

Kansas' Forest Resources, 2010

Research Note NRS-123

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

| | 2010 estimate | Sampling error (%) | Change since 2005 (%) |
|---|---------------|--------------------|-----------------------|
| Forest Land Estimates | | | |
| Area of forest land (thousand acres) | 2,437.4 | 3.1 | 15.8 |
| Number of all live trees on forestland (million trees) | 802.8 | 4.8 | 11.7 |
| All live tree and sapling aboveground biomass on forest land oven-dry (thousand tons) | 82,523.2 | 4.1 | 13.0 |
| Volume of all live on forest land (million ft ³) | 3,097.4 | 4.8 | 13.0 |
| Net growth of all live on forest land (thousand ft ³ per year) | 74,288.8 | 11.6 | NA |
| Mortality of all live on forest land (thousand ft ³ per year) | 47,380.8 | 10.2 | NA |
| Harvest removals of all live on forest land (thousand ft ³ per year) | 16,136.3 | 23.9 | NA |
| Other removals of all live on forest land (thousand ft ³ per year) | 3,618.8 | 42.5 | NA |
| Timberland Estimates | | | |
| Area of timberland (thousand acres) | 2,330.1 | 3.1 | 14.9 |
| Number of all live trees on timberland (million trees) | 759.7 | 4.8 | 11.5 |
| All live tree and sapling aboveground biomass on timberland oven-dry (thousand tons) | 80,068.3 | 4.2 | 13.1 |
| Volume of all live on timberland (million cuft) | 3,020.1 | 4.9 | 12.8 |
| Volume of growing-stock on timberland (million ft ³) | 1,451.6 | 6.9 | -0.4 |
| Net growth of growing-stock on timberland (thousand ft ³ per year) | 33,507.7 | 16.8 | NA |
| Mortality of growing-stock on timberland (thousand ft ³ per year) | 16,195.9 | 16.2 | NA |
| Harvest removals of growing-stock on timberland (thousand ft ³ per year) | 8,245.5 | 38.4 | NA |
| Other removals of growing-stock on timberland (thousand ft ³ per year) | 4,920.7 | 49.5 | NA |

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

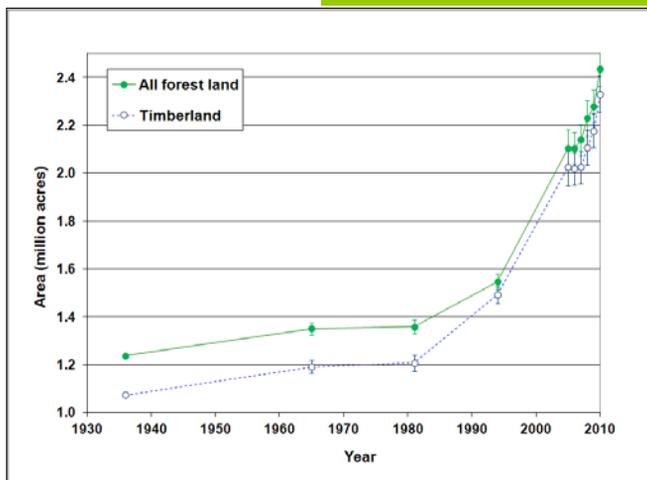


Figure 1. – Area of timberland and forest land by year.

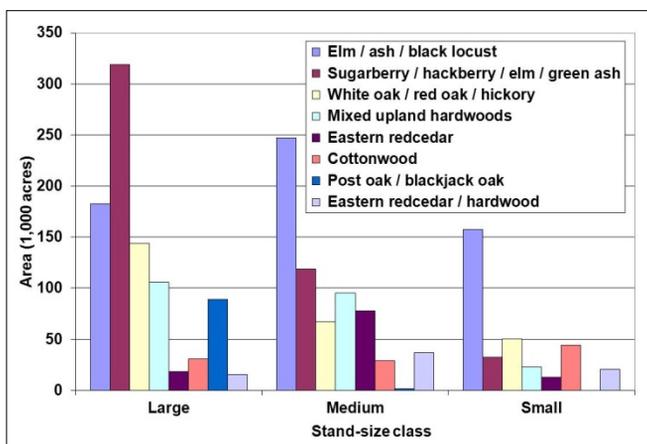


Figure 2. – Area of forest land by top eight forest types and stand-size class, 2010.

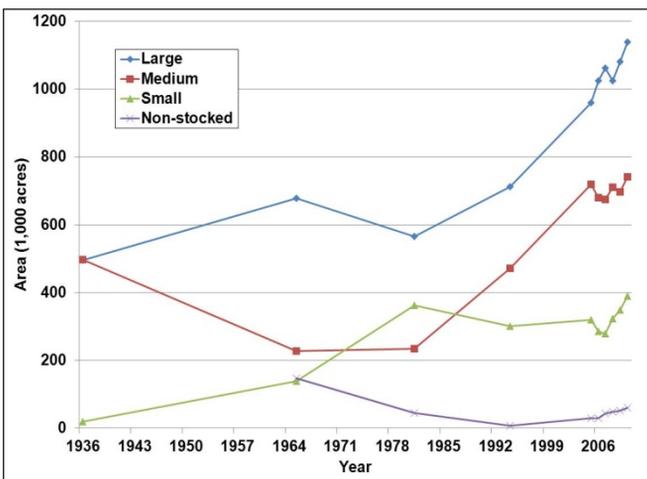


Figure 3. – Area of timberland by stand-size class and year, 1936 - 2010.



Table 2. – Top 10 tree species by statewide volume estimates, Kansas 2010.

| Rank | Name | Net volume of live trees on forest land (million cubic feet) | Sampling error (%) | Change since 2005 (%) | Net volume of sawtimber trees on timberland (million board feet) | Sampling error (%) | Change since 2005 (%) |
|-------------------------------|-------------------|--|--------------------|-----------------------|--|--------------------|-----------------------|
| 1 | Hackberry | 416.3 | 10.5 | 18.2 | 861.2 | 14.9 | 17.0 |
| 2 | Cottonwood | 378.8 | 23.9 | 7.2 | 1,119.4 | 26.1 | -4.3 |
| 3 | Green ash | 240.1 | 11.4 | 13.1 | 392.1 | 17.4 | -2.9 |
| 4 | American elm | 240.0 | 9.1 | 11.7 | 185.9 | 24.2 | 22.4 |
| 5 | Osage-orange | 226.6 | 11.0 | 32.1 | 0.0 | 0.0 | 0.0 |
| 6 | Black walnut | 189.1 | 10.1 | 14.8 | 411.1 | 13.7 | 5.9 |
| 7 | Bur oak | 148.8 | 17.8 | -3.6 | 347.9 | 24.6 | -5.6 |
| 8 | Mulberry | 141.6 | 15.2 | 19.5 | 68.6 | 46.8 | 36.7 |
| 9 | American sycamore | 113.7 | 37.0 | 25.9 | 511.7 | 42.8 | 24.5 |
| 10 | Honeylocust | 113.6 | 14.6 | 22.4 | 51.5 | 41.9 | -3.9 |
| Other softwood species | | 106.3 | 14.2 | 24.6 | 78.8 | 35.0 | -48.9 |
| Other hardwood species | | 782.4 | 7.5 | 7.0 | 1,400.5 | 12.1 | -4.7 |
| All species | | 3,097.4 | 4.8 | 13.0 | 5,428.6 | 8.5 | 1.3 |

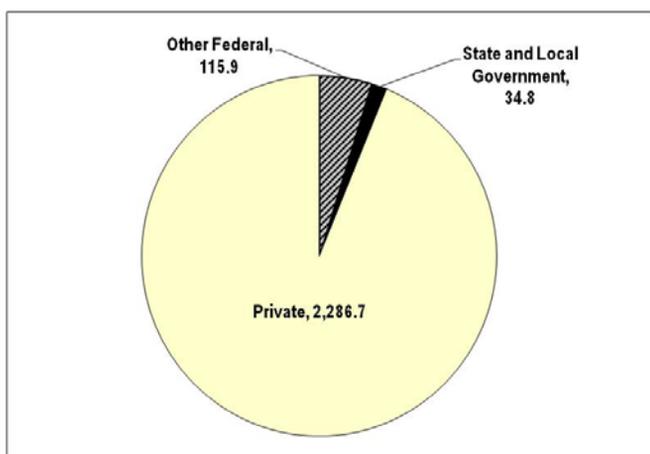


Figure 4. – Area of forest land in 2010, in thousands of acres, by major owner group.

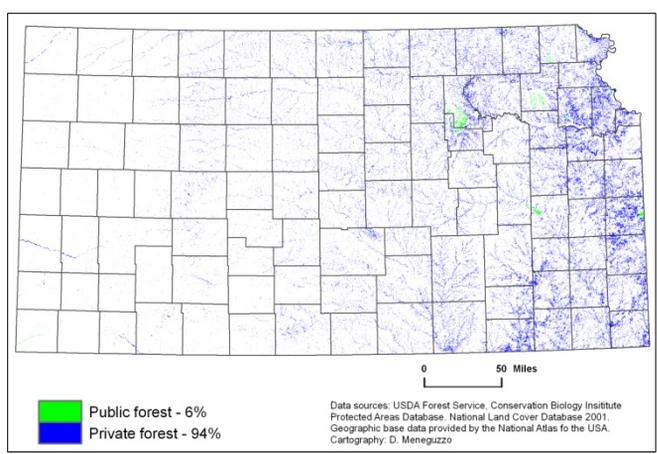


Figure 5. – Area of forest land by major owner group (public and private). White area represents nonforest.



Invasive Plants

Invasive plant species (IPS) have spread throughout the world, changing ecosystems through modifying nutrient cycles and displacing native flora and fauna. Invasive plant species may also change aesthetic values by creating dense impenetrable layers and homogenizing the forest. These plants are dispersed by seed and propagules via humans, animals, and natural vectors such as storms and waterways. Each year IPS cost billions of dollars in the U.S. through inspection, control, and reduced timber yield.

In 2007-2010, forest vegetation measured on 36 Phase 3 plots and the IPS were measured on 100 Phase 2 Invasive plots. Table 3 shows the most common plant species found on Phase 3 plots in Kansas; all 16 species are native. These plants offer valuable habitat and forage for the native species and are put at risk by the IPS in the State. Figure 6 shows the seven most common IPS found on Phase 2 Invasive plots and the percentage of plots where they were found. The most commonly recorded species were multiflora rose (16 plots) and garlic mustard (11 plots; Figure 6). Since the inventory is only on forested plots, the greatest occurrence of these species is in the eastern half of the state (Figure 7), where there is more forest land. Future plot remeasurement will help determine factors contributing to the spread of these species.

Table 3. – The 16 most common plant species on Forest Inventory and Analysis Phase 3 plots and the number of plots where they occurred, Kansas 2007-2010.

| Species | Plots |
|------------------------|-------|
| Coralberry | (33) |
| Eastern poison ivy | (32) |
| Common hackberry | (30) |
| Bristly greenbrier | (29) |
| Virginia creeper | (27) |
| American elm | (26) |
| Eastern woodland sedge | (26) |
| Virginia wildrye | (26) |
| Roughleaf dogwood | (23) |
| White avens | (23) |
| Honeylocust | (20) |
| Common blue violet | (20) |
| Great ragweed | (20) |
| Osage orange | (20) |
| Eastern redcedar | (18) |
| Baldwin's ironweed | (17) |

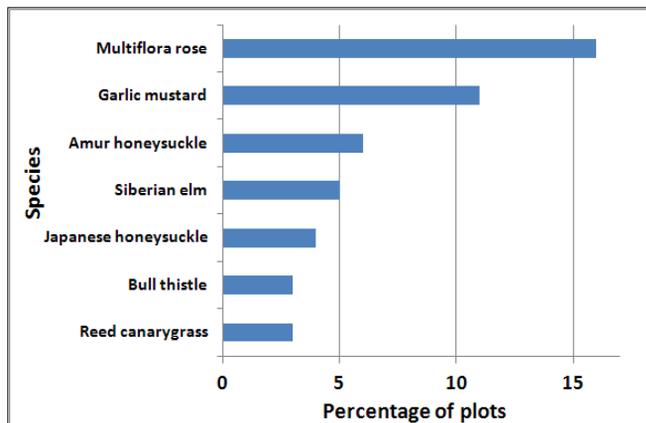


Figure 6. – Percentage of plots occupied by the eight most common invasive plant species on Forest Inventory and Analysis Phase 2 Invasive plots, Kansas 2007-2010.

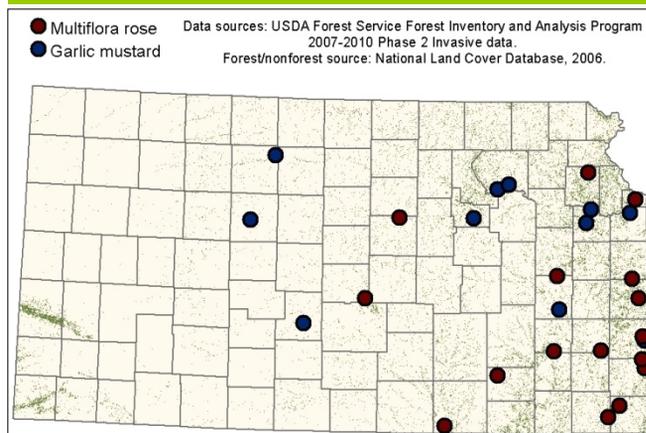


Figure 7. – Approximate location of invasives monitoring plots with garlic mustard and multiflora rose, Kansas, 2007-2010.



Citation for this Publication

Moser, W.K.; Barnett, C.H.; Kurtz, C.M.; Atchison, R.A. 2011. **Kansas' forest resources, 2010**. Res. Note NRS-123. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 4 p.

FIA Program Information

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.

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**. Washington, DC: U.S. Department of Agriculture, Forest Service Available at <http://www.fia.fs.fed.us/library/field-guides-methods-proc/> (accessed 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.

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.