



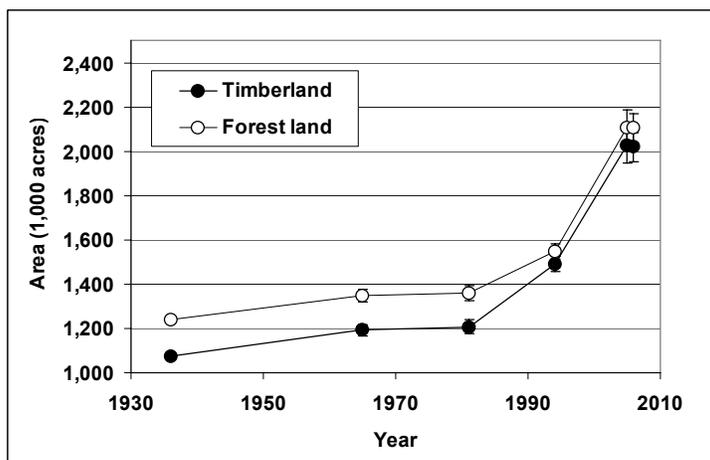
# Kansas' Forest Resources, 2006

Research Note NRS-9

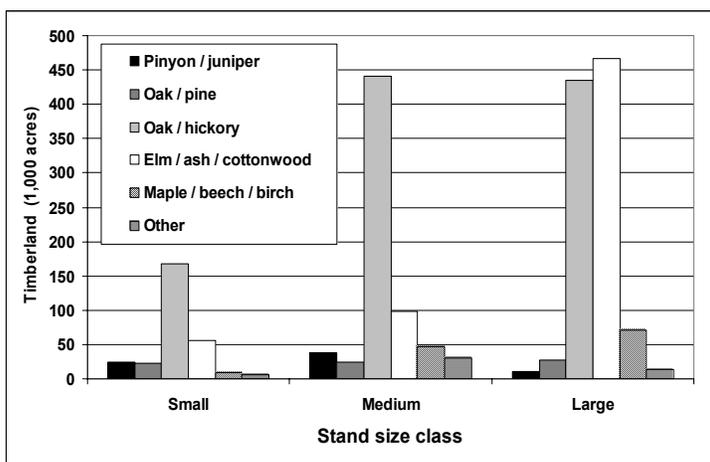
This publication provides an overview of forest resource attributes for this state based on an annual inventory conducted by the Forest Inventory and Analysis program at the Northern Research Station of the U.S. Forest Service. These annual estimates, along with web-posted core tables, will be updated annually. For more information regarding past inventory reports for this state, inventory program information, and sampling/estimation procedures, please refer to the citations at the end of this report.

**Table 1.—Annual estimates, uncertainty, and change**

	2006 estimate	SE (%)	Change since 2005 (%)
<b>Forest land estimates</b>			
Area (1,000 acres)	2,103.9	3.2	-0.1
Number of all live trees 1 inch diameter or larger (million trees)	734.5	4.6	2.2
Biomass of all live trees 1 inch diameter or larger (1,000 tons)	74,865.6	4.4	3.5
Net volume of live trees (million cubic feet)	2,849.4	5.1	3.9
Net volume of growing stock trees (million cubic feet)	1,473.3	6.9	-0.8
Annual net growth of live trees (thousand cubic feet per year)	48,276.5	35.2	NA
Annual mortality of live trees (thousand cubic feet per year)	38,797.3	23.0	NA
Annual removals of live trees (thousand cubic feet per year)	7,563.7	73.1	NA
<b>Timberland estimates</b>			
Area (1,000 acres)	2,019.4	3.3	-0.4
Number of all live trees 1 inch diameter or larger (million trees)	691.1	4.5	1.4
Biomass of all live trees 1 inch diameter or larger (1,000 tons)	72,480.4	4.6	3.4
Net volume of live trees (million cubic feet)	2,778.6	5.2	3.8
Net volume of growing stock trees (million cubic feet)	1,443.3	7.1	-0.9
Annual net growth of live trees (thousand cubic feet per year)	47,206.6	35.7	NA
Annual mortality of live trees (thousand cubic feet per year)	36,371.6	24.3	NA
Annual removals of live trees (thousand cubic feet per year)	15,244.3	48.9	NA
Annual net growth of growing stock trees (thousand cubic feet per year)	17,786.2	81.5	NA
Annual mortality of growing stock trees (thousand cubic feet per year)	14,921.7	31.7	NA
Annual removals of growing stock trees (thousand cubic feet per year)	8,292.5	58.4	NA



**Figure 1.—Area of timberland and forest land by year<sup>1</sup>**



**Figure 2.—Timberland area of top six forest types by stand size class<sup>2</sup>**

<sup>1</sup> FIA separates forest land by two criteria: productive / unproductive and reserved / unreserved. Combining these criteria, we define three components of forest land: 1) Timberland—forest land not restricted from harvesting by statute, administrative regulation, or designation and capable of growing trees at a rate of 20 cubic feet per acre per year at maximum annual increment; 2) Reserved forest land—land restricted from harvesting by statute, administrative regulation, or designation (e.g., state parks, national parks, federal wilderness areas); and Other forest land—low productivity forest land not capable of growing trees at a rate of 20 cubic feet per acre per year.

<sup>2</sup> The Pinyon/juniper forest type group is mainly eastern redcedar. Oak/pine is mainly eastern redcedar/hardwoods.



Table 2.—Top 10 species by statewide volume estimates

Rank	Species	Volume of live trees on timberland (million cubic feet)	Sampling error (%)	Change since 2005 (%)	Volume of sawtimber on timberland (million board feet)	Sampling error (%)	Change since 2005 (%)
1	Hackberry	373.9	11.2	6.5	760.8	15.8	3.4
2	Cottonwood	327.7	27.2	-5.8	1,090.0	29.0	-6.8
3	Green ash	223.8	11.9	5.7	357.3	16.4	-11.5
4	American elm	217.7	9.2	1.7	165.1	23.5	8.7
5	Osage-orange	180.3	11.7	5.6	0.0	0.0	0.0
6	Black walnut	169.0	10.8	4.8	409.8	15.3	5.6
7	Bur oak	148.1	17.9	0.7	348.7	24.5	-5.4
8	Red mulberry	134.0	16.7	13.8	55.3	53.0	10.2
9	Honeylocust	98.0	15.3	5.6	61.2	35.8	14.2
10	Northern Red oak	97.6	24.4	0.7	405.9	26.8	6.7
	<b>Other softwood species</b>	<b>85.7</b>	<b>16.9</b>	<b>2.5</b>	<b>146.1</b>	<b>26.4</b>	<b>-5.0</b>
	<b>Other hardwood species</b>	<b>722.7</b>	<b>9.4</b>	<b>5.9</b>	<b>1,543.2</b>	<b>16.3</b>	<b>-42.2</b>
	<b>All species</b>	<b>2,778.6</b>	<b>5.2</b>	<b>3.8</b>	<b>5,343.6</b>	<b>8.8</b>	<b>-0.2</b>

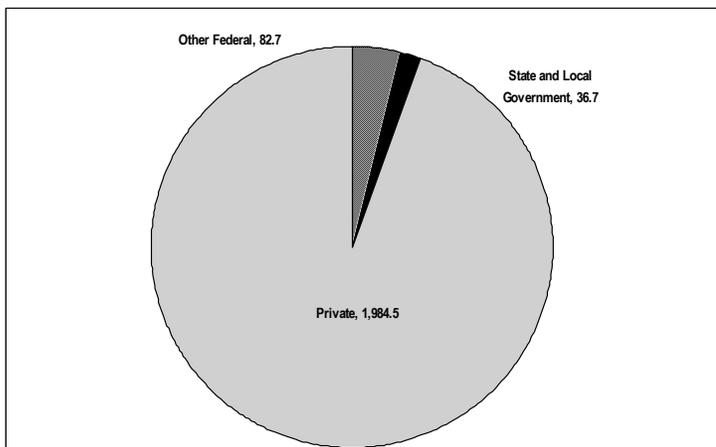


Figure 3.—Forest land area (1,000 acres) by ownership group

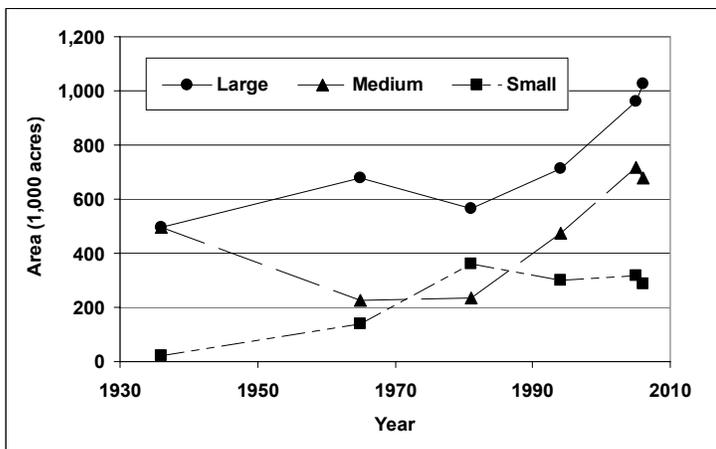


Figure 4.—Area of timberland by stand size class and year

[Large diameter: Stands with an all live stocking value of at least 10 (base 100) and with more than 50 percent of the stocking in medium and large diameter trees; and with the stocking of large diameter trees equal to or greater than the stocking of medium diameter trees. Medium diameter: Stands with more than 50 percent of the stocking in medium and large diameter trees; and with the stocking of large diameter trees less than the stocking of medium diameter trees. Small diameter: Stands on which at least 50 percent of the stocking is in small diameter trees. Nonstocked: Forest land with all live stocking less than 10.]

## Kansas Issue Update – Density increases and trends in growing stock volume per acre of timberland

Kansas plays host to the transition of the central hardwood forests of the United States into the grasslands of the Great Plains. Limited rainfall and fire traditionally have kept the majority of forest land in the eastern third of the state though riparian forests of cottonwood, willow, and elm are found intermittently all the way to the Colorado border.

In many places, Kansas' forests are denser now than in the recent past (Fig. 5). Individual trees are, on average, larger in the latest inventory than in previous ones (Fig. 6). Although the combination of more and larger trees suggests that there are increased opportunities for utilization, density increases could also mean that forest health problems that attack stressed trees are on the horizon. The smaller rate of increase in per-acre growing stock volume between 1994 and 2006 compared to the earlier interval (1981 – 1994) suggests: 1) that there is less unoccupied growing space; and 2) that the trees, being larger (and presumably older) are exhibiting slowdowns in their volume growth.

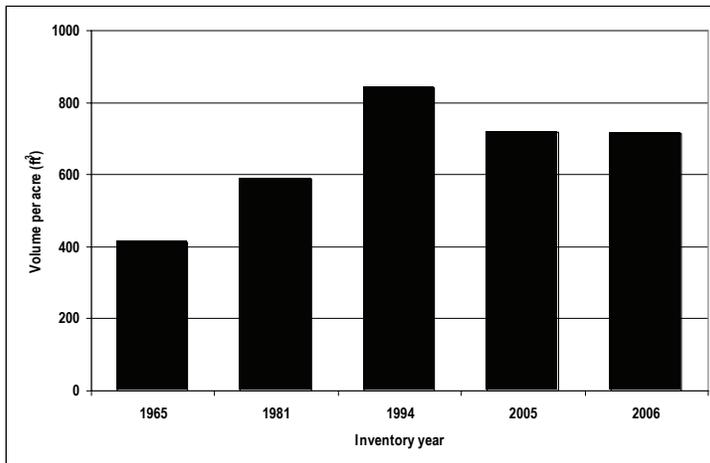


Figure 5.—Growing stock volume per acre of timberland increased steadily between 1965 and 1994, but has declined slightly since then

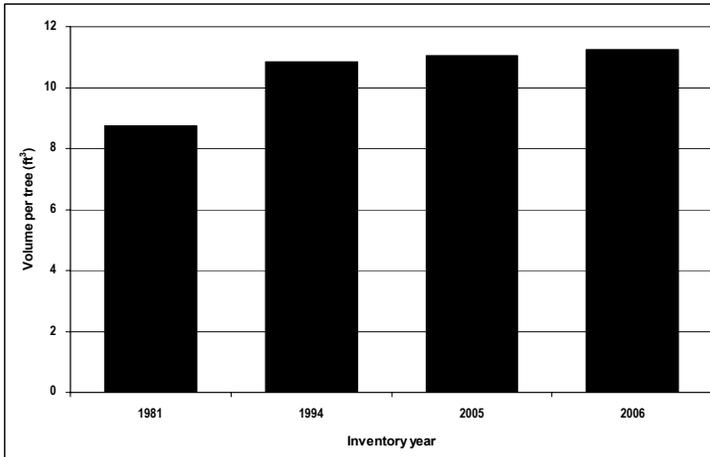


Figure 6.—Volume per growing stock tree on timberland has leveled off recently

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### FIA Program Information

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### Additional Kansas Inventory Information

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