



Forest Resources of the Shawnee National Forest, 2007 **Research Note NRS-59**

This publication provides an overview of forest resource attributes for the Shawnee National Forest based on an annual inventory conducted by the Forest Inventory and Analysis (FIA) program of the U.S. Forest Service, Northern Research Station. These estimates, along with web-posted core tables, will be updated annually. For more information, please refer to page 4 of this report.

Table 1.— Annual estimates and sampling errors, Shawnee National Forest, 2003-2007.

	Estimate	Sampling error (%)
Forest Land Estimates		
Area (1,000 acres)	288.2	4.6
Number of live trees 1-inch d.b.h. or larger (1,000,000 trees)	152.4	7.8
Dry biomass of live trees 1-inch d.b.h. or larger (1,000 tons)	16,840.9	6.0
Net volume of live trees (1,000,000 ft ³)	628.7	6.5
Annual net growth of live trees (1,000 ft ³ /yr)	n/a [†]	n/a [†]
Annual mortality of live trees (1,000 ft ³ /yr)	n/a [†]	n/a [†]
Annual harvest removals of live trees (1,000 ft ³ /yr)	n/a [†]	n/a [†]
Annual other removals of live trees (1,000 ft ³ /yr)	n/a [†]	n/a [†]
Timberland Estimates		
Area (1,000 acres)	266.9	4.4
Number of live trees 1-inch d.b.h. or larger (1,000,000 trees)	143.3	7.8
Dry biomass of live trees 1-inch d.b.h. or larger (1,000 tons)	15,482.8	5.8
Net volume of live trees (1,000,000 ft ³)	578.1	6.5
Net volume of growing-stock trees (1,000,000 ft ³)	556.7	6.4
Annual net growth of growing-stock trees (1,000 ft ³ /yr)	n/a [†]	n/a [†]
Annual mortality of growing-stock trees (1,000 ft ³ /yr)	n/a [†]	n/a [†]
Annual harvest removals of growing-stock trees (1,000 ft ³ /yr)	n/a [†]	n/a [†]
Annual other removals of growing-stock trees (1,000 ft ³ /yr)	n/a [†]	n/a [†]

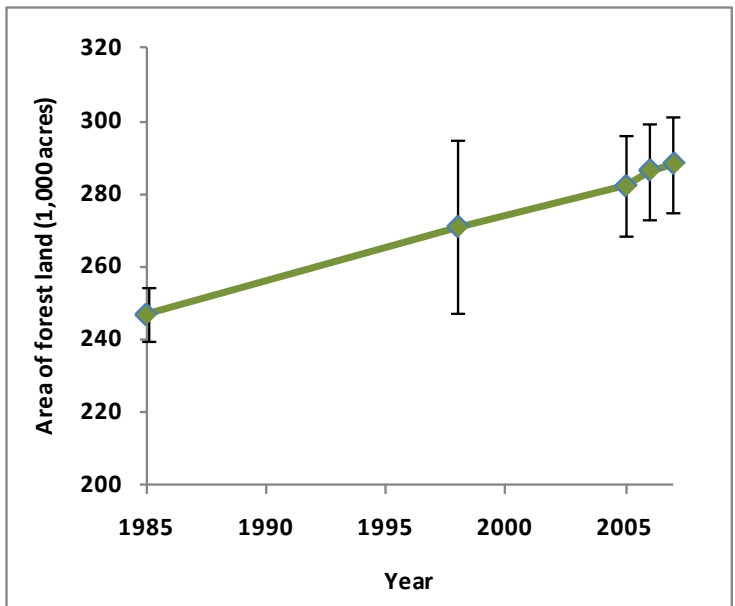


Figure 1. —Area of forest land by year.

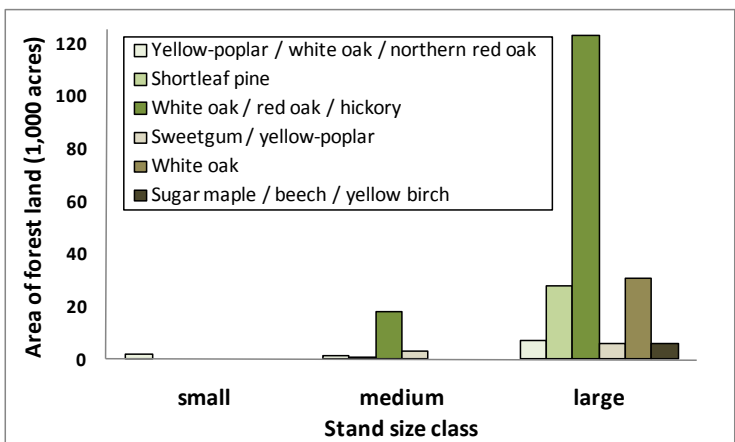


Figure 2.— Area of forest land for the top six forest types by stand size class, Shawnee National Forest, 2003-2007.

[†]Not reported due to insufficient sample size, data will be reported in the future when it becomes available.

Note: when available, sampling errors/bars provided in tables and figures represent 68% confidence intervals.

Table 2. —Top 10 species by forest wide volume estimates, Shawnee National Forest, 2003-2007

Rank	Species	Volume of live trees on forest land (1,000,000 ft ³)	Sampling error (%)	Volume of sawtimber trees on timberland (1,000,000 bdf ³)	Sampling error (%)
1	White oak	99.8	12.7	356.3	13.8
2	Shortleaf pine	82.6	23.4	379.1	24.3
3	Yellow-poplar	78.3	27.6	308.6	33.5
4	Black oak	52.8	16.6	220.7	18.4
5	Pignut hickory	51.4	16.6	155.6	16.1
6	Sugar maple	35.7	20.8	100.3	28.5
7	Northern red oak	35.7	19.2	147.9	21.9
8	Post oak	23.6	18.0	69.6	23.5
9	Sweetgum	17.6	65.6	45.2	70.6
10	American elm	11.9	48.6	41.6	59.1
	Other softwoods	11.3	40.4	42.5	45.4
	Other hardwoods	127.9	11.0	333.6	14.2

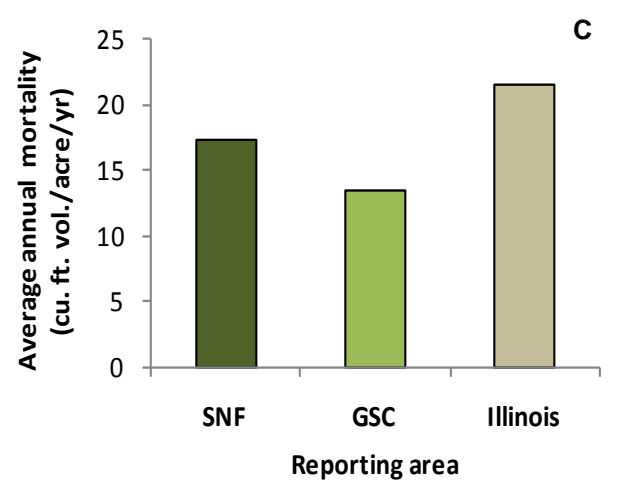
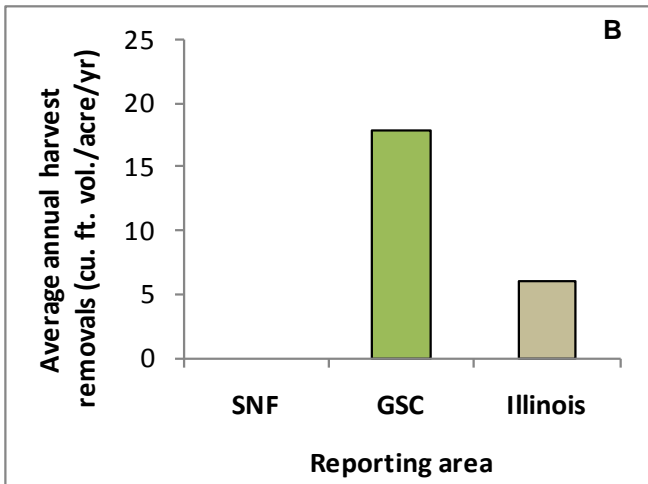
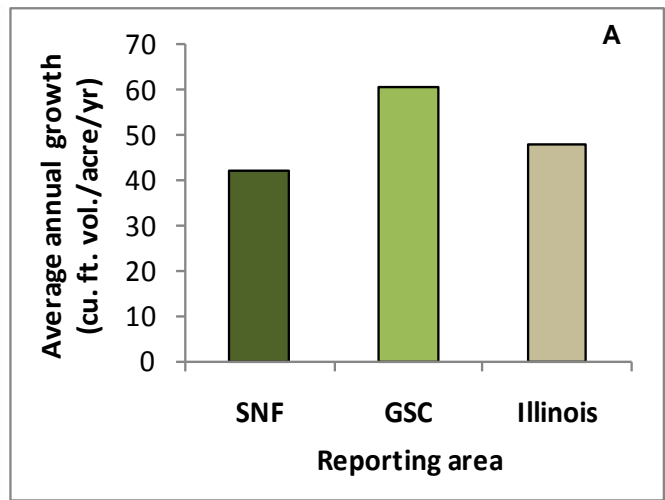
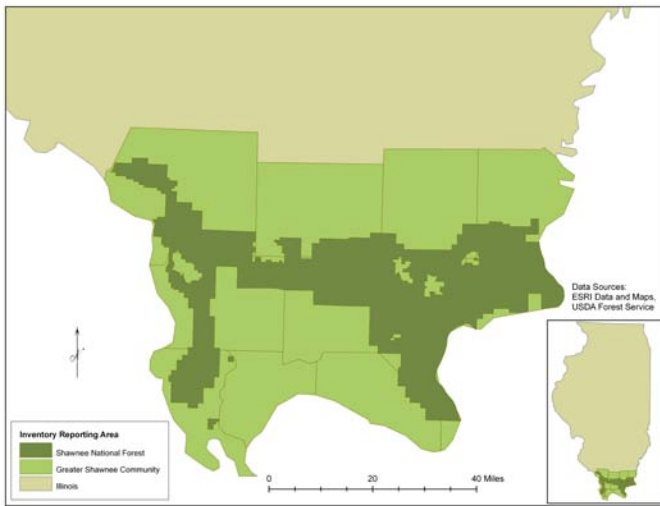


Figure 3. —Inventory reporting areas (map) and average annual growth (A), harvest removals (B), and mortality (C) (cubic foot volume/acre/year) for live tree volume on forest land, Shawnee National Forest (SNF), Greater Shawnee Community (GSC), and Illinois, comparing 2001 and 2002 plots to 2006 and 2007 plots.

Shawnee National Forest Issue Update: Down woody material and invasive plant species

Down woody material includes fallen trees, branches, and leaf litter. These materials play a valuable role in our forests by providing essential habitat niches for flora and fauna. The amount of down woody material on the forest floor also affects the hydrology and seedbed quality in the forest. When this material decomposes, carbon and other nutrients are released. Down woody material also represents a potential fuel source. Fuel load information is an important indicator of wildfire risk. Overall, fuel loading in the Shawnee National Forest (SNF) is low with a fine (1-hour) fuel load of < 0.2 tons per acre and a total fuel load around 2.5 tons per acre (Fig. 4); however, during times of intense drought, these low fuel loads may pose a fire risk.

Another characteristic of forest health is the presence of invasive plant species. It is important to know which invasive plants are present in the forest as each poses a risk to the native flora. Figure 5 shows the number of invasive plants found per FIA plot in the SNF. Throughout this region, seven invasive plant species were recorded on FIA plots with Japanese honeysuckle (*Lonicera japonica*) being the most common species followed by multiflora rose (*Rosa multiflora*) [Table 3].

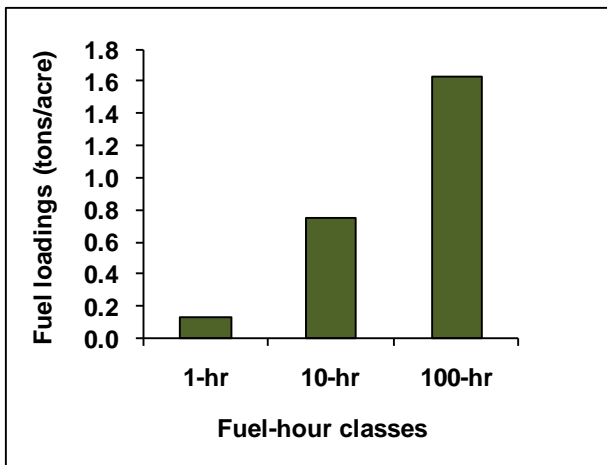


Figure 4. —Mean fuel loading of biomass (tons/acre, time-lag fuel classes) on forest land in the Shawnee National Forest, 2003-2007.

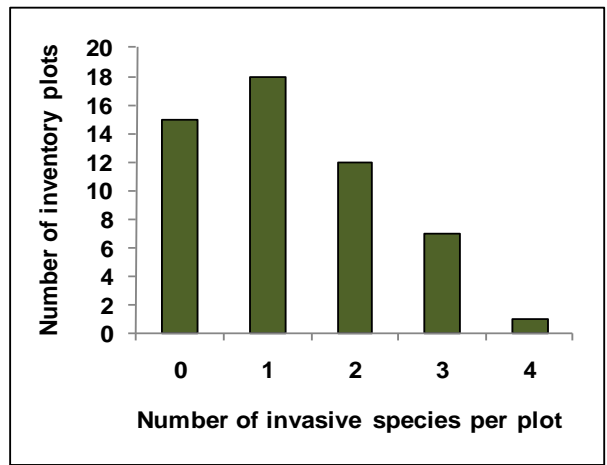


Figure 5. —Number of invasive plant species present per Forest Inventory and Analysis plot in the Shawnee National Forest, 2003-2007.

Species	Scientific name	Number of plots invasive found
Japanese honeysuckle	<i>Lonicera japonica</i>	32
Multiflora rose	<i>Rosa multiflora</i>	18
Autumn olive	<i>Elaeagnus umbellata</i>	7
Japanese stiltgrass	<i>Microstegium vimineum</i>	4
Nonnative bush honeysuckles	<i>Lonicera spp.</i>	3
Japanese barberry	<i>Berberis thunbergii</i>	2
Common burdock	<i>Arctium minus</i>	1

Table 3. —Invasive plant species present on Forest Inventory and Analysis plots in the Shawnee National Forest, 2003-2007.

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FIA Program Information

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USDA Forest Service. 2005. Forest inventory and analysis national core field guide, Vol. 1, field data collection procedures for phase 2 plots, ver. 4.0. Available at www.fia.fs.fed.us/library/field-guides-methods-proc/ (verified 03 Feb 2010).

Additional Illinois and Shawnee National Forest Inventory Information

Crocker, S.J.; Brand, G.J.; Little, D.C. 2007. Illinois' forest resource, 2005. Resour. Bull. NRS-13. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 36 p.

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Raile, G.K.; Leatherberry, E.C. 1969. Illinois' forest resource. Resour. Bull. NC-105. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 113 p.

Schmidt, T.L.; Hansen, M.H.; Solomakos, J.A. 2000. Illinois' forests in 1998. Resour. Bull. NC-198. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 133 p.

Telford, C.J. 1926. Third report on a forest survey of Illinois. Illinois Natural History Survey Bulletin. 1(1): 1-102.

Definitions

Forest land — Land that is at least 10 percent stocked by trees of any size or formerly having such tree cover and is not currently developed for nonforest use. The area with trees must be at least 1 acre in size and 120 feet wide.

Growing-stock volume — Net volume in cubic feet of growing-stock trees 5.0 inches d.b.h. and over, from a 1-foot stump to a 4.0 inch top .

Sawtimber volume — Net volume of the saw log portion of live sawtimber, measured in board feet, from a 1-foot stump to minimum top diameter (9 inches for hardwoods and 7 inches for softwoods).

Timberland — Forest land that is producing or is capable of producing in excess of 20 cubic feet per acre per year of wood, excludes reserved forest lands.

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Estimates, tabular data, and maps may be generated at: <http://fiatools.fs.fed.us/fido/index.html>

Page 1 image by: Paul Wray, Iowa State University, <http://bugwood.org/>

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