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Indiana's Forest Resources in 2004

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Indiana's Forest Resources in 2004

The North Central Research Station's Forest Inventory and Analysis (NCFIA) program began fieldwork for the sixth forest inventory of Indiana's forest resources in 2004. This inventory initiated the second cycle of Indiana's annual inventory system in which one-fifth of the field plots (considered one panel) in the State are measured each year. Indiana's first annual inventory was completed in 2003 (measuring, compiling, and reporting the data for all plots or five panels). Beginning in 2004, all panels will be remeasured approximately every 5 years. For example, in Indiana, the field plots measured in 2000 will be remeasured in 2005.

In 2004, NCFIA completed measurement of the first panel of the second annual inventory cycle in Indiana. This sixth inventory of Indiana's forest resources will be completed in 2008. Previous inventories of Indiana's forest resources were completed in 1950, 1967, 1986, 1998, and 2003 (Hutchison 1956, Spencer 1969, Spencer *et al.* 1990, Smith and Golitz 1988, Schmidt *et al.* 2000, Woodall *et al.* 2005). Information presented in this report is based on moving average estimates that use the latest measurements of every field plot (five panels – 2000-2004) for estimates of current conditions such as area, number of trees, volume, and biomass. Estimates of change (growth, removals, and mortality) are based on remeasured plots, thus for this report only the plots measured in 1999 and then remeasured in 2004 (one panel) provide the estimate of change. In 2005 another panel will be remeasured and estimates of change will be based on two panels of remeasured plots, and by 2008 all five panels will have been remeasured. The results presented in this report are estimates based on sampling techniques presented by Bechtold and Patterson (2005). This 2004 annual report contains summary information from the sixth forest inventory, along with 12 core tables. More tabular data from the sixth inventory of Indiana can be generated through the FIA Mapmaker program Web site at http://ncrs2.fs.fed.us/4801/fiadb/index.htm.

Data from new inventories are often compared with data from earlier inventories to determine trends in forest resources. However, for the comparisons to be valid, the procedures used in the two inventories must be similar. As a result of our ongoing efforts to improve the efficiency and reliability of the inventory, several changes in procedures and definitions have been made since the last periodic Indiana inventory in 1998 (Schmidt *et al.* 2000). Although these changes will have little impact on statewide estimates of forest area, timber volume, and tree biomass, they may significantly impact plot classification variables such as forest type and stand-size class. Additionally, although these changes allow limited comparison of inventory estimates among separate inventories in this report, it is inappropriate to directly compare all portions of the 2000-2004 data with those published for earlier inventories. Only comparisons that are appropriate and not impacted by changes in procedures are discussed in this report.

RESULTS

Area

Forest land area (including reserved or low-productivity land) totaled 4.6 million acres in 2004 (table 1). More than 16 percent of forest land is owned by public agencies and 83.4

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percent is owned by private landowners; 2.7 percent of the area was dominated by softwoods and 96.9 percent was dominated by hardwoods in 2004, with the remainder classified as nonstocked (table 1). Oak/hickory forests constituted 59.0 percent of the total hardwood forest land area (table 1). The white/red/jack pine forest group constituted 37.6 percent of all forest land dominated by softwoods (table 1).

Forest land has three components:

(1) Timberland—forest land that is not restricted from harvesting by statute, administrative regulation, or designation and is capable of growing trees at a rate of 20 cubic feet per acre per year

(2) Reserved forest land—land that is restricted from harvesting by statute, administrative regulation, or designation (e.g., state parks, national parks and lakeshores, and Federal wilderness areas)

(3) Other forest land—land that is not capable of growing trees at a rate of 20 cubic feet per acre per year and not restricted from harvesting.

Timberland area has continued to increase since its low point in the 1967 inventory (fig. 1). Hardwoods made up 97.1 percent of the total acreage, 95.6 percent of all public timberland area, and 97.4 percent of all private landholdings (table 2). The area of timberland by forest type group was dominated by hardwoods (table 3), particularly by the oak/hickory group (table 3, fig. 2), although the maple/beech/birch group held a strong second place. The upland oak component increased as a percentage of total timberland area: the 1950 oak/pine, oak/hickory, and white oak groups constituted 59.7 percent of the total timberland area, and the 2004 oak/pine and oak/hickory groups made up 62.1 percent. Since 1950, the area of timberland in the sawtimber stand-size class has steadily increased (table 3, fig. 3). The area of timberland in the sapling-seedling and poletimber classes has decreased since 1950, suggesting stand development (fig. 3).

Volume

The net volume of all live trees on forest land, which includes growing stock, rough, and rotten trees, was 9.0 billion cubic feet (table 4). Hardwoods constituted nearly 8.7 billion cubic feet and softwoods made up more than 309 million cubic feet. Oaks made up 2.3 billion cubic feet or 26.5 percent of all hardwoods. Select oaks (red and white) totaled 1.3 billion cubic feet or 58.1 percent of all oaks and 15.4 percent of all hardwoods (table 4). This represents a considerable increase over the 1986 inventory, which listed the total cubic foot volume of all live trees as 6.0 billion cubic feet, all hardwoods as 5.8 billion cubic feet, all oaks as 1.7 billion cubic feet, and all select oaks as 859 million cubic feet (Smith and Golitz 1988).

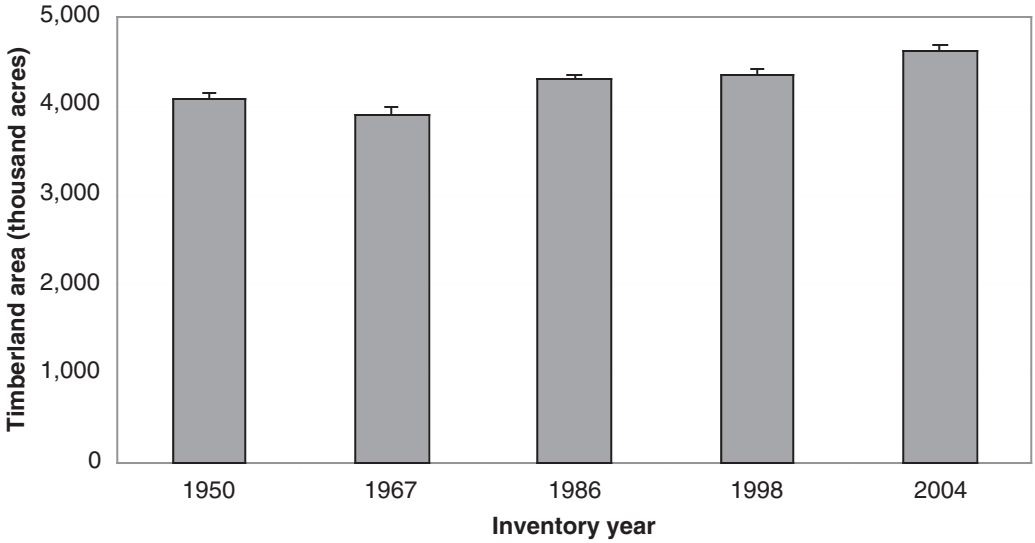

Figure 1.—Area of timberland in Indiana by inventory year, 1950-2004. The vertical line at the top of each bar represents the sample error associated with each inventory.

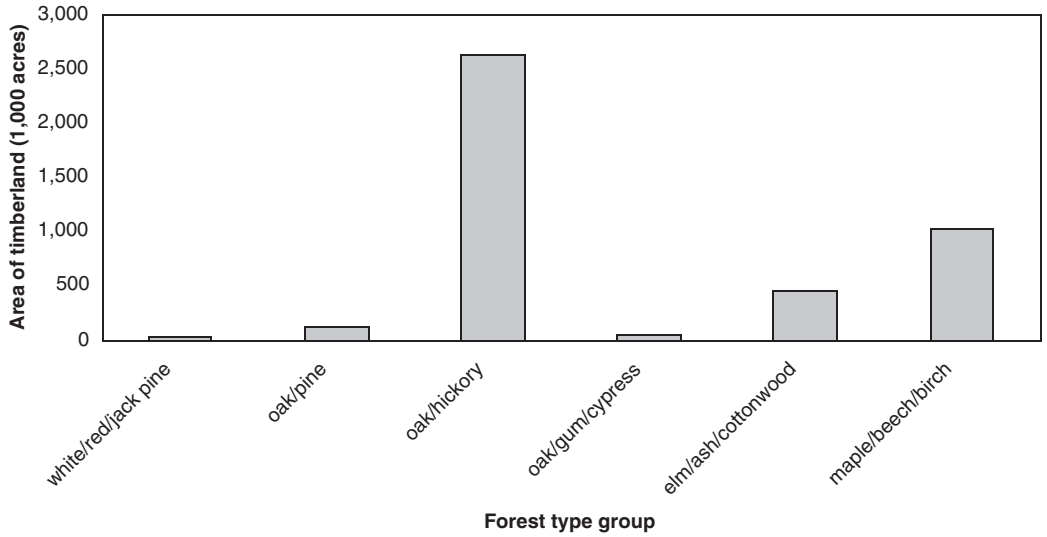

Figure 2.—Area of timberland in Indiana by selected forest type groups, 2000-2004.

Net volume of all live trees with a d.b.h. (diameter at breast height) greater than or equal to 1 inch and salvable dead trees on timberland was nearly 8.8 billion cubic feet (table 5). Volume of all live trees made up nearly 8.7 billion cubic feet or 98.8 percent. The difference between the total volume of all live trees on timberland (table 5) and forest land (table 4) represents more than 317 million cubic feet on land that is either reserved (e.g., parks, wilderness areas) or of low productivity (incapable of growth greater than 20 cubic feet per acre per year at the culmination of mean annual increment). Of the 7.8 billion cubic feet of volume in growing-stock trees, nearly 6.2 billion cubic feet or 79.4 percent was sawtimber (table 5, fig. 4). The sawtimber percentages for softwoods and hardwoods were 75.1 and 79.6 percent, respectively (table 5). Cull tree volume, at 880 million cubic feet, was 10.1 percent of all live tree volume. The softwood cull tree volume represented only 3.6 percent of the total softwood live tree volume, whereas hardwood cull volume represented 10.4 percent of the total hardwood volume (table 5, fig. 4). The phototropic and decurrent growth habits of hardwoods and the poor stem form resulting from inadequate self-pruning, particularly in more open stands, might explain the disparity in the cull percentage.

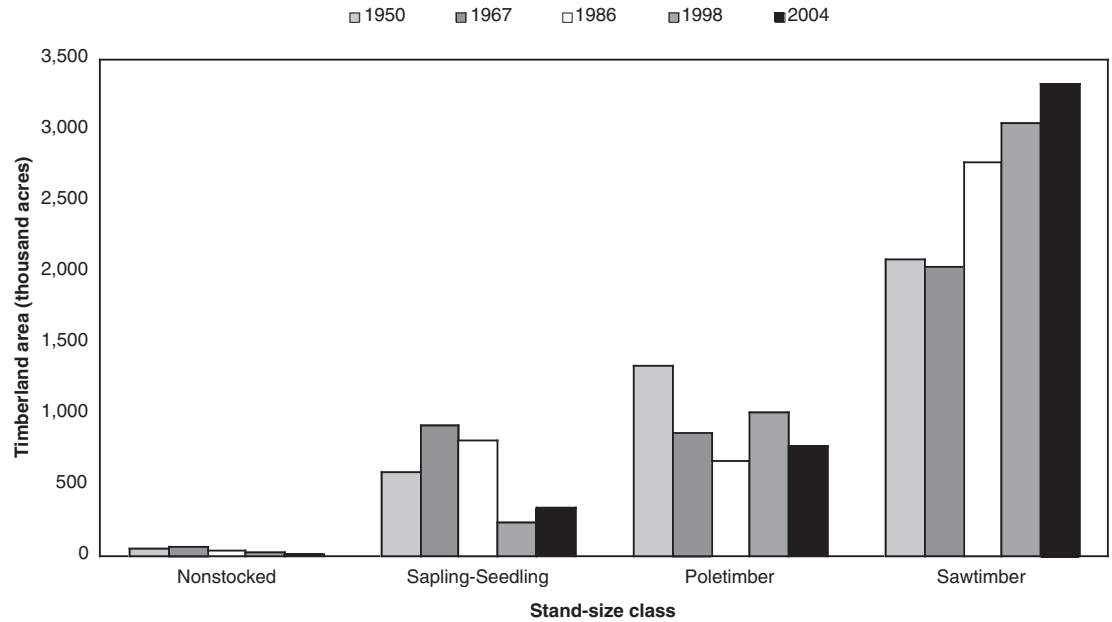

Figure 3.—Area of timberland in Indiana by stand-size class, 1950-2004.

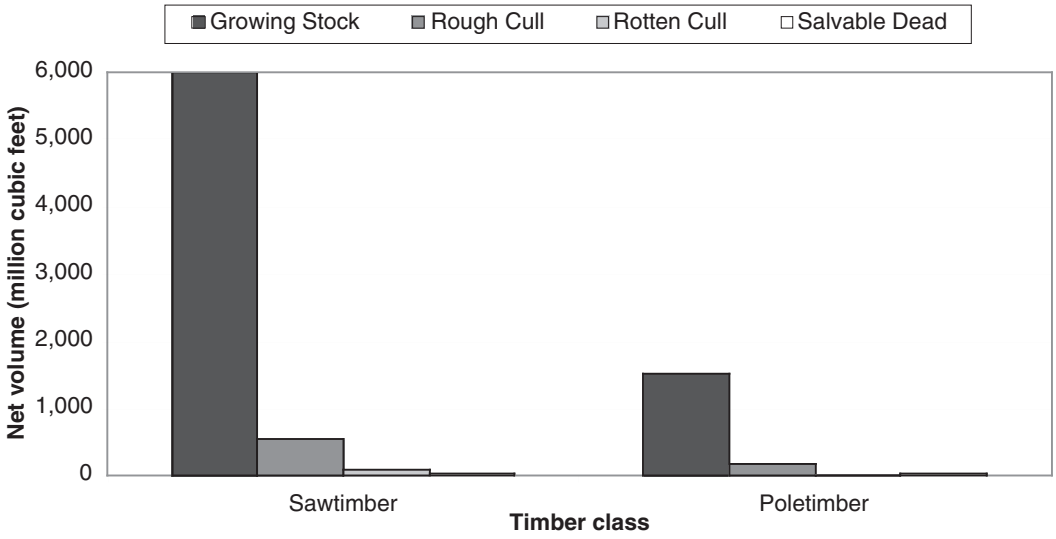

Figure 4.—Net volume of all hardwood live trees and salvable dead hardwood trees on timberland in Indiana by timber class and size class, 2000-2004.

The net volume of growing stock (trees with a d.b.h. greater than or equal to 5 inches) on timberland totaled 7.8 billion cubic feet, more than triple the 2.5 billion cubic feet estimated during the 1950 inventory (table 6, fig. 5). More than 96 percent (7.5 billion cubic feet) was in hardwoods and 3.5 percent (276 million cubic feet) was in softwoods, with the remainder in the nonstocked category. In table 6 and in figure 5, tree volumes were calculated for softwoods and hardwoods for each forest type group. For example, the oak/pine group had 53.6 million cubic feet of softwoods and 96.2 million cubic feet of hardwoods.

The net volume of growing stock on timberland by diameter class varies considerably by species group (table 7, fig. 6). The totals for softwood and hardwood volumes were 276.1 million cubic feet and 7.5 billion cubic feet, respectively (table 7). Total volume of oak growing stock on timberland was more than 2 billion cubic feet, which was 27.3 percent of all hardwood volume and 26.4 percent of all growing-stock volume (table 7). Volume in trees at least 19 inches in diameter constituted 8.6 percent of the net volume of softwood growing stock and 33.1 percent of net hardwood volume (table 7).

The net volume of sawtimber on timberland was almost 29.8 billion board feet (table 8). As with many other measures of tree coverage and abundance in Indiana, hardwoods constituted most of the sawtimber volume (96.5 percent or 28.7 billion board feet) (table 8). Red and white oaks totaled 8.7 billion board feet or 30.4 percent of the hardwood total (table 8). Yellow-poplar had the greatest net volume of all individual species at 4.3 billion board feet. Trees that were 19 or more inches in diameter made up 11.3 percent of the softwood volume (116.5 million board feet) and 40.9 percent of the hardwood volume (11.8 billion board feet) (table 8). In 1986, the proportions were 1.3 percent and 32.6 percent, respectively (Smith and Golitz 1988).

Biomass

The live aboveground biomass on timberland in Indiana totaled 235.4 million dry tons (table 9 and fig. 7). Nearly 5.6 percent of the biomass total was in 1- to 5-inch trees, 82.5 percent was in growing-stock trees, and more than 11.8 percent was in non-growing-stock trees (table 9). Of the total, 85.3 percent (200.8 million dry tons) was on private land and 14.6 percent (34.6 million dry tons) was on public land (table 9). Of the 196.3 million dry tons in growing-stock trees, 84.2 percent were on private land and 15.8 percent were on public land. Among biomass in non-growing-stock trees, 92.6 percent was on private land and 7.4 percent was on public land (table 9). Of the biomass in growing-stock trees, bole biomass made up 74.1 percent, and stumps, tops, and limbs made up the remaining 25.9 percent. Approximately the same proportions existed for the 27.8 million dry tons of biomass in non-growing-stock trees: 74.1 percent in bolewood and 25.9 percent in stumps, tops,

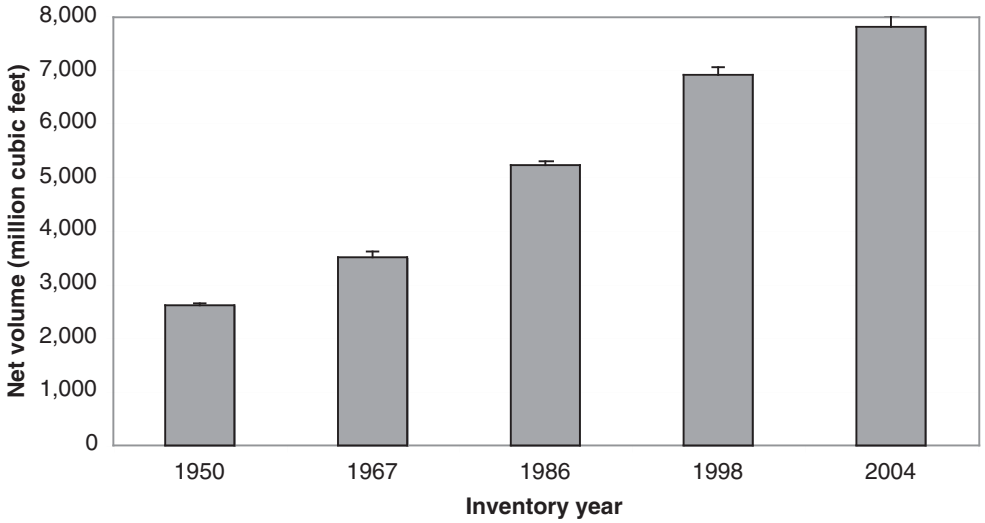

Figure 5.—Net volume of growing stock on timberland in Indiana 1950-2004. Vertical line at the top of each bar represeents the sample error associated with each inventory.

and limbs (table 9). The disparity in the proportion of aboveground biomass in non-growing-stock softwood trees (4.8 percent of all softwood biomass) vs. non-growing-stock hardwood trees (14.6 percent of all hardwood biomass) possibly reflects the higher proportion of hardwood volume made up of species of little or no current commercial value or the higher likelihood of hardwoods with defects causing quality degrades (table 9).

Growth, Removals, and Mortaliy

The growing stock on Indiana's timberland grew, on average, 377.9 million cubic feet per year between 1999 and 2004 (table 10). Softwoods increased by 5.3 million cubic feet per year, while hardwoods increased by 372.6 million cubic feet per year. Hardwood growth was 98.6 percent of the total growth while the hardwood growing stock in 1998 was 96.0 percent of the total volume (table 10). The growth of the other eastern soft hardwoods, yellow-poplar, ash, hard maple, and other red oaks species groups increased the most at 69.6, 66.6, 37.2, 35.1, and 34.8 million cubic feet per year, respectively (table 10).

Average annual removals of growing stock on timberland (table 11) totaled 80.0 million cubic feet per year. Hardwood removals were 79.9 million cubic feet per year (99.9 percent

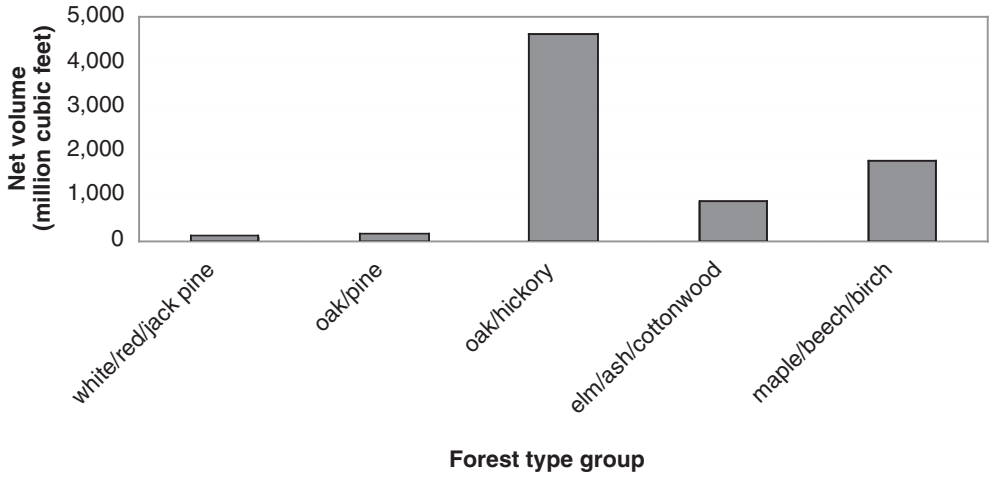

Figure 6.—Net volume of growing stock on timberland for Indiana by selected forest type, 2000-2004.

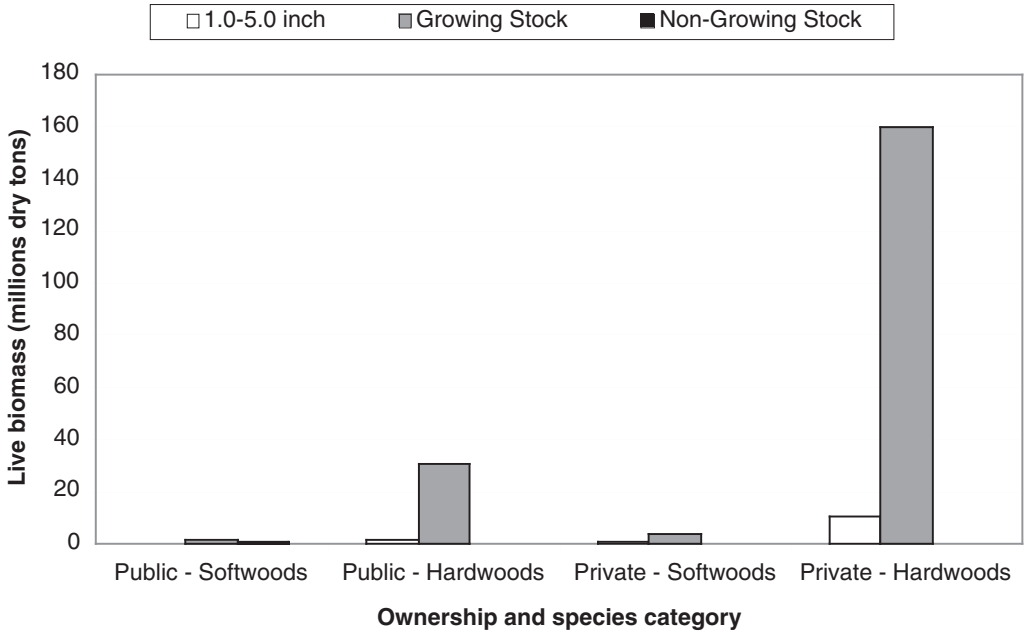

Figure 7.—Live aboveground biomass in Indiana, by ownership type and forest type, 2000-2004.

of the total removals). Removals from private timberland totaled 75.1 million cubic feet per year (93.8 percent of all removals), while removals from public land averaged 4.9 million cubic feet per year (table 11). The species group categories with the highest average annual removals were yellow-poplar (20.9 million cubic feet per year or 26.1 percent of the total removals), other eastern hardwoods (15.9 million cubic feet per year), and hickory (10.7 million cubic feet per year) (table 11).

Average annual mortality of growing stock on timberland from 1999 through 2004 was 48.7 million cubic feet per year (table 12). Of that total, 45.5 million cubic feet per year (more than 93 percent) were from hardwoods, while the remaining 3.3 million cubic feet per year were from softwoods (table 12). Across all species groups, 7.2 percent or 3.5 million cubic feet per year occurred on public lands. Hardwood mortality on public lands averaged 3.1 million cubic feet per year (6.9 percent of all hardwood mortality), while softwood mortality on public land averaged nearly 0.4 million cubic feet per year (11.2 percent of all softwood mortality) (table 12). Among hardwoods species groups, the other eastern soft hardwoods group had the highest mortality rate at 11.0 million cubic feet per year or 22.5 percent of all mortality (table 12).

Forest Health Update

In 2004, forest health problems in Indiana involved both native and exotic insects and diseases. A major forest health problem was tree mortality resulting from the looper epidemic, forest tent caterpillar epidemic, pine bark beetles, oak wilt, Dutch elm disease, ash yellows, and weather. Additionally, exotic species of concern were gypsy moth, emerald ash borer, Asian longhorned beetle, exotic bark beetles, sudden oak death, and beech bark disease. Of these, gypsy moth and emerald ash borer are now causing damage to the forests of Indiana; the remaining species were not present in the State or just recently detected.

The current status of specific forest health problems across Indiana may help indicate future trends in the vitality of Indiana's forest resources. The looper epidemic (linden looper and half wing geometer) started in 2002 in Clark State Forest. Light to heavy defoliation to the forests of south central Indiana appeared in 2003 (89,252 acres) and again in 2004 (131,943 acres).

The forest tent caterpillar epidemic also began in 2002, but did not produce noticeable defoliation until 2003 (19,248 acres) and again in 2004 (28,707 acres). This epidemic occurs in a more confined area of the State (Jefferson,

Ohio, and Switzerland Counties) than the looper epidemic. The caterpillar epidemic is expected to begin killing oak, maple, and hickory trees in 2005; however, mortality was not recorded during recent aerial defoliation surveys.

Pine forests are generally dense and reaching maturity. Several pine bark beetle species in Indiana are starting to take advantage of the stressed status of the pine forests to attack and kill pines. Bark beetles involved include Ips bark beetles and turpentine beetles.

Oak wilt has been detected in all major forested counties across Indiana, but has not been reported from counties in central eastern Indiana. Currently oak wilt is killing red and black oaks in the rural and urban forests of northwestern Indiana.

For the past 10 years, Dutch elm disease has been killing elms across the State. This epidemic of Dutch elm disease is believed to be the result of the elm tree increasing in size and becoming suitable to support the disease transmitting beetle populations. It is also believed to be the result of a new strain of the Dutch elm disease fungus. The future of the elm resource will continue to be impacted by this disease until the elm resource is reduced to a level that will not support the beetle and disease.

Ash yellows is a chronic disease present across the forests of Indiana. Caused by a phytoplasma organism that works in the phloem tissue of the tree, ash yellows slowly causes dieback, decreased growth, and death of all ash species, especially white ash. Ash yellows impacts are more noticeable across the northern forests of Indiana and range from very low to very high.

Over the past 4-5 years, foresters in south central and southeast Indiana reported the decline and death of yellow-poplar and bitternut hickory at a level above the amount anticipated. For bitternut and other smooth bark hickories, the trees decline and suddenly die. Shagbark and other loose bark hickory (even in the same forest) do not decline and die.

Exotic forest pests will be a major concern for Indiana's forests in the future. Gypsy moth is present in the northeastern corner of the State. Through 2004, only one location (2 acres in Allen County) has been noticeably defoliated by gypsy moth.

Emerald ash borer (EAB), first detected in April 2004 in Steuben County, is the most recent exotic invasive species to threaten the forest resources of Indiana. EAB is a wood-boring beetle whose immature larvae bore extensive galleries under the bark of ash trees causing 100 percent mortality. Through 2004, three infestations were receiving eradication measures (Jellystone, Manapogo, and Shipshewana). To date, more than 118,500 ash trees have been killed or destroyed totaling over 12.5 square miles of Indiana. Surveys are still being conducted to detect new infestations. Presently, the movement of infested firewood and logs is the greatest risk to the introduction and spread of EAB.

SUMMARY

Continuing long-term trends in Indiana, most measures of forested area and volumes show increases. Area has increased steadily since a low point in 1967, while standing volumes have continued to increase since 1950. Hardwood forests continue to dominate the majority of Indiana's forests both in terms of acreage and volume/biomass. However, given the constant threats of invasive species (e.g., emerald ash borer and gypsy moth), the inventorying and monitoring of Indiana's hardwood forests is critical for future sustainability.

APPENDIX

Accuracy of the Inventory

Sampling errors measure the uncertainty in estimates due to not observing every member of the population. In the case of the 2000-2004 Indiana forest inventory, a total of 948 forested plots were observed. Sampling error estimates for the 2004 inventory results are area of forest land, 1.67 percent; area of timberland, 1.78 percent; number of growing-stock trees on timberland, 3.10 percent; volume of growing stock on timberland, 2.66 percent; volume of sawtimber on timberland, 3.09 percent, growing stock growth on timberland, 11.49 percent; growing-stock mortality on timberland, 18.60 percent; and growing-stock removals on timberland, 32.77 percent. These sampling error estimates are higher than those for the last periodic inventory completed in 1998 (i.e., 1.59 percent for timberland area and 2.18 percent for growing-stock volume) because of the smaller sample sizes. Therefore, caution should be used when comparing the results of this inventory with those of the past. Additionally, all conclusions based on this inventory must be tempered by the sampling errors that correspond with all estimates from this inventory.

Inventory Methods

Since the 1998 inventory of Indiana, several changes have been made in NCFIA inventory methods to improve the quality of the inventory as well as meet increasing demands for timely forest resource information. The most significant difference between inventories was the change from periodic inventories to annual inventories. Historically, NCFIA periodically inventoried each State on a cycle that averaged about 12 years. However, the need for timely and consistent data across large geographical regions, combined with national legislative mandates, resulted in NCFIA's implementation of an annual inventory system. Indiana was one of the first States in the North Central region, and in the Nation, to be inventoried with this new system, beginning with the 1999 inventory.

With an annual inventory system, about one-fifth of all field plots are measured each year. After 5 years, an entire inventory cycle will be completed and summarized in a comprehensive report (Woodall *et al.* 2005). After the first 5 years, NCFIA will report and analyze results as a moving average. For example, NCFIA will be able to generate a report based on inventory results for 1999 through 2003 or for 2002 through 2006. Other significant changes between inventories include the implementation of new remote sensing technology, the implementation of a new sampling design and plot configuration, and the gathering of additional remotely sensed and field data. The advent of remote sensing technology since the previous inventory in 1998 has allowed NCFIA to use classifications of Multi-Resolution Land Characterization (MRLC) data and other available remote sensing products to stratify the total area of the State and to improve the precision of estimates.

New algorithms were used in the annual inventory system (1999-present) to assign forest type and stand-size class to each condition observed on a plot. These algorithms are being used nationwide by FIA to provide consistency among States and will be used to reassign the forest type and stand-size class of every plot measured in the 1998 inventory when it is updated. This will be done so that changes in forest type and stand-size class will more accurately reflect actual changes in the forest and not changes in how values are computed. The list of recognized forest types, grouping of these forest types for reporting purposes, models used to assign stocking values to individual trees, definition of non-stocked, and names given to the forest types changed with the new algorithms. As a result, comparisons between the published 2004 inventory results and those published for the 1998 inventory may not be valid. For additional details about algorithms used in both inventories, please contact NCFIA.

Inventory Phases

The 2004 Indiana survey was based on a three-phase inventory. The first phase used classified satellite imagery to stratify the State

and aerial photographs to select plots for field measurement. The second phase measured the traditional FIA suite of mensurational variables, and the third phase measured a suite of variables related to the health of the forest.

The only land that could not be sampled was (1) private land where field personnel could not obtain permission from the owner to measure the field plot and (2) plots that could not be accessed because of a hazard or danger to field personnel. The methods used in preparing this report make the necessary adjustments to account for sites where access was denied or hazardous.

Phase 1

The 2004 inventory used a classification of satellite imagery. FIA used the imagery to form two initial strata—forest and nonforest. Pixels within 60 m (2 pixel widths) of a forest/nonforest edge formed two additional strata—forest/nonforest and nonforest/forest. Forest pixels within 60 m on the forest side of a forest/nonforest boundary were classified into a forest edge stratum. Pixels within 60 m of the boundary on the nonforest side were classified into a nonforest edge stratum. The estimated population total for a variable is the sum across all strata of the product of each stratum's estimated area and the variable's estimated mean per unit area for the stratum.

Phase 2

Phase 2 of the inventory consisted of the measurement of the annual sample of field plots in Indiana. Current FIA precision standards for annual inventories require a sampling intensity of one plot for approximately every 6,000 acres. FIA has divided the entire area of the United States into non-overlapping hexagons, each of which contains 5,937 acres (McRoberts 1999). An array of field plots was established by selecting one plot from each hexagon based on the following rules: (1) if a Forest Health Monitoring (FHM) plot (Mangold 1998) fell within a hexagon, it was selected; (2) if no FHM plot fell within a hexagon, the existing NCFIA plot from the 1998 inventory nearest the hexagon center was selected; and (3) if neither FHM nor existing NCFIA plots fell within the hexagon, a new NCFIA plot was established in the hexagon (McRoberts 1999). This array of plots is designated the Federal base sample and is considered an equal probability sample; its measurement in Indiana is funded by the Federal government.

The total Federal base sample of plots was systematically divided into five interpenetrating, nonoverlapping subsamples or panels. Each year the plots in a single panel are measured, and panels are selected on a 5-year, rotating basis (McRoberts 1999). For estimation purposes, the measurement of each panel of plots may be considered an independent systematic sample of all land in a State. Field crews measure vegetation on plots forested at the time of the last inventory and on plots currently classified as forest by trained photointerpreters using aerial photos or digital orthoquads.

Phase 3

NCFIA has two categories of field plot measurements—phase 2 field plots (standard FIA plots) and phase 3 plots (forest health plots) to optimize our ability to collect data when available for measurement. Both types of plot are uniformly distributed both geographically and temporally. Phase 3 plots are measured with the full suite of FHM vegetative and health variables (Mangold 1998) collected as well as the full suite of measures associated with phase 2 plots. Phase 3 plots must be measured between June 1 and August 30 to accommodate the additional measurement of nonwoody understory vegetation, ground cover, soils, and other variables. The 2000–2004 annual inventory results includes 948 phase 2 forested plots and 59 phase 3 plots.

The new national FIA plot configuration (fig. 8) was first used for data collection in Indiana in 1999, the first annual inventory year. This design was also used in the 2000–2004 panels and will be used in subsequent years. The national plot configuration requires mapping forest conditions on each plot. Due to the small sample size (20 percent) each year, precision associated with change factors such as mortality will be relatively low.

The overall plot layout for the new configuration consists of four subplots. The centers of subplots 2, 3, and 4 are located 120 feet from

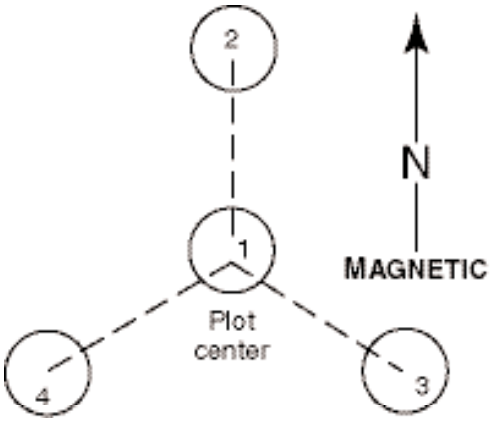

Figure 8.—Current NCFIA field plot configuration.

the center of subplot 1. The azimuths to subplots 2, 3, and 4 are 0, 120, and 240 degrees, respectively from the center of subplot 1. The center of the new plot is located at the same point as the center of the previous plot if a previous plot existed at the same location. Trees with a d.b.h. 5 inches and larger are measured on a 24-foot-radius (1/24 acre) circular subplot. Trees with a d.b.h. 1 inch and larger but less than 5 inches are measured on a 6.8-foot-radius (1/300 acre) circular microplot located 12 feet east of the center of each of the four subplots. Seedlings (trees less than 1 inch d.b.h. and at least 6 inches tall (softwood species) or 12 inches tall (hardwood species) are counted but not individually measured on this same microplot. Forest conditions that occur on any of the four subplots are recorded. Factors that differentiate forest conditions are changes in forest type, stand-size class, land use, ownership, and density. Each condition that occurs anywhere on any of the subplots is identified, described, and mapped if the area of the condition meets or exceeds 1 acre in size.

Field plot measurements are combined with phase 1 estimates in the compilation process and table production. The number of published annual inventory tables is currently 12. However, at www.ncrs.fed.us/4801/fiadb/index.htm, other tabular data can be generated.

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TABLE TITLES

TABLES

Table 1. -- Area of forest land by forest type group, forest type, and owner category, Indiana, 2000-2004

(In thousand acres)

Forest type group/ forest type	Owner category			
	All owners	Public	Private	Unidentified owner
Softwood type groups				
White / red / jack pine group				
Red pine	15.5	4.6	10.8	- -
Eastern white pine	31.5	11.6	19.9	- -
All forest types	46.9	16.3	30.7	- -
Loblolly / shortleaf pine group				
Shortleaf pine	12.8	12.8	- -	- -
Virginia pine	19.8	4.2	15.6	- -
All forest types	32.6	16.9	15.6	- -
Pinyon / juniper group				
Eastern redcedar	38.8	8.3	30.5	- -
All forest types	38.8	8.3	30.5	- -
Exotic softwoods group				
Scotch pine	6.2	- -	6.2	- -
All forest types	6.2	- -	6.2	- -
All softwood groups	124.6	41.5	83.1	- -
Hardwood type groups				
Oak / pine group				
White pine / red oak / white ash	20.6	4.0	16.6	- -
Eastern redcedar / hardwood	85.8	9.7	76.1	- -
Shortleaf pine / oak	12.6	8.0	4.6	- -
Virginia pine / southern red oak	18.5	7.7	10.8	- -
Other pine / hardwood	1.4	- -	1.4	- -
All forest types	139.0	29.4	109.6	- -
Oak / hickory group				
Oak / hickory group	0.8	- -	0.8	- -
Chestnut oak	63.9	19.5	44.4	- -
White oak / red oak / hickory	1,280.9	239.4	1,041.4	- -
White oak	194.6	63.9	130.7	- -
Northern red oak	32.9	6.7	26.3	- -
Yellow-poplar / white oak / red oak	218.9	23.0	195.9	- -
Sassafras / persimmon	142.4	11.0	131.4	- -
Sweetgum / yellow-poplar	81.7	11.4	70.3	- -
Bur oak	6.0	- -	6.0	- -
Scarlet oak	10.1	4.0	6.2	- -
Yellow-poplar	71.4	9.5	62.0	- -
Black walnut	66.9	5.3	61.6	- -
Black locust	3.1	- -	3.1	- -
Chestnut oak / black oak / scarlet oak	45.6	18.7	26.9	- -
Red maple / oak	59.0	18.6	40.4	- -
Mixed upland hardwoods	442.1	44.7	397.4	- -
All forest types	2,720.3	475.7	2,244.7	- -

(Table 1 continued on next page)

(Table 1 continued)

Forest type group/ forest type	Owner category			
	All owners	Public	Private	Unidentified owner
Hardwood type groups				
Oak / gum / cypress group				
Swamp chestnut oak / cherrybark oak	5.1	- -	5.1	- -
Sweetgum / Nuttall oak / willow oak	24.0	5.9	18.1	- -
Sweetbay / swamp tupelo / red maple	22.4	- -	22.4	- -
All forest types	51.5	5.9	45.6	- -
Elm / ash / cottonwood group				
Black ash / American elm / red maple	22.0	6.8	15.2	- -
River birch / sycamore	112.5	21.9	90.6	- -
Cottonwood	50.2	7.9	42.3	- -
Willow	9.8	- -	9.8	- -
Sycamore / pecan / American elm	50.0	17.1	33.0	- -
Sugarberry / hackberry / elm / green ash	138.1	2.6	135.5	- -
Silver maple / American elm	71.2	3.4	67.8	- -
Red maple / lowland	0.9	- -	0.9	- -
Cottonwood / willow	29.7	3.4	26.3	- -
All forest types	484.5	63.2	421.4	- -
Maple / beech / birch group				
Maple / beech / birch group	1.1	- -	1.1	- -
Sugar maple / beech / yellow birch	590.3	73.1	517.2	- -
Black cherry	42.4	13.7	28.7	- -
Cherry / ash / yellow-poplar	257.4	39.7	217.6	- -
Hard maple / basswood	139.4	7.5	131.9	- -
Elm / ash / locust	33.0	5.9	27.0	- -
All forest types	1,063.5	140.0	923.5	- -
Aspen / birch group				
Aspen	8.5	7.0	1.5	- -
All forest types	8.5	7.0	1.5	- -
All hardwood groups	4,467.3	721.0	3,746.2	- -
Nonstocked	17.3	- -	17.3	- -
All forest groups	4,609.1	762.5	3,846.6	- -

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 0.1 thousand acres. Columns and rows may not add to their totals due to rounding.

Table 2. -- Area of timberland by major forest type group, stand origin, and owner category, Indiana, 2000-2004

(In thousand acres)

Major forest type group and stand origin	Owner category			
	All owners	Public	Private	Unidentified owner
Softwood type groups				
Natural	42.3	1.3	41.0	- -
Planted	68.6	26.5	42.1	- -
All softwood types	110.9	27.8	83.1	- -
Hardwood type groups				
Natural	4,245.4	588.4	3,657.0	- -
Planted	94.2	23.4	70.8	- -
All hardwood types	4,339.5	611.7	3,727.8	- -
Nonstocked	17.3	- -	17.3	- -
All groups	4,467.7	639.6	3,828.1	- -

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 0.1 thousand acres. Columns and rows may not add to their totals due to rounding.

Table 3. -- Area of timberland by forest type group, forest type, and stand-size class, Indiana, 2000-2004

(In thousand acres)

Forest type group/ forest type	Stand-size class				
	All stands	Sawtimber	Poletimber	Sapling-seedling	Non-stocked
Softwood type groups					
White / red / jack pine group					
Red pine	15.5	9.3	6.2	- -	- -
Eastern white pine	24.8	24.8	- -	- -	- -
All forest types	40.3	34.1	6.2	- -	- -
Loblolly / shortleaf pine group					
Shortleaf pine	12.8	12.8	- -	- -	- -
Virginia pine	19.8	10.2	4.8	4.8	- -
All forest types	32.6	23.0	4.8	4.8	- -
Pinyon / juniper group					
Eastern redcedar	31.8	12.2	11.9	7.8	- -
All forest types	31.8	12.2	11.9	7.8	- -
Exotic softwoods group					
Scotch pine	6.2	- -	- -	6.2	- -
All forest types	6.2	- -	- -	6.2	- -
All softwood groups	110.9	69.2	22.9	18.8	- -
Hardwood type groups					
Oak / pine group					
White pine / red oak / white ash	20.6	14.6	6.0	- -	- -
Eastern redcedar / hardwood	77.9	29.8	31.8	16.2	- -
Shortleaf pine / oak	8.7	8.7	- -	- -	- -
Virginia pine / southern red oak	18.5	11.2	7.3	- -	- -
Other pine / hardwood	1.4	- -	- -	1.4	- -
All forest types	127.0	64.3	45.1	17.6	- -
Oak / hickory group					
Oak / hickory group	0.8	0.8	- -	- -	- -
Chestnut oak	53.5	53.5	- -	- -	- -
White oak / red oak / hickory	1,251.4	1,092.4	119.7	39.2	- -
White oak	185.4	163.5	21.9	- -	- -
Northern red oak	32.9	29.9	- -	3.0	- -
Yellow-poplar / white oak / red oak	218.9	172.8	22.8	23.3	- -
Sassafras / persimmon	137.9	72.4	39.7	25.8	- -
Sweetgum / yellow-poplar	79.1	63.2	7.9	8.0	- -
Bur oak	6.0	6.0	- -	- -	- -
Scarlet oak	10.1	10.1	- -	- -	- -
Yellow-poplar	71.4	33.7	30.5	7.2	- -
Black walnut	72.5	47.0	20.7	4.8	- -
Black locust	3.1	- -	- -	3.1	- -
Chestnut oak / black oak / scarlet oak	37.7	25.4	12.3	- -	- -
Red maple / oak	59.0	28.6	16.7	13.7	- -
Mixed upland hardwoods	427.7	225.5	149.1	53.1	- -
All forest types	2,647.6	2,025.0	441.5	181.1	- -

(Table 3 continued on next page)

(Table 3 continued)

Forest type group/ forest type	Stand-size class				
	All stands	Sawtimber	Poletimber	Sapling-seedling	Non-stocked
Hardwood type groups					
Oak / gum / cypress group					
Swamp chestnut oak / cherrybark oak	5.1	5.1	- -	- -	- -
Sweetgum / Nuttall oak / willow oak	24.0	17.7	- -	6.4	- -
Sweetbay / swamp tupelo / red maple	22.4	20.8	1.6	- -	- -
All forest types	51.5	43.5	1.6	6.4	- -
Elm / ash / cottonwood group					
Black ash / American elm / red maple	22.0	14.0	6.9	1.1	- -
River birch / sycamore	107.3	70.2	31.4	5.8	- -
Cottonwood	46.8	41.4	2.0	3.4	- -
Willow	9.8	3.7	4.6	1.5	- -
Sycamore / pecan / American elm	48.9	31.6	10.6	6.7	- -
Sugarberry / hackberry / elm / green ash	135.5	96.7	21.1	17.7	- -
Silver maple / American elm	71.2	59.6	11.6	- -	- -
Red maple / lowland	0.9	- -	0.9	- -	- -
Cottonwood / willow	29.7	25.8	- -	4.0	- -
All forest types	472.1	342.8	89.2	40.2	- -
Maple / beech / birch group					
Maple / beech / birch group	1.1	1.1	- -	- -	- -
Sugar maple / beech / yellow birch	577.5	507.2	48.9	21.3	- -
Black cherry	36.7	15.8	12.8	8.0	- -
Cherry / ash / yellow-poplar	252.2	126.3	86.9	39.1	- -
Hard maple / basswood	137.0	121.4	13.8	1.8	- -
Elm / ash / locust	33.0	9.4	19.8	3.8	- -
All forest types	1,037.4	781.3	182.2	74.0	- -
Aspen / birch group					
Aspen	3.9	2.3	- -	1.5	- -
All forest types	3.9	2.3	- -	1.5	- -
All hardwood groups	4,339.5	3,259.2	759.6	320.8	- -
Nonstocked	17.3	- -	- -	- -	17.3
All forest groups	4,467.7	3,328.4	782.4	339.6	17.3

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 0.1 thousand acres. Columns and rows may not add to their totals due to rounding.

Table 4. -- Net volume of all live trees on forest land by species group, species, and owner category, Indiana, 2000-2004

(In thousand cubic feet)

Species group/ species	Owner category			
	All owners	Public	Private	Unidentified owner
Softwoods				
Loblolly and shortleaf pines				
Shortleaf pine	36,168	31,529	4,639	- -
All species	36,168	31,529	4,639	- -
Other yellow pines				
Scotch pine	4,281	- -	4,281	- -
Virginia pine	43,603	12,840	30,763	- -
All species	47,884	12,840	35,044	- -
Eastern white and red pines				
Red pine	28,429	9,139	19,290	- -
Eastern white pine	86,924	29,391	57,533	- -
All species	115,353	38,530	76,823	- -
Jack pine				
Jack pine	1,905	233	1,673	- -
All species	1,905	233	1,673	- -
Cypress				
Baldcypress			- -	- -
All species			- -	- -
Other eastern softwoods				
Eastern redcedar	102,776	17,834	84,941	- -
Tamarack (native)	851	851	- -	- -
Norway spruce	4,601	4,601	- -	- -
All species	108,227	23,286	84,941	- -
Total softwoods	309,538	106,418	203,120	- -
Hardwoods				
Select white oaks				
White oak	741,938	217,268	524,670	- -
Swamp white oak	19,749	122	19,627	- -
Bur oak	26,152	1,325	24,827	- -
Swamp chestnut oak	1,221	- -	1,221	- -
Chinkapin oak	103,569	14,444	89,125	- -
All species	892,629	233,159	659,470	- -
Select red oaks				
Cherrybark oak	3,030	- -	3,030	- -
Northern red oak	438,929	112,416	326,513	- -
Shumard oak	1,809	1,809	- -	- -
All species	443,768	114,226	329,542	- -
Other white oaks				
Chestnut oak	147,062	57,309	89,753	- -
Post oak	6,407	5,459	947	- -
All species	153,469	62,769	90,701	- -

(Table 4 continued on next page)

(Table 4 continued)

Species group/ species	Owner category			
	All owners	Public	Private	Unidentified owner
Hardwoods				
Other red oaks				
Scarlet oak	56,046	27,266	28,779	- -
Shingle oak	43,075	2,511	40,564	- -
Pin oak	162,089	30,378	131,711	- -
Black oak	550,150	107,509	442,642	- -
All species	811,360	167,664	643,696	- -
Hickory				
Water hickory	1,989	- -	1,989	- -
Bitternut hickory	179,805	15,456	164,350	- -
Pignut hickory	306,310	73,265	233,045	- -
Pecan	258	- -	258	- -
Shellbark hickory	2,818	- -	2,818	- -
Shagbark hickory	289,601	30,723	258,878	- -
Black hickory	951	- -	951	- -
Mockernut hickory	32,472	7,947	24,525	- -
All species	814,204	127,390	686,814	- -
Yellow birch				
Yellow birch			- -	- -
All species			- -	- -
Hard maple				
Black maple	356	- -	356	- -
Sugar maple	875,915	123,439	752,476	- -
All species	876,270	123,439	752,831	- -
Soft maple				
Red maple	288,638	42,300	246,339	- -
Silver maple	183,456	16,015	167,440	- -
All species	472,094	58,315	413,779	- -
Beech				
American beech	267,500	44,230	223,270	- -
All species	267,500	44,230	223,270	- -
Sweetgum				
Sweetgum	103,262	29,890	73,372	- -
All species	103,262	29,890	73,372	- -
Tupelo and blackgum				
Blackgum	63,553	8,982	54,570	- -
All species	63,553	8,982	54,570	- -
Ash				
White ash	515,070	66,654	448,417	- -
Black ash	5,259	1,373	3,886	- -
Green ash	162,670	12,939	149,731	- -
Blue ash	13,561	- -	13,561	- -
All species	696,560	80,965	615,595	- -

(Table 4 continued on next page)

(Table 4 continued)

Species group/ species	Owner category			
	All owners	Public	Private	Unidentified owner
Hardwoods				
Cottonwood and aspen				
Eastern cottonwood	246,238	34,820	211,417	- -
Bigtooth aspen	31,845	17,350	14,494	- -
Swamp cottonwood	195	195	- -	- -
Quaking aspen	3,824	409	3,416	- -
All species	282,102	52,775	229,327	- -
Basswood				
American basswood	131,908	7,765	124,142	- -
All species	131,908	7,765	124,142	- -
Yellow-poplar				
Yellow-poplar	985,012	172,937	812,075	- -
All species	985,012	172,937	812,075	- -
Black walnut				
Black walnut	246,120	19,625	226,495	- -
All species	246,120	19,625	226,495	- -
Other eastern soft hardwoods				
Boxelder	47,667	1,740	45,927	- -
Ohio buckeye	8,635	935	7,700	- -
European Alder	591	591	- -	- -
River birch	13,566	613	12,952	- -
Northern catalpa	13,630	- -	13,630	- -
Sugarberry	927	- -	927	- -
Hackberry	114,999	3,046	111,953	- -
Butternut	570	280	289	- -
American sycamore	374,729	45,296	329,433	- -
Black cherry	239,880	33,484	206,395	- -
Black willow	25,365	484	24,881	- -
Sassafras	182,649	26,695	155,954	- -
Winged elm	838	400	438	- -
American elm	139,803	8,904	130,900	- -
Siberian elm	3,098	- -	3,098	- -
Slippery elm	86,424	7,787	78,637	- -
All species	1,253,371	130,255	1,123,116	- -
Other eastern hard hardwoods				
Flowering dogwood	4,647	1,108	3,539	- -
Common persimmon	15,381	2,250	13,130	- -
Honeylocust	52,008	5,389	46,619	- -
Kentucky coffeetree	4,101	- -	4,101	- -
White mulberry	1,659	- -	1,659	- -
Red mulberry	10,546	217	10,329	- -
Black locust	58,705	7,382	51,323	- -
All species	147,046	16,346	130,700	- -

(Table 4 continued on next page)

(Table 4 continued)

Species group/ species	Owner category			
	All owners	Public	Private	Unidentified owner
Hardwoods				
Eastern noncommercial hardwoods				
Ailanthus	4,199	36	4,162	- -
Serviceberry spp.		- -	- -	- -
Pawpaw		- -	- -	- -
American hornbeam, musclewood	1,118	91	1,027	- -
Eastern redbud	7,015	609	6,406	- -
Hawthorn spp.	4,570	54	4,516	- -
Cockspur hawthorn		- -		- -
Osage-orange	30,591	460	30,131	- -
Apple spp.	1,370	51	1,319	- -
Eastern hophornbeam	4,673	240	4,433	- -
Cherry and plum spp.	64	64	- -	- -
Chokecherry		- -		- -
American plum	51	- -	51	- -
Other or unknown tree	81	- -	81	- -
All species	53,732	1,606	52,126	- -
Total hardwoods	8,693,959	1,452,337	7,241,622	- -
All species groups	9,003,497	1,558,755	7,444,742	- -

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates that the volume rounds to less than 1 thousand cubic feet. Columns and rows may not add to their totals due to rounding.

Table 5. -- Net volume of all live trees and salvable dead trees on timberland by class of timber and softwood/hardwood species category, Indiana, 2000-2004

(In thousand cubic feet)

Class of timber	All species	Softwood species	Hardwood species
Live trees			
Growing-stock trees			
Sawtimber			
Saw log portion	5,519,474	186,840	5,332,633
Upper stem portion	679,903	20,426	659,477
Total	6,199,377	207,266	5,992,110
Poletimber	1,606,056	68,859	1,537,197
All growing-stock trees	7,805,433	276,125	7,529,307
Cull trees			
Rough trees[1]			
Sawtimber size	560,534	4,951	555,583
Poletimber size	202,794	4,972	197,822
Total	763,328	9,923	753,405
Rotten trees[1]			
Sawtimber size	102,941	207	102,734
Poletimber size	14,581	99	14,482
Total	117,522	306	117,216
All live cull trees	880,850	10,229	870,621
All live trees	8,686,283	286,355	8,399,928
Salvable dead trees			
Sawtimber size	50,317	5,578	44,739
Poletimber size	54,314	5,905	48,409
All salvable dead trees	104,631	11,483	93,148
All classes	8,790,914	297,838	8,493,076

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates that the volume rounds to less than 1 thousand cubic feet. Columns and rows may not add to their totals due to rounding.

[1] Includes noncommercial species.

Table 6. -- Net volume of growing stock on timberland by forest type group, forest type, and softwood/hardwood species category, Indiana, 2000-2004

(In thousand cubic feet)

Forest type group/ forest type	All species	Softwood species	Hardwood species
Softwood type groups			
White / red / jack pine group			
Red pine	40,659	27,516	13,143
Eastern white pine	70,061	56,343	13,718
All forest types	110,721	83,859	26,861
Loblolly / shortleaf pine group			
Shortleaf pine	30,704	24,140	6,564
Virginia pine	33,406	27,210	6,196
All forest types	64,111	51,350	12,760
Pinyon / juniper group			
Eastern redcedar	21,004	14,052	6,952
All forest types	21,004	14,052	6,952
Exotic softwoods group			
Scotch pine	2,127	2,070	58
All forest types	2,127	2,070	58
All softwood groups	197,962	151,331	46,631
Hardwood type groups			
Oak / pine group			
White pine / red oak / white ash	26,503	12,704	13,799
Eastern redcedar / hardwood	86,739	30,596	56,143
Shortleaf pine / oak	18,448	5,110	13,339
Virginia pine / southern red oak	18,130	5,193	12,937
Other pine / hardwood		- -	- -
All forest types	149,820	53,603	96,217

(Table 6 continued on next page)

(Table 6 continued)

Forest type group/ forest type	All species	Softwood species	Hardwood species
Hardwood type groups			
Oak / hickory group			
Oak / hickory group	1,287	- -	1,287
Chestnut oak	108,259	1,280	106,979
White oak / red oak / hickory	2,408,888	11,440	2,397,448
White oak	355,439	5,211	350,228
Northern red oak	87,012	- -	87,012
Yellow-poplar / white oak / red oak	478,205	10,265	467,940
Sassafras / persimmon	175,745	2,047	173,698
Sweetgum / yellow-poplar	182,900	340	182,560
Bur oak	5,501	- -	5,501
Scarlet oak	22,979	- -	22,979
Yellow-poplar	167,723	3,690	164,033
Black walnut	79,324	- -	79,324
Chestnut oak / black oak / scarlet oak	47,964	78	47,886
Red maple / oak	95,567	96	95,472
Mixed upland hardwoods	432,913	8,650	424,263
All forest types	4,649,707	43,097	4,606,609
Oak / gum / cypress group			
Swamp chestnut oak / cherrybark oak	10,704	- -	10,704
Sweetgum / Nuttall oak / willow oak	32,374	- -	32,374
Sweetbay / swamp tupelo / red maple	46,356	- -	46,356
All forest types	89,435	- -	89,435
Elm / ash / cottonwood group			
Black ash / American elm / red maple	34,949	851	34,097
River birch / sycamore	182,182	754	181,428
Cottonwood	143,799	1,381	142,418
Willow	11,179	- -	11,179
Sycamore / pecan / American elm	88,635	- -	88,635
Sugarberry / hackberry / elm / green ash	217,526	717	216,809
Silver maple / American elm	136,477	- -	136,477
Red maple / lowland	1,963	- -	1,963
Cottonwood / willow	66,557	7,000	59,557
All forest types	883,265	10,704	872,562

(Table 6 continued on next page)

(Table 6 continued)

Forest type group/ forest type	All species	Softwood species	Hardwood species
Hardwood type groups			
Maple / beech / birch group			
Maple / beech / birch group	1,755	- -	1,755
Sugar maple / beech / yellow birch	1,043,606	10,236	1,033,370
Black cherry	29,243	150	29,093
Cherry / ash / yellow-poplar	369,301	2,741	366,559
Hard maple / basswood	333,792	4,210	329,582
Elm / ash / locust	39,458	- -	39,458
All forest types	1,817,154	17,338	1,799,817
Aspen / birch group			
Aspen	16,242	53	16,189
All forest types	16,242	53	16,189
All hardwood groups	7,605,623	124,795	7,480,828
Nonstocked	1,848	- -	1,848
All forest groups	7,805,433	276,125	7,529,307

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates that the volume rounds to less than 1 thousand cubic feet. Columns and rows may not add to their totals due to rounding.

Table 7. -- Net volume of growing stock on timberland by species group, species, and diameter class, Indiana, 2000-2004

(In thousand cubic feet)

Species group/ species	All classes	Diameter class (inches at breast height)									
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0+
Softwoods											
Loblolly and shortleaf pines											
Shortleaf pine	29,027	821	2,612	4,415	7,534	8,058	3,335	2,252	- -	- -	- -
All species	29,027	821	2,612	4,415	7,534	8,058	3,335	2,252	- -	- -	- -
Other yellow pines											
Scotch pine	3,860	1,209	546	1,679	426	- -	- -	- -	- -	- -	- -
Virginia pine	42,698	1,607	3,267	6,191	12,915	7,445	5,968	5,304	- -	- -	- -
All species	46,557	2,816	3,813	7,870	13,341	7,445	5,968	5,304	- -	- -	- -
Eastern white and red pines											
Red pine	28,429	1,217	6,726	13,572	2,426	4,488	- -	- -	- -	- -	- -
Eastern white pine	76,354	2,216	5,225	5,949	17,355	7,124	9,142	8,786	2,310	18,246	- -
All species	104,783	3,433	11,951	19,522	19,781	11,612	9,142	8,786	2,310	18,246	- -
Jack pine											
Jack pine	1,673	88	464	671	450	- -	- -	- -	- -	- -	- -
All species	1,673	88	464	671	450	- -	- -	- -	- -	- -	- -
Cypress											
Baldcypress		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
All species		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Other eastern softwoods											
Eastern redcedar	88,633	17,855	23,936	17,510	8,267	14,024	6,146	895	- -	- -	- -
Tamarack (native)	851	- -	851	- -	- -	- -	- -	- -	- -	- -	- -
Norway spruce	4,601	58	160	- -	- -	- -	1,275	- -	- -	3,108	- -
All species	94,085	17,913	24,947	17,510	8,267	14,024	7,421	895	- -	3,108	- -
Total softwoods	276,125	25,072	43,787	49,988	49,372	41,139	25,867	17,236	2,310	21,354	- -
Hardwoods											
Select white oaks											
White oak	669,104	9,276	17,896	31,603	41,082	65,757	100,569	108,497	79,958	166,101	48,366
Swamp white oak	19,749	169	657	257	631	3,233	1,079	1,531	4,547	7,646	- -
Bur oak	24,167	810	925	1,382	479	1,581	2,268	1,698	4,145	10,879	- -
Swamp chestnut oak	1,221	- -	- -	- -	- -	- -	1,221	- -	- -	- -	- -
Chinkapin oak	89,735	4,304	7,606	9,840	15,778	7,980	8,445	8,225	6,090	21,467	- -
All species	803,976	14,558	27,084	43,081	57,970	78,552	113,581	119,951	94,741	206,092	48,366
Select red oaks											
Cherrybark oak	3,030	- -	- -	- -	656	853	- -	1,522	- -	- -	- -
Northern red oak	396,971	6,285	10,240	15,982	25,292	41,424	43,496	52,339	50,324	104,349	47,238
Shumard oak	1,809	- -	- -	- -	- -	- -	744	1,065	- -	- -	- -
All species	401,810	6,285	10,240	15,982	25,948	42,277	44,240	54,926	50,324	104,349	47,238

(Table 7 continued)

Species group/ species	All classes	Diameter class (inches at breast height)									
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0+
Hardwoods											
Other white oaks											
Chestnut oak	112,573	1,269	2,053	6,551	14,690	26,894	22,680	11,411	17,387	9,637	- -
Post oak	6,407	100	518	1,069	2,093	692	- -	1,935	- -	- -	- -
All species	118,979	1,368	2,571	7,620	16,783	27,587	22,680	13,345	17,387	9,637	- -
Other red oaks											
Scarlet oak	48,412	144	1,574	1,945	2,807	10,681	12,280	8,400	2,784	7,797	- -
Shingle oak	42,461	1,780	3,588	4,847	2,900	719	3,395	5,166	4,051	8,958	7,057
Pin oak	154,777	3,284	3,742	8,121	6,771	13,086	11,827	15,642	11,513	74,220	6,571
Black oak	487,695	8,406	14,565	24,001	32,992	56,568	57,059	56,735	62,169	125,063	50,136
All species	733,345	13,613	23,469	38,915	45,470	81,054	84,562	85,944	80,516	216,038	63,764
Hickory											
Water hickory	877	- -	- -	- -	- -	877	- -	- -	- -	- -	- -
Bitternut hickory	167,490	5,619	12,082	18,991	25,500	26,296	22,407	31,064	9,257	10,626	5,647
Pignut hickory	295,203	8,372	20,943	32,381	47,130	55,521	38,527	39,937	23,777	28,616	- -
Pecan	258	82	176	- -	- -	- -	- -	- -	- -	- -	- -
Shellbark hickory	2,818	- -	- -	- -	752	- -	- -	2,066	- -	- -	- -
Shagbark hickory	276,359	12,428	23,056	35,144	38,940	33,827	51,150	38,965	22,974	19,874	- -
Black hickory	951	- -	- -	- -	- -	951	- -	- -	- -	- -	- -
Mockernut hickory	30,770	1,051	1,798	1,958	2,998	5,717	8,863	8,384	- -	- -	- -
All species	774,726	27,552	58,056	88,474	115,320	123,189	120,946	120,416	56,009	59,116	5,647
Hard maple											
Black maple	356	110	245	- -	- -	- -	- -	- -	- -	- -	- -
Sugar maple	743,554	61,438	69,556	95,966	93,721	105,682	108,206	84,213	42,565	67,874	14,333
All species	743,909	61,548	69,801	95,966	93,721	105,682	108,206	84,213	42,565	67,874	14,333
Soft maple											
Red maple	235,311	18,837	28,992	31,656	23,522	21,983	21,512	23,612	22,992	35,683	6,522
Silver maple	142,338	7,913	14,017	17,855	21,437	8,609	15,067	10,000	18,089	18,418	10,934
All species	377,649	26,750	43,009	49,511	44,959	30,592	36,579	33,611	41,082	54,101	17,455
Beech											
American beech	192,139	6,690	10,317	8,820	13,895	21,501	23,859	27,690	24,258	49,668	5,442
All species	192,139	6,690	10,317	8,820	13,895	21,501	23,859	27,690	24,258	49,668	5,442
Sweetgum											
Sweetgum	98,009	5,241	6,835	10,091	16,685	16,578	12,673	13,280	12,665	3,962	- -
All species	98,009	5,241	6,835	10,091	16,685	16,578	12,673	13,280	12,665	3,962	- -
Tupelo and blackgum											
Blackgum	56,482	7,785	6,792	7,285	3,549	5,304	9,683	1,701	3,854	10,529	- -
All species	56,482	7,785	6,792	7,285	3,549	5,304	9,683	1,701	3,854	10,529	- -

(Table 7 continued)

Species group/ species	All classes	Diameter class (inches at breast height)									
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0+
Hardwoods											
Ash											
White ash	437,522	21,140	29,801	46,315	41,180	58,933	64,139	61,959	42,288	61,402	10,365
Black ash	5,011	634	1,577	1,461	549	790	- -	- -	- -	- -	- -
Green ash	136,342	6,918	12,108	20,100	14,755	18,853	10,417	22,560	11,972	18,661	- -
Blue ash	7,240	729	641	728	1,138	817	1,203	- -	1,984	- -	- -
All species	586,116	29,421	44,127	68,603	57,623	79,393	75,758	84,519	56,244	80,063	10,365
Cottonwood and aspen											
Eastern cottonwood	233,851	1,640	1,518	5,434	7,360	10,726	16,052	19,782	20,414	88,587	62,336
Bigtooth aspen	26,824	538	2,603	1,435	4,034	5,841	1,295	7,687	3,390	- -	- -
Quaking aspen	3,271	1,408	381	- -	- -	- -	1,483	- -	- -	- -	- -
All species	263,946	3,586	4,503	6,869	11,394	16,567	18,830	27,470	23,804	88,587	62,336
Basswood											
American basswood	113,415	5,406	10,039	9,599	13,030	7,568	12,811	12,896	10,864	31,202	- -
All species	113,415	5,406	10,039	9,599	13,030	7,568	12,811	12,896	10,864	31,202	- -
Yellow-poplar											
Yellow-poplar	947,573	23,957	38,487	71,907	92,594	94,248	112,408	101,831	91,590	291,262	29,287
All species	947,573	23,957	38,487	71,907	92,594	94,248	112,408	101,831	91,590	291,262	29,287
Black walnut											
Black walnut	203,532	9,703	18,118	28,753	37,289	42,936	31,133	23,247	10,007	2,346	- -
All species	203,532	9,703	18,118	28,753	37,289	42,936	31,133	23,247	10,007	2,346	- -
Other eastern soft hardwoods											
Boxelder	23,771	5,014	4,433	4,021	4,196	3,532	2,576	- -	- -	- -	- -
Ohio buckeye	5,914	2,129	1,465	1,623	697	- -	- -	- -	- -	- -	- -
European Alder	480	172	77	231	- -	- -	- -	- -	- -	- -	- -
River birch	12,213	971	1,080	1,378	1,639	4,012	- -	- -	- -	3,133	- -
Northern catalpa	6,081	165	767	- -	1,100	703	1,177	- -	2,169	- -	- -
Sugarberry	927	98	- -	322	507	- -	- -	- -	- -	- -	- -
Hackberry	97,803	7,538	9,146	13,390	10,270	15,650	9,813	9,059	3,698	11,004	8,236
Butternut	491	201	- -	289	- -	- -	- -	- -	- -	- -	- -
American sycamore	332,832	3,942	9,109	16,927	17,789	29,570	33,363	28,143	42,501	102,429	49,060
Black cherry	189,635	18,016	24,759	33,451	26,244	22,750	15,382	16,956	12,935	19,141	- -
Black willow	20,448	1,972	3,155	1,263	796	3,509	4,555	1,665	- -	3,532	- -
Sassafras	134,555	18,880	24,447	20,087	21,058	20,995	12,672	10,297	6,120	- -	- -
Winged elm	644	644	- -	- -	- -	- -	- -	- -	- -	- -	- -
American elm	111,202	22,293	20,508	19,820	13,631	8,431	12,934	3,824	2,153	7,609	- -
Siberian elm	3,043	54	- -	- -	- -	- -	- -	2,989	- -	- -	- -
Slippery elm	78,651	10,493	12,870	14,375	8,143	6,860	7,268	4,839	8,262	5,540	- -
All species	1,018,688	92,582	111,817	127,176	106,068	116,013	99,740	77,772	77,837	152,388	57,295

(Table 7 continued)

Species group/ species	All classes	Diameter class (inches at breast height)									
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0+
Hardwoods											
Other eastern hard hardwoods											
Flowering dogwood	1,858	1,858	- -	- -	- -	- -	- -	- -	- -	- -	- -
Common persimmon	14,483	2,283	2,489	2,637	1,986	2,665	2,423	- -	- -	- -	- -
Honeylocust	40,704	1,984	3,916	5,261	6,881	4,910	11,165	3,450	- -	3,137	- -
Kentucky coffeetree	4,101	206	- -	- -	- -	3,895	- -	- -	- -	- -	- -
White mulberry	92	92	- -	- -	- -	- -	- -	- -	- -	- -	- -
Red mulberry	222	222	- -	- -	- -	- -	- -	- -	- -	- -	- -
Black locust	33,553	3,347	5,283	7,656	4,282	5,961	2,412	2,229	2,384	- -	- -
All species	95,013	9,992	11,687	15,555	13,149	17,431	16,000	5,678	2,384	3,137	- -
Total hardwoods	7,529,307	346,039	496,953	694,206	765,446	906,472	943,690	888,491	696,131	1,430,351	361,530
All species groups	7,805,433	371,111	540,739	744,193	814,818	947,611	969,557	905,727	698,441	1,451,705	361,530

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates that the volume rounds to less than 1 thousand cubic feet. Columns and rows may not add to their totals due to rounding.

Table 8. -- Net volume of sawtimber on timberland by species group, species, and diameter class, Indiana, 2000-2004

(In thousand board feet)[1]

Species group/ species	All classes	Diameter class (inches at breast height)							
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0+
Softwoods									
Loblolly and shortleaf pines									
Shortleaf pine	130,383	21,621	37,914	41,411	17,433	12,004	--	--	--
All species	130,383	21,621	37,914	41,411	17,433	12,004	--	--	--
Other yellow pines									
Scotch pine	9,792	7,746	2,047	--	--	--	--	--	--
Virginia pine	193,344	30,309	65,015	38,559	31,317	28,144	--	--	--
All species	203,137	38,055	67,061	38,559	31,317	28,144	--	--	--
Eastern white and red pines									
Red pine	96,773	63,831	11,541	21,401	--	--	--	--	--
Eastern white pine	330,766	27,032	81,400	33,311	44,478	43,137	11,405	90,004	--
All species	427,539	90,863	92,940	54,712	44,478	43,137	11,405	90,004	--
Jack pine									
Jack pine	5,520	3,284	2,237	--	--	--	--	--	--
All species	5,520	3,284	2,237	--	--	--	--	--	--
Other eastern softwoods									
Eastern redcedar	238,937	96,314	42,426	67,816	28,513	3,868	--	--	--
Norway spruce	21,209	--	--	--	6,109	--	--	15,100	--
All species	260,146	96,314	42,426	67,816	34,622	3,868	--	15,100	--
Total softwoods	1,026,724	250,136	242,579	202,498	127,850	87,154	11,405	105,103	--
Hardwoods									
Select white oaks									
White oak	2,785,690	--	202,915	319,474	480,012	508,138	367,281	728,192	179,678
Swamp white oak	84,731	--	3,073	15,794	5,263	7,167	21,001	32,432	--
Bur oak	95,132	--	2,366	7,739	11,019	7,775	18,968	47,264	--
Swamp chestnut oak	5,849	--	--	--	5,849	--	--	--	--
Chinkapin oak	317,722	--	77,767	38,758	40,342	38,353	27,990	94,511	--
All species	3,289,123	--	286,121	381,765	542,485	561,433	435,241	902,400	179,678
Select red oaks									
Cherrybark oak	15,064	--	3,250	4,246	--	7,568	--	--	--
Northern red oak	1,751,362	--	124,800	206,014	216,712	259,848	248,227	494,194	201,568
Shumard oak	9,001	--	--	--	3,708	5,293	--	--	--
All species	1,775,427	--	128,050	210,260	220,420	272,709	248,227	494,194	201,568
Other white oaks									
Chestnut oak	514,704	--	75,238	137,120	114,229	56,655	85,002	46,461	--
Post oak	23,574	--	10,536	3,390	--	9,648	--	--	--
All species	538,278	--	85,774	140,510	114,229	66,302	85,002	46,461	--

(Table 8 continued)

Species group/ species	All classes	Diameter class (inches at breast height)							
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0+
Hardwoods									
Other red oaks									
Scarlet oak	218,293	- -	13,824	52,721	60,247	41,073	13,365	37,064	- -
Shingle oak	151,393	- -	14,326	3,540	16,791	25,248	19,490	42,667	29,329
Pin oak	656,475	- -	33,221	64,352	58,170	76,059	55,248	342,144	27,281
Black oak	2,092,584	- -	162,313	279,544	280,768	277,312	300,502	585,714	206,431
All species	3,118,745	- -	223,685	400,157	415,976	419,692	388,605	1,007,588	263,041
Hickory									
Water hickory	4,381	- -	- -	4,381	- -	- -	- -	- -	- -
Bitternut hickory	654,101	- -	127,373	131,738	112,298	155,615	46,195	53,047	27,834
Pignut hickory	1,166,921	- -	235,339	277,878	192,688	200,218	118,542	142,256	- -
Shellbark hickory	13,629	- -	3,626	- -	- -	10,003	- -	- -	- -
Shagbark hickory	994,425	- -	187,763	163,407	247,160	188,589	111,209	96,298	- -
Black hickory	4,773	- -	- -	4,773	- -	- -	- -	- -	- -
Mockernut hickory	125,197	- -	14,441	27,585	42,808	40,362	- -	- -	- -
All species	2,963,428	- -	568,543	609,763	594,954	594,788	275,945	291,601	27,834
Hard maple									
Sugar maple	2,461,278	- -	451,377	511,154	522,379	404,358	201,860	313,313	56,838
All species	2,461,278	- -	451,377	511,154	522,379	404,358	201,860	313,313	56,838
Soft maple									
Red maple	677,457	- -	102,101	96,307	94,597	103,823	100,647	153,863	26,118
Silver maple	433,869	- -	93,168	37,683	66,209	43,911	79,019	79,116	34,763
All species	1,111,325	- -	195,270	133,990	160,806	147,734	179,666	232,979	60,882
Beech									
American beech	813,351	- -	70,305	108,195	119,277	137,307	118,732	234,632	24,902
All species	813,351	- -	70,305	108,195	119,277	137,307	118,732	234,632	24,902
Sweetgum									
Sweetgum	340,718	- -	76,018	75,485	57,242	59,374	56,033	16,566	- -
All species	340,718	- -	76,018	75,485	57,242	59,374	56,033	16,566	- -
Tupelo and blackgum									
Blackgum	154,126	- -	16,234	24,072	43,860	7,697	17,281	44,983	- -
All species	154,126	- -	16,234	24,072	43,860	7,697	17,281	44,983	- -
Ash									
White ash	1,593,833	- -	186,619	273,139	302,419	294,661	201,877	289,421	45,697
Black ash	6,125	- -	2,478	3,647	- -	- -	- -	- -	- -
Green ash	454,447	- -	66,856	87,410	49,015	107,267	57,145	86,754	- -
Blue ash	24,023	- -	5,154	3,764	5,638	- -	9,467	- -	- -
All species	2,078,429	- -	261,108	367,960	357,072	401,928	268,488	376,175	45,697

(Table 8 continued)

Species group/ species	All classes	Diameter class (inches at breast height)							
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0+
Hardwoods									
Cottonwood and aspen									
Eastern cottonwood	1,127,866	- -	34,795	52,556	80,541	101,154	106,404	452,812	299,604
Bigtooth aspen	110,109	- -	19,234	29,075	6,757	38,885	16,158	- -	- -
Quaking aspen	7,421	- -	- -	- -	7,421	- -	- -	- -	- -
All species	1,245,397	- -	54,029	81,630	94,719	140,040	122,562	452,812	299,604
Basswood									
American basswood	433,225	- -	65,899	38,080	64,014	63,848	53,286	148,100	- -
All species	433,225	- -	65,899	38,080	64,014	63,848	53,286	148,100	- -
Yellow-poplar									
Yellow-poplar	4,254,095	- -	467,030	483,879	588,420	537,259	487,890	1,541,174	148,443
All species	4,254,095	- -	467,030	483,879	588,420	537,259	487,890	1,541,174	148,443
Black walnut									
Black walnut	710,622	- -	181,950	209,583	150,271	111,036	46,607	11,175	- -
All species	710,622	- -	181,950	209,583	150,271	111,036	46,607	11,175	- -
Other eastern soft hardwoods									
Boxelder	46,662	- -	19,098	15,983	11,581	- -	- -	- -	- -
Ohio buckeye	3,219	- -	3,219	- -	- -	- -	- -	- -	- -
River birch	39,570	- -	7,473	18,338	- -	- -	- -	13,759	- -
Northern catalpa	23,319	- -	5,044	3,233	5,378	- -	9,665	- -	- -
Sugarberry	2,417	- -	2,417	- -	- -	- -	- -	- -	- -
Hackberry	296,827	- -	48,615	73,447	45,250	41,153	16,386	44,531	27,445
American sycamore	1,443,448	- -	82,505	139,428	158,137	136,517	207,094	493,677	226,091
Black cherry	509,085	- -	120,020	103,684	69,737	76,569	57,464	81,610	- -
Black willow	63,948	- -	3,704	16,212	20,795	7,311	- -	15,925	- -
Sassafras	322,157	- -	95,778	95,612	57,656	46,129	26,982	- -	- -
American elm	222,567	- -	64,944	39,331	59,599	16,847	9,603	32,243	- -
Siberian elm	13,263	- -	- -	- -	- -	13,263	- -	- -	- -
Slippery elm	187,014	- -	39,037	32,475	33,488	22,083	36,252	23,680	- -
All species	3,173,496	- -	491,853	537,744	461,620	359,873	363,446	705,424	253,536
Other eastern hard hardwoods									
Common persimmon	32,175	- -	9,075	12,080	11,020	- -	- -	- -	- -
Honeylocust	134,300	- -	31,546	22,411	50,958	15,596	- -	13,788	- -
Kentucky coffeetree	17,675	- -	- -	17,675	- -	- -	- -	- -	- -
Black locust	78,375	- -	19,592	27,247	11,005	9,937	10,595	- -	- -
All species	262,525	- -	60,213	79,413	72,983	25,533	10,595	13,788	- -
Total hardwoods	28,723,589	- -	3,683,457	4,393,640	4,580,728	4,310,910	3,359,467	6,833,364	1,562,022
All species groups	29,750,313	250,136	3,926,036	4,596,138	4,708,578	4,398,064	3,370,872	6,938,468	1,562,022

(Table 8 continued)

Species group/ species	All classes	Diameter class (inches at breast height)							
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0+
Hardwoods									

[1] All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates the volume rounds to less than 1 thousand board feet. Columns and rows may not add to their totals due to rounding.

International 1/4-inch rule.

Table 9. -- All live aboveground tree biomass on timberland by owner category, softwood/hardwood species category, and tree biomass component, Indiana, 2000-2004

(In dry tons)

Owner category and softwood/hardwood category	All components	Tree biomass component						
		All live 1-5 inch trees	Growing-stock trees			Non-growing-stock trees		
			Total	Boles	Stumps, tops, and limbs	Total	Boles	Stumps, tops, and limbs
Public								
Softwoods	1,549,030	33,817	1,482,496	1,220,555	261,941	32,716	26,098	6,618
Hardwoods	33,049,121	1,843,806	29,173,114	21,560,514	7,612,599	2,032,202	1,498,945	533,256
Total	34,598,151	1,877,624	30,655,609	22,781,069	7,874,540	2,064,918	1,525,043	539,875
Private								
Softwoods	4,499,340	654,175	3,634,334	2,848,898	785,436	210,831	150,138	60,693
Hardwoods	196,326,144	10,696,379	160,054,648	118,356,415	41,698,233	25,575,117	18,951,289	6,623,829
Total	200,825,484	11,350,554	163,688,982	121,205,313	42,483,669	25,785,948	19,101,427	6,684,521
All ownerships								
Softwoods	6,048,370	687,993	5,116,830	4,069,453	1,047,377	243,547	176,236	67,311
Hardwoods	229,375,265	12,540,185	189,227,761	139,916,929	49,310,832	27,607,319	20,450,234	7,157,085
Total	235,423,635	13,228,178	194,344,591	143,986,382	50,358,209	27,850,866	20,626,470	7,224,396

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates the aboveground tree biomass rounds to less than 1 dry ton. Columns and rows may not add to their totals due to rounding.

Table 10. -- Average annual net growth of growing stock on timberland by species group and owner category, Indiana, 1999 to 2004

(In thousand cubic feet per year)

Species group	Owner category			
	All owners	Public	Private	Unidentified owner
Softwoods				
Loblolly and shortleaf pines	-518	- -	-518	- -
Other yellow pines	1,364	- -	1,364	- -
Eastern white and red pines	2,468	- -	2,468	- -
Other eastern softwoods	1,949	-323	2,272	- -
Total softwoods	5,263	-323	5,586	- -
Hardwoods				
Select white oaks	23,478	4,290	19,188	- -
Select red oaks	9,658	1,046	8,612	- -
Other white oaks	2,536	814	1,723	- -
Other red oaks	34,837	3,480	31,356	- -
Hickory	24,778	2,083	22,695	- -
Hard maple	35,068	3,187	31,881	- -
Soft maple	20,786	-17	20,804	- -
Beech	2,263	427	1,836	- -
Sweetgum	1,919	396	1,523	- -
Tupelo and blackgum	4,795	235	4,560	- -
Ash	37,242	1,351	35,890	- -
Cottonwood and aspen	10,984	467	10,517	- -
Basswood	6,876	- -	6,876	- -
Yellow-poplar	66,614	2,686	63,928	- -
Black walnut	11,902	1,493	10,409	- -
Other eastern soft hardwoods	69,584	5,805	63,778	- -
Other eastern hard hardwoods	9,288	763	8,525	- -
Total hardwoods	372,607	28,505	344,102	- -
All species groups	377,870	28,182	349,688	- -

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates that the volume rounds to less than 1 thousand cubic feet. Columns and rows may not add to their totals due to rounding.

Table 11. -- Average annual removals of growing stock on timberland by species group and owner category, Indiana, 1999 to 2004

(In thousand cubic feet per year)

Species group	Owner category			
	All owners	Public	Private	Unidentified owner
Softwoods				
Other eastern softwoods	108	- -	108	- -
Total softwoods	108	- -	108	- -
Hardwoods				
Select white oaks	4,580	4,513	67	- -
Select red oaks	- -	- -	- -	- -
Other red oaks	1,970	- -	1,970	- -
Hickory	10,682	- -	10,682	- -
Hard maple	6,763	- -	6,763	- -
Soft maple	1,311	- -	1,311	- -
Beech	6,789	- -	6,789	- -
Sweetgum	382	- -	382	- -
Tupelo and blackgum	153	153	- -	- -
Ash	7,324	- -	7,324	- -
Basswood	1,286	- -	1,286	- -
Yellow-poplar	20,892	68	20,824	- -
Black walnut	1,374	- -	1,374	- -
Other eastern soft hardwoods	15,929	158	15,772	- -
Other eastern hard hardwoods	439	- -	439	- -
Total hardwoods	79,874	4,892	74,983	- -
All species groups	79,982	4,892	75,091	- -

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates that the volume rounds to less than 1 thousand cubic feet. Columns and rows may not add to their totals due to rounding.

Table 12. -- Average annual mortality of growing stock on timberland by species group and owner category, Indiana, 1999 to 2004

(In thousand cubic feet per year)

Species group	Owner category			
	All owners	Public	Private	Unidentified owner
Softwoods				
Loblolly and shortleaf pines	558	- -	558	- -
Other yellow pines	798	- -	798	- -
Eastern white and red pines	1,550	- -	1,550	- -
Other eastern softwoods	365	365	- -	- -
Total softwoods	3,272	365	2,906	- -
Hardwoods				
Select white oaks	1,146	242	904	- -
Other red oaks	1,636	516	1,120	- -
Hickory	10,706	- -	10,706	- -
Hard maple	5,558	198	5,360	- -
Soft maple	302	- -	302	- -
Beech	- -	- -	- -	- -
Sweetgum	1,111	199	912	- -
Ash	5,097	- -	5,097	- -
Cottonwood and aspen	2,855	- -	2,855	- -
Basswood	205	- -	205	- -
Yellow-poplar	4,364	125	4,239	- -
Other eastern soft hardwoods	10,983	964	10,019	- -
Other eastern hard hardwoods	1,523	877	646	- -
Total hardwoods	45,485	3,121	42,364	- -
All species groups	48,757	3,487	45,270	- -

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates that the volume rounds to less than 1 thousand cubic feet. Columns and rows may not add to their totals due to rounding.

Woodall, Christopher; Brand, Gary; Gallion, Joey.

2006. **Indiana's forest resources in 2004.** Resour. Bull. NC-268. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 37 p.

Reports the initial results of five annual panels (2000-2004) of the inventory of Indiana's forest resources and one panel (2004) of growth, removals, and mortality. Includes information on forest area, number of trees, volume, biomass, growth, removals, mortality, and forest health.

KEY WORDS: Annual inventory, forest area, forest type, volume, biomass, Indiana.

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