



# Forests of Illinois, 2013

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

## Overview

Illinois is home to 4.9 million acres of forest land, a gain of 2 percent since 2008 (Table 1). Timberland accounts

for 94 percent of forest land, while the remaining 6 percent of forest land is reserved or unproductive.



Illinois landscape. Photo by Steve Crumley, used with permission.

Table 1.—Illinois’ forest statistics, 2013

	2013 estimate	Sampling error (%)	Change since 2008 (%)
<b>Forest Land</b>			
Area (thousand acres)	4,907	1.6	2.3
Number of live trees ≥1 in diameter (million trees)	2,070	2.6	-1.7
Net volume of live trees ≥5 in diameter (million ft <sup>3</sup> )	9,156	2.3	5.7
Live-tree aboveground biomass (thousand oven-dry tons)	248,924	2.1	5.7
Net growth of live trees ≥5 in (thousand ft <sup>3</sup> /yr)	171,383	6.1	-21.4
Annual harvest removals of live trees ≥5 in (thousand ft <sup>3</sup> /yr)	50,015	17.6	39.2
Annual other removals of live trees ≥5 in (thousand ft <sup>3</sup> /yr)	19,889	36.1	39.0
Annual mortality of live trees ≥5 in (thousand ft <sup>3</sup> /yr)	138,622	5.9	11.9
<b>Timberland</b>			
Area (thousand acres)	4,598	1.8	1.9
Number of live trees ≥1 in diameter (million trees)	1,959	2.7	-2.0
Net volume of live trees ≥5 in diameter (million ft <sup>3</sup> )	8,548	2.6	5.4
Net volume of growing-stock trees ≥5 in diameter (million ft <sup>3</sup> )	6,943	2.8	-1.0
Live-tree aboveground biomass (thousand oven-dry tons)	232,912	2.3	5.5
Net growth of growing-stock trees ≥5 in (thousand ft <sup>3</sup> /yr)	139,616	5.7	-17.3
Annual harvest removals of growing-stock trees ≥5 in (thousand ft <sup>3</sup> /yr)	44,295	18.7	32.9
Annual other removals of growing-stock trees ≥5 in (thousand ft <sup>3</sup> /yr)	16,460	33.4	38.5
Annual mortality of growing-stock trees ≥5 in (thousand ft <sup>3</sup> /yr)	92,254	6.7	3.1



# Forest Area

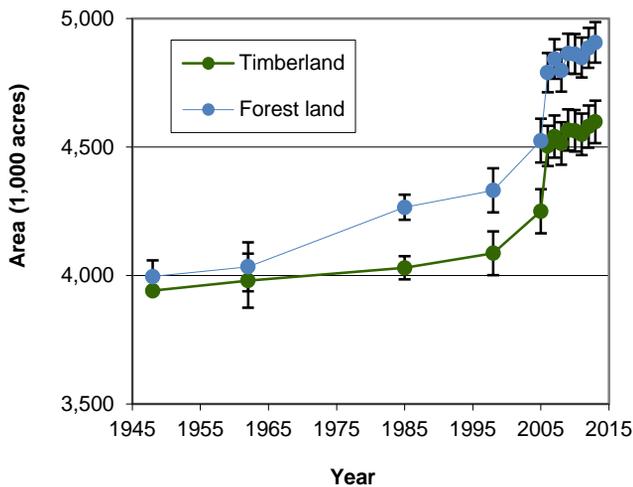


Figure 1.—Area of timberland and forest land by year, Illinois, 1948-2013. Error bars represent 68 percent confidence interval around the estimate.

Illinois forest land has gradually increased in area since 1945 (Fig. 1). While forest land occurs throughout most of Illinois, it is concentrated in the western half and southern third of the State, largely in the Shawnee National Forest (Fig. 2). Eighty-three percent, or 4.1 million acres of forest land is privately owned.

Hardwoods are the dominant species in Illinois. Two hardwood forest-type groups—oak/hickory and elm/ash/cottonwood—occupy 92 percent of forest land in Illinois (Fig. 2). The oak/hickory group alone occupies just over two-thirds of forest land, the bulk of which resides in the white oak/red oak/hickory forest type (1.7 million acres). Softwoods, with 88,600 acres, represent 2 percent of forest land.

Forest land consists mainly of sawtimber stands (76 percent); 15 percent of forest land is made up of poletimber stands, 8 percent contain sapling-seedling stands and 1 percent is nonstocked. The age of forest stands continues to increase (Fig. 3). Currently, nearly half (47 percent) of stands are over 61 years of age.

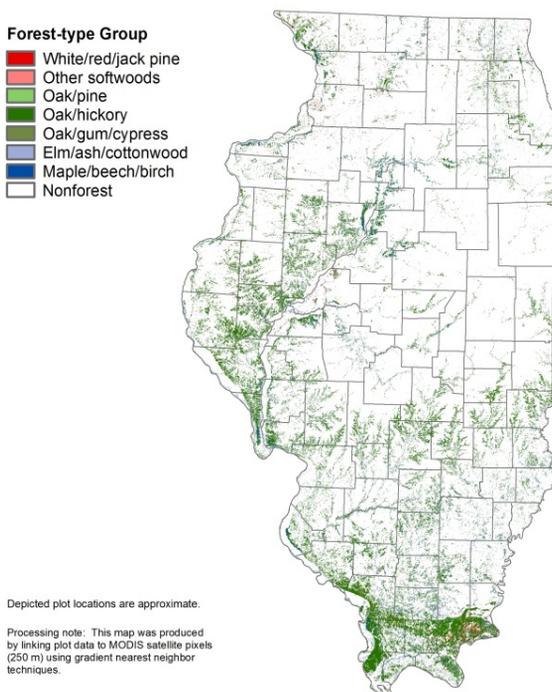


Figure 2.—Distribution of forest land by forest-type group, Illinois, 2013.

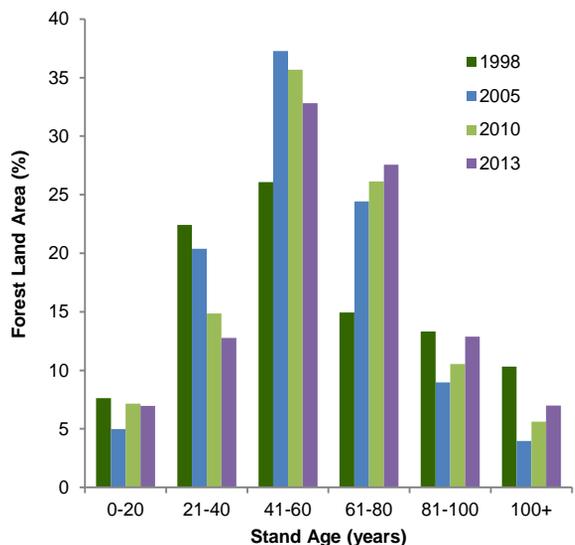


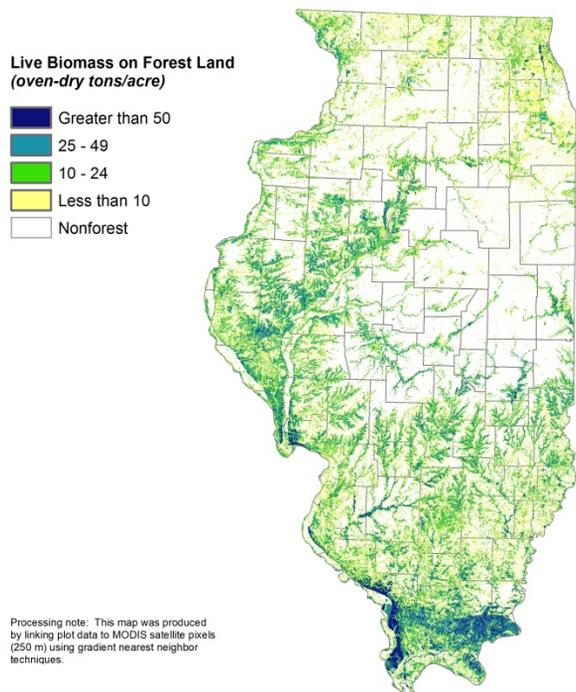
Figure 3.—Area of forest land by stand age and inventory year, Illinois, 2013.

## Volume, Biomass, and Trends

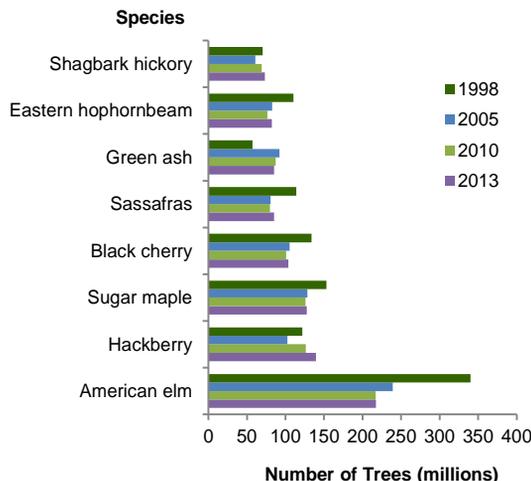
Live-tree and sapling biomass in Illinois continues to increase and currently totals 248,900 tons on forest land (Table 1). Biomass is distributed throughout the State, with the largest concentrations in the southern tier of Illinois (Fig. 4)

Illinois' forest land contains just over 2 billion trees (greater than 1 inch d.b.h.) (Table 1). This represents an 18 percent decrease, nearly half a billion trees, since 1998. American elm, hackberry, and sugar maple are the most numerous species in Illinois (Fig. 5).

In contrast to number of trees, volume of live trees in Illinois is increasing (Table 1). White oak, at 965.6 million ft<sup>3</sup>, is the most voluminous species of forest land, followed by silver maple (866.8 million ft<sup>3</sup>) and black oak (632.1 million ft<sup>3</sup>). As a group, oaks make up one-third of total live-tree volume.

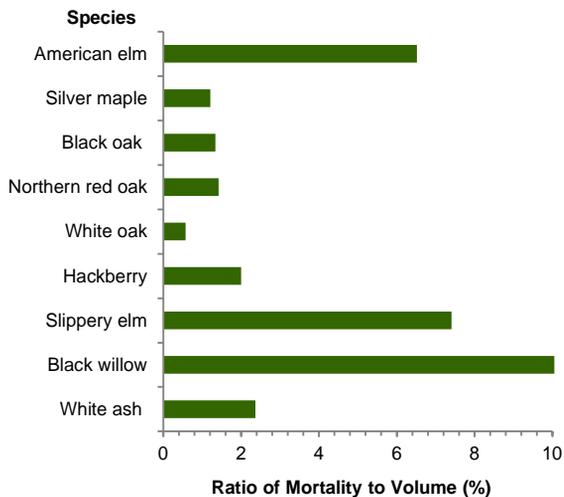


**Figure 4.—Distribution of live-tree and sapling biomass on forest land, Illinois 2013.**



**Figure 5.—Top eight species on forest land by number of trees and inventory year, Illinois.**

Forest growth has decreased by 21 percent since 2008 largely due to issues of reversion (Table 1); for more information on reversion issues see Crocker 2013. Mortality has increased in the past 5 years (Table 1). American elm is the top contributor to mortality in Illinois; together, American elm and slippery elm account for 16 percent of total mortality in 2013 (Fig. 6). While silver maple, black oak and northern red oak are among the top grossing species in terms of mortality, slippery elm and black willow have mortality to volume ratios greater than 7 percent, indicating a yearly loss greater than 7 percent of volume (Fig. 6).



**Figure 6.—Average annual mortality of growing stock as a percentage of total growing-stock volume by species, Illinois, 2013. (Species are shown in decreasing order of total mortality.)**

# Impacts to FIA Estimates of Changes to the Reserved Status Variable

FIA defines reserved land as land that is withdrawn by law(s) prohibiting the management of land for the production of wood products (not merely controlling or prohibiting wood-harvesting methods). Because of differences in the interpretation and implementation of this definition, certain areas of land have historically fluctuated in and out of reserved status. In an effort to increase consistency among states and across inventory years, a refined set of procedures for determining reserved status have been implemented with version 6.0 of the FIA field manual.

The reserved status variable plays an important role in the differentiation of forest land and timberland, as well as on subsequent calculations such as volume and

growth. Therefore, slight changes in the reserved land and timberland estimates for Illinois have occurred. Classification procedures identical to those employed in the 2013 inventory have been retroactively applied to data and tools since 2012. Therefore, comparisons between the current results for 2013 and those for previously published data may be invalid.

In Illinois, the change in the reserved status variable has resulted in an increase in the estimate of reserved land and a decrease in the estimate of timberland.

## Literature Cited

Crocker, S.J. 2013. **Illinois' forest resources, 2012**. Res. Note. NRS-168. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 4 p.

## Additional Inventory Sources

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.

Crocker, S. J.; Nelson, M.D.; Barnett, C. J.; Butler, B. J.; Domke, G. M.; et al. 2013. **Illinois' Forests 2010**. Resour. Bull. NRS-86. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 52 p.

## Definitions

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

**Timberland** — Forest land that is producing or is capable of producing in excess of 20 cubic feet per acre per year of industrial wood in natural stands and is not withdrawn from timber utilization by statute or administrative regulation.

**Growing-stock volume** — The amount of sound wood in live, commercial tree species; trees must be at least 5 inches in d.b.h. or greater and free of defect.

**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).

### How to Cite This Publication

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