



# Renewable Natural Resources Timely Tips

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**Landowners**

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## Economic Impacts of Forestry in Tennessee

*(This information was compiled from a report generated by the Department of Agricultural Economics, University of Tennessee, December 2006. Special thanks to Burt English, Kim Jensen and Jamey Menard for their efforts.)*

### Overview

In 2003, Tennessee's forest products (paper products, wood products, plus furniture and related products) exported outside the U.S., including forestry and logging, totaled \$453.3 million. Paper products had the highest export value at \$332.4 million, followed by wood products at \$73.9 million, furniture and related products at \$37.8 million, and forestry and logging at \$9.1 million (U.S. Department of Commerce, 2003b).

Tennessee is one of the top hardwood lumber producing states in the U.S. In 2003, approximately 964 million board feet of hardwood lumber and 95 million board feet of softwood were produced (Tennessee Agricultural Statistics Service, 2004). The majority of the forest cover in the state was hardwoods. White oak, red oak, hickory, yellow-poplar and maple were some of the predominant hardwood species. Loblolly pine, shortleaf and Virginia pine, and red cedar were major species of softwoods.

Forestry manufacturing industries for the state included wood products, paper, and furniture and related products. These industries shipped approximately \$9.2 billion worth of goods. That's 1.8 percent of the national market share for value of shipments of wood products, 2.3 percent of national

paper manufacturing and 1.5 percent of furniture and related products. In terms of employment, the forest products group (wood product manufacturing, paper manufacturing, and furniture and related products) employed more than 51,500 workers.

### Economic Impacts at the State & In-State Region Levels

Direct economic activity for forestry-related industries contributed a total of \$13.1 billion (or 3.4 percent) to the state's economy. Employment in forestry-related industries was 58,900 persons or 1.7 percent of the workforce. Total value added was more than \$4 billion, with \$2.8 billion in labor income.

Of the forestry workforce, 76.4 percent was employed in secondary industries (wood products manufacturing) and 23.6 percent in primary industries (logging; pulp, paper and sawmills; and nursery/timber tracts).

For both primary and secondary forestry, the Memphis region had the largest value of total industry output (32 percent) followed by the Nashville region (22.5 percent). The Chattanooga region (24.9 percent) trailed the Memphis region (41.1 percent) in economic activity for primary forestry, and was followed by the Nashville (15.6 percents), Tri-Cities (12.8 percent) and Knoxville (5.6 percent) regions. However, the Nashville region had more jobs in primary forestry than the Chattanooga region. For secondary forestry, the Knoxville region (12,260) had more jobs than the Nashville (12,154) and Memphis (9,975) regions. Yet, total industry output was larger for the Nashville (\$2.1 billion) region followed by the Memphis (\$2.0 billion) and Knoxville (\$1.8 billion) regions.

## **Primary Forest Products**

The largest output value for primary forest products was from paper and paperboard mills (\$3.35 billion), followed by sawmills (\$833 million); logging (\$703 million); pulp mills (\$316 million); and forest nurseries, forest products, and timber tracts (\$36 million) (i.e., growing trees for reforestation; gathering forest products such as gums, barks, balsam needles, rhizomes, fibers and ginseng; and timber tracts for selling timber).

The Memphis and Chattanooga regions had the largest output values for paper and paperboard mills at 39 percent and 36 percent, respectively. For employment, paper and paperboard mills had the largest number of individuals, with the Memphis and Chattanooga regions employing the largest numbers. The Nashville region had the largest output value for sawmills. For logging, the Memphis and Nashville regions had the largest output values. For pulp mills, 94.6 percent of the economic activity originates from the Memphis region. For forest nurseries, forest products and timber tracts, the Tri-Cities region had the largest output values.

## **Secondary Forest Products**

The largest output value for secondary forest products was paper manufacturing followed by furniture and related product manufacturing; millwork; manufactured home manufacturing; other wood product manufacturing; and veneer, plywood and engineered wood product manufacturing. Furniture and related product manufacturing for this analysis was composed of household and institutional, office and other (mattress, blind and shades) furniture categories. The other wood product manufacturing category was composed of wood preservation, wood containers and pallets, miscellaneous wood products, and kitchen cabinets.

The Memphis region had the largest values for output, employment, labor income, and value added for paper manufacturing. The Knoxville region had the largest output values for furniture and manufactured home manufacturing, with the latter category being an important industry for the state. Economic activity was the largest for the Memphis and Nashville regions for millwork and other wood product manufacturing. For the veneer, plywood and engineered wood product manufacturing category, the Memphis region had the largest output value, followed by the Knoxville, Nashville, Tri-Cities and Chattanooga regions.

## **Estimated Total Economic Impacts of Forestry**

The estimated total economic impacts of forestry included not only the direct impacts from the industry, but also the impacts the industry had on input supplying industries (indirect impacts) and on expenditures by households and other institutions (induced impacts). The total economic impacts from forestry included direct, indirect and induced impacts. Forestry contributed an estimated \$22.8 billion a year to Tennessee's \$388.2 billion economy – roughly 5.9 percent. Employment from forestry totaled more than 148,000 workers from primary and secondary forest products production.

### **Primary Forest Products Total Impacts**

Pulp and paperboard mills contributed the largest values for all the categories analyzed when compared to the other four primary forest products sectors combined. The Memphis region dominated all value categories for this sector; the Chattanooga region had the second largest values and was followed by the Tri-Cities region. The Memphis region also had the largest values for logging and pulp mills. The Nashville region had the largest output values for sawmills. The Tri-Cities region had the largest output values for forest nurseries, forest products and timber tracts.

### **Secondary Forest Products Total Impacts**

Paper manufacturing and furniture and related product manufacturing were the largest contributors for all categories. Although paper manufacturing had the largest value for output, labor income and value added, the furniture sector had the largest number of employed individuals. The Memphis and Nashville regions had the largest output value for the paper manufacturing sector (for Memphis, primarily from paperboard containers manufacturing and sanitary paper products; for Nashville, primarily from paperboard containers, all other converted paper products, packaging materials and coated, laminated paper). For furniture, the Knoxville region (primarily from upholstered household furniture, institutional furniture, and showcases, partitions, shelving and lockers), Chattanooga region (upholstered household furniture), and Nashville region (institutional furniture and showcases, partitions, shelving and lockers) were the leaders. The Knoxville region also had the largest output values for manufactured home manufacturing. For millwork, both the Memphis and

Nashville regions had the largest values, followed by the Knoxville region. The Nashville region (primarily from wood kitchen cabinets and countertops, wood containers and pallets, and all other miscellaneous wood products—NAICS 321999) and Memphis region (wood containers and pallets and wood kitchen cabinets and countertops) were the leaders in all categories for other wood product manufacturing. Veneer, plywood and engineered wood product manufacturing economic activity were the largest in the Memphis region.

## Conclusion

Forestry included the management and logging of trees; sawmills (primary forestry products), including pulp and paper mills; plus forestry products manufacturing (secondary forestry products). Forestry accounted for 5.9 percent of the state's economy, employed close to 149,000 Tennesseans and generated \$22.8 billion in output.

*Larry Tankersley*  
*Extension Forester*

## Streamside Management Zones

Streamside Management Zones (SMZs) may be the most critical Best Management Practice (BMP) during harvesting operations. An SMZ is a vegetated zone that serves as a buffer between harvested areas and water bodies (streams, creeks, rivers, lakes) to trap sediment before it enters the water. An SMZ also has other benefits. Trees and other vegetation in an SMZ provide shade to the waterway to prevent elevated stream temperature, which affects aquatic organisms. These buffer strips also serve as travel corridors and cover for wildlife.

### When should SMZs be applied?

SMZs should be applied adjacent to *perennial* or *intermittent* streams. These streams have a well-defined channel and support aquatic life. Although these streams flow during most times of the year, they may dry up during drought periods. SMZs should still be applied. *Ephemeral* streams, commonly referred to as drains, draws or dry washes, typically have no well-defined channels and flow only during and for short periods following rainfall. Aquatic organisms are not present. SMZs are not required for ephemeral streams, but care must be taken to minimize disturbing

soil in these concave depressions before they enter intermittent or perennial streams.

### How wide should an SMZ be?

There is no uniform formula to determine the width of an SMZ. The objective of an SMZ is to trap any sediment that might erode from disturbed areas. The steeper the slope, and the more erosive the soil, the wider the SMZ should be. The minimum width of an SMZ is 25 feet on each side as measured from the stream bank, not the centerline of the stream. Hay bales and silt fences can be used to ensure that sediment does not reach a stream if adequate SMZ width cannot be attained.

### Can trees in the SMZ be cut?

Yes, but extreme care must be observed. It is preferred that SMZs be “no equipment zones” where timber must be pulled or winched from the zone. SMZ guidelines specify that no more than 50 percent of the tree cover can be harvested, leaving at least 50 percent to maintain the functionality of the buffer strip.

SMZs may be a landowner's most productive forestland because of the proximity to water. These areas should be managed for maximum benefit for water quality and the growth of trees. Too often, SMZs are high-graded with little potential for future value. In other areas, they are left alone with little management and become unhealthy and susceptible to insects and disease.

### Are roads acceptable in the SMZ?

Preferably not, but existing roads do occur. Maintain existing roads within SMZs with adequate water control structures – dips, wing ditches and water bars. Do not divert water directly into the stream; divert water in the filter strip so sediments may settle out. Minimize stream crossing and locate new roads outside the SMZ. Locate log decks, staging areas and skid trails outside the SMZ. Remember, SMZs should be treated as no equipment zones to minimize site disturbance.

*Wayne K. Clatterbuck*  
*Forest Management and Silviculture*

## Time to Order Seedlings for Spring Planting

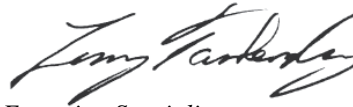
Although fall and winter are well on the way, now is the time to begin planning for reforestation, i.e., planting trees in the spring. Site preparation for planting should be accomplished in the late fall to control herbaceous and woody weeds before spring planting. Bare root tree seedlings (both hardwoods and pines) should be planted before April 1 when seedlings break dormancy and begin to grow. Reserve seedlings now from the Tennessee Division of Forestry (TDF) nursery located near Delano, Tennessee in Polk County. Contact your local Division of Forestry office or the nursery at 423-263-1626 or for a seedling catalog with order forms, prices and

species available for sale. A copy of the catalog is also online at [state.tn.us/agriculture/forestry/landowners/catalog.pdf](http://state.tn.us/agriculture/forestry/landowners/catalog.pdf). Do not procrastinate. The demand for seedlings of some species may exceed supply.

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