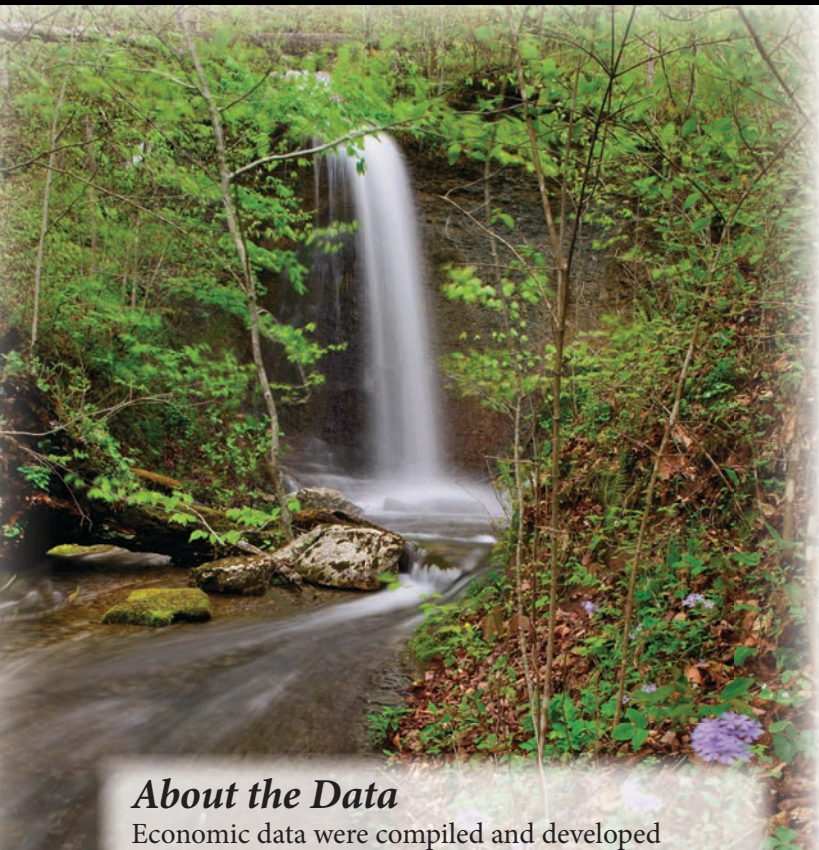


# Kentucky Forestry Economic Impact Report 2013-2014





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## ***About the Data***

Economic data were compiled and developed specifically for this report from a variety of credible sources and partners. Overall forestry sector revenue and indirect impacts were developed using statewide IMPLAN data from 2011, the most currently available data at this time and adjusted for 2013 (discussed below). Direct economic impact refers to the economic activity directly associated with an industry sector. Total economic impact refers to the complete economic activity associated with an industry sector and includes direct, indirect, and induced effects. The IMPLAN data was adjusted to provide current year's estimates based on annual employment figures from the Kentucky Forest Products Industry Directory maintained by the University of Kentucky, Department of Forestry Extension and Kentucky Division of Forestry (KDF). The availability of current employment data in the directory also allowed adjustments of other sources of information such as the USDA Forest Service's Timber Product Output data allowing reasonable estimates of current year's outputs. Data from KDF through its Delivered Log and Product Prices is also essential for this report as is the Forest Inventory Analysis provided jointly by KDF and the U.S. Forest Service. Data from USDA NASS Census of Agriculture, RISI, the Kentucky Master Logger Program, and Kentucky Forest Industry Association members also provided value data used in this report.

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*All photos courtesy: Thomas Barnes and Billy Thomas*





# Kentucky Forestry Economic Impact Report 2013-2014

## Authors

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## Abstract

Forests are a valuable part of Kentucky's landscape providing significant resources and opportunities benefiting the Commonwealth. One important and verifiable benefit is the economic contributions of Kentucky's forest and wood industries. Analysis of these industries indicated a total economic impact of \$12.8 billion and 59,000 jobs in 2013. Kentucky is one of the leading producers of hardwood forest products in the south and exports wood products across the nation and the world. This economic impact was generated from forests located in all 120 counties of the Commonwealth providing resources harvested by over 1,800 logging firms and processed at 703 facilities located in 109 counties. These industries include: sawmills, pulp and paper mills, and a wide variety of secondary producers such as cabinet, barrel, and flooring manufacturers. The Kentucky forest industry improved significantly in 2013 and most sectors and commodities performed better than expected. 2013 saw a reversal of sluggish delivered log prices experienced in 2012 with overall statewide average prices increasing by 11.4% compared to 2012. Analysis indicates that Kentucky will remain the leading producer of hardwood sawlogs in the South and one of the top three in the nation. This report highlights the economic contribution of the forestry sector to Kentucky in 2013 and provides insights to the sectors predicted performance in 2014.

## Acknowledgements

The authors thank Kentucky Division of Forestry personnel Larry Lowe, Chris Nevins, and Stewart West for providing necessary and invaluable information to this report; Chris Oswalt with USDA Forest Service's FIA unit in Knoxville; Mark Schuster, KDF coordinator of the Kentucky Master Logger Program, members of the Kentucky Forest Industries Association; and Carroll Fackler and Terrell Baker with the University of Kentucky, Department of Forestry. Special thanks go to Reneé Williams, Information Specialist with the University of Kentucky, Department of Forestry Extension for publication graphics and layout.

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# Overall Impact



**Direct Impact: \$7.9 billion**  
**Total Impact: \$12.8 billion**

In 2013, the forestry industry is estimated to provide \$7.9 billion in direct contributions and a total contribution of \$12.8 billion to Kentucky's economy - an increase of 2.9% and 3.3% respectively compared to 2011.

**Direct Employment: 27,574**  
**Total Employment: 59,306**  
**Earned Income: \$1.9 billion**



Employment increased with the forest industry directly employing an estimated 27,574 in 2013 and with a total contribution of 59,306 jobs in the Commonwealth - an increase of 4.6% and 4.3%, respectively since 2011. While forestry sector contributions increased the number of facilities was flat, 703 facilities in 109 counties in 2013 compared to 708 facilities in 2012.

Sawmills and logging are estimated to show increases in direct revenues in 2013, \$826 and \$717 million respectively, with secondary industry increasing to \$1.9 billion. Kentucky's paper producers are estimated to maintain stable output in 2013. While paper converters fell by 1.2% they did better than the 4.7% reduction in U.S. paper consumption would indicate. Wood related exports increased in 2013 with \$210 million shipped compared to \$175 million in 2012. Wooden barrels led exports followed by oak lumber, which showed a significant increase of 71% compared to 2012. Hardwood pulp, other lumber, and railway ties also increased. The majority of shipments were to Europe (40%), North American (Canada and Mexico) (28%) and Asia (20%).



# Economic Impact of Forest and Wood Industries

Kentucky forest industries include 703 wood using facilities and more than 1,800 logging firms across the Commonwealth (Fig. 1). This widespread distribution highlights the importance of the forestry sector for both urban and rural economies in Kentucky ensuring for allocation of the \$12.8 billion across all regions of the state.

The forest and wood industry is comprised of a range of sub-sectors. Figures 2 and 3 provide a breakdown of the forest and wood industry into six distinct sub-sectors including: logging, primary wood manufacturing, pulp and paper manufacturing, secondary wood manufacturing, paper converters, and wood residue manufacturing.

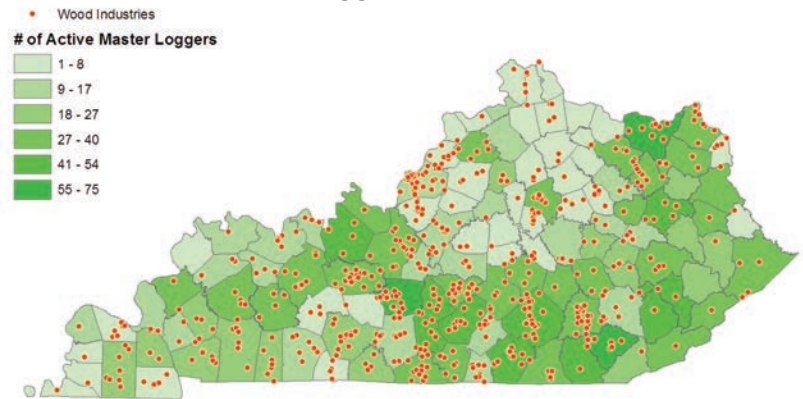
**Logging:** Logging firms directly employed 2,037 (not including the over 2,000 owner/operators) with a direct economic impact of \$717 million and provided the necessary capacity to cut and haul the Commonwealth's timber and pulpwood resources.

**Solid wood manufacturing:** Solid wood manufacturing, including both primary wood manufacturing (ex. lumber mills) and secondary wood manufacturing (ex. cabinet manufacturing), provided \$2.7 billion in direct revenue and more than 16,000 jobs.

**Paper:** Paper represents a sizable portion of the forestry sector \$3.9 billion overall including pulp and paper manufacturing and paper converters, industries that manufacture finished paper products, that in total employ over 20,900.

**Wood residue:** Wood residue manufacturing (ex. mulch) was also important in Kentucky providing \$488 million and 745 jobs to Kentucky's economy.

Figure 1. Kentucky Wood Industries and Master Logger Distribution 2013



Source: Kentucky Master Logger Database; Kentucky Forest Products Industry Directory

Figure 2. Direct Employment by Kentucky Forestry Sub-Sectors

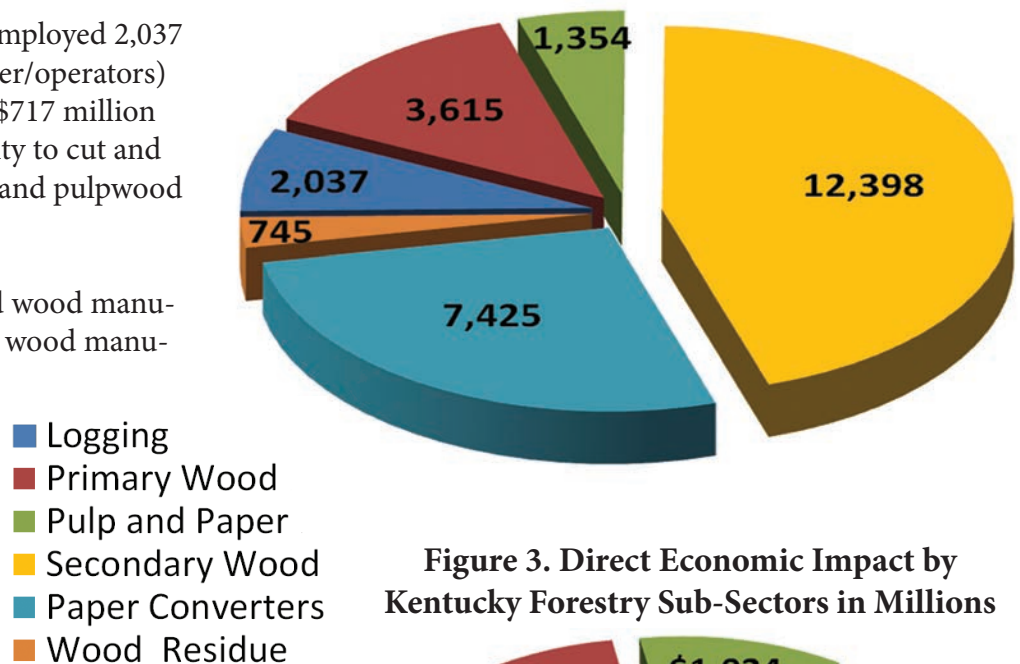
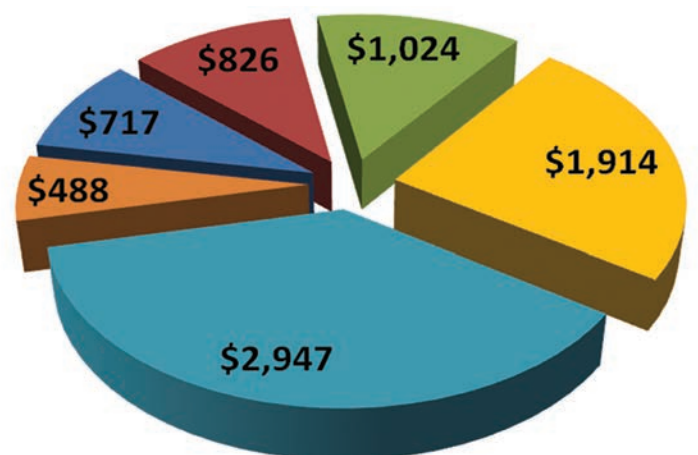


Figure 3. Direct Economic Impact by Kentucky Forestry Sub-Sectors in Millions



Figures 2 and 3 source: IMPLAN Data for Kentucky and the Kentucky Forest Products Industry Directory

# Timber Output and Prices

**T**imber product output is estimated to increase in 2013 compared to 2012. Total volume of sawlogs produced was 729 million board feet showing an increase of 3.3 percent over 2012 estimates. This corresponds to overall forest industry economic impact and increases in the logging and solid wood manufacturing sub-sectors. Commodity pricing also was stable or increased for a number of timber products such as tie and stave logs and sawlogs for lumber manufacturing. Delivered sawlog prices increased for many species important to Kentucky. Yellow-poplar experienced the greatest increase with grade 1 logs rising to \$418/thousand board feet (MBF) a 34.0% increase. Ash, despite the occurrence of emerald ash borer, increased 6.0% (\$443/MBF). Railway tie logs increased 11%, ranging \$301 - \$347/MBF. Hickory tie logs commanded the highest value statewide (\$371/MBF) while ash exhibited the highest regional price (\$420/MBF) in South Central Kentucky. White oak stave logs used in barrel manufacturing maintained the relatively high prices paid in 2012 averaging \$875/MBF. Pine and hardwood pulpwood prices were stable in 2013 averaging \$23.17 and \$23.63/ton respectively.

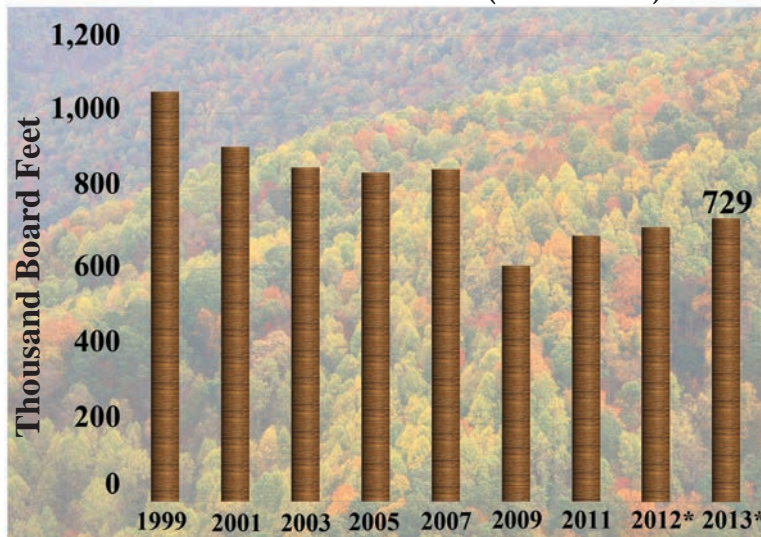
**Figure 7. Delivered Grade 1 Logs Prices for Major Species in Kentucky**

Species	Percent Change <sup>1</sup>	2013 (3rd Q) \$/MBF
Yellow-Poplar	+ 34.0 %	\$ 418
Ash	+ 6.0 %	\$ 443
Black Walnut	+ 14.9 %	\$ 1,256
Red Oak	+ 0%	\$ 570
White Oak	+ 5.7 %	\$ 700
Cherry	+ 62.6 %	\$ 709
Hard Maple	+ 9.5 %	\$ 718

<sup>1</sup>Industry information indicates all prices are increasing in 4<sup>th</sup> quarter of 2013 extending into 2014 for all species including red oak.

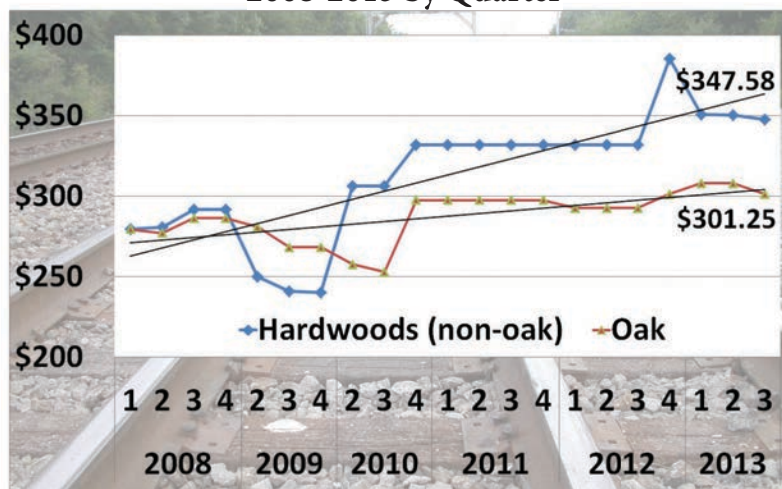
Source: Kentucky Division of Forestry's Delivered Log Price Data

**Figure 4. Kentucky Hardwood Sawlog Production 1999-2013 (\*estimated)**



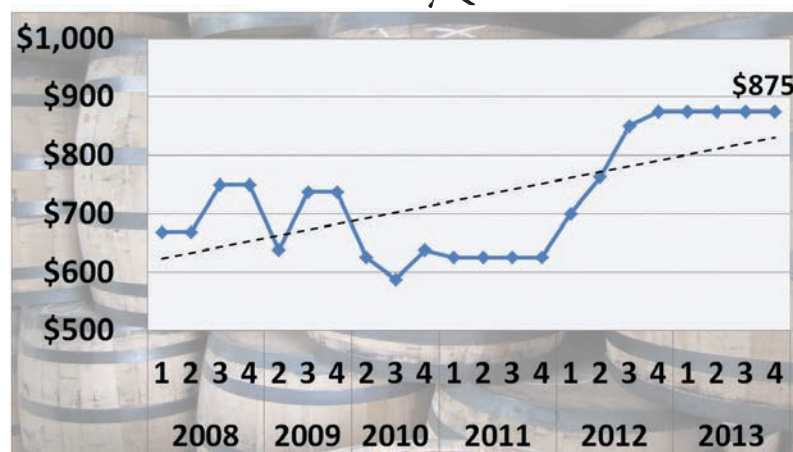
Source: U.S. Forest Service Forest Inventory & Analysis Timber Product Output Data and the Kentucky Forest Products Industry Directory

**Figure 5. Delivered Tie Logs Prices in Kentucky 2008-2013 by Quarter**



Sources above and below: Kentucky Division of Forestry's Delivered Log Price Data

**Figure 6. Delivered Stave Logs Prices in Kentucky 2008-2013 by Quarter**

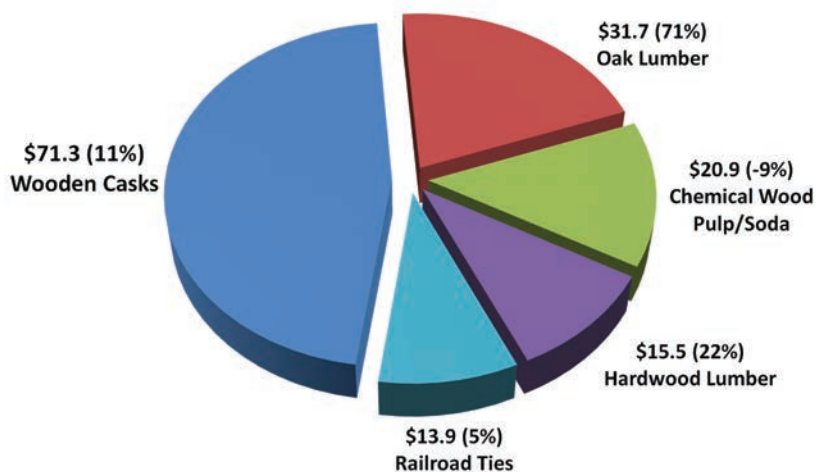




# Exports and 2014 Outlook

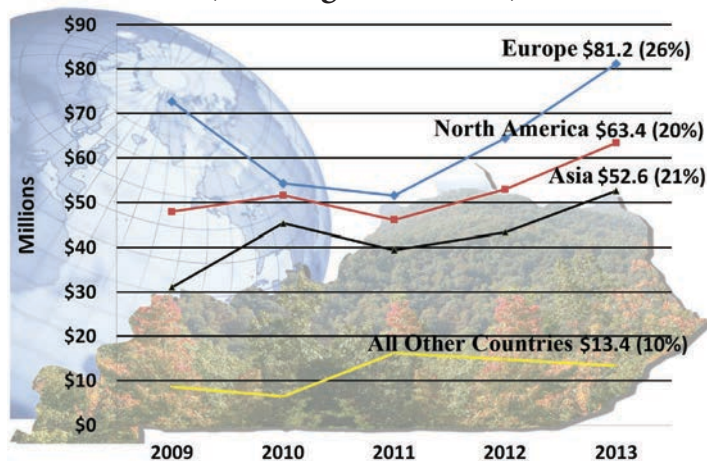
Exports are projected to continue on an upward trend that started in 2012 lead by over \$71 million in wooden cask (barrels) sales to Europe (Figures 8 and 9). Oak lumber showed the highest increase in exports (71%) and non-domestic interest in oak lumber and manufactured parts remains high.

**Figure 8. Top 5 Kentucky Wood, Paper, and Pulp Exports in 2013 in Millions (% change from 2012)**



Source: U.S. Department of Agriculture Foreign Agricultural Services

**Figure 9. Destinations of Kentucky Wood, Paper, and Pulp Exports 2009-2013 (% change from 2012)**

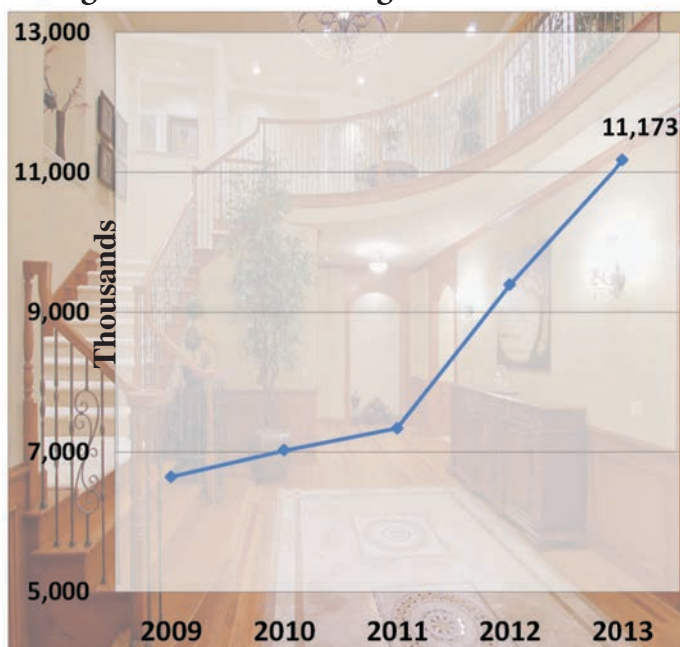


Source: U.S. Department of Agriculture Foreign Agricultural Services

## 2014 Outlook

The outlook for 2014 is encouraging with primary mills expecting increases in sales of green and dried lumber, pulp and paper remaining stable, and Kentucky's paper converters while experiencing losses should still outperform national figures for reductions in paper usage. Demand and prices for a number of important species including red oak are projected to increase. Housing starts indicate that yellow-poplar used for trim and cabinetry (along with other species used in interior and architectural wood components) will also maintain value and demand in 2014 (Figure 10). Demand for sawlogs is expected to increase as is demand for tie and stave logs while pulpwood demand should remain stable. Log inventories in 2013 were highly variable by region and facility due to the wet weather experienced in the first half of the year. Inventories improved as 2013 progressed and inventories should stabilize quickly in 2014. Increases in market demand expected for 2014 for a variety of primary products indicates a stable or increasing demand for logs with improved delivered log pricing in most regions and markets. While demand and pricing is expected to improve and provide some relief to the logging sector, which has been under significant stress since 2005, this sector will remain fragile due to the high cost of parts and fuel. In general, projections are for improvement in most forestry sectors in 2014 including markets for timber.

**Figure 10. U.S. Housing Starts 2009-2013**



Source: U.S. Department of Agriculture Foreign Agricultural Services



## ***Kentucky's Forests: More than trees, logs, and economic impact***

The forests of Kentucky support an important industry which makes significant contributions to the Commonwealth's economy as detailed in this report. However, Kentucky's forests also provide countless other environmental benefits as well. Environmental benefits of trees and forests include ecosystems services such as: cleaner air and water, carbon sequestration, biodiversity, wildlife habitat and provide Kentuckians with recreational opportunities, aesthetic beauty, and a host of other intrinsic values. It is beyond the scope of this year's report to document those benefits; however as credible statewide data becomes available the value of ecosystem services provided by the Commonwealth's forests will be included in future reports. To highlight the importance of ecosystem services a recent study by the city of Lexington found the economic benefits and savings provided by the Lexington urban tree canopy was more than \$30 million dollars ([www.lexingtonky.gov/index.aspx?page=3412](http://www.lexingtonky.gov/index.aspx?page=3412)).

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