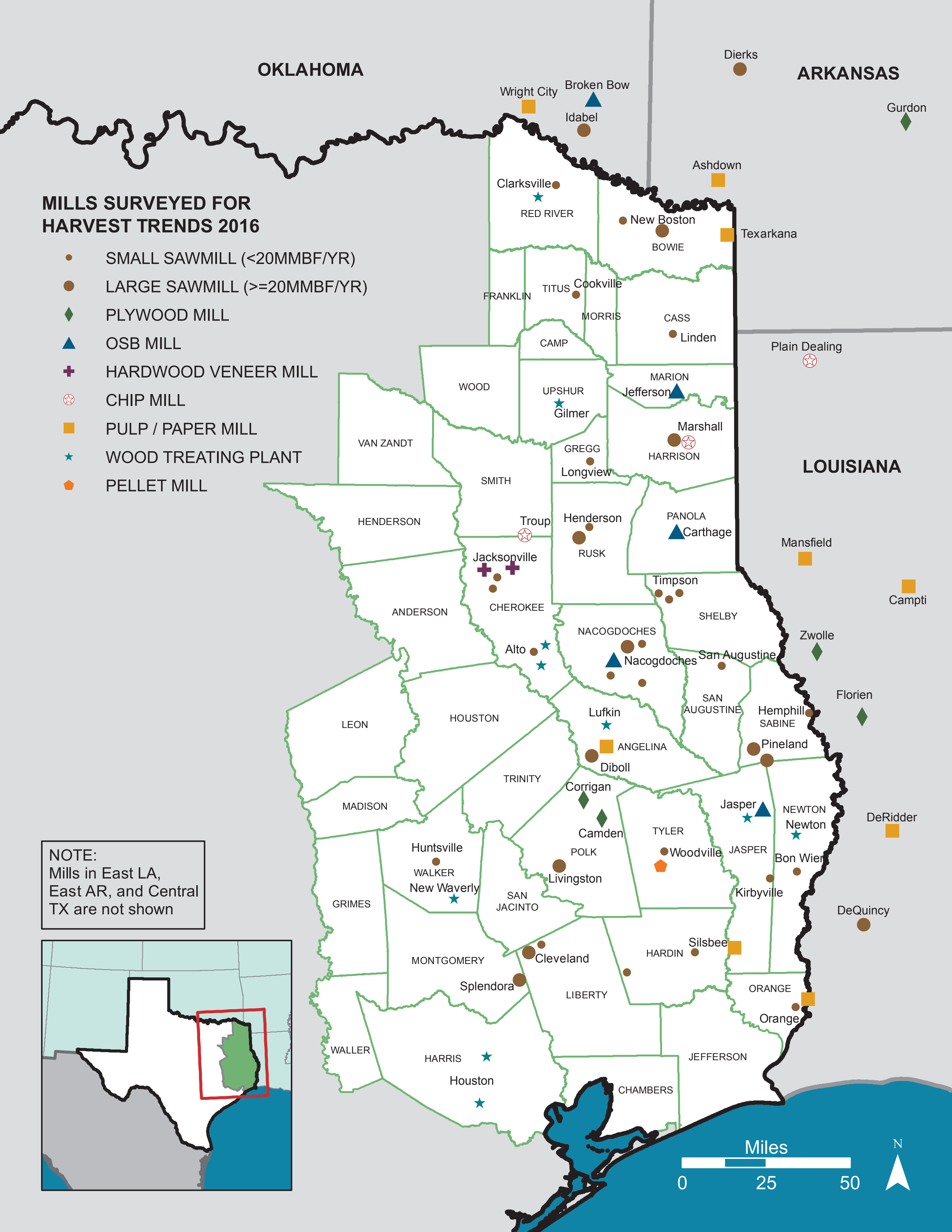
Harvest Trends 2016

December 2017

Texas A&M Forest Service


MILLS SURVEYED FOR HARVEST TRENDS 2016
SMALL SAWMILL (<20MMBF/YR)
LARGE SAWMILL (>=20MMBF/YR)
PLYWOOD MILL
OSB MILL
HARDWOOD VENEER MILL
CHIP MILL
PULP / PAPER MILL
WOOD TREATING PLANT
PELLET MILL
NOTE:
Mills in East LA, East AR, and Central TX are not shown
OKLAHOMA
ARKANSAS
LOUISIANA
Dierks
Gurdon
Wright City
Broken Bow
Idabel
Ashdown
Texarkana
Clarksville
RED RIVER
New Boston
BOWIE
FRANKLIN
TITUS
Cookville
MORRIS
CASS
Linden
CAMP
Plain Dealing
WOOD
UPSHUR
Gilmer
MARION
Jefferson
VAN ZANDT
Marshall
HARRISON
GREGG
Longview
SMITH
HENDERSON
Troup
Henderson
RUSK
PANOLA
Carthage
Mansfield
Campti
Jacksonville
CHEROKEE
ANDERSON
Timpson
SHELBY
NACOGDOCHES
Nacogdoches
Alto
San Augustine
Zwolle
SAN AUGUSTINE
Florien
Hemphill
SABINE
LEON
HOUSTON
Lufkin
ANGELINA
Diboll
Pineland
TRINITY
Corrigan
MADISON
Camden
Jasper
NEWTON
Newton
DeRidder
TYLER
Woodville
JASPER
POLK
Livingston
Huntsville
WALKER
New Waverly
Bon Wier
GRIMES
SAN JACINTO
Kirbyville
DeQuincy
Silsbee
HARDIN
MONTGOMERY
Cleveland
Splendora
LIBERTY
ORANGE
Orange
WALLER
HARRIS
Houston
JEFFERSON
CHAMBERS
Miles
0
25
50
N

Harvest Trends 2016

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HIGHLIGHTS

Harvest Trends 2016

TIMBER REMOVAL

- ♦ Total growing stock timber removal was 527.3 million cubic feet, an increase of 4.5 percent from last year.
  - Pine removal was 447.9 million cubic feet, up 11.9 percent from last year.
  - Hardwood removal was down 24.0 percent to 79.4 million cubic feet.
- ♦ Harvest of timber for industrial use in the production of wood products was 546.6 million cubic feet.
  - 467.2 million cubic feet of pine were harvested for industrial consumption.
  - 79.4 million cubic feet of hardwood were harvested for industrial consumption.
- ♦ Stumpage value decreased 5.2 percent to $299.9 million, and delivered value was up 4.7 percent to $691.2 million.
- ♦ Harvest of sawlogs was up 14.1 percent from last year to 1.2 billion board feet.
- ♦ Harvest for veneer and structural panel production increased 5.4 percent from last year to 131.0 million cubic feet.
- ♦ Pulpwood and pellet roundwood harvest was 2.7 million cords, a decrease of 3.4 percent from last year.
- ♦ Total timber volume imported from other states was 87.4 million cubic feet while the total volume exported was 70.0 million cubic feet. The net import was 17.4 million cubic feet.

PRIMARY FOREST PRODUCTS

- ♦ Production of primary wood products included:
  - 1.4 billion board feet of lumber, a decrease of 4.8 percent from last year.
  - 2.7 billion square feet (3/8-inch basis) of structural panel products, an increase of 11.7 percent.
  - 2.3 million tons of pulp and paperboard, up 10.0 percent from last year.

MILL AND LOGGING RESIDUES

- ♦ Total production of mill residue was 5.6 million green tons, a decrease of 4.7 percent.
- ♦ Total production of logging residue was 2.7 million green tons, the same as last year.

Harvest Trends 2016

INTRODUCTION

Forests are vital economic and environmental assets in East Texas. The wood-based industry employed more than 66,000 people in 2015.[1] The wood-based sector ranked fifth among manufacturing sector employers in the state in 2015.[2] In 28 of 43 East Texas counties, the wood-based sector was among the top five manufacturing employers in 2015.[1] The value of harvested timber ranked ninth in 2015 among Texas' top agricultural commodities, behind cattle and calves, broilers, milk, miscellaneous crops, cotton lint, corn, chicken eggs, and sorghum grain.[3]

To gather the most current information on the status of this valuable resource, Texas A&M Forest Service conducts an annual survey of the state's primary forest products industry. This 51st annual report provides information on the volume and value of timber harvested in East Texas during 2016 and reports the production of primary wood products, logging residue, and mill residue. Data on forest management activities are also presented. Information for this report comes from a survey of 66 mills in Texas and 17 mills in surrounding states. Texas A&M Forest Service appreciates the cooperation of these companies, without which this report would not be possible.

2016 ECONOMIC CONDITIONS

The United States (U.S.) economy remained steady in 2016. The real Gross Domestic Product (GDP) increased 1.6 percent, which was lower than the 2015 annual increase of 2.6 percent.[4] The decline in real GDP growth from 2015 to 2016 was primarily due to downturns in private inventory investment, nonresidential and residential fixed investment, and personal consumption expenditures. U.S. corporate profits from current production were down by $2.3 billion in 2016. The economy was on a path of recovery with a drop in the rate of unemployment to 4.9 percent in 2016, from 5.3 percent in 2015.[5] Given the considerable improvement in realized and expected labor market conditions and inflation, the Federal Reserve raised the target range for the federal funds rate to 1/2-3/4 percent in December 2016. The target range was 1/4-1/2 percent in 2015.[6]

The Consumer Price Index (CPI), the most closely watched indicator for U.S. inflation, increased 2.1 percent in 2016, a larger increase than the 0.7 percent rise in 2015. This was the largest increment in CPI over the past 10 years. The energy index increased 5.4 percent after declining in 2015 and 2014.[7] The gasoline index increased 9.1 percent in 2016. The food index, however, declined 0.2 percent in 2016, the first annual decline since 2009.

The U.S. housing market continued to improve at a modest rate in 2016. Compared to 2015, housing starts rose 5.6 percent to 1,173,800 units in 2016, the highest annual total since 2007.[8] Single-family housing starts increased 9.4 percent to 781,500 units. The share of single-family starts was 66.6 percent, slightly higher than the 64.3 percent the previous year. Multi-family housing starts declined 1.3 percent. National residential housing permits, the best indicator of future housing starts activity, rose 2.0 percent to 1,206,600 units in 2016. A large share of this gain (62.2 percent) was contributed by single-family permits. Multi-family building permits decreased 6.3 percent to 455,800 units in 2016.[8]

The housing affordability index was 164.8 in 2016, meaning that a family earning the median family income has 164.8 percent of the income necessary to qualify for a conventional loan covering 80 percent of a median priced existing single-family house, assuming a 20 percent down payment.[9] The median sale price of existing homes averaged $223,500 in 2016, down 5.2 percent from 2015.[9] Total existing home sales in 2016 were 5.5 million, up 3.8 percent over 2015.[9]

The average annual 30-year fixed mortgage rate was 3.7 percent in 2016, which was slightly lower than the 2015 average annual rate of 3.9 percent. The national monthly average 30-year fixed mortgage rate ranged from a rate of 3.4 percent in July to 4.2 percent in December.[10]

The Texas economy underperformed the economy of the rest of the U.S. in 2016. Real GDP (GDP-State) in Texas grew 0.4 percent in 2016, after increasing 3.8 percent in 2015.[11] Texas gained 158,700 additional jobs in 2016 with additions in major sectors including construction, mining and logging, professional and business, leisure and hospitality, trade, transportation and utilities, education and health services, financial activities, information, and government.[12] The unemployment rate in Texas remained at 4.5 percent in 2016, the same rate as in 2015.[5]

Compared to 2015, the total number of residential building permits in Texas decreased 5.5 percent in 2016 to 165,853 units. Single-family housing building permits increased 1.0 percent to 106,511. Multi-family building permits decreased 15.2 percent to 59,342 units in 2016.[13]

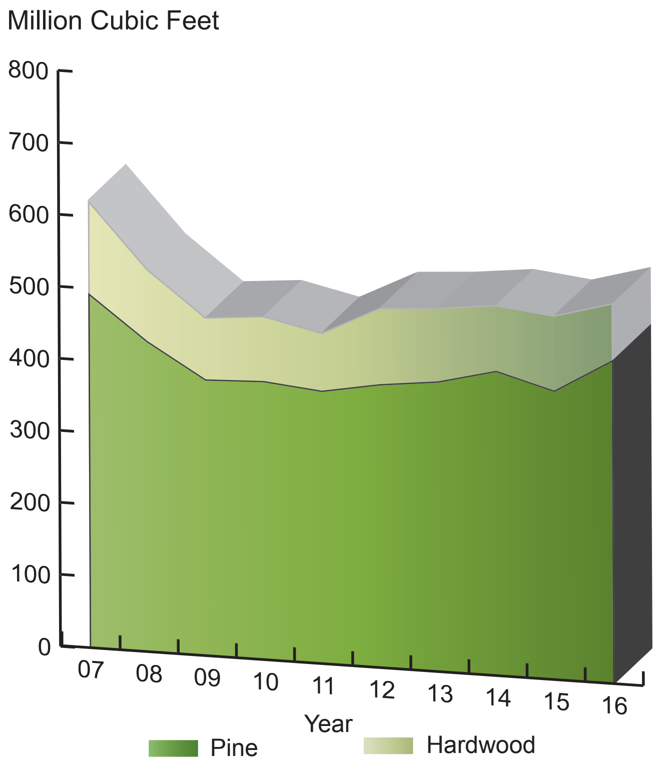


Figure 1. Total Timber Removal, 2007-2016

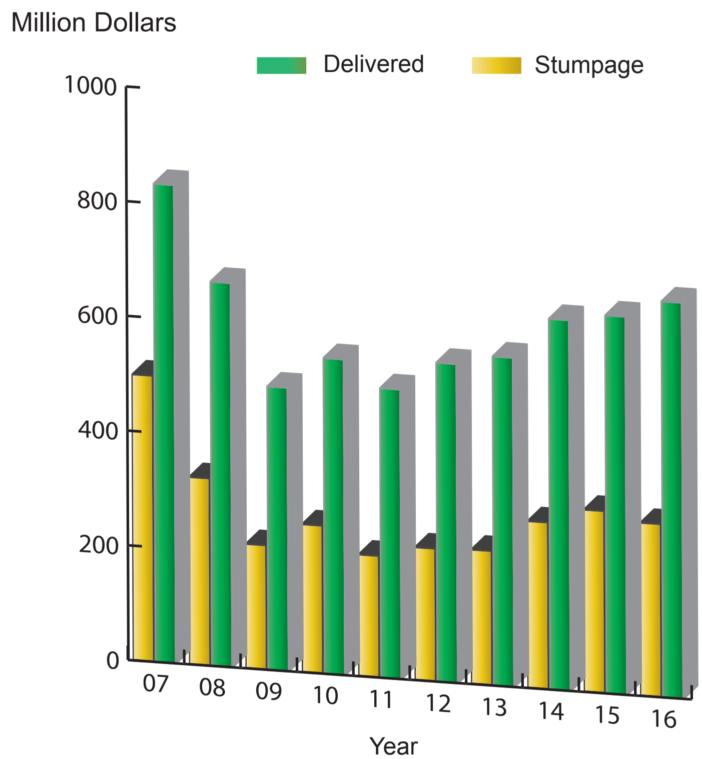


Figure 2. Value of Timber Harvest, 2007-2016

Given a 10.8 percent rise in U.S. housing starts, the domestic softwood lumber market in the U.S. posted an upward trend in 2016. U.S. softwood lumber production posted a seventh consecutive annual gain in 2016, up 1.9 percent to 32.5 billion board feet (bbf), but still 19.2 percent less than the production in 2005. Lumber production in the U.S. South accounted for 53.3 percent, or 17.3 bbf, of the U.S. total, a 4.2 percent increase from 2015.[14]

Structural panel production in the U.S. increased 3.2 percent to 22.7 billion square feet (bsf) (3/8-inch basis),[14] including 8.8 bsf of plywood and 13.9 bsf of oriented strand board (OSB). Southern OSB production increased 3.0 percent to 5.3 bsf in 2016. Southern plywood production was also up 5.0 percent to 11.2 bsf.

U.S. lumber prices rebounded slightly in 2016, but were still well below the level of 2013 and 2014. The average annual Random Lengths framing lumber composite price in 2016 was $346 per thousand board feet (mbf), a 4.9 percent increase from 2015.[14] Similarly, the average annual Random Lengths structural panel composite price increased 1.4 percent to $370 per thousand square feet (msf) in 2016.[14] While U.S. total exports of softwood lumber dropped slightly to 1.4 bbf, U.S. imports of softwood lumber from Canada soared 13.9 percent to 14.9 bbf in 2016. Since the expiration of the 2006 U.S.-Canada Softwood Lumber Agreement in October 2015, the everlasting softwood lumber trade debate between the U.S. and Canada has been active once again. In response to surging Canadian softwood lumber shipments to the U.S., the U.S. recently announced company-specific varying rates of countervailing duty and antidumping tariff against Canadian lumber flows to the U.S.

U.S. paper and paperboard production posted a slight decline in 2016, dropping 0.9 percent to 78.3 million short tons. It was 5.6 percent lower than in 2010, and down 12.3 percent from 2005. A lower level of paper production was considered the primary reason behind this decline.[15]

STUMPAGE PRICES

Across the U.S. South, average annual prices for pine sawtimber and chip-n-saw in 2016 decreased 3.9 percent and 2.1 percent, respectively.[16] Average annual pulpwood prices remained relatively flat at $10.10 per ton. While average south-wide hardwood sawtimber prices were up 4.6 percent in 2016, hardwood pulpwood prices dropped 10.9 percent over the past year. Along with usual demand and supply factors, weather, competition, mill inventories, tract size and location, and tree size and quality are the major causes of stumpage price variation in the U.S. South.[17]

According to the Texas Timber Price Trends bimonthly timber market report, the average annual pine sawtimber price in Texas dropped 9.3 percent to $213.29 per mbf, Doyle scale, in 2016, from the previous year's average annual price of $235.26 per mbf. The average annual mixed hardwood sawtimber price decreased 0.3 percent from a year earlier to

$371.21 per mbf. Pine pulpwood price decreased 2.7 percent to $24.65 per cord. Mixed hardwood pulpwood price dropped 34.7 percent to $29.76 per cord. Table 6 provides historic data on stumpage prices.

TIMBER REMOVALS

Growing Stock Removals

Total removals of growing stock in East Texas, including pine and hardwood, increased 4.5 percent from the previous year (Figure 1). The total volume of growing stock removed was 527.3 million cubic feet, compared to 504.7 million cubic feet a year earlier. Included in the total growing stock removals are timber harvested for industrial use and an estimate of logging residue. Growing stock removals are based on the latest East Texas Harvest and Utilization Study by the USDA Forest Service.

By species group, growing stock removals were comprised of 447.9 million cubic feet of pine and 79.4 million cubic feet of hardwood. Pine removals were up 11.9 percent and hardwood removals were down 24.0 percent from a year earlier. Figure 3 and Table 14 illustrate the harvest volume by species group by year.

Industrial Roundwood Harvest

Industrial roundwood harvest in Texas, the portion of the total removals that was subsequently utilized in the manufacture of wood products, totaled 467.2 and 79.4 million cubic feet for pine and hardwood, respectively. Pine industrial roundwood harvest was up 11.7 percent, and hardwood roundwood harvest was down 24.6 percent from a year earlier. The combined harvest increased 4.4 percent to 546.6 million cubic feet. Ninety-three percent of the industrial roundwood was from growing stock and 7 percent of the industrial roundwood was from non-growing stock (Table 13).

Table 1 lists the harvest of pine and hardwood by county. The top five timber producing counties were Polk, Newton, Nacogdoches, Cass, and Jasper.

Figure 4 on the next page illustrates the intensity of timber harvest expressed in cubic feet of harvest per acre of timberland. San Augustine, Angelina, Shelby, Bowie, and Polk counties had the five highest relative timber harvesting intensities.

Value of Timber Harvest

Stumpage value of East Texas timber harvest decreased 5.2 percent to $299.9 million (Figure 2). Lower stumpage prices produced the decrease in stumpage value. The delivered value was up 4.7 percent to $691.2 million. Pine timber accounted for 83 percent of the total stumpage value. Figure 3 depicts the value of harvest by product. Table 7 lists stumpage and delivered value by product category.

Sawlogs

Harvest of sawlogs for lumber production increased 14.1 percent to 1.2 billion board feet, which accounted for 35.4 percent of the total timber harvest. The pine sawlog cut totaled 1.1 billion board feet, up 15.5 percent. Hardwood sawlog harvest was down 0.5 percent to 95.0 million board feet. Polk, Newton, Angelina, Jasper, and Cherokee counties were the top five producers of sawlogs. Table 2 lists sawlog harvest by county.

Veneer and Panel Roundwood

Harvest of timber for the production of structural panels, including plywood, OSB, and hardwood veneer, was 131.0 million cubic feet, a 5.4 percent increase from a year earlier. The timber harvest for structural panels was 24.0 percent of the total timber harvest. Almost all of the veneer and panel roundwood was pine. Nacogdoches, Polk, Harrison, Cherokee, and Angelina counties were the top five producers of veneer and panel roundwood. Table 3 lists the harvest of veneer and panel roundwood by county.

Pulpwood and Pellet Roundwood

Harvest of timber for pulp and paper products and pellets was 2.7 million cords, a decrease of 3.4 percent from a year earlier. Pulpwood and pellet roundwood harvest accounted for 39.8 percent of the total timber harvest. Pine made up 71 percent of the total production. Newton, Jasper, Polk, Cass, and Tyler counties were the top five producers. Table 4 lists the pulpwood and pellet roundwood harvest by county.

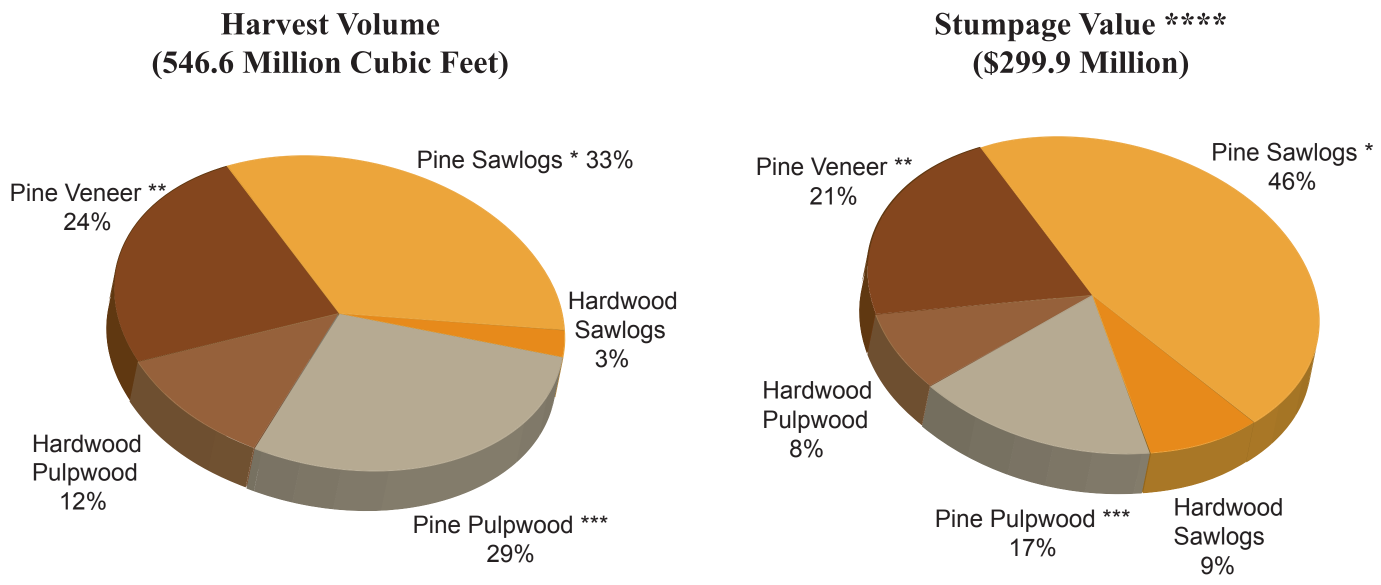
Other Roundwood

Other roundwood harvest included posts, poles, and pilings that totaled 4.0 million cubic feet. Table 5 lists harvest of these products by county.

Import-Export Trends

Texas imported more timber from surrounding states than exported to surrounding states. Exports of roundwood from Texas were 70.0 million cubic feet, while imports totaled 87.4 million cubic feet. The net import of roundwood was 17.4 million cubic feet. Table 8 details the interstate movement of roundwood.

Texas mills utilized 87.2 percent of the timber harvested in the state. The remainder was processed mainly by mills in Arkansas, Louisiana, and Oklahoma. Details are listed in Table 8.



* Includes chip-n-saw
** Includes panel roundwood (pulpwood sized material chipped for panel production)
*** Includes pellet roundwood, posts, poles, and pilings
**** Products with stumpage value less than 1% of total are not included

Figure 3. Volume and Value of Timber Harvest, 2016

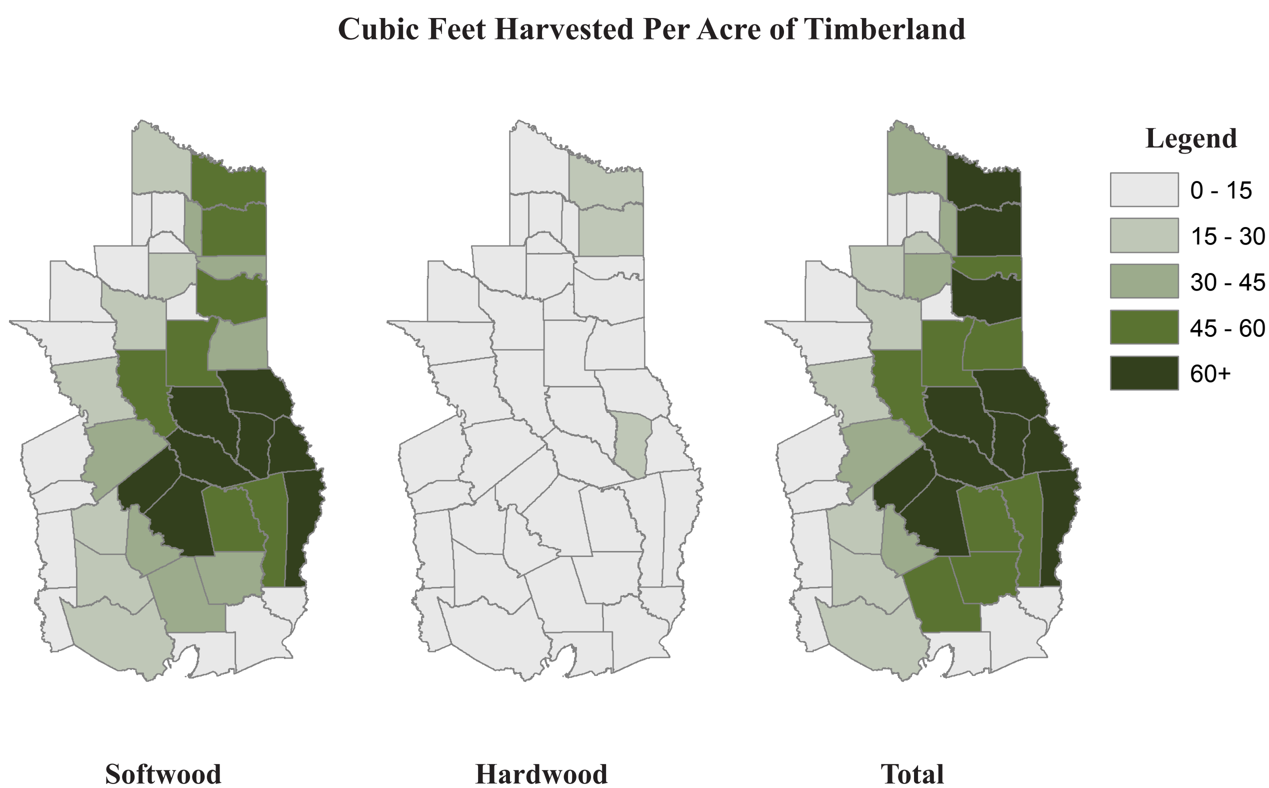


Figure 4. Intensity of Timber Harvest by County, 2016

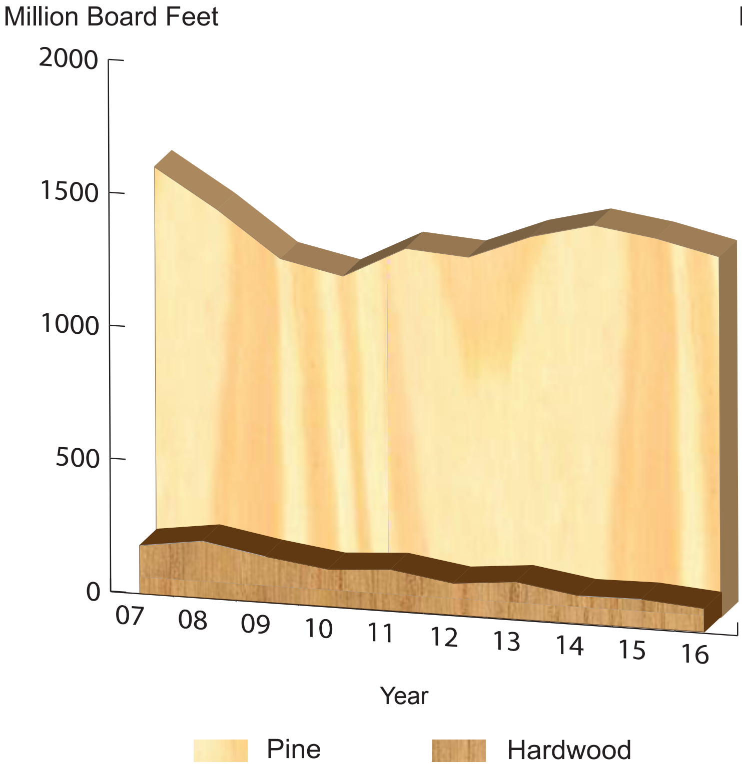


Figure 5. Texas Lumber Production, 2007-2016

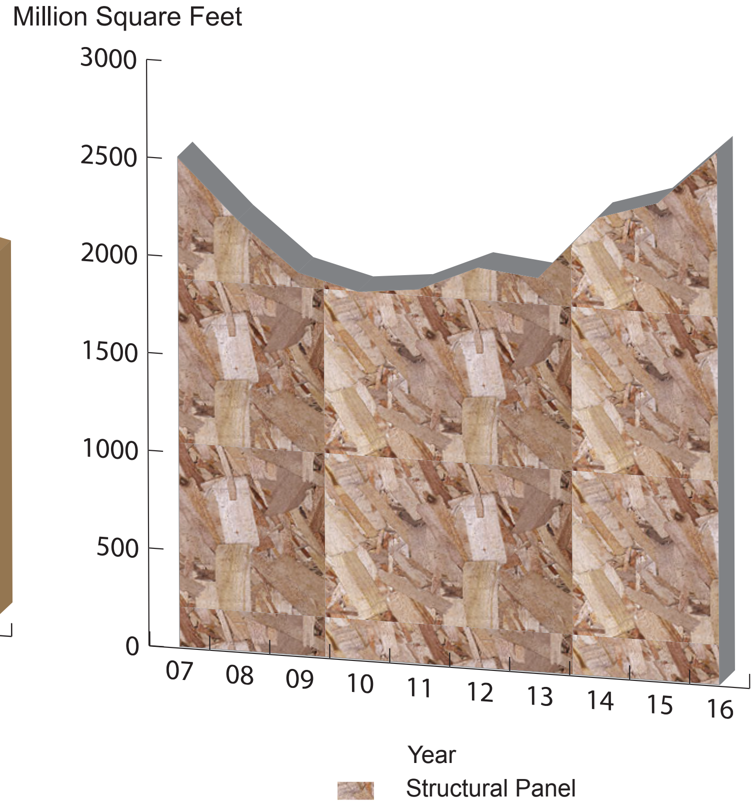


Figure 6. Texas Structural Panel Production, 2007-2016

PRODUCTION OF FOREST PRODUCTS

Lumber

Texas sawmills produced 1.4 billion board feet of lumber, a decrease of 4.8 percent from a year earlier. Production of pine lumber decreased 3.8 percent to 1.4 billion board feet and hardwood lumber production decreased 17.8 percent to 88.0 million board feet. Table 9 and Figure 5 present a 10-year trend in lumber production.

Structural Panel Products

Production of structural panels, including plywood and OSB, was up 11.7 percent to 2.7 billion square feet (3/8-inch basis). Table 9 and Figure 6 show the recent trend in structural panel output.

Paper Products

Production of paperboard, fiberboard, and market pulp totaled 2.3 million tons, up 10.0 percent from a year earlier. There has not been any major paper production in Texas since 2003. Table 10 and Figure 7 summarize recent trends in paper product output.

Treated Wood Products

The total volume of wood treated by Texas wood treaters was 42.1 million cubic feet, an increase of 7.3 percent from a year earlier. Among major treated products, lumber accounted for 57.1 percent of the total volume, ties 20.6 percent, and poles and pilings 8.8 percent. Table 11 contains treated volume by product for the past two years.

Primary Mill Residue

Total mill residue, including chips, sawdust, shavings, and bark in primary mills such as sawmills, panel mills, and chip mills was 5.6 million tons (Table 12). Eighty-eight percent of the mill residue was from pine species and 12.0 percent was from hardwood species. Chips accounted for 47.2 percent of mill residue, followed by bark (34.1 percent), sawdust (12.9 percent), and shavings (5.8 percent) (Figure 8).

Logging Residue

Logging residue includes stumps, tops, limbs, and unutilized cull trees. Total logging residue produced was 2.7 million green tons. Logging residue comes from both growing stock and non-growing stock. For this year, 24.1percent of the logging residue was from growing stock, and 75.7 percent was from non-growing stock. Seventy-four percent of the residue was from pine and 26.5 percent was from hardwood (Table 13, Figure 9).

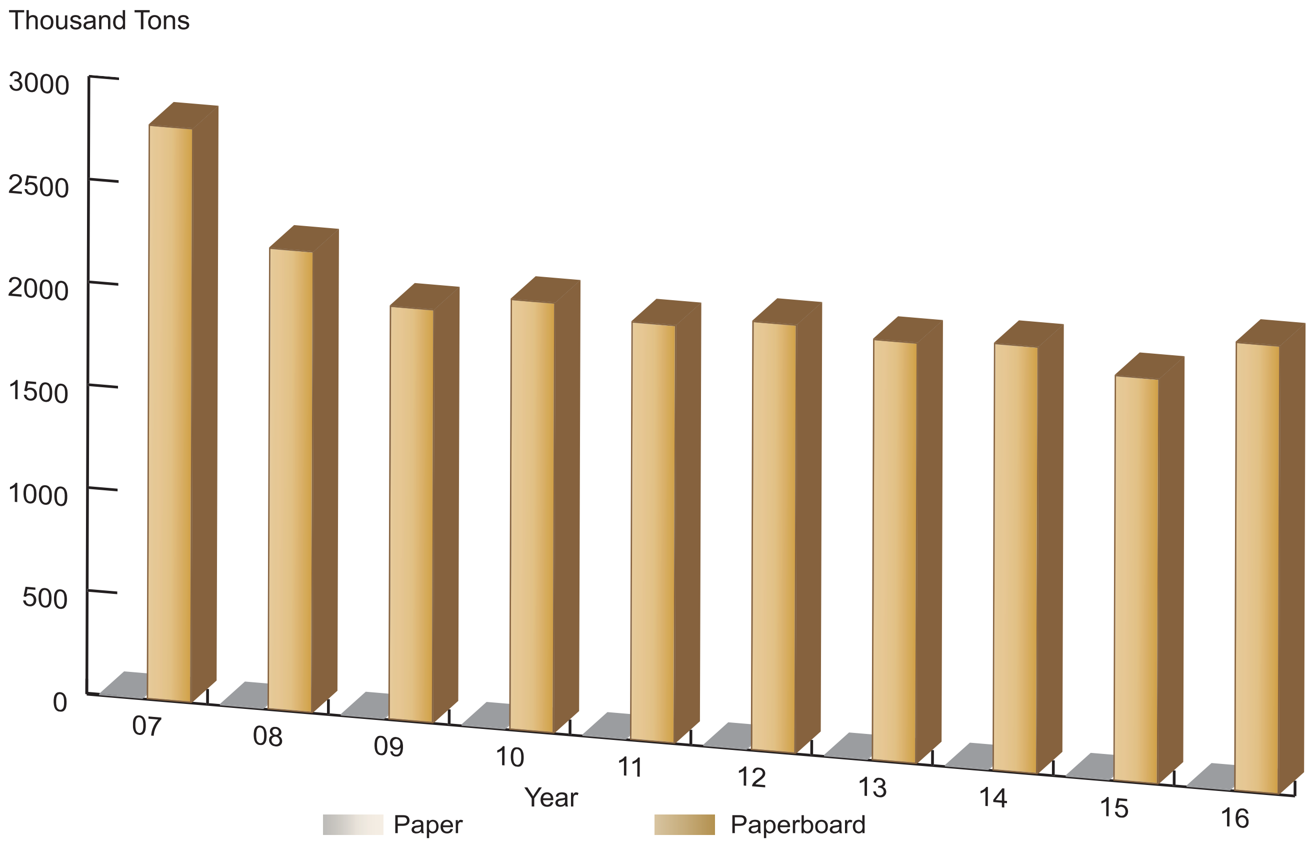


Figure 7. Texas Paper and Paperboard Production, 2007-2016

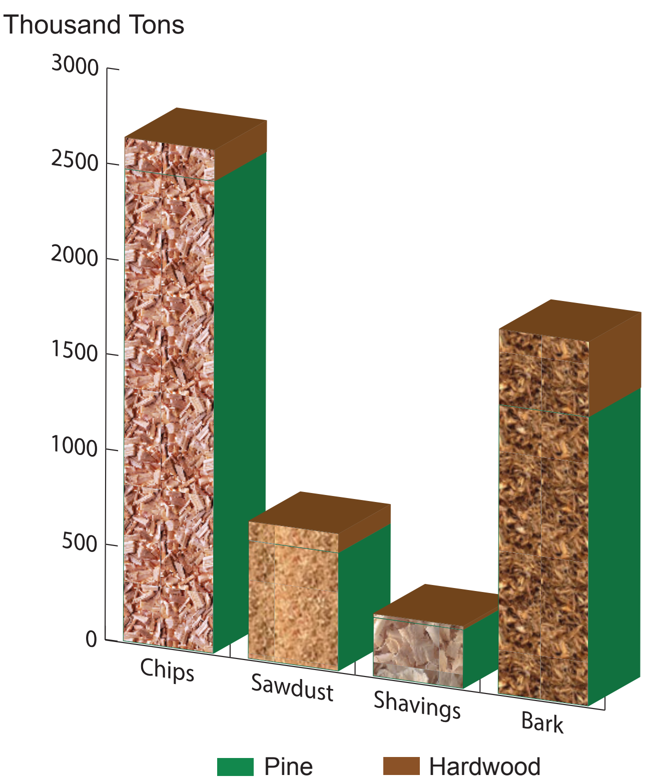


Figure 8. Texas Primary Mill Residue, 2016

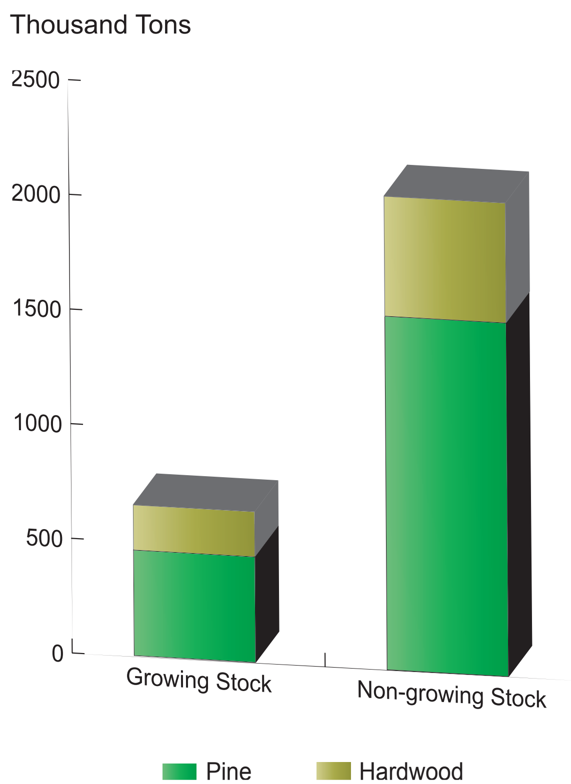


Figure 9. Texas Logging Residue, 2016

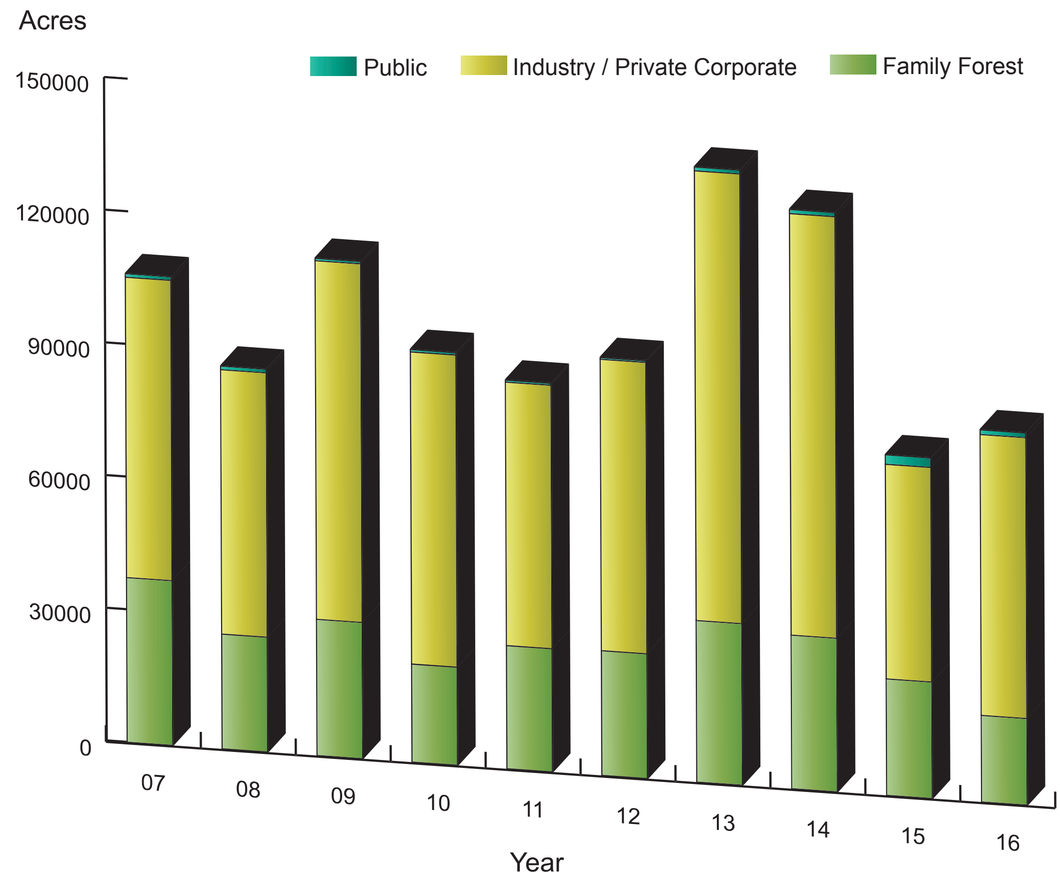


Figure 10. Reforestation Acreage by Ownership in Texas, 2007-2016

REFORESTATION

Accomplishments in reforestation by funding source and ownership are presented in Table 15. A total of 84,148 acres was planted during the winter 2015/spring 2016 planting season. Industrial landowners planted 63,498 acres, 31 percent more than the previous year. Family forest owners planted 19,575 acres. Public landowners planted 1,075 acres. Family forest owners received $2.1 million in cost share assistance for reforestation through federal cost share programs.

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[3]USDA Economic Research Service. U.S. and State Farm Income and Wealth Statistics. Annual cash receipts by commodity groups and selected commodities, by state.

[4]https://www.bea.gov/newsreleases/national/gdp/2017/gdp4q16_3rd.htm

[5]http://www.bls.gov/lau/lastrk16.htm#

[6]http://www.federalreserve.gov/monetarypolicy/fomccalendars.htm

[7]http://www.bls.gov/news.release/archives/cpi_01162015.pdf

[8]http://www.census.gov/construction/nrc/historical_data/index.html

[9]http://www.realtor.org/topics/housing-affordability-index

[10]http://www.freddiemac.com/pmms/pmms30.htm

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[12]http://www.bls.gov/sae/

[13]https://www.recenter.tamu.edu/data/building-permits/

[14]Random Lengths, Year Book, 2016.

[15]http://www.statmill.org/

[16]Timber-Mart South

[17]http://www.forest2market.com/uploads/Legacy/5-causes-of-stumpage-price-variation-in-the-us-south.pdf

Table 1. Total Industrial Timber Harvest Volume and Value by County in Texas, 2016

County	Volume Harvested			Value of Harvest	
	Pine	Hardwood	Total	Stumpage Value	Delivered Value
	– – – – – – – – – – – cubic feet – – – – – – – – – – –			– – – – – thousand dollars – – – – –	
Anderson	9,483,102	947,374	10,430,476	5,167	12,585
Angelina	26,459,003	2,028,459	28,487,462	17,701	37,811
Bowie	11,111,496	5,180,235	16,291,731	8,382	20,295
Camp	527,337	109,590	636,927	368	831
Cass	21,426,212	7,759,448	29,185,660	15,799	37,167
Chambers	28,230	66,334	94,564	78	149
Cherokee	20,540,594	2,460,990	23,001,584	14,314	30,938
Franklin	199,828	178,937	378,765	182	458
Gregg	700,547	285,204	985,751	916	1,641
Grimes	2,142,355	13,239	2,155,594	1,452	3,005
Hardin	18,900,426	2,965,017	21,865,443	10,784	26,178
Harris	2,429,827	557,174	2,987,001	1,912	4,099
Harrison	18,820,669	5,291,003	24,111,672	13,508	31,156
Henderson	820,982	385,097	1,206,079	643	1,530
Houston	11,488,330	689,416	12,177,746	6,964	15,656
Jasper	28,048,769	1,049,420	29,098,189	13,841	34,134
Jefferson	527,347	234,304	761,651	453	1,002
Leon	331,358	1,500,831	1,832,189	752	2,157
Liberty	14,368,631	5,002,251	19,370,882	12,468	26,413
Madison	18,502	1,680	20,182	15	30
Marion	8,140,069	1,955,974	10,096,043	5,089	12,402
Montgomery	7,286,789	738,383	8,025,172	5,047	10,803
Morris	1,841,493	483,871	2,325,364	1,378	3,075
Nacogdoches	26,881,303	4,542,657	31,423,960	16,353	38,935
Newton	37,513,684	857,915	38,371,599	19,753	46,771
Orange	797,632	266,551	1,064,183	568	1,343
Panola	15,110,219	2,835,395	17,945,614	9,782	22,805
Polk	37,688,871	2,728,268	40,417,139	22,728	51,109
Red River	8,849,974	3,078,085	11,928,059	5,336	13,866
Rusk	16,179,914	2,516,697	18,696,611	11,079	24,677
Sabine	12,283,232	762,080	13,045,312	7,078	16,375
San Augustine	18,539,687	3,717,648	22,257,335	10,743	26,690
San Jacinto	8,273,250	499,749	8,772,999	5,333	11,598
Shelby	16,003,839	3,630,699	19,634,538	10,615	24,885
Smith	4,191,405	1,425,985	5,617,390	3,273	7,405
Titus	317,448	522,091	839,539	433	1,056
Trinity	17,525,482	2,067,814	19,593,296	11,368	25,286
Tyler	25,799,334	1,863,297	27,662,631	13,887	33,209
Upshur	3,983,783	2,830,139	6,813,922	3,744	8,764
Van Zandt	145,501	30,560	176,061	80	207
Walker	5,781,525	131,757	5,913,282	3,787	7,992
Waller	744,934	2,222	747,156	593	1,148
Wood	3,686,957	2,071,568	5,758,525	2,716	6,944
Other Counties	1,247,799	3,099,113	4,346,912	3,395	6,615
Total Production	467,187,669	79,364,521	546,552,190	299,856	691,197

Table 2. Sawlog Harvest by County in Texas, 2016

County	Pine	Hardwood	Total
	––––––––––thousand board feet[1]––––––––––		
Anderson	16,098	916	17,014
Angelina	65,369	5,472	70,841
Bowie	24,762	3,677	28,439
Camp	1,509	113	1,622
Cass	54,063	4,468	58,531
Chambers	90	168	258
Cherokee	57,162	6,507	63,669
Franklin	57	236	293
Gregg	2,934	1,538	4,472
Grimes	9,737	5	9,742
Hardin	29,546	5,451	34,997
Harris	8,286	890	9,176
Harrison	51,204	2,478	53,682
Henderson	2,253	184	2,437
Houston	20,565	1,150	21,715
Jasper	62,710	2,636	65,346
Jefferson	812	507	1,319
Leon	143	4	147
Liberty	45,668	10,099	55,767
Madison	36	0	36
Marion	14,726	755	15,481
Montgomery	25,865	1,930	27,795
Morris	5,467	617	6,084
Nacogdoches	49,630	4,407	54,037
Newton	92,266	1,433	93,699
Orange	1,982	217	2,199
Panola	33,888	1,511	35,399
Polk	87,443	6,943	94,386
Red River	6,774	4,125	10,899
Rusk	44,247	2,729	46,976
Sabine	33,388	0	33,388
San Augustine	35,633	1,232	36,865
San Jacinto	28,438	788	29,226
Shelby	36,532	766	37,298
Smith	13,504	902	14,406
Titus	163	604	767
Trinity	51,834	1,586	53,420
Tyler	40,427	6,360	46,787
Upshur	8,953	2,989	11,942
Van Zandt	261	0	261
Walker	20,295	145	20,440
Waller	3,908	8	3,916
Wood	7,841	453	8,294
Other Counties	304	7,953	8,257
Total Production	1,096,773	94,952	1,191,725

[1]International ¼-inch rule.

Table 3. Veneer and Panel Roundwood Harvest by County in Texas, 2016			
County	Pine	Hardwood	Total
	– – – – – – – – – – – – – – – cubic feet – – – – – – – – – – – – – – –		
Anderson	6,234,152	*	6,234,152
Angelina	8,366,032	*	8,366,032
Bowie	477,805	*	477,805
Camp	260,036	*	260,036
Cass	5,451,996	*	5,451,996
Chambers	3,921	*	3,921
Cherokee	8,517,383	*	8,517,383
Franklin	23,833	*	23,833
Gregg	194,208	*	194,208
Grimes	37,767	*	37,767
Hardin	3,245,884	*	3,245,884
Harris	15,624	*	15,624
Harrison	8,564,950	*	8,564,950
Henderson	446,450	*	446,450
Houston	5,761,240	*	5,761,240
Jasper	2,551,645	*	2,551,645
Jefferson	81,770	*	81,770
Leon	308,097	*	308,097
Liberty	2,230,041	*	2,230,041
Madison	12,585	*	12,585
Marion	2,801,069	*	2,801,069
Montgomery	219,598	*	219,598
Morris	831,868	*	831,868
Nacogdoches	10,006,006	*	10,006,006
Newton	5,766,849	*	5,766,849
Orange	0	*	0
Panola	5,356,488	*	5,356,488
Polk	9,598,189	*	9,598,189
Red River	3,047,627	*	3,047,627
Rusk	8,095,146	*	8,095,146
Sabine	3,665,308	*	3,665,308
San Augustine	4,760,087	*	4,760,087
San Jacinto	645,201	*	645,201
Shelby	5,324,264	*	5,324,264
Smith	1,608,961	*	1,608,961
Titus	94,949	*	94,949
Trinity	5,681,434	*	5,681,434
Tyler	6,687,576	*	6,687,576
Upshur	1,491,456	*	1,491,456
Van Zandt	61,287	*	61,287
Walker	1,119,502	*	1,119,502
Waller	882	*	882
Wood	1,297,617	*	1,297,617
Other Counties	31,306	*	31,306
Total Production	130,978,089	*	130,978,089

*Data suppressed to avoid disclosure of individual company information.

Table 4. Pulpwood and Pellet Roundwood Harvest by County in Texas, 2016

County	Pine	Hardwood	Total
	––––––––––––––– cords –––––––––––––––		
Anderson	7,534	9,922	17,456
Angelina	76,471	13,885	90,356
Bowie	81,727	57,045	138,772
Camp	280	1,133	1,413
Cass	89,022	87,627	176,649
Chambers	120	477	597
Cherokee	30,400	17,122	47,522
Franklin	2,059	1,742	3,801
Gregg	379	341	720
Grimes	6,497	155	6,652
Hardin	133,570	25,636	159,206
Harris	13,223	5,099	18,322
Harrison	24,143	60,943	85,086
Henderson	115	4,428	4,543
Houston	29,378	6,207	35,585
Jasper	189,008	7,592	196,600
Jefferson	3,876	1,866	5,742
Leon	1	18,752	18,753
Liberty	58,468	41,358	99,826
Madison	1	21	22
Marion	36,444	22,867	59,311
Montgomery	35,488	5,184	40,672
Morris	1,523	4,755	6,278
Nacogdoches	105,668	47,545	153,213
Newton	206,023	7,720	213,743
Orange	5,881	2,877	8,758
Panola	50,792	32,275	83,067
Polk	171,808	19,549	191,357
Red River	58,079	29,829	87,908
Rusk	11,263	25,738	37,001
Sabine	39,578	9,526	49,104
San Augustine	95,103	43,888	138,991
San Jacinto	37,263	4,595	41,858
Shelby	47,891	43,778	91,669
Smith	4,857	15,934	20,791
Titus	2,421	5,260	7,681
Trinity	42,491	22,523	65,014
Tyler	154,442	9,959	164,401
Upshur	12,852	29,111	41,963
Van Zandt	517	382	899
Walker	16,941	1,343	18,284
Waller	1,365	11	1,376
Wood	13,807	24,945	38,752
Other Counties	7,334	20,642	27,976
Total Production	1,906,103	791,587	2,697,690

Table 5. Other Roundwood Harvest by County in Texas, 2016[1]

County	Pine	Hardwood	Total
	––––––––––––––– cubic feet –––––––––––––––		
Anderson	29,160	0	29,160
Angelina	1,302,679	0	1,302,679
Bowie	0	0	0
Camp	0	0	0
Cass	0	0	0
Chambers	0	0	0
Cherokee	294,840	0	294,840
Franklin	0	0	0
Gregg	0	0	0
Grimes	0	0	0
Hardin	46,253	0	46,253
Harris	0	0	0
Harrison	0	0	0
Henderson	0	0	0
Houston	13,932	0	13,932
Jasper	22,548	0	22,548
Jefferson	0	0	0
Leon	0	0	0
Liberty	0	0	0
Madison	0	0	0
Marion	0	0	0
Montgomery	0	0	0
Morris	0	0	0
Nacogdoches	271,309	0	271,309
Newton	103,012	0	103,012
Orange	0	0	0
Panola	146,416	0	146,416
Polk	0	0	0
Red River	0	0	0
Rusk	0	0	0
Sabine	0	0	0
San Augustine	300,333	0	300,333
San Jacinto	0	0	0
Shelby	878,591	0	878,591
Smith	0	0	0
Titus	0	0	0
Trinity	0	0	0
Tyler	49,062	0	49,062
Upshur	0	0	0
Van Zandt	0	0	0
Walker	0	0	0
Waller	0	0	0
Wood	0	0	0
Other Counties	573,199	0	573,199
Total Production	4,031,334	0	4,031,334

[1]Including posts, poles and pilings.

Table 6. Timber Stumpage Price in East Texas by Product, 2007-2016

Year	Sawtimber/Veneer		Pulpwood		Pine Chip-N-Saw	Pine Poles
	Pine	Mixed Hardwood	Pine	Mixed Hardwood		
	– – – $/MBF-Doyle – – –		– – – $/cord – – –		$/cord	$/ton
2007	321.40	162.69	32.79	30.09	46.78	59.16
2008	241.71	217.87	25.90	22.31	41.80	54.28
2009	180.62	177.34	17.27	18.42	32.66	57.75
2010	200.60	270.49	21.99	31.75	38.66	55.06
2011	186.44	234.94	15.70	16.93	25.55	52.00
2012	185.87	237.93	17.45	23.32	30.00	52.50
2013	177.84	266.43	18.88	23.88	29.01	52.13
2014	217.10	319.55	24.42	27.27	34.68	51.50
2015	235.26	372.15	25.33	45.56	39.23	50.34
2016	213.29	371.21	24.65	29.76	34.29	50.31

SOURCE: *Texas Timber Price Trends* bi-monthly market report, with pine pole price from *Timber Mart-South.*

Table 7. Value of East Texas Timber Harvest, 2016

Product	Unit	Stumpage		Delivered	
		Price[1] ($/unit)	Value (million $)	Price[2] ($/unit)	Value (million $)
PINE					
Sawlogs/Chip-n-Saw	MBF[3]	–	137	–	266
Sawlogs	MBF[3]	142.17	120	264.16	222
Chip-n-Saw	MBF[3]	68.58	18	170.09	43
Veneer/Panel Roundwood	MCF	–	63	–	156
Veneer Logs	MCF	877.09	35	1,629.62	66
Panel Roundwood	MCF	304.32	28	992.59	90
Pulpwood	cords	24.65	47	80.40	153
Others	MCF	–	3	–	6
All pine products			250		580
HARDWOOD					
Sawlogs	MBF[3]	272.97	26	397.06	38
Veneer	MCF	1,999.69	0	3,517.75	0
Pulpwood	cords	29.76	24	92.01	73
All hardwood products			50		111
ALL PRODUCTS			300		691

[1]Average annual statewide prices as published in *Texas Timber Price Trends*, Texas A&M Forest Service.

[2]Average annual statewide prices, obtained by adding the difference between the standing timber prices and the delivered prices published in *Timber Mart-South* to the stumpage prices published in *Texas Timber Price Trends*, Texas A&M Forest Service.

[3]International ¼-inch rule.

Table 8. Interstate Movement of Roundwood by Species Group and Product in Texas, 2016						
Product	Units	Imports	Produced & Utilized in State	Exports	Texas Mill Receipts	Texas Roundwood Production
PINE						
Sawlogs	MBF[1]	159,849	1,070,212	26,561	1,230,061	1,096,773
Veneer/Panel Roundwood	MCF	5,902	119,590	11,388	125,491	130,978
Pulpwood	cords	391,158	1,327,108	578,995	1,718,266	1,906,103
Others	MCF	1,715	4,031	0	5,746	4,031
All Pine Products	MCF	65,212	404,596	62,591	469,808	467,188
HARDWOOD						
Sawlogs	MBF[1]	3,667	94,952	0	98,619	94,952
Veneer	MCF	342	114	0	456	114
Pulpwood	cords	265,199	699,300	92,287	964,499	791,587
All Hardwood Products	MCF	22,173	71,982	7,383	94,155	79,365
TOTAL						
Sawlogs	MBF[1]	163,516	1,165,164	26,561	1,328,680	1,191,725
Veneer/Panel Roundwood	MCF	6,244	119,704	11,388	125,948	131,092
Pulpwood	cords	656,357	2,026,408	671,282	2,682,765	2,697,690
Posts, Poles, Pilings	MCF	1,715	4,031	0	5,746	4,031
ALL PRODUCTS	MCF	87,385	476,578	69,974	563,962	546,552

[1]International ¼-inch rule.

Table 9. Texas Industrial Roundwood Products, 2007-2016				
Year	Lumber			Structural Panel
	Pine	Hardwood	Total	
	– – – – – m. bd. ft[1] – – – – –			m. sq. ft.
2007	1,550,716	180,713	1,731,429	2,503,941
2008	1,406,103	213,191	1,619,293	2,204,544
2009	1,237,801	171,514	1,409,315	1,958,794
2010	1,188,294	139,389	1,327,683	1,881,763
2011	1,308,427	154,593	1,463,020	1,915,605
2012	1,291,578	118,823	1,410,401	2,049,084
2013	1,385,043	140,427	1,525,470	2,017,406
2014	1,444,203	104,089	1,548,292	2,348,023
2015	1,410,472	107,029	1,517,501	2,444,464
2016	1,357,409	88,001	1,445,410	2,729,569

[1]Lumber tally.

Table 10. Texas Pulp and Paperboard Production, 2007-2016	
Year	Pulp and Paperboard Products[1]
	tons
2007	2,788,308
2008	2,239,347
2009	2,050,681
2010	2,089,521
2011	2,071,405
2012	2,081,521
2013	2,168,403
2014	2,213,026
2015	2,106,412
2016	2,317,537

[1]Includes fiberboard, paperboard, market pulp, and miscellaneous products.

Table 11. Products Treated by Texas Wood Preserving Plants, 2015-2016

Product	Unit of Measure	Volume by Specific Unit		Volume by Cubic Feet	
		2015	2016	2015	2016
Poles and pilings[1]	CF	3,525,806	3,709,745	3,525,806	3,709,745
Fence posts	number	1,927,879	2,027,590	1,697,212	1,784,993
Ties[2]	CF	7,286,134	2,076,683	7,286,134	2,076,683
Lumber	MBF	287,815	288,539	23,984,581	24,044,895
Plywood/OSB	MSF	13,148	11,732	410,864	366,637
Other	CF	2,351,960	3,557,939	2,351,960	3,557,939
Total	CF	–	–	39,256,558	42,137,749

[1]Includes utility poles, construction poles, and pilings.

[2]Includes cross ties, switch ties, and cross arms.

Table 12. Texas Primary Mill Residue, 2016[1]

Residue Type	Pine	Hardwood	Total
	– — – – – – tons – — – – – –		
Chips[2]	2,477,677	165,569	2,643,246
Sawdust	619,199	100,960	720,159
Shavings	307,184	19,477	326,661
Bark[3]	1,516,387	396,469	1,912,856
Total	4,920,447	682,475	5,602,922

[1]Primary mills include sawmills, structural panel mills, and chip mills.

[2]Does not include chips produced in chip mills.

[3]Includes bark from sawmills, panel mills, and chip mills.

Table 13. Industrial Roundwood Removal and Logging Residue by Product in East Texas, 2016

Product	Industrial Roundwood			Logging Residue			Total Volume		
	Pine	Hardwood	Total	Pine	Hardwood	Total	Pine	Hardwood	Total
	thousand tons			thousand tons			thousand tons		
Growing Stock									
Sawtimber	7,086.0	621.5	7,707.5	421.8	89.8	511.6	7,507.8	711.3	8,219.1
Poletimber	6,742.5	1,907.9	8,650.4	38.3	107.1	145.4	6,780.8	2,015.0	8,795.8
Sub-total	13,828.6	2,529.4	16,357.9	460.1	196.9	657.0	14,288.6	2,726.2	17,014.9
Non-growing Stock									
Sawtimber	135.0	11.4	146.4	835.3	147.4	982.7	970.3	158.8	1,129.1
Poletimber	902.2	170.1	1,072.3	706.7	376.1	1,082.8	1,608.9	546.2	2,155.1
Sub-total	1,037.2	181.4	1,218.7	1,542.0	523.5	2,065.5	2,579.2	704.9	3,284.1
All									
Sawtimber	7,221.0	632.9	7,853.9	1,257.1	237.1	1,494.3	8,478.2	870.0	9,348.2
Poletimber	7,644.8	2,077.9	9,722.7	744.9	483.2	1,228.2	8,389.7	2,561.1	10,950.8
Total	14,865.8	2,710.8	17,576.6	2,002.1	720.4	2,722.4	16,867.9	3,431.2	20,299.0

Note: Sawtimber includes sawlogs, chip-n-saw, veneer logs, and poles; poletimber includes pulpwood, panel roundwood, post, and piling. See documents from the Forest Inventory and Analysis (FIA) Program for definition of growing stock. The separation of industrial roundwood harvest by source was based upon wood utilization rates from the *East Texas Harvest and Utilization Study, 2008*.

Table 14. Removals of Industrial Roundwood and Growing Stock in East Texas, 1997-2016

Year	Pine		Hardwood		All	
	Industrial Roundwood	Growing Stock	Industrial Roundwood	Growing Stock	Industrial Roundwood	Growing Stock
	– —— – – – – – —— – – – – MMCF – —— – – – – – —— – – – –					
1997	557.5	548.7	118.4	119.8	675.9	668.5
1998	542.4	533.9	127.9	129.5	670.3	663.3
1999	541.4	532.9	157.9	159.8	699.3	692.7
2000	508.9	500.9	116.7	118.1	625.6	619.0
2001	488.5	480.8	111.6	113.0	600.1	593.8
2002	537.0	528.5	130.6	132.2	667.6	660.7
2003	542.1	533.6	126.1	127.6	668.2	661.2
2004	517.7	509.5	133.5	135.1	651.2	644.7
2005	564.3	555.4	137.2	138.9	701.5	694.3
2006	500.0	492.1	148.3	150.1	648.3	642.2
2007	501.2	490.7	127.6	128.6	628.8	619.3
2008	440.3	430.2	97.7	100.1	538.0	530.2
2009	396.4	382.6	83.4	86.3	479.8	468.8
2010	401.2	385.9	89.4	90.3	490.6	476.1
2011	392.7	378.0	78.6	80.5	471.3	458.5
2012	408.9	392.6	106.1	106.1	515.0	498.7
2013	419.6	402.0	102.0	102.4	521.5	504.4
2014	439.8	422.3	91.5	91.4	531.3	513.7
2015	418.2	400.2	105.2	104.5	523.4	504.7
2016	467.2	447.9	79.4	79.4	546.6	527.3

Note: Total industrial roundwood harvest includes harvest from both growing stock and non-growing stock. The growing stock removal was calculated using wood utilization rates from the *East Texas Harvest and Utilization Study, 2008*.

Table 15. Tree Planting by Ownership and Funding Source in Texas, 2007-2016

Year[1]	Family Forest								Industry[4]	Public	Total
	Federal Cost Share Programs[2]		Texas Reforestation Foundation (TRe)		All Cost Share Programs		Non-Cost Share[3]	Total Acres	Acres	Acres	Acres
	Acres	Cost Share $	Acres	Cost Share $	Acres	Cost Share $	Acres				
2007	12,497	2,073,855	2,912	187,917	15,409	2,261,772	21,820	37,229	67,910	797	105,936
2008	15,585	1,004,163	1,040	78,174	16,625	1,082,337	9,335	25,960	59,764	822	86,546
2009	17,152	746,763	0	0	17,152	746,763	13,639	30,791	81,067	564	112,422
2010	16,255	1,569,178	0	0	16,255	1,569,178	5,919	22,174	70,577	555	93,306
2011	22,338	2,060,568	0	0	22,338	2,060,568	5,522	27,860	59,554	473	87,887
2012	23,299	2,172,624	0	0	23,299	2,172,624	4,913	28,212	65,867	402	94,481
2013	29,818	3,130,118	0	0	29,818	3,130,118	6,709	36,527	101,671	872	139,070
2014	27,008	2,750,446	0	0	27,008	2,750,446	7,716	34,724	95,306	941	130,971
2015	18,941	2,245,453	0	0	18,941	2,245,453	7,385	26,326	48,530	2,153	77,009
2016	16,585	2,108,513	0	0	16,585	2,108,513	2,990	19,575	63,498	1,075	84,148

[1]Federal fiscal year. For example, fiscal year 2007 begins on October 1, 2006 and ends on September 30, 2007.

[2]Includes Forestry Incentives Program (FIP), Stewardship Incentives Program (SIP), Environmental Quality Incentives Program (EQIP), Conservation Reserve Program (CRP), Forest Land Enhancement Program (FLEP), Emergency Forestry Conservation Reserve Program (EFCRP), Wetlands Reserve Program (WRP), Landowner Incentive Program (LIP), United States Fish and Wildlife Service (USFWS) Partners Program, and Wildlife Habitat Incentive Program (WHIP) accomplishments.

[3]Non-cost share acres include only family forest acres planted with TFS assistance.

[4]Acres for industry tree planting includes acres planted by Timber Investment Management Organizations (TIMOs) and timberland Real Estate Investment Trusts (REITs).

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