in cooperation with the Texas A&M Forest Service. The 254 counties of Texas are consolidated into seven FIA survey units—southeast (unit 1), northeast (unit 2), north central (unit 3), south (unit 4), west central (unit 5), northwest (unit 6), and west (unit 7). East Texas is made up of units 1 and 2 with a total of 43 counties, while central and west Texas consist of units 3 through 7 (fig. 1). This overview represents the 2003 to 2012 moving average for east Texas provided by the remeasurement of annual inventory plots.



Figure 1—Survey units of east and central/west Texas.

### Forested Area

Forest area amounted to 12.1 million acres in 2012 and occupied 56 percent of the total land area in east Texas (table 1). Nearly 12.0 million acres, or 99 percent, of the forest land is considered timberland. The area of forest land in east Texas has remained relatively stable since 1992 (Cooper and Bentley 2012).

### Forest Ownership

Ownership of east Texas' 11.9 million acres of timberland has remained stable with notable exceptions. Nonindustrial private landowners still control the majority (54 percent) of east Texas' 11.9 million acres of timberland, and public agencies (Federal, State and other) hold only a small percentage (9 percent) (fig. 2). Forest industry's divestiture of timberland, and its acquisition by other

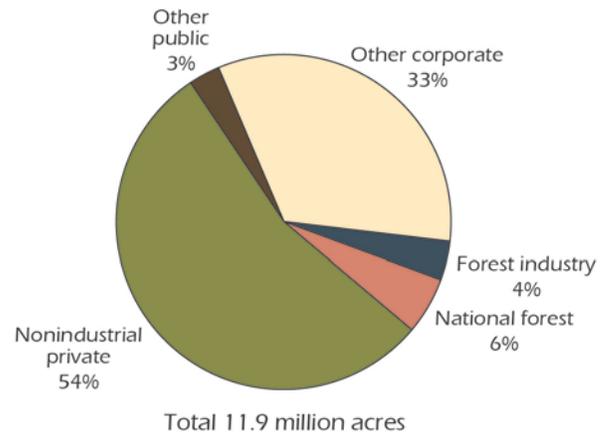


Figure 2—Timberland area by ownership class, east Texas, 2012.

Table 1—Area by land class and survey year, east Texas, 2003 to 2012

Land class	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
	<i>thousand acres</i>									
Timberland	11,663	11,738	11,847	11,907	11,955	11,961	11,949	11,957	11,931	11,922
Other/reserved	135	120	119	125	122	128	127	128	125	125
Total forest land	11,865	11,908	12,009	12,092	12,116	12,126	12,124	12,128	12,092	12,071
Nonforest land	9,592	9,564	9,455	9,388	9,360	9,352	9,355	9,351	9,384	9,401
Total land area	21,456	21,471	21,464	21,480	22,133	22,238	22,272	22,260	21,476	21,472
Percent forested	55	55	56	56	55	55	54	54	56	56

Numbers in rows and columns may not sum to totals due to rounding.





corporate owners, continued into 2012 (fig. 3). Forest industry-held land has decreased by 87 percent since 2003 and stood at 4 percent of timberland in 2012, while other corporate owners such as Timber Investment Management Organizations (TIMOs) and Real Estate Investment Trusts (REITs) increased by 289 percent to hold 33 percent of timberland.

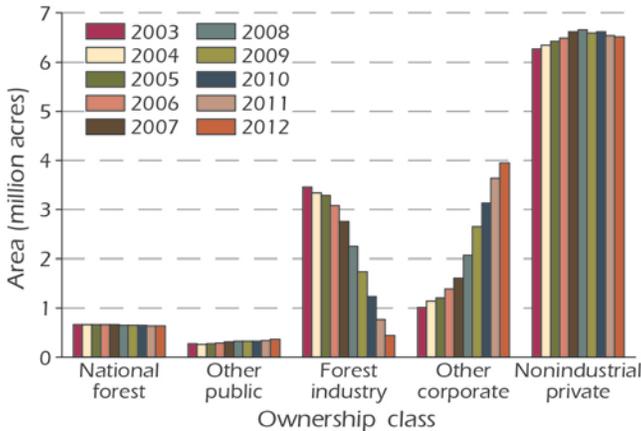


Figure 3—Timberland area by ownership class and survey year, east Texas, 2003–12.

## Forest-Type Composition

Hardwood forest types comprise the majority of timberland area in east Texas, accounting for 6.5 million acres (fig. 4). Softwood forest types occupy 5.3 million acres of east Texas’ timberland area. Loblolly-shortleaf pine is the most abundant forest-type group with 5.1 million acres and comprises the majority (96 percent) of all softwood forest-types. East Texas’ softwood timberland area is split nearly equally between natural pine stands (2.6 million acres) and planted pine stands (2.7 million acres). Oak-hickory is the predominant hardwood forest-type group with 2.8 million acres, followed by oak-pine (1.4 million acres) and oak-gum-cypress (1.4 million acres).

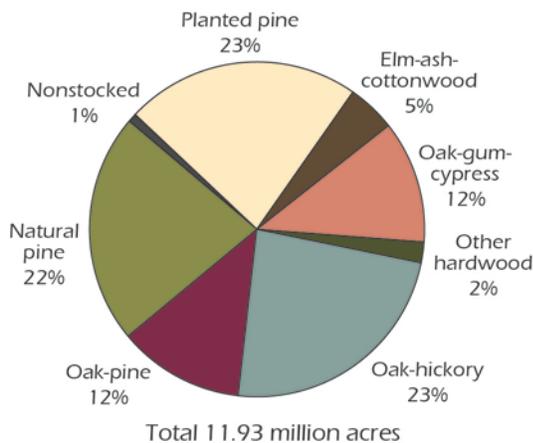


Figure 4—Timberland area by major forest-type groups, east Texas, 2012.

## Inventory Volume

Total all-live volume on timberland was 17.5 billion cubic feet. Inventory volume has remained relatively stable, increasing slightly from 16.8 billion cubic feet recorded at the start of the annualized forest inventory in 2003 (fig. 5). In 2012, all-live volume in softwood species amounted to 9.7 billion cubic feet, while hardwood species totaled 7.8 billion cubic feet. The loblolly-shortleaf pine forest-type group accounted for 9.4 billion cubic feet (97 percent) of the all-live softwood volume. Since 2003, volume for forest industry has decreased from 4.5 billion cubic feet to 610.7 million cubic feet in 2012 (fig. 6), following the divestiture of forest acreage previously mentioned. During this same time, volume for other corporate ownership increased from 1.2 billion cubic feet to almost 5.0 billion cubic feet.

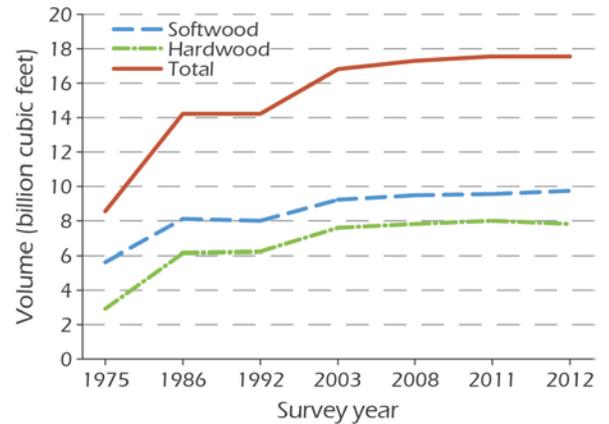


Figure 5—Net volume of live trees on timberland by survey year, east Texas, 1975–2012.

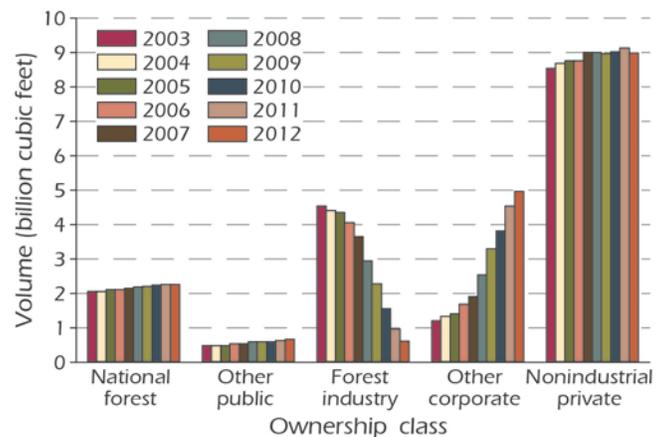


Figure 6—Net all-live volume on timberland by ownership class and survey year, east Texas, 2003–12.



All-live volume of softwoods has increased in most diameter classes since 2003, with the largest increases occurring in the 5.0–6.9, 7.0–8.9, and 9.0–10.9 inch classes (fig. 7). Volume by 2-inch diameter class shows the majority (60 percent) is centered within the 7.0- to 16.9-inch diameter classes. All-live volume of hardwoods by diameter classes has remained fairly stable since 2003 (fig. 8).

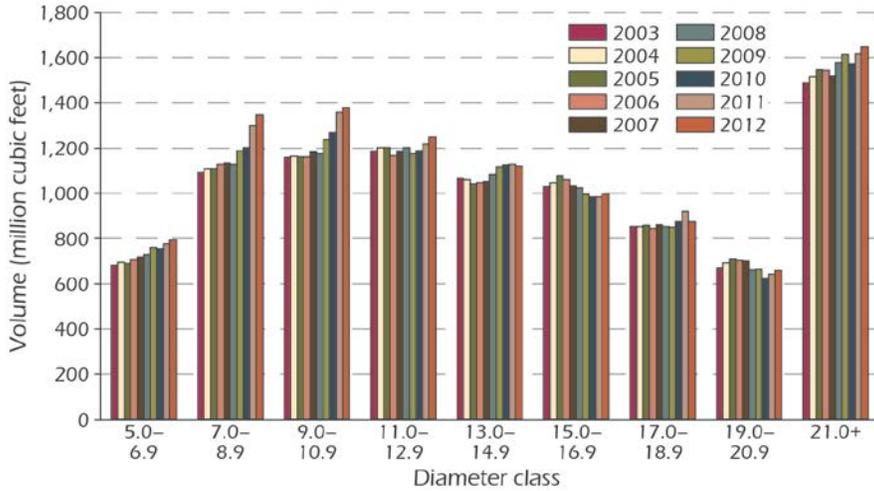


Figure 7—Softwood volume on timberland by 2-inch diameter class and survey year, east Texas, 2003–12.

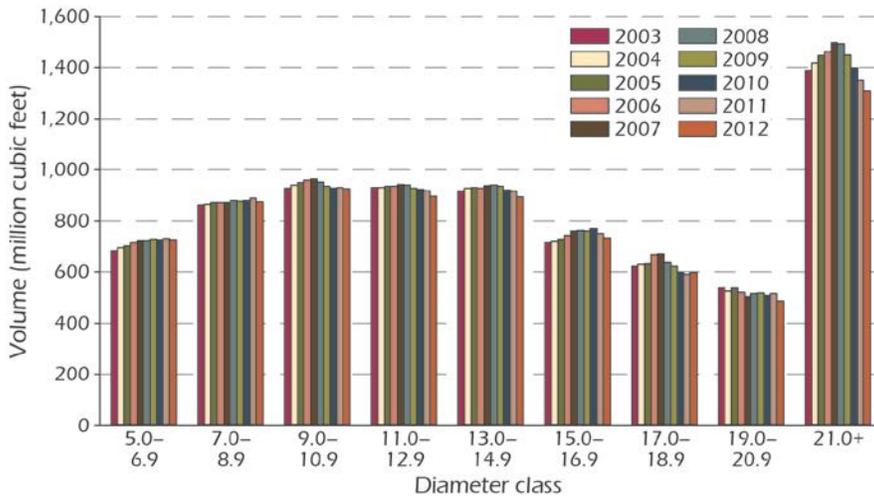


Figure 8—Hardwood volume on timberland by 2-inch diameter class and survey year, east Texas, 2003–12.

**Annual Growth, Removals, and Mortality**

In 2012, total average annual net growth for all-live trees on timberland was 700.5 million cubic feet (fig. 9). Total annual removals for all-live trees on timberland were 622.5 million cubic feet per year, while mortality averaged 285.5 million cubic feet per year. Average annual net growth for all-live softwood species on timberland averaged 603.6 million cubic feet per year, a decrease of 9 percent since 2006. Average annual softwood removals were 465.8 million cubic feet per year, a decline of 15 percent since 2006, while average annual softwood mortality was 110.8 cubic feet per year, showing an 89 percent increase during the same timeframe. Average annual net growth for hardwood species averaged 96.9 million cubic feet per year, a striking 74 percent decrease since 2006. Average annual removals of hardwood species decreased 19 percent from the 2006 data to 156.7 million cubic feet per year. Average annual hardwood mortality, on the other hand, increased 286 percent since 2006 to 174.7 million cubic feet per year.

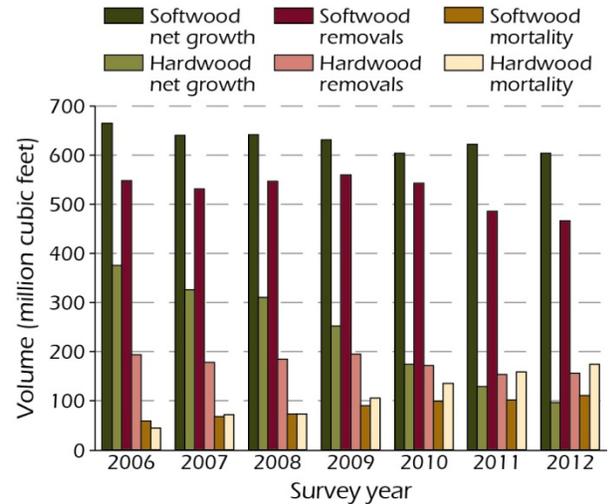


Figure 9—All-live average annual growth, removals, and mortality on timberland by survey year, east Texas, 2006–12.

## Hardwood Growth and Mortality

Hardwood trees exhibit the most marked decreases in net annual growth and increases in net annual mortality for timberland trees in east Texas. Texas has experienced repeated, severe droughts, most notably from 2005 to 2006 and 2010 to 2011, with 2011 being the driest year ever recorded in the State. The ratio of hardwood net annual growth to annual mortality has steadily decreased since 2006 (fig. 10). When this ratio is greater than one, it indicates that the forests are growing more

volume annually than is lost to natural mortality. This ratio drops below one for hardwoods in east Texas in 2011 and decreased further in 2012, meaning that more volume was being lost to mortality each year than was being gained from growth. Looking more closely, we can see that hardwoods growing in the southeast survey unit of east Texas have been particularly hard-hit, possibly due to the landfalls of Hurricanes Rita (2005) and Ike (2008). Growth to mortality ratios dropped below one in southeast Texas in 2010 and have continued to decline (fig. 10).

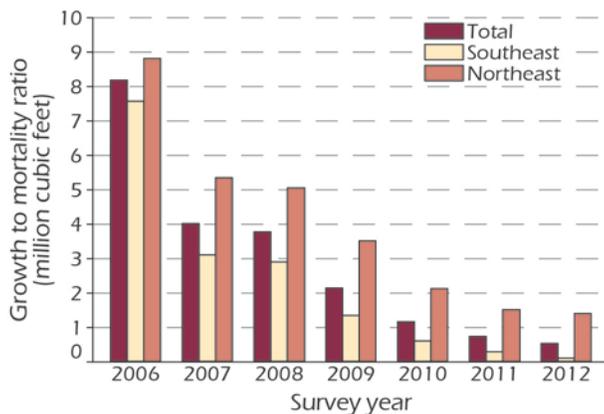


Figure 10—Ratio of all-live average net annual growth to average annual mortality for the hardwood species group on forest land by survey unit and year, east Texas, 2006–12.

## Literature Cited

Cooper, J.A.; Bentley, J.W. 2012. East Texas, 2011. e-Science Update SRS-052. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 5 p.  
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Pine stand in Davis Mountains.  
 (photo by Ron Billings)

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