USDA Forest Service, U.S. Department of Agriculture
Northern Research Station

Wisconsin's Forest Resources, 2012

Research Note NRS-193

This publication provides an overview of forest resource attributes for Wisconsin 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.

Table 1 .— Annual estimates, uncertainty, and change for Wisconsin, 2012

	2012 estimate	Sampling error (%)	Change since 2007 (%)
Forest land estimates			
Area (1,000 acres)	17,073	0.5	4.1
Number of live trees (million trees)	11,238	1.1	4.2
Dry aboveground biomass of live trees and saplings (1,000 tons)	633,229	0.8	6.8
Net volume in live trees (1,000,000 ft^3)	24,463	0.9	7.3
Annual net growth of live trees (1,000 ft^3/year)	642,547	2.0	4.5
Annual mortality of live trees (1,000 ft^3/year)	301,662	2.2	10.0
Annual harvest removals of live trees (1,000 ft^3/year)	333,874	4.7	-8.2
Annual other removals of live trees (1,000 ft^3/year)	6,992	41.4	3.9
Timberland estimates			
Area (1,000 acres)	16,822	0.5	3.9
Number of live trees (million trees)	11,066	1.1	4.0
Dry aboveground biomass of live trees and saplings (1,000 tons)	625,781	0.9	6.8
Net volume in live trees (1,000,000 ft^3)	24,187	1.0	7.4
Net volume in growing-stock trees (1,000,000 ft^3)	21,600	1.0	4.9
Annual net growth of growing-stock trees (1,000 ft^3/year)	570,552	2.0	-4.6
Annual mortality of growing-stock trees (1,000 ft^3/year)	236,176	2.4	19.3
Annual harvest removals of growing-stock trees (1,000 ft^3/year)	294,394	4.8	-5.3
Annual other removals of growing-stock trees (1,000 ft^3/year)	10,385	28.5	-45.0

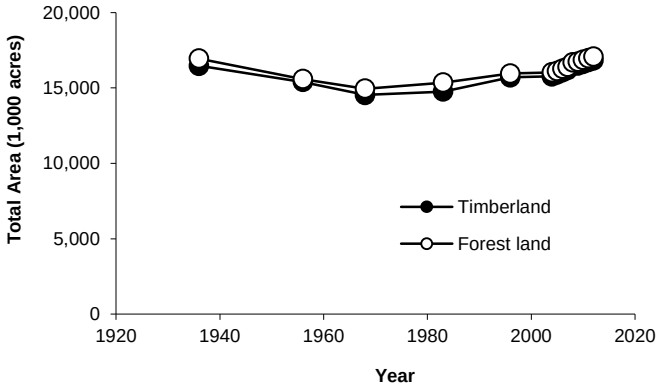

Figure 1.—Area of timberland and forest land in Wisconsin by year. Detailed definitions of timberland and forest land are available (USDA Forest Service 2013).

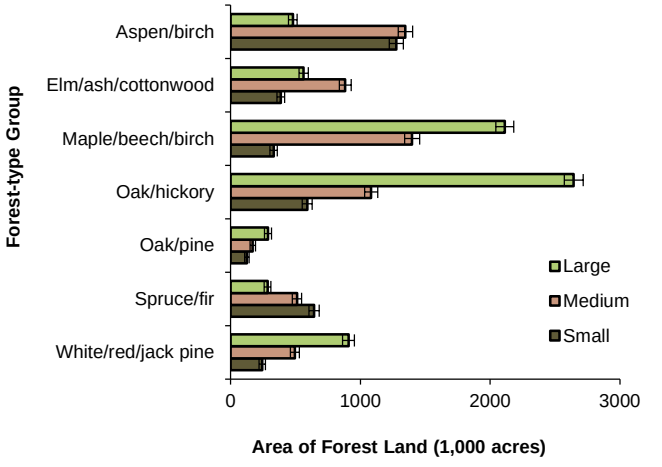

Figure 2.—Area of forest land by top seven forest-type groups and stand-size class, Wisconsin, 2012.

Note: Large diameter trees are at least 11.0 inches diameter at breast height for hardwoods and at least 9.0 inches diameter at breast height for softwoods. Medium diameter trees are at least 5.0 inches diameter but not as large as large diameter trees. Small diameter trees are less than 5.0 inches diameter. Additional details are available in U.S. Forest Service (2013).

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

Table 2.— Top 10 tree species by statewide volume estimates, Wisconsin, 2012

Rank	Species	Volume of live trees on forest land (million cubic feet)	Sampling error (%)	Change since 2007 (%)	Volume of sawtimber on timberland (million board feet)	Sampling error (%)	Change since 2007 (%)
1	sugar maple	2,652.2	3.2	6.8	6,250.5	4.3	12.5
2	red maple	2,550.9	2.6	7.8	4,629.2	4.0	13.4
3	northern red oak	1,968.5	4.0	7.7	7,343.1	4.6	12.5
4	quaking aspen	1,772.9	3.1	-0.2	3,164.5	4.8	-1.3
5	eastern white pine	1,735.8	5.5	25.0	8,098.2	6.2	25.1
6	red pine	1,677.5	5.2	12.9	6,708.2	5.9	15.0
7	American basswood	1,267.6	4.0	9.5	3,872.9	4.7	18.8
8	northern white-cedar	860.3	6.3	11.0	2,213.8	7.6	4.4
9	white oak	844.9	4.8	-1.4	2,563.6	5.9	-3.0
10	bigtooth aspen	679.1	5.9	-5.8	1,847.9	7.4	-10.2
	Other softwood species	2,118.0	2.9	6.3	5,384.4	4.4	0.9
	Other hardwood species	6,335.5	1.8	6.3	13,303.1	2.7	7.8
	All species	24,463.2	0.9	7.3	65,379.3	1.5	10.0

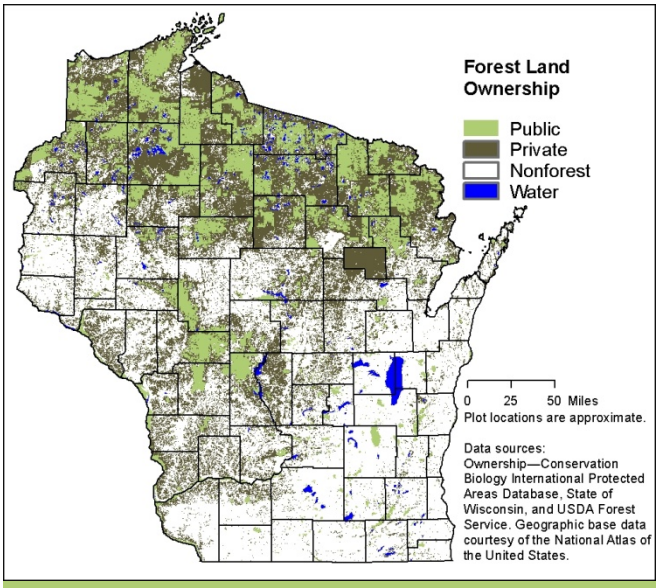

Figure 3.— Distribution of forest land ownership, Wisconsin, 2012.

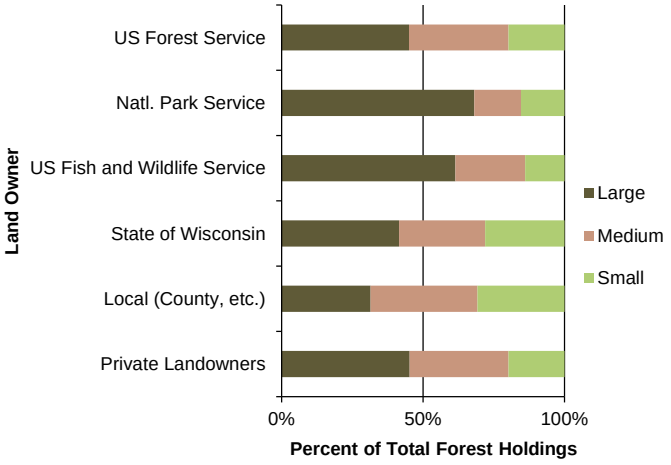

Figure 4.— Distribution of stand-size class across forest land owners, Wisconsin, 2012.

Note: Large diameter trees are at least 11.0 inches diameter for hardwoods and at least 9.0 inches diameter for softwoods. Medium diameter trees are at least 5.0 inches diameter but not as large as large diameter trees. Small diameter trees are less than 5.0 inches diameter. Additional details are available in U.S. Forest Service (2013).

Wisconsin Timberland Woody Biomass has Increased since 2003

Traditionally, the merchantable portion of a tree is found in the main stem, or bole. Sawtimber volume is estimated on commercial species from a 1-foot stump to the top of the tree where it narrows to either 7.0 inches (softwoods) or 9.0 inches (hardwoods) diameter outside the bark. Pulpwood volume is more inclusive because a greater portion of the tree can be used for pulp.

There is a growing realization that the unused portion of trees represents yet another economic resource on forest and timberland. The biomass industry would like to use this resource (including but not limited to small diameter saplings and the tops and limbs of harvested trees) to create new products.

One of the biggest concerns about biomass harvesting is the effect of the practice on the relationships between forest biomass, soil nutrients, wildlife habitat, and other aspects of sustainable forest management. The Wisconsin Council on Forestry and Wisconsin Department of Natural Resources developed harvesting guidelines to protect these resources (Herrick et al. 2009), and those guidelines are currently undergoing a periodic review.

Effective management of woody biomass is based upon an understanding of the changing amount and spatial distribution of the resource. The biomass available in boles has increased from 383 to 427 million tons since 2003 (Figure 5), an increase of 11 percent. The distribution of live biomass in tops and saplings is relevant to discussions of harvest residues. Tops and limbs have increased by 8 percent and live saplings by 7 percent over the same period (2003-2012). It is important to note that these stocks are not distributed evenly across the State of Wisconsin (Figure 6).

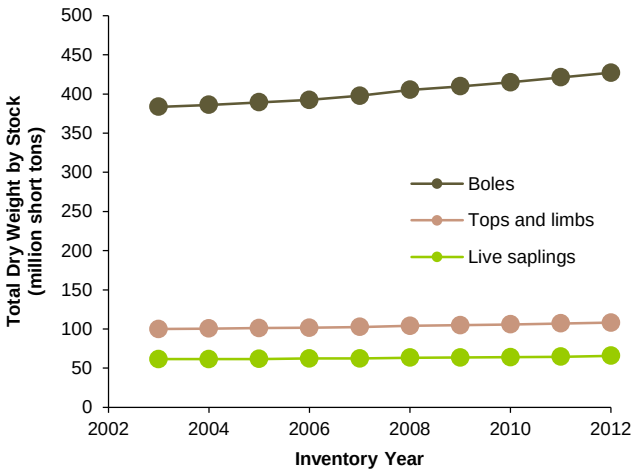

Figure 5.—Biomass accumulations by stock, Wisconsin, 2003-2012.

Reference Cited:

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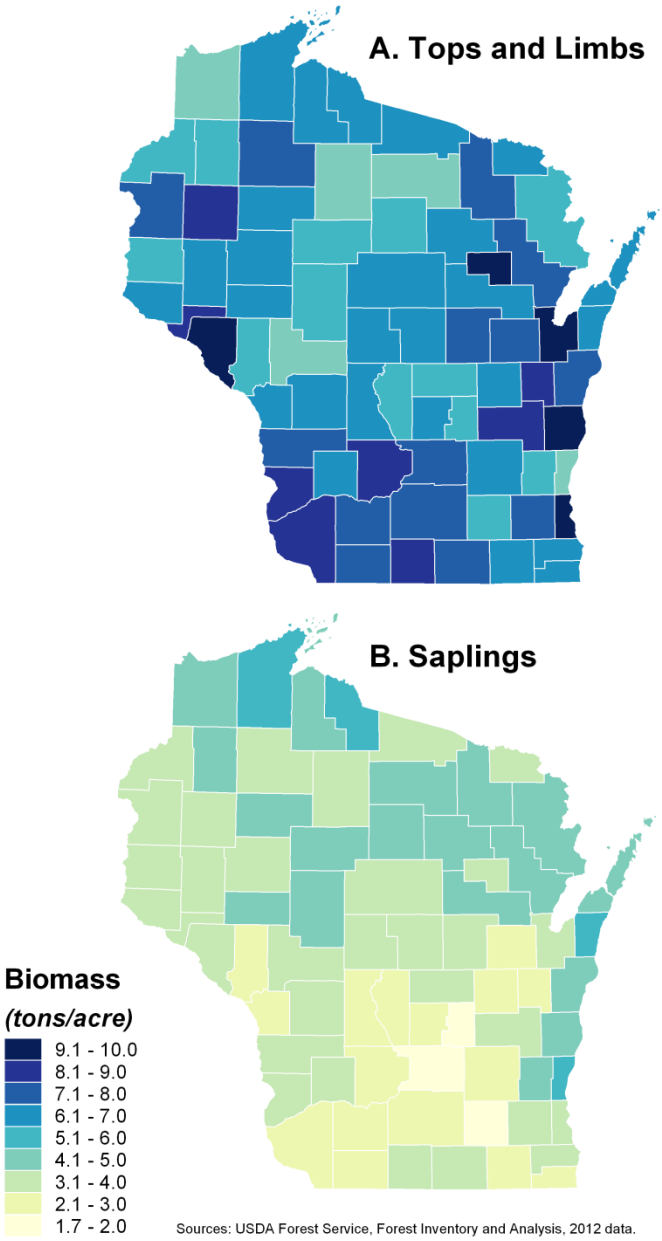

Figure 6.—Spatial distribution of live oven-dry top and limb and sapling biomass on timberland, Wisconsin, 2012.

Citation for this Publication

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	Estimates, tabular data, and maps from this report may be generated at http://fiatools.fs.fed.us
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Information published in this report and in related tables is based on Forest Inventory and Analysis Database (FIADB), collected under field guides 3.0 to 5.1 and compiled in National Information Management System (NIMS) version 6.0, installed on November 15, 2012. Due to periodic changes to FIADB and NIMS, trend analyses should be made using FIA's online estimation tools, not by comparing published reports or tables. FIA estimates, tabular data, and maps may be generated at http://fiatools.fs.fed.us/.