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# Indiana's Forest Resources in 2003

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# Indiana's Forest Resources In 2003

## ABSTRACT

This publication presents the initial results of the fifth inventory of Indiana's forest resources, marking the first complete cycle of the new annual inventory system. Since 1998, total forest land area has increased by a little over 50,000 acres. As in every inventory since 1950, the oak/hickory type is the largest forest type on the landscape, making up over 59.3 percent of all forested land. Softwoods make up approximately 2.8 percent of Indiana's forested acreage. The net volume of growing stock on timberland totaled 7.5 billion cubic feet in 2003, triple the 2.5 billion cubic feet estimated during the 1950 inventory. A complete report of the final results of the fifth inventory of Indiana's forest resources will be published later as a companion to this report.

The North Central Research Station's Forest Inventory and Analysis (NCFIA) program began fieldwork for the fifth forest inventory of Indiana forest resources in 1999. This inventory initiated the new annual inventory system in which one-fifth of the field plots (considered one panel) in the State are measured each year. A complete inventory consists of measuring and compiling the data for all plots (or five panels). Now that all panels have been measured, each will be remeasured approximately every 5 years. For example, in Indiana, the field plots measured in 2000 will be remeasured in 2005.

In 2003, NCFIA completed measurement of the fifth panel of inventory plots in Indiana. The 2003 panel, along with those surveyed in 1999, 2000, 2001, and 2002, completed data collection for the fifth inventory of Indiana's forests. Previous inventories of Indiana's forest resources were completed in 1950, 1967, 1986, and 1998 (Hutchison 1956, Spencer 1969, Spencer *et al.* 1990, Smith and Golitz 1988, Schmidt *et al.* 2000). To expedite the reporting of findings from Indiana's fifth inventory, this 2003 annual report contains summary information from the

fifth forest inventory, along with 12 core tables. More tabular data from the fifth inventory of Indiana can be generated through the FIA Mapmaker program Web site at: <http://ncrs2.fs.fed.us/4801/fiadb/index.htm>. A subsequent, comprehensive analytical report will be developed from the fifth Indiana inventory, addressing issues of concerns and identifying trends in the State's forest resources.

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 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. For estimating growth, removals, and mortality, the 1998 inventory (Schmidt *et al.* 2000) was processed using estimation/summary routines for the 1999-2003 inventory. 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 1999-2003 data with those published for earlier inventories.

## RESULTS

### Area

Forest land area (including reserved or low-productivity land) totaled 4.55 million acres in 2003 (table 1). Over 16 percent of forest land was owned by public agencies and 83.4 percent was owned by private landowners; 2.8 percent of the area was dominated by softwoods and 96.5 percent was dominated by hardwoods,

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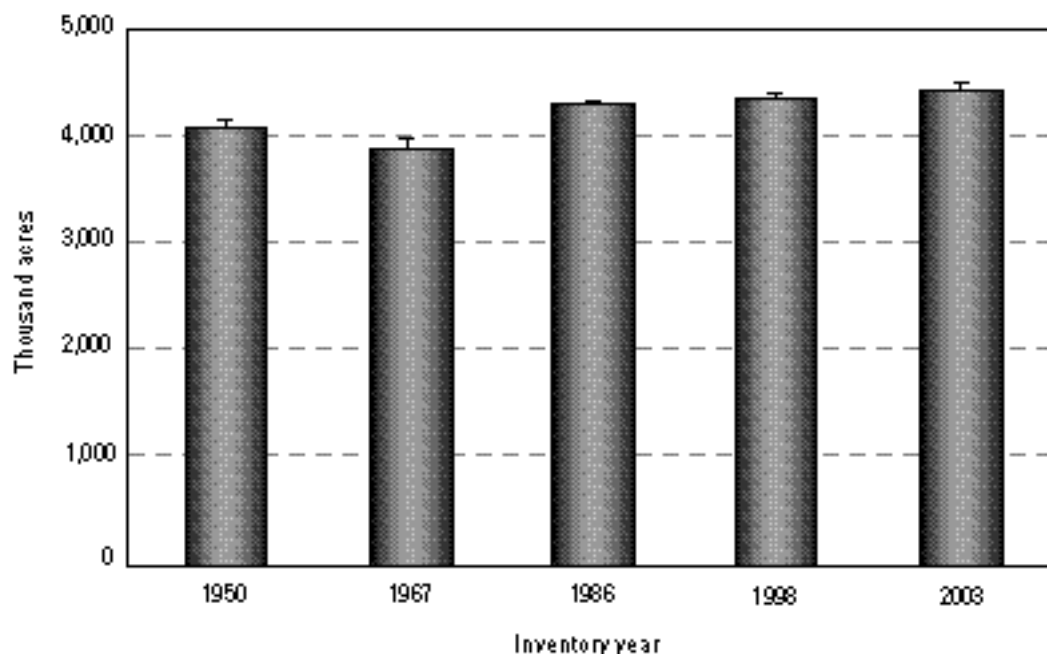


Figure 1.—Area of timberland in Indiana by inventory year, 1950-2003. The vertical line at the top of each bar represents the sample error associated with each inventory.

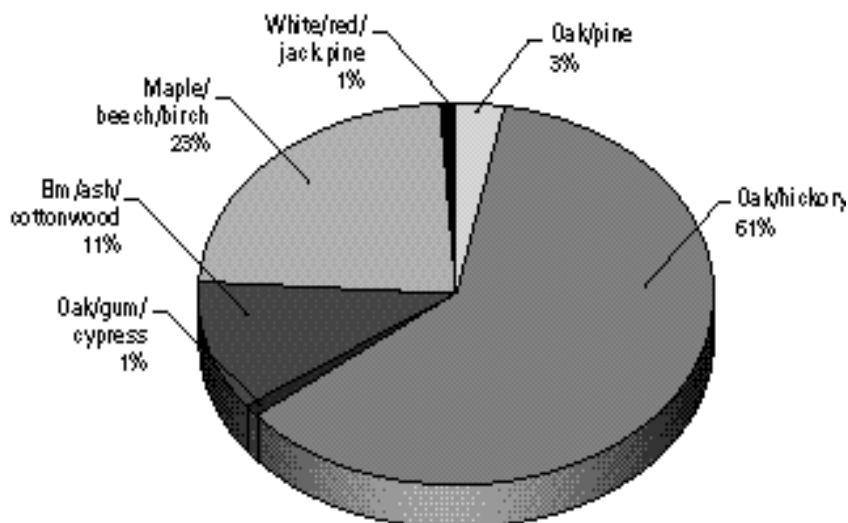
with the remainder classified as nonstocked (table 1). Oak/hickory forests constituted 61.4 percent of the total hardwood forest land area (table 1). The white/red/jack pine forest group constituted 36.7 percent of all forest land dominated by softwoods (table 1).

Timberland area has continued to increase since its low point in the 1967 inventory (fig. 1). Hardwoods made up 96.7 percent of the total acreage, 95.5 percent of all public timberland area, and 97.0 percent of all private landholdings (table 2). The area of timberland by forest type group was dominated by hardwoods (table 3) and 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, with the 1950 oak/pine, oak/hickory, and white oak groups constituting 59.7 percent of the total timberland area, and the 1999-2003 oak/pine and oak/hickory groups making up 62.6 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 8.7 billion cubic feet (table 4). Hardwoods constituted 8.4 billion cubic feet and softwoods made up over 308 million cubic feet. Oaks made up 2.2 billion cubic feet or 26.7 percent of all hardwoods. Select oaks (red and white) totaled 1.3 billion cubic feet or 58.3 percent of all oaks and 15.6 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

Figure 2.—Area of timberland in Indiana by selected forest type groups, 1999-2003.



cubic feet, all oaks as 1.7 billion cubic feet, and all select oaks as 859 million cubic feet (Smith and Golitz 1988).

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 8.5 billion cubic feet (table 5). All live trees made up 8.4 billion cubic feet or 98.5 percent. The difference between the total of all live trees

on timberland (table 5) and the 8.7 billion cubic feet volume of all live trees on forest land (table 4) represents the over 172 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 7.5 billion cubic feet of growing-stock trees, 6.0 billion cubic feet or 79.3 percent was sawtimber (table 5, fig. 4). The sawtimber

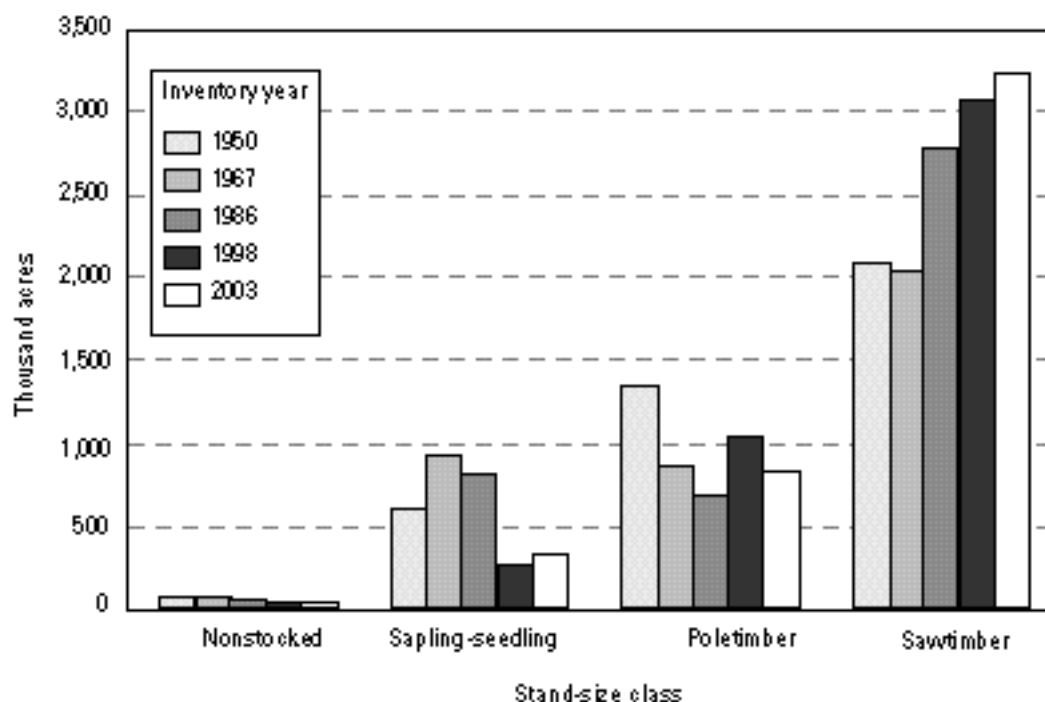


Figure 3.—Area of timberland in Indiana by stand-size class, 1950-2003.

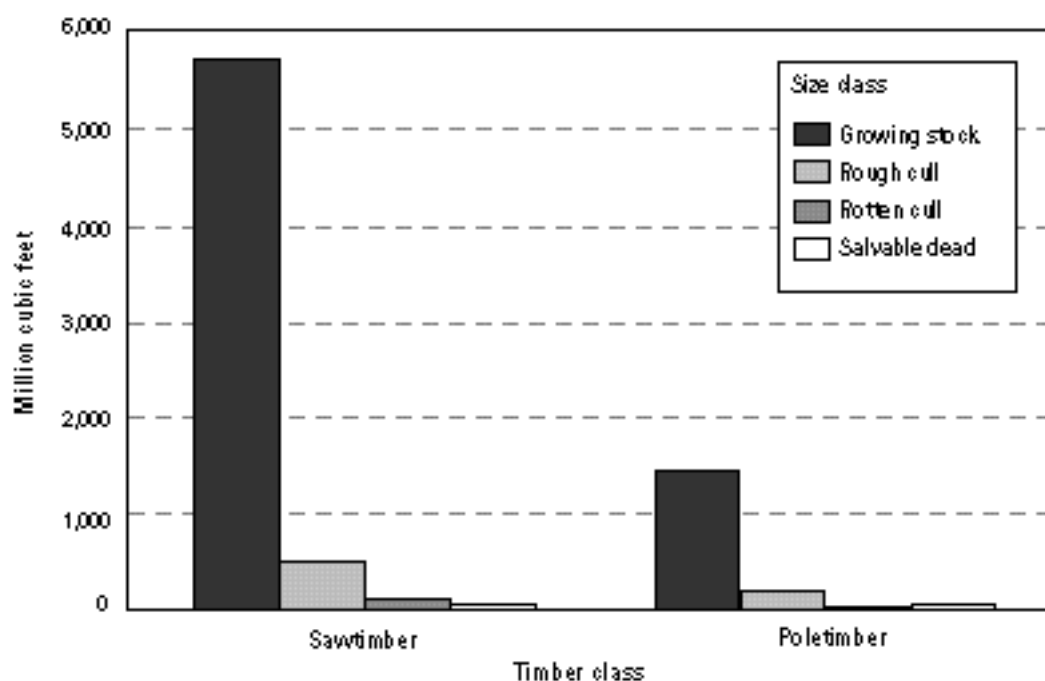


Figure 4.—Net volume of all hardwood live trees and salvable dead hardwood trees on timberland in Indiana by timber class and size class, 1999-2003.

percentages for softwoods and hardwoods were 74.0 and 79.5 percent, respectively (table 5). Cull trees, at 872 million cubic feet, were 10.4 percent of all live trees. The softwood cull tree volume represented only 3.7 percent of the total softwood live tree volume, whereas hardwood culls represented 10.6 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.

The net volume of growing-stock (trees with a d.b.h. greater than or equal to 5 inches) on tim-

berland totaled 7.5 billion cubic feet, triple the 2.5 billion cubic feet estimated during the 1950 inventory (table 6, fig. 5). Over 96 percent (7.2 billion cubic feet) was in hardwoods and 3.6 percent (274 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 57.4 million cubic feet of softwoods and 101.5 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

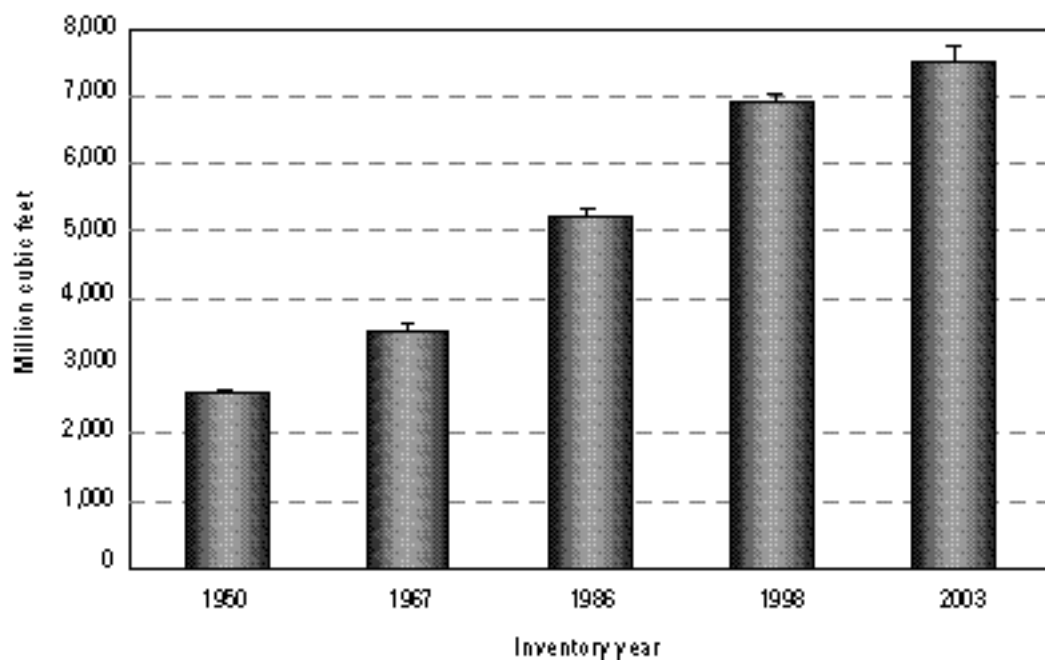


Figure 5.—Net volume of growing stock on timberland in Indiana, 1950-2003. The vertical line at the top of each bar represents the sample error associated with each inventory.

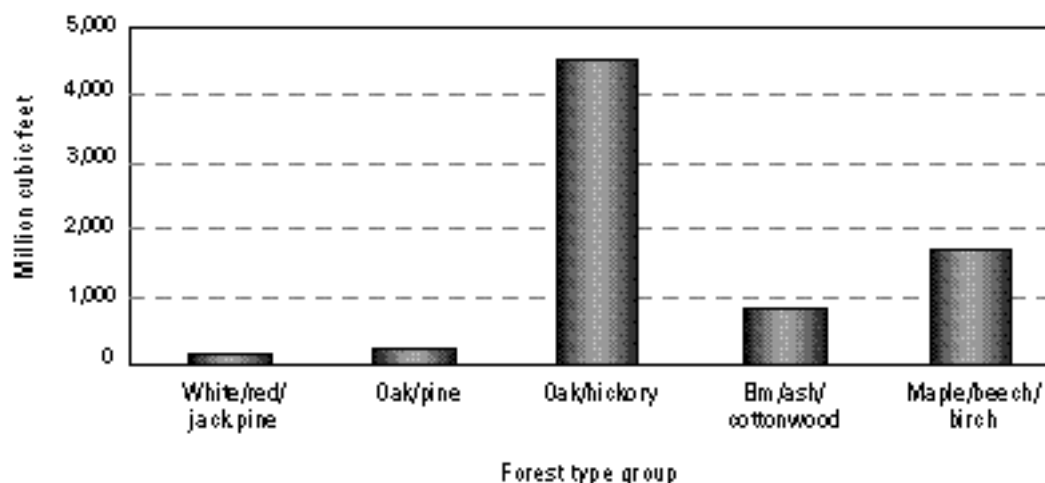


Figure 6.—Net volume of growing stock on timberland for Indiana by selected forest type, 1999-2003.

and hardwood volumes were 274.3 million cubic feet and 7.2 billion cubic feet, respectively (table 7). Total volume of oak growing stock on timberland was 2 billion cubic feet, which was 27.7 percent of all hardwood volume and 26.7 percent of all growing-stock volume (table 7). Trees that were at least 19 inches in diameter constituted 8.3 percent of the net volume of softwood growing stock and 32.7 percent of net hardwood volume (table 7).

The net volume of sawtimber on timberland was 28.6 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 27.6 billion board feet) (table 8). Red and white oaks totaled 8.5 billion board feet or 30.7 percent of the hardwood total (table 8). Yellow-poplar had the greatest net volume of all individual species at 4.0 billion board feet. Trees that were 19 or more inches in diameter made up 11.1 percent of the softwood volume (112.1 million board feet) and 40.6 percent of the hardwood volume (11.2 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 228.3 million dry tons (table 9 and fig. 7). Nearly 5.7 percent of the biomass total was in 1- to 5-inch trees, 82.2 percent was in growing-stock trees and over 12.1 percent was in non-growing-stock trees (table 9). Of the total, 85.0 percent (194.1 million dry tons) was on private land and 15.0 percent (34.2 million dry tons) was on public land (table 9). Of the 187.6 million dry tons in growing-stock trees, 83.9 percent was on private land and 16.1 percent was 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: 74.0 percent in bolewood and 26.0 percent in stumps, tops, and limbs (table 9). The disparity in the proportion of aboveground biomass in non-growing-stock softwood trees (4.2 percent of all softwood biomass) vs. non-growing-stock hardwood trees (12.4 percent of all hardwood biomass) possibly reflects

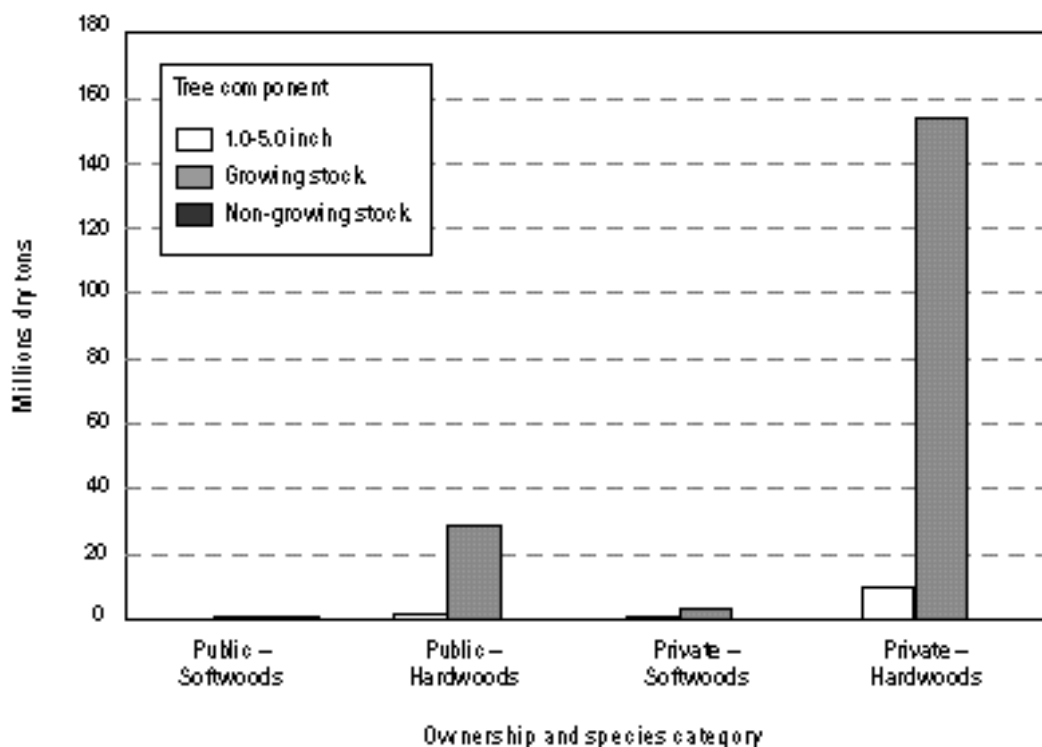


Figure 7.—Live aboveground biomass in Indiana by ownership type and forest type, 1999-2003.

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 Mortality

The growing stock on Indiana's timberland grew, on average, 268.1 million cubic feet per year between 1998 and 1999-2003 (table 10). Softwoods increased by 3.7 million cubic feet per year, while hardwoods increased by 264.4 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 yellow-poplar, other eastern soft hardwoods, select oaks (both white and red), hard maple, and ash species groups increased the most at 52.1, 44.3, 27.3, 25.9, and 25.6 million cubic feet, respectively (table 10).

Average annual removals of growing stock on timberland (table 11) totaled 128.7 million cubic feet per year. Softwood and hardwood removals were 3.4 million cubic feet/year (2.7 percent of the total) and 125.3 million cubic feet/year, respectively (table 11). Removals from private timberland totaled 123.6 million cubic feet/year (96.0 percent of all removals), while removals from public land averaged 5.1 million cubic feet/year (table 11). The species group categories with the highest average annual removals were yellow-poplar (25.9 million cubic feet/year or 20.6 percent of the total average hardwood removal), select white oaks (15.8 million cubic feet/year), and hickory (12.6 million cubic feet/year) (table 11).

Average annual mortality of growing stock on timberland from 1998 through 1999-2003 was 66.8 million cubic feet per year (table 12). Over 92 percent, or 61.6 million cubic feet/year, was from hardwoods, while the remaining 5.2 million cubic feet/year was from softwoods (table

12). Across all species groups, 10.8 percent or 7.2 million cubic feet/year occurred on public lands. Hardwood mortality on public lands averaged 5.9 million cubic feet/year (9.6 percent of all hardwood mortality), while public land softwood mortality averaged nearly 1.3 million cubic feet/year (24.9 percent of all softwood mortality) (table 12). Among hardwoods species groups, "other eastern soft hardwoods" had the highest mortality rate at 16.6 million cubic feet/year or 26.9 percent of all hardwood mortality (table 12). This species group also had the highest mortality on both public and private lands, 1.9 million and 14.6 cubic feet/year, respectively.

### Forest Health Update

Although Indiana's forests continue to be affected by numerous defoliators (i.e., gypsy moth and eastern tent caterpillar), climate effects (drought of 1999), fungi (Armillaria root rot), and advanced ages, a new threat has emerged that could drastically alter a majority of Indiana's forests. Emerald ash borer (EAB) is an introduced pest to ash tree species. EAB is a wood boring beetle whose immature larvae bore extensive galleries under the bark of ash trees causing 100 percent mortality. EAB was first detected in the United States in Detroit in 2002. Since that first discovery, EAB has been dispersed through flight routes of mature beetles and the longer distance transport of EAB-infected firewood/logs. EAB was first discovered in Indiana in the counties of Steuben and LaGrange during the spring of 2004. The majority of counties in Indiana contain forest land where ash species are present (fig. 8). For numerous counties in southern Indiana, forests with ash present constitute over 20 percent of the entire land area of the county (fig. 8). Given the ubiquitous presence of ash in Indiana's forests, along with its crucial ecological niche, the sudden loss of ash trees would affect Indiana's forest stand dynamics and ecosystem functions beyond what can be predicted at this time.

## 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 (i.e., emerald ash borer and gypsy moth), the inventorying and monitoring of Indiana's hardwood forests is critical for future sustainability. Full analysis and interpretation of Indiana's fifth forest inventory, both in terms of forest health and robust forest resource evaluation, will be made available shortly as a companion to this fifth annual forest inventory report.

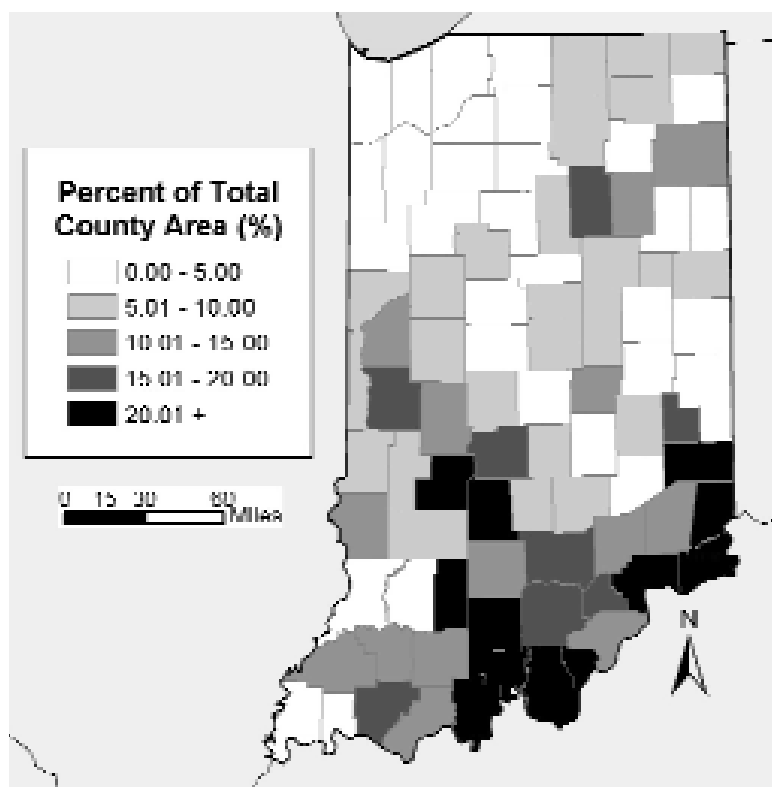


Figure 8.—Acreage of Indiana counties potentially affected by emerald ash borer (forest acreage with ash species present divided by total county acreage).



# Appendix

## 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 is 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. After the first 5 years, NCFIA will report and analyze results as a moving 5-year average. For example, NCFIA will be able to generate a report based on inventory results for 1999 through 2003 or for 2002 through 2006. Sampling error estimates for the 2003 inventory results are area of forest land, 1.73 percent; area of timberland, 1.84 percent; number of growing-stock trees on timberland, 3.10 percent; volume of growing stock on timberland, 2.73 percent; and volume of sawtimber on timberland, 3.18 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.

Other significant changes between inventories include the implementation of new remote sensing technology, a new field plot design, and additional remotely sensed and field data. The advent of remote sensing technology since the previous inventory in 1998 has allowed NCFIA to use computer-assisted 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. Inventories in Indiana before 1999 used manual interpretation of aerial photos to stratify the sample (1950, 1967, 1986, and 1998 samples).

New algorithms were used in 1999-2003 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 nonstocked, and names given to the forest types changed with the new algorithms. As a result, comparisons between the published 2003 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.

## Sampling Phases

The 2003 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 of this report make the necessary adjustments to account for sites where access was denied or hazardous.

### Phase 1

The 2003 inventory used a computer-assisted 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 1999–2003 annual inventory results represent field measures on 920 phase 2 forested plots and 45 phase 3 plots.

The new national FIA plot design (fig. 9) was first used for data collection in Indiana in 1999, the first annual inventory year. This design was also used in the 2000–2003 inventories and will be used in subsequent years. The national plot design 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 design consists of four subplots. The centers of subplots 2, 3, and 4 are located 120 feet from the center of subplot 1. The azimuths to subplots 2, 3, and 4 are 0, 120, and 240 degrees, respectively. The center of the new plot is located at the same point as the center of the previous plot if a previous plot existed within the sample unit. Trees with a d.b.h. 5 inches and larger are measured on a 24-foot-radius (1/24 acre) circular subplot. All trees less than 5 inches d.b.h. 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. 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.

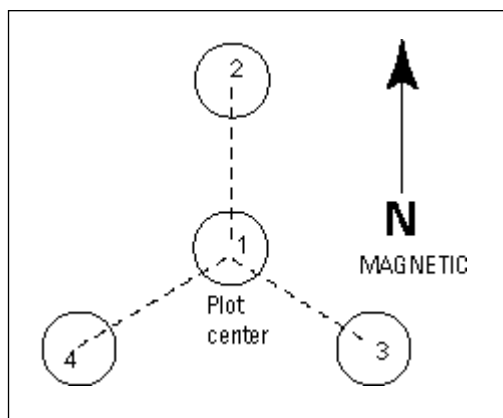


Figure 9.—Current NCFIA field plot design.

Field plot measurements are combined with phase 1 estimates in the compilation process and table production. The number of published tables generated from less than five panels of data is limited. However, at: [www.ncrs.fs.fed.us/4801/fiadb/index.htm](http://www.ncrs.fs.fed.us/4801/fiadb/index.htm) other tabular data can be generated. For additional information, contact:

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Table 1. — Area of forest land by forest type group, forest type, and owner category, Indiana, 1999-2003

(In thousand acres)

| Forest type group/<br>forest type      | Owner category |        |                       |
|----------------------------------------|----------------|--------|-----------------------|
|                                        | All<br>owners  | Public | Unidentified<br>owner |
| <b>Softwood type groups</b>            |                |        |                       |
| <i>White / red / jack pine group</i>   |                |        |                       |
| Red pine                               | 46.3           | 4.6    | 11.6                  |
| Eastern white pine                     | 30.1           | 11.1   | 59.0                  |
| All forest types                       | 46.4           | 15.7   | 30.7                  |
| <i>Loblolly / shortleaf pine group</i> |                |        |                       |
| Shortleaf pine                         | 14.1           | 14.1   | --                    |
| Virginia pine                          | 19.9           | 4.3    | 15.6                  |
| All forest types                       | 34.0           | 18.4   | 15.6                  |
| <i>Pinon / juniper group</i>           |                |        |                       |
| Eastern redcedar                       | 40.0           | 9.3    | 30.6                  |
| All forest types                       | 40.0           | 9.3    | 30.6                  |
| <i>Exotic softwoods group</i>          |                |        |                       |
| Scotch pine                            | 6.0            | --     | 6.0                   |
| All forest types                       | 6.0            | --     | 6.0                   |
| <b>Hardwood type groups</b>            |                |        |                       |
| <i>Oak / pine group</i>                |                |        |                       |
| White pine / red oak / white ash       | 22.5           | 4.4    | 18.1                  |
| Eastern redcedar / hardwood            | 97.1           | 11.1   | 86.1                  |
| Shortleaf pine / oak                   | 13.1           | 8.4    | 4.7                   |
| Virginia pine / southern red oak       | 19.2           | 8.1    | 11.1                  |
| Other pine / hardwood                  | 2.4            | --     | 2.4                   |
| All forest types                       | 154.4          | 32.0   | 122.9                 |
| <i>Oak / hickory group</i>             |                |        |                       |
| Oak / hickory group                    | 0.8            | --     | 0.8                   |
| Chestnut oak                           | 57.6           | 20.4   | 37.2                  |
| White oak / red oak / hickory          | 1,302.4        | 234.7  | 1,067.7               |
| White oak                              | 205.0          | 70.1   | 134.9                 |
| Northern red oak                       | 33.4           | 6.5    | 26.8                  |
| Yellow-poplar / white oak / red oak    | 173.3          | 22.7   | 150.6                 |
| Shoeborn / persimmon                   | 131.7          | 11.2   | 120.5                 |
| Sweetgum / yellow-poplar               | 86.0           | 11.6   | 74.4                  |
| Blue oak                               | 5.7            | --     | 5.7                   |
| Scarlet oak                            | 10.6           | 4.4    | 6.2                   |
| Yellow-poplar                          | 79.9           | 9.8    | 70.2                  |
| Black walnut                           | 65.7           | 4.8    | 61.0                  |
| Black locust                           | 9.9            | --     | 9.9                   |
| Chestnut oak / black oak / scarlet oak | 48.5           | 15.6   | 33.7                  |
| Red maple / oak                        | 59.4           | 20.9   | 38.5                  |
| Mixed upland hardwoods                 | 427.9          | 47.0   | 380.9                 |
| All forest types                       | 2,698.8        | 479.8  | 2,219.0               |

(Table 1 continued on next page)

(Table 1 continued)

| Forest type group/<br>forest type        | Owner category |        |         |                       |
|------------------------------------------|----------------|--------|---------|-----------------------|
|                                          | All<br>owners  | Public | Private | Unidentified<br>owner |
| <b>Hardwood type groups</b>              |                |        |         |                       |
| Oak / gum / cypress group                |                |        |         |                       |
| Swamp chestnut oak / cherrybark oak      | 3.4            | --     | 3.4     | --                    |
| Sweetgum / Nuttall oak / willow oak      | 20.1           | 5.7    | 14.4    | --                    |
| Sweetbay / swamp tupelo / red maple      | 24.9           | --     | 24.9    | --                    |
| All forest types                         | 48.4           | 5.7    | 42.7    | --                    |
| Elm / ash / cottonwood group             |                |        |         |                       |
| Black ash / American elm / red maple     | 21.0           | 6.8    | 14.2    | --                    |
| River birch / sycamore                   | 120.8          | 21.9   | 99.0    | --                    |
| Cottonwood                               | 39.6           | 7.9    | 31.7    | --                    |
| Willow                                   | 5.2            | --     | 5.2     | --                    |
| Sycamore / pecan / American elm          | 42.1           | 18.3   | 23.8    | --                    |
| Sugarberry / hackberry / elm / green ash | 141.2          | 2.7    | 138.5   | --                    |
| Silver maple / American elm              | 71.3           | 3.4    | 68.0    | --                    |
| Red maple / lowland                      | 0.9            | --     | 0.9     | --                    |
| Cottonwood / willow                      | 36.1           | 3.4    | 32.7    | --                    |
| All forest types                         | 478.3          | 64.3   | 414.0   | --                    |
| Maple / beech / birch group              |                |        |         |                       |
| Maple / beech / birch group              | 1.1            | --     | 1.1     | --                    |
| Sugar maple / beech / yellow birch       | 570.3          | 66.3   | 504.0   | --                    |
| Black cherry                             | 40.4           | 11.0   | 29.4    | --                    |
| Cherry / ash / yellow-poplar             | 219.5          | 26.0   | 193.5   | --                    |
| Hard maple / basswood                    | 133.4          | 8.0    | 125.4   | --                    |
| Elm / ash / locust                       | 39.7           | 10.0   | 29.7    | --                    |
| All forest types                         | 1,004.4        | 121.3  | 883.1   | --                    |
| Aspen / birch group                      |                |        |         |                       |
| Aspen                                    | 10.8           | 7.3    | 3.5     | --                    |
| All forest types                         | 10.8           | 7.3    | 3.5     | --                    |
| All hardwood groups                      | 4,395.1        | 710.5  | 3,684.6 | --                    |
| Nonstocked                               | 32.4           | --     | 32.4    | --                    |
| All forest groups                        | 4,553.8        | 753.9  | 3,799.9 | --                    |

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, 1998-2003

(In thousand acres)

| Major forest type group<br>and stand origin | Owner category |              |                       |
|---------------------------------------------|----------------|--------------|-----------------------|
|                                             | All<br>owners  | Public       | Unidentified<br>owner |
| <b>Softwood type groups</b>                 |                |              |                       |
| Natural                                     | 35.4           | 1.3          | 34.1                  |
| Planted                                     | 76.3           | 27.4         | 48.8                  |
| All softwood types                          | 111.7          | 28.8         | 82.9                  |
| <b>Hardwood type groups</b>                 |                |              |                       |
| Natural                                     | 4,166.0        | 579.8        | 3,586.2               |
| Planted                                     | 103.2          | 23.9         | 79.3                  |
| All hardwood types                          | 4,269.2        | 603.7        | 3,665.5               |
| Nonstocked                                  | 32.4           | --           | 32.4                  |
| <b>All groups</b>                           | <b>4,413.3</b> | <b>632.4</b> | <b>3,780.8</b>        |

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, 1999-2003

(In thousand acres)

| Forest type group/<br>forest type      | Stand-size class |           |            |                      |
|----------------------------------------|------------------|-----------|------------|----------------------|
|                                        | All<br>stands    | Sawtimber | Polelimber | Sapling-<br>seedling |
| <b>Softwood type group</b>             |                  |           |            |                      |
| White / red / jack pine group          |                  |           |            | Non-<br>stocked      |
| Red pine                               | 16.3             | 9.6       | 6.4        | --                   |
| Eastern white pine                     | 23.4             | 23.4      | --         | --                   |
| All forest types                       | 39.7             | 33.3      | 6.4        | --                   |
| <b>Tropical / shortleaf pine group</b> |                  |           |            |                      |
| Shortleaf pine                         | 14.1             | 14.1      | --         | --                   |
| Virginia pine                          | 10.9             | 10.3      | 6.0        | 4.6                  |
| All forest types                       | 25.0             | 24.4      | 5.9        | 4.6                  |
| <b>Prunus / juniper group</b>          |                  |           |            |                      |
| Eastern redcedar                       | 32.0             | 12.2      | 12.0       | 7.8                  |
| All forest types                       | 32.0             | 12.2      | 12.0       | 7.8                  |
| <b>Exotic softwoods group</b>          |                  |           |            |                      |
| Scotch pine                            | 6.0              | --        | --         | 6.0                  |
| All forest types                       | 6.0              | --        | --         | 6.0                  |
| All softwood groups                    | 111.7            | 69.9      | 23.4       | 16.4                 |
| <b>Hardwood type groups</b>            |                  |           |            |                      |
| <b>Oak / pine group</b>                |                  |           |            |                      |
| White pine / red oak / white ash       | 22.5             | 15.1      | 7.4        | --                   |
| Eastern redcedar / hardwood            | 88.0             | 36.1      | 32.1       | 19.7                 |
| Shortleaf pine / oak                   | 8.7              | 8.7       | --         | --                   |
| Virginia pine / southern red oak       | 19.2             | 11.4      | 7.8        | --                   |
| Other pine / hardwood                  | 2.4              | --        | 1.0        | 1.4                  |
| All forest types                       | 140.8            | 71.4      | 48.4       | 21.1                 |
| <b>Oak / hickory group</b>             |                  |           |            |                      |
| Oak / hickory group                    | 0.6              | 0.6       | --         | --                   |
| Chestnut oak                           | 46.9             | 46.9      | --         | --                   |
| White oak / red oak / hickory          | 1,267.3          | 1,074.0   | 151.1      | 42.1                 |
| White oak                              | 195.2            | 173.9     | 21.3       | --                   |
| Northern red oak                       | 33.4             | 29.9      | --         | 3.4                  |
| Yellow-poplar / white oak / red oak    | 173.3            | 165.2     | 40.9       | 16.2                 |
| Sassafras / persimmon                  | 127.4            | 63.1      | 32.4       | 31.9                 |
| Sweetgum / yellow-poplar               | 83.3             | 65.1      | 7.9        | 10.3                 |
| Blue oak                               | 5.7              | 5.7       | --         | --                   |
| Scarlet oak                            | 10.6             | 10.6      | --         | --                   |
| Yellow-poplar                          | 79.9             | 39.7      | 35.6       | 4.7                  |
| Black walnut                           | 65.7             | 46.7      | 14.4       | 4.7                  |
| Black locust                           | 9.9              | 6.6       | --         | 3.1                  |
| Chestnut oak / black oak / scarlet oak | 45.1             | 33.1      | 12.0       | --                   |
| Red maple / oak                        | 50.4             | 28.3      | 16.2       | 15.0                 |
| Mixed upland hardwoods                 | 419.2            | 203.7     | 153.4      | 62.2                 |
| All forest types                       | 2,623.3          | 1,944.6   | 485.2      | 190.6                |
| <b>Oak / gum / cypress group</b>       |                  |           |            |                      |
| Swamp chestnut oak / cherrybark oak    | 3.4              | 3.4       | --         | --                   |
| Sweetgum / Nuttall oak / yellow oak    | 20.1             | 20.1      | --         | --                   |
| Sweetgum / swamp tupelo / red maple    | 24.9             | 23.5      | 1.5        | --                   |
| All forest types                       | 48.4             | 46.9      | 1.5        | --                   |

(Table 3 continued on next page)

(Table 3 continued)

| Forest type group/<br>forest type        | Stand-size class |           |            |                      |                 |
|------------------------------------------|------------------|-----------|------------|----------------------|-----------------|
|                                          | All<br>stands    | Sawtimber | Poletimber | Sapling-<br>seedling | Non-<br>stocked |
| <b>Hardwood type groups</b>              |                  |           |            |                      |                 |
| Elm / ash / cottonwood group             |                  |           |            |                      |                 |
| Black ash / American elm / red maple     | 19.6             | 13.0      | 4.5        | 2.0                  | --              |
| River birch / sycamore                   | 115.5            | 81.9      | 30.2       | 3.4                  | --              |
| Cottonwood                               | 36.1             | 30.5      | 2.0        | 3.6                  | --              |
| Willow                                   | 5.2              | 3.8       | --         | 1.4                  | --              |
| Sycamore / pecan / American elm          | 40.9             | 22.4      | 11.9       | 6.6                  | --              |
| Sugarberry / hackberry / elm / green ash | 138.5            | 102.8     | 13.9       | 21.7                 | --              |
| Silver maple / American elm              | 71.3             | 60.2      | 11.1       | --                   | --              |
| Red maple / lowland                      | 0.9              | --        | 0.9        | --                   | --              |
| Cottonwood / willow                      | 36.1             | 28.7      | 5.7        | 3.7                  | --              |
| All forest types                         | 464.2            | 341.4     | 80.3       | 42.5                 | --              |
| Maple / beech / birch group              |                  |           |            |                      |                 |
| Maple / beech / birch group              | 1.1              | 1.1       | --         | --                   | --              |
| Sugar maple / beech / yellow birch       | 563.5            | 501.2     | 51.7       | 10.6                 | --              |
| Black cherry                             | 35.9             | 14.9      | 11.2       | 9.8                  | --              |
| Cherry / ash / yellow-poplar             | 219.5            | 110.5     | 83.0       | 26.1                 | --              |
| Hard maple / basswood                    | 130.8            | 116.7     | 14.1       | --                   | --              |
| Elm / ash / locust                       | 35.6             | 16.3      | 19.3       | --                   | --              |
| All forest types                         | 866.3            | 760.7     | 179.2      | 46.5                 | --              |
| Aspen / birch group                      |                  |           |            |                      |                 |
| Aspen                                    | 6.1              | 4.6       | --         | 1.6                  | --              |
| All forest types                         | 6.1              | 4.6       | --         | 1.6                  | --              |
| All hardwood groups                      | 4,269.2          | 3,169.5   | 794.5      | 305.2                | --              |
| Nonstocked                               | 32.4             | --        | --         | --                   | 32.4            |
| All forest groups                        | 4,413.3          | 3,239.4   | 817.9      | 323.6                | 32.4            |

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 in forest land by species group, species, and owner category, Indiana, 1999-2003

(In thousand cubic feet)

| Species group/<br>species           | Owner category |         |         |                       |
|-------------------------------------|----------------|---------|---------|-----------------------|
|                                     | All<br>owners  | Public  | Private | Unidentified<br>owner |
| <b>Latitude and shortleaf pines</b> |                |         |         |                       |
| Shortleaf pine                      | 30,607         | 34,510  | 5,088   | --                    |
| All species                         | 30,607         | 34,510  | 5,088   | --                    |
| <b>Other yellow pines</b>           |                |         |         |                       |
| Scotch pine                         | 4,086          | --      | 4,086   | --                    |
| Virginia pine                       | 44,150         | 13,302  | 30,856  | --                    |
| All species                         | 48,244         | 13,302  | 34,942  | --                    |
| <b>Eastern white and red pines</b>  |                |         |         |                       |
| Red pine                            | 26,022         | 9,146   | 20,856  | --                    |
| Eastern white pine                  | 70,925         | 27,273  | 52,653  | --                    |
| All species                         | 106,727        | 36,419  | 73,306  | --                    |
| Jack pine                           | --             | --      | --      | --                    |
| Jack pine                           | 1,853          | 233     | 1,620   | --                    |
| All species                         | 1,853          | 233     | 1,620   | --                    |
| <b>Cypress</b>                      |                |         |         |                       |
| Baldcypress                         | --             | --      | --      | --                    |
| All species                         | --             | --      | --      | --                    |
| <b>Other eastern softwoods</b>      |                |         |         |                       |
| Eastern redcedar                    | 103,100        | 18,127  | 84,982  | --                    |
| Tamarack (natho)                    | 851            | 851     | --      | --                    |
| Norway spruce                       | 4,740          | 4,740   | --      | --                    |
| All species                         | 108,750        | 23,718  | 84,982  | --                    |
| Total softwoods                     | 320,131        | 105,190 | 195,941 | --                    |
| <b>Hardwoods</b>                    |                |         |         |                       |
| <b>Select white oaks</b>            |                |         |         |                       |
| White oak                           | 727,688        | 216,038 | 511,650 | --                    |
| Swamp white oak                     | 16,972         | 125     | 10,847  | --                    |
| Bur oak                             | 25,738         | 1,208   | 24,440  | --                    |
| Chickadee oak                       | 102,163        | 14,752  | 87,411  | --                    |
| All species                         | 874,660        | 232,213 | 642,347 | --                    |
| <b>Select red oaks</b>              |                |         |         |                       |
| Cherrybark oak                      | 3,059          | --      | 3,059   | --                    |
| Northern red oak                    | 425,714        | 110,373 | 315,341 | --                    |
| Shumard oak                         | 2,010          | 2,010   | --      | --                    |
| All species                         | 430,783        | 112,383 | 318,400 | --                    |
| <b>Other white oaks</b>             |                |         |         |                       |
| Chestnut oak                        | 140,836        | 93,978  | 86,858  | --                    |
| Post oak                            | 5,973          | 5,044   | 929     | --                    |
| All species                         | 146,809        | 99,022  | 87,787  | --                    |
| <b>Other red oaks</b>               |                |         |         |                       |
| Scarlet oak                         | 55,046         | 27,327  | 27,718  | --                    |
| Shingle oak                         | 42,281         | 2,685   | 30,596  | --                    |
| Pin oak                             | 160,314        | 28,935  | 130,379 | --                    |
| Black oak                           | 520,458        | 101,503 | 427,865 | --                    |
| All species                         | 787,099        | 161,540 | 625,558 | --                    |

(Table 4 continued on next page)

(Table 4 continued)

| Species group/<br>species   | Owner category |         |         |                       |
|-----------------------------|----------------|---------|---------|-----------------------|
|                             | All<br>owners  | Public  | Private | Unidentified<br>owner |
| <b>Hardwoods</b>            |                |         |         |                       |
| <b>Hickory</b>              |                |         |         |                       |
| Water hickory               | 2,010          | --      | 2,010   | --                    |
| Bitternut hickory           | 164,368        | 15,833  | 148,535 | --                    |
| Pignut hickory              | 300,380        | 71,195  | 229,185 | --                    |
| Pecan                       | 249            | --      | 249     | --                    |
| Shadbark hickory            | 2,871          | --      | 2,871   | --                    |
| Shagbark hickory            | 284,422        | 27,011  | 257,411 | --                    |
| Black hickory               | 943            | --      | 943     | --                    |
| Mockernut hickory           | 34,053         | 8,090   | 25,963  | --                    |
| All species                 | 789,326        | 122,137 | 667,189 | --                    |
| <b>Yellow birch</b>         |                |         |         |                       |
| Yellow birch                | --             | --      | --      | --                    |
| <b>Hard maple</b>           |                |         |         |                       |
| All species                 | --             | --      | --      | --                    |
| Black maple                 | 331            | --      | 331     | --                    |
| Sugar maple                 | 848,496        | 118,077 | 730,419 | --                    |
| All species                 | 848,827        | 118,077 | 730,750 | --                    |
| <b>Soft maple</b>           |                |         |         |                       |
| Red maple                   | 273,737        | 43,677  | 230,060 | --                    |
| Silver maple                | 176,435        | 16,096  | 160,340 | --                    |
| All species                 | 450,171        | 59,772  | 390,400 | --                    |
| <b>Beech</b>                |                |         |         |                       |
| American beech              | 272,437        | 41,738  | 230,700 | --                    |
| All species                 | 272,437        | 41,738  | 230,700 | --                    |
| <b>Sweetgum</b>             |                |         |         |                       |
| Sweetgum                    | 104,256        | 29,821  | 74,435  | --                    |
| All species                 | 104,256        | 29,821  | 74,435  | --                    |
| <b>Tupelo and blackgum</b>  |                |         |         |                       |
| Blackgum                    | 60,607         | 9,154   | 51,453  | --                    |
| All species                 | 60,607         | 9,154   | 51,453  | --                    |
| <b>Ash</b>                  |                |         |         |                       |
| White ash                   | 492,372        | 57,989  | 434,383 | --                    |
| Black ash                   | 5,029          | 1,373   | 3,657   | --                    |
| Green ash                   | 157,099        | 13,895  | 143,204 | --                    |
| Blue ash                    | 11,459         | --      | 11,459  | --                    |
| All species                 | 665,959        | 73,257  | 592,703 | --                    |
| <b>Cottonwood and aspen</b> |                |         |         |                       |
| Eastern cottonwood          | 237,392        | 34,645  | 202,747 | --                    |
| Bigtooth aspen              | 32,817         | 18,175  | 14,642  | --                    |
| Swamp cottonwood            | 201            | 201     | --      | --                    |
| Quaking aspen               | 4,191          | 409     | 3,782   | --                    |
| All species                 | 274,601        | 53,431  | 221,171 | --                    |
| <b>Basswood</b>             |                |         |         |                       |
| American basswood           | 124,050        | 7,980   | 116,070 | --                    |
| All species                 | 124,050        | 7,980   | 116,070 | --                    |

(Table 4 continued on next page)

(Table 4 continued)

| Species group/<br>species       | Owner category |           |           | Unidentified<br>owner |
|---------------------------------|----------------|-----------|-----------|-----------------------|
|                                 | All<br>owners  | Public    | Private   |                       |
| Hardwoods                       |                |           |           |                       |
| Yellow-poplar                   |                |           |           |                       |
| Yellow-poplar                   | 944,902        | 176,374   | 768,616   | --                    |
| All species                     | 944,902        | 176,374   | 768,616   | --                    |
| Black walnut                    |                |           |           |                       |
| Black walnut                    | 235,605        | 18,343    | 217,352   | --                    |
| All species                     | 235,605        | 18,343    | 217,352   | --                    |
| Other eastern soft hardwoods    |                |           |           |                       |
| Basswood                        | 45,585         | 1,617     | 43,968    | --                    |
| Ohio buckeye                    | 7,871          | 981       | 6,890     | --                    |
| European alder                  | 598            | 598       | --        | --                    |
| River birch                     | 14,501         | 684       | 13,817    | --                    |
| Northern catalpa                | 13,213         | --        | 13,213    | --                    |
| Sugarberry                      | 936            | --        | 936       | --                    |
| Hackberry                       | 112,377        | 2,900     | 109,477   | --                    |
| Butternut                       | 467            | 180       | 287       | --                    |
| Sycamore                        | 356,503        | 46,501    | 320,001   | --                    |
| Black cherry                    | 224,851        | 31,012    | 193,838   | --                    |
| Black willow                    | 17,932         | 338       | 17,594    | --                    |
| Sassafras                       | 172,531        | 26,695    | 145,836   | --                    |
| Winged elm                      | 525            | 425       | 400       | --                    |
| American elm                    | 131,141        | 8,276     | 122,865   | --                    |
| Siberian elm                    | 3,267          | --        | 3,267     | --                    |
| Slippery elm                    | 63,268         | 8,268     | 75,000    | --                    |
| All species                     | 1,395,666      | 128,476   | 1,067,390 | --                    |
| Other eastern hard hardwoods    |                |           |           |                       |
| Flowering dogwood               | 4,681          | 1,166     | 3,525     | --                    |
| Common persimmon                | 15,286         | 2,201     | 13,085    | --                    |
| Honeylocust                     | 49,377         | 5,577     | 43,799    | --                    |
| Kentucky coffeetree             | 3,797          | --        | 3,797     | --                    |
| White mulberry                  | 1,404          | --        | 1,404     | --                    |
| Red mulberry                    | 10,110         | --        | 10,110    | --                    |
| Black locust                    | 57,294         | 7,483     | 49,811    | --                    |
| All species                     | 141,949        | 16,416    | 125,531   | --                    |
| Eastern noncommercial hardwoods |                |           |           |                       |
| Alnus                           | 3,820          | --        | 3,820     | --                    |
| Pawpaw                          | 1,317          | 97        | 1,220     | --                    |
| American hickory, muscadine     | 6,112          | 604       | 5,508     | --                    |
| Eastern redbud                  | 4,547          | 54        | 4,593     | --                    |
| Hawthorn                        | 28,960         | 460       | 28,500    | --                    |
| Cashew-orange                   | 1,470          | 51        | 1,418     | --                    |
| Apple spp.                      | 4,127          | 240       | 3,887     | --                    |
| Eastern hophornbeam             | 84             | 84        | --        | --                    |
| Cherry and plum spp.            | 47             | --        | 47        | --                    |
| Chokeberry                      | 81             | --        | 81        | --                    |
| Wild plum                       | --             | --        | --        | --                    |
| Unknown dead hardwood           | 50,545         | 1,571     | 49,075    | --                    |
| All species                     | 8,388,554      | 1,421,706 | 6,966,948 | --                    |
| Total hardwoods                 |                |           |           |                       |

(Table 4 continued on next page)

(Table 4 continued)

| Species group/<br>species | Owner category |           |           |                       |
|---------------------------|----------------|-----------|-----------|-----------------------|
|                           | All<br>owners  | Public    | Private   | Unidentified<br>owner |
| <b>Hardwoods</b>          |                |           |           |                       |
| <b>All species groups</b> | 8,696,785      | 1,529,896 | 7,166,889 | --                    |

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 5. -- Net volume of all live trees and salvable dead trees on timberland by class of timber and softwood/hardwood species category, Indiana, 1989-2003

(In thousand cubic feet)

| Class of timber                | All species      | Softwood species | Hardwood species |
|--------------------------------|------------------|------------------|------------------|
| <b>Live trees</b>              |                  |                  |                  |
| <b>Growing-stock trees</b>     |                  |                  |                  |
| Sawtimber                      |                  |                  |                  |
| Saw log portion                | 5,302,632        | 182,315          | 5,120,317        |
| Upper stem portion             | 659,589          | 20,703           | 638,886          |
| Total                          | 5,962,221        | 203,018          | 5,759,203        |
| Polelimber                     | 1,558,579        | 71,270           | 1,487,309        |
| <b>All growing-stock trees</b> | <b>7,520,801</b> | <b>274,289</b>   | <b>7,246,512</b> |
| <b>Cull trees</b>              |                  |                  |                  |
| Rough trees <sup>1</sup>       |                  |                  |                  |
| Sawtimber size                 | 527,491          | 4,794            | 522,697          |
| Polelimber size                | 210,219          | 5,336            | 204,883          |
| Total                          | 737,710          | 10,129           | 727,581          |
| Rotten trees <sup>1</sup>      |                  |                  |                  |
| Sawtimber size                 | 118,064          | 299              | 117,765          |
| Polelimber size                | 16,451           | 169              | 16,282           |
| Total                          | 134,535          | 468              | 134,067          |
| <b>All live trees</b>          | <b>872,245</b>   | <b>10,597</b>    | <b>861,648</b>   |
| <b>All live trees</b>          | <b>8,393,045</b> | <b>284,885</b>   | <b>8,108,160</b> |
| <b>Salvable dead trees</b>     |                  |                  |                  |
| Sawtimber size                 | 65,367           | 7,411            | 57,947           |
| Polelimber size                | 65,493           | 6,895            | 58,598           |
| <b>All salvable dead trees</b> | <b>130,861</b>   | <b>14,306</b>    | <b>116,545</b>   |
| <b>All classes</b>             | <b>8,523,896</b> | <b>299,191</b>   | <b>8,224,705</b> |

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.

<sup>1</sup> Includes noncommercial species.

Table 6. -- Net volume of growing stock on timberland by forest type group, forest type, and softwood/hardwood species category, Indiana, 1999-2003

(In thousand cubic feet)

| Forest type group/<br>forest type      | All<br>species | Softwood<br>species | Hardwood<br>species |
|----------------------------------------|----------------|---------------------|---------------------|
| <b>White / red / jack pine group</b>   |                |                     |                     |
| Red pine                               | 45,172         | 28,574              | 16,598              |
| Eastern white pine                     | 61,174         | 50,202              | 10,972              |
| All forest types                       | 106,347        | 78,776              | 27,571              |
| <b>Loblolly / shortleaf pine group</b> |                |                     |                     |
| Shortleaf pine                         | 33,825         | 26,603              | 7,222               |
| Virginia pine                          | 31,017         | 26,030              | 4,987               |
| All forest types                       | 64,842         | 52,633              | 12,208              |
| <b>Pinon / juniper group</b>           |                |                     |                     |
| Eastern redcedar                       | 20,726         | 14,097              | 6,628               |
| All forest types                       | 20,726         | 14,097              | 6,628               |
| <b>Exotic softwoods group</b>          |                |                     |                     |
| Scotch pine                            | 2,061          | 2,005               | 56                  |
| All forest types                       | 2,061          | 2,005               | 56                  |
| All softwood groups                    | 193,975        | 147,511             | 46,463              |
| <b>Hardwood type groups</b>            |                |                     |                     |
| <b>Oak / pine group</b>                |                |                     |                     |
| White pine / red oak / white ash       | 28,018         | 13,287              | 14,731              |
| Eastern redcedar / hardwood            | 93,573         | 33,628              | 59,944              |
| Shortleaf pine / oak                   | 19,553         | 5,136               | 13,416              |
| Virginia pine / southern red oak       | 18,745         | 5,348               | 13,397              |
| Other pine / hardwood                  | --             | --                  | --                  |
| All forest types                       | 159,889        | 57,400              | 101,489             |
| <b>Oak / hickory group</b>             |                |                     |                     |
| Oak / hickory group                    | 1,247          | --                  | 1,247               |
| Chestnut oak                           | 92,346         | 1,293               | 91,052              |
| White oak / red oak / hickory          | 2,400,411      | 11,679              | 2,388,732           |
| White oak                              | 375,290        | 5,363               | 369,927             |
| Northern red oak                       | 87,056         | --                  | 87,056              |
| Yellow-poplar / white oak / red oak    | 367,566        | 9,474               | 358,093             |
| Sassafras / persimmon                  | 143,319        | 2,451               | 140,868             |
| Sweetgum / yellow-poplar               | 185,659        | --                  | 185,659             |
| Bur oak                                | 5,261          | --                  | 5,261               |
| Scarlet oak                            | 23,992         | --                  | 23,992              |
| Yellow-poplar                          | 181,349        | 3,656               | 177,693             |
| Black walnut                           | 70,067         | --                  | 70,067              |
| Black locust                           | 2,541          | 1,074               | 1,466               |
| Chestnut oak / black oak / scarlet oak | 64,529         | 79                  | 64,450              |
| Red maple / oak                        | 91,168         | 109                 | 91,059              |
| Mixed upland hardwoods                 | 396,606        | 6,303               | 392,303             |
| All forest types                       | 4,490,409      | 41,482              | 4,448,927           |

(Table 6 continued on next page)

(Table 6 continued)

| Forest type group/<br>forest type        | All<br>species | Softwood<br>species | Hardwood<br>species |
|------------------------------------------|----------------|---------------------|---------------------|
| <b>Hardwood type groups</b>              |                |                     |                     |
| Oak / gum / cypress group                |                |                     |                     |
| Swamp chestnut oak / cherrybark oak      | 8,973          | --                  | 8,973               |
| Sweetgum / Nuttall oak / willow oak      | 34,160         | --                  | 34,160              |
| Sweetbay / swamp tupelo / red maple      | 49,872         | --                  | 49,872              |
| All forest types                         | 93,006         | --                  | 93,006              |
| <b>Elm / ash / cottonwood group</b>      |                |                     |                     |
| Black ash / American elm / red maple     | 32,111         | 851                 | 31,260              |
| River birch / sycamore                   | 204,268        | 768                 | 203,500             |
| Cottonwood                               | 124,141        | --                  | 124,141             |
| Willow                                   | 4,787          | --                  | 4,787               |
| Sycamore / pecan / American elm          | 69,410         | --                  | 69,410              |
| Sugarberry / hackberry / elm / green ash | 220,082        | 633                 | 219,448             |
| Silver maple / American elm              | 133,860        | --                  | 133,860             |
| Red maple / lowland                      | 1,978          | --                  | 1,978               |
| Cottonwood / willow                      | 74,162         | 8,658               | 65,505              |
| All forest types                         | 864,800        | 10,910              | 853,890             |
| <b>Maple / beech / birch group</b>       |                |                     |                     |
| Maple / beech / birch group              | 1,715          | --                  | 1,715               |
| Sugar maple / beech / yellow birch       | 1,022,492      | 9,898               | 1,012,594           |
| Black cherry                             | 24,045         | 55                  | 23,990              |
| Cherry / ash / yellow-poplar             | 296,478        | 2,791               | 293,687             |
| Hard maple / basswood                    | 304,597        | 4,187               | 300,411             |
| Elm / ash / locust                       | 48,054         | --                  | 48,054              |
| All forest types                         | 1,697,382      | 16,931              | 1,680,451           |
| <b>Aspen / birch group</b>               |                |                     |                     |
| Aspen                                    | 20,841         | 53                  | 20,787              |
| All forest types                         | 20,841         | 53                  | 20,787              |
| All hardwood groups                      | 7,325,327      | 126,777             | 7,198,549           |
| Nonstocked                               | 1,499          | --                  | 1,499               |
| <b>All forest groups</b>                 | 7,520,801      | 274,289             | 7,246,512           |

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 7. – Net volume of growing stock on timberland by species group, species, and diameter class, Indiana, 1999-2003

(In thousand cubic feet)

| Species group/<br>species    | All<br>classes | Diameter class (inches at breast height) |         |          |           |           |           |           |           |           |        | 29.0+ |
|------------------------------|----------------|------------------------------------------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|-------|
|                              |                | 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 |        |       |
| Loblolly and shortleaf pines |                |                                          |         |          |           |           |           |           |           |           |        |       |
| Shortleaf pine               | 31,729         | 874                                      | 2,863   | 5,004    | 8,102     | 8,677     | 3,706     | 2,502     | --        | --        | --     | --    |
| All species                  | 31,729         | 874                                      | 2,863   | 5,004    | 8,102     | 8,677     | 3,706     | 2,502     | --        | --        | --     | --    |
| Other yellow pines           |                |                                          |         |          |           |           |           |           |           |           |        |       |
| Scotch pine                  | 3,690          | 1,110                                    | 524     | 1,639    | 407       | --        | --        | --        | --        | --        | --     | --    |
| Virginia pine                | 42,885         | 2,352                                    | 3,183   | 7,604    | 11,365    | 7,450     | 5,820     | 5,111     | --        | --        | --     | --    |
| All species                  | 46,575         | 3,462                                    | 3,707   | 9,243    | 11,772    | 7,450     | 5,820     | 5,111     | --        | --        | --     | --    |
| Eastern white and red pines  |                |                                          |         |          |           |           |           |           |           |           |        |       |
| Red pine                     | 29,802         | 1,221                                    | 7,243   | 13,603   | 3,544     | 4,191     | --        | --        | --        | --        | --     | --    |
| Eastern white pine           | 69,303         | 2,056                                    | 5,267   | 5,962    | 16,096    | 7,307     | 8,943     | 4,172     | 4,576     | 14,923    | --     | --    |
| All species                  | 99,104         | 3,277                                    | 12,510  | 19,566   | 19,640    | 11,498    | 8,943     | 4,172     | 4,576     | 14,923    | --     | --    |
| Jack pine                    |                |                                          |         |          |           |           |           |           |           |           |        |       |
| Jack pine                    | 1,620          | 66                                       | 450     | 650      | 435       | --        | --        | --        | --        | --        | --     | --    |
| All species                  | 1,620          | 66                                       | 450     | 650      | 435       | --        | --        | --        | --        | --        | --     | --    |
| Cypress                      |                |                                          |         |          |           |           |           |           |           |           |        |       |
| Baldcypress                  | --             | --                                       | --      | --       | --        | --        | --        | --        | --        | --        | --     | --    |
| All species                  | --             | --                                       | --      | --       | --        | --        | --        | --        | --        | --        | --     | --    |
| Other eastern softwoods      |                |                                          |         |          |           |           |           |           |           |           |        |       |
| Eastern redcedar             | 89,679         | 18,590                                   | 24,378  | 17,406   | 8,290     | 13,785    | 6,238     | 994       | --        | --        | --     | --    |
| Tamarack (native)            | 851            | --                                       | 851     | --       | --        | --        | --        | --        | --        | --        | --     | --    |
| Norway spruce                | 4,740          | 60                                       | 160     | --       | --        | --        | 1,313     | --        | --        | 3,202     | --     | --    |
| All species                  | 95,270         | 18,649                                   | 25,394  | 17,406   | 8,290     | 13,785    | 7,551     | 994       | --        | 3,202     | --     | --    |
| Total softwoods              | 274,289        | 26,348                                   | 44,922  | 51,868   | 48,240    | 41,410    | 26,020    | 12,779    | 4,576     | 18,126    | --     | --    |
| Hardwoods                    |                |                                          |         |          |           |           |           |           |           |           |        |       |
| Select white oaks            |                |                                          |         |          |           |           |           |           |           |           |        |       |
| White oak                    | 657,968        | 8,947                                    | 19,551  | 31,733   | 41,224    | 70,984    | 101,415   | 94,226    | 78,122    | 157,986   | 53,779 | --    |
| Swamp white oak              | 18,972         | 172                                      | 808     | 262      | 643       | 4,117     | --        | 1,486     | 4,614     | 6,871     | --     | --    |
| Bur oak                      | 23,863         | 806                                      | 1,201   | 1,111    | 593       | 1,750     | 2,192     | 1,745     | 3,736     | 10,729    | --     | --    |
| Chickasaw oak                | 87,629         | 4,088                                    | 8,063   | 9,542    | 14,689    | 8,041     | 9,345     | 6,437     | 6,321     | 21,097    | --     | --    |
| All species                  | 768,432        | 14,011                                   | 29,623  | 42,647   | 57,150    | 84,891    | 112,952   | 103,894   | 92,793    | 196,663   | 53,779 | --    |
| Select red oaks              |                |                                          |         |          |           |           |           |           |           |           |        |       |
| Cherrybark oak               | 3,059          | --                                       | --      | --       | 662       | 861       | --        | 1,536     | --        | --        | --     | --    |
| Northern red oak             | 385,031        | 7,155                                    | 11,475  | 15,222   | 27,035    | 37,914    | 43,076    | 53,073    | 46,202    | 98,900    | 44,979 | --    |
| Shumard oak                  | 2,010          | --                                       | --      | --       | --        | --        | 827       | 1,184     | --        | --        | --     | --    |
| All species                  | 390,100        | 7,155                                    | 11,475  | 15,222   | 27,697    | 38,775    | 43,903    | 55,763    | 46,202    | 98,900    | 44,979 | --    |
| Other white oaks             |                |                                          |         |          |           |           |           |           |           |           |        |       |
| Chestnut oak                 | 109,919        | 1,161                                    | 2,052   | 7,067    | 14,388    | 27,304    | 21,336    | 11,627    | 15,883    | 9,081     | --     | --    |
| Post oak                     | 5,973          | 97                                       | 504     | 1,115    | 2,106     | --        | --        | 2,150     | --        | --        | --     | --    |
| All species                  | 115,892        | 1,279                                    | 2,556   | 8,182    | 16,495    | 27,304    | 21,336    | 13,776    | 15,883    | 9,081     | --     | --    |

(Table 7 continued on next page)

(Table 7 continued)

| Species group/<br>species | All<br>classes | Diameter class (inches at breast height) |         |          |           |           |           |           |           |           |        |
|---------------------------|----------------|------------------------------------------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|
|                           |                | 5.0-5.9                                  | 7.0-7.9 | 9.0-10.9 | 11.0-12.9 | 13.0-14.9 | 15.0-16.9 | 17.0-18.9 | 19.0-20.9 | 21.0-23.9 | 24.0+  |
| Hardwoods                 |                |                                          |         |          |           |           |           |           |           |           |        |
| Other red oaks            |                |                                          |         |          |           |           |           |           |           |           |        |
| Scarlet oak               | 49,459         | 151                                      | 1,450   | 2,437    | 2,022     | 10,949    | 12,026    | 8,755     | 3,093     | 7,776     | --     |
| Shingle oak               | 41,761         | 1,451                                    | 3,946   | 4,562    | 3,273     | 2,220     | 2,177     | 4,961     | 6,063     | 5,574     | 7,514  |
| Pin oak                   | 150,345        | 3,359                                    | 4,459   | 7,077    | 6,637     | 11,507    | 14,097    | 14,171    | 10,959    | 71,541    | 6,340  |
| Black oak                 | 472,487        | 9,179                                    | 16,979  | 25,250   | 32,292    | 57,449    | 54,515    | 59,935    | 60,764    | 120,414   | 35,720 |
| All species               | 714,053        | 14,139                                   | 26,834  | 35,327   | 44,224    | 82,225    | 83,815    | 87,821    | 80,889    | 205,405   | 49,575 |
| Hickory                   |                |                                          |         |          |           |           |           |           |           |           |        |
| Water hickory             | 887            | --                                       | --      | --       | --        | 887       | --        | --        | --        | --        | --     |
| Bitternut hickory         | 152,744        | 5,082                                    | 12,320  | 18,023   | 25,122    | 24,974    | 17,722    | 27,912    | 4,340     | 11,167    | 6,074  |
| Pignut hickory            | 288,642        | 8,200                                    | 21,083  | 30,726   | 44,619    | 55,251    | 37,914    | 31,745    | 24,263    | 28,248    | 5,993  |
| Pecan                     | 240            | 79                                       | 170     | --       | --        | --        | --        | --        | --        | --        | --     |
| Shoebark hickory          | 2,871          | --                                       | --      | --       | 765       | --        | --        | 2,105     | --        | --        | --     |
| Shagbark hickory          | 272,369        | 12,400                                   | 24,046  | 35,644   | 40,107    | 31,530    | 40,100    | 40,987    | 25,531    | 14,000    | --     |
| Black hickory             | 943            | --                                       | --      | --       | --        | 943       | --        | --        | --        | --        | --     |
| Mockernut hickory         | 32,712         | 1,082                                    | 2,240   | 2,383    | 3,234     | 5,620     | 9,839     | 8,306     | --        | --        | --     |
| All species               | 751,416        | 20,851                                   | 60,459  | 86,775   | 113,848   | 119,222   | 113,583   | 111,055   | 54,142    | 53,414    | 12,067 |
| Hard maple                |                |                                          |         |          |           |           |           |           |           |           |        |
| Black maple               | 331            | 109                                      | 222     | --       | --        | --        | --        | --        | --        | --        | --     |
| Sugar maple               | 715,094        | 57,904                                   | 63,586  | 94,001   | 97,920    | 97,422    | 108,955   | 81,240    | 32,888    | 67,225    | 13,953 |
| All species               | 715,424        | 58,013                                   | 63,808  | 94,001   | 97,920    | 97,422    | 108,955   | 81,240    | 32,888    | 67,225    | 13,953 |
| Soft maple                |                |                                          |         |          |           |           |           |           |           |           |        |
| Red maple                 | 219,278        | 18,370                                   | 27,907  | 29,483   | 24,105    | 20,289    | 22,936    | 18,381    | 25,247    | 32,561    | --     |
| Silver maple              | 139,099        | 7,327                                    | 16,119  | 15,620   | 20,195    | 11,450    | 12,871    | 8,230     | 18,324    | 18,499    | 10,456 |
| All species               | 358,377        | 25,697                                   | 44,026  | 45,103   | 44,299    | 31,747    | 35,807    | 26,612    | 43,571    | 51,060    | 10,456 |
| Beech                     |                |                                          |         |          |           |           |           |           |           |           |        |
| American beech            | 195,004        | 5,764                                    | 9,801   | 9,212    | 14,317    | 19,504    | 25,455    | 33,640    | 16,887    | 55,153    | 5,272  |
| All species               | 195,004        | 5,764                                    | 9,801   | 9,212    | 14,317    | 19,504    | 25,455    | 33,640    | 16,887    | 55,153    | 5,272  |
| Sweetgum                  |                |                                          |         |          |           |           |           |           |           |           |        |
| Sweetgum                  | 98,989         | 5,167                                    | 7,130   | 9,703    | 18,559    | 15,033    | 12,888    | 13,099    | 12,505    | 4,504     | --     |
| All species               | 98,989         | 5,167                                    | 7,130   | 9,703    | 18,559    | 15,033    | 12,888    | 13,099    | 12,505    | 4,504     | --     |
| Tupelo and blackgum       |                |                                          |         |          |           |           |           |           |           |           |        |
| Tupelo and blackgum       | 53,248         | 7,502                                    | 7,606   | 6,046    | 4,900     | 4,277     | 8,428     | 5,495     | 1,979     | 7,017     | --     |
| All species               | 53,248         | 7,502                                    | 7,606   | 6,046    | 4,900     | 4,277     | 8,428     | 5,495     | 1,979     | 7,017     | --     |
| Ash                       |                |                                          |         |          |           |           |           |           |           |           |        |
| White ash                 | 410,515        | 10,790                                   | 27,054  | 44,472   | 43,061    | 56,496    | 58,968    | 59,926    | 34,377    | 55,512    | 10,837 |
| Black ash                 | 4,655          | 525                                      | 1,290   | 1,477    | 549       | 804       | --        | --        | --        | --        | --     |
| Green ash                 | 131,884        | 6,889                                    | 11,510  | 19,283   | 14,665    | 18,436    | 10,764    | 21,913    | 9,300     | 19,122    | --     |
| Blue ash                  | 4,600          | 637                                      | 651     | 764      | 515       | 640       | 1,193     | --        | --        | --        | --     |
| All species               | 551,654        | 27,841                                   | 40,515  | 65,955   | 68,792    | 76,576    | 70,946    | 81,839    | 43,677    | 74,635    | 10,837 |
| Cottonwood and aspen      |                |                                          |         |          |           |           |           |           |           |           |        |
| Eastern cottonwood        | 224,965        | 1,645                                    | 1,112   | 5,200    | 7,232     | 8,336     | 13,946    | 17,757    | 19,793    | 89,575    | 60,369 |
| Bigtooth aspen            | 27,659         | 723                                      | 2,247   | 2,402    | 3,701     | 4,905     | 3,444     | 6,263     | 3,874     | --        | --     |
| Quaking aspen             | 3,645          | 1,356                                    | 687     | --       | --        | --        | 1,401     | --        | --        | --        | --     |
| All species               | 256,269        | 3,724                                    | 4,245   | 7,682    | 10,933    | 13,241    | 18,791    | 24,040    | 23,668    | 89,575    | 60,369 |

(Table 7 continued on next page)

(Table 7 continued)

| Species group/<br>species    | All<br>classes | Diameter class (inches at breast height) |         |          |           |           |           |           |           |  |
|------------------------------|----------------|------------------------------------------|---------|----------|-----------|-----------|-----------|-----------|-----------|--|
|                              |                | 5.0-5.9                                  | 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 |  |
| Hardwoods                    |                |                                          |         |          |           |           |           |           |           |  |
| Basswood                     |                |                                          |         |          |           |           |           |           |           |  |
| American basswood            | 106,863        | 5,126                                    | 9,116   | 9,053    | 11,322    | 7,263     | 11,846    | 10,951    | 10,760    |  |
| All species                  | 106,863        | 5,126                                    | 9,116   | 9,053    | 11,322    | 7,263     | 11,846    | 10,951    | 10,760    |  |
| Yellow-poplar                |                |                                          |         |          |           |           |           |           |           |  |
| Yellow-poplar                | 906,652        | 23,020                                   | 39,072  | 73,062   | 80,762    | 95,329    | 98,983    | 94,853    | 98,866    |  |
| All species                  | 906,652        | 23,020                                   | 39,072  | 73,062   | 80,762    | 95,329    | 98,983    | 94,853    | 98,866    |  |
| Black walnut                 |                |                                          |         |          |           |           |           |           |           |  |
| Black walnut                 | 193,181        | 9,111                                    | 19,314  | 24,262   | 37,553    | 38,535    | 31,849    | 21,918    | 8,305     |  |
| All species                  | 193,181        | 9,111                                    | 19,314  | 24,262   | 37,553    | 38,535    | 31,849    | 21,918    | 8,305     |  |
| Other eastern soft hardwoods |                |                                          |         |          |           |           |           |           |           |  |
| Boxelder                     | 21,717         | 5,063                                    | 3,915   | 3,479    | 4,135     | 2,609     | 2,517     | --        | --        |  |
| Ohio buckeye                 | 5,360          | 1,820                                    | 1,134   | 1,715    | 691       | --        | --        | --        | --        |  |
| European alder               | 487            | 179                                      | 77      | 231      | --        | --        | --        | --        | --        |  |
| River birch                  | 13,198         | 1,222                                    | 1,176   | 2,279    | 1,498     | 4,062     | --        | --        | --        |  |
| Northern catalpa             | 5,882          | 164                                      | 778     | --       | 1,078     | 672       | 1,126     | --        | 2,075     |  |
| Sugarberry                   | 936            | 99                                       | --      | 325      | 512       | --        | --        | --        | --        |  |
| Hackberry                    | 94,419         | 7,337                                    | 9,460   | 12,054   | 9,521     | 14,240    | 8,549     | 9,104     | 3,977     |  |
| Butternut                    | 379            | 92                                       | --      | 287      | --        | --        | --        | --        | --        |  |
| Sycamore                     | 323,633        | 3,915                                    | 8,904   | 17,472   | 16,345    | 25,553    | 38,591    | 33,245    | 34,169    |  |
| Black cherry                 | 177,108        | 16,106                                   | 21,195  | 30,812   | 24,642    | 20,081    | 17,508    | 15,274    | 12,921    |  |
| Black willow                 | 11,447         | 677                                      | 912     | 1,319    | --        | 2,235     | 1,351     | 1,613     | --        |  |
| Sassafras                    | 124,927        | 17,558                                   | 22,213  | 20,724   | 20,174    | 20,369    | 9,350     | 10,528    | 4,012     |  |
| Winged elm                   | 635            | 635                                      | --      | --       | --        | --        | --        | --        | --        |  |
| American elm                 | 102,628        | 20,629                                   | 17,926  | 17,879   | 12,190    | 8,478     | 11,455    | 2,292     | 4,308     |  |
| Siberian elm                 | 3,214          | --                                       | --      | --       | --        | --        | --        | 3,214     | --        |  |
| Slippery elm                 | 75,804         | 10,467                                   | 13,144  | 11,929   | 7,971     | 6,248     | 7,226     | 4,788     | 8,440     |  |
| All species                  | 961,787        | 85,962                                   | 100,834 | 121,105  | 98,757    | 104,546   | 97,674    | 80,059    | 69,902    |  |
| Other eastern hard hardwoods |                |                                          |         |          |           |           |           |           |           |  |
| Flowering dogwood            | 1,798          | 1,644                                    | 155     | --       | --        | --        | --        | --        | --        |  |
| Common persimmon             | 14,265         | 2,181                                    | 3,026   | 2,630    | 1,310     | 2,658     | 2,449     | --        | --        |  |
| Honeylocust                  | 37,119         | 1,983                                    | 3,770   | 4,175    | 5,530     | 7,047     | 8,966     | 3,559     | 2,069     |  |
| Kentucky coffeetree          | 3,797          | 199                                      | --      | --       | --        | 3,598     | --        | --        | --        |  |
| Red mulberry                 | 131            | 131                                      | --      | --       | --        | --        | --        | --        | --        |  |
| Black locust                 | 32,260         | 3,173                                    | 5,111   | 4,978    | 4,804     | 5,142     | 2,383     | 3,223     | 3,447     |  |
| All species                  | 89,370         | 9,311                                    | 12,062  | 11,782   | 11,644    | 16,455    | 13,798    | 6,762     | 5,537     |  |
| Total hardwoods              |                |                                          |         |          |           |           |           |           |           |  |
| All species groups           | 7,245,512      | 329,672                                  | 488,476 | 669,161  | 749,179   | 874,366   | 910,809   | 852,865   | 658,541   |  |
|                              | 7,520,801      | 358,020                                  | 533,369 | 721,029  | 797,419   | 915,776   | 936,829   | 865,844   | 683,117   |  |

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 8. -- Net volume of sawtimber on timberland by species group, species, and diameter class, Indiana, 1999-2003

(In thousand board feet)<sup>1</sup>

| Species group/<br>species    | All<br>classes | Diameter class (inches at breast height) |           |           |           |           |           |           |         |
|------------------------------|----------------|------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|---------|
|                              |                | 9.5-10.9                                 | 11.0-12.9 | 13.0-14.9 | 15.0-16.9 | 17.0-18.9 | 19.0-20.9 | 21.0-28.9 | 28.0+   |
| Loblolly and shortleaf pines |                |                                          |           |           |           |           |           |           |         |
| Shortleaf pine               | 142,602        | 24,526                                   | 40,767    | 44,602    | 19,370    | 13,338    | --        | --        | --      |
| All species                  | 142,602        | 24,526                                   | 40,767    | 44,602    | 19,370    | 13,338    | --        | --        | --      |
| Other yellow pines           |                |                                          |           |           |           |           |           |           |         |
| Scotch pine                  | 9,510          | 7,553                                    | 1,957     | --        | --        | --        | --        | --        | --      |
| Virginia pine                | 191,008        | 37,329                                   | 57,212    | 30,591    | 30,622    | 27,254    | --        | --        | --      |
| All species                  | 200,518        | 44,881                                   | 59,170    | 30,591    | 30,622    | 27,254    | --        | --        | --      |
| Eastern white and red pines  |                |                                          |           |           |           |           |           |           |         |
| Red pine                     | 101,208        | 84,150                                   | 16,915    | 20,144    | --        | --        | --        | --        | --      |
| Eastern white pine           | 298,394        | 27,128                                   | 75,829    | 34,151    | 44,123    | 20,617    | 22,823    | 73,724    | --      |
| All species                  | 399,603        | 91,277                                   | 92,744    | 54,295    | 44,123    | 20,617    | 22,823    | 73,724    | --      |
| Jack pine                    |                |                                          |           |           |           |           |           |           |         |
| Jack pine                    | 5,348          | 3,101                                    | 2,167     | --        | --        | --        | --        | --        | --      |
| All species                  | 5,348          | 3,101                                    | 2,167     | --        | --        | --        | --        | --        | --      |
| Other eastern softwoods      |                |                                          |           |           |           |           |           |           |         |
| Eastern redcedar             | 238,445        | 95,772                                   | 42,550    | 66,888    | 28,937    | 4,268     | --        | --        | --      |
| Norway spruce                | 21,852         | --                                       | --        | --        | 6,294     | --        | --        | 15,557    | --      |
| All species                  | 260,297        | 95,772                                   | 42,550    | 66,888    | 35,232    | 4,268     | --        | 15,557    | --      |
| Total softwoods              | 1,008,367      | 259,637                                  | 237,396   | 204,377   | 129,346   | 65,507    | 22,823    | 89,281    | --      |
| Hardwoods                    |                |                                          |           |           |           |           |           |           |         |
| Selected white oaks          |                |                                          |           |           |           |           |           |           |         |
| White oak                    | 2,728,655      | --                                       | 203,526   | 344,995   | 483,986   | 441,154   | 359,438   | 693,462   | 202,065 |
| Swamp white oak              | 80,568         | --                                       | 3,131     | 20,062    | --        | 6,957     | 21,310    | 29,498    | --      |
| Bur oak                      | 94,046         | --                                       | 2,929     | 8,571     | 10,652    | 7,991     | 17,246    | 46,667    | --      |
| Chickpea oak                 | 308,054        | --                                       | 72,447    | 39,052    | 44,638    | 29,866    | 29,050    | 93,001    | --      |
| All species                  | 3,211,712      | --                                       | 282,033   | 412,680   | 539,276   | 485,959   | 427,042   | 862,618   | 202,065 |
| Selected red oaks            |                |                                          |           |           |           |           |           |           |         |
| Cherrybark oak               | 15,208         | --                                       | 3,281     | 4,286     | --        | 7,640     | --        | --        | --      |
| Northern red oak             | 1,688,113      | --                                       | 133,495   | 188,583   | 214,686   | 263,533   | 227,797   | 467,714   | 192,304 |
| Shumard oak                  | 10,001         | --                                       | --        | --        | 4,120     | 5,881     | --        | --        | --      |
| All species                  | 1,713,322      | --                                       | 136,777   | 192,869   | 218,806   | 277,054   | 227,797   | 467,714   | 192,304 |
| Other white oaks             |                |                                          |           |           |           |           |           |           |         |
| Chestnut oak                 | 498,587        | --                                       | 73,580    | 139,101   | 107,205   | 57,940    | 77,128    | 43,632    | --      |
| Post oak                     | 21,326         | --                                       | 10,607    | --        | --        | 10,720    | --        | --        | --      |
| All species                  | 519,913        | --                                       | 84,187    | 139,101   | 107,205   | 68,660    | 77,128    | 43,632    | --      |
| Other red oaks               |                |                                          |           |           |           |           |           |           |         |
| Scarlet oak                  | 221,585        | --                                       | 9,908     | 54,047    | 62,826    | 42,802    | 14,849    | 36,973    | --      |
| Shingle oak                  | 149,455        | --                                       | 16,219    | 11,043    | 10,762    | 24,247    | 29,435    | 26,521    | 31,228  |
| Pin oak                      | 637,656        | --                                       | 32,638    | 57,045    | 69,423    | 68,798    | 52,745    | 330,683   | 26,324  |
| Black oak                    | 2,005,986      | --                                       | 150,753   | 283,695   | 268,374   | 292,726   | 293,955   | 561,737   | 146,746 |
| All species                  | 3,014,681      | --                                       | 217,597   | 405,829   | 413,485   | 428,673   | 390,985   | 955,914   | 204,298 |

(Table 8 continued on next page)

(Table 8 continued)

| Species group/<br>species | All<br>classes | Diameter class (inches at breast height) |           |           |           |           |           |           |         | 29.0+ |
|---------------------------|----------------|------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|---------|-------|
|                           |                | 9.0-10.9                                 | 11.0-12.9 | 13.0-14.9 | 15.0-16.9 | 17.0-18.9 | 19.0-20.9 | 21.0-23.9 |         |       |
| Hardwoods                 |                |                                          |           |           |           |           |           |           |         |       |
| Hickory                   |                |                                          |           |           |           |           |           |           |         |       |
| Water hickory             | 4,428          | --                                       | --        | 4,428     | --        | --        | --        | --        | --      | --    |
| Bitternut hickory         | 586,288        | --                                       | 125,368   | 125,000   | 88,820    | 139,810   | 21,595    | 55,768    | 29,936  | --    |
| Pignut hickory            | 1,138,180      | --                                       | 222,807   | 276,441   | 189,385   | 158,967   | 120,997   | 140,176   | 29,406  | --    |
| Shellbark hickory         | 13,884         | --                                       | 3,694     | --        | --        | 10,190    | --        | --        | --      | --    |
| Snead's hickory           | 980,215        | --                                       | 193,387   | 152,298   | 232,591   | 190,433   | 123,625   | 67,801    | --      | --    |
| Black hickory             | 4,735          | --                                       | --        | 4,735     | --        | --        | --        | --        | --      | --    |
| Mockernut hickory         | 130,267        | --                                       | 15,570    | 27,161    | 47,551    | 39,985    | --        | --        | --      | --    |
| All species               | 2,845,995      | --                                       | 560,816   | 590,063   | 858,348   | 547,385   | 266,217   | 263,826   | 59,342  | --    |
| Hard maple                |                |                                          |           |           |           |           |           |           |         |       |
| Sugar maple               | 2,379,577      | --                                       | 471,333   | 470,878   | 525,867   | 389,356   | 155,930   | 310,347   | 55,864  | --    |
| All species               | 2,379,577      | --                                       | 471,333   | 470,878   | 525,867   | 389,356   | 155,930   | 310,347   | 55,864  | --    |
| Soft maple                |                |                                          |           |           |           |           |           |           |         |       |
| Red maple                 | 626,047        | --                                       | 104,606   | 88,860    | 100,857   | 80,860    | 110,470   | 140,394   | --      | --    |
| Silver maple              | 423,406        | --                                       | 87,755    | 50,156    | 56,564    | 36,140    | 80,044    | 79,501    | 33,246  | --    |
| All species               | 1,049,452      | --                                       | 192,360   | 139,016   | 157,422   | 117,000   | 190,514   | 219,895   | 33,246  | --    |
| Beech                     |                |                                          |           |           |           |           |           |           |         |       |
| American beech            | 832,631        | --                                       | 72,443    | 98,122    | 127,244   | 166,737   | 82,604    | 261,358   | 24,123  | --    |
| All species               | 832,631        | --                                       | 72,443    | 98,122    | 127,244   | 166,737   | 82,604    | 261,358   | 24,123  | --    |
| Sweetgum                  |                |                                          |           |           |           |           |           |           |         |       |
| Sweetgum                  | 945,678        | --                                       | 84,523    | 68,489    | 58,201    | 58,656    | 55,300    | 20,508    | --      | --    |
| All species               | 945,678        | --                                       | 84,523    | 68,489    | 58,201    | 58,656    | 55,300    | 20,508    | --      | --    |
| Tupelo and blackgum       |                |                                          |           |           |           |           |           |           |         |       |
| Blackgum                  | 143,712        | --                                       | 22,364    | 19,444    | 38,320    | 24,771    | 8,841     | 29,972    | --      | --    |
| All species               | 143,712        | --                                       | 22,364    | 19,444    | 38,320    | 24,771    | 8,841     | 29,972    | --      | --    |
| Ash                       |                |                                          |           |           |           |           |           |           |         |       |
| White ash                 | 1,494,161      | --                                       | 195,383   | 261,961   | 278,170   | 204,977   | 164,115   | 261,754   | 47,800  | --    |
| Black ash                 | 6,193          | --                                       | 2,478     | 3,715     | --        | --        | --        | --        | --      | --    |
| Green ash                 | 440,048        | --                                       | 66,481    | 85,325    | 50,669    | 104,235   | 44,385    | 88,955    | --      | --    |
| Blue ash                  | 11,775         | --                                       | 2,314     | 3,869     | 5,503     | --        | --        | --        | --      | --    |
| All species               | 1,952,177      | --                                       | 266,565   | 354,869   | 334,432   | 389,212   | 208,499   | 350,709   | 47,800  | --    |
| Cottonwood and aspen      |                |                                          |           |           |           |           |           |           |         |       |
| Eastern cottonwood        | 1,085,699      | --                                       | 34,138    | 40,832    | 69,761    | 90,845    | 103,135   | 458,014   | 288,974 | --    |
| Bigtooth aspen            | 109,713        | --                                       | 17,428    | 24,493    | 17,557    | 31,770    | 18,466    | --        | --      | --    |
| Quaking aspen             | 7,016          | --                                       | --        | --        | 7,016     | --        | --        | --        | --      | --    |
| All species               | 1,202,428      | --                                       | 51,566    | 65,324    | 94,334    | 122,615   | 121,601   | 458,014   | 288,974 | --    |
| Basswood                  |                |                                          |           |           |           |           |           |           |         |       |
| American basswood         | 408,111        | --                                       | 57,277    | 36,642    | 59,157    | 54,186    | 52,772    | 148,078   | --      | --    |
| All species               | 408,111        | --                                       | 57,277    | 36,642    | 59,157    | 54,186    | 52,772    | 148,078   | --      | --    |
| Yellow-poplar             |                |                                          |           |           |           |           |           |           |         |       |
| Yellow-poplar             | 4,027,513      | --                                       | 405,166   | 468,099   | 516,538   | 488,471   | 524,317   | 1,492,693 | 102,230 | --    |
| All species               | 4,027,513      | --                                       | 405,166   | 468,099   | 516,538   | 488,471   | 524,317   | 1,492,693 | 102,230 | --    |

(Table 8 continued on next page)

(Table 8 continued)

| Species group/<br>species    | All<br>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                    |                |                                          |           |           |           |           |           |           |           |
| Black walnut                 |                |                                          |           |           |           |           |           |           |           |
| All species                  | 679,040        | --                                       | 183,125   | 187,758   | 153,842   | 104,895   | 38,933    | 10,687    | --        |
| Other eastern soft hardwoods |                |                                          |           |           |           |           |           |           |           |
| Boxelder                     | 41,908         | --                                       | 18,824    | 11,769    | 11,315    | --        | --        | --        | --        |
| Ohio buckeye                 | 3,193          | --                                       | 3,193     | --        | --        | --        | --        | --        | --        |
| River birch                  | 38,415         | --                                       | 6,846     | 18,562    | --        | --        | --        | 13,007    | --        |
| Northern catalpa             | 22,424         | --                                       | 4,946     | 3,002     | 5,143     | --        | 9,243     | --        | --        |
| Sugarberry                   | 2,442          | --                                       | 2,442     | --        | --        | --        | --        | --        | --        |
| Hackberry                    | 283,339        | --                                       | 45,124    | 66,561    | 39,511    | 41,335    | 17,623    | 45,491    | 27,692    |
| Sycamore                     | 1,394,163      | --                                       | 75,603    | 120,383   | 183,156   | 160,025   | 166,897   | 519,667   | 168,433   |
| Black cherry                 | 489,774        | --                                       | 112,748   | 91,540    | 79,475    | 69,020    | 57,465    | 79,526    | --        |
| Black willow                 | 38,668         | --                                       | --        | 10,351    | 6,181     | 7,063     | --        | 15,054    | --        |
| Sassafras                    | 292,264        | --                                       | 91,885    | 92,926    | 42,577    | 47,168    | 17,710    | --        | --        |
| American elm                 | 210,813        | --                                       | 57,772    | 39,587    | 52,830    | 10,037    | 18,926    | 31,662    | --        |
| Siberian elm                 | 14,265         | --                                       | --        | --        | --        | 14,265    | --        | --        | --        |
| Slippery elm                 | 183,680        | --                                       | 38,270    | 29,520    | 33,287    | 21,664    | 37,045    | 23,892    | --        |
| All species                  | 3,015,348      | --                                       | 457,654   | 484,291   | 453,473   | 370,594   | 324,910   | 728,300   | 196,125   |
| Other eastern hard hardwoods |                |                                          |           |           |           |           |           |           |           |
| Common persimmon             | 29,227         | --                                       | 5,994     | 12,005    | 11,138    | --        | --        | --        | --        |
| Honeylocust                  | 123,705        | --                                       | 25,341    | 32,161    | 40,847    | 16,034    | 9,322     | --        | --        |
| Kentucky coffeetree          | 16,407         | --                                       | --        | 16,407    | --        | --        | --        | --        | --        |
| Black locust                 | 86,085         | --                                       | 21,990    | 23,531    | 10,872    | 14,370    | 15,322    | --        | --        |
| All species                  | 255,423        | --                                       | 53,325    | 84,193    | 62,857    | 30,404    | 24,644    | --        | --        |
| Total hardwoods              |                |                                          |           |           |           |           |           |           |           |
| All species groups           | 28,605,082     | 259,637                                  | 3,836,598 | 4,442,045 | 4,545,154 | 4,199,845 | 3,200,857 | 6,713,545 | 1,406,400 |

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.

<sup>1</sup> International 1/4-inch rule.

Table 9. -- All live aboveground tree biomass on timberland by owner category, softwood/hardwood species category, and tree component, Indiana, 1999-2003

(In dry tons)

| Owner category and<br>softwood/hardwood<br>category | Tree biomass component |                            |                     |             |                            |                         |            |
|-----------------------------------------------------|------------------------|----------------------------|---------------------|-------------|----------------------------|-------------------------|------------|
|                                                     | All<br>components      | All live<br>1-5 inch trees | Growing-stock trees |             |                            | Non-growing-stock trees |            |
|                                                     |                        |                            | Total               | Boles       | Stumps, tops,<br>and limbs | Total                   | Boles      |
| Public                                              |                        |                            |                     |             |                            |                         |            |
| Softwoods                                           | 1,586,415              | 32,634                     | 1,519,479           | 1,249,237   | 270,242                    | 34,302                  | 27,278     |
| Hardwoods                                           | 32,631,023             | 1,859,564                  | 28,756,539          | 21,240,678  | 7,515,861                  | 2,014,920               | 1,483,153  |
| Total                                               | 34,217,439             | 1,892,199                  | 30,276,018          | 22,489,915  | 7,786,103                  | 2,049,222               | 1,510,430  |
| Private                                             |                        |                            |                     |             |                            |                         |            |
| Softwoods                                           | 4,417,973              | 613,666                    | 3,584,384           | 2,800,662   | 783,722                    | 219,924                 | 156,871    |
| Hardwoods                                           | 189,704,199            | 10,411,989                 | 153,756,783         | 113,640,312 | 40,116,470                 | 25,535,427              | 18,898,294 |
| Total                                               | 194,122,172            | 11,025,655                 | 157,341,166         | 116,440,974 | 40,900,193                 | 25,755,351              | 19,055,164 |
| All ownerships                                      |                        |                            |                     |             |                            |                         |            |
| Softwoods                                           | 6,004,389              | 646,300                    | 5,103,863           | 4,049,898   | 1,053,965                  | 254,226                 | 184,148    |
| Hardwoods                                           | 222,335,222            | 12,271,553                 | 182,513,322         | 134,880,991 | 47,632,331                 | 27,550,347              | 20,381,448 |
| Total                                               | 228,339,611            | 12,917,853                 | 187,617,185         | 138,930,889 | 48,686,296                 | 27,804,573              | 20,565,594 |
|                                                     |                        |                            |                     |             |                            |                         | 7,238,978  |

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, 1998 to 1999-2003

(In thousand cubic feet per year)

| Species group                | Owner category |        |         | Unidentified owner |
|------------------------------|----------------|--------|---------|--------------------|
|                              | All owners     | Public | Private |                    |
| Softwoods                    |                |        |         |                    |
| Loblolly and shortleaf pines | -9             | -9     | --      | --                 |
| Other yellow pines           | 43             | 329    | -286    | --                 |
| Eastern white and red pines  | 1,423          | -472   | 1,895   | --                 |
| Jack pine                    | -10            | --     | -10     | --                 |
| Other eastern softwoods      | 2,257          | 841    | 1,416   | --                 |
| Total softwoods              | 3,703          | 688    | 3,015   | --                 |
| Hardwoods                    |                |        |         |                    |
| Select white oaks            | 13,855         | 3,224  | 10,631  | --                 |
| Select red oaks              | 13,432         | 2,047  | 11,385  | --                 |
| Other white oaks             | 1,421          | 1,130  | 290     | --                 |
| Other red oaks               | 11,443         | 3,692  | 7,752   | --                 |
| Hickory                      | 21,537         | 3,443  | 18,094  | --                 |
| Hard maple                   | 25,953         | 2,483  | 23,470  | --                 |
| Soft maple                   | 8,483          | 1,397  | 7,086   | --                 |
| Beech                        | 23,573         | 745    | 22,828  | --                 |
| Sweetgum                     | 3,615          | 1,383  | 2,232   | --                 |
| Tupelo and blackgum          | -46            | 285    | -331    | --                 |
| Ash                          | 25,622         | 2,815  | 22,807  | --                 |
| Cottonwood and aspen         | 7,224          | 137    | 7,087   | --                 |
| Basswood                     | 3,227          | --     | 3,227   | --                 |
| Yellow-poplar                | 52,054         | 7,030  | 45,023  | --                 |
| Black walnut                 | 5,414          | 1,633  | 3,781   | --                 |
| Other eastern soft hardwoods | 44,305         | 3,232  | 41,073  | --                 |
| Other eastern hard hardwoods | 3,319          | 479    | 2,840   | --                 |
| Total hardwoods              | 264,430        | 35,157 | 229,273 | --                 |
| All species groups           |                |        |         |                    |
|                              | 268,133        | 35,845 | 232,288 | --                 |

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, 1998 to 1999-2003

(In thousand cubic feet per year)

| Species group                | Owner category |              |                    |
|------------------------------|----------------|--------------|--------------------|
|                              | All owners     | Public       | Unidentified owner |
| <b>Softwoods</b>             |                |              |                    |
| Eastern white and red pines  | 3,253          | --           | 3,253              |
| Other eastern softwoods      | 158            | --           | 158                |
| Total softwoods              | 3,411          | --           | 3,411              |
| <b>Hardwoods</b>             |                |              |                    |
| Select white oaks            | 15,845         | --           | 15,845             |
| Select red oaks              | 9,979          | --           | 9,979              |
| Other white oaks             | 3,630          | 351          | 3,279              |
| Other red oaks               | 11,637         | 4,303        | 7,334              |
| Hickory                      | 12,626         | 27           | 12,599             |
| Hard maple                   | 7,974          | 447          | 7,527              |
| Soft maple                   | 11,270         | --           | 11,270             |
| Beech                        | 4,127          | --           | 4,127              |
| Tupelo and blackgum          | 418            | --           | 418                |
| Ash                          | 6,670          | --           | 6,670              |
| Cottonwood and aspen         | 877            | --           | 877                |
| Yellow-poplar                | 25,861         | --           | 25,861             |
| Black walnut                 | 1,621          | --           | 1,621              |
| Other eastern soft hardwoods | 11,924         | --           | 11,924             |
| Other eastern hard hardwoods | 2,013          | --           | 2,013              |
| Total hardwoods              | 126,471        | 5,128        | 121,343            |
| <b>All species groups</b>    | <b>129,882</b> | <b>5,128</b> | <b>124,754</b>     |

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, 1998 to 1999-2003

(In thousand cubic feet per year)

| Species group                | Owner category |        |         | Unidentified owner |
|------------------------------|----------------|--------|---------|--------------------|
|                              | All owners     | Public | Private |                    |
| Softwoods                    |                |        |         |                    |
| Loblolly and shortleaf pines | 277            | 277    | --      | --                 |
| Other yellow pines           | 970            | 132    | 838     | --                 |
| Eastern white and red pines  | 3,601          | 1,777  | 1,824   | --                 |
| Jack pine                    | 46             | --     | 46      | --                 |
| Other eastern softwoods      | 262            | --     | 262     | --                 |
| Total softwoods              | 5,156          | 2,186  | 2,970   | --                 |
| Hardwoods                    |                |        |         |                    |
| Select white oaks            | 2,576          | 61     | 2,514   | --                 |
| Select red oaks              | 1,003          | --     | 1,003   | --                 |
| Other white oaks             | 487            | 156    | 331     | --                 |
| Other red oaks               | 12,696         | 1,869  | 10,827  | --                 |
| Hickory                      | 7,427          | 257    | 7,170   | --                 |
| Hard maple                   | 5,126          | --     | 5,126   | --                 |
| Soft maple                   | 3,819          | 278    | 3,540   | --                 |
| Beech                        | 358            | --     | 358     | --                 |
| Sweetgum                     | 264            | --     | 264     | --                 |
| Tupelo and blackgum          | 20             | 20     | --      | --                 |
| Ash                          | 1,657          | 67     | 1,590   | --                 |
| Cottonwood and aspen         | 3,929          | 473    | 3,456   | --                 |
| Basswood                     | 103            | --     | 103     | --                 |
| Yellow-poplar                | 2,984          | 577    | 2,407   | --                 |
| Black walnut                 | 441            | --     | 441     | --                 |
| Other eastern soft hardwoods | 16,638         | 1,436  | 15,202  | --                 |
| Other eastern hard hardwoods | 2,140          | 101    | 2,039   | --                 |
| Total hardwoods              | 61,665         | 5,296  | 56,370  | --                 |
| All species groups           |                |        |         |                    |
|                              | 66,822         | 7,482  | 59,340  | --                 |

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; Vissage, John; Gallion, Joey.

2004. Indiana's forest resources in 2003. Resour. Bull. NC-238. St. Paul, MN:  
U.S. Department of Agriculture, Forest Service, North Central Research Station.  
33 p.

Presents initial results of the fifth inventory of Indiana's forest resources, 1999-2003, marking the first complete cycle of the new annual inventory system in the State. Includes information on forest area; timber volume; tree biomass; growth, removals, and mortality; and forest health.

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

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