



Kentucky, 2007

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FOREST INVENTORY & ANALYSIS FACTSHEET



This science update provides an overview of the forest resource attributes of Kentucky. The overview is based on an annual inventory conducted by the Forest Inventory and Analysis (FIA) Program at the Southern Research Station of the USDA Forest Service in cooperation with the Kentucky Division of Forestry. The inventory, along with Web-posted supplemental tables, will be updated annually. For past FIA inventory reports on Kentucky's forests as well as information on the FIA program, and FIA's field sampling methodology and estimation procedures, please refer to the references at the end of this publication.

Annual Update

Since 2004, Kentucky's forested land, an estimated 12.4 million acres in 2007, has changed little in area (table 1), with both forest land area and timberland area remaining near 2004 levels. The number of trees has increased, as have standing volume and standing biomass, and since 2004, annual timberland growth has increased. While annual removals also have increased, growth remains twice the level of removals, indicating a sustainable level of harvesting at current rates. Since 2004, average annual mortality on timberland has declined by almost 3 percent.



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Fall color provided by maples is prolific in Kentucky. (photo by Christopher Oswalt)

Table 1—Kentucky forest statistics, change between 2004 and 2007

Forest statistics	2007 estimate	Sampling error	Change since 2004 percent
Forest land estimates			
Area (acres)	12,369,227	0.81	0.76
Number of live trees			
≥ 1 inch diameter (trees)	6,880,470,866	1.55	1.02
Net volume in live trees			
≥ 5 inch diameter (ft ³)	23,508,357,161	1.41	4.77
Net volume of growing stock			
stock trees (ft ³)	20,130,836,392	1.53	5.14
All live tree and sapling aboveground biomass (oven-dry short tons)	631,912,770	1.30	4.24
Annual net growth of live trees			
≥ 5 inch (ft ³ /year)	772,863,392	4.89	—
Annual removals of live trees			
≥ 5 inch (ft ³ /year)	362,382,053	10.36	—
Annual mortality of live trees			
≥ 5 inch (ft ³ /year)	202,973,040	11.08	—
Timberland estimates			
Area (acres)	12,111,947	0.87	0.77
Number of live trees			
≥ 1 inch diameter (trees)	6,746,430,662	1.60	1.16
Net volume in live trees			
≥ 5 inch diameter (ft ³)	22,910,075,077	1.46	4.91
Net volume of growing stock			
stock trees (ft ³)	19,583,554,300	1.58	5.27
All live tree and sapling aboveground biomass (oven-dry short tons)	616,398,656	1.35	4.40
Annual net growth of live trees			
≥ 5 inch (ft ³ /year)	776,508,524	4.95	37.51
Annual removals of live trees			
≥ 5 inch (ft ³ /year)	369,034,515	10.29	15.12
Annual mortality of live trees			
≥ 5 inch (ft ³ /year)	198,348,737	11.30	-2.96

— = Growth, removals, and mortality live trees were not estimated in 2004.

Forest Characteristics

Since the early 1960s, Kentucky's estimated area of timberland has hovered around 12 million acres (fig. 1). Eastern Kentucky remains more heavily forested than the rest of the Commonwealth of Kentucky, with several eastern counties covered > 80 percent by forests (fig. 2). Since 2004, relatively no change has occurred in ownership of forest land, with 87 percent of the forest land privately owned (fig. 3), another 6 percent managed by the U.S. Forest Service, and 7 percent under other Federal, State (Commonwealth), or local ownership (fig. 3). Forest industry lands account for about 2 percent of Kentucky's forest land.

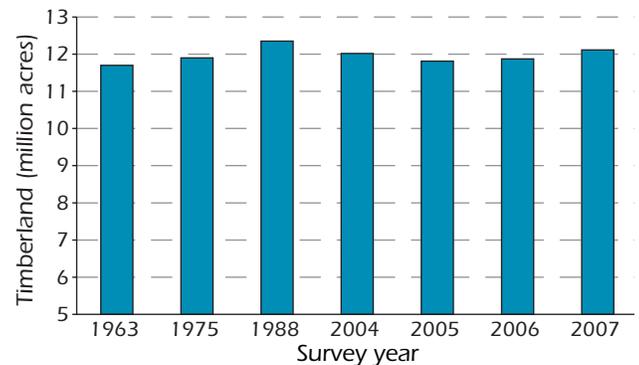


Figure 1—Timberland in Kentucky, 1963–2007.

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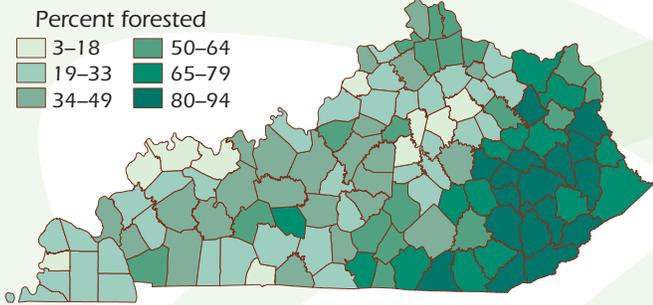


Figure 2—Distribution of forest land in Kentucky, 2007.

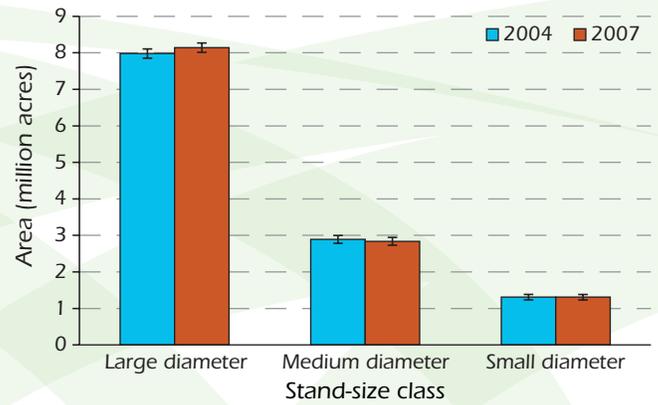


Figure 5—Area of forest land by stand-size class, Kentucky, 2004-07.

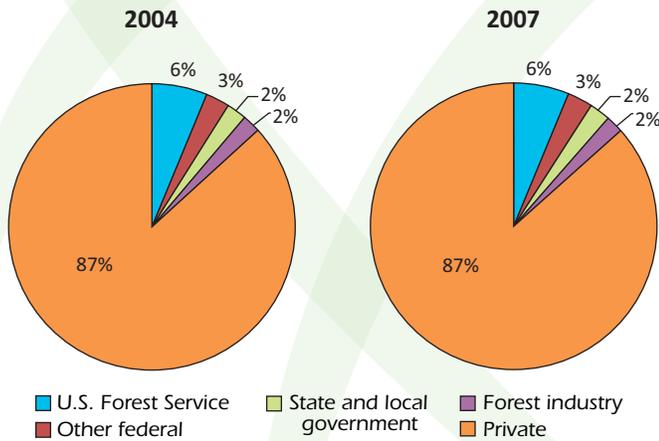


Figure 3—Forest land area (percent) by ownership group in Kentucky, 2004 and 2007.

Since 2004, the area of pine-dominated forest types has declined, while the area of hardwood-dominated forest groups has expanded (fig. 4). The greatest expansion has been in the elm-ash-cottonwood group, although this group makes up only 5.8 percent of Kentucky's forests. There has been no significant change in the distribution of forest land area among stand-size classes (fig. 5). Large-diameter stands makeup > 8 million acres, medium-diameter stands account for about 3 million acres, and small-diameter stands account for 1 million acres. Red maple is the most numerous tree species found in Kentucky forests. Kentucky's red maple population is nearly 830 million live trees. Red maple is more numerous than all oak species (whose population is estimated at 687 million) sampled in Kentucky (table 2).

Table 2—The 25 most common species by number of individual live trees (≥ 1 inch d.b.h.) and number of estimated standing dead trees (≥ 5 inch d.b.h.), Kentucky 2007

Species	Live		Dead	
	Estimate no. of trees	Sampling error percent	Estimate no. of trees	Sampling error percent
Red maple	829,962,251	4.31	3,735,198	11.71
Sugar maple	640,979,164	4.12	3,407,561	11.18
Yellow-poplar	447,549,232	5.98	7,415,759	9.26
Eastern redcedar	361,456,046	7.30	7,586,617	10.68
Flowering dogwood	332,362,969	5.83	1,755,496	14.85
American beech	311,085,565	5.78	1,094,632	19.93
Blackgum	270,929,351	5.56	818,724	22.07
Sourwood	248,905,228	6.07	1,732,701	15.29
Eastern redbud	229,825,125	7.34	1,786,969	16.75
Sassafras	228,124,267	7.20	9,973,629	8.67
White oak	191,766,394	4.78	8,261,754	8.09
Pignut hickory	134,416,676	5.65	1,910,997	15.72
Chestnut oak	134,176,903	6.72	3,670,072	11.66
White ash	127,704,253	7.54	2,257,009	15.88
Green ash	118,855,717	9.00	1,817,108	18.79
Virginia pine	118,012,197	15.56	12,607,375	13.45
Winged elm	104,562,746	8.69	983,331	23.43
Sweetgum	103,412,104	14.55	1,258,241	20.19
Black cherry	96,860,614	8.12	1,659,942	16.52
Slippery elm	94,752,752	8.68	2,581,780	13.90
Black locust	93,921,747	11.24	14,152,178	8.68
Black oak	93,797,125	7.39	4,143,899	11.05
Mockernut hickory	90,461,352	7.36	847,072	27.37
American elm	85,747,760	10.12	2,521,157	14.62
American hornbeam	85,531,934	11.96	74,333	70.11
Oaks ^a	686,744,740	3.04	24,245,195	5.07

^a All oak species combined have been included for comparison.

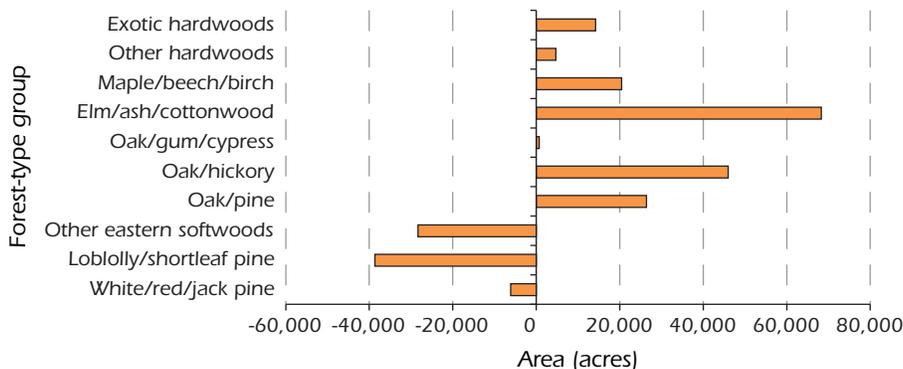


Figure 4—Change in area by forest-type group in Kentucky, 2004-07.

Economic Contribution of Forest Products Industry

Kentucky forests contribute significantly to the statewide (commonwealth) economy. Moreover, Kentucky hardwood products contribute significantly to the southern primary wood processing industry, with Kentucky responsible for 13.5 percent of southern hardwood sawmill production, making Kentucky the second highest producing State/Commonwealth in the South (fig. 6). The mills also produce about 8 percent of the South's hardwood plywood/veneer (table 3). Altogether these contributions make Kentucky an essential component of the southern forest products industry.

More than 5,100 workers are directly employed in Kentucky's primary wood processing mills alone (table 3). This number does not include those employed in harvesting and sales. In 2007, Kentucky mills accounted for about 199 million cubic feet worth of receipts (table 3).

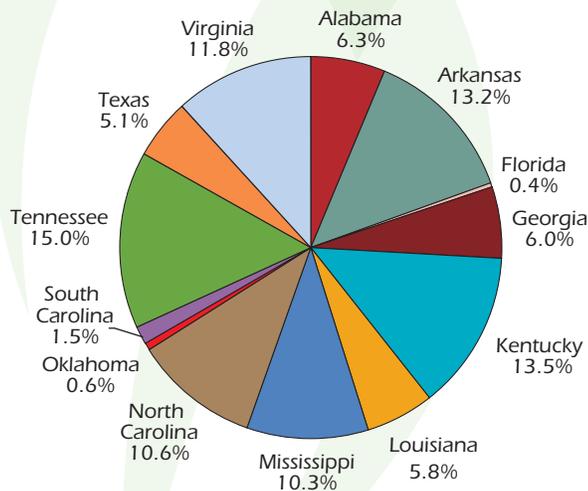
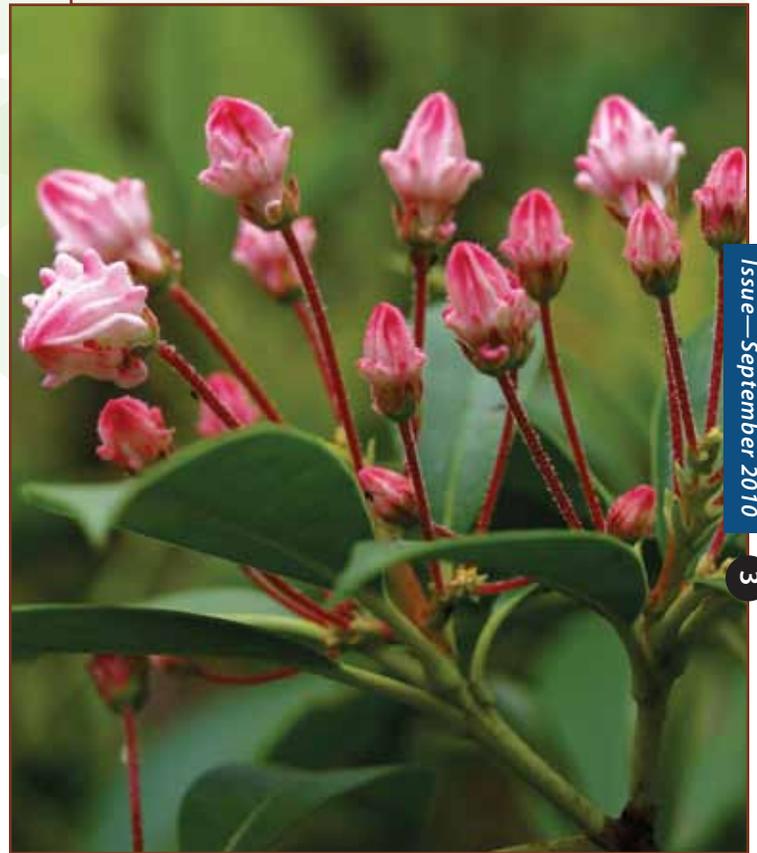


Figure 6—Proportion of 2007 southern hardwood sawmill volume production by each State/Commonwealth in the Southern United States.

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Mountain laurel (*Kalmia latifolia*) is common in the mountains of eastern Kentucky. (photo by Christopher Oswalt)

Table 3—The number of employees, volume received, and total receipts by mill and product types for Kentucky primary wood processing mills, 2007

Mill type		Roundwood type			All
		Softwood	Hardwood	Softwood/ hardwood	
Sawmill	Number of employees	93	3,780	35	3,908
	Percent of South Total	0.0%	15.9%	1.5%	7.5%
	Volume received (<i>mbf</i>)	14,999	832,846	5,582	853,427
	Percent of South Total	0.1%	13.5%	0.6%	4.1%
	Total receipts (<i>mcf</i>)	—	—	—	140,201
Plywood, veneer, and composite panel	Number of employees	—	402	—	402
	Percent of South Total	—	8.4%	—	1.9%
	Volume received (<i>mbf</i>)	—	40,958	—	40,958
	Percent of South Total	—	7.9%	—	0.6%
	Total receipts (<i>mcf</i>)	—	—	—	7,015
Pulpwood	Number of employees	—	821	—	821
	Percent of South Total	—	4.6%	—	1.6%
	Volume received (<i>cords</i>)	—	1,185,015	—	1,185,015
	Percent of South Total	—	6.6%	—	1.8%
	Total receipts (<i>mcf</i>)	—	—	—	51,347

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References

Bechtold, W.A.; Patterson, P.L., eds. 2005. The enhanced forest inventory and analysis program—national sampling design and estimation procedures. Gen. Tech. Rep. SRS–80. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 85 p.

Smith, W.B. 2002. Forest inventory and analysis: a national inventory and monitoring program. *Environmental Pollution*. 116: 233–242.

U.S. Forest Service. 2005. Forest inventory and analysis national core field guide: field data collection procedures for phase 2 plots, Version 3.0. Washington, DC. www.fia.fs.fed.us/library/field-guides-methods-proc. Vol. 1. Internal report.

Additional Kentucky Inventory Information

Mathison, R.A.; Nevins, C. 2009. Kentucky's timber industry—an assessment of timber product output and use, 2007. *Resour. Bull. SRS–154*. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 31 p.

Turner, J.A.; Oswald, C.M.; Chamberlain, J.L. [and others]. 2008. Kentucky's forests, 2004. *Resour. Bull. SRS–129*. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 101 p.

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Hardwood dominated forests, like the one here are common throughout Kentucky. (photo by Christopher Oswald)

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