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Forest Harvesting in Southwest Tennessee

The State of Tennessee has nine Economic Development Regions as shown in Figure 1. The Southwest region includes 8 counties as shown in Figure 2. It is bounded on the North by I-40 from Nashville to Memphis and the States of Mississippi and Alabama on the south. The Tennessee River forms the eastern boundary in Decatur County but meanders across Hardin County as it flows north. All of Hardin County is included in the region. If Wayne County were included, the region would correspond to the western pine region of the state, where thousands of acres of loblolly pine have been planted on eroded farmland beginning in the late 1940's. The western boundary is the urban areas surrounding Memphis.

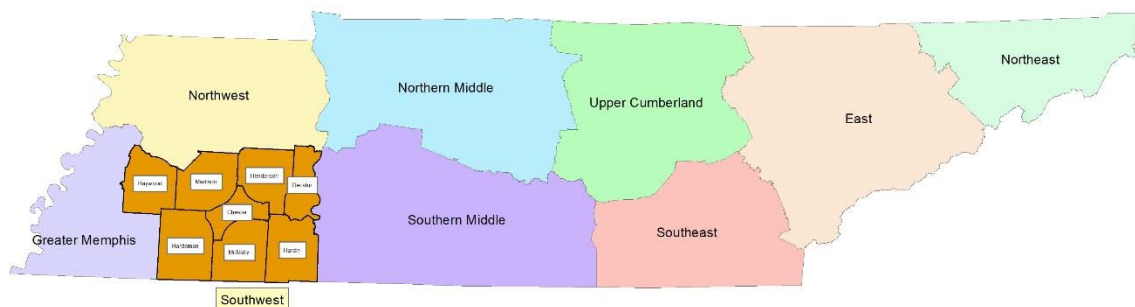


Figure 1. Tennessee Economic Development Regions

Forest industries are important in this largely rural region due to the number of jobs and sale of forest products that support the local economy. Monitoring forest harvest rates allows industries to predict the availability of wood raw materials.

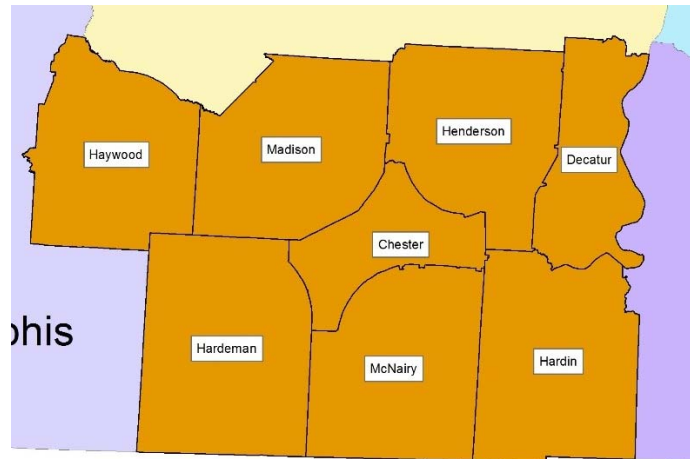


Figure 2. Tennessee Southwest Economic Development Regions

A new technology is now being used to monitor changes in forest area that is based on a computer program developed for national defense agencies. This program locates areas where the forest has changed in aerial or satellite photos over a period of time. In one photo the forest canopy is intact and in the next it is missing or there are roads, homes or parking lots. Photo analysts check the changes and classify them into forestry, agriculture, right of way, residential, industrial, road construction, or other types of disturbances.

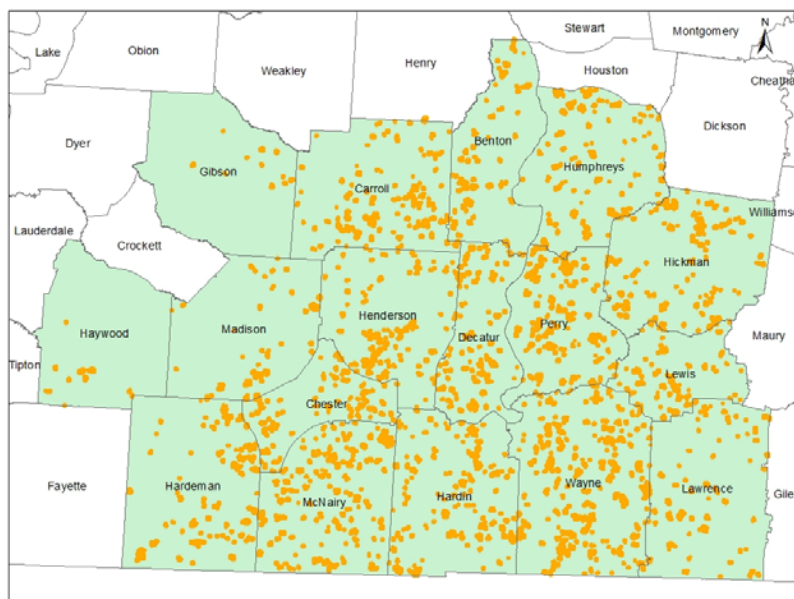


Figure 3. Forest Harvest Areas 2012 - 2014 Extracted From NAIP Imagery

Figure 3 shows the areas located by the program as changed between 2012 and 2014 and classified as harvested. The total area harvested in the 8 county region was 32,281 acres during the two year period. The largest area harvested was 453 acres with a mean of 25 acres.

The areas harvested are significant since they are one indicator of how rapidly the forests are being cut in the region. Assuming it takes 80 years to grow a hardwood forest, then cutting more than 1/80th of total forest area per year will result in some period when no trees will be available if all other factors are held constant. Switching to faster growing trees or more intensive management would allow more acres to be harvested in a shorter period of time. For example, Hardin County has approximately 279,000 acres of forest. Based on the remote sensing analysis, an average of 3,151 acres were harvest per year in the period between 2012 and 2014. Dividing the total acres by harvest acres per year yields a rotation of 89 years. If the period 2012 – 2014 is representative of harvest rates over a long period, then it would take 89 years to harvest all the forest in the county. On most sites in this region, this is enough time for the forest to grow sawtimber size hardwood trees and twice the time needed to grow pine sawtimber.

County	Harvest Acres	Harvest/Yr	Forested Acres	Rotation
Chester	3,609	1,805	121,285	67
McNairy	6,644	3,322	235,942	71
Decatur	4,013	2,007	160,447	80
Hardin	6,303	3,151	278,935	89
Henderson	4,087	2,044	211,484	103
Hardeman	4,909	2,455	266,775	109
Madison	2,838	1,419	160,683	113
Haywood	700	350	97,653	279

Table 1. Harvest Acres by County

Data on harvest acres by county are shown in Table 1. Based on harvested acres and forested acres, the rotation length has been calculated in the last column. There are many types of forest disturbances that permanently change forest into other land use types such as conversion to urban uses, agricultural fields or highways. These types of land use changes will reduce the number of forested acres in Table 1 and cause the rotation age to drop even if the number of acres harvested over time remains constant.

This process of extracting and classifying forest disturbances is being conducted statewide and should be completed for the 2012 – 2014 period by this summer. It will then be repeated for the 2014 – 2016 period.

There are a number of uses to be made of spatial data on location and size of harvest areas statewide. A list of these are given below

- Locations establish a date and area of harvest for landowners. With ownership tenure times falling this will allow future owners to know stand ages.

- TDOF checks logging sites to advise loggers on ways to reduce water quality impacts. . The percentage and distribution of these inspections can be determined. Inspections in underserved areas can be increased.
- Logging sites are surveyed every five years to check for implementation of Best Management Practices (BMP) by loggers. Data on all locations allows sampling from all sites, not just the ones visited in past inspections.
- Forest Inventory and Analysis data on treatment acres can be compared to harvest acres derived from aerial photos.
- Water quality BMPs require leaving riparian zones along streams. Compliance with this BMP can be checked through spatial analysis without a site visit.
- Reforestation data can be collected from aerial imagery. For example, the acres of hardwood forests that are converted to pine can be determined.
- Since TDOF has access to parcel maps, the number of harvests that involve timber trespass can be determined.
- Large paper mills require thousands of acres of pine thinnings each year. The number of acres of pine plantations that are being thinned each year can be monitored so that predictions can be made of future supplies.
- As explained above, forest sustainability can be estimated based on the area that is being harvested over time.
- The extent to which forests are being fragmented and converted to other land uses can be estimated.
- Forest certification requires that participating mills establish a chain of custody, that is, each certified mill must show the percentage of wood coming from certified forests. Spatial data on harvest locations allows tracking of logs and pulpwood from logging site to the mill.

Data is also available on inventory, growth, and removals from the Forest Inventory and Analysis website located here: https://www.fia.fs.fed.us/tools-data/other_tools/index.php

Delivered Forest Products Prices in Tennessee
January – March, 2017

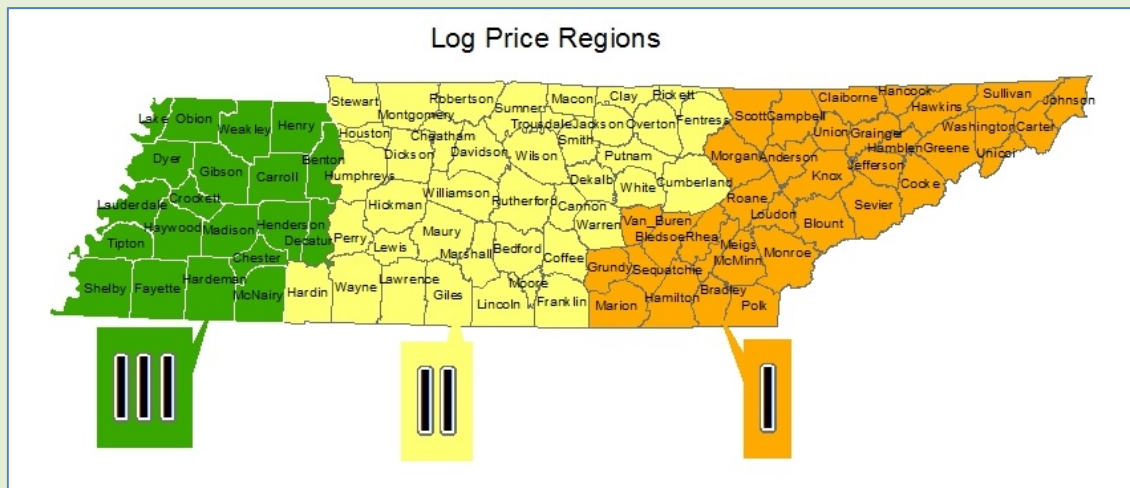
Cedar Logs	Length-6' to 12' and min DIB 4" at small end	\$85.00/ton \$330.00/MBF Cedar Rule) Chipper logs \$40/ton	II & III
Crosstie Logs	Length-8' 8" min DIB 11" and up Must be sound on both ends	<u>Oak</u> Grade 1: \$391-/MBF Doyle Grade 2: \$250/MBF Doyle \$57 per ton <u>Mixed Hardwoods</u> Grade 1: \$298-/MBF Doyle Grade 2: \$210-/MBF Doyle \$57 per ton	I, II & III
Hickory Handle Logs	Each mill will have their own requirements.	Grade 1: \$250/MBF Doyle Grade 2: \$175/MBF Doyle	I & II
White Oak Stave Logs	White Oak-Length: 8 ½' min and add on 2' increments (allow 1 knot per 3' of length", and min. DIB 12"at small end)	Grade 1: \$990/MBF Doyle Grade 2: \$743/MBF Doyle	I & II
Paulownia Logs	Min. length 2 meters + trim allowance (6' 6"+trim) and Min. DIB 8" at small end (Must be slow grown – prefer 8-10 growth rings per inch); season Oct- April	Grade 1 \$850	I, II & III
Pine Pulpwood	Pine: Diameter, length, and species may vary with purchasing company. Consult firm first before cutting	\$18/ton Some suppliers are reporting quotas (5350 lbs/ cord)	I,II & III
Softwood Logs	Length: 8'-16' and min DIB 6" at small end	Few areas report active markets. SY Pine: \$175/MBF Doyle White Pine: \$250/MBF Doyle Hemlock: \$180/MBF Doyle SY Pine CNS: \$25/ton	I & III

Veneer Logs	Prime logs only**	Red Oak: Average \$769/MBF Doyle White Oak: Average \$1,236/MBF Doyle Walnut: Average \$2,014/MBF Doyle Cherry Average \$833/MBF Doyle Poplar Average \$528/MBF Doyle	I, II & III
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*Information is taken from a survey of wood-using industries in Tennessee

**Specifications vary with industries or buyers

***All prices are regional averages and are delivered prices per MBF Doyle unless otherwise indicated. They are subject to change and will vary locally. ("+" indicates an increase since the last bulletin; "-" indicates a decrease)



Hardwood Sawlogs*

Species	Region I	Region II	Region III
Red Oak	Grade 1: \$431 Grade 2: \$334 Grade 3: \$165	Grade 1: \$516 Grade 2: \$402 Grade 3: \$294-	Grade 1: \$573 Grade 2: \$457 Grade 3: \$371-
White Oak	Grade 1: \$494 Grade 2: \$353 Grade 3: \$166	Grade 1: \$624- Grade 2: \$430+ Grade 3: \$300	Grade 1: \$645 Grade 2: \$529 Grade 3: \$363
Ash	Grade 1: \$344	Grade 1: \$479	Grade 1: \$542

	Grade 2: \$236 Grade 3: \$132	Grade 2: \$345 Grade 3: \$291	Grade 2: \$483 Grade 3: \$350
Yellow Poplar	Grade 1: \$309 Grade 2: \$211 Grade 3: \$138	Grade 1: \$362 Grade 2: \$274 Grade 3: \$226	Grade 1: \$345 Grade 2: \$294 Grade 3: \$240
Walnut	Grade 1: \$500 Grade 2: \$334 Grade 3: \$200	Grade 1: \$1,077 Grade 2: \$682 Grade 3: \$531	Grade 1: \$1,083 Grade 2: \$850 Grade 3: \$533
Cherry	Grade 1: \$363 Grade 2: \$266 Grade 3: \$149	Grade 1: \$455 Grade 2: \$317 Grade 3: \$269	Grade 1: \$467 Grade 2: \$358 Grade 3: \$323
Hard Maple	Grade 1: \$413 Grade 2: \$294 Grade 3: \$149	Grade 1: \$495 Grade 2: \$373 Grade 3: \$314	Grade 1: \$550 Grade 2: \$200 Grade 3: \$323
Hickory	Grade 1: \$311 Grade 2: \$243 Grade 3: \$141	Grade 1: \$339- Grade 2: \$302- Grade 3: \$183-	Grade 1: no data Grade 2: \$408 Grade 3: \$325
Misc. Hardwoods	Average: \$187	Average: \$216	Average: \$332-

Increase from last quarter (+); Decrease from last quarter (-)

**Specifications: (Length: 8'-16'; and Min. DIB 8 " at small end) Delivered Price*

Prices quoted are per thousand board feet (MBF) Doyle Rule delivered to mill. Prices will vary greatly depending on many factors such as weather and mill inventories. Prices received for standing timber will be less than the delivered price based on harvest cost, haul cost and buyer profit:

Standing timber (stumpage) price = delivered price - harvest cost - haul cost - buyer profit



Wanted to Buy:

- ❖ **Hardwood Sawmill:** Foreign company with offices in Taiwan, China and Southeast Asian is looking to expand and is interested in purchasing a hardwood mill in the States. For more information, contact Cleo Fu, Agricultural Marketing Specialist with the USDA Foreign Agricultural Service: +886-2-2705-6536 ext. 242; fucwy@state.gov

- ❖ **Loblolly or shortleaf pine for utility poles:** 36 foot to 76 foot in length (length is determined by diameter). Roadside pricing. Call Doug Curry, Bell Timber for specifications and details. 715-418-9333.
- ❖ **Logs for Export:** An exporting company based out of Southern Illinois is interested in buying veneer logs for export. Any information or bid proposals can be e-mailed to swsveneer@gmail.com or call Derek Wilson at 618-559-7568.
- ❖ **Bark:** Garick, LLC is buying bark for mulch production. Contact Earl Funderburk, General Manager, Decaturville Bagging Plant, 9745 Hwy 641 S, Decaturville, TN. 731-852-2058

For Sale:

- ❖ **SCHAEFER ENTERPRISES OF WOLF LAKE, INC** –Rely on our experience, established in 1967. Used Parts Shipped Daily for Log Skidders, Crawlers, Loader Backhoes, Excavators, Wheel Loaders and Skid Steers. We have many reconditioned engines and transmissions that are Dyno-Tested. Rebuilt winches, final drives and used tires. If we do not have a part – we can locate it for you on one of our three nationwide parts locators
- ❖ **Parts for:** Allis Chalmers, Athey, Bantam/Koehring, Bobcat, Case, Clark, Daewoo, Dresser, Drott, Fiat Allis, Franklin, Hitachi, Hough, Hyundai, International, John Deere, Kobelco, Komatsu, Leihberr, Linkbelt, Michigan, Mitsubishi, New Holland, New Process, Pettibone, Samsung, Timbco, Timberjack, TreeFarmer, VME, Volvo
- ❖ We have many reconditioned engines and transmissions that are dyno-tested, rebuilt winches, final drives and used tires.
- ❖ Contact a parts professional at: (618) 833-5498 or (800) 626-6046. Ask for Andy, Brad Jill, Joe, Kevin, or Matt if buying. Ask for Jerry or Tom if selling.
- ❖ We are located at 4535 State Route 3 North, Wolf Lake, IL 62998.
- ❖ Check out our inventory at – www.sewlparts.com or you may send email requests to parts@sewlparts.com.

Components from a biofuel thermal treatment plant used to make biochar and other products

A partial listing of what is available: Wood chip/sawdust dryer with cyclone; NG/#2 fuel oil/propane furnace; motors, auger assemblies with motors, stainless steel flue gas ducting, conveyors, airlocks, condensers, air handler, flowmeters and other instruments, electrostatic precipitator, stainless steel storage tanks; climate controlled 16' control room trailer with VFDs, HMI, PLC, kWh meters, circuit breakers, considerable power and sensor wiring, etc.

The skinny on this equipment:

- ❖ Biofuel plant was used intermittently for research and development over two years
- ❖ All equipment was in good condition and fully operational upon shutdown, and all equipment with the exception of the dryer cyclone and control room trailer have been kept under roof.
- ❖ Pictures and more detailed information available
- ❖ Arrangements can be made to view and inspect the equipment. Location NW Alabama
- ❖ **Buyer pays no sales commissions**

Owner is anxious to sell so make an offer. This is an unusual opportunity for the right party. Seller lost his lease and must move. Lots of good, useful items in good shape and ready to load out. These items can be used in a variety of ways for a variety of purposes.

Contact Phillip Badger, cell phone 256-762-2886, email: pbadger@bioenergyupdate.com

Other:

- ❖ **"Logs, Chips and Lumber Trucking Company:** West Tennessee company specializes in providing trucking services for area loggers, sawmills and papermills located within a 100 mile radius of Paris, TN. We currently have 20 trucks and over 60 trailers in our fleet for quick "drop and hook" service. Flatbed Trailer and Live Floor Chip Trailer services also available. Fully licensed, bonded and insured. Competitive rates. References available. Call Revel Logging, LLC at 731-642-3944 for more information. "
- ❖ **"ATTENTION LOGGERS!"** "Waverly Wood, LLC" of Waverly, TN is looking to employ additional logging crews, to log their timber tracts; long-term employment possible. All prospective contractors must have workers' compensation and general liability insurance. Also, wanting to buy white oak stave logs and tie logs. Please contact: Mike Phillipi, Timber Procurement Manager or Todd Richardson (Office: 931-296-1455; Mobile: 615-418-0276)

The Tennessee Forest Products Bulletin welcomes those items that you are looking to buy or sell in The Trading Post. Contact Kerry Livengood (email: Kerry.R.Livengood@tn.gov); (Fax: 615-837-5003) with your submissions.
