Indiana's Forest Resources, 2011

Research Note NRS-131

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 2011	Sampling error (%)	Change since 2007 (%)
Forest Land Estimates			
Area (1,000 acres)	4,830.4	1.0	0.1
Number of live trees 1-inch diameter or larger (million trees)	2,200.8	1.8	-4.4
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	264,892.8	1.4	2.2
Net volume in live trees (1,000,000 ft^3)	10,154.6	1.6	2.9
Annual net growth of live trees (1,000 ft^3/year)	267,213.9	4.3	-27.9
Annual mortality of live trees (1,000 ft^3/year)	107,104.4	6.7	7.5
Annual harvest removals of live trees (1,000 ft^3/year)	79,656.2	15.4	2.7
Annual other removals of live trees (1,000 ft^3/year)	6,259.7	50.0	-14.5
Timberland Estimates			
Area (1,000 acres)	4,748.9	1.1	1.0
Number of live trees 1-inch diameter or larger (million trees)	2,155.3	1.9	-3.7
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	260,470.8	1.5	3.3
Net volume in live trees (1,000,000 ft^3)	9,986.8	1.6	4.0
Net volume of growing-stock trees (1,000,000 ft^3)	9,062.1	1.6	3.7
Annual net growth of growing-stock trees (1,000 ft^3/year)	259,202.3	4.7	-22.2
Annual mortality of growing-stock trees (1,000 ft^3/year)	80,826.6	7.8	7.1
Annual harvest removals of growing-stock trees (1,000 ft^3/year)	75,596.9	15.8	13.4
Annual other removals of growing-stock trees (1,000 ft^3/year)	4,503.2	43.1	-50.8

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

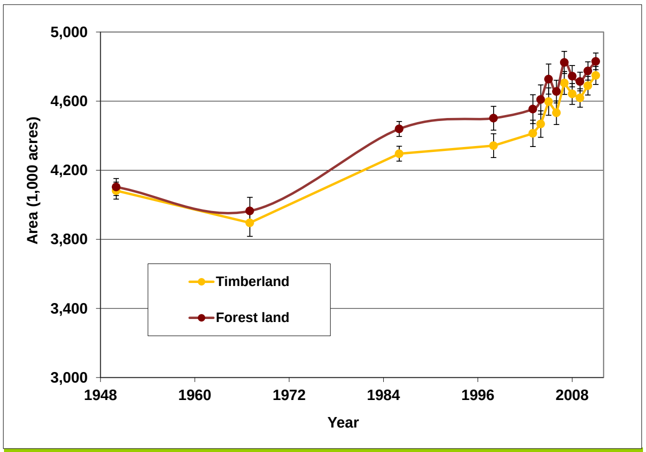

Figure 1. – Area of timberland and forest land by year.

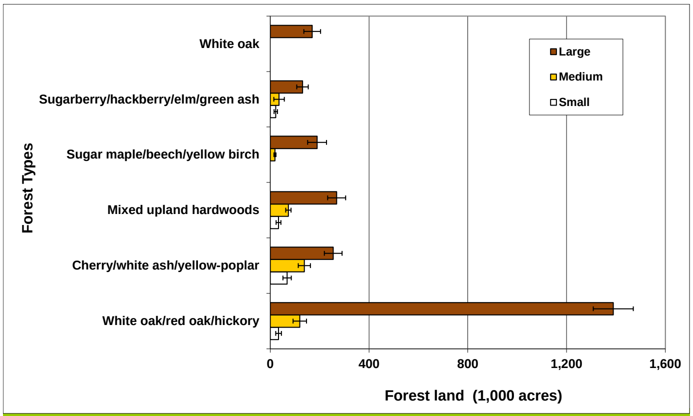

Figure 2. – Area of forest land area by top six forest types and stand-size class, Indiana, 2007-2011.

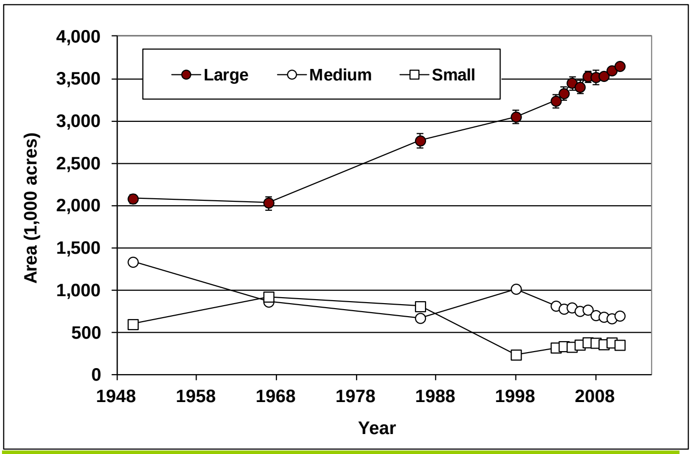

Figure 3. – Area of timberland by stand-size class and year.

Table 2. – Top 10 tree species by statewide volume estimates, Indiana, 2007-2011

Rank	Species	Volume of live trees on forest land (1,000,000 ft^3)	Sampling Error (%)	Change since 2007 (%)	Volume of sawtimber trees on timberland (1,000,000 bdft)	Sampling error (%)	Change since 2007 (%)
1	Yellow-poplar	1,160.7	5.8	3.10	5,160.0	6.4	1.10
2	Sugar maple	1,068.7	4.3	1.90	3,266.7	5.3	3.20
3	White oak	742.0	5.6	-2.00	2,866.6	5.9	-1.20
4	White ash	560.8	5.9	0.80	1,940.6	7.2	11.70
5	Black oak	546.1	6.9	-0.90	2,180.5	7.3	3.10
6	Northern red oak	462.3	6.9	4.10	1,904.7	7.4	7.00
7	Red maple	459.8	7.9	23.80	1,310.8	10.0	26.70
8	American sycamore	427.6	8.7	-2.10	1,761.8	9.1	-0.90
9	Shagbark hickory	370.5	6.5	16.30	1,431.2	7.2	21.30
10	Black cherry	321.7	6.5	11.70	774.0	8.3	26.10
	Other softwoods	343.0	9.0	9.10	1,140.3	11.3	12.50
	Other hardwoods	3,691.5	2.7	1.00	11,773.4	3.3	3.40
	All Species	**10,154.6**	**1.5**	**2.90**	**35,510.5**	**1.9**	**5.00**

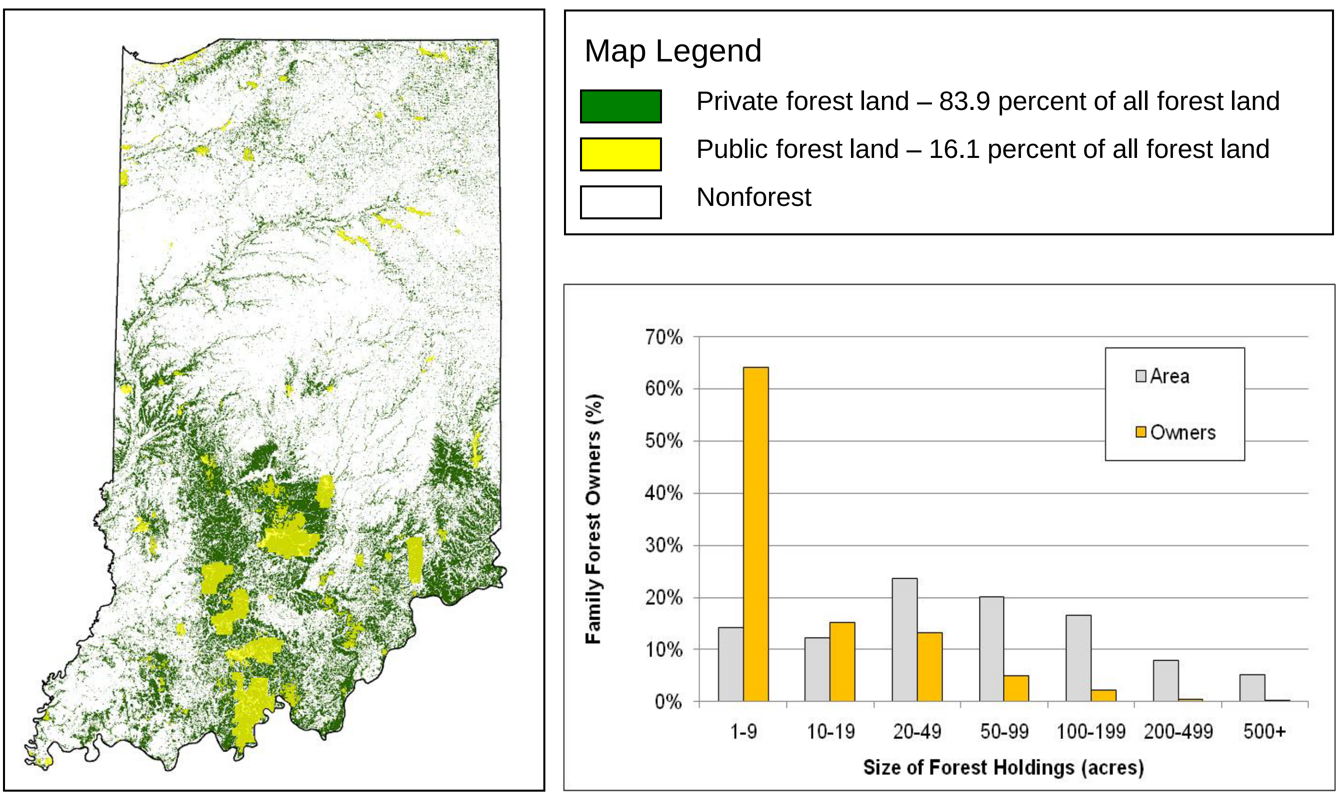

Figure 4. – Area and number of family forests in Indiana by size of forest landholdings, Indiana, 2002-2006.

Indiana's Forest Industry and the Recession of 2007-2009

Based on emerging work from Woodall et al. (in press), the northeastern and north-central states (inclusive of Indiana) had initial declines in various forest product sub-industries in 2000 followed by a precipitous drop following the housing construction downturn (~2006) and recession of 2007 to 2009. Trends (2005-2010) within selected sub-industry employment can further identify causes of the industrial decline (Fig. 5; USDL 2012). First, housing construction related sub-industries such as plywood and engineered wood product manufacturers (softwood plywood, oriented strand board, trusses or structural members, and non-structural products such as hardwood plywood, particle board, and fiber board; NAICS 3212) experienced nearly a 46 percent reduction in employment (over 15,000 lost jobs). The millwork sub-industry (moldings, doors, windows, hardwood flooring; NAICS 32191) lost over 38 percent of total employment (over 27,000 lost jobs). Even the sawmills and wood preservation sub-industry (NAICS 3211) lost over 28 percent of total regional employment since 2005. In contrast, the wood container and pallet sub-industries (NAICS 32192) had only a 14 percent reduction in employment (more than 3,800 lost jobs) over the same time period. The suppliers of home construction wood products across Indiana and the greater region experienced tremendous reductions in employment that may have exceeded the reductions in broader manufacturing declines.

The broader economic recession and the off-shoring of secondary wood process industry or employment may have affected Indiana's and the broader region's forest industries. The wood kitchen cabinet and counter tops sub-industry (NAICS 33711) experienced tremendous employment declines both in terms of percentage (36 percent) and lost jobs (26,000). Three other sub-industries, upholstered household furniture (NAICS 33712), non-upholstered household furniture (NAICS 337122), and wood office furniture (NAICS 337211) had substantial declines in terms of employment percentages exceeding 25 percent, albeit a low number of total jobs lost. The non-upholstered wood household furniture sector is traditionally the dominate consumer of higher grade hardwood lumber with this furniture sector's decline being another possible reason for the downturn in the sawmill sector. Certainly, the decline in wood kitchen cabinet and countertop manufacture is due to the housing crash; however, the decline in furniture manufacturing is likely due to secondary processor employment off-shoring as even sawmills didn't experience declines to such an extent. As of the publication of this analysis, employment across these sub-industries remained at historic lows.

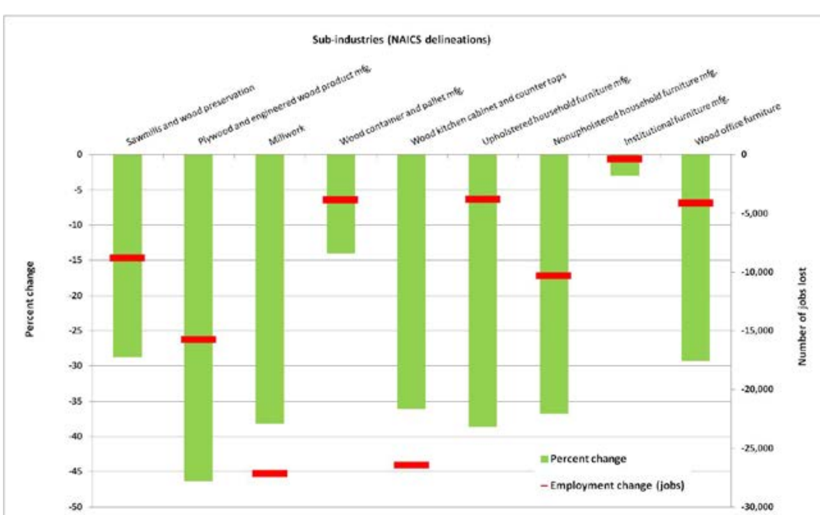

Figure 5. – Changes in employment (percent change and number of lost jobs) for manufacturing between 2005 and 2010 by sub-industry timber processors, inclusive of Indiana and all northeastern and north central region states except as indicated: Sawmills and wood preservation (excludes NH, RI, CT, DE, ND); Plywood and engineered wood (all states); Millwork (excludes DE and SD), Wood containers and pallets (excludes NH, DE, SD); Wood kitchen cabinet and counter tops (NH, RI, DE); Upholstered household furniture (excludes ME, VT, NH, RI, DE, WV, NE, SD, ND); Non-upholstered wood furniture (excludes WV), Institutional furniture (ME, VT, NH, RI, DE, WV. NE, SD, ND); Wood office furniture (excludes ME, VT, NH, RI, WV, NE, SD, ND).

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FIA Program Information

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Additional Indiana Inventory Information

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