

East Texas Forestlands



2008 Report

T E X A S
FOREST SERVICE

The Texas A&M University System

Published November 2009

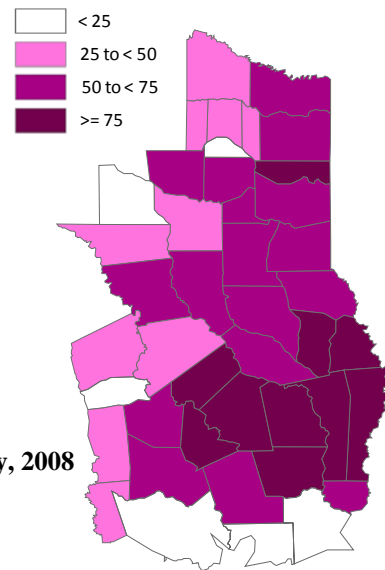
East Texas Forestlands: 2008

Texas Forest Service Forest Inventory and Analysis Program

In 2004, Texas Forest Service, in cooperation with the Southern Research Station's Forest Inventory and Analysis (FIA) Program launched an inventory of 43 counties in East Texas.

The information contained in the FIA database represents the full complement (all five panels) for the second cycle of annualized inventory data collected in East Texas.

The complete cycle consisted of 3,773 plots. About one-fifth of these plots were measured in each panel between 2004 and 2008.



Percent forestland by county, 2008

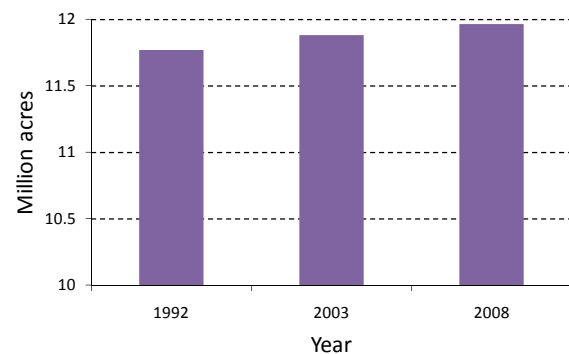
Area

Forestland

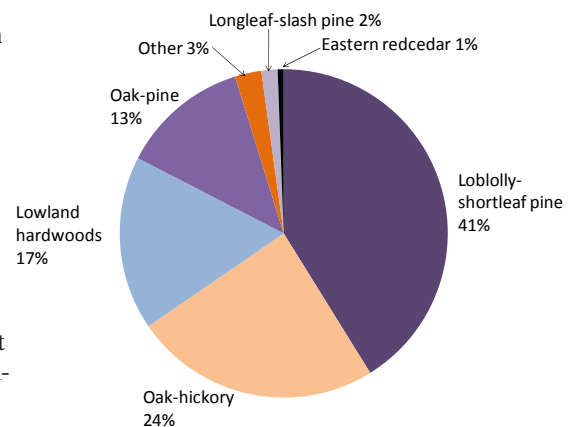
Forestland makes up about 54 percent of the East Texas region. Almost all of that forestland (99 percent) is timberland while the remaining area consists of limited timber productivity (< 20 cubic feet/acre/year) or land reserved by law from timber production.

Nearly 39 percent of the region's timberland is located in just 10 of the 43 counties, with the central southeastern counties the most densely forested.

Area of timberland, 1992-2008



Area of timberland, 2008



Timberland

There were 11,964,913 acres of timberland estimated in 2008, which is an 80,128 acre increase (< 1 percent) since the 2003 inventory. When considering sampling error, the relative change in timberland area likely is negligible.

Forest type

Southern pine forests consist primarily of loblolly pine and account for 43 percent of the timberland — about half planted and half occurring naturally. It's located primarily in the south and east.

The remaining timberland consists of oak-hickory mainly to the west and north, and oak-pine and lowland hardwood (12 percent oak-gum-cypress and 5 percent elm-ash-cottonwood) located throughout the region.

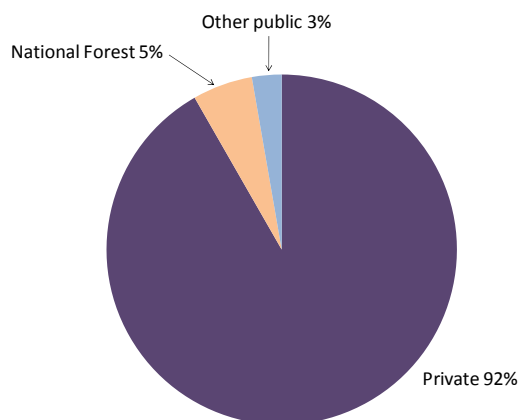
East Texas Forestlands: 2008

Ownership

Private owners control 92 percent of the timberland in East Texas, private owners include forest industry and other corporate owners — such as Timber Investment Management Organizations (TIMOs) and Real Estate Investment Trusts (REITs) — as well as family forest owners. The USDA Forest Service operates another 5 percent of the timberland.

Questionnaires focusing on timber harvest and property size were sent out from 2002 to 2006 to an area weighted sample of 857 land owners. There was a 45 percent return rate.

According to survey results, timber was harvested on 74 percent of the family forest acreage. The survey also revealed that the vast majority of owners possess small tracts of land while just a few people hold large tracts.



Major timberland owners, 2008

Response by family forest owner (formerly Non-Industrial Private Forest, or NIPF), 2006

Timber activity	Area	
	million acres	percent
Timber harvest		
Yes	4.8	74
No	1.5	24
No answer	0.1	2
Harvested past 5 years	2.3	36

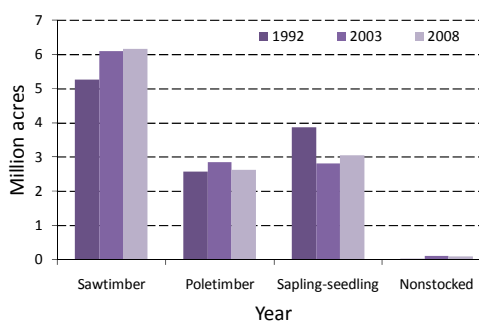
Size of forest	Area		Owners	
	thousand Acres	percent	thousand Number	percent
Acres				
1-9	346	5	94	45
10-19	680	11	55	26
20-49	914	14	31	15
50-99	1125	18	17	8
100-1000	2505	39	11	5
> 1000	841	13	~ 1	-

Stand structure

Stand-product class, also known in timber reports as stand-size class, is largely calculated from all live tallied trees on timberland.

Sawtimber stands constitute 52 percent of the region while poletimber stands make up 22 percent. Sapling-seedling stands make up the remaining 26 percent.

Stand-product class by survey year, timberland



Stand-product class	Area	Not Determined	Stand-diameter class (inches d.b.h.)			
			0 to < 5	5 to < 9	9 to < 20	20 to < 40
thousand acres						
Sawtimber	6163.4	-	122.8	876.3	4822.5	341.9
Poletimber	2636.9	6.1	103.5	2077.7	433.3	16.3
Sapling-seedling	3055.7	79.4	1933.0	807.0	213.6	22.7
Nonstocked	109.0	28.9	52.4	17.1	9.1	1.5
Total	11964.9	114.3	2211.6	3778.1	5478.4	382.4

Stand-diameter by stand-product class, timberland, 2008

East Texas Forestlands: 2008

Trees Per Acre

Across all forest types, there is an average of 638 trees per acre.

Volume

In 2008, softwood tree volume measured 9.5 billion cubic feet for live trees (9.3 billion for growing-stock trees). That's an increase of 0.4 percent (1.2 percent for growing-stock trees) since 2003. Hardwood tree volume measured 7.8 billion cubic feet (6.6 billion for growing-stock trees), marking a 1.1 percent (4 percent for growing-stock trees) increase since 2003.

Pine is more heavily concentrated in the southern region of East Texas, while oak-hickory volume is more plentiful in the northern part of the region. In general, volume is greater in Southeast Texas.

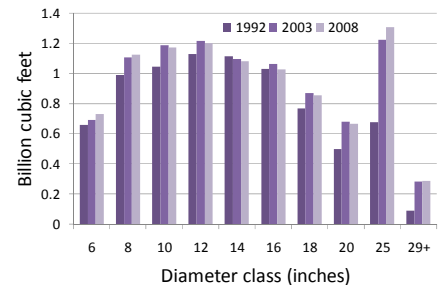
The ratio of average annual net growth to average annual removals is important. If the ratio is greater than one, then wood volume is being added to the inventory. If the ratio is less than one, then inventory is declining.

The ratio for the 2003 to 2008 period varies by owner class:

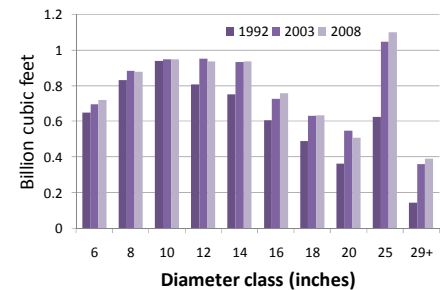
- National forest land: 71.00 for live trees, 70.39 for growing-stock trees.
- Other public: 41.89 for live trees, 33.73 for growing stock trees.
- Private land: 1.33 for live trees, 1.31 for growing stock trees.

Volume in live trees by dbh, timberland, 1992 to 2008

Softwoods



Hardwoods



Growth to removals ratio and average annual live tree (growing stock) growth, removals and mortality for timberland, 2003 to 2008

Item	Softwoods	Hardwoods
Net growth-to-removals ratio	1.17 (1.17)	1.62 (1.69)
<i>million ft³</i>		
Component of change		
Gross growth	742.5 (729.4)	381.7 (325.3)
Mortality	74.9 (72.1)	74.8 (53.3)
Net growth	667.5 (657.3)	306.9 (272.0)
Removals	568.8 (560.2)	189.5 (161.1)

East Texas Forestlands: 2008

Estimates for East Texas, 2008; Components of change between 2003 and 2008

Item	Sample estimate
Land area (1,000 acres)	
Forestland	12128.7
Timberland	11964.9
Reserved forestland	126.7
Other forestland	37.1
All live on timberland (million ft³)	
Inventory	17292.3
Net annual growth	974.4
Annual mortality*	149.7
Annual removals	758.3
Growing stock on timberland (million ft³)	
Inventory	15982.9
Net annual growth	929.3
Annual mortality*	125.3
Annual removals	721.3
Sawtimber on timberland (million fbm)	
Inventory	62897.5
Net annual growth	3517.8
Annual mortality*	536.6
Annual removals	2616.0

* Net annual growth includes annual mortality.

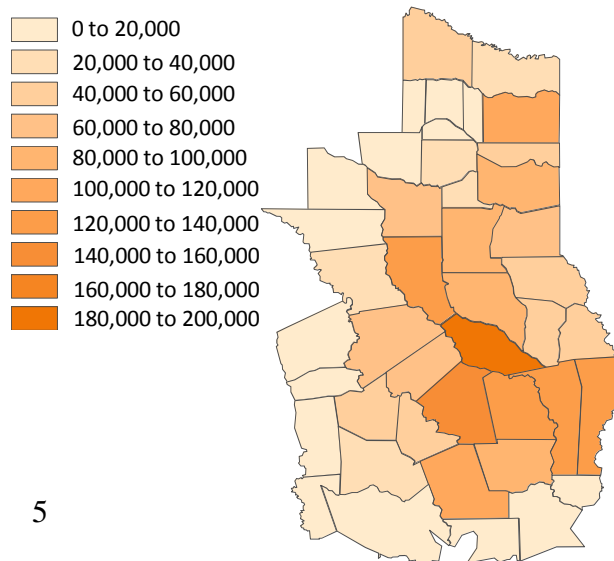
Silvicultural Treatments

Since 2003, 18 percent of the timberland in East Texas has undergone at least one silvicultural treatment. The majority of the treatments involved some type of tree cutting (final harvest, partial harvest, commercial thinning, seed tree/shelterwood operation or timber stand improvement) and accounted for 15percent, or 1,847,156 acres, of the timberland.

Logging Residue

Harvesting operations produce logging residue — or biomass — that potentially can be used to produce bioenergy and biofuel.

An estimated 2.3 million green tons of available logging residue (including tops, limbs and unutilized cull trees but excluding stumps) was generated during 2008 harvests.



East Texas Forestlands: 2008

Acres Planted by Year Trends

An annual survey is conducted by Texas Forest Service to determine how many acres of trees (across all species) have been planted. Both the number of family forest and the total number (also includes private companies and public agencies) of acres planted have declined over the past decade.

In the table to the right, 'Year' refers to fiscal year. For example, fiscal year 2006 begins on Oct. 1, 2005 and ends Sept. 30, 2006.

Year	Number of acres	
	Family forest	All
1999	48,358	147,089
2000	43,181	164,430
2001	48,438	156,875
2002	33,164	114,392
2003	26,358	90,193
2004	36,896	113,686
2005	33,296	103,601
2006	26,710	92,030
2007	37,229	105,936
2008	25,960	86,546

Major Mill Shutdowns

Several large-scale mills in East Texas and the surrounding states of Arkansas and Louisiana have halted operations, resulting in an impact on the long term timber supply.

Company Name	Mill Location	Mill Type
Abitibi-Consolidated Inc.	Lufkin, TX	Paper mill
Clemsa Lumber Co.	Pollok, TX	Lumber mill
Georgia-Pacific	Logansport, LA	Plywood
Georgia-Pacific	Springhill, LA	Plywood
Louisiana-Pacific Corp.	Silsbee, TX	Oriented Strand Board (OSB)
Norbord Inc.	Jefferson, TX	Oriented Strand Board (OSB)
North American Procurement Co.	Moscow, TX	Chip mill
Pasadena Paper Co.	Livingston, TX	Paper mill
Potlatch Corp.	Prescott, AR	Lumber mill
Temple-Inland	Pineland, TX	Softwood Veneer
Weyerhaeuser	Mountain Pine, AR	Plywood

Precautions

Estimates in this publication are calculated using samples obtained from the East Texas region. All estimates, including data generated by both the FIA and Texas Forest Service, have error associated with them.

East Texas Forestlands: 2008

Definition of Terms

Component of change: References change in the volume of trees averaged over the years of the intersurvey period. More specifically:

- **Average annual gross growth:** Change in the volume of trees in the absence of cutting and mortality.
- **Average annual mortality:** Volume of trees that died from natural causes.
- **Average net annual growth:** Net change in volume in the absence of removals; calculated as average annual gross growth minus average annual mortality.
- **Average annual removal:** Volume of trees removed from the inventory by harvesting, cultural operations (e.g., timber-stand improvement), land clearing or change in land use; averaged over the years of the intersurvey period.

Dbh: Tree stem diameter in inches measured outside the bark 4.5 feet above the ground (breast height).

Family forest: Private land owned by individuals and families — including farms — where the owner does not own a primary wood-using plant or is not a formally incorporated company or organization. Previously referred to as non-industrial private forest (NIPF) owners.

Forestland: Land that is at least 10 percent stocked by forest trees of any size, or land that has been at least 10 percent stocked in the past and not currently developed for nonforest use. To qualify, the tract must be at least one acre and 120 feet wide:

- **Timberland:** Forestland that is capable of annually producing 20 cubic feet of wood volume per acre and is not withdrawn from timber utilization.
- **Reserved forestland:** Public forestland that is capable of annually producing 20 cubic feet of wood volume per acre, but is withdrawn from timber utilization by statute or administrative regulation.
- **Other forestland:** Forestland that is incapable of annually producing 20 cubic feet of wood volume per acre under natural conditions due to adverse site conditions such as sterile soils, dry climate, poor drainage, high elevation, steepness or rockiness. The term is synonymous with woodland, a term used in earlier FIA reports.

Forest type: Forestland classification of the species forming a plurality of live tree stocking, and largely based on an algorithm of tallied trees.

Growing-stock trees: Live trees that contain at least one 12-foot or two 8-foot logs in the saw-log portion, either currently or potentially, if too small to qualify as a sawlog. The log(s) must meet dimension and merchantability standards to qualify. Trees must have one-third of the gross board-foot volume in sound wood, either currently or potentially.

Growth-to-removals ratio: The ratio of net growth in volume divided by the volume removed by human activity, including harvesting, land clearing and changes in land use.

Hardwoods: Dicotyledonous trees, usually broadleaf and deciduous.

East Texas Forestlands: 2008



Logging residue: Woody material that is not removed from sites during harvesting operations. Types of logging residue include stumps, tops, limbs and unutilized cull trees:

- **Stump residue:** Part of the tree that is lower than the cutting point and thus left after the harvesting operation, it generally isn't commercially available since the cost of obtaining the stump or root biomass likely is prohibitive.
- **Tops:** The tops of the trees that are broken during harvesting or cut off the central stem of the tree due to a merchantability standard.
- **Limbs:** Tree branches.
- **Cull trees:** Trees that can't be used to produce saw logs due to defects, rot or form. Some cull trees are used as pulpwood and others are left unutilized as a part of logging residue.

Tops, limbs and unutilized cull trees are potentially available as biomass for energy production and/or chemical extraction.

Poletimber: As defined by FIA, softwood species 5 to 8.9 inches dbh and hardwood species 5 to 10.9 inches dbh.

Saplings: As defined by FIA, live trees 1 to 4.9 inches dbh.

Sawtimber: As defined by FIA, softwood species 9 inches dbh and larger and hardwood species 11 inches dbh and larger.

Seedlings: As defined by FIA, live hardwood trees with a dbh less than or equal to one inch and height greater than or equal to one foot and live softwood trees with a dbh less than or equal to one inch and height greater than or equal to six inches.

Softwoods: Coniferous trees, usually evergreen, having needles or scale-like leaves.

Stumpage: Standing trees in the forest.

Volume: The amount of sound wood in live trees that are at least five inches dbh from a one-foot stump to a minimum four-inch top diameter outside bark of the central stem.

For additional information, contact:

Curtis L. VanderSchaaf, Forest Resource Analyst
Texas Forest Service

John B. Connally Building · 301 Tarrow, Ste. 364 · College Station, Texas 77840-7896

Phone: (979) 458-6659 · Fax: (979) 458-6633

Email: cvanderschaaf@tfs.tamu.edu

Users can conduct their own analysis by going to the FIA web site:

<http://www.fia.fs.fed.us/tools-data/default.asp>