

Image credit: Terry Spivey, USDA Forest Service, Bugwood.org

Michigan's Forest Resources, 2007

Research Note NRS-28

This publication provides an overview of forest resource attributes for Michigan based on an annual inventory (2003-2007) conducted by the Forest Inventory and Analysis (FIA) program of the Northern Research Station, U.S. Forest Service. These estimates, along with web-posted core tables, are updated annually. For more information please refer to page 4 of this report or visit our website: <http://www.fia.fs.fed.us/>.

Note that changes in inventory design and definitions make it inappropriate to directly compare some previously published estimates with these current estimates. Sampling errors and error bars in this report represent 66% confidence intervals.

Table 1. — Annual estimates and sampling error
Note: Volumes are for 5-inch and larger diameter trees

	Estimate	Sampling error (%)
Forest Land Estimates		
Area (1,000 acres)	19,710	0.4
Number of live trees 1-inch diameter or larger (1,000,000 trees)	14,093	0.9
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	820,730	0.7
Net volume in live trees (1,000,000 ft ³)	31,383	0.8
Annual net growth of live trees (1,000 ft ³ /year)	748,202	3.3
Annual mortality of live trees (1,000 ft ³ /year)	342,340	3.4
Annual harvest removals of live trees (1,000 ft ³ /year)	310,151	7.7
Annual other removals of live trees (1,000 ft ³ /year)	34,378	16.8
Timberland Estimates		
Area (1,000 acres)	19,166	0.4
Number of live trees 1-inch diameter or larger (1,000,000 trees)	13,716	1.0
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	797,168	0.7
Net volume in live trees (1,000,000 ft ³)	30,438	0.8
Net volume of growing-stock trees (1,000,000 ft ³)	28,294	0.8
Annual net growth of growing-stock trees (1,000 ft ³ /year)	735,511	3.4
Annual mortality of growing-stock trees (1,000 ft ³ /year)	276,664	3.7
Annual harvest removals of growing-stock trees (1,000 ft ³ /year)	278,836	7.8
Annual other removals of growing-stock trees (1,000 ft ³ /year)	84,537	20.6

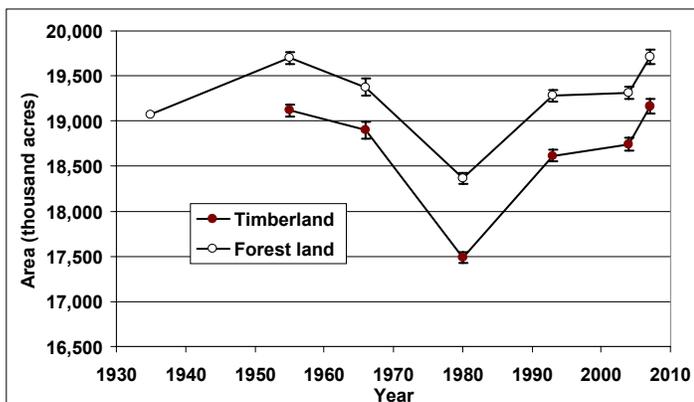


Figure 1.—Area of timberland and forest land by year.

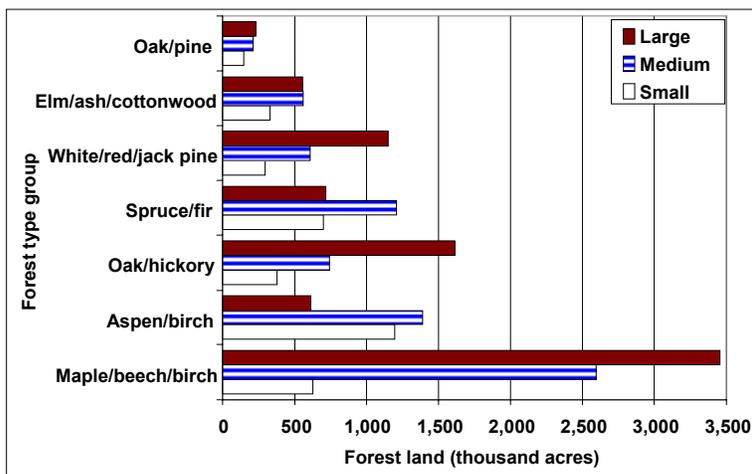


Figure 2.—Area of forest land for top seven forest type groups by stand-size class (based on tree size), Michigan 2007.

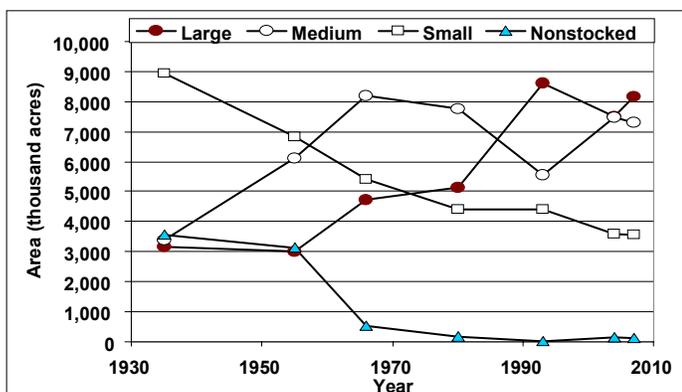


Figure 3.—Area of timberland by stand-size class (based on tree size) and year.

Image credit: Terry Spivey, USDA Forest Service, Bugwood.org

Table 2. —Top 10 species by statewide volume estimates

Rank	Species	Volume of live trees 5-inch diameter and larger on forest land (1,000,000 ft ³)	Sampling error (%)	Volume of sawtimber trees on timberland (1,000,000 board feet)	Sampling error (%)
1	Sugar maple	4,614	2.3	10,761	3.1
2	Red maple	3,848	2.2	7,649	3.4
3	Northern white-cedar	2,754	3.4	7,513	4.2
4	Red pine	2,056	4.5	7,816	4.9
5	Quaking aspen	1,600	3.3	3,397	4.8
6	Northern red oak	1,502	4.2	5,028	4.9
7	Eastern white pine	1,391	5.0	5,856	5.7
8	Bigtooth aspen	1,207	4.8	3,078	6.2
9	Eastern hemlock	947	5.4	3,844	5.8
10	American basswood	893	4.6	2,569	5.8
	Other softwoods	2,760	2.3	6,109	3.3
	Other hardwoods	7,813	1.6	19,402	2.4
	All Species	31,383	0.8	83,022	1.2

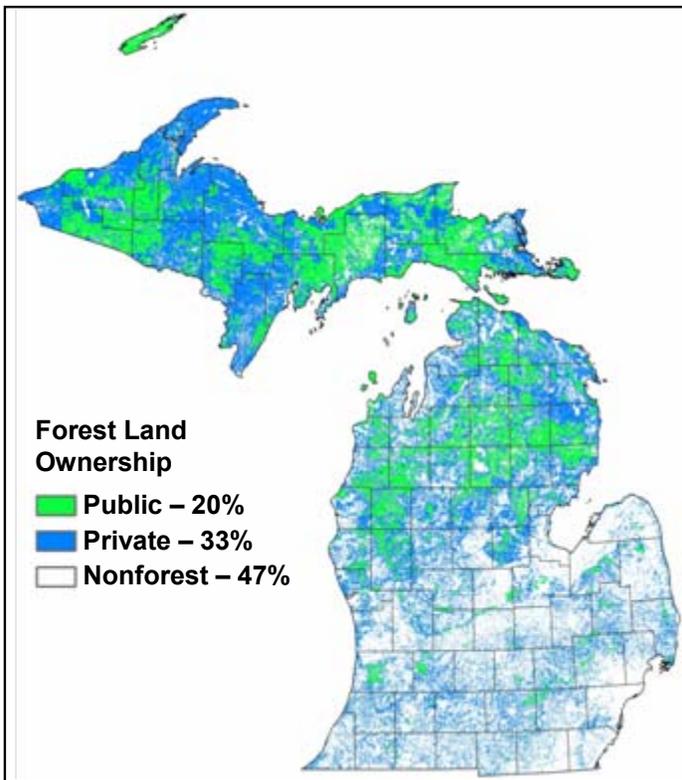


Figure 4. —Area of forest land by major ownership group. Note: National Land Cover Database (NLCD) 2001 used to delineate forest and nonforest. Protected Areas Database (PAD version 4.6) 2007 used to delineate public and private ownership.

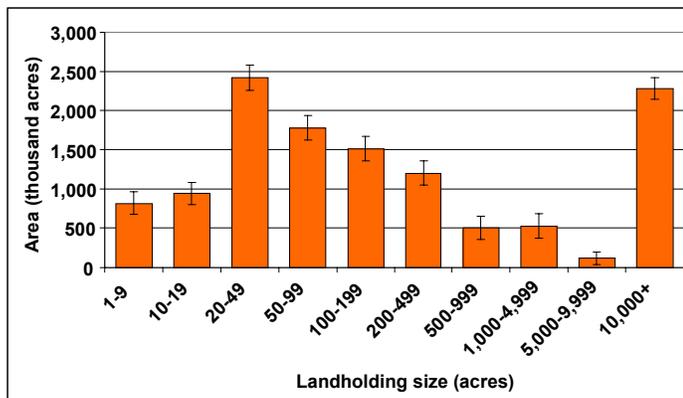


Figure 5.—Area of private forest land by size of forest landholding, Michigan 2006.

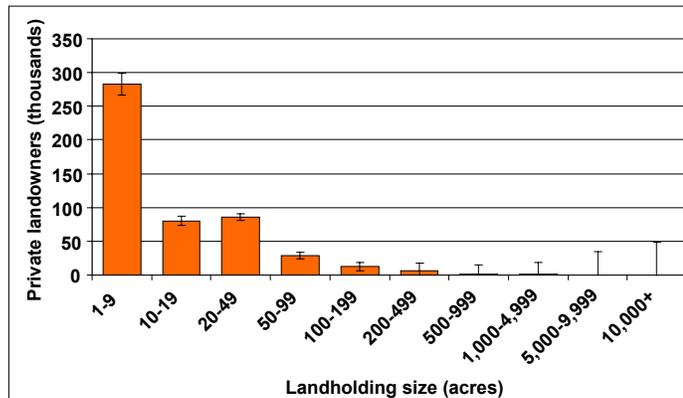


Figure 6.—Number of private forest landowners by size of forest landholding, Michigan 2006.

Image credit: Terry Spivey, USDA Forest Service, Bugwood.org

Michigan Issue Update – Carbon Stocks

Concern over global climate change has focused attention on the capacity of forests to act as carbon sinks. The introduction of markets for trading in carbon credits could result in a different mix of forest management practices and require additional information on forest carbon stocks.

A combination of sampled (directly measured stocks, such as live tree carbon) and modeled (based on forest attributes like forest type group for estimating carbon from soil organic matter) estimates provide a total carbon stock for Michigan's forests. Estimation procedures are detailed by Smith et al. (2007) and the U.S. Environmental Protection Agency (2008).

There are 1,999 million metric tons of carbon in Michigan's forests. Organic matter in mineral soil and aboveground live trees are the largest components of the forest carbon stock (Fig. 7). In Michigan, there are 479 million metric tons of carbon in aboveground live trees. This is approximately two times the amount of carbon sequestered in the United States in 2006 (U.S. Environmental Protection Agency 2008). On a per acre basis, carbon stocks of organic matter in mineral soil are generally higher on less productive sites (e.g., low, wet areas) while aboveground live tree carbon is generally higher on more productive sites (e.g., mesic uplands) (Fig. 8).

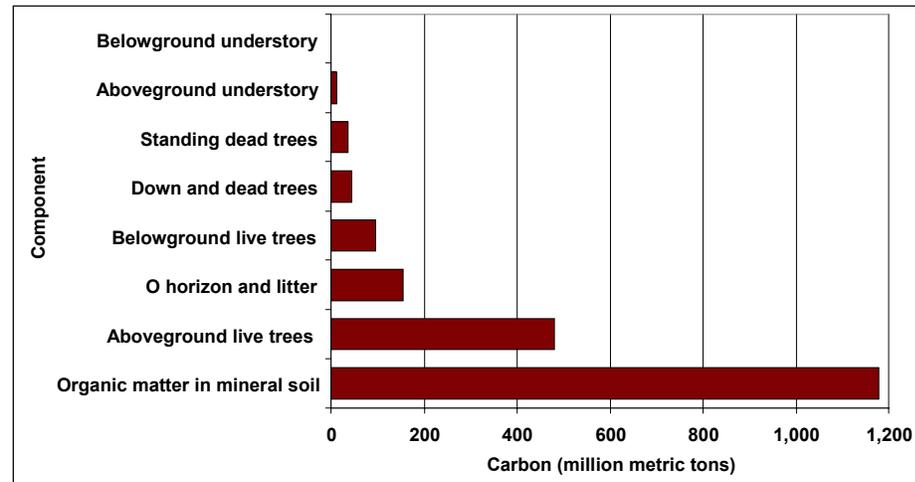


Figure 7.—Forest land carbon stocks by component, Michigan 2002-2006. Note: litter includes leaves and small woody debris (≤ 3 in. diameter) like small branches. Mineral soil occurs below O horizon.

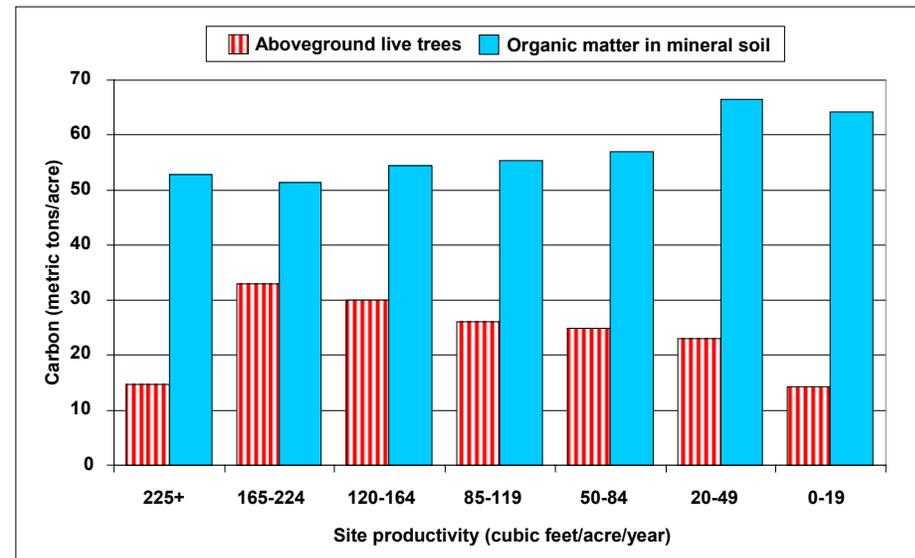


Figure 8.—Carbon stocks of aboveground live trees and soil organic matter in mineral soil on forest land by productivity class, Michigan 2002-2006. Note: Only 4 sample plots in the 225+ productivity class. Mineral soil occurs below O horizon.

Image credit: Terry Spivey, USDA Forest Service, Bugwood.org

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FIA Program Information

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Additional Michigan Inventory Information

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

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