USDA Forest Service, US Department of Agriculture
Northern Research Station

Indiana's Forest Resources, 2007

Research Note NRS-20

This publication provides an overview of forest resource attributes for Indiana 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

	Estimate 2007	Sampling error (%)	Change since 2006 (%)
Forest Land Estimates			
Area (1,000 acres)	4,823.8	1.3	3.6
Number of live trees 1-inch diameter or larger (million trees)	2,302.3	2.5	2.4
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	264,010.4	1.8	5.0
Net volume in live trees (1,000,000 ft^3)	9,869.8	2.0	5.3
Annual net growth of live trees (1,000 ft^3/year)	372,376.3	5.8	-5.4
Annual mortality of live trees (1,000 ft^3/year)	98,667.8	9.5	10.8
Annual removals of live trees (1,000 ft^3/year)	85,024.5	16.4	5.7
Timberland Estimates			
Area (1,000 acres)	4,705.3	1.4	3.8
Number of live trees 1-inch diameter or larger (million trees)	2,242.4	2.5	2.2
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	257,129.4	1.9	5.4
Net volume in live trees (1,000,000 ft^3)	9,612.6	2.1	5.7
Net volume of growing-stock trees (1,000,000 ft^3)	8,739.3	2.2	5.5
Annual net growth of growing-stock trees (1,000 ft^3/year)	335,839.6	5.8	-5.7
Annual mortality of growing-stock trees (1,000 ft^3/year)	75,105.6	11.0	13.1
Annual removals of growing-stock trees (1,000 ft^3/year)	74,192.2	16.9	13.1

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

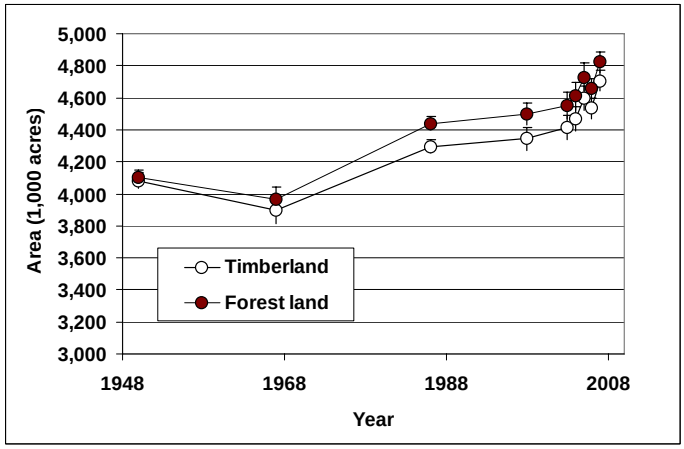


Figure 1. – Area of timberland and forest land by year.

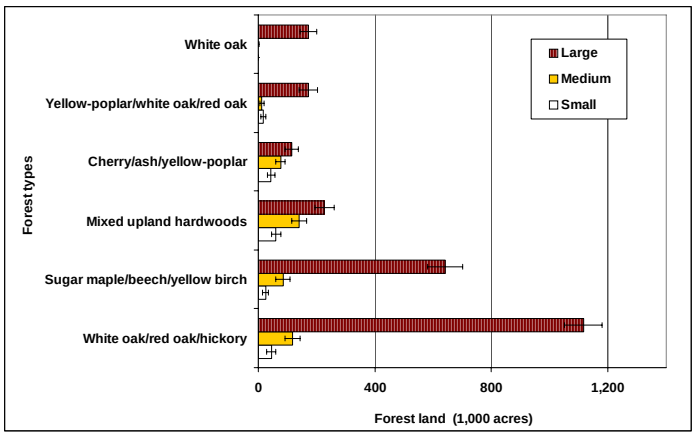


Figure 2. – Area of forest land area by top six forest types and stand size class, 2003-2007.

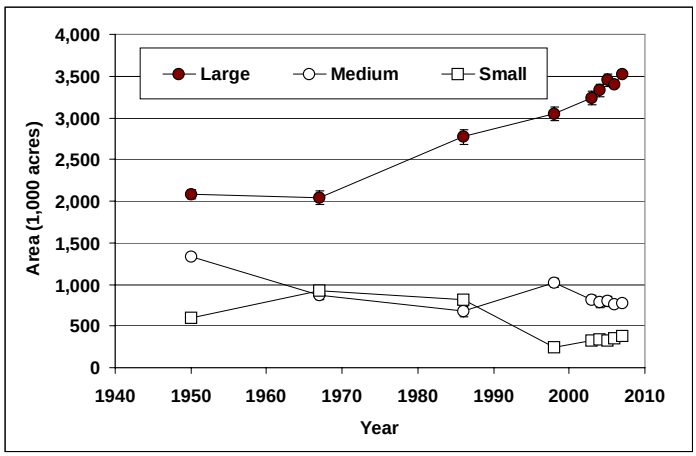
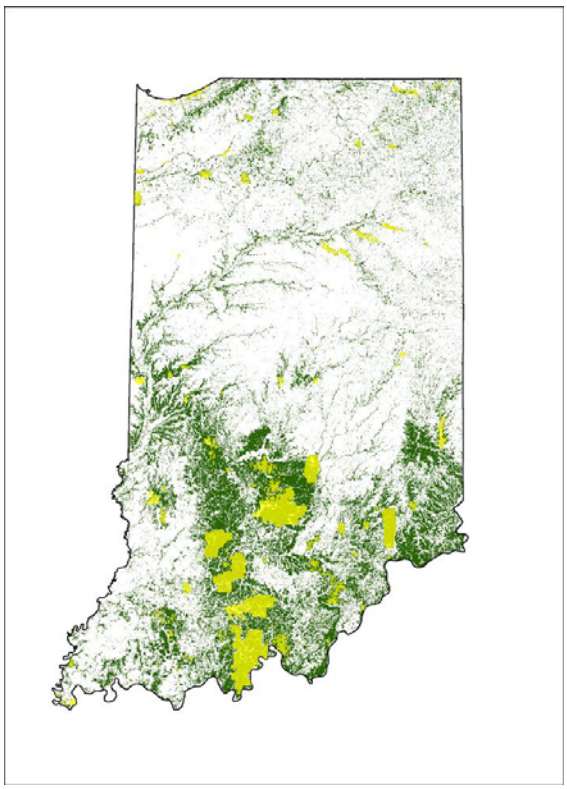


Figure 3. – Area of timberland by stand size class and year.

Table 2. – Top 10 tree species by statewide volume estimates, 2003-2007

Rank	Species	Volume of live trees on forest land (1,000,000 ft^3)	Sampling Error (%)	Change since 2006 (%)	Volume of sawtimber trees on timberland (1,000,000 bdft)	Sampling error (%)	Change since 2006 (%)
1	Yellow-poplar	1,126.3	7.4	8.70	5,097.0	8.1	11.20
2	Sugar maple	1,048.8	5.7	13.20	3,166.4	7.2	15.50
3	White oak	757.5	7.0	1.40	2,900.2	7.3	1.30
4	White ash	556.5	7.1	5.70	1,736.8	9.3	5.50
5	Black oak	550.8	8.8	-3.70	2,135.3	9.2	-4.80
6	Northern red oak	444.3	8.8	9.00	1,783.5	9.4	7.40
7	American sycamore	436.9	11.2	2.70	1,777.1	11.9	4.60
8	Red maple	371.5	10.8	20.70	1,016.7	13.8	35.70
9	Shagbark hickory	318.6	8.8	6.10	1,180.1	10.1	7.80
10	Pignut hickory	307.7	8.8	-0.30	1,187.9	10.1	0.10
	Other softwoods	314.5	11.3	3.00	1,013.4	14.0	-1.40
	Other hardwoods	3,636.3	3.5	3.50	10,801.0	4.6	4.80
	All Species	**9,869.8**	**2.0**	**5.30**	**33,795.4**	**2.5**	**6.30**



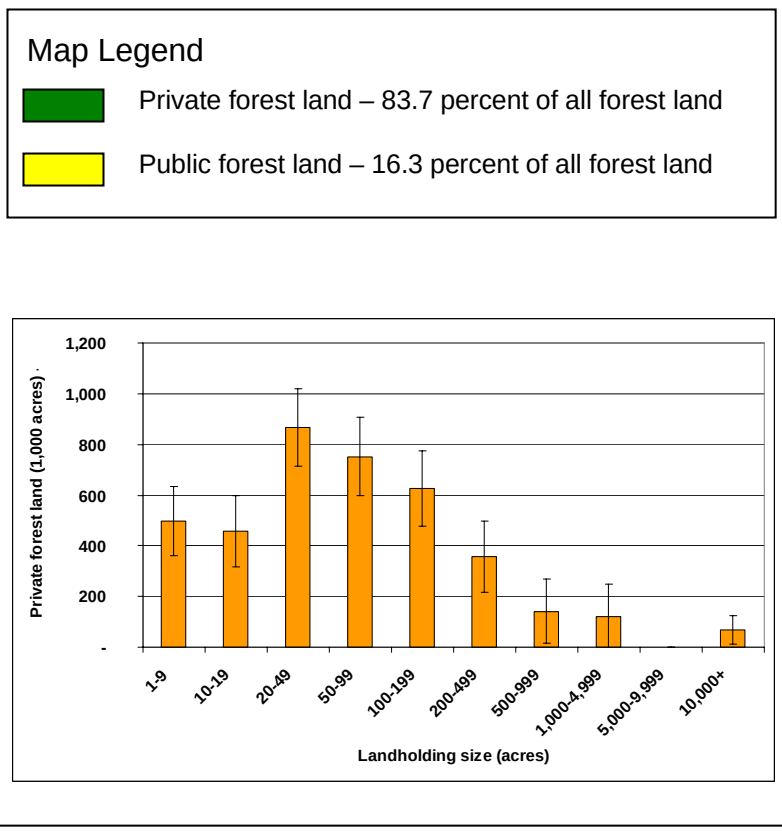


Figure 4. – Area of forest land by major owner group and size of private family forest landholding, 2006.

Indiana Issue Update – Carbon Stocks

In recent years there has been increased interest in mitigating possible climate change through forest management and subsequent carbon credit trading efforts. Therefore, estimates of Indiana's forest carbon stocks warrant examination. The FIA program does not directly measure every forest carbon stock in Indiana. Instead, a combination of empirically derived carbon estimates (for stocks that are directly measured such as standing live trees) and models (based on forest attributes such as stand age and forest type for carbon stocks such as belowground carbon) are used in combination to estimate Indiana's total forest carbon stock. The standard units for carbon stock reporting are metric. Estimation procedures are detailed by Smith et al. (2006).

There are over 300 million metric tonnes of carbon in the forests of Indiana, including everything from the organic soils to aboveground live trees. All of this carbon represents only 18 percent of all the carbon emitted in the form of CO_2 in the United States in the year 2006. Live tree aboveground carbon and organic soils were the largest components of this total carbon stock in Indiana (Fig. 5). Over half of Indiana's forest carbon stocks are found on moderate to poor quality sites in terms of productive capacity (Fig. 6). This demonstrates that despite agricultural practices occupying some of the most productive sites in Indiana, forest land still has the capacity to sequester tremendous amounts of carbon.

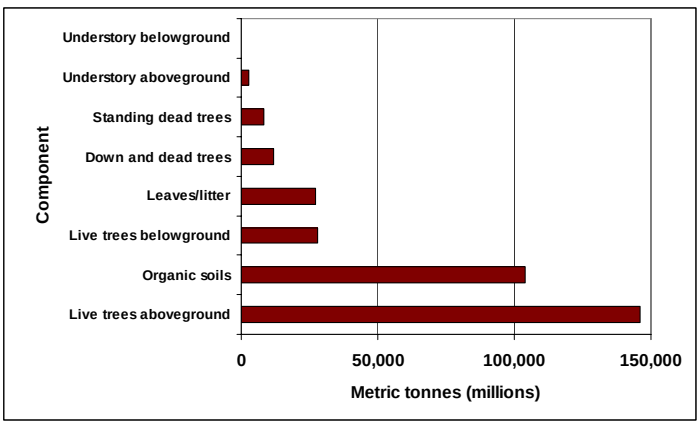


Figure 5. – Forest land carbon stocks by component, 2002-2006.

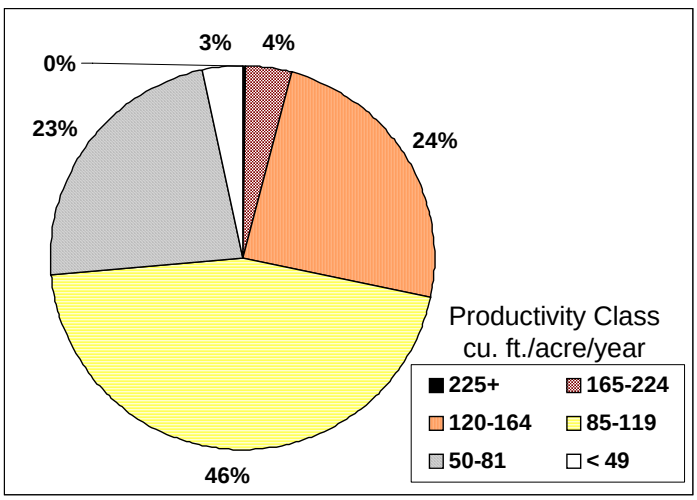


Figure 6. – Aboveground live tree carbon on forest land by forest productivity class, 2002-2006.

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Special Issue Citation

Smith, J.E., Heath, L.S., Skog, K.E., Birdsey, R.A. 2006. Methods for calculating forest ecosystem and harvested carbon with standard estimates for forest types of the United States. Gen. Tech. Rep. NE-343. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station. 216 p.

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