

Kansas' Forest Resources, 2009

Research Note NRS-79

This publication provides an overview of forest resource attributes for Kansas based on an annual inventory conducted by the Forest Inventory and Analysis (FIA) program at the Northern Research Station of the U.S. Forest Service. These estimates, along with web-posted core tables, will be updated annually. For more information please refer to page 4 of this report. More comprehensive reports with key findings and definitions are reported every 5 years (Moser et al. 2008).

Table 1. — Annual estimates, uncertainty, and change

	2009 estimate	Sampling error (%)	Change since 2008 (%)
Forest Land Estimates			
Area of forest land (thousand acres)	2,278.9	3.1	2.2
Number of all live trees on forestland (million trees)	767.7	5.0	2.0
All live tree and sapling aboveground biomass on forest land oven-dry (thousand tons)	78,900.8	4.2	0.9
Volume of all live on forest land (million ft ³)	2,953.2	4.9	0.7
Net growth of all live on forest land (thousand ft ³ per year)	61,423.1	15.2	11.9
Mortality of all live on forest land (thousand ft ³ per year)	50,496.3	11.4	15.3
Harvest removals of all live on forest land (thousand ft ³ per year)	18,154.9	25.9	37.7
Other removals of all live on forest land (thousand ft ³ per year)	4,402.7	43.3	10.5
Timberland Estimates			
Area of timberland (thousand acres)	2,177.3	3.2	3.3
Number of all live trees on timberland (million trees)	724.0	5.0	5.4
All live tree and sapling aboveground biomass on timberland oven-dry (thousand tons)	76,560.2	4.3	1.7
Volume of all live on timberland (million cuft)	2,881.1	5.1	1.0
Volume of growing-stock on timberland (million ft ³)	1,437.3	7.2	-1.3
Net growth of growing-stock on timberland (thousand ft ³ per year)	29,474.5	22.4	23.1
Mortality of growing-stock on timberland (thousand ft ³ per year)	18,149.6	17.6	12.2
Harvest removals of growing-stock on timberland (thousand ft ³ per year)	9,194.8	42.1	129.5
Other removals of growing-stock on timberland (thousand ft ³ per year)	5,638.8	53.5	87.3

Note: When available, sampling errors/bars provided in figures and tables represent 68 percent confidence intervals

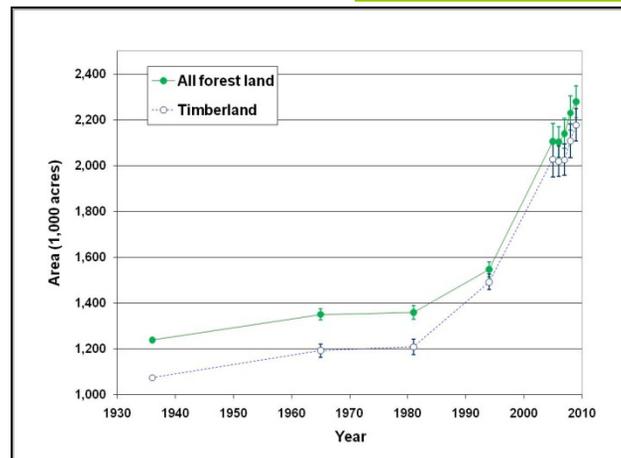


Figure 1. — Area of timberland and forest land by year.

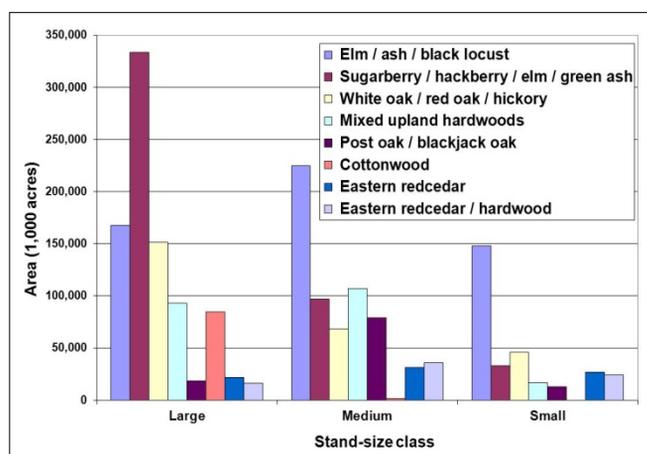


Figure 2. — Area of forest land by top eight forest types and stand-size class, 2009.

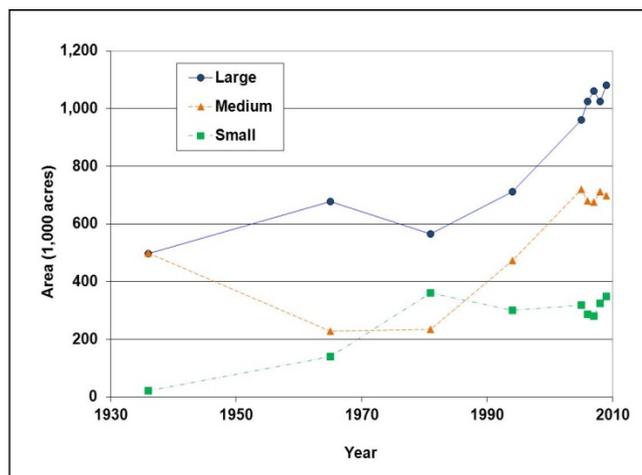


Figure 3. — Area of timberland by stand-size class and year, 1936 - 2009.



Table 2. —Top 10 tree species by statewide volume estimates

Rank	Name	Net volume of live trees on forest land (million cubic feet)	Sampling error (%)	Change since 2008 (%)	Net volume of sawtimber trees on timberland (million board feet)	Sampling error (%)	Change since 2008 (%)
1	Hackberry	402.8	10.5	5.6	837.0	14.8	1.9
2	Cottonwood	344.6	25.8	-12.8	1,114.7	28.6	-7.9
3	Green ash	230.9	11.8	4.4	388.7	17.1	8.0
4	American elm	230.8	8.9	6.4	168.4	25.1	-0.7
5	Osage-orange	209.2	11.3	2.9	0.0	0.0	0.0
6	Black walnut	181.1	10.3	7.2	395.1	14.0	5.9
7	Bur oak	152.4	17.7	6.1	388.6	24.1	6.8
8	Red mulberry	134.2	15.6	6.8	66.5	46.0	19.2
9	American sycamore	109.5	39.0	-3.3	520.6	42.9	-5.1
10	Honeylocust	108.4	14.8	3.3	55.7	39.6	-13.1
Other softwood species		99.8	14.8	11.3	70.6	34.5	-1.4
Other hardwood species		749.5	7.7	-2.4	1,362.6	12.4	-2.7
All species		2,953.2	4.9	0.7	5,368.3	9.0	-1.3

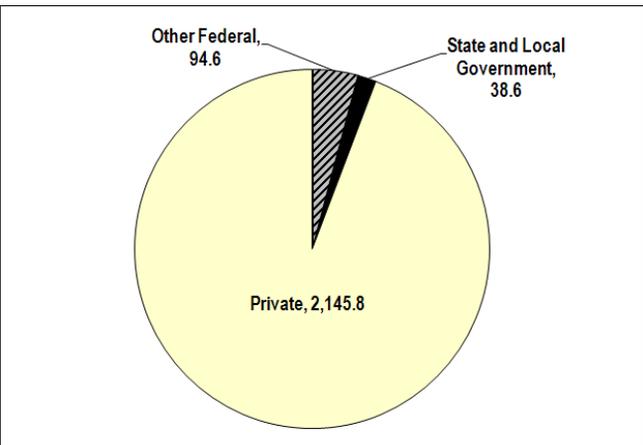
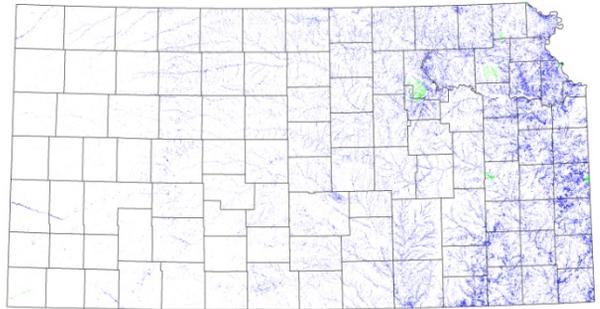


Figure 4. — Area of forest land in 2009, in 1,000's of acres, by major owner group.



Public forest - 6%
Private forest - 94%

Data sources: USDA Forest Service, Conservation Biology Institute, Protected Areas Database, National Land Cover Database 2001, Geographic base data provided by the National Atlas of the USA.

Figure 5. — Area of forest land by major owner group (public and private). White area represents non-forest. Map courtesy of D.M. Meneguazzo

Black walnut: A significant Kansas resource

Black walnut (*Juglans nigra*) is the most valuable hardwood in Kansas. It is found throughout the eastern two-thirds of the State in small groups or as individuals (Fig. 6). The fine wood from this species is prized for use in furniture and gunstocks. Black walnut has provided landowners with economic returns and the presence of black walnut trees in a stand improves wildlife habitat. Although usually found in mixed stands, some sites exhibited high volumes of black walnut per acre (Fig. 7).

Based on trend data since 1984 (Fig. 8), we are observing a flattening out of the black walnut inventory. Furthermore, there is an apparent decline in in-growth at the lower diameters, suggesting that a reduction in regeneration is occurring and that future Kansas forests might contain less black walnut.

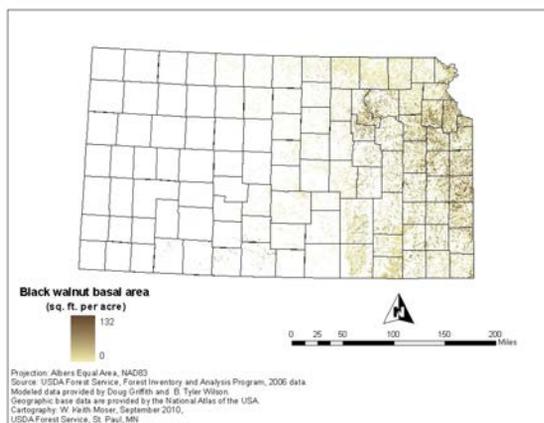


Figure 6. — Black walnut basal area in Kansas, 2006.

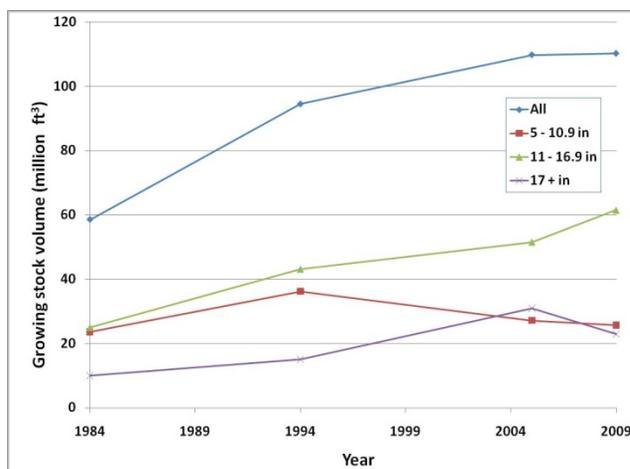


Figure 8. — Growing stock volume of black walnut on timberland, 1984 – 2009, by total and diameter class.

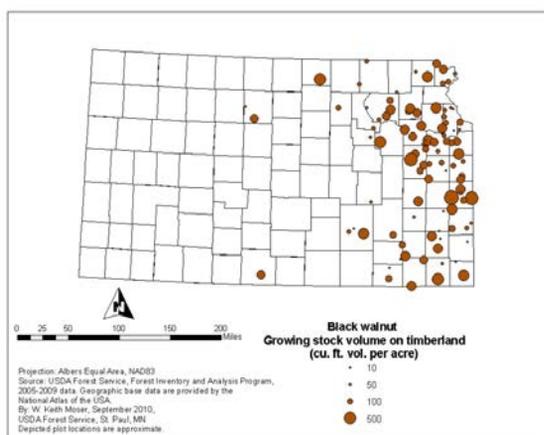


Figure 7. — Growing stock volume of black walnut on Kansas timberland, 2005-2009.

Thousand canker disease

On the horizon, however, is an even more devastating phenomenon, thousand cankers disease (TCD). Caused by a walnut twig beetle (*Pityophthorus juglandis*) carrying a lethal fungus (*Geosmithia morbida*), this disease threatens black walnuts in Kansas and throughout the eastern United States.

In an analysis of potential economic effects, Treiman et al. (2010) estimated the annual value of loss due to TCD to the state wood products industry of \$9.7 million. The nut producing industry would lose another \$605 thousand per year. Estimates of the total economic impact from the loss of trees in urban and park areas (generally not counted in FIA inventories) could amount to more than \$65 million.



Citation for this Publication

Moser, W.K.; Hansen, M.H.; Barnett, C.H.; Atchison R.A. 2010. **Kansas' forest resources, 2009**. Res. Note NRS-79. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 4 p.

FIA Program Information

Bechtold, W.A.; Patterson, P.L. 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.

USDA Forest Service. 2007. **Forest inventory and analysis national core field guide, Vol. 1, field data collection procedures for phase 2 plots, ver. 4.0**. Available at <http://www.fia.fs.fed.us/library/field-guides-methods-proc/> (verified Aug. 31 2009).

Additional Kansas Inventory Information

Chase, C.D.; Strickler, J.K. 1968. **Kansas woodlands**. Resource Bulletin NC-4. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 50 p.

Kansas State College. 1939. **Woodlands of Kansas**. Agricul. Exp. Sta. Bull. 285. Manhattan, KS: Kansas State College. 42 p.

Leatherberry, E.C.; Schmidt, T.L.; Strickler, J.K.; Aslin, R.G. 1999. **An analysis of the forest resources of Kansas**. Res. Pap. NC-334. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 114 p.

Moser, W.K.; Hansen, M.H.; Atchison, R.L.; Brand, G.J.; Butler, B.J.; Crocker, S.J.; Meneguzzo, D.M.; Nelson, M.D.; Perry, C.H.; Reading, W.H.; Wilson, B.T.; Woodall, B.T. 2008. **Kansas forests 2005**. Resour. Bull. NRS-26. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 125 p.

Raile, G.K.; Spencer, J.S. 1984. **Kansas forest statistics, 1981**. Resour. Bull. NC-70. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 124 p.

Reading, W.H.; Bruton, D.L. 2007. **Kansas timber industry – an assessment of timber product output and use, 2003**. Resour. Bull. NC-269. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 73 p.

Spencer, J.S.; Strickler, J.K.; Moyer, W.J. 1984. **Kansas forest inventory, 1981**. Resour. Bull. NC-83. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 134 p.

Treiman, T.; Atchison, B.; McDonnell, T.; Barden, C.; Moser, W.K. 2010. **Economic loss associated with the introduction of Thousand Cankers Disease of black walnut to Kansas**. Manhattan, KS: Kansas Forest Service Rural Forestry Publication. 19 March 2010. 4 p. Available at <http://www.kansasforests.org/pubs/rural/TCD%20Pub.pdf>. (Accessed 3 Sept. 2010.)

Contact Information

Author and lead analyst: W. Keith Moser, (651) 649-5155, wkmoser@fs.fed.us

Data processing/access: Chuck Barnett, (610) 557-4031, cjbarnett@fs.fed.us

Estimates, tabular data, and maps from this report may be generated at: <http://www.fia.fs.fed.us/tools-data/>

Page header photo by Terry Spivey, U.S. Forest Service, <http://www.bugwood.org>

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternate means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, DC 20250-9410, or call (800)795-3272 (voice) or (202)720-6382 (TDD). USDA is an equal opportunity provider and employer.