

Indiana DNR State Forest Properties
Report of Continuous Forest Inventory (CFI)
Summary of years 2011-2015



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ACKNOWLEDGMENTS

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FOREWORD

This report provides an overview of forest resource attributes for State Forest land managed by the Indiana DNR Division of Forestry. The findings come from the continuous annual inventory conducted by the Forest Resource Information (FRI) Section of the Division of Forestry. The CFI inventory of Division of Forestry State Forest property is based on a sample of 3,937 plots located randomly across those lands (a total area of 156,185 acres), a sampling rate of approximately one plot for every 40 acres. Information in this report is gathered from quantitative and qualitative measurements that describe forest site attributes; stand characteristics; tree measurements on live and dead stems such as species, diameter, height, damage, tree quality; counts of regeneration; and estimates of growth, mortality, and removals. All estimates in this assessment are estimates of a population based on a statistical sample derived from the expansion of plot data and therefore may differ slightly from complete censuses of the population (e.g., total acres). Given the multitude of estimates of forest resource attributes, they are organized in “core tables” (e.g., forest land area vs. live tree volumes), which are updated annually.

This report is a summary of the five years of plot installation and data collection for the years 2011-2015, which constitute one entire cycle. With 20% of the plots measured annually, the 2015 plots were the same plots

measured in 2010, thus the 2010 data were replaced with the 2015. Because plot re-measurement (measuring the same plot at time two) has only occurred on 60% (2013, 2014 and 2015) of the plots thus far, change attributes such as growth, removals and mortality may not represent the entire sample with statistical significance yet.

EXECUTIVE SUMMARY/HIGHLIGHTS

This is the fourth reported results of the established continuous forest inventory (CFI), with the first three panels of annual plots (60% of the total sample) being re-measured. The goal of the first five years was to install all of the plots within the CFI sample frame and produce baseline resource estimates. These baseline data/estimates are now being used as a monitoring baseline to compare to future re-measurement data in compilation of statistical change estimates (e.g., tree growth/mortality). Details of the results are discussed below, and tabular results can be found in the additional “Part B” report. Baseline resource estimates of state forest properties are:

- 156,185 total acres; 150,932 forested acres with the balance in non-forest (i.e., campgrounds) and water
- 96% of the forested acres are hardwoods
- 85% of the forested acres are sawlog-sized stands
- Forests contain 58.6 million live trees
- Sugar Maple trees and seedlings are more abundant than any other species
- 337.1 million cubic feet of total live tree volume
- 1.159 billion board feet (Doyle) of sawlog volume
- White oaks followed by red oaks are the species groups with the most sawlog volume
- Over half of the sawlog volume is considered grade 1 or 2
- Japanese honeysuckle, multiflora rose, and stiltgrass are the most common invasive species

FOREST COMPOSITION

Area

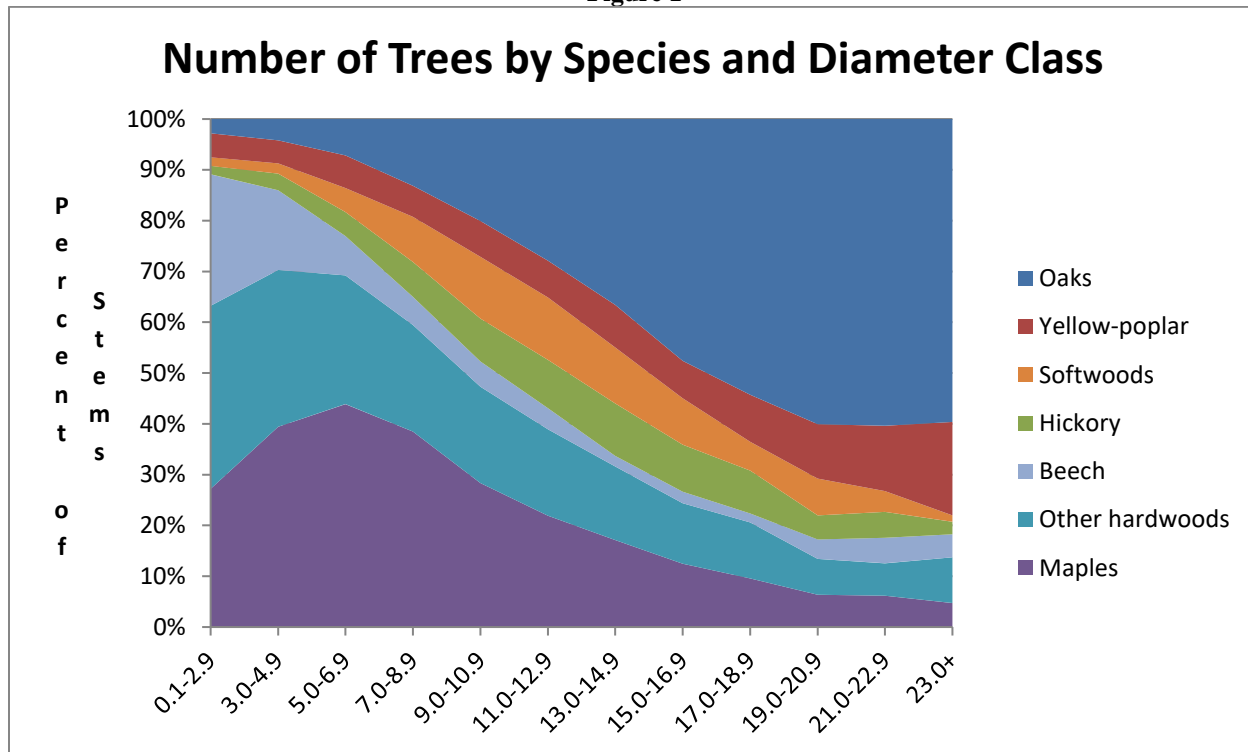
State Forest lands comprise approximately 156,185 acres located primarily in the southern third of Indiana. An estimated 150,932 of these acres are considered forestland (land considered stocked with trees or seedlings that is at minimum 1 acre in size and 120 feet in width), with the remaining ~5,300 acres being non-forest (open fields, campgrounds, rights-of-way, etc.), census water (bodies of water >5 acres and permanent rivers/streams), and non-census water (bodies of water <5 acres and small streams). Like most of Indiana’s forests, state forests are predominantly hardwoods with 96% of the total forest area classified as hardwood forest types. The primary hardwood forest types were white oak/red oak/hickory (35,493 acres, 23%), mixed upland hardwoods (20,980 acres, 14%), white oak (15,602 acres, 10%), and chestnut oak (13,240 acres, 9%) (Table 1). Eighty-five percent of the area was considered sawlog-sized stands (large diameter or 11.0” diameter breast height (d.b.h.) and greater), with the remainder classified as poles (medium diameter or 5.0-10.9” d.b.h.) and seedling/saplings (small diameter or 1.0-4.9” d.b.h.) (Table 1).

Number of Live Trees

It is estimated that there are 58.6 million live trees on state forest lands. In terms of the total number of live trees, sugar maple and beech were the most abundant species at 12.1 million and 10.7 million trees, respectively (Table 2). More than half of those trees were less than 3 inches d.b.h., with 42.2 million being less than 5 inches d.b.h. An item of concern is the non-uniform distribution of the number of stems by diameter class for different

species (Figure 1). In this sample, all oak species combined represented about 3.1% of all saplings 1 inch to less than 5 inches d.b.h. The lack of oak seedlings/saplings and abundance of maple seedlings/saplings suggests a future decline of oak/hickory forest types as mature stands senesce.

Figure 1



Volume of All Live Trees

The net volume of all live trees, which includes growing stock, rough, and rotten trees, 5” d.b.h. and above was 337.2 million cubic feet. Hardwoods constituted 314.2 million cubic feet (cuft) or 93%. Oaks made up 145.1 million cuft or 43%. Maples were 47.5 million cuft or 14%. Yellow poplar was 45.6 million cuft or 13%. Hickories were 23.5 million cuft or 7% of the total volume (Table 3). Approximately 44.0 million cuft or 13% of the volume is in pole-sized trees (trees <11” d.b.h.) with the remainder being sawlog-size (11” and greater d.b.h.). 68.6 million cuft or 20% is 23” or greater d.b.h. (Table 3). It was estimated that 327.0 million cuft of the total volume was in growing stock trees, with the remainder in rough cull and rotten cull trees. These volumes are presented in cubic feet because board foot volume estimates are only calculated on sawtimber-sized trees (hardwoods 11” d.b.h. and greater, softwoods 9” d.b.h. and greater).

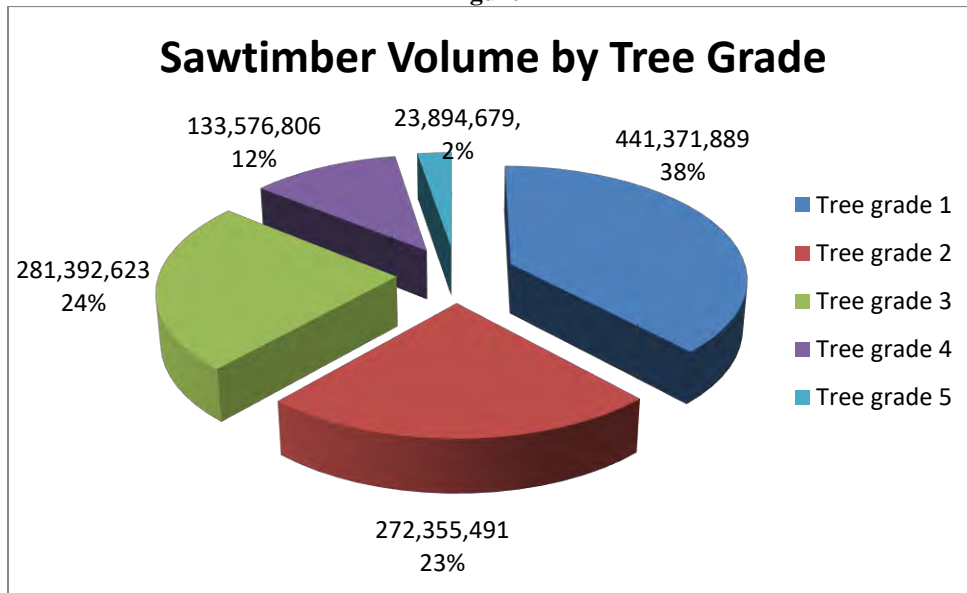
Volume of Sawtimber-sized Trees

The total net sawtimber volume was 1.159 billion board feet Doyle scale (7,682 bdft/acre). White oak was the most voluminous species with 219.3 million board feet (MMBF) or 19%, followed by yellow poplar, chestnut oak, and black oak with 167.1, 159.1, and 133.4 MMBF respectively (Table 4).

Grade of Sawtimber-sized Trees

Trees are graded using the Forest Service tree grading system. It grades the best 12' section in the butt 16' for hardwoods. Grade 1 must yield 10' clear of defects, grade 2 must yield 8' clear, grade 3 must yield 6' clear, grade 4 must only be sound (tie grade) and grade 5 has a non-gradable butt log (due to form or rot) but has a gradable upper log (above the butt 16' log). It was estimated that 441.3 MMBF of the total net sawtimber volume was grade 1 and 272.3 and 281.3 MMBF in grades 2 and 3 respectively (Figure 2). Ninety-nine percent of the sawtimber volume of trees had 0-10% cull deductions.

Figure 2



CHANGE ATTRIBUTES AND ANCILLARY DATA ITEMS

We continued to re-measure plots, beginning in 2013, now with 60% of the total sample (three annual panels) re-measured. The uncertainty associated with our estimates of change will sequentially decrease as each year's annual re-measurement is added to the sample until all CFI plots have been re-measured. With only a partial sample completed, the level of uncertainty with the estimations of change is somewhat higher than desired; however, we will report these attributes based on plot data and other outside data sources where applicable.

Growth

Net growth is defined as the gross or total growth less mortality. The average annual net volume growth of all live trees, which includes growing stock, rough, and rotten trees, 5" d.b.h. and above, was 3.44 million cubic feet per year. Hardwoods actually grew 3.69 million cuft/year or 107% of the total growth, while cedar and pines lost 250 million cuft/year. Oaks constituted 1.21 million cuft or 35%. Maples were 956,000 cuft or 28%. Yellow poplar was 635,000 cuft or 18%, and hickories were 521,000 cuft or 15% of the total growth (Table 5). Species groups showing negative growth (a negative growth value means that mortality was larger than the gross growth) besides the pines mentioned above, were sassafras, scarlet oak, ashes and elms. Approximately 700,000 cuft or 20% of the growth is in pole-sized trees (trees <11" d.b.h.) with the remainder being sawlog-sized (11" and greater d.b.h.).

Looking at sawlog-sized volume growth, trees collectively grew an average of 10.97 million board feet (Doyle) annually. Hardwoods actually grew 11.36 million bdft/year, while cedar and pines lost 387,000 bdft/year. Oaks constituted 3.5 million bdft or nearly 32%. Yellow poplar was 2.54 million bdft or 23%. Maples were 1.79 million bdft or 16%. Hickories were 1.62 million bdft or nearly 15% of the total growth (Table 6). Species or species groups showing negative growth (a negative growth value means that mortality was larger than the gross growth), besides the pines mentioned above, were elms and scarlet oak.

Mortality

The average annual volume mortality of all trees was 4.53 million cubic feet per year. Hardwoods accounted for 3.81 million cuft/year or 84% of the total mortality. Yellow poplar was 613,000 cuft or 13%, and four oak species were the next individual species with the most volume lost to mortality. Black oak lost 418,000 cuft. Northern red oak lost 391,000 cuft. White oak lost 356,000 cuft. Chestnut oak lost 345,000 cuft. Collectively, all the oak species accounted for 1.69 million cuft or 37% of all mortality (Table 7).

Looking at sawlog-sized volume mortality, forests lost an average of 10.8 million board feet (Doyle) annually. Hardwoods accounted for 8.88 million bdft/year or 82%. Oaks constituted 5.3 million bdft or nearly 49%. Yellow poplar was 1.5 million bdft or 14%. Ashes were 637,000 bdft or 6%. Maples were 614,000 bdft or 5% of the total mortality (Table 8).

Some of the high mortality is easy to understand. Ash decline can be contributed to the emerald ash borer (EAB). Ash will continue to increase in mortality loss, the elms to Dutch elm disease, and sassafras probably due to a combination of the canker diseases that favor that species. Others, however, are a bit more complex. Several possible factors such as intermittent recent droughts over the last 20 years, an outbreak of tulip scale attacking yellow poplar a few years ago, other possible insects and diseases, and natural age progression of many individual tree species could be contributing to the volume lost to mortality.

Just looking at volume, one may think all oaks are on a tremendous downward trend. But looking at the volume as a percentage of live volume by species, things aren't totally doom and gloom, as Figures 3 and 4 show. With the white oak family species, one can see "normal" mortality trends until you get to the upper diameter classes where a slight uptick is present, especially with white oak. Compared to the red oak family's trends, that uptick is more pronounced in all species except pin oak.

This high mortality in oaks and other species is concerning. We will continue to monitor mortality levels in the future while investigating deeper into the root causes of excess mortality in forests.

Figure 3

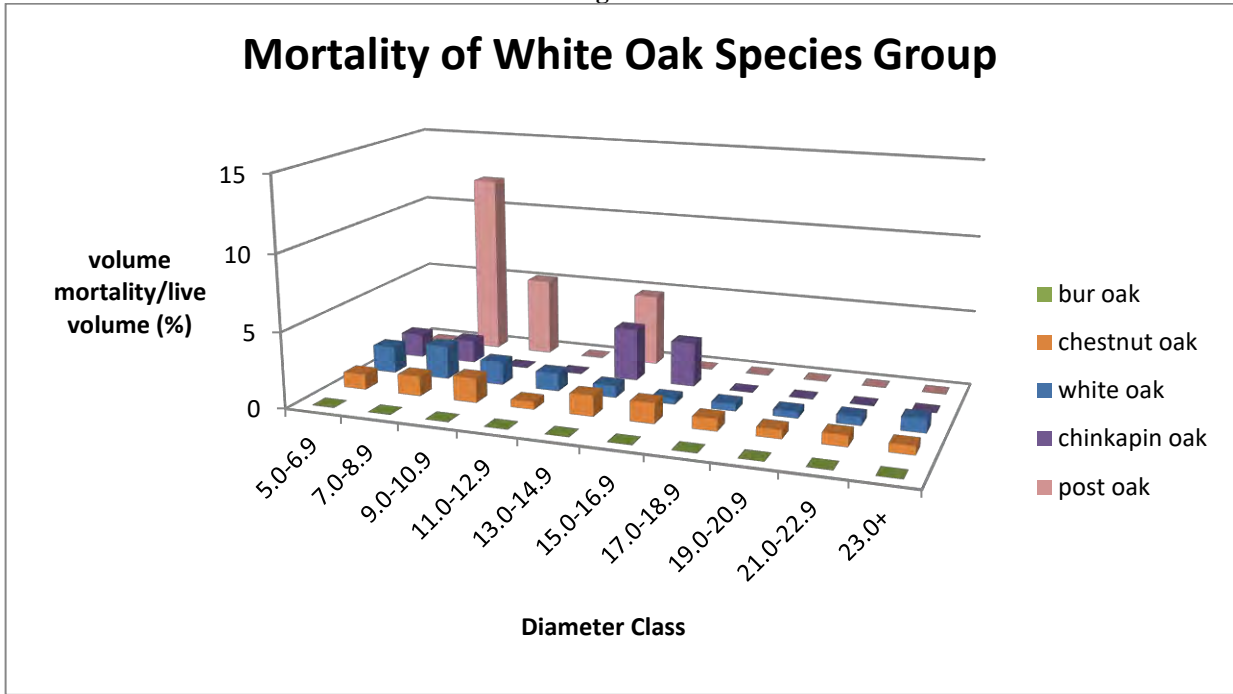
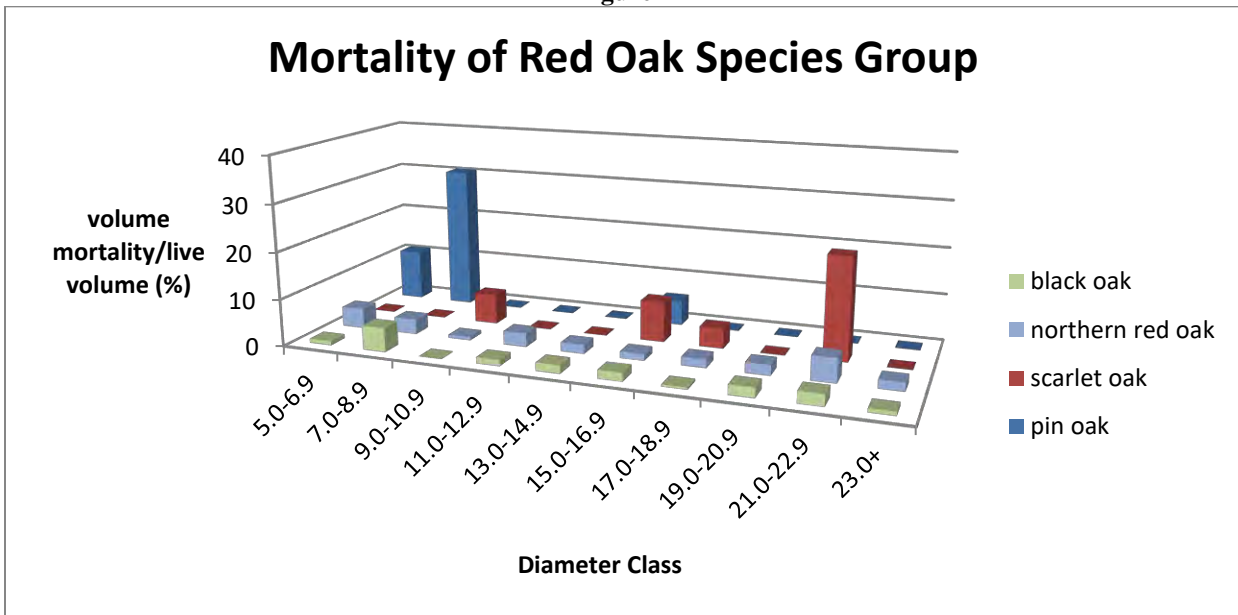


Figure 4



Removals

The average annual volume removals of all trees was 3.77 million cubic feet per year. Hardwoods accounted for 3.67 million cuft/year or 97% of the total removals. Yellow poplar was 851,000 cuft or 22%, followed by black oak at 610,000 cuft, white oak at 342,000 cuft, and sugar maple at 290,000 cuft (Table 9).

Looking at sawlog-sized volume removals, 12.0 million board feet (Doyle) was removed annually. Hardwoods accounted for 11.8 million bdft/year. 4.4 million bdft or 36% of the removals were oaks, while yellow poplar and maples followed at 3.6 million bdft or 30% and 1.0 million bdft or 8%, respectively (Table 10).

Standing Dead Trees

There were an estimated 1.7 million standing dead trees 5" d.b.h. and greater. The individual species with the largest number of standing dead trees was sassafras with 283,000 stems. Virginia pine was second with 173,000 standing dead trees with white oak, chestnut oak and yellow poplar following with 162,000, 141,000 and 132,000 standing dead trees, respectively (Table 11). As with the number of live trees, the number of standing dead trees decreased as the diameter increased. Of the 1.7 million standing dead trees, 935,000 had a diameter from 5-9" d.b.h., 589,000 were from 9-15" d.b.h., 152,000 were from 15-19" d.b.h., and the remaining 109,000 were 19" d.b.h. and greater (Table 11).

Invasive Species

If present, crews identify any invasive species found on plot and measure the area of the plot that species occupy. These area estimates are then expanded to the entire 150,932 forested acres to estimate a total area that each invasive species occupies. Some plots may have multiple species present, while the majority of plots are free from invasive species. There were an estimated 1,890 cumulative acres (about 1.25%) with invasive species present. Japanese (vine) honeysuckle and multiflora rose are the most prevalent, covering approximately 642 and 595 acres, respectively. Stiltgrass (Nepalese browntop) is next, covering 199 acres. Other species of interest were black locust and bush honeysuckle (approximately 100 acres each), autumn olive (81 acres), and garlic mustard (54 acres). Of note it appears that bush honeysuckle and multiflora rose are more prevalent in forests with higher tree basal area content.

SUMMARY

The establishment of a statistically rigorous forest resource monitoring program modeled after many aspects of the nation's forest inventory program (FIA) on Indiana's state forests is already yielding a baseline of resource information. Estimates from this baseline compare favorably to prior estimates available from the FIA program and previous inventories conducted on state forest properties. As estimates of state forest land resource attributes were either sampled at a lower plot intensity (FIA) or using inconsistent methodologies (stand-exams), estimates from Indiana's state forest land CFI program may be considered as a superior baseline.

Change estimates (growth, mortality and removals) will become statistically stronger in the future as more plots are re-measured to provide reliable estimates. The CFI system was not designed to produce change estimates until plots are re-measured (beginning in 2013, with 20% measured annually).

INVENTORY METHODS AND TECHNIQUES

In order to better understand Indiana's public forests, to assist in providing public disclosure for forest management, and to better address third party certification from SFI and FSC, the Division of Forestry began designing a Continuous Forest Inventory (CFI) system in 2007. The USDA Forest Service Forest Inventory and Analysis (FIA) program was chosen as the program to mirror for several reasons. The Indiana DNR began to negotiate with FIA to build the CFI system to meet the certification audit requirements and yet coincide with the

existing FIA standards. A unique system was designed, and implementation of plot establishment on the forest began in 2008. The plots were spaced such that an approximately equal number of plots per year per state forest property (an annual panel) would be completed. Annually, these panels can stand alone as an independent survey, and therefore some results of significant value can be analyzed and reported on an annual basis. In 2013 we began to re-measure the plots that were established and measured in 2008. Therefore, now three annual panels of plots (60% of the total sample) have been updated with 2013, 2014 and 2015 data and the 2008, 2009 and 2010 data were dropped from the total estimate calculations. Later years will follow the same protocol.

Quality Assurance/Quality Control

The CFI program is the key program that provides the information needed to assess the status and trends of the Division of Forestry's managed forest lands. The goal of the CFI is to assure the production of complete, accurate and unbiased forest information of known quality. Specific measurement quality objectives (MQO) for precision are designed to provide a window of performance that we strive to achieve for every field measurement (quality assurance or QA). Quality control (QC) procedures include direct feedback to field staff to provide continual real-time assessment and improvements or refinements of field staff performance. These data quality goals were adapted from the USFS FIA program goals, which were developed from knowledge of measurement processes in forestry and forest ecology.

At the heart of CFI quality is extensive staff training and expertise. Field staff members meet minimum forest inventory requirements of a forestry education and background. In addition, each field staff member begins with an extensive on-the-job training program. Once field staff members have a comfort level for what is expected of them, they begin production data collection on their own.

To quantify and evaluate how the field staff is performing, a second measurement (quality check) taken on a sample of completed field plots is performed by a trained and certified QA staff. This technique is done blindly, or without the production crew data on hand, and then the two sets of data are compared, analyzed and scored to the given MQO standards. Three percent of the plots are pre-selected and considered mandatory quality-check plots. The field staff does not know which plots are mandatory checks. Field staff turn in completed data at given time intervals, and if no mandatory check plots are in that batch of production plots, then a random plot (non-mandatory) is picked to perform a quality check so that timely feedback can continuously be provided to the production field staff.

Each datum measured in the field has an associated MQO for precision. This is an assigned tolerance or acceptable level of measurement error, and measure the ability of field staff to make repeatable measurements or observations within the assigned tolerances. In the analysis of QA data, an observation is within tolerance when the difference between the production field staff data and the quality-check data do not exceed the assigned tolerance or MQO for that data element. For some data elements, the tolerance is "no error," thus only observations that are identical are within tolerance. For example, the tolerance for measurement of tree DBH is +/- 0.1 inch for each 20.0 inches of diameter of a live tree, with the MQO for DBH set at 95%. The quality of the data is evaluated by comparing the desired rate of differences within tolerance (as a percent of observations) to the MQO. In the example above, the objective for DBH would be that 95% or more of the DBH observations are within +/- 0.1 inch for each 20.0 inches of diameter for all trees measured by both production field staff and QA staff.

Analysis of this QA dataset assures two things for the program: 1) a measurement of the accuracy of the data being collected and 2) an indicator of future training needs and refinement of the production field staff. With continuous program monitoring and productive feedback to field staff, the QAQC portion of the CFI program should continually improve the quality of the data over time.

Field Production Protocols

With the annual inventory system, about one-fifth of all field plots are measured each year. After five years, an entire inventory cycle is completed. After the first five years, results can be analyzed and reports created as a moving five-year average. For example, Indiana CFI will be able to generate a report based on inventory results for 2008 through 2012 (the first report), 2009 through 2013 (second report), 2010 through 2014 (last year's report), or 2011 through 2015 (this year's report), and so on.

Field plots of the inventory consist of installing and measuring of the annual sample of field plots (panel) on each state forest. It was determined for desired CFI precision standards that the sampling intensity would be one plot for approximately every 40 acres. For efficiency, it was also determined that an entire compartment of a state forest property would be established and measured within the same panel. INCFI used the FIA non-overlapping hexagonal method to assist with establishing plot locations using Arc Map.

Field crews measure vegetation on plots based on FIA standards and protocols with few exceptions. Instead of the four-subplot design that FIA uses, Indiana CFI only uses one 24-foot-radius (1/24th acre) circular subplot with the offset 6.8-foot-radius (1/300th acre) microplot. Trees with a d.b.h. 5 inches and larger are measured on the 24-foot-radius circular subplot. All trees 1 inch d.b.h. and larger are measured on the 6.8-foot-radius circular microplot located 12 feet east of the center of the subplot. Both tree and forest measurements are collected.

Some measurements include:

- General stand characteristics such as forest type, stand size and age, slope and aspect, and any recent disturbances
- Tree species, diameter, several different heights, damage, amount of rotten or missing wood, crown measurements, and tree quality
- Counts of tree regeneration
- Presence of identified invasive plants

Specific field protocols can be found in the Indiana CFI Field Data Collection Procedures for Plots Field Manual (internal document). With few exceptions, the FIA field manual (version 4.0) will suffice and is readily available online at http://www.fia.fs.fed.us/library/field-guides-methods-proc/docs/core_ver_4-0_10_2007_p2.pdf.

Estimation Errors or Quality of the Estimates

The four primary sources of error common to all sample-based estimates are sampling, measurement, prediction, and non-response error. For each of these sources of error, a definition within the context of the CFI inventory is provided along with a discussion of methods used to quantify and reduce this error.

Sampling Error

The process of sampling (selecting a random subset of a population and calculating estimates from this subset) causes estimates to contain error they would otherwise not have if every member of the population had been observed and included in the estimate. The CFI inventory of Division of Forestry State Forest property is based on a sample of 3,867 plots located randomly across those lands managed by the Division of Forestry (a total area of 156,265 acres), a sampling rate of approximately one plot for every 40 acres. Along with every estimate is an associated sampling error that is typically expressed as a percentage of the estimated value but that can also be expressed in the same units as the estimate or as a confidence interval (the estimated value plus or minus the sampling error). This sampling error is the primary measure of the reliability of an estimate. A sampling error can be interpreted to mean that the chances are two out of three that had a 100-percent inventory been taken using these methods, the results would have been within the limits indicated (i.e., 67-percent confidence interval).

The sampling errors for State-level estimates of the major attributes presented in this report are shown in the Part B tabular data report. The estimators used by CFI are unbiased under the assumptions that the sample plots are a random sample of the total population and the observed value for any plot is the true value for that plot. Deviations from these basic assumptions are not reflected in the computation of sampling errors. The following sections on measurement, prediction and nonresponsive error address possible departures from these basic assumptions.

Measurement Error

Errors associated with the methods and instruments used to observe and record the sample attributes are called measurement errors. On CFI plots, attributes such as the diameter and height of a tree are measured with different instruments, and other attributes such as species and crown class are observed without the aid of an instrument. On a typical CFI plot, six to 12 trees are observed, with 15 to 20 attributes recorded on each tree. In addition, many attributes that describe the plot and conditions on the plot are observed. Errors in any of these observations affect the quality of the estimates. If a measurement is biased (such as tree diameter consistently taken at an incorrect place on the tree), then the estimates that use this observation (such as volume) will reflect this bias. Even if measurements are unbiased, high levels of random error in the measurements will add to the total random error of the estimation process.

To ensure that all CFI observations are made to the highest standards possible, a regular program of quality assurance and quality control is an integral part of all CFI data-collection efforts, as described previously.

Prediction Error

Errors associated with using mathematical models (such as volume models) to provide observations of the attributes of interest based on sample attributes are referred to as prediction errors. Area, number of trees, volume, biomass, growth, removals and mortality are the primary attributes of interest presented in this report. Area and number of trees estimates are based on direct observation and do not involve the use of prediction models; however, CFI estimates of volume, biomass, growth, removals and mortality use model-based predictions in the estimation process. Models are used to predict volume and biomass estimates of individual tree volumes. In the future, change estimates such as growth, mortality and removals will be based on these model-based predictions of volume from both the future plot re-measurements and the measurements taken in this first inventory.

Users of CFI estimates should be aware of the possible prediction errors in CFI estimates. In comparing CFI estimates to other data sources, users need to be aware of the prediction models used in both estimates. If both estimates are based on the same prediction models with matching fitted parameter values, then the prediction bias of one estimate should cancel out that of the other estimate. If the estimates are based on different prediction models, then the user should be aware of the prediction error of both models.

Non-response Error

Non-response error refers to the error caused by not being able to observe some of the elements in the sample. In CFI, non-response occurs when crews are unable to measure a plot (or a portion of a plot) at a selected location. Non-response falls into the following three classes:

Denied access – Entire plots or portions of plots where the field crew is unable to obtain permission from the landowner and is therefore unable to measure the trees on the plot. This is not applicable in the CFI system on State Forest properties, but could apply to the CFI system on the classified forest program.

Hazardous/inaccessible – Entire plots or portions of plots where the conditions present prevent a crew from safely getting to the plot or measuring the trees on the plot.

Other – Plots where the field crew is unable to obtain a valid measurement for a variety of reasons other than those stated above.

Non-response has two effects on the sample. First, it reduces the sample size. The reduced sample size is reflected in the sampling errors discussed in that section. Second, non-response can bias the estimates if the portion of the population not being sampled differs from the portion being sampled. Fortunately, in CFI, unlike many survey samples, non-response rates are relatively low. The non-response plots in this inventory were not permanently removed from the CFI system of plots. In future inventories we will again attempt to measure these plots. At that time we may be able to obtain permission to access these plots (for the classified forest system), the hazardous conditions may have changed, or other circumstances that caused us to not measure plots could be different.

Data Management

These collected data are then imported, housed, and processed using a sophisticated Oracle database system. This Oracle system consists of three different but linked databases: MIDAS, NIMS and FIADB. Midas is the pre-field database and historical data housing unit. NIMS is the post-field housing and processing database. FIADB is the database housing the presentation tables. So this Oracle system not only houses the data but also processes and readies the data for distribution. “Processing” the data combines certain measurements to determine some calculated estimates (e.g., using tree diameter, tree height, site index measurements, tree species, etc. to estimate tree volume using a volume equation).

Distribution is accomplished by eventually loading the post-processed data (FIADB tables) into a customized Access database that is similar in functionality to the USFS FIA EVALIDator online tool. This Access database is used to assist with the analysis and interpretation of data. One can create customized tables with error estimates using this EVALIDator Access database.

Oracle processing protocols are documented as well (several internal documents). Most protocols are scripts written in sequel programming code or are instructions for the processing of the data and are intended for the database manager or advanced user only. An Access EVALIDator User Guide was created (beta version – work in progress) with the intent of being used as a reference guide after a training session of how to use EVALIDator has been attended.

APPENDIX

Table 1.—Area of forestland by forest type group and stand size class, State Forest Properties, 2011-2015

Table 2.—Number of all live trees by species and diameter class, State Forest Properties, 2011-2015

Table 3.—Net volume of all live trees by species and diameter class, State Forest Properties, 2011-2015

Table 4.—Sawtimber volume of all live trees by species and diameter class, State Forest Properties, 2011-2015

Table 5.—Net growth of all live trees by species and diameter class, State Forest Properties, 2013-2015

Table 6.—Net growth of sawtimber by species and diameter class, State Forest Properties, 2013-2015

Table 7.—Mortality of all live trees by species and diameter class, State Forest Properties, 2013-2015

Table 8.—Mortality of sawtimber by species and diameter class, State Forest Properties, 2013-2015

Table 9.—Removals of all live trees by species and diameter class, State Forest Properties, 2013-2015

Table 10.—Removals of sawtimber by species and diameter class, State Forest Properties, 2013-2015

Table 11.—Number of standing dead trees 5” d.b.h. and greater by species and diameter class, State Forest Properties, 2011-2015

List of Estimate Tables

*All tables contain forest attribute estimates for Indiana State Forest properties for measurements taken from 2011 to 2015, except where indicated

**Gaps in enumeration of tables are placeholders for potential future tables such as forest health indicator population estimates (e.g., downed woody material)

Area

Table 1. — Area of forest land, in acres, by forest type and stand-size class, Indiana State Forests 2011-2015

Table 2. — Area of forest land, in acres, by forest type and stand age, Indiana State Forests 2011-2015

Table 3. — Area of forest land, in acres, by state forest and forest type, Indiana State Forests 2011-2015

Table 4. — Area of forest land, in acres, by state forest and stand-size class, Indiana State Forests 2011-2015

Table 5. — Area of forest land, in acres, by state forest and stand age, Indiana State Forests 2011-2015

Table 6. — Area of forest land, in acres, by state forest and site productivity class, Indiana State Forests 2011-2015

Table 7. — Area of forest land, in acres, by state forest and site index, Indiana State Forests 2011-2015

Number of Trees

Table 10.—Number of live trees on forest land by species and diameter class, Indiana State Forests 2011-2015

Table 11. — Number of live trees on forest land by species group and diameter class, Indiana State Forests 2011-2015

Table 12. — Number of standing dead trees (at least 5 inch d.b.h.) on forest land by species and diameter class, Indiana State Forests 2011-2015

Table 13. — Number of standing dead trees (at least 5 inch d.b.h.) on forest land by decay code and diameter class, Indiana State Forests 2011-2015

Table 14. — Number of live trees on forest land by cavity present and diameter class, Indiana State Forests 2011-2015

Volume of Trees – All Live

Table 20. — Net volume of live trees (at least 5 inches d.b.h.), in cubic feet, on forest land by species and diameter class, Indiana State Forests 2011-2015

Table 21. — Net volume of live trees (at least 5 inches d.b.h.), in cubic feet, on forest land by state forest and major species group, Indiana State Forests 2011-2015

Table 22. — Net volume of live trees (at least 5 inches d.b.h.), in cubic feet, on forest land by state forest and species group, Indiana State Forests 2011-2015

Table 23. — Net volume of live trees (at least 5 inches d.b.h.), in cubic feet, on forest land by tree class and diameter class, Indiana State Forests 2011-2015

Volume of Trees – Sawtimber

Table 30. — Net volume of sawtimber trees (International 1/4 inch rule), in board feet, on forest land by species and diameter class, Indiana State Forests 2011-2015

Table 30a. — Net volume of sawtimber trees (IN Doyle rule), in board feet, on forest land by species and diameter class, Indiana State Forests 2011-2015

Table 31. — Net volume of sawtimber trees (International 1/4 inch rule), in board feet, on forest land by species group and diameter class, Indiana State Forests 2011-2015

Table 31a. — Net volume of sawtimber trees (IN Doyle rule), in board feet, on forest land by species group and diameter class, Indiana State Forests 2011-2015

Table 32. — Net volume of sawtimber trees (International 1/4 inch rule), in board feet, on forest land by tree grade and cull proportion, Indiana State Forests 2011-2015

Table 32a. — Net volume of sawtimber trees (IN Doyle rule), in board feet, on forest land by tree grade and cull proportion, Indiana State Forests 2011-2015

Growth

Table 40. — Annual net volume growth of live trees (at least 5 inches d.b.h.), in cubic feet per year, on forest land by species and diameter class, Indiana State Forests 2013 - 2015

Table 41. — Annual net volume growth of sawtimber trees (International 1/4 inch rule), in board feet per year, on forest land by species and diameter class, Indiana State Forests 2013 - 2015

Table 41a. — Annual net volume growth of sawtimber trees (Doyle rule), in board feet per year, on forest land by species and diameter class, Indiana State Forests 2013 – 2015

Mortality

Table 50. — Annual mortality of trees (at least 5 inches d.b.h.), in cubic feet per year, on forest land by species and diameter class, Indiana State Forests 2013 – 2015

Table 51. — Annual mortality of sawtimber trees (International 1/4 inch rule), in board feet per year, on forest land by species and diameter class, Indiana State Forests 2013 - 2015

Table 51a. — Annual mortality of sawtimber trees (Doyle rule), in board feet per year, on forest land by species and diameter class, Indiana State Forests 2013 - 2015

Removals

Table 60. — Annual removals of trees (at least 5 inches d.b.h.), in cubic feet per year, on forest land by species and diameter class, Indiana State Forests 2013 – 2015

Table 61. — Removals of sawtimber trees (International 1/4 inch rule), in board feet, on forest land by species and diameter class, Indiana State Forests 2013 - 2015

Table 61a. — Removals of sawtimber trees (Doyle rule), in board feet, on forest land by species and diameter class, Indiana State Forests 2013 - 2015

Table 1.—Area of forestland by forest type group and stand size class, Indiana State Forests, 2011-2015

Estimate: Total-Area of forestland(acres)

Sampling Error percent: Simple Random Sampling: Total Area of forestland(acres)

Forest type	Stand-size	Large diameter	Medium diameter	Small diameter	Nonstocked
All	150,932	128,210	9,493	10,530	2,699
	0.3	0.75	6.31	5.96	12.13
Jack pine	40	40	-	-	-
	100	100	-	-	-
Red pine	733	733	-	-	-
	23.32	23.32	-	-	-
Eastern white pine	2,075	1,991	-	84	-
	13.71	14	-	70.55	-
Shortleaf pine	121	80	41	-	-
	57.74	70.71	100	-	-
Virginia pine	2,356	2,182	86	87	-
	12.95	13.46	66.72	66.78	-
White pine / red oak / white ash	371	288	83	-	-
	33.25	37.7	70.72	-	-
Eastern redcedar / hardwood	1,344	1,021	282	41	-
	17.04	19.62	37.71	100	-
Shortleaf pine / oak	287	245	42	-	-
	37.78	40.8	100	-	-
Virginia pine / southern red oak	647	485	81	81	-
	24.95	28.81	70.71	70.71	-
Other pine / hardwood	5,292	4,847	165	279	-
	8.51	8.92	49.69	37.86	-
Post oak / blackjack oak	220	220	-	-	-
	42	42	-	-	-
Chestnut oak	13,240	12,877	284	79	-
	4.99	5.08	37.74	70.71	-
White oak / red oak / hickory	35,493	32,615	1,662	1,216	-
	2.93	3.09	15.54	18.2	-
White oak	15,602	15,154	367	81	-
	4.78	4.86	33.22	70.72	-
Northern red oak	3,472	3,431	-	41	-
	10.65	10.71	-	100	-

(Table 1 continued on next page)

(Table 1 continued)

Yellow-poplar / white oak / red oak	4,413	4,001	246	166	-
	9.47	9.96	40.8	49.96	-
Sassafras / persimmon	2,166	867	404	895	-
	13.49	21.29	31.61	21.26	-
Sweetgum / yellow-poplar	1,033	743	125	122	42
	19.84	23.45	57.74	57.75	100
Scarlet oak	525	525	-	-	-
	27.68	27.68	-	-	-
Yellow-poplar	8,311	6,365	1,144	802	-
	6.76	7.78	18.67	22.19	-
Black walnut	1,293	1,090	203	-	-
	17.42	18.93	44.72	-	-
Black locust	644	228	41	375	-
	24.95	41.06	100	33.15	-
Chestnut oak / black oak / scarlet oak	5,293	4,866	182	245	-
	8.44	8.81	45.67	40.72	-
Red maple / oak	2,332	1,716	360	255	-
	13	15.22	33.29	38.88	-
Mixed upland hardwoods	20,980	18,098	1,038	1,844	-
	3.95	4.3	19.62	14.64	-
Sweetgum / Nuttall oak / willow oak	124	124	-	-	-
	57.69	57.69	-	-	-
Overcup oak / water hickory	65	65	-	-	-
	73.2	73.2	-	-	-
Sweetbay / swamp tupelo / red maple	163	81	-	81	-
	49.98	70.71	-	70.65	-
Black ash / American elm / red maple	166	166	-	-	-
	49.88	49.88	-	-	-
River birch / sycamore	1,005	857	66	81	-
	19.95	21.72	72.07	70.74	-
Cottonwood	544	544	-	-	-
	27.07	27.07	-	-	-
Willow	42	-	-	42	-
	100	-	-	100	-
Sycamore / pecan / American elm	809	726	82	-	-
	22.31	23.54	70.73	-	-

(Table 1 continued on next page)

(Table 1 continued)

Sugarberry / hackberry / elm / green ash	902	564	242	96	-
	20.91	26.66	40.82	61.51	-
Silver maple / American elm	167	83	84	-	-
	49.88	70.72	70.59	-	-
Red maple / lowland	659	496	121	41	-
	24.9	28.77	57.69	100	-
Sugar maple / beech / yellow birch	4,482	3,474	562	446	-
	9.34	10.65	26.66	30.12	-
Black cherry	126	126	-	-	-
	57.46	57.46	-	-	-
Hard maple / basswood	4,363	3,257	643	463	-
	9.42	10.96	24.94	29.2	-
Red maple / upland	168	168	-	-	-
	49.65	49.65	-	-	-
Aspen	243	203	40	-	-
	40.79	44.7	100	-	-
Paulownia	40	-	40	-	-
	100	-	100	-	-
Other exotic hardwoods	42	-	-	42	-
	100	-	-	100	-
Eastern redceder	408	327	41	41	-
	31.38	35.15	100	100	-
Cherry / white ash / yellow-poplar	3,452	1,949	447	1,057	-
	10.72	14.35	30.13	19.55	-
Elm / ash / black locust	1,107	207	247	654	-
	18.78	44.69	39.18	24.49	-
Nonstocked	2,657	-	-	-	2,657
	12.22	-	-	-	12.22
Other	917	83	41	793	-
	20.85	70.72	100	22.37	-

Table 2. -- Area of forestland, in acres, by forest type and stand age, Indiana State Forests 2011 – 2015

Estimate: Total-Area of forestland(acres)

Sampling Error percent: Simple Random Sampling: Total Area of forestland(acres)

Forest type	Stand Age	0 - 19	20 - 39	40 - 59	60 - 79	80 - 99	100 - 119	120 - 139	140 - 159	160 +
All	150,932	5,947	4,284	20,227	39,515	40,175	28,296	9,855	2,139	493
	0.3	8.05	9.56	4.1	2.73	2.72	3.36	6.06	13.52	28.35
Jack pine	40	-	-	-	40	-	-	-	-	-
	100	-	-	-	100	-	-	-	-	-
Red pine	733	-	80	492	161	-	-	-	-	-
	23.32	-	70.65	28.49	49.98	-	-	-	-	-
Eastern white pine	2,075	-	81	688	1,029	277	-	-	-	-
	13.71	-	70.77	24.21	19.59	38.03	-	-	-	-
Shortleaf pine	121	-	-	40	80	-	-	-	-	-
	57.74	-	-	100	70.72	-	-	-	-	-
Virginia pine	2,356	87	159	993	713	282	82	41	-	-
	12.95	66.78	50.04	20.09	23.61	37.78	70.65	100	-	-
White pine / red oak / white ash	371	-	-	123	207	-	42	-	-	-
	33.25	-	-	57.77	44.7	-	100	-	-	-
Eastern red cedar / hardwood	1,344	41	203	406	367	163	122	41	-	-
	17.04	100	44.63	31.47	33.11	49.94	57.64	100	-	-
Shortleaf pine / oak	287	-	41	84	122	40	-	-	-	-
	37.78	-	100	70.71	57.75	100	-	-	-	-
Virginia pine / southern red oak	647	40	40	163	160	204	40	-	-	-
	24.95	100	100	49.98	49.98	44.68	100	-	-	-
Other pine / hardwood	5,292	83	331	1,777	1,296	617	615	492	82	-
	8.51	70.6	35.19	15.04	17.6	25.63	25.53	28.61	70.65	-
Post oak / blackjack oak	220	-	-	-	41	82	56	41	-	-
	42	-	-	-	100	70.65	77.5	100	-	-
Chestnut oak	13,240	204	-	283	1,421	3,797	3,920	2,652	803	161
	4.99	44.64	-	37.76	16.7	10.07	9.93	12.07	22.18	49.96

(Table 2 continued on next page)

(Table 2 continued)

Forest type	Stand Age	0 - 19	20 - 39	40 - 59	60 - 79	80 - 99	100 - 119	120 - 139	140 - 159	160 +
White oak / red oak / hickory	35,493	163	82	2,061	8,515	13,250	8,407	2,251	603	161
	2.93	49.99	70.65	13.9	6.64	5.26	6.72	13.26	25.73	49.96
White oak	15,602	163	6	202	2,153	5,539	5,653	1,471	325	89
	4.78	49.94	100	44.67	13.61	8.38	8.25	16.49	35.31	65.54
Northern red oak	3,472	-	41	203	881	1,174	768	364	41	-
	10.65	-	100	44.7	21.23	18.49	22.89	33.31	100	-
Yellow-poplar / white oak / red oak	4,413	42	124	737	1,638	1,263	325	284	-	-
	9.47	100	57.74	23.5	15.69	17.89	35.34	37.74	-	-
Sassafras / persimmon	2,166	83	81	341	768	568	284	40	-	-
	13.49	70.72	70.71	33.87	22.83	26.67	37.78	100	-	-
Sweetgum / yellow-poplar	1,033	82	42	498	288	82	41	-	-	-
	19.84	70.74	100	28.68	37.75	70.74	100	-	-	-
Scarlet oak	525	-	-	41	-	162	162	161	-	-
	27.68	-	-	100	-	49.98	49.94	49.94	-	-
Yellow-poplar	8,311	394	876	1,813	3,436	1,224	363	165	41	-
	6.76	31.24	21.33	14.76	10.71	18.02	33.27	49.94	100	-
Black walnut	1,293	-	119	408	605	78	83	-	-	-
	17.42	-	57.75	31.45	25.67	70.77	70.72	-	-	-
Black locust	644	168	125	190	78	40	42	-	-	-
	24.95	49.82	57.74	45.02	70.78	100	100	-	-	-
Chestnut oak / black oak / scarlet oak	5,293	41	41	285	1,069	1,731	1,644	441	41	-
	8.44	100	100	37.79	19.23	15.09	15.45	30.06	100	-
Red maple / oak	2,332	40	34	855	735	220	285	122	41	-
	13	100	100	21.74	23.12	42.39	37.78	57.71	100	-
Mixed upland hardwoods	20,980	1,123	780	3,879	6,817	4,983	2,761	515	41	82
	3.95	18.76	22.66	10.02	7.42	8.79	11.87	27.7	100	70.65
Sweetgum / Nuttall oak / willow oak	124	-	-	82	42	-	-	-	-	-
	57.69	-	-	70.73	100	-	-	-	-	-
Overcup oak / water hickory	65	-	-	-	65	-	-	-	-	-
	73.2	-	-	-	73.2	-	-	-	-	-

(Table 2 continued on next page)

(Table 2 continued)

Forest type	Stand Age	0 - 19	20 - 39	40 - 59	60 - 79	80 - 99	100 - 119	120 - 139	140 - 159	160 +
Sweetbay / swamp tupelo / red maple	163	-	-	40	41	81	-	-	-	-
	49.98	-	-	100	100	70.65	-	-	-	-
Black ash / American elm / red maple	166	-	-	-	42	82	42	-	-	-
	49.88	-	-	-	100	70.73	100	-	-	-
River birch / sycamore	1,005	81	148	208	365	161	41	-	-	-
	19.95	70.74	50.61	44.47	33.31	50	100	-	-	-
Cottonwood	544	-	-	295	166	84	-	-	-	-
	27.07	-	-	37.26	49.84	70.55	-	-	-	-
Willow	42	-	-	42	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-
Sycamore / pecan / American elm	809	-	125	272	288	42	83	-	-	-
	22.31	-	57.65	37.93	37.79	100	70.72	-	-	-
Sugarberry / hackberry / elm / green ash	902	16	40	282	406	119	41	-	-	-
	20.91	100	100	37.67	31.59	57.75	100	-	-	-
Silver maple / American elm	167	-	-	-	84	83	-	-	-	-
	49.88	-	-	-	70.59	70.72	-	-	-	-
Red maple / lowland	659	-	82	413	40	124	-	-	-	-
	24.9	-	70.73	31.57	100	57.67	-	-	-	-
Sugar maple / beech / yellow birch	4,482	81	80	445	1,455	1,129	891	362	40	-
	9.34	70.72	70.72	30.13	16.57	18.81	21.27	33.3	100	-
Black cherry	126	-	-	-	42	42	42	-	-	-
	57.46	-	-	-	100	100	100	-	-	-
Hard maple / basswood	4,363	83	40	402	1,730	1,167	568	333	41	-
	9.42	70.72	100	31.57	15.13	18.49	26.67	33.88	100	-
Red maple / upland	168	-	42	-	84	42	-	-	-	-
	49.65	-	100	-	70.55	100	-	-	-	-
Aspen	243	-	-	42	40	81	80	-	-	-
	40.79	-	-	100	100	70.65	70.65	-	-	-

(Table 2 continued on next page)

(Table 2 continued)

Forest type	Stand Age	0 - 19	20 - 39	40 - 59	60 - 79	80 - 99	100 - 119	120 - 139	140 - 159	160 +
Paulownia	40	40	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-
Other exotic hardwoods	42	42	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-
Eastern redceder	408	-	41	245	82	-	41	-	-	-
	31.38	-	100	40.65	70.65	-	100	-	-	-
Cherry / white ash / yellow-poplar	3,452	82	247	653	1,336	772	282	40	41	-
	10.72	70.73	40.81	24.96	17.32	22.89	37.77	100	100	-
Elm / ash / black locust	1,107	73	155	204	387	42	246	-	-	-
	18.78	71.53	50.15	42.97	32.05	100	40.83	-	-	-
Nonstocked	2,657	2,657	-	-	-	-	-	-	-	-
	12.22	12.22	-	-	-	-	-	-	-	-
Other	917	40	-	41	201	349	245	41	-	-
	20.85	100	-	100	44.67	33.55	40.8	100	-	-

Table 3. — Area of forest land, in acres, by state forest and forest type, Indiana State Forests 2011 – 2015

Estimate: Total-Area of forestland(acres)

Sampling Error percent: Simple Random Sampling: Total Area of forestland(acres)

State Forest	Forest type	Jack pine	Red pine	Eastern white pine	Shortleaf pine	Virginia pine	White pine / red oak / white ash	Eastern red cedar / hardwood	Shortleaf pine / oak	Virginia pine / southern red oak	Other pine / hardwood
All	150,932	40	733	2,075	121	2,356	371	1,344	287	647	5,292
	0.3	100	23.32	13.71	57.74	12.95	33.25	17.04	37.78	24.95	8.51
Clark State Forest	25,199	-	-	123	-	680	41	41	-	205	2,418
	0.49	-	-	57.64	-	24.01	100	100	-	44.58	12.4
Covered Bridge State Forest	262	-	-	-	-	-	-	-	-	-	-
	14.29	-	-	-	-	-	-	-	-	-	-
Ferdinand State Forest	12,397	-	84	377	-	126	168	-	84	-	922
	0.98	-	70.59	32.89	-	57.54	49.75	-	70.59	-	20.57
Greene-Sullivan State Forest	6,060	-	-	421	-	379	84	-	42	-	505
	4.83	-	-	30.95	-	32.7	70.55	-	100	-	28.12
Harrison-Crawford State Forest	23,881	-	122	122	41	408	-	1,184	41	122	539
	0.46	-	57.64	57.64	100	31.38	-	18.13	100	57.64	27.08
Jackson-Washington State Forest	17,846	-	40	-	40	79	-	119	-	79	356
	0.97	-	100	-	100	70.63	-	57.61	-	70.63	33.04
Martin State Forest	7,854	-	40	40	40	-	-	-	40	80	161
	0.56	-	100	100	100	-	-	-	100	70.53	49.62
Morgan-Monroe State Forest	24,970	-	41	272	-	41	-	-	-	-	-
	0.65	-	100	37.89	-	100	-	-	-	-	-
Owen-Putnam State Forest	6,402	40	121	172	-	207	-	-	-	40	232
	1.21	100	57.38	46.89	-	43.1	-	-	-	100	40.39
Salamonie State Forest	1,445	-	-	233	-	-	39	-	-	-	39
	1.85	-	-	37.97	-	-	100	-	-	-	100

(Table 3 continued on next page)

(Table 3 continued)

State Forest	Forest type	Jack pine	Red pine	Eastern white pine	Shortleaf pine	Virginia pine	White pine / red oak / white ash	Eastern red cedar / hardwood	Shortleaf pine / oak	Virginia pine / southern red oak	Other pine / hardwood
Selmier State Forest	311	-	-	-	-	-	-	-	-	-	-
	12.5	-	-	-	-	-	-	-	-	-	-
Yellowwood State Forest	24,305	-	285	315	-	436	40	-	80	120	120
	0.71	-	36.9	34.86	-	29.63	100	-	70.65	57.64	57.64

State Forest	Post oak / blackjack oak	Chestnut oak	White oak / red oak / hickory	White oak	Northern red oak	Yellow-poplar / white oak / red oak	Sassafras / persimmon	Sweetgum / yellow-poplar	Scarlet oak	Yellow-poplar	Black walnut
All	220	13,240	35,493	15,602	3,472	4,413	2,166	1,033	525	8,311	1,293
	42	4.99	2.93	4.78	10.65	9.47	13.49	19.84	27.68	6.76	17.42
Clark State Forest	-	6,067	4,067	4,387	491	779	82	287	82	1,025	41
	-	7.19	9.2	8.77	28.61	22.61	70.65	37.61	70.65	19.44	100
Covered Bridge State Forest	-	-	75	-	37	-	-	-	-	-	37
	-	-	65.47	-	100	-	-	-	-	-	100
Ferdinand State Forest	-	210	3,227	1,090	84	754	42	210	-	629	126
	-	44.43	9.87	18.79	70.59	22.9	100	44.43	-	25.22	57.54
Greene-Sullivan State Forest	-	-	295	84	84	168	126	337	-	-	210
	-	-	37.26	70.55	70.55	49.65	57.46	34.77	-	-	44.3
Harrison-Crawford State Forest	220	122	7,921	3,307	612	776	447	41	41	1,429	245
	42	57.64	5.89	10.33	25.51	22.59	29.9	100	100	16.41	40.65
Jackson-Washington State Forest	-	3,799	5,050	820	317	356	237	79	40	752	40
	-	9.09	7.53	21.39	35.09	33.04	40.6	70.63	100	22.49	100

(Table 3 continued on next page)

(Table 3 continued)

State Forest	Post oak / blackjack oak	Chestnut oak	White oak / red oak / hickory	White oak	Northern red oak	Yellow-poplar / white oak / red oak	Sassafras / persimmon	Sweetgum / yellow-poplar	Scarlet oak	Yellow-poplar	Black walnut
Martin State Forest	-	-	1,991	924	80	120	-	-	-	700	-
	-	-	12.28	19.65	70.53	57.44	-	-	-	22.75	-
Morgan-Monroe State Forest	-	1,099	6,132	2,117	529	896	570	41	204	1,518	122
	-	18.84	7.11	13.29	27.47	20.96	26.45	100	44.58	15.85	57.64
Owen-Putnam State Forest	-	-	1,213	202	445	283	422	-	-	591	40
	-	-	16.54	44.17	29.21	37.09	29.66	-	-	24.81	100
Salamonie State Forest	-	-	233	-	76	-	-	-	-	39	233
	-	-	37.97	-	69.77	-	-	-	-	100	37.97
Selmier State Forest	-	-	117	-	-	-	-	39	-	39	39
	-	-	50	-	-	-	-	100	-	100	100
Yellowwood State Forest	-	1,943	5,174	2,671	718	280	239	-	159	1,589	159
	-	13.74	7.8	11.56	23.25	37.46	40.66	-	49.88	15.32	49.88

State Forest	Black locust	Chestnut oak / black oak / scarlet oak	Red maple / oak	Mixed upland hardwoods	Sweetgum / Nuttall oak / willow oak	Overcup oak / water hickory	Sweetbay / swamp tupelo / red maple	Black ash / American elm / red maple	River birch / sycamore	Cottonwood	Willow
All	644	5,293	2,332	20,980	124	65	163	166	1,005	544	42
	24.95	8.44	13	3.95	57.69	73.2	49.98	49.88	19.95	27.07	100
Clark State Forest	-	533	608	988	-	41	41	-	82	-	-
	-	27.47	25.55	19.84	-	100	100	-	70.65	-	-
Covered Bridge State Forest	37	-	-	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-

(Table 3 continued on next page)

(Table 3 continued)

State Forest	Black locust	Chestnut oak / black oak / scarlet oak	Red maple / oak	Mixed upland hardwoods	Sweetgum / Nuttall oak / willow oak	Overcup oak / water hickory	Sweetbay / swamp tupelo / red maple	Black ash / American elm / red maple	River birch / sycamore	Cottonwood	Willow
Ferdinand State Forest	84	126	327	1,343	84	-	-	126	42	-	-
	70.59	57.54	35.03	16.65	70.59	-	-	57.54	100	-	-
Greene-Sullivan State Forest	252	-	295	421	-	-	-	-	319	505	42
	40.35	-	37.26	30.95	-	-	-	-	35.21	28.12	100
Harrison-Crawford State Forest	82	327	82	2,042	-	-	-	-	82	-	-
	70.65	35.15	70.65	13.49	-	-	-	-	70.65	-	-
Jackson-Washington State Forest	40	435	435	1,306	40	24	-	40	119	40	-
	100	29.82	29.82	16.79	100	100	-	100	57.61	100	-
Martin State Forest	-	61	80	2,209	-	-	40	-	80	-	-
	-	73.85	70.53	11.48	-	-	100	-	70.53	-	-
Morgan-Monroe State Forest	-	1,465	191	6,761	-	-	81	-	122	-	-
	-	16.2	43.75	6.65	-	-	70.65	-	57.64	-	-
Owen-Putnam State Forest	40	-	35	1,455	-	-	-	-	-	-	-
	100	-	100	14.76	-	-	-	-	-	-	-
Salamonie State Forest	-	-	-	78	-	-	-	-	-	-	-
	-	-	-	69.75	-	-	-	-	-	-	-
Selmier State Forest	-	-	-	39	-	-	-	-	-	-	-
	-	-	-	100	-	-	-	-	-	-	-
Yellowwood State Forest	109	2,345	279	4,338	-	-	-	-	159	-	-
	58.24	12.41	37.62	8.68	-	-	-	-	49.88	-	-

(Table 3 continued on next page)

(Table 3 continued)

State Forest	Sycamore / pecan / American elm	Sugarberry / hackberry / elm / green ash	Silver maple / American elm	Red maple / lowland	Sugar maple / beech / yellow birch	Black cherry	Hard maple / basswood	Red maple / upland	Aspen	Paulownia	Other exotic hardwoods
All	809	902	167	659	4,482	126	4,363	168	243	40	42
	22.31	20.91	49.88	24.9	9.34	57.46	9.42	49.65	40.79	100	100
Clark State Forest	41	-	-	123	533	-	533	-	-	-	-
	100	-	-	57.64	27.47	-	27.47	-	-	-	-
Covered Bridge State Forest	-	-	-	-	-	-	37	-	-	-	-
	-	-	-	-	-	-	100	-	-	-	-
Ferdinand State Forest	210	84	126	207	251	-	251	-	-	-	-
	44.43	70.59	57.54	44.44	40.49	-	40.49	-	-	-	-
Greene-Sullivan State Forest	157	58	-	168	42	126	-	168	42	-	42
	50.05	77.75	-	49.65	100	57.46	-	49.65	100	-	100
Harrison-Crawford State Forest	160	245	41	-	694	-	916	-	-	-	-
	49.91	40.65	100	-	23.92	-	20.61	-	-	-	-
Jackson-Washington State Forest	-	198	-	40	1,108	-	831	-	-	40	-
	-	44.65	-	100	18.34	-	21.34	-	-	100	-
Martin State Forest	80	80	-	40	201	-	120	-	-	-	-
	70.53	70.53	-	100	44.26	-	57.44	-	-	-	-
Morgan-Monroe State Forest	81	41	-	41	773	-	529	-	81	-	-
	70.65	100	-	100	22.61	-	27.47	-	70.65	-	-
Owen-Putnam State Forest	-	40	-	-	243	-	156	-	-	-	-
	-	100	-	-	40.19	-	49.64	-	-	-	-
Salamonie State Forest	-	116	-	-	-	-	271	-	-	-	-
	-	56.15	-	-	-	-	34.6	-	-	-	-
Selmier State Forest	-	-	-	-	39	-	-	-	-	-	-
	-	-	-	-	100	-	-	-	-	-	-
Yellowwood State Forest	80	40	-	40	598	-	718	-	120	-	-
	70.65	100	-	100	25.53	-	23.25	-	57.64	-	-

(Table 3 continued on next page)

(Table 3 continued)

State Forest	Eastern redceder	Cherry / white ash / yellow-poplar	Elm / ash / black locust	Nonstocked	Not Collected
All	408	3,452	1,107	2,657	917
	31.38	10.72	18.78	12.22	20.85
Clark State Forest	-	205	82	328	246
	-	44.58	70.65	35.16	40.66
Covered Bridge State Forest	-	-	-	37	-
	-	-	-	100	-
Ferdinand State Forest	-	545	126	251	84
	-	27.18	57.54	40.49	70.59
Greene-Sullivan State Forest	-	126	328	233	-
	-	57.46	34.86	40.9	-
Harrison-Crawford State Forest	408	653	122	204	82
	31.38	24.68	57.64	44.57	70.65
Jackson-Washington State Forest	-	396	79	277	198
	-	31.31	70.63	37.55	44.53
Martin State Forest	-	201	40	321	80
	-	44.26	100	34.72	70.53
Morgan-Monroe State Forest	-	570	219	366	67
	-	26.45	41.25	33.12	72.38
Owen-Putnam State Forest	-	243	19	81	81
	-	40.19	100	70.49	70.49
Salamonie State Forest	-	39	12	39	-
	-	100	100	100	-
Selmier State Forest	-	-	-	-	-
	-	-	-	-	-
Yellowwood State Forest	-	475	80	518	80
	-	28.62	70.65	27.47	70.65

Table 4. — Area of forest land, in acres, by state forest and stand-size class, Indiana State Forests 2011 – 2015

Estimate: Area of forestland(acres)

Sampling Error percent: Area of forestland(acres)

State Forest	Stand-size	Large diameter	Medium diameter	Small diameter	Nonstocked
All	150,932	128,210	9,493	10,530	2,699
	0.3	0.75	6.31	5.96	12.13
Clark State Forest	25,199	21,540	1,562	1,768	328
	0.49	1.73	15.63	14.64	35.16
Covered Bridge State Forest	262	224	-	-	37
	14.29	21.82	-	-	100
Ferdinand State Forest	12,397	9,808	1,004	1,334	251
	0.98	3.15	19.61	16.76	40.49
Greene-Sullivan State Forest	6,060	4,567	439	778	276
	4.83	6.81	29.67	22.06	37.71
Harrison-Crawford State Forest	23,881	20,678	1,560	1,439	204
	0.46	1.69	15.62	16.25	44.57
Jackson-Washington State Forest	17,846	15,116	1,464	989	277
	0.97	2.24	15.78	19.47	37.55
Martin State Forest	7,854	6,409	503	620	321
	0.56	3.45	27.12	24.29	34.72
Morgan-Monroe State Forest	24,970	21,604	1,193	1,806	366
	0.65	1.72	17.99	14.33	33.12
Owen-Putnam State Forest	6,402	5,661	207	453	81
	1.21	3.11	43.1	28.29	70.49
Salamonie State Forest	1,445	1,084	206	116	39
	1.85	9.83	39.81	56.15	100
Selmier State Forest	311	234	78	-	-
	12.5	25	66.14	-	-

(Table 4 continued on next page)

(Table 4 continued)					
State Forest	Stand-size	Large diameter	Medium diameter	Small diameter	Nonstocked
Yellowwood State Forest	24,305	21,285	1,276	1,227	518
	0.71	1.68	17.24	17.48	27.47

Table 5. — Area of forest land, in acres, by state forest and stand age, Indiana State Forests 2011 – 2015

Estimate: Area of forestland(acres)

Sampling Error percent: Area of forestland(acres)

State Forest	Stand Age	0 - 19	20 - 39	40 - 59	60 - 79	80 - 99	100 - 119	120 - 139	140 - 159	160 +
All	150,932	5,947	4,284	20,227	39,515	40,175	28,296	9,855	2,139	493
	0.3	8.05	9.56	4.1	2.73	2.72	3.36	6.06	13.52	28.35
Clark State Forest	25,199	873	408	1,731	4,318	6,570	5,881	4,099	984	335
	0.49	21.2	31.01	14.83	8.87	6.8	7.32	9.17	20.03	34.47
Covered Bridge State Forest	262	37	-	-	75	112	37	-	-	-
	14.29	100	-	-	65.47	48.8	100	-	-	-
Ferdinand State Forest	12,397	831	462	1,928	4,727	3,108	1,215	126	-	-
	0.98	21.67	29.59	13.61	7.48	10.1	17.69	57.54	-	-
Greene-Sullivan State Forest	6,020	549	518	3,018	1,220	463	252	-	-	-
	4.81	26.21	27.13	9.64	17.31	29.44	40.35	-	-	-
Harrison-Crawford State Forest	23,881	604	825	3,353	5,959	6,737	5,201	1,079	122	-
	0.46	25.54	21.78	10.23	7.19	6.62	7.85	18.94	57.64	-
Jackson-Washington State Forest	17,663	673	381	1,439	4,433	4,868	3,155	1,804	752	158
	0.86	23.83	31.52	15.88	8.23	7.73	10.18	14.03	22.49	49.84
Martin State Forest	7,854	660	161	1,125	3,619	2,129	80	80	-	-
	0.56	23.48	49.62	17.55	7.74	11.77	70.53	70.53	-	-
Morgan-Monroe State Forest	24,970	845	651	2,728	6,826	7,487	5,495	855	81	-
	0.65	21.5	24.7	11.5	6.62	6.2	7.64	21.47	70.65	-
Owen-Putnam State Forest	6,402	121	202	1,296	2,000	2,062	566	156	-	-
	1.21	57.38	44.17	15.73	11.86	11.64	25.63	49.64	-	-
Salamonie State Forest	1,445	78	78	516	580	155	39	-	-	-
	1.85	69.75	69.75	22.11	20.36	47.93	100	-	-	-

(Table 5 continued on next page)

(Table 5 continued)

State Forest	Stand Age	0 - 19	20 - 39	40 - 59	60 - 79	80 - 99	100 - 119	120 - 139	140 - 159	160 +
Selmier State Forest	311	-	-	195	78	39	-	-	-	-
	12.5	-	-	31.62	66.14	100	-	-	-	-
Yellowwood State Forest	24,528	676	598	2,899	5,681	6,446	6,373	1,656	199	-
	0.59	23.81	25.53	11	7.35	6.78	6.82	14.94	44.58	-

Table 6. — Area of forest land, in acres, by state forest and site productivity class, Indiana State Forests 2011 – 2015

Estimate: Area of forestland(acres)

Sampling Error percent: Area of forestland(acres)

State Forest	Site productivity	225+	165-224	120-164	85-119	50-84	20-49	0-19
All	150,932	699	1,061	15,386	57,695	49,995	25,651	445
	0.3	23.89	19.54	4.83	2.06	2.33	3.51	30.07
Clark State Forest	25,199	41	82	1,224	6,072	9,042	8,656	82
	0.49	100	70.65	17.83	7.15	5.41	5.6	70.65
Covered Bridge State Forest	262	-	37	-	75	149	-	-
	14.29	-	100	-	65.47	37.8	-	-
Ferdinand State Forest	12,397	168	126	1,760	5,639	3,697	1,007	-
	0.98	49.75	57.54	14.35	6.44	8.98	19.61	-
Greene-Sullivan State Forest	6,020	79	210	636	2,193	1,345	1,346	210
	4.81	70.69	44.3	24.76	11.99	16.35	16.35	44.3
Harrison-Crawford State Forest	23,881	82	122	1,397	8,607	9,975	3,657	41
	0.46	70.65	57.64	16.57	5.53	4.9	9.72	100
Jackson-Washington State Forest	17,663	-	-	1,583	4,975	6,412	4,654	40
	0.86	-	-	15.13	7.61	6.34	7.96	100
Martin State Forest	7,854	40	40	1,165	4,439	1,968	201	-
	0.56	100	100	17.19	6.3	12.41	44.26	-
Morgan-Monroe State Forest	24,970	91	122	3,338	11,561	7,618	2,239	-
	0.65	63.91	57.64	10.31	4.39	6.12	12.89	-
Owen-Putnam State Forest	6,402	40	121	1,313	3,478	1,126	323	-
	1.21	100	57.38	15.64	7.38	17.26	34.58	-
Salamonie State Forest	1,445	78	-	194	824	310	39	-
	1.85	69.75	-	42.23	14.38	31.84	100	-

(Table 6 continued on next page)

(Table 6 continued)

State Forest	Site productivity	225+	165-224	120-164	85-119	50-84	20-49	0-19
Selmier State Forest	311	-	-	156	156	-	-	-
	12.5	-	-	39.53	39.53	-	-	-
Yellowwood State Forest	24,528	80	199	2,620	9,676	8,353	3,528	72
	0.59	70.65	44.58	11.66	5.02	5.64	9.84	71.03

Table 7. — Area of forest land, in acres, by state forest and site index, Indiana State Forests 2011 – 2015

Estimate: Area of forestland (acres)

Sampling Error percent: Area of forestland (acres)

State Forest	Site index	21 - 30	31 - 40	41 - 50	51 - 60	61 - 70	71 - 80	81 - 90	91 - 199	Not Collected
All	150,932	157	1,107	9,232	19,641	29,037	30,975	21,232	26,188	13,361
	0.3	50.2	18.98	6.36	4.18	3.36	3.2	4.03	3.53	5.1
Clark State Forest	25,199	-	622	2,880	5,500	4,946	2,533	1,563	1,990	5,165
	0.49	-	25.26	11.23	7.65	8.17	12.07	15.64	13.74	7.97
Covered Bridge State Forest	262	-	-	-	-	-	187	37	37	-
	14.29	-	-	-	-	-	29.28	100	100	-
Ferdinand State Forest	12,397	-	-	293	1,048	2,473	2,806	2,137	3,178	462
	0.98	-	-	37.42	19.19	11.71	10.78	12.8	9.96	29.59
Greene-Sullivan State Forest	6,020	84	42	168	631	841	1,050	1,116	1,371	715
	4.81	70.55	100	49.65	24.96	21.34	18.85	18.08	16.1	23.33
Harrison-Crawford State Forest	23,881	41	245	2,491	4,833	5,716	4,218	2,776	2,900	661
	0.46	100	40.65	12.14	8.22	7.39	8.93	11.42	11.11	24.4
Jackson-Washington State Forest	17,663	-	158	1,305	2,280	3,234	3,206	2,098	2,335	3,047
	0.86	-	49.84	16.79	12.31	10.03	10.1	12.94	12.17	10.41
Martin State Forest	7,854	-	-	120	321	1,285	2,129	1,789	2,209	-
	0.56	-	-	57.44	34.72	16.22	11.77	13.17	11.48	-
Morgan-Monroe State Forest	24,970	-	-	1,180	2,483	4,456	6,908	3,786	5,465	692
	0.65	-	-	18.15	12.18	8.68	6.56	9.58	7.65	23.94
Owen-Putnam State Forest	6,402	-	-	40	121	843	1,415	1,577	2,204	202
	1.21	-	-	100	57.38	20.44	15.02	14.01	10.97	44.17
Salamonie State Forest	1,445	-	-	-	116	155	580	310	284	-
	1.85	-	-	-	56.15	47.93	20.36	31.84	33.06	-

(Table 7 continued on next page)

(Table 7 continued)										
State Forest	Site index	21 - 30	31 - 40	41 - 50	51 - 60	61 - 70	71 - 80	81 - 90	91 - 199	Not Collected
Selmier State Forest	311	-	-	-	-	-	39	117	156	-
	12.5	-	-	-	-	-	100	50	39.53	-
Yellowwood State Forest	24,528	32	40	753	2,307	5,088	5,906	3,926	4,060	2,417
	0.59	100	100	22.62	12.52	7.89	7.17	9.23	9.07	12.19

RETURN TO LIST OF TABLES

Table 10.—Number of all live trees by species and diameter class, State Forest Properties, 2011-2015

Estimate: Total-Number of all live trees on forestland (trees)

Sampling Error percent: Simple Random Sampling: Total Number of all live trees on forestland (trees)

Species	Diameter class	0.1-2.9	3.0-4.9	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	21.0-22.9	23.0+	
All		58,599,354	32,614,420	9,620,617	4,134,014	2,785,256	2,091,890	1,787,584	1,459,173	1,222,106	1,002,394	736,783	523,782	621,335
		1.65	2.57	3.67	1.86	2.18	2.48	2.53	2.81	2.97	3.26	3.75	4.41	4.11
eastern red cedar		712,691	194,519	159,249	113,604	104,028	67,762	43,090	19,654	6,877	2,925	983	-	-
		12.58	30.52	27.53	13.08	13.72	17.02	20.33	22.04	42.75	57.71	100	-	-
Norway spruce		980	-	-	-	-	-	980	-	-	-	-	-	-
		100	-	-	-	-	-	100	-	-	-	-	-	-
shortleaf pine		54,347	-	-	1,976	8,934	14,863	9,853	5,903	6,863	2,985	1,009	953	1,009
		30.47	-	-	70.73	48.54	41.6	44.4	52.56	42.86	74.97	100	100	100
red pine		163,705	-	12,243	5,920	31,228	43,962	33,215	22,461	7,830	1,926	3,953	-	967
		24.51	-	100	57.33	36.78	27.83	25.27	24.07	46.35	70.71	61.68	-	100
eastern white pine		397,703	72,609	23,479	30,598	28,511	28,262	35,081	39,470	46,140	35,542	33,542	19,643	4,825
		14.78	46.66	70.71	23.95	23.55	21.16	19.1	23.89	19.53	19.49	22.67	28.21	44.62
Virginia pine		743,605	283,982	-	43,152	73,781	100,598	97,378	72,891	42,378	13,756	13,714	987	987
		21.48	53.56	-	23.82	16.81	14.56	14.23	14.41	17.12	28.43	26.63	100	100
bald cypress		2,026	-	-	-	1,013	-	-	-	1,013	-	-	-	-
		70.55	-	-	-	100	-	-	-	100	-	-	-	-
boxelder		123,165	37,103	24,137	24,510	15,745	9,951	6,805	2,918	1,013	-	983	-	-
		25.63	57.71	70.71	26.6	30.48	37.23	37.77	57.71	100	-	100	-	-
black maple		983	-	-	-	-	-	-	983	-	-	-	-	-
		100	-	-	-	-	-	-	100	-	-	-	-	-
red maple		4,924,992	2,397,622	1,136,136	554,903	327,420	182,284	128,411	68,515	56,827	29,490	14,732	13,867	14,784
		5.41	8.62	11.02	5.23	6.27	8.44	9.73	12.5	13.49	19.37	25.78	26.67	25.77

(Table 10 continued)

Species	Diameter class	0.1-2.9	3.0-4.9	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	21.0-22.9	23.0+
silver maple	116,817	61,535	-	10,089	10,007	11,031	7,044	5,018	4,043	4,039	1,009	1,009	1,992
	33.45	52.36	-	37.04	49.09	39.53	37.67	52.87	49.9	61.15	100	100	70.72
sugar maple	12,101,308	6,417,491	2,654,502	1,248,615	734,993	399,491	256,188	175,179	91,455	62,097	31,098	17,594	12,605
	3.39	5.09	7.09	3.3	4.01	5.25	6.31	8.14	10.73	12.94	18.14	24.83	27.68
Ohio buckeye	98,464	61,217	23,855	7,617	2,876	1,916	-	-	-	983	-	-	-
	40.23	52.8	70.74	55.2	57.75	70.73	-	-	-	100	-	-	-
ailanthus	29,534	23,736	-	1,916	1,966	1,916	-	-	-	-	-	-	-
	57.89	70.63	-	70.73	70.65	70.73	-	-	-	-	-	-	-
European Alder	205,910	201,859	-	1,013	2,026	1,013	-	-	-	-	-	-	-
	98.03	100	-	100	70.55	100	-	-	-	-	-	-	-
serviceberry spp.	98,436	85,249	12,201	987	-	-	-	-	-	-	-	-	-
	39.16	42.87	100	100	-	-	-	-	-	-	-	-	-
roundleaf serviceberry	1,013	-	-	1,013	-	-	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-	-	-
pawpaw	1,030,481	1,017,914	12,568	-	-	-	-	-	-	-	-	-	-
	16.9	16.97	100	-	-	-	-	-	-	-	-	-	-
river birch	116,251	62,838	25,184	13,125	6,065	7,014	2,026	-	-	-	-	-	-
	43.42	59.82	70.71	57.13	47.05	42.58	100	-	-	-	-	-	-
paper birch	967	-	-	967	-	-	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-	-	-
American hornbeam	1,054,150	913,648	120,998	18,545	960	-	-	-	-	-	-	-	-
	13.18	14.5	31.59	25.27	100	-	-	-	-	-	-	-	-
bitternut hickory	130,515	23,917	11,868	8,609	12,746	14,702	13,653	18,672	10,633	11,773	980	2,962	-
	18.27	70.73	100	33.33	27.64	25.77	28.57	25.08	30.07	28.81	100	57.74	-
pignut hickory	1,218,447	305,166	205,592	115,344	118,066	120,141	96,625	81,939	66,508	56,444	23,337	16,649	12,637
	7.68	20.7	25.72	9.82	9.58	9.87	10.3	11.43	12.72	13.7	20.35	24.2	27.69

(Table 10 continued on next page)

(Table 10 continued)													
Species	Diameter class	0.1-2.9	3.0-4.9	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	21.0-22.9	23.0+
shellbark hickory	20,523	12,568	-	1,009	3,005	1,946	-	-	1,996	-	-	-	-
	68.03	100	-	100	57.67	70.72	-	-	70.72	-	-	-	-
shagbark hickory	619,228	195,166	97,179	66,144	55,365	38,038	54,388	46,825	32,066	15,572	9,691	6,874	1,920
	11.29	27.97	35.35	13.34	14.69	15.92	13.79	14.64	18.33	24.93	31.56	37.81	70.71
mockernut hickory	28,517	12,616	-	3,005	960	983	4,010	3,969	1,966	-	1,009	-	-
	50.62	100	-	57.74	100	100	61.3	49.98	70.65	-	100	-	-
red hickory	3,952	-	-	-	1,009	-	1,009	-	-	967	-	-	967
	61.63	-	-	-	100	-	100	-	-	100	-	-	100
American chestnut	3,038	-	-	1,013	1,013	-	1,013	-	-	-	-	-	-
	100	-	-	100	100	-	100	-	-	-	-	-	-
Chinese chestnut	1,013	-	-	1,013	-	-	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-	-	-
hackberry	341,038	219,608	82,509	11,564	8,820	1,942	6,809	2,899	-	1,916	1,013	2,975	983
	21.3	27.18	42.73	31.13	43.07	70.72	42.93	75.06	-	70.73	100	57.71	100
eastern redbud	601,122	304,949	256,296	29,194	7,761	2,922	-	-	-	-	-	-	-
	16.74	26.28	21.69	22.88	35.3	57.74	-	-	-	-	-	-	-
flowering dogwood	1,907,017	1,421,329	426,625	56,114	2,949	-	-	-	-	-	-	-	-
	9.85	11.06	18.22	18.7	57.64	-	-	-	-	-	-	-	-
hawthorn spp.	24,768	24,768	-	-	-	-	-	-	-	-	-	-	-
	70.72	70.72	-	-	-	-	-	-	-	-	-	-	-
persimmon spp.	1,905	-	-	-	-	1,905	-	-	-	-	-	-	-
	100	-	-	-	-	100	-	-	-	-	-	-	-
common persimmon	236,049	98,473	98,023	19,814	11,906	4,884	983	1,966	-	-	-	-	-
	36.85	46.62	49.99	22.24	35.15	52.95	100	70.65	-	-	-	-	-

(Table 10 continued on next page)

(Table 10 continued)

Species	Diameter class	0.1-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	Species	Diameter class	0.1-2.9	3.0-4.9	5.0-6.9	7.0-8.9
American beech	10,756,443	8,435,044	1,509,118	320,375	154,609	104,065	74,783	30,207	28,166	17,421	28,180	26,326	28,148
	3.85	4.43	9.11	6.07	8.47	10.48	12.26	17.9	19.15	24.76	20.34	21.21	19.16
white ash	1,197,167	758,798	110,223	75,683	45,058	43,297	43,128	34,241	27,352	26,352	12,678	5,849	14,510
	10.47	15.19	33.29	13.04	14.96	16.29	15.98	18.62	18.82	20.56	27.69	40.82	25.75
green ash	389,384	307,085	24,484	25,288	4,849	5,898	6,005	4,939	3,987	5,890	-	960	-
	25.21	27.86	70.74	27.04	44.71	40.81	40.69	53.2	49.96	47.11	-	100	-
blue ash	9,829	-	-	2,949	2,949	983	-	983	-	983	-	-	983
	37.22	-	-	74.49	57.64	100	-	100	-	100	-	-	100
Honey locust	119,837	93,298	12,243	933	5,673	1,900	-	2,850	980	-	1,960	-	-
	69.48	88.07	100	100	62.09	70.72	-	74.03	100	-	100	-	-
butternut	1,993	-	-	980	-	-	-	1,013	-	-	-	-	-
	70.72	-	-	100	-	-	-	100	-	-	-	-	-
black walnut	294,323	73,187	24,111	30,110	30,159	31,302	33,199	32,589	11,644	15,579	2,853	4,790	4,799
	15.75	40.82	70.72	19.98	25.4	24.3	17.4	18.37	28.69	24.85	57.75	44.73	44.71
sweetgum	408,002	224,593	50,270	28,840	23,927	20,188	17,067	19,108	14,014	5,982	2,018	1,009	987
	22.31	32.43	49.75	23.57	23.37	28.84	26.78	29.14	28.45	40.61	100	100	100
yellow-poplar	3,252,650	1,536,322	438,024	266,171	169,832	147,366	129,323	122,060	89,860	92,925	79,170	67,387	114,210
	9.58	16.35	19.97	10.6	9.74	9.75	10.02	10.47	10.87	11.28	11.64	13.38	10.49
Osage-orange	12,568	12,568	-	-	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-	-	-
apple spp.	2,960	-	-	2,960	-	-	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-	-	-
sweet crab apple	12,616	12,616	-	-	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-	-	-
mulberry spp.	2,026	-	-	-	1,013	1,013	-	-	-	-	-	-	-
	70.55	-	-	-	100	100	-	-	-	-	-	-	-

(Table 10 continued on next page)

(Table 10 continued)

Species	Diameter class	0.1-2.9	3.0-4.9	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	21.0-22.9	23.0+
white mulberry	14,412	11,612	-	933	-	933	933	-	-	-	-	-	-
	93.57	100	-	100	-	100	100	-	-	-	-	-	-
red mulberry	2,026	-	-	2,026	-	-	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-	-	-
Black gum	1,672,618	925,812	378,032	182,758	78,573	45,925	24,479	13,643	12,662	6,819	967	973	1,976
	8.9	13.41	18.46	8.77	12.84	14.49	19.94	26.68	27.67	37.78	100	100	70.73
eastern hophornbeam	1,743,064	1,526,146	194,592	17,444	3,902	-	-	-	980	-	-	-	-
	10.09	10.97	24.96	23.5	50	-	-	-	100	-	-	-	-
paulownia	1,939	-	-	953	987	-	-	-	-	-	-	-	-
	70.72	-	-	100	100	-	-	-	-	-	-	-	-
American sycamore	263,404	85,769	12,243	23,915	20,860	18,733	15,909	17,869	20,799	15,822	9,793	7,940	13,751
	17.56	42.77	100	30.05	23.78	27.23	33.09	24.8	24.5	24.93	31.6	35.32	28.51
balsam poplar	967	-	-	-	-	-	967	-	-	-	-	-	-
	100	-	-	-	-	-	100	-	-	-	-	-	-
eastern cottonwood	33,302	-	-	-	1,013	1,966	3,038	5,064	3,038	4,051	7,030	2,026	6,077
	22.87	-	-	-	100	70.74	57.46	44.3	57.46	49.65	47.27	70.55	40.35
bigtooth aspen	99,700	24,568	11,952	9,684	4,791	8,810	14,589	6,765	8,803	5,852	973	2,913	-
	33.16	70.74	100	48.78	66.36	40.14	27.37	42.73	43.22	47.15	100	57.74	-
quaking aspen	1,933	-	-	-	980	-	-	-	-	-	953	-	-
	70.72	-	-	-	100	-	-	-	-	-	100	-	-
pin cherry	987	-	-	987	-	-	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-	-	-
black cherry	707,957	340,370	144,826	59,356	50,049	39,304	30,645	12,880	10,856	7,854	4,931	983	5,901
	11.89	20.11	28.87	17.01	14.36	18.97	19.58	29.79	30.11	35.32	44.69	100	40.82
white oak	1,857,130	232,644	60,931	99,090	148,811	150,759	171,306	180,262	211,026	190,503	158,434	119,397	133,968
	4.95	28.25	53.02	10.76	8.9	8.7	8.52	8.19	7.36	7.67	8.15	9.19	9.05

(Table 10 continued on next page)

(Table 10 continued)

Species	Diameter class	0.1-2.9	3.0-4.9	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	21.0-22.9	23.0+
swamp white oak	1,968	-	-	-	-	-	-	-	1,009	-	960	-	-
	70.73	-	-	-	-	-	-	-	100	-	100	-	-
scarlet oak	108,944	24,154	-	1,939	7,737	5,875	13,640	9,786	7,828	18,463	8,819	4,862	5,842
	18.82	70.72	-	70.71	35.28	47.24	26.69	31.58	35.34	25.14	33.26	44.73	40.78
northern pin oak	7,023	-	-	-	1,013	-	1,013	3,005	980	-	1,013	-	-
	37.65	-	-	-	100	-	100	57.74	100	-	100	-	-
shingle oak	46,994	24,902	-	8,053	4,005	3,034	3,038	2,979	-	-	983	-	-
	39.09	70.72	-	35.04	49.83	57.64	57.46	57.71	-	-	100	-	-
chinkapin oak	225,901	59,809	73,105	16,578	19,520	10,733	11,794	10,802	11,782	7,863	967	1,966	983
	23.22	44.72	47.13	28.1	24.26	32.65	30.93	32.59	31.02	35.28	100	70.65	100
pin oak	30,578	-	-	3,926	2,858	3,992	5,934	1,972	6,970	1,963	1,996	-	967
	29.33	-	-	50.01	100	49.95	40.79	70.74	42.67	70.71	70.72	-	100
willow oak	12,286	12,286	-	-	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-	-	-
chestnut oak	1,748,716	170,535	145,549	88,541	104,490	143,629	192,269	216,136	210,559	178,582	150,578	83,629	64,217
	6.53	41.74	33.27	12.86	11.74	10.34	8.76	8.05	8	8.58	8.47	11.05	13.41
northern red oak	690,311	196,217	72,835	30,169	38,110	46,800	41,926	38,811	47,065	52,698	36,853	35,222	53,606
	10.05	26.47	40.78	20.09	19.62	15.8	17.79	18.49	14.98	13.5	17.32	17.05	13.61
post oak	36,366	-	-	983	9,829	6,880	5,897	6,880	3,931	983	-	983	-
	29.22	-	-	100	37.22	42.7	47	47.24	61.15	100	-	100	-
black oak	919,187	195,119	48,433	46,033	30,376	47,736	51,762	63,285	80,877	92,721	81,754	70,145	110,947
	7.45	26.44	49.98	16.86	19.53	15.82	14.41	13.02	11.81	10.75	11.28	11.97	10.19
black locust	341,267	149,232	111,670	27,046	18,970	12,874	9,777	6,946	960	1,919	-	973	900
	27.73	48.76	39.78	32.11	29.08	31.5	34.48	43.01	100	70.65	-	100	100
willow spp.	12,616	12,616	-	-	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-	-	-

(Table 10 continued on next page)

(Table 10 continued)

Species	Diameter class	0.1-2.9	3.0-4.9	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	21.0-22.9	23.0+
black willow	2,022	-	-	2,022	-	-	-	-	-	-	-	-	-
	70.71	-	-	70.71	-	-	-	-	-	-	-	-	-
sassafras	2,332,551	1,394,913	400,006	206,464	124,306	95,835	61,384	25,340	15,555	5,842	980	973	953
	8.86	12.85	18.89	10.52	11.9	12.01	14.89	22.21	30.36	40.7	100	100	100
American basswood	110,199	35,680	24,069	8,680	5,805	3,929	10,594	5,812	6,861	1,933	3,879	-	2,956
	31.86	57.75	70.72	40.03	40.82	61.19	29.98	40.78	47.37	70.72	50	-	57.7
winged elm	53,298	49,340	-	983	2,975	-	-	-	-	-	-	-	-
	46.41	49.98	-	100	57.71	-	-	-	-	-	-	-	-
American elm	1,154,824	710,906	256,569	92,176	58,811	17,806	6,787	7,755	2,022	983	1,009	-	-
	11.49	14.98	22.77	12.02	13.14	24.79	37.8	35.36	70.71	100	100	-	-
slippery elm	662,604	415,185	122,072	56,630	35,266	11,809	7,838	5,930	3,931	1,996	-	967	980
	15.49	19.89	34.59	16.45	17.51	28.84	35.35	40.8	49.94	70.72	-	100	100
Russian-olive	113,546	100,929	12,616	-	-	-	-	-	-	-	-	-	-
	52.97	52.72	100	-	-	-	-	-	-	-	-	-	-
Other or unknown tree	14,259	12,286	-	987	-	987	-	-	-	-	-	-	-
	93.33	100	-	100	-	100	-	-	-	-	-	-	-

Table 11. — Number of live trees on forest land by species group and diameter class, Indiana State Forests 2011 – 2015

Estimate: Total-Number of all live trees on forestland (trees)

Sampling Error percent: Simple Random Sampling: Total Number of all live trees on forestland (trees)

Species group	Diameter class	0.1-2.9	3.0-4.9	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	21.0-22.9	23.0+
All	58,599,354	32,614,420	9,620,617	4,134,014	2,785,256	2,091,890	1,787,584	1,459,173	1,222,106	1,002,394	736,783	523,782	621,335
	1.65	2.57	3.67	1.86	2.18	2.48	2.53	2.81	2.97	3.26	3.75	4.41	4.11
Loblolly and shortleaf pine	54,347	-	-	1,976	8,934	14,863	9,853	5,903	6,863	2,985	1,009	953	1,009
	30.47	-	-	70.73	48.54	41.6	44.4	52.56	42.86	74.97	100	100	100
Other yellow pines	743,605	283,982	-	43,152	73,781	100,598	97,378	72,891	42,378	13,756	13,714	987	987
	21.48	53.56	-	23.82	16.81	14.56	14.23	14.41	17.12	28.43	26.63	100	100
Eastern white and red pine	561,408	72,609	35,723	36,518	59,739	72,224	68,296	61,931	53,969	37,468	37,496	19,643	5,792
	12.66	46.66	57.75	22.08	22.24	18.81	15.62	17.47	17.98	18.84	21.27	28.21	40.75
Cypress	2,026	-	-	-	1,013	-	-	-	1,013	-	-	-	-
	70.55	-	-	-	100	-	-	-	100	-	-	-	-
Other eastern softwoods	713,671	194,519	159,249	113,604	104,028	67,762	44,070	19,654	6,877	2,925	983	-	-
	12.56	30.52	27.53	13.08	13.72	17.02	20	22.04	42.75	57.71	100	-	-
Select white oaks	2,084,999	292,453	134,036	115,668	168,331	161,492	183,101	191,063	223,816	198,365	160,360	121,363	134,951
	5.05	24.25	35.24	10.03	8.33	8.39	8.19	7.93	7.12	7.48	8.1	9.11	9.01
Select red oaks	690,311	196,217	72,835	30,169	38,110	46,800	41,926	38,811	47,065	52,698	36,853	35,222	53,606
	10.05	26.47	40.78	20.09	19.62	15.8	17.79	18.49	14.98	13.5	17.32	17.05	13.61
Other white oaks	1,785,082	170,535	145,549	89,524	114,319	150,509	198,167	223,016	214,491	179,565	150,578	84,612	64,217
	6.42	41.74	33.27	12.77	11.2	10.06	8.62	7.93	7.93	8.55	8.47	10.99	13.41
Other red oaks	1,125,012	256,460	48,433	59,951	45,989	60,637	75,387	81,027	96,655	113,146	94,564	75,007	117,756
	6.78	22.75	49.98	14.51	16.22	14.32	12.02	11.6	10.75	9.89	10.63	11.55	9.96
Hickory	2,021,181	549,433	314,638	194,110	191,150	175,811	169,684	151,405	113,169	84,756	35,017	26,485	15,524
	6.02	15.8	20.37	7.76	7.74	8	8.04	8.53	9.68	11.06	16.58	19.16	24.92

(Table 11 continued on next page)

(Table 11 continued)

Species	Diameter class	0.1-2.9	3.0-4.9	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	21.0-22.9	23.0+
Hard maple	12,102,291	6,417,491	2,654,502	1,248,615	734,993	399,491	256,188	176,162	91,455	62,097	31,098	17,594	12,605
	3.39	5.09	7.09	3.3	4.01	5.25	6.31	8.15	10.73	12.94	18.14	24.83	27.68
Soft maple	5,041,809	2,459,158	1,136,136	564,992	337,427	193,315	135,455	73,533	60,871	33,530	15,741	14,876	16,775
	5.33	8.51	11.02	5.18	6.24	8.25	9.41	12.18	13	18.53	24.95	25.75	24.2
Beech	10,756,443	8,435,044	1,509,118	320,375	154,609	104,065	74,783	30,207	28,166	17,421	28,180	26,326	28,148
	3.85	4.43	9.11	6.07	8.47	10.48	12.26	17.9	19.15	24.76	20.34	21.21	19.16
Sweetgum	408,002	224,593	50,270	28,840	23,927	20,188	17,067	19,108	14,014	5,982	2,018	1,009	987
	22.31	32.43	49.75	23.57	23.37	28.84	26.78	29.14	28.45	40.61	100	100	100
Tupelo and black gum	1,672,618	925,812	378,032	182,758	78,573	45,925	24,479	13,643	12,662	6,819	967	973	1,976
	8.9	13.41	18.46	8.77	12.84	14.49	19.94	26.68	27.67	37.78	100	100	70.73
Ash	1,596,380	1,065,883	134,707	103,919	52,855	50,178	49,133	40,162	31,339	33,225	12,678	6,808	15,493
	9.93	13.43	30.09	11.69	13.75	14.96	14.86	17.32	17.59	18.53	27.69	37.78	24.93
Cottonwood and aspen	135,902	24,568	11,952	9,684	6,784	10,776	18,594	11,829	11,842	9,903	8,955	4,938	6,077
	24.94	70.74	100	48.78	51.26	35.24	23.99	30.93	35.29	34.48	40.09	44.69	40.35
Basswood	110,199	35,680	24,069	8,680	5,805	3,929	10,594	5,812	6,861	1,933	3,879	-	2,956
	31.86	57.75	70.72	40.03	40.82	61.19	29.98	40.78	47.37	70.72	50	-	57.7
Yellow-poplar	3,252,650	1,536,322	438,024	266,171	169,832	147,366	129,323	122,060	89,860	92,925	79,170	67,387	114,210
	9.58	16.35	19.97	10.6	9.74	9.75	10.02	10.47	10.87	11.28	11.64	13.38	10.49
Black walnut	294,323	73,187	24,111	30,110	30,159	31,302	33,199	32,589	11,644	15,579	2,853	4,790	4,799
	15.75	40.82	70.72	19.98	25.4	24.3	17.4	18.37	28.69	24.85	57.75	44.73	44.71
Other eastern soft hardwoods	5,860,475	3,377,248	1,091,401	501,261	326,760	204,311	138,203	76,605	54,176	35,396	18,709	13,837	22,568
	5.33	7.67	11.08	6.29	6.59	8.24	9.72	12.16	14.86	16.57	22.89	26.68	21.68
Other eastern hard hardwoods	2,622,632	1,773,944	648,561	106,866	40,510	21,605	11,693	11,762	1,939	1,919	1,960	973	900
	9.2	11.09	15.81	13.81	19.69	23.91	31.07	33.26	70.71	70.65	100	100	100
Eastern noncommercial hardwoods	4,963,987	4,249,283	609,271	77,071	17,627	8,744	1,013	-	980	-	-	-	-
	7.47	8.39	14.04	13.22	23.51	36.71	100	-	100	-	-	-	-

Table 12. — Number of standing dead trees (at least 5 inch d.b.h.) on forest land by species and diameter class, Indiana State Forests 2011 – 2015

Estimate: Total-Number of standing dead trees 5"+ dbh on forestland (trees)

Sampling Error percent: Simple Random Sampling: Total Number of standing dead trees 5"+ dbh on forestland (trees)

Species	Diameter class	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	21.0-22.9	23.0+
All	1,786,611	551,230	384,441	269,663	177,676	141,627	93,176	59,559	51,561	22,512	35,167
	3.01	4.85	5.97	6.59	8.06	8.79	10.77	12.9	13.9	20.8	16.6
eastern red cedar	113,840	63,867	27,507	15,726	1,919	3,848	-	-	-	-	973
	13.18	14.65	21.73	24.68	100	49.98	-	-	-	-	100
shortleaf pine	9,059	1,009	3,027	2,022	980	-	2,022	-	-	-	-
	42.95	100	100	70.71	100	-	70.71	-	-	-	-
red pine	88,717	17,564	31,478	23,331	9,616	5,794	-	933	-	-	-
	24.84	30.17	35.32	32.69	37.28	40.8	-	100	-	-	-
eastern white pine	59,865	14,661	10,641	14,752	3,916	5,030	3,902	1,992	4,973	-	-
	18.73	30.59	37.31	30.47	50	44.65	50	70.72	44.7	-	-
Virginia pine	173,540	28,592	48,320	24,632	31,567	22,641	9,893	5,920	987	-	987
	10.47	23.59	15.55	19.85	20.1	23.24	31.44	40.66	100	-	100
boxelder	2,979	-	-	1,966	1,013	-	-	-	-	-	-
	57.71	-	-	70.65	100	-	-	-	-	-	-
red maple	44,173	14,636	8,002	12,735	3,928	1,939	953	967	-	-	1,013
	15.46	25.78	35.26	27.7	50.01	70.72	100	100	-	-	100
silver maple	4,977	2,018	-	1,009	1,013	937	-	-	-	-	-
	44.65	70.59	-	100	100	100	-	-	-	-	-
sugar maple	89,440	34,902	24,415	11,775	5,781	6,784	983	2,858	960	983	-
	10.8	16.58	20.65	31.16	40.79	37.76	100	57.61	100	100	-
European Alder	2,026	1,013	-	1,013	-	-	-	-	-	-	-
	70.55	100	-	100	-	-	-	-	-	-	-

(Table 12 continued on next page)

(Table 12 continued)

Species	Diameter class	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	21.0-22.9	23.0+
common serviceberry	1,013	-	1,013	-	-	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-	-	-
yellow birch	960	-	960	-	-	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-	-	-
river birch	3,027	1,009	1,009	1,009	-	-	-	-	-	-	-
	57.54	100	100	100	-	-	-	-	-	-	-
American hornbeam	967	967	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
bitternut hickory	1,926	973	-	-	953	-	-	-	-	-	-
	70.71	100	-	-	100	-	-	-	-	-	-
pignut hickory	13,678	983	2,935	2,892	973	3,926	1,968	-	-	-	-
	26.69	100	57.75	57.7	100	49.98	70.73	-	-	-	-
shellbark hickory	960	-	960	-	-	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-	-	-
shagbark hickory	5,809	3,890	953	-	967	-	-	-	-	-	-
	40.72	49.94	100	-	100	-	-	-	-	-	-
American chestnut	953	-	-	-	953	-	-	-	-	-	-
	100	-	-	-	100	-	-	-	-	-	-
hackberry	2,959	1,009	-	-	983	967	-	-	-	-	-
	57.74	100	-	-	100	100	-	-	-	-	-
eastern redbud	3,901	2,949	953	-	-	-	-	-	-	-	-
	49.94	57.64	100	-	-	-	-	-	-	-	-
flowering dogwood	5,949	3,001	2,949	-	-	-	-	-	-	-	-
	40.74	57.67	57.64	-	-	-	-	-	-	-	-
common persimmon	3,958	1,009	1,966	-	983	-	-	-	-	-	-
	61.07	100	100	-	100	-	-	-	-	-	-

(Table 12 continued on next page)

(Table 12 continued)

Species	Diameter class	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	21.0-22.9	23.0+
American beech	27,279	2,943	3,882	5,830	2,976	953	1,933	953	-	1,942	5,869
	19.47	57.74	50.01	40.82	57.74	100	70.71	100	-	70.72	40.79
white ash	39,924	13,608	5,911	4,845	5,849	1,968	973	2,936	2,847	987	-
	18.25	26.65	47.47	44.66	47.22	70.73	100	57.74	57.25	100	-
green ash	2,872	-	1,920	-	953	-	-	-	-	-	-
	74.39	-	70.71	-	100	-	-	-	-	-	-
blue ash	1,966	983	-	-	-	-	-	983	-	-	-
	70.65	100	-	-	-	-	-	100	-	-	-
butternut	960	-	960	-	-	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-	-	-
black walnut	5,842	967	983	-	1,926	983	-	983	-	-	-
	40.76	100	100	-	70.71	100	-	100	-	-	-
sweetgum	7,977	3,005	937	2,018	1,009	-	1,009	-	-	-	-
	39.44	57.67	100	70.59	100	-	100	-	-	-	-
yellow-poplar	132,164	42,793	28,124	13,580	15,526	6,771	8,779	7,823	2,902	2,936	2,929
	10.39	18.06	19.13	26.71	27.81	37.75	36.7	39.36	57.71	57.74	57.74
Osage-orange	953	-	-	953	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-
white mulberry	1,867	933	933	-	-	-	-	-	-	-	-
	100	100	100	-	-	-	-	-	-	-	-
Black gum	11,740	8,807	987	987	960	-	-	-	-	-	-
	28.84	33.32	100	100	100	-	-	-	-	-	-
eastern hophornbeam	953	-	-	953	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-
American sycamore	9,842	3,031	3,918	-	1,926	-	967	-	-	-	-
	37.43	57.67	50.03	-	70.71	-	100	-	-	-	-

(Table 12 continued on next page)

(Table 12 continued)

Species	Diameter class	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	21.0-22.9	23.0+
eastern cottonwood	2,952	960	1,993	-	-	-	-	-	-	-	-
	57.75	100	70.72	-	-	-	-	-	-	-	-
bigtooth aspen	9,643	953	1,946	1,905	960	960	1,939	980	-	-	-
	31.57	100	70.72	70.63	100	100	70.71	100	-	-	-
quaking aspen	960	-	960	-	-	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-	-	-
black cherry	27,099	11,676	5,743	2,853	1,993	3,882	-	953	-	-	-
	19.04	28.68	46.53	57.71	70.72	49.95	-	100	-	-	-
white oak	162,581	34,320	29,347	26,384	11,824	18,658	10,799	10,797	11,670	987	7,794
	8.34	17.28	18.18	19.18	28.82	24.05	30.1	30.11	28.8	100	35.32
scarlet oak	5,931	1,009	1,009	960	1,973	-	-	980	-	-	-
	47.38	100	100	100	70.65	-	-	100	-	-	-
shingle oak	3,987	1,992	983	1,013	-	-	-	-	-	-	-
	60.96	70.72	100	100	-	-	-	-	-	-	-
bur oak	967	967	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
chinkapin oak	16,693	2,949	4,914	2,933	1,966	983	983	-	1,966	-	-
	26.7	57.64	44.57	57.7	70.65	100	100	-	70.65	-	-
pin oak	6,962	967	1,009	-	980	-	4,007	-	-	-	-
	51.81	100	100	-	100	-	79.4	-	-	-	-
chestnut oak	141,074	15,638	15,482	30,269	22,266	21,303	18,595	2,926	8,714	1,939	3,942
	10.29	24.85	26.35	19.98	22.44	24.86	24.04	57.71	36.93	70.72	49.99
northern red oak	52,933	7,841	2,943	5,853	3,955	8,843	6,858	5,848	2,944	2,982	4,865
	14.5	35.34	57.74	47.21	49.98	33.3	37.74	40.78	57.75	57.74	44.74

(Table 12 continued on next page)

(Table 12 continued)

Species	Diameter class	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	21.0-22.9	23.0+
post oak	8,846	983	4,914	983	-	1,966	-	-	-	-	-
	42.87	100	52.8	100	-	70.65	-	-	-	-	-
black oak	89,569	7,822	10,700	5,827	13,646	7,784	9,776	7,790	11,649	8,746	5,828
	10.75	35.33	30.13	40.82	26.67	35.34	34.61	35.34	28.83	33.31	40.8
black locust	38,935	23,076	6,960	4,981	2,936	983	-	-	-	-	-
	22.55	26.78	37.73	44.6	57.74	100	-	-	-	-	-
sassafras	283,727	147,397	71,181	34,912	14,612	5,852	6,837	2,936	-	-	-
	7.97	10.37	12.66	17.03	30.59	47.23	37.77	57.74	-	-	-
American basswood	3,902	987	-	-	973	1,942	-	-	-	-	-
	50	100	-	-	100	70.72	-	-	-	-	-
American elm	28,349	11,816	4,769	3,886	1,942	3,987	-	-	983	-	967
	19.02	28.85	44.48	49.92	70.76	49.96	-	-	100	-	100
slippery elm	14,693	7,773	1,009	1,993	983	960	-	-	967	1,009	-
	29.14	35.36	100	70.72	100	100	-	-	100	100	-
unknown hardwood	7,796	987	2,940	2,886	-	983	-	-	-	-	-
	46.6	100	57.71	74.68	-	100	-	-	-	-	-

Table 13. — Number of standing dead trees (at least 5 inch d.b.h.) on forest land by decay code and diameter class, Indiana State Forests 2011 – 2015

Estimate: Total-Number of standing dead trees 5"+ dbh on forestland(trees)

Sampling Error percent: Simple Random Sampling: Total Number of standing dead trees 5"+ dbh on forestland(trees)

Decay code	Diameter class	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	21.0-22.9	23.0 +
All	1,786,611	551,230	384,441	269,663	177,676	141,627	93,176	59,559	51,561	22,512	35,167
	3.01	4.85	5.97	6.59	8.06	8.79	10.77	12.9	13.9	20.8	16.6
1: All limbs and branches present	383,473	123,450	95,834	57,877	35,138	24,340	12,676	14,691	11,659	2,000	5,809
	6.11	9.42	11.7	13.76	16.59	20.69	29.62	25.76	28.81	70.72	40.81
2: Few limbs and no fine branches	326,910	106,046	69,567	49,734	34,166	18,611	15,611	9,755	12,578	5,927	4,915
	6.19	10.39	12.57	14.45	17.31	22.9	26.51	31.6	27.66	40.81	44.69
3: Only limb stubs present	507,674	146,751	98,639	68,543	49,864	59,649	26,604	21,459	20,506	7,808	7,849
	5.19	8.83	10.5	12.98	14.95	13.7	19.18	21.23	21.76	35.31	35.29
4: Few or no limb stubs remain	435,412	145,660	90,970	63,146	42,947	29,227	28,449	11,665	5,835	3,831	13,681
	5.57	9.24	11.41	13.36	15.66	18.17	19.14	28.84	40.79	49.94	26.68
5: No evidence of branches remain	133,143	29,323	29,430	30,363	15,560	9,801	9,835	1,989	983	2,946	2,913
	12.45	18.65	28.9	20.11	24.96	31.58	40.37	70.72	100	57.7	57.71

Table 14. — Number of live trees on forest land by cavity present and diameter class, Indiana State Forests 2011 – 2015

Estimate: Total-Number of all live trees on forestland (trees)

Sampling Error percent: Simple Random Sampling: Total Number of all live trees on forestland (trees)

Cavity Presence	Diameter class	0.1-2.9	3.0-4.9	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	21.0-22.9	23.0 +
All	58,599,354	32,614,420	9,620,617	4,134,014	2,785,256	2,091,890	1,787,584	1,459,173	1,222,106	1,002,394	736,783	523,782	621,335
	1.65	2.57	3.67	1.86	2.18	2.48	2.53	2.81	2.97	3.26	3.75	4.41	4.11
Tree Cavity	828,205	-	-	191,481	141,075	119,890	105,004	70,872	56,219	53,064	29,276	27,280	34,044
	4.06	-	-	7.64	8.74	9.71	10.42	11.72	13.68	13.8	18.75	19.52	16.83
No Tree Cavity	57,771,148	32,614,420	9,620,617	3,942,532	2,644,181	1,972,000	1,682,580	1,388,301	1,165,887	949,330	707,507	496,503	587,291
	1.67	2.57	3.67	1.91	2.23	2.56	2.61	2.88	3.03	3.34	3.79	4.53	4.22

RETURN TO LIST OF TABLES

Table 20. — Net volume of live trees (at least 5 inches d.b.h.), in cubic feet, on forest land by species and diameter class, Indiana State Forests 2011 – 2015

Estimate: Total-Volume of all live on forestland (cuft)

Sampling Error percent: Simple Random Sampling: Total Volume of all live on forestland (cuft)

Species	Diameter class	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	21.0-22.9	23.0+
All	337,159,857	9,726,860	14,409,115	19,918,278	27,586,009	33,589,208	39,738,111	43,750,828	41,792,388	38,031,656	68,617,404
	1.29	1.9	2.21	2.49	2.54	2.82	2.99	3.29	3.79	4.5	4.36
eastern red cedar	2,361,975	232,427	458,411	516,469	509,673	340,254	170,159	90,684	43,897	-	-
	12.76	13.01	13.65	17.24	21.19	22.14	43.44	58.26	100	-	-
Norway spruce	16,991	-	-	-	16,991	-	-	-	-	-	-
	100	-	-	-	100	-	-	-	-	-	-
shortleaf pine	1,185,004	4,215	51,793	157,568	159,162	137,343	248,056	142,522	66,182	85,953	132,211
	29.09	71.7	48.27	41.62	44.65	53.55	43.45	74.29	100	100	100
red pine	2,268,979	14,646	157,563	398,915	481,851	487,139	245,865	82,666	257,099	-	143,234
	20.98	58.81	36.36	28.11	25.37	24.27	46.22	71.73	61.09	-	100
eastern white pine	9,223,973	71,851	144,650	282,326	581,663	905,046	1,559,663	1,611,372	2,039,643	1,505,021	522,738
	14.07	23.77	24.15	21.71	19.23	22.99	19.79	19.76	22.66	28.27	44.87
Virginia pine	7,881,282	105,088	408,763	992,188	1,577,910	1,733,033	1,465,549	638,182	794,697	73,985	91,886
	9.95	23.58	16.8	14.34	14.05	14.62	17.28	28.31	26.71	100	100
bald cypress	33,372	-	4,944	-	-	-	28,428	-	-	-	-
	86.4	-	100	-	-	-	100	-	-	-	-
boxelder	421,099	48,316	70,185	80,710	85,128	61,421	24,101	-	51,240	-	-
	27.53	30.67	30.04	37.85	38.22	59.27	100	-	100	-	-
black maple	30,153	-	-	-	-	30,153	-	-	-	-	-
	100	-	-	-	-	100	-	-	-	-	-
red maple	15,107,804	1,351,435	1,723,269	1,802,214	2,022,050	1,551,342	1,841,104	1,297,163	865,920	1,030,497	1,622,811
	6.15	5.33	6.42	8.56	9.77	12.57	13.66	19.65	25.86	26.72	26.88

(Table 20 continued on next page)

(Table 20 continued)

Species	Diameter class	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	21.0-22.9	23.0 +
silver maple	1,091,275	23,105	54,283	99,540	103,716	121,078	140,759	182,254	53,453	82,621	230,465
	30.33	37.65	50.28	39.77	37.8	53.44	50.37	61.02	100	100	71.14
sugar maple	30,912,226	3,229,302	4,130,956	4,077,799	4,239,003	4,332,756	3,246,748	2,926,496	1,955,907	1,353,483	1,419,777
	3.53	3.37	4.13	5.33	6.37	8.18	10.81	13.16	18.21	25.09	28.52
Ohio buckeye	91,800	17,311	15,424	13,578	-	-	-	45,487	-	-	-
	56.18	55.06	58.43	71.61	-	-	-	100	-	-	-
ailanthus	27,085	3,472	8,405	15,208	-	-	-	-	-	-	-
	62.56	74.29	72.68	71.1	-	-	-	-	-	-	-
European Alder	18,068	2,235	9,135	6,698	-	-	-	-	-	-	-
	58.79	100	70.76	100	-	-	-	-	-	-	-
serviceberry spp.	2,422	2,422	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
roundleaf serviceberry	1,840	1,840	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
river birch	142,185	29,543	27,579	57,583	27,480	-	-	-	-	-	-
	38.32	61.36	47.1	41.38	100	-	-	-	-	-	-
paper birch	2,173	2,173	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
American hornbeam	37,899	32,601	5,298	-	-	-	-	-	-	-	-
	27.6	25.34	100	-	-	-	-	-	-	-	-
bitternut hickory	2,168,088	20,607	68,118	149,615	237,866	480,400	382,232	544,470	55,670	229,110	-
	15.04	34.25	28.33	26.04	29.05	25.45	30.21	29.28	100	57.85	-
pignut hickory	14,719,136	259,620	624,367	1,184,416	1,565,951	1,993,471	2,367,337	2,697,108	1,433,350	1,335,746	1,257,770
	6.11	10.14	9.73	9.92	10.42	11.49	12.78	13.77	20.41	24.29	27.78
shellbark hickory	113,121	2,641	19,308	19,389	-	-	71,783	-	-	-	-
	52.43	100	57.86	72.15	-	-	70.72	-	-	-	-

(Table 20 continued on next page)

(Table 20 continued)

Species	Diameter class	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	21.0-22.9	23.0 +
shagbark hickory	6,034,909	155,688	285,939	364,173	898,131	1,147,853	1,116,974	745,062	579,628	541,932	199,528
	8.55	13.92	14.81	16.07	13.9	14.82	18.28	25.03	31.62	37.93	70.8
mockernut hickory	312,728	8,232	4,519	6,785	66,963	82,934	73,271	-	70,024	-	-
	35.17	59.28	100	100	61.98	50.42	70.78	-	100	-	-
red hickory	144,238	-	6,262	-	16,974	-	-	39,803	-	-	81,198
	64.61	-	100	-	100	-	-	100	-	-	100
American chestnut	15,022	1,602	4,515	-	8,905	-	-	-	-	-	-
	100	100	100	-	100	-	-	-	-	-	-
Chinese chestnut	2,499	2,499	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
hackberry	645,997	24,613	39,508	15,248	95,833	64,539	-	73,499	58,143	186,687	87,927
	27.21	32.26	43	71.23	42.09	73.03	-	71.14	100	58.4	100
eastern redbud	87,760	44,354	26,368	17,038	-	-	-	-	-	-	-
	23.05	24.91	36.18	57.75	-	-	-	-	-	-	-
flowering dogwood	112,835	101,256	11,578	-	-	-	-	-	-	-	-
	21.84	20.06	58.15	-	-	-	-	-	-	-	-
persimmon spp.	15,147	-	-	15,147	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-
common persimmon	190,732	40,678	54,490	43,001	14,867	37,696	-	-	-	-	-
	23.98	22.95	40.4	51.72	100	70.75	-	-	-	-	-
American beech	12,836,503	730,786	779,616	950,954	1,159,969	712,981	937,527	785,435	1,669,814	1,995,638	3,113,783
	7.55	6.22	8.61	10.59	12.45	18.06	19.33	24.94	20.56	21.39	19.81
white ash	7,199,516	161,837	221,496	389,463	648,541	837,065	930,139	1,182,758	741,289	414,645	1,672,283
	9.76	13.47	15.37	17.09	16.51	18.85	18.9	20.47	27.79	40.85	26.64
green ash	814,039	56,086	23,690	56,395	95,216	121,041	124,890	273,552	-	63,169	-
	25.04	28.41	46.16	41.2	40.95	54.71	50.08	48.67	-	100	-

(Table 20 continued on next page)

(Table 20 continued)

Species	Diameter class	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	21.0-22.9	23.0 +
blue ash	192,427	7,181	15,788	11,550	-	20,914	-	48,790	-	-	88,204
	55.77	76.59	59.08	100	-	100	-	100	-	-	100
honey locust	239,981	2,707	22,143	17,773	-	56,422	30,152	-	110,784	-	-
	64.49	100	62.25	70.93	-	72.94	100	-	100	-	-
butternut	19,683	1,570	-	-	-	18,113	-	-	-	-	-
	92.37	100	-	-	-	100	-	-	-	-	-
black walnut	3,544,002	66,674	143,005	265,136	473,089	707,098	343,415	615,254	158,488	306,692	465,151
	12.33	21.19	25.12	23.93	17.47	18.16	28.87	24.88	57.91	44.8	45.04
sweetgum	2,079,586	65,063	118,981	181,697	286,892	411,139	463,420	263,056	112,209	62,368	114,761
	17.74	23.98	23.26	29.85	26.46	29.02	29.11	40.68	100	100	100
yellow-poplar	45,891,435	697,893	960,514	1,598,538	2,352,403	3,409,144	3,580,332	5,044,261	5,685,691	6,206,201	16,356,458
	5.51	10.79	9.76	9.87	10.02	10.44	10.99	11.34	11.68	13.57	10.94
apple spp.	6,486	6,486	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
mulberry spp.	12,180	-	4,546	7,634	-	-	-	-	-	-	-
	72.8	-	100	100	-	-	-	-	-	-	-
white mulberry	18,133	1,193	-	5,629	11,312	-	-	-	-	-	-
	93.47	100	-	100	100	-	-	-	-	-	-
red mulberry	3,755	3,755	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
black gum	2,784,323	361,109	360,437	385,435	360,984	289,938	389,408	301,033	57,101	75,436	203,442
	11.08	8.89	12.94	14.72	20.17	26.86	27.85	37.83	100	100	71.4
eastern hophornbeam	68,657	27,367	15,808	-	-	-	25,482	-	-	-	-
	40.11	24.54	50.94	-	-	-	100	-	-	-	-
paulownia	8,770	3,165	5,605	-	-	-	-	-	-	-	-
	73.4	100	100	-	-	-	-	-	-	-	-

(Table 20 continued on next page)

(Table 20 continued)

Species	Diameter class	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	21.0-22.9	23.0 +
American sycamore	6,513,827	71,050	135,393	214,423	301,637	516,306	808,673	835,854	657,073	717,296	2,256,121
	15.05	30.14	23.95	27.62	33.38	24.9	24.58	25.18	31.8	35.42	30.22
balsam poplar	14,357	-	-	-	14,357	-	-	-	-	-	-
	100	-	-	-	100	-	-	-	-	-	-
eastern cottonwood	2,143,220	-	5,501	16,309	48,228	125,145	106,934	187,629	468,901	159,337	1,025,237
	28.3	-	100	70.72	58	44.47	57.48	49.85	47.4	70.56	43.74
bigtooth aspen	1,336,629	22,957	28,491	94,020	230,986	150,025	294,089	256,711	51,639	207,710	-
	24.74	54.55	65.69	40.87	27.72	41.89	43.53	48.47	100	57.79	-
quaking aspen	51,843	-	5,688	-	-	-	-	-	46,154	-	-
	89.7	-	100	-	-	-	-	-	100	-	-
pin cherry	1,855	1,855	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
black cherry	2,978,162	112,931	216,301	348,918	433,986	289,699	350,106	342,412	279,198	63,058	541,554
	12.35	17.61	14.65	19.44	19.91	29.12	30.5	35.42	45.54	100	41.92
white oak	51,954,972	227,103	754,575	1,398,609	2,508,942	3,871,269	6,360,134	7,808,224	8,340,351	7,974,619	12,711,146
	3.86	11.07	9.07	8.77	8.55	8.24	7.39	7.68	8.2	9.23	9.24
swamp white oak	83,619	-	-	-	-	-	34,816	-	48,803	-	-
	71.69	-	-	-	-	-	100	-	100	-	-
scarlet oak	2,821,528	3,878	36,943	57,241	196,002	206,793	234,702	743,147	482,328	341,413	519,082
	14.37	72.3	35.81	46.18	26.86	31.91	35.38	25.17	33.35	44.75	40.99
northern pin oak	180,356	-	4,554	-	14,144	65,715	33,265	-	62,678	-	-
	45.5	-	100	-	100	59.16	100	-	100	-	-
shingle oak	205,305	17,270	17,973	23,196	42,510	58,461	-	-	45,895	-	-
	32.43	36.2	50.72	59.07	58.79	57.77	-	-	100	-	-
chinkapin oak	1,564,708	36,813	98,669	96,454	175,468	220,507	353,290	305,610	52,850	131,573	93,475
	16.96	27.39	24.69	33.15	30.61	32.21	31.27	35.44	100	70.65	100

(Table 20 continued on next page)

(Table 20 continued on next page)

Species	Diameter class	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	21.0-22.9	23.0 +
pin oak	716,595	9,246	10,794	36,718	90,991	45,794	221,507	76,134	125,643	-	99,768
	33.97	50.4	100	50.69	41.3	70.97	42.71	70.72	70.71	-	100
chestnut oak	39,736,448	202,217	489,873	1,264,340	2,649,278	4,392,318	6,006,586	6,779,328	7,365,223	5,189,530	5,397,756
	4.41	12.79	11.84	10.52	8.8	8.05	7.97	8.58	8.51	11.06	13.51
northern red oak	16,453,178	78,804	205,618	467,048	664,498	929,825	1,560,300	2,296,858	2,063,949	2,519,252	5,667,025
	6.79	20.68	20.4	15.93	18.02	18.1	15.12	13.57	17.37	17.09	13.92
post oak	522,309	1,904	44,955	53,010	74,801	139,126	108,541	39,039	-	60,931	-
	30.26	100	36.92	46.38	47.73	47	62.86	100	-	100	-
black oak	30,874,414	112,858	166,191	455,819	742,424	1,418,065	2,562,127	3,947,948	4,514,344	4,924,656	12,029,981
	5.53	17.29	19.61	15.86	14.61	13.07	11.92	10.71	11.32	12	10.34
black locust	715,697	50,904	74,874	113,803	128,006	140,427	31,951	66,469	-	71,068	38,195
	23.24	31.82	29.95	31.9	35.76	44.25	100	74.24	-	100	100
black willow	3,654	3,654	-	-	-	-	-	-	-	-	-
	71.4	71.4	-	-	-	-	-	-	-	-	-
sassafras	3,917,527	413,411	565,766	790,438	804,042	511,407	436,557	231,232	45,158	59,597	59,919
	9.52	10.85	12.22	12.15	15.11	21.85	30.55	41.93	100	100	100
American basswood	1,258,408	20,622	30,124	43,833	173,054	140,787	243,791	95,534	230,934	-	279,727
	21.28	42.2	41.86	61.38	30.34	40.94	47.45	70.73	50.18	-	58.35
winged elm	15,300	1,952	13,347	-	-	-	-	-	-	-	-
	53.58	100	59.67	-	-	-	-	-	-	-	-
American elm	981,693	188,736	248,252	148,418	90,531	158,383	62,249	34,086	51,037	-	-
	12.48	12.49	13.4	25.83	38.02	35.69	71.4	100	100	-	-
slippery elm	966,430	120,168	167,969	103,221	103,604	118,842	121,701	73,705	-	62,429	94,791
	17.04	16.79	18.12	29.22	35.75	41.62	50.52	70.72	-	100	100
Other or unknown tree	8,531	1,882	-	6,649	-	-	-	-	-	-	-
	80.97	100	-	100	-	-	-	-	-	-	-

Table 21. — Net volume of live trees (at least 5 inches d.b.h.), in cubic feet, on forest land by state forest and major species group, Indiana State Forests 2011 – 2015

Estimate: Volume of all live on forestland (cuft)

Sampling Error percent: Simple Random Sampling: Total Volume of all live on forestland (cuft)

State Forest	Species group major	Softwoods	Hardwoods
All	337,159,857	22,971,576	314,188,281
	1.29	7.2	1.35
Clark State Forest	52,732,355	3,865,061	48,867,294
	2.84	15.41	2.93
Covered Bridge State Forest	459,410	-	459,410
	37.79	-	37.79
Ferdinand State Forest	31,604,455	4,098,367	27,506,088
	4.84	20.31	5.18
Greene-Sullivan State Forest	12,573,885	2,228,845	10,345,041
	8.98	21	10.27
Harrison-Crawford State Forest	51,238,639	4,109,194	47,129,445
	2.86	13.06	3.18
Jackson-Washington State Forest	39,366,237	803,817	38,562,421
	3.49	31.37	3.59
Martin State Forest	16,460,186	1,092,374	15,367,812
	6.83	40.63	7.12
Morgan-Monroe State Forest	54,748,459	1,249,326	53,499,133
	3.38	32.39	3.44
Owen-Putnam State Forest	16,116,105	1,449,846	14,666,259
	6.03	32.24	6.35
Salamonie State Forest	3,472,021	1,095,161	2,376,861
	13.92	37.45	16.93
Selmier State Forest	914,421	-	914,421
	27.05	-	27.05
Yellowwood State Forest	57,473,682	2,979,585	54,494,097
	3	20.44	3.11

Table 22. — Net volume of live trees (at least 5 inches d.b.h.), in cubic feet, on forest land by state forest and species group, Indiana State Forests 2011 – 2015

Estimate: Volume of all live on forestland (cuft)

Sampling Error percent: Simple Random Sampling: Total Volume of all live on forestland (cuft)

State Forest	Species group	Loblolly and shortleaf pine	Other yellow pines	Eastern white and red pine	Cypress	Other eastern softwoods	Select white oaks	Select red oaks	Other white oaks	Other red oaks	Hickory	Hard maple	Soft maple
All	337,159,857	1,185,004	7,881,282	11,492,952	33,372	2,378,966	53,603,299	16,453,178	40,258,757	34,798,197	23,492,219	30,942,379	16,199,080
	1.29	29.09	9.95	12.02	86.4	12.69	3.76	6.79	4.37	5.18	4.74	3.53	6.11
Clark State Forest	52,732,355	100,562	3,202,381	541,450	-	20,668	10,987,411	1,974,740	16,070,657	2,557,471	2,364,371	3,442,456	2,974,710
	2.84	100	14.94	62.05	-	64.43	7.86	19.18	6.38	18.13	14.15	11.25	11.47
Covered Bridge State Forest	459,410	-	-	-	-	-	30,433	24,215	-	166,929	76,789	94,219	3,836
	37.79	-	-	-	-	-	100	74.53	-	100	96.47	46.19	100
Ferdinand State Forest	31,604,455	465,067	606,162	3,027,139	-	-	4,608,946	828,527	556,376	2,804,462	3,144,742	1,959,648	2,615,598
	4.84	49.19	35.16	25.88	-	-	13.02	27.93	49.62	19.08	13.42	14.41	17.33
Greene-Sullivan State Forest	12,573,885	33,828	876,222	1,282,945	33,372	2,478	204,893	283,792	135,638	665,734	185,922	7,201	1,924,651
	8.98	73.19	29.33	31.36	86.4	100	46.48	45.34	100	33.04	68.67	100	24.08
Harrison-Crawford State Forest	51,238,639	213,332	1,282,451	488,467	-	2,124,945	12,147,505	3,623,790	1,194,148	5,082,547	3,547,892	6,777,922	1,116,899
	2.86	58.87	29.48	38.82	-	13.88	7.78	14.77	25.43	12.72	10.52	6.98	20.79
Jackson-Washington State Forest	39,366,237	85,953	416,792	190,829	-	110,244	4,068,381	1,332,935	11,482,998	3,274,077	3,766,721	4,736,515	1,409,490
	3.49	100	42.79	60.47	-	34.33	13.88	24.19	8.19	17.6	12.17	9.54	16
Martin State Forest	16,460,186	216,990	73,268	796,599	-	5,517	2,729,357	580,335	-	1,443,836	2,018,218	1,491,110	466,114
	6.83	80.03	61.27	50.88	-	74.14	17.42	33.52	-	24.96	18.42	13.85	27
Morgan-Monroe State Forest	54,748,459	-	107,985	1,080,644	-	60,696	8,366,941	2,712,818	4,194,011	9,169,705	3,703,578	5,200,841	2,054,659
	3.38	-	52.2	36.87	-	55.63	10.19	15.47	14.61	10.6	12.5	8.76	14.6
Owen-Putnam State Forest	16,116,105	-	271,551	1,167,728	-	10,567	1,538,163	1,881,955	-	396,791	1,188,342	1,660,094	654,246
	6.03	-	50.25	37.72	-	100	25.65	22.66	-	53.93	21.85	15.75	27.54
Salamonie State Forest	3,472,021	-	-	1,090,605	-	4,556	39,547	318,067	-	-	227,065	490,610	-
	13.92	-	-	37.63	-	100	66.97	71.41	-	-	56.45	33.42	-
Selmier State Forest	914,421	-	-	-	-	-	4,185	-	-	198,491	82,766	51,723	28,690
	27.05	-	-	-	-	-	66.27	-	-	100	64.28	96.48	67.56

(Table 22 continued on next page)

(Table 22 continued)

State Forest	Species group	Loblolly and shortleaf pine	Other yellow pines	Eastern white and red pine	Cypress	Other eastern softwoods	Select white oaks	Select red oaks	Other white oaks	Other red oaks	Hickory	Hard maple	Soft maple
Yellowwood State Forest	57,473,682	69,273	1,044,471	1,826,545	-	39,296	8,877,538	2,892,004	6,624,929	9,038,154	3,185,812	5,030,039	2,950,188
	3	71.32	26.37	29.26	-	91.37	8.87	15.4	11.59	9.63	11.65	8.59	15.12

State Forest	Beech	Sweetgum	Tupelo and black gum	Ash	Cottonwood and aspen	Basswood	Yellow-poplar	Black walnut	Other eastern soft hardwoods	Other eastern hard hardwoods	Eastern noncommercial hardwoods
All	12,836,503	2,079,586	2,784,323	8,205,982	3,546,049	1,258,408	45,891,435	3,544,002	16,708,300	1,293,313	293,270
	7.55	17.74	11.08	9	19.49	21.28	5.51	12.33	7.02	18.15	16.3
Clark State Forest	2,134,776	342,145	591,823	402,295	54,655	205,866	3,518,384	112,677	1,087,854	11,301	33,702
	19.68	40.62	18.35	38.08	57.84	67.88	17.92	42.16	28.83	38.97	35.8
Covered Bridge State Forest	-	-	-	-	-	-	-	13,356	11,438	38,195	-
	-	-	-	-	-	-	-	100	49.68	100	-
Ferdinand State Forest	448,183	937,876	319,309	980,283	-	-	6,155,504	258,031	1,822,217	60,567	5,820
	32.26	30.29	38.62	21.89	-	-	16.33	40.2	20.33	45.02	62.06
Greene-Sullivan State Forest	-	643,771	2,680	130,635	2,182,814	-	658,236	455,475	2,578,560	247,609	37,429
	-	27.37	100	36.75	27.8	-	38.36	34.88	18.37	26.75	53.42
Harrison-Crawford State Forest	860,195	1,557	391,479	2,424,081	-	236,657	6,112,170	478,946	2,764,354	307,669	61,634
	28.57	100	29.39	15.91	-	50.86	13.66	28.98	14.12	21.78	32.91
Jackson-Washington State Forest	1,780,059	84,708	246,179	1,157,784	186,356	94,624	3,675,014	133,896	1,057,932	32,719	42,032
	18.82	54.28	44.02	27.11	47.98	57.97	20.22	46.18	17.76	42.9	44.76
Martin State Forest	717,917	-	241,374	497,736	14,357	59,746	3,549,736	415,402	1,106,188	15,890	20,498
	32.99	-	49.43	42.27	100	100	22.06	34.2	32.79	77.63	39.9
Morgan-Monroe State Forest	3,109,351	-	360,742	1,078,887	451,199	330,618	9,108,235	453,844	2,968,438	189,974	45,291
	16.56	-	26.73	26.75	39.7	39.55	12.56	33.93	19.78	75.33	58.38

(Table 22 continued on next page)

(Table 22 continued)

State Forest	Beech	Sweetgum	Tupelo and black gum	Ash	Cottonwood and aspen	Basswood	Yellow-poplar	Black walnut	Other eastern soft hardwoods	Other eastern hard hardwoods	Eastern noncommercial hardwoods
Owen-Putnam State Forest	670,277	-	199,288	157,420	254,274	160,715	4,195,544	176,118	1,424,315	99,134	9,583
	31.29	-	57.96	51.25	88.07	57.07	16.47	47.51	19.75	82.45	49.86
Salamonie State Forest	16,738	-	-	48,585	-	36,211	300,323	529,047	279,509	76,878	14,280
	82.53	-	-	73.95	-	73.28	58.01	38.71	29.76	78.92	68.43
Selmier State Forest	55,106	51,630	2,792	50,159	-	-	247,735	107,736	26,154	7,254	-
	80.05	100	100	100	-	-	66.14	100	76.37	100	-
Yellowwood State Forest	3,043,902	17,898	428,657	1,278,117	402,393	133,971	8,370,554	409,475	1,581,340	206,124	23,002
	14.73	100	18.46	23.21	33.15	52.05	13.16	38.51	25.75	54.78	38.37

Table 23. — Net volume of live trees (at least 5 inches d.b.h.), in cubic feet, on forest land by tree class and diameter class, Indiana State Forests 2011 – 2015

Estimate: Total-Volume of all live on forestland (cuft)

Sampling Error percent: Simple Random Sampling: Total Volume of all live on forestland (cuft)

Tree class	Diameter class	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	21.0-22.9	23.0 +
All	337,159,857	9,726,860	14,409,115	19,918,278	27,586,009	33,589,208	39,738,111	43,750,828	41,792,388	38,031,656	68,617,404
	1.29	1.9	2.21	2.49	2.54	2.82	2.99	3.29	3.79	4.5	4.36
Growing stock	326,983,555	8,749,548	13,286,811	18,857,291	26,354,111	32,425,641	38,925,844	42,878,113	40,904,933	37,292,266	67,308,997
	1.32	2.02	2.29	2.57	2.62	2.88	3.02	3.34	3.83	4.56	4.42
Rough cull	7,958,793	883,961	997,056	901,898	1,034,830	906,185	562,146	571,185	829,460	487,004	785,066
	6.18	5.37	7.28	9.94	11.69	14.13	21.43	26.57	23.82	35.65	34.6
Rotten cull	2,217,509	93,351	125,247	159,089	197,069	257,382	250,120	301,530	57,994	252,386	523,342
	12.79	12.92	16.19	20.95	22.56	22.5	26.85	29.11	70.82	41.54	36.31

RETURN TO LIST OF TABLES

Table 30. — Net volume of sawtimber trees (International 1/4 inch rule), in board feet, on forest land by species and diameter class, Indiana State Forests 2011 – 2015

Estimate: Total-Volume of sawtimber on forestland (bdft - FIA)

Sampling Error percent: Simple Random Sampling: Total Volume of sawtimber on forestland (bdft - FIA)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
All	1,384,404,700	10,818,340	127,391,468	158,123,935	189,766,077	208,751,698	198,466,404	178,752,313	312,334,466
	1.49	10.14	2.63	2.89	3.03	3.36	3.86	4.62	4.45
eastern red cedar	6,433,941	2,133,273	2,155,584	1,212,645	461,340	285,898	185,200	-	-
	18.23	20.34	24.5	26.51	61.77	70.96	100	-	-
Norway spruce	79,073	-	79,073	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
shortleaf pine	5,868,757	776,206	799,751	708,255	1,301,887	754,709	355,848	460,981	711,121
	29.46	41.73	44.64	53.6	43.37	74.22	100	100	100
red pine	10,184,417	1,865,317	2,317,582	2,381,481	1,238,109	415,945	1,260,371	-	705,612
	21.22	28.11	25.34	24.34	46.36	71.54	60.74	-	100
eastern white pine	44,356,571	1,267,730	2,757,003	4,364,253	7,643,281	8,012,142	10,183,827	7,538,600	2,589,735
	14.3	21.92	19.21	23.02	19.75	19.72	22.66	28.27	44.88
Virginia pine	37,703,889	4,775,813	7,774,623	8,729,109	7,764,385	3,432,799	4,319,202	396,917	511,040
	10.27	14.72	14.26	14.8	17.32	28.29	26.7	100	100
bald cypress	130,153	-	-	-	130,153	-	-	-	-
	100	-	-	-	100	-	-	-	-
boxelder	690,177	-	245,709	214,462	-	-	230,005	-	-
	43.76	-	50.19	71.14	-	-	100	-	-
black maple	146,947	-	-	146,947	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
red maple	41,883,732	-	8,233,126	6,381,725	7,695,366	5,346,591	3,552,096	4,469,511	6,205,317
	8.44	-	10.14	13.01	14.12	20.58	26.77	26.72	28.43

(Table 30 continued on next page)

(Table 30 continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
silver maple	3,717,425	-	331,030	529,543	495,046	799,731	234,266	355,728	972,082
	35.39	-	44.75	53.42	57.83	61.04	100	100	71.08
sugar maple	88,198,447	-	19,484,716	19,722,838	14,946,619	13,434,128	8,962,003	5,818,457	5,829,686
	5.22	-	6.54	8.41	11.12	13.48	18.51	26.51	29.47
Ohio buckeye	204,093	-	-	-	-	204,093	-	-	-
	100	-	-	-	-	100	-	-	-
river birch	124,319	-	124,319	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
bitternut hickory	9,164,250	-	1,184,116	2,398,081	1,908,766	2,604,822	276,994	791,472	-
	16.67	-	29.06	25.48	30.22	30.24	100	70.74	-
pignut hickory	62,425,900	-	7,675,673	9,738,703	11,804,146	13,216,580	7,142,160	6,626,723	6,221,915
	6.92	-	10.52	11.67	12.79	13.91	20.41	24.3	27.78
shellbark hickory	347,283	-	-	-	347,283	-	-	-	-
	70.73	-	-	-	70.73	-	-	-	-
shagbark hickory	25,315,326	-	4,334,196	5,552,955	5,405,914	3,612,936	2,810,165	2,631,061	968,099
	9.55	-	13.9	14.82	18.29	25.03	31.62	37.93	70.81
mockernut hickory	1,339,946	-	323,944	323,608	354,919	-	337,474	-	-
	38.88	-	62.03	57.76	70.79	-	100	-	-
red hickory	681,571	-	85,039	-	-	196,168	-	-	400,364
	66.46	-	100	-	-	100	-	-	100
hackberry	2,110,239	-	446,939	298,607	-	179,345	243,208	587,589	354,550
	32.43	-	42.22	72.98	-	100	100	70.65	100
common persimmon	241,615	-	69,146	172,469	-	-	-	-	-
	57.97	-	100	70.72	-	-	-	-	-
American beech	45,978,325	-	5,363,633	3,345,163	4,365,076	3,377,980	7,215,935	9,057,717	13,252,820
	9.49	-	13.07	18.92	20.3	25.84	21.76	22.33	21.11

(Table 30 continued on next page)

(Table 30 continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
white ash	29,076,789	-	2,727,441	3,704,379	4,244,809	5,309,207	3,538,059	1,975,382	7,577,512
	10.89	-	17.38	19.5	19.25	20.86	27.79	40.85	26.34
green ash	3,181,213	-	431,249	561,002	586,483	1,301,132	-	301,348	-
	29.43	-	40.98	54.81	50.09	48.7	-	100	-
blue ash	745,180	-	-	97,094	-	232,550	-	-	415,535
	65.14	-	-	100	-	100	-	-	100
honey locust	891,714	-	-	259,977	137,475	-	494,262	-	-
	73.96	-	-	72.87	100	-	100	-	-
butternut	83,994	-	-	83,994	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
black walnut	14,391,253	-	2,285,383	3,352,794	1,655,899	2,938,509	740,721	1,414,937	2,003,010
	13.06	-	17.48	18.12	28.86	24.88	57.92	44.8	44.98
sweetgum	7,731,819	-	1,308,466	1,883,410	2,101,777	1,181,025	500,908	278,776	477,457
	19.67	-	26.44	29.01	29.06	40.67	100	100	100
yellow-poplar	216,734,793	-	11,692,766	17,086,176	18,318,792	25,964,976	29,697,884	31,483,708	82,490,492
	5.88	-	10.02	10.59	11.18	11.54	11.79	13.97	10.9
black gum	7,577,842	-	1,659,497	1,335,785	1,776,066	1,363,357	254,663	328,121	860,353
	17.36	-	20.16	26.85	27.83	37.83	100	100	71.25
American sycamore	28,052,412	-	1,377,016	2,401,207	3,797,982	3,887,145	2,915,945	3,473,521	10,199,596
	15.9	-	33.27	24.96	24.62	25.83	33.39	35.45	29.69
balsam poplar	66,590	-	66,590	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
eastern cottonwood	10,286,736	-	217,465	610,975	509,975	946,123	2,417,688	805,860	4,778,651
	28.16	-	58.1	44.49	57.5	49.98	47.4	70.55	42.58
bigtooth aspen	5,797,007	-	1,076,126	724,433	1,492,396	1,292,069	254,952	957,031	-
	27.19	-	27.81	41.8	43.63	48.22	100	57.77	-

(Table 30 continued on next page)

(Table 30 continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
quaking aspen	222,781	-	-	-	-	-	222,781	-	-
	100	-	-	-	-	-	100	-	-
black cherry	8,987,568	-	1,780,711	1,257,672	1,365,667	1,542,040	1,068,099	280,124	1,693,256
	15.77	-	21.5	29.04	33.53	35.41	50.25	100	50.49
white oak	223,251,943	-	12,214,559	18,316,446	29,966,256	36,272,028	37,579,222	35,329,903	53,573,529
	3.95	-	8.6	8.36	7.4	7.68	8.26	9.26	9.23
swamp white oak	385,503	-	-	-	163,412	-	222,091	-	-
	71.53	-	-	-	100	-	100	-	-
scarlet oak	12,931,276	-	906,792	948,816	1,161,106	3,500,782	2,347,774	1,632,575	2,433,432
	14.89	-	27.86	33.55	35.38	25.94	33.34	44.74	40.94
northern pin oak	857,805	-	69,678	324,748	163,207	-	300,171	-	-
	46.29	-	100	59.05	100	-	100	-	-
shingle oak	673,148	-	157,879	288,945	-	-	226,324	-	-
	44.91	-	71.04	57.77	-	-	100	-	-
chinkapin oak	5,859,980	-	717,850	932,361	1,568,883	1,426,665	241,890	581,046	391,286
	18.87	-	33.95	33.46	32.75	35.45	100	70.65	100
pin oak	3,199,251	-	445,391	227,042	1,092,080	373,458	601,769	-	459,512
	34.87	-	41.32	70.94	42.7	70.72	70.71	-	100
chestnut oak	179,257,073	-	12,703,068	21,336,400	29,261,351	32,372,945	34,346,402	24,200,945	25,035,963
	4.57	-	8.96	8.1	7.94	8.74	8.67	11.19	13.52
northern red oak	75,657,766	-	3,020,037	4,628,610	7,788,132	11,298,616	10,192,156	12,287,819	26,442,396
	6.98	-	17.83	18.09	15.11	13.68	17.36	17.08	13.81
post oak	2,027,537	-	358,364	662,967	522,678	190,271	-	293,257	-
	34.19	-	48.03	46.9	63.14	100	-	100	-
black oak	141,024,638	-	3,478,512	6,949,850	12,570,580	19,388,322	21,630,218	23,549,104	53,458,051
	5.59	-	15.08	13.17	11.9	10.71	11.43	11.99	10.41

(Table 30 continued on next page)

(Table 30 continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
black locust	1,550,448	-	458,188	441,151	143,778	196,031	-	311,299	-
	38.12	-	42.57	50.22	100	100	-	100	-
sassafras	7,259,212	-	2,884,719	1,703,464	1,448,611	955,311	-	267,106	-
	17.53	-	17.01	24.33	36.74	44.78	-	100	-
American basswood	5,208,989	-	752,778	708,562	1,216,840	471,601	1,132,470	-	926,739
	23.34	-	33.39	40.93	47.44	70.72	50.17	-	71.47
American elm	1,699,474	-	374,046	663,590	285,130	145,509	231,199	-	-
	26.48	-	41.02	38.04	71.46	100	100	-	-
slippery elm	2,406,567	-	441,695	411,239	564,425	328,159	-	265,696	395,353
	27.98	-	38.05	50.25	50.55	70.72	-	100	100

Table 30a. — Net volume of sawtimber trees (IN Doyle rule), in board feet, on forest land by species and diameter class, Indiana State Forests 2011 – 2015

Estimate: Total-All live net sawtimber volume on forestland (bdft - IN Doyle)

Sampling Error percent: Simple Random Sampling: Total All live net sawtimber volume on forestland (bdft - IN Doyle)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +	
All		1,159,488,819	2,360,526	52,112,465	96,060,576	145,843,845	187,805,351	177,468,298	178,430,463	319,407,295
		2.05	11.86	3.23	3.4	3.59	3.79	4.45	5.25	5.02
eastern red cedar		3,702,153	382,145	1,098,253	1,058,631	534,077	384,193	244,853	-	-
		25.36	26.64	31.27	26.95	62.29	70.99	100	-	-
Norway spruce		47,555	-	47,555	-	-	-	-	-	-
		100	-	100	-	-	-	-	-	-
shortleaf pine		3,532,789	164,775	193,696	275,263	909,749	542,927	400,023	-	1,046,355
		41.72	50.01	52.86	61.13	53.93	100	100	-	100
red pine		6,336,790	275,031	849,061	1,541,145	675,789	547,467	1,516,143	-	932,153
		30.58	33.56	32.26	30.05	51.35	71.65	60.16	-	100
eastern white pine		45,896,130	340,051	1,421,271	2,865,096	7,420,033	9,183,650	11,252,170	9,664,327	3,749,531
		15.98	26.9	22.05	24.94	21.58	20.46	24.82	29.3	45.03
Virginia pine		26,106,695	1,198,524	3,816,804	5,711,689	6,625,452	3,084,347	4,574,242	449,047	646,589
		12.36	16.38	15.7	17.04	19.38	32.53	27.81	100	100
boxelder		428,919	-	84,097	151,212	-	-	193,611	-	-
		52.97	-	57.75	72.05	-	-	100	-	-
black maple		123,653	-	-	123,653	-	-	-	-	-
		100	-	-	100	-	-	-	-	-
red maple		29,739,504	-	3,381,468	3,805,146	5,645,662	4,422,003	2,881,280	3,605,202	5,998,744
		10.79	-	11.69	15.19	15.79	22.47	30.85	32.18	32.82
silver maple		1,910,696	-	93,128	148,783	148,829	347,360	-	462,075	710,520
		56.91	-	58.04	100	100	71.5	-	100	100

(Table 30a -Doyle- continued on next page)

(Table 30a -Doyle- continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
sugar maple	57,519,012	-	6,984,005	11,236,826	9,852,699	10,881,387	7,346,037	5,285,939	5,932,118
	6.88	-	7.91	9.6	12.68	14.78	19.8	29.04	33.14
Ohio buckeye	245,527	-	-	-	-	245,527	-	-	-
	100	-	-	-	-	100	-	-	-
river birch	46,532	-	46,532	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
bitternut hickory	5,653,075	-	396,157	1,133,675	1,648,772	2,003,199	-	471,272	-
	21.2	-	44.05	30.12	30.88	33.71	-	100	-
pignut hickory	45,228,095	-	2,904,643	5,599,882	8,412,904	10,741,170	5,774,771	6,396,367	5,398,358
	8.59	-	12.64	13.56	14.83	15.29	23.01	27	33.72
shellbark hickory	113,613	-	-	-	113,613	-	-	-	-
	100	-	-	-	100	-	-	-	-
shagbark hickory	18,334,641	-	1,915,583	3,177,806	4,135,126	2,670,036	2,158,362	2,924,183	1,353,545
	12.78	-	16.42	17.16	20.73	29.33	38.07	41.22	70.93
mockernut hickory	1,088,465	-	177,692	212,724	348,628	-	349,421	-	-
	43.22	-	69.13	60.43	73.03	-	100	-	-
red hickory	619,498	-	37,286	-	-	177,053	-	-	405,158
	71.49	-	100	-	-	100	-	-	100
hackberry	1,658,027	-	156,102	84,729	-	174,398	280,274	339,218	623,305
	47.64	-	51.1	100	-	100	100	100	100
common persimmon	145,714	-	44,435	101,279	-	-	-	-	-
	58.89	-	100	72.59	-	-	-	-	-
American beech	32,606,759	-	1,932,163	1,638,019	2,808,320	2,727,892	5,202,748	6,946,079	11,351,539
	12.06	-	15.95	23.14	22.59	28.3	24.07	26.36	24.65
white ash	24,217,206	-	1,131,750	2,534,597	3,179,018	4,437,427	3,292,232	1,444,564	8,197,617
	15.39	-	20.53	21.66	22.51	23.66	30.4	57.81	35.55

(Table 30a -Doyle- continued on next page)

(Table 30a -Doyle- continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
green ash	2,159,946	-	54,677	356,511	440,982	1,029,607	-	278,169	-
	36.67	-	73.57	53.68	58.02	62.33	-	100	-
blue ash	349,346	-	-	82,361	-	266,985	-	-	-
	79.94	-	-	100	-	100	-	-	-
honey locust	831,182	-	-	81,650	174,270	-	575,262	-	-
	90.71	-	-	100	100	-	100	-	-
butternut	64,376	-	-	64,376	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
black walnut	12,539,776	-	1,100,327	2,352,276	1,345,904	2,882,017	1,011,805	1,627,729	2,219,717
	16.5	-	20.22	20.19	32.42	26.97	57.87	50.74	51.74
sweetgum	4,874,570	-	505,311	1,083,739	1,548,173	663,530	-	314,969	758,848
	24.22	-	32.64	37.28	30.38	58.02	-	100	100
yellow-poplar	167,124,170	-	4,297,150	9,268,177	10,846,254	20,316,113	21,287,466	29,018,086	72,090,924
	6.94	-	11.63	12.21	13.21	12.5	13.25	14.77	12.15
black gum	4,524,030	-	680,843	897,855	1,518,183	1,122,160	-	304,990	-
	19.72	-	24.04	30.69	30.59	41.91	-	100	-
American sycamore	23,651,573	-	516,225	1,461,573	3,208,261	3,615,453	2,515,386	2,652,122	9,682,553
	18.42	-	34.71	27.49	26.02	26.34	35.49	38.12	33.08
balsam poplar	13,272	-	13,272	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
eastern cottonwood	9,060,494	-	127,714	316,621	396,275	845,167	2,166,643	855,939	4,352,136
	30.83	-	62.49	58.47	58.47	50.9	52.88	70.55	46.12
bigtooth aspen	5,099,144	-	463,066	601,243	966,238	1,457,478	275,805	1,335,313	-
	33.92	-	31.83	41.78	53.14	49.3	100	57.79	-
quaking aspen	270,478	-	-	-	-	-	270,478	-	-
	100	-	-	-	-	-	100	-	-

(Table 30a -Doyle- continued on next page)

(Table 30a -Doyle- continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
black cherry	7,648,878	-	792,588	833,903	783,556	1,426,209	1,211,954	306,845	2,293,823
	20.43	-	25.59	31.28	45.54	37.83	50.53	100	50.74
white oak	219,322,025	-	5,568,413	12,033,414	25,132,833	36,755,183	36,556,925	38,136,379	65,138,878
	4.91	-	10.16	10.1	8.71	8.62	9.55	10.79	10.71
swamp white oak	295,556	-	-	-	-	-	295,556	-	-
	100	-	-	-	-	-	100	-	-
scarlet oak	11,955,442	-	420,000	664,095	1,067,837	3,159,607	2,610,222	1,210,522	2,823,160
	17.5	-	31.11	36.98	38.37	28.91	35.45	58.68	45.76
northern pin oak	714,301	-	42,979	188,190	139,757	-	343,376	-	-
	54.5	-	100	59.91	100	-	100	-	-
shingle oak	439,730	-	-	195,123	-	-	244,607	-	-
	61.19	-	-	57.71	-	-	100	-	-
chinkapin oak	5,149,009	-	333,025	706,477	1,496,619	1,078,948	220,096	662,268	651,576
	22.42	-	36.61	34.86	33.32	42.71	100	70.76	100
pin oak	2,237,958	-	187,481	200,872	689,299	382,106	315,946	-	462,255
	44.23	-	49.48	71.33	53.31	71.29	100	-	100
chestnut oak	159,133,080	-	5,630,242	13,068,176	24,136,535	30,739,132	32,061,939	24,435,942	29,061,115
	5.68	-	10.42	9.69	9.49	9.88	10.04	13.25	15.35
northern red oak	70,112,786	-	1,159,190	2,910,996	6,518,700	9,814,580	8,339,359	14,003,963	27,365,998
	8.31	-	21.66	19.64	16.63	15.52	19.35	18.26	15.93
post oak	1,892,818	-	238,031	621,662	496,124	212,294	-	324,707	-
	33.83	-	48.84	47.92	60.83	100	-	100	-
black oak	133,478,581	-	1,548,284	4,561,280	9,634,544	17,934,078	20,833,593	24,614,610	54,352,192
	6.73	-	16.8	15.12	14.11	12.02	12.71	13.73	12.23
black locust	463,055	-	133,509	329,546	-	-	-	-	-
	41.36	-	61.82	52.55	-	-	-	-	-

(Table 30a -Doyle- continued on next page)

(Table 30a -Doyle- continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
sassafras	3,924,668	-	1,081,833	771,644	1,058,467	653,085	-	359,638	-
	26.74	-	20.91	32.37	44.92	57.66	-	100	-
American basswood	4,019,396	-	233,716	343,693	1,071,568	532,509	603,817	-	1,234,093
	30.06	-	43.4	52.74	46.67	70.84	71.01	-	71.04
American elm	1,128,902	-	148,224	389,991	185,587	143,204	261,896	-	-
	33.81	-	50.32	45.94	74.75	100	100	-	-
slippery elm	1,709,232	-	124,685	274,975	529,207	205,869	-	-	574,495
	40.73	-	57.83	59.79	50.89	100	-	-	100

Table 31. — Net volume of sawtimber trees (International 1/4 inch rule), in board feet, on forest land by species group and diameter class, Indiana State Forests 2011 – 2015

Estimate: Total-Volume of sawtimber on forestland (bdft - FIA)

Sampling Error percent: Simple Random Sampling: Total Volume of sawtimber on forestland (bdft - FIA)

Species group	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
All	1,384,404,700	10,818,340	127,391,468	158,123,935	189,766,077	208,751,698	198,466,404	178,752,313	312,334,466
	1.49	10.14	2.63	2.89	3.03	3.36	3.86	4.62	4.45
Loblolly and shortleaf pine	5,868,757	776,206	799,751	708,255	1,301,887	754,709	355,848	460,981	711,121
	29.46	41.73	44.64	53.6	43.37	74.22	100	100	100
Other yellow pines	37,703,889	4,775,813	7,774,623	8,729,109	7,764,385	3,432,799	4,319,202	396,917	511,040
	10.27	14.72	14.26	14.8	17.32	28.29	26.7	100	100
Eastern white and red pine	54,540,988	3,133,047	5,074,585	6,745,734	8,881,390	8,428,087	11,444,198	7,538,600	3,295,347
	12.28	18.9	15.48	17.11	18.16	19.07	21.22	28.27	41.26
Cypress	130,153	-	-	-	130,153	-	-	-	-
	100	-	-	-	100	-	-	-	-
Other eastern softwoods	6,513,014	2,133,273	2,234,658	1,212,645	461,340	285,898	185,200	-	-
	18.05	20.34	23.9	26.51	61.77	70.96	100	-	-
Select white oaks	229,497,427	-	12,932,409	19,248,807	31,698,551	37,698,692	38,043,203	35,910,950	53,964,815
	3.85	-	8.32	8.11	7.18	7.5	8.2	9.17	9.19
Select red oaks	75,657,766	-	3,020,037	4,628,610	7,788,132	11,298,616	10,192,156	12,287,819	26,442,396
	6.98	-	17.83	18.09	15.11	13.68	17.36	17.08	13.81
Other white oaks	181,284,610	-	13,061,431	21,999,367	29,784,028	32,563,216	34,346,402	24,494,202	25,035,963
	4.53	-	8.82	7.98	7.87	8.71	8.67	11.12	13.52
Other red oaks	158,686,119	-	5,058,253	8,739,401	14,986,973	23,262,562	25,106,256	25,181,679	56,350,995
	5.25	-	12.61	11.79	10.82	9.84	10.77	11.57	10.16

(Table 31 continued on next page)

(Table 31 continued)

Species group	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
Hickory	99,274,276	-	13,602,967	18,013,348	19,821,028	19,630,506	10,566,792	10,049,256	7,590,379
	5.33	-	8.23	8.63	9.71	11.26	16.64	19.6	25.02
Hard maple	88,345,394	-	19,484,716	19,869,785	14,946,619	13,434,128	8,962,003	5,818,457	5,829,686
	5.23	-	6.54	8.43	11.12	13.48	18.51	26.51	29.47
Soft maple	45,601,157	-	8,564,156	6,911,268	8,190,412	6,146,322	3,786,362	4,825,239	7,177,399
	8.26	-	9.88	12.67	13.7	19.55	25.85	25.81	26.38
Beech	45,978,325	-	5,363,633	3,345,163	4,365,076	3,377,980	7,215,935	9,057,717	13,252,820
	9.49	-	13.07	18.92	20.3	25.84	21.76	22.33	21.11
Sweetgum	7,731,819	-	1,308,466	1,883,410	2,101,777	1,181,025	500,908	278,776	477,457
	19.67	-	26.44	29.01	29.06	40.67	100	100	100
Tupelo and black gum	7,577,842	-	1,659,497	1,335,785	1,776,066	1,363,357	254,663	328,121	860,353
	17.36	-	20.16	26.85	27.83	37.83	100	100	71.25
Ash	33,003,181	-	3,158,690	4,362,475	4,831,292	6,842,889	3,538,059	2,276,729	7,993,047
	10.11	-	16	18.1	17.96	18.92	27.79	37.83	25.5
Cottonwood and aspen	16,373,114	-	1,360,181	1,335,408	2,002,371	2,238,192	2,895,422	1,762,891	4,778,651
	20.15	-	24.36	30.47	35.6	34.94	41.27	44.98	42.58
Basswood	5,208,989	-	752,778	708,562	1,216,840	471,601	1,132,470	-	926,739
	23.34	-	33.39	40.93	47.44	70.72	50.17	-	71.47
Yellow-poplar	216,734,793	-	11,692,766	17,086,176	18,318,792	25,964,976	29,697,884	31,483,708	82,490,492
	5.88	-	10.02	10.59	11.18	11.54	11.79	13.97	10.9
Black walnut	14,391,253	-	2,285,383	3,352,794	1,655,899	2,938,509	740,721	1,414,937	2,003,010
	13.06	-	17.48	18.12	28.86	24.88	57.92	44.8	44.98
Other eastern soft hardwoods	51,618,056	-	7,675,154	7,034,236	7,461,815	7,241,602	4,688,457	4,874,036	12,642,755
	9.7	-	10.91	13.01	16.25	17.62	25.23	28.33	25.22
Other eastern hard hardwoods	2,683,776	-	527,334	873,597	281,253	196,031	494,262	311,299	-
	33.4	-	39.24	36.16	70.73	100	100	100	-

Table 31a. — Net volume of sawtimber trees (IN Doyle rule), in board feet, on forest land by species group and diameter class, Indiana State Forests 2011 – 2015

Estimate: Total-All live net sawtimber volume on forestland (bdft - IN Doyle)

Sampling Error percent: Simple Random Sampling: Total All live net sawtimber volume on forestland (bdft - IN Doyle)

Species group	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +	
All		1,159,488,819	2,360,526	52,112,465	96,060,576	145,843,845	187,805,351	177,468,298	178,430,463	319,407,295
		2.05	11.86	3.23	3.4	3.59	3.79	4.45	5.25	5.02
Loblolly and shortleaf pine		3,532,789	164,775	193,696	275,263	909,749	542,927	400,023	-	1,046,355
		41.72	50.01	52.86	61.13	53.93	100	100	-	100
Other yellow pines		26,106,695	1,198,524	3,816,804	5,711,689	6,625,452	3,084,347	4,574,242	449,047	646,589
		12.36	16.38	15.7	17.04	19.38	32.53	27.81	100	100
Eastern white and red pine		52,232,920	615,082	2,270,333	4,406,241	8,095,822	9,731,117	12,768,313	9,664,327	4,681,684
		14.52	21.06	18.2	19.23	20.22	19.72	22.98	29.3	41.2
Other eastern softwoods		3,749,707	382,145	1,145,808	1,058,631	534,077	384,193	244,853	-	-
		25.07	26.64	30.26	26.95	62.29	70.99	100	-	-
Select white oaks		224,766,590	-	5,901,438	12,739,891	26,629,452	37,834,130	37,072,576	38,798,648	65,790,454
		4.81	-	9.79	9.72	8.4	8.45	9.47	10.67	10.64
Select red oaks		70,112,786	-	1,159,190	2,910,996	6,518,700	9,814,580	8,339,359	14,003,963	27,365,998
		8.31	-	21.66	19.64	16.63	15.52	19.35	18.26	15.93
Other white oaks		161,025,898	-	5,868,273	13,689,838	24,632,659	30,951,427	32,061,939	24,760,649	29,061,115
		5.63	-	10.2	9.5	9.38	9.83	10.04	13.15	15.35
Other red oaks		148,826,011	-	2,198,744	5,809,559	11,531,436	21,475,791	24,347,743	25,825,132	57,637,607
		6.35	-	14.36	13.34	12.74	11.03	12	13.37	11.93
Hickory		71,037,386	-	5,431,361	10,124,087	14,659,043	15,591,458	8,282,554	9,791,821	7,157,061
		6.72	-	9.93	10.06	11.13	12.45	19.3	21.99	29.26
Hard maple		57,642,665	-	6,984,005	11,360,480	9,852,699	10,881,387	7,346,037	5,285,939	5,932,118
		6.89	-	7.91	9.65	12.68	14.78	19.8	29.04	33.14

(Table 31a -Doyle- continued on next page)

(Table 31a -Doyle- continued)

Species group	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
Soft maple	31,650,200	-	3,474,596	3,953,929	5,794,491	4,769,363	2,881,280	4,067,277	6,709,264
	10.71	-	11.48	15.09	15.59	21.45	30.85	30.68	31.18
Beech	32,606,759	-	1,932,163	1,638,019	2,808,320	2,727,892	5,202,748	6,946,079	11,351,539
	12.06	-	15.95	23.14	22.59	28.3	24.07	26.36	24.65
Sweetgum	4,874,570	-	505,311	1,083,739	1,548,173	663,530	-	314,969	758,848
	24.22	-	32.64	37.28	30.38	58.02	-	100	100
Tupelo and black gum	4,524,030	-	680,843	897,855	1,518,183	1,122,160	-	304,990	-
	19.72	-	24.04	30.69	30.59	41.91	-	100	-
Ash	26,726,497	-	1,186,426	2,973,469	3,620,000	5,734,019	3,292,232	1,722,733	8,197,617
	14.32	-	19.87	19.72	20.97	21.94	30.4	51.09	35.55
Cottonwood and aspen	14,443,388	-	604,052	917,864	1,362,513	2,302,645	2,712,926	2,191,252	4,352,136
	22.82	-	27.83	34	41.34	36.37	44.56	44.72	46.12
Basswood	4,019,396	-	233,716	343,693	1,071,568	532,509	603,817	-	1,234,093
	30.06	-	43.4	52.74	46.67	70.84	71.01	-	71.04
Yellow-poplar	167,124,170	-	4,297,150	9,268,177	10,846,254	20,316,113	21,287,466	29,018,086	72,090,924
	6.94	-	11.63	12.21	13.21	12.5	13.25	14.77	12.15
Black walnut	12,539,776	-	1,100,327	2,352,276	1,345,904	2,882,017	1,011,805	1,627,729	2,219,717
	16.5	-	20.22	20.19	32.42	26.97	57.87	50.74	51.74
Other eastern soft hardwoods	40,506,635	-	2,950,285	4,032,404	5,765,079	6,463,746	4,463,122	3,657,824	13,174,176
	12.14	-	12.88	15.09	18.41	18.86	26.07	31.88	26.63
Other eastern hard hardwoods	1,439,952	-	177,944	512,476	174,270	-	575,262	-	-
	54.34	-	52.66	40	100	-	100	-	-

Table 32. — Net volume of sawtimber trees (International 1/4 inch rule), in board feet, on forest land by tree grade and cull proportion, Indiana State Forests 2011 – 2015

Estimate: Total-Volume of sawtimber on forestland (bdft - FIA)

Sampling Error percent: Simple Random Sampling: Total Volume of sawtimber on forestland (bdft - FIA)

Tree grade	Cull proportion	0 - 10%	11- 20%	21 - 30%	31 - 40%
All	1,384,404,700	1,368,995,786	12,871,737	1,109,487	1,427,689
	1.49	1.5	18.79	48.87	55.96
Tree grade 1	446,936,735	444,848,505	1,677,277	410,953	-
	3.23	3.24	53.47	100	-
Tree grade 2	324,305,401	323,821,673	483,728	-	-
	3.06	3.06	71.7	-	-
Tree grade 3	400,198,975	398,103,457	1,635,558	459,961	-
	2.48	2.49	38.63	70.79	-
4: Gradable log but does not meet grade 3 standards	178,060,578	175,318,034	1,838,982	89,423	814,139
	4.3	4.34	37.49	100	77.94
5: Graded but does not contain gradable log in the butt 16' log	34,903,010	26,904,117	7,236,192	149,151	613,550
	10.24	11.01	27.08	70.73	79.29

Table 32a. — Net volume of sawtimber trees (IN Doyle rule), in board feet, on forest land by tree grade and cull proportion, Indiana State Forests 2011 – 2015

Estimate: Total-All live net sawtimber volume on forestland (bdft - IN Doyle)

Sampling Error percent: Simple Random Sampling: Total All live net sawtimber volume on forestland (bdft - IN Doyle)

Tree grade	Cull proportion	0 - 10%	11- 20%	21 - 30%	31 - 40%
All	1,159,488,819	1,147,847,270	10,058,370	949,730	633,450
	2.05	2.06	21.5	56.05	62.35
Tree grade 1	441,371,889	439,848,359	1,050,589	472,941	-
	3.77	3.78	60.78	100	-
Tree grade 2	272,355,491	271,796,593	558,898	-	-
	3.79	3.79	72.56	-	-
Tree grade 3	281,392,623	279,962,889	1,113,029	316,706	-
	3.51	3.51	54.16	70.84	-
4: Gradable log but does not meet grade 3 standards	133,576,806	131,394,212	1,860,472	74,713	247,408
	5.54	5.59	43.25	100	100
5: Graded but does not contain gradable log in the butt 16' log	30,792,009	24,845,218	5,475,382	85,369	386,041
	12.05	13.31	30.73	71.69	79.77

RETURN TO LIST OF TABLES

Table 40. — Annual net volume growth of live trees (at least 5 inches d.b.h.), in cubic feet per year, on forest land by species and diameter class, Indiana State Forests 2013 – 2015

Estimate: Total-Net growth of all live on forestland (cuft per year)

Sampling Error percent: Simple Random Sampling: Total Net growth of all live on forestland (cuft per year)

	Diameter class	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	21.0-22.9	23.0 +
Species	3,438,626	302,689	171,351	226,722	285,768	235,479	343,277	428,816	557,744	250,603	636,175
	9.86	8.41	18.73	17.9	20.39	32.01	29.87	23.3	18.43	53.16	29.07
eastern red cedar	-16,628	-2,548	-546	-2,710	-565	-11,607	977	371	-	-	-
	-97.42	-135.68	-672.85	-210.16	-800.36	-93.23	65.76	100	-	-	-
Norway spruce	812	-	-	-	812	-	-	-	-	-	-
	100	-	-	-	100	-	-	-	-	-	-
shortleaf pine	-16,677	-	-601	-8,657	799	5,180	-21,023	3,216	-	4,410	-
	-124.75	-	-232.02	-82.7	761.99	63.92	-85.72	100	-	100	-
red pine	-109,443	-6,273	-17,257	-36,950	-27,144	-24,056	-46	-7,405	9,687	-	-
	-37.88	-49.76	-59.4	-35.95	-50.77	-87.76	4,964.40	-100	100	-	-
eastern white pine	7,668	190	-3,694	-15,493	-14,232	-6,947	10,333	10,551	31,932	15,273	-20,245
	1,046.87	830.58	-92.32	-60.73	-80.05	-235.98	214.55	161.83	103.07	202.75	-214.15
Virginia pine	-117,176	-3,481	-5,425	-16,521	-13,834	-20,606	-42,770	5,875	11,060	-	-31,473
	-52	-82.31	-79.22	-58.45	-117.07	-106.32	-69.56	39.43	42.62	-	-100
Bald cypress	1,502	-	160	-	-	-	1,342	-	-	-	-
	89.88	-	100	-	-	-	100	-	-	-	-
Box elder	7,283	148	3,237	-4,264	3,069	2,209	-	-	2,883	-	-
	88.15	741.84	70.84	-82.64	51.85	72.56	-	-	100	-	-
red maple	299,153	61,756	48,760	35,744	56,530	33,835	48,588	20,693	23,301	15,888	-45,941
	27.13	14.65	14.52	29.97	24.62	31.41	23.5	77.73	35.63	45.26	-157.13
silver maple	11,489	1,926	4,861	-280	4,421	6,685	-8,965	72	-2,527	-	5,296
	222.52	72.02	52.87	1,588.58	61.92	58.94	-172.33	18,754.38	-100	-	100

(Table 40 continued on next page)

(Table 40 continued)

Species	Diameter class	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	21.0-22.9	23.0 +
sugar maple	638,471	142,639	116,242	117,760	70,517	58,222	37,063	16,930	38,562	15,809	24,726
	8.72	8.49	11.32	11.2	22.56	34.67	70.83	118.33	25.28	138.22	32.97
Ohio buckeye	1,983	1,333	269	381	-	-	-	-	-	-	-
	44.11	48.71	80.49	70.78	-	-	-	-	-	-	-
ailanthus	587	163	-	425	-	-	-	-	-	-	-
	100	100	-	100	-	-	-	-	-	-	-
European Alder	-8,898	-776	-593	-2,937	-4,592	-	-	-	-	-	-
	-99.02	-127.1	-239.53	-100	-100	-	-	-	-	-	-
serviceberry spp.	20	20	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
river birch	742	181	561	-	-	-	-	-	-	-	-
	100	100	100	-	-	-	-	-	-	-	-
American hornbeam	3,242	2,970	272	-	-	-	-	-	-	-	-
	47.02	51.35	100	-	-	-	-	-	-	-	-
bitternut hickory	37,362	1,901	364	596	4,036	12,770	8,646	4,914	2,889	1,247	-
	25.85	52.99	65.34	885.65	45.19	38.03	46.87	60.43	77.45	100	-
pignut hickory	342,132	5,989	6,799	26,730	34,202	17,498	58,736	71,801	55,141	42,250	22,986
	15.57	41.17	55.97	20.44	26.7	105.63	36.54	18.1	43.26	35.89	36.6
shellbark hickory	3,819	148	380	193	-	-	3,098	-	-	-	-
	69.83	100	100	100	-	-	76.12	-	-	-	-
shagbark hickory	133,101	1,847	4,796	7,196	20,081	32,835	26,738	9,100	15,161	8,063	7,285
	12.75	85.93	64.13	39.4	20.98	26.18	24.49	41.25	39.26	63.3	78.41
mockernut hickory	4,738	128	-	161	566	451	2,334	-	1,099	-	-
	56.76	77.64	-	100	79.06	100	100	-	100	-	-
hackberry	10,486	1,562	1,826	-1,897	3,926	-4,848	-	3,774	-	6,143	-
	107.21	70.67	124.43	-183.43	119.79	-134.07	-	77.56	-	70.31	-

(Table 40 continued on next page)

(Table 40 continued)

Species	Diameter class	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	21.0-22.9	23.0 +
eastern redbud	197	1,568	-1,949	577	-	-	-	-	-	-	-
	1,236.64	95.45	-103.56	100	-	-	-	-	-	-	-
flowering dogwood	-714	306	-1,020	-	-	-	-	-	-	-	-
	-255.81	455.63	-114.64	-	-	-	-	-	-	-	-
persimmon spp.	1,083	-	-	1,083	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-
common persimmon	217	1,220	-3,259	-	1,030	1,226	-	-	-	-	-
	2,685.76	68.84	-166.35	-	100	100	-	-	-	-	-
American beech	81,627	43,229	25,510	30,497	22,756	866	-4,306	-5,587	17,207	23,844	-72,388
	88.63	12.39	21.51	21.06	31.94	1,338.96	-373.47	-288.36	35.65	32.04	-92.85
white ash	-59,243	-3,036	-6,095	-1,067	-38,444	-8,827	-1,675	14,463	-32,901	-16,865	35,204
	-137.46	-141.04	-76.76	-505.64	-60.1	-211.76	-	135.17	-87.82	-144.97	122.09
green ash	8,412	809	-2,749	1,234	-2,243	1,669	2,151	6,597	-	-	944
	83.3	68.39	-79.34	73.34	-190.62	100	100	61.86	-	-	100
blue ash	-11,345	11	669	2,172	-	492	-	-17,574	-	-	2,885
	-146.4	2,781.72	72.91	100	-	100	-	-109.78	-	-	100
honey locust	2,988	45	1,687	338	-	918	-	-	-	-	-
	70.73	100	87.56	100	-	100	-	-	-	-	-
black walnut	86,762	3,160	5,240	5,946	13,906	20,415	12,999	-3,287	5,330	15,428	7,625
	30.9	57.47	53.28	48.89	29.04	26.93	48.63	-473.89	58.12	77.78	58.13
sweetgum	49,872	-2,075	1,754	4,506	10,941	12,231	11,623	8,042	2,849	-	-
	22.35	-105.86	76.12	41.98	33.99	35.33	38.68	59.18	100	-	-
yellow-poplar	635,212	23,693	-8,524	35,355	20,507	38,374	60,660	23,255	55,953	138,186	247,754
	19.81	54.06	-157.45	42.08	131.07	70.84	62.57	239.59	80.15	39.01	25.47

(Table 40 continued on next page)

(Table 40 continued)

Species	Diameter class	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	21.0-22.9	23.0 +
Osage-orange	-2,958	-	-	-2,958	-	-	-	-	-	-	-
	-100	-	-	-100	-	-	-	-	-	-	-
apple spp.	379	379	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
mulberry spp.	2,547	-	227	2,320	-	-	-	-	-	-	-
	91.47	-	100	100	-	-	-	-	-	-	-
white mulberry	258	8	-620	89	780	-	-	-	-	-	-
	96.7	100	-100	100	100	-	-	-	-	-	-
red mulberry	60	60	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
black gum	67,048	18,429	9,460	10,948	8,852	2,623	3,312	3,189	3,684	2,265	4,286
	15.01	17.96	22.64	25.98	37.91	67.13	66.73	63.27	100	100	75.73
eastern hophornbeam	-2,809	-830	612	-2,590	-	-	-	-	-	-	-
	-98.84	-107.12	72.98	-100	-	-	-	-	-	-	-
American sycamore	144,163	861	581	7,525	7,796	13,958	25,714	17,697	21,734	13,298	34,998
	20.18	237.57	697.87	53.85	115.05	38.59	30.86	57.98	45.18	55.13	49.21
eastern cottonwood	20,457	-	-1,808	1,339	-	2,044	3,549	4,221	14,150	-19,372	16,335
	129.44	-	-100	100	-	101.13	100	64.19	52.99	-117.98	46.64
bigtooth aspen	14,621	-76	-3,305	2,229	7,027	-3,188	8,774	3,160	-	-	-
	85.19	-	-132.86	195.23	40.66	-220.1	47.1	58.15	-	-	-
black cherry	39,788	-4,515	3,245	-3,047	12,430	-10,832	11,476	5,205	5,662	-	20,165
	50.25	-57.28	122.76	-224.13	33.85	-108.82	51.31	63.96	59.59	-	48.51
white oak	657,777	4,066	1,214	13,784	29,599	53,898	65,487	117,131	157,379	98,486	116,734
	17.94	63.82	492.23	65.29	50.14	32.1	63.92	28.46	25.51	36.48	61.5

(Table 40 continued on next page)

(Table 40 continued)

Species	Diameter class	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	21.0-22.9	23.0 +
scarlet oak	-62,958	-	2,317	-2,232	4,229	508	-6,621	-18,079	10,818	-67,019	13,122
	-90.37	-	49.82	-155.66	40.74	77.76	-226.85	-120.57	48.37	-61.99	46.3
northern pin oak	11,618	-	474	-	937	6,266	-	-	3,941	-	-
	47.18	-	100	-	100	59.08	-	-	100	-	-
shingle oak	6,987	903	979	802	2,242	2,061	-	-	-	-	-
	37.84	61.29	60.93	73.16	72.73	78.62	-	-	-	-	-
bur oak	-745	-745	-	-	-	-	-	-	-	-	-
	-100	-100	-	-	-	-	-	-	-	-	-
chinkapin oak	6,103	-56	2,774	2,852	2,035	-5,377	-4,632	5,657	814	-	2,037
	300.51	-	77.02	47.85	45.53	-143.75	-225.89	55.07	100	-	100
pin oak	6,896	-323	-2,952	717	2,408	-	-3,453	804	7,378	-	2,317
	217.63	-219.75	-100	148.26	71.91	-	-349.88	100	100	-	100
chestnut oak	284,880	6,309	3,101	7,772	26,578	15,647	18,147	37,158	69,734	37,727	62,707
	30.25	35.16	113.23	112.94	34.93	144.62	160.55	92.81	46.7	77.3	54.82
northern red oak	35,351	1,302	671	6,068	3,076	9,871	18,469	28,133	3,415	-47,085	11,431
	277.82	166.54	566.52	65.04	390.43	131.29	83.19	91.73	876.43	-128.44	545.07
post oak	-5,112	61	-3,811	-2,056	1,022	-3,484	2,538	617	-	-	-
	-156.46	100	-104.36	-125.08	58.62	-176.24	59.61	100	-	-	-
black oak	274,004	2,425	-1,315	10,630	8,029	616	20,224	64,105	8,884	-3,514	163,921
	39.48	56.89	-307.16	30.45	97.21	2,282.57	141.68	32.54	477.86	-	42.27
black locust	10,139	1,792	-9	3,164	1,130	5,742	778	-3,636	-	1,178	-
	97.88	272.52	-	65.04	289.52	54.42	100	-150.82	-	100	-
black willow	1,652	1,652	-	-	-	-	-	-	-	-	-
	70.94	70.94	-	-	-	-	-	-	-	-	-

(Table 40 continued on next page)

(Table 40 continued)

Species	Diameter class	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	21.0-22.9	23.0 +
sassafras	-96,973	-15,598	-22,460	-11,819	708	-11,132	-35,821	-6,145	4,241	-	1,053
	-45.16	-42.37	-38.91	-88.62	1,474.62	-169.67	-56.62	-228.21	77.17	-	100
American basswood	30,876	1,948	1,092	3,686	4,238	2,983	6,388	1,152	6,978	-	2,412
	27.83	55.9	67.36	60.3	37.98	47.37	78.05	100	62.05	-	157.18
winged elm	916	203	712	-	-	-	-	-	-	-	-
	59.37	100	70.83	-	-	-	-	-	-	-	-
American elm	-5,049	3,317	6,262	-3,646	-2,057	-10,518	285	-	1,308	-	-
	-360.98	90.67	51.84	-179.78	-185.6	-145.18	100	-	100	-	-
slippery elm	-35,254	1,699	2,235	-1,435	-2,339	-5,191	2,163	2,647	-	-35,034	-
	-112.3	128	153.28	-233.92	-238.29	-161.97	70.99	100	-	-107.54	-
Other or unknown tree	3,126	664	-	2,463	-	-	-	-	-	-	-
	81.53	100	-	100	-	-	-	-	-	-	-

Table 41. — Annual net volume growth of sawtimber trees (International 1/4 inch rule), in board feet per year, on forest land by species and diameter class, Indiana State Forests 2013 – 2015

Estimate: Total-Net growth of sawtimber on forestland (bdft per year)

Sampling Error percent: Simple Random Sampling: Total Net growth of sawtimber on forestland (bdft per year)

	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
Species	18,284,204	-170,185	6,967,168	1,298,360	1,833,187	2,111,218	2,363,367	1,048,268	2,832,821
	8.44	-68.14	6.73	26.72	25.94	22.18	20.86	59.63	25.99
eastern red cedar	19,043	51,109	12,247	-44,313	-	-	-	-	-
	296.81	82.16	48.3	-84.47	-	-	-	-	-
Norway spruce	3,931	-	3,931	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
shortleaf pine	-66,363	-29,906	5,260	27,827	-111,467	17,753	-	24,170	-
	-168.34	-130.44	581.34	63.93	-86.25	100	-	100	-
red pine	-353,775	-128,088	-128,009	-110,829	3,554	-37,498	47,095	-	-
	47.46	50.19	51.34	91.35	276.81	100.00	100.00	-	-
eastern white pine	160,413	-29,332	-42,757	-30,390	59,881	57,274	164,024	77,906	-96,194
	233.94	165.71	118.62	258.27	178.10	142.50	96.76	195.16	216.33
Virginia pine	-501,024	-17,476	-75,457	-105,148	-222,664	31,577	60,626	-	-172,482
	63.81	285.95	107.53	108.12	71.06	39.14	41.89	-	100.00
bald cypress	6,532	-	-	-	6,532	-	-	-	-
	100.00	-	-	-	100.00	-	-	-	-
boxelder	56,509	-	40,615	3,751	-	-	12,143	-	-
	55.03	-	69.95	100.00	-	-	100.00	-	-
red maple	1,241,145	1,949	748,521	167,576	199,389	133,375	89,403	63,770	-162,837
	24.93	100.00	18.64	18.08	20.65	28.23	37.59	45.31	156.41
silver maple	94,315	-	50,124	28,954	-38,833	44,582	-10,356	-	19,844
	106.36	-	70.61	58.95	171.12	81.58	100.00	-	100.00

(Table 41 continued on next page)

(Table 41 continued)									
Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
sugar maple	2,344,726	-	1,444,367	256,028	168,171	111,092	166,655	108,586	89,827
	11.58	-	13.21	36.72	72.61	79.63	25.77	32.30	35.39
bitternut hickory	181,454	-	31,576	63,167	42,586	24,024	14,076	6,025	-
	22.24	-	54.16	38.05	46.87	60.47	77.46	100.00	-
pignut hickory	1,801,658	-	459,942	125,256	286,010	347,282	269,838	202,551	110,778
	15.02	-	22.04	67.65	36.78	18.30	43.23	36.26	36.56
shellbark hickory	14,748	-	-	-	14,748	-	-	-	-
	76.10	-	-	-	76.10	-	-	-	-
shagbark hickory	721,759	-	251,022	156,752	127,351	43,319	72,032	37,115	34,168
	13.77	-	26.59	26.21	24.48	41.24	39.23	66.04	78.21
mockernut hickory	21,191	-	2,715	2,152	11,135	-	5,189	-	-
	60.20	-	79.14	100.00	100.00	-	100.00	-	-
hackberry	128,418	-	124,688	-22,717	-	4,176	-	22,272	-
	55.49	-	50.19	131.58	-	100.00	-	72.59	-
common persimmon	10,145	-	4,700	5,445	-	-	-	-	-
	70.79	-	100.00	100.00	-	-	-	-	-
American beech	749,099	-	379,111	942	72,949	-31,020	69,849	104,769	152,499
	19.93	-	24.00	6,034.85	31.59	249.14	38.07	32.11	32.14
white ash	-3,320	-	-19,713	2,584	42,358	104,352	-154,001	-86,109	107,209
	9,430.63	-	578.49	3,006.61	168.38	30.69	88.19	132.94	160.91
green ash	61,102	-	7,619	7,968	10,354	31,761	-	-	3,400
	46.56	-	114.93	100.00	100.00	61.85	-	-	100.00
blue ash	-67,179	-	-	2,366	-	-82,127	-	-	12,582
	115.89	-	-	100.00	-	110.00	-	-	100.00

(Table 41 continued on next page)

(Table 41 continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
honey locust	4,121	-	-	4,121	-	-	-	-	-
	100.00	-	-	100.00	-	-	-	-	-
black walnut	439,773	-	182,639	94,265	61,068	-15,403	23,114	69,216	24,872
	29.74	-	32.04	27.35	48.96	459.91	58.16	78.86	57.98
sweetgum	228,794	-	77,684	54,412	50,603	34,278	11,818	-	-
	24.78	-	43.55	35.33	38.61	59.33	100.00	-	-
yellow-poplar	3,611,296	-	860,059	199,699	356,452	116,349	291,241	686,456	1,101,041
	18.02	-	24.53	69.94	55.35	248.17	80.34	40.51	27.33
black gum	199,853	-	120,425	11,715	14,530	13,665	15,331	8,944	15,243
	27.97	-	37.42	67.12	66.47	63.36	100.00	100.00	74.84
American sycamore	735,780	-	134,332	67,385	123,301	106,942	76,574	62,486	164,761
	20.14	-	61.42	38.68	30.79	43.72	49.45	55.32	47.11
eastern cottonwood	95,031	-	-	10,449	17,936	21,513	73,806	-95,192	66,519
	139.46	-	-	101.29	100.00	63.11	52.92	118.93	46.66
bigtooth aspen	155,852	-	107,800	-13,177	46,684	14,545	-	-	-
	44.83	-	44.13	256.03	47.41	58.00	-	-	-
black cherry	273,787	-	187,195	-49,121	34,599	21,987	13,549	-	65,578
	36.27	-	35.27	107.97	59.45	63.92	73.06	-	53.85
white oak	3,003,555	-	531,287	245,384	314,439	493,845	658,675	380,201	379,725
	17.04	-	22.95	33.43	52.90	30.54	27.04	40.80	75.14
scarlet oak	-280,000	-	61,779	669	-33,586	-94,994	48,722	-315,581	52,991
	96.85	-	54.41	100.00	218.95	110.69	48.33	61.69	46.31
northern pin oak	69,863	-	21,555	30,651	-	-	17,657	-	-
	47.28	-	100.00	59.02	-	-	100.00	-	-

(Table 41 continued on next page)

(Table 41 continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
shingle oak	37,690	-	27,611	10,079	-	-	-	-	-
	61.31	-	78.86	78.59	-	-	-	-	-
chinkapin oak	17,670	-	26,147	-17,888	-24,647	23,494	3,368	-	7,197
	497.35	-	83.92	198.55	199.63	57.04	100.00	-	100.00
pin oak	53,251	-	24,327	-	-17,121	3,762	33,263	-	9,021
	136.47	-	82.73	-	342.49	100.00	100.00	-	100.00
chestnut oak	1,254,160	-	414,657	39,583	63,529	145,764	221,920	136,787	231,920
	32.58	-	23.76	283.42	207.27	109.26	69.83	98.39	66.63
northern red oak	234,144	-	206,969	49,696	90,860	131,685	8,925	-244,214	-9,777
	199.75	-	44.76	128.82	83.27	96.10	1,622.31	119.18	2,858.78
post oak	67,565	-	40,049	13,024	11,660	2,832	-	-	-
	49.93	-	68.57	64.30	59.59	100.00	-	-	-
black oak	1,154,110	-	194,534	-4,009	104,321	296,689	9,298	-56,647	609,922
	42.85	-	36.57	1,714.41	134.10	33.53	2,162.64	447.43	47.97
black locust	88,000	-	52,523	20,652	3,360	6,780	-	4,686	-
	40.67	-	57.76	58.88	100.00	100.00	-	100.00	-
sassafras	234,956	-	285,489	63,387	-97,531	-28,933	12,544	-	-
	56.15	-	27.06	29.70	78.94	213.64	100.00	-	-
American basswood	139,121	-	42,235	14,457	30,225	5,448	31,739	-	15,016
	31.75	-	60.57	47.38	78.03	100.00	62.07	-	100.00
American elm	-43,734	-18,440	29,518	-61,272	1,211	-	5,250	-	-
	182.06	100.00	105.80	115.39	100.00	-	100.00	-	-
slippery elm	-114,959	-	37,851	-23,173	9,241	11,050	-	-149,928	-
	148.59	-	109.75	166.67	71.08	100.00	-	106.68	-

Table 41a. — Annual net volume growth of sawtimber trees (Doyle rule), in board feet per year, on forest land by species and diameter class, Indiana State Forests 2013 – 2015

Estimate: Total-Net growth of sawtimber on forestland (bdft per year - DOYLE)

Sampling Error percent: Simple Random Sampling: Total Net growth of sawtimber on forestland(bdft per year - DOYLE)

	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
Species	10,973,613	-53,101	2,893,036	641,527	1,051,177	1,394,571	1,734,752	829,019	2,482,633
	10.56	-74.45	6.83	28.95	27.63	22.22	20.9	59.42	29
eastern red cedar	-3,040	17,658	5,854	-26,552	-	-	-	-	-
	-883.04	82.16	48.3	-84.47	-	-	-	-	-
Norway spruce	1,879	-	1,879	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
shortleaf pine	-33,607	-10,333	2,514	16,674	-77,001	13,643	-	20,895	-
	-219.41	-130.44	581.34	63.93	-86.25	100	-	100	-
red pine	-157,839	-44,255	-61,188	-66,409	2,455	-28,817	40,374	-	-
	-59.84	-50.19	-51.34	-91.35	276.81	-100	100	-	-
eastern white pine	147,629	-10,134	-20,438	-18,210	41,366	44,015	140,618	67,350	-96,938
	215.54	-165.71	-118.62	-258.27	178.1	142.5	96.76	195.16	-208.06
Virginia pine	-346,423	-6,038	-36,068	-63,005	-153,816	24,267	51,975	-	-163,737
	-67.68	-285.95	-107.53	-108.12	-71.06	39.14	41.89	-	-100
bald cypress	4,512	-	-	-	4,512	-	-	-	-
	100	-	-	-	100	-	-	-	-
boxelder	27,583	-	16,944	1,920	-	-	8,719	-	-
	53.74	-	69.95	100	-	-	100	-	-
red maple	521,003	-	312,283	85,765	117,281	87,614	64,191	49,925	-196,057
	57.81	-	18.64	18.08	20.65	28.23	37.59	45.31	-147.24
silver maple	52,075	-	20,912	14,819	-22,841	29,286	-7,436	-	17,336
	113.31	-	70.61	58.95	-171.12	81.58	-100	-	100
sugar maple	1,186,301	-	602,590	131,035	98,918	72,976	119,658	85,012	76,111
	11.96	-	13.21	36.72	72.61	79.63	25.77	32.3	35.06

(Table 41a continued on next page)

(Table 41a continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
bitternut hickory	101,156	-	13,173	32,329	25,049	15,781	10,107	4,717	-
	22.36	-	54.16	38.05	46.87	60.47	77.46	100	-
pignut hickory	1,098,258	-	191,888	64,106	168,231	228,130	193,744	158,577	93,583
	15.58	-	22.04	67.65	36.78	18.3	43.23	36.26	36.69
shellbark hickory	8,675	-	-	-	8,675	-	-	-	-
	76.1	-	-	-	76.1	-	-	-	-
shagbark hickory	397,905	-	104,726	80,226	74,908	28,457	51,719	29,057	28,813
	13.99	-	26.59	26.21	24.48	41.24	39.23	66.04	77.64
mockernut hickory	12,509	-	1,133	1,101	6,550	-	3,726	-	-
	61.57	-	79.14	100	100	-	100	-	-
hackberry	60,573	-	52,020	-11,627	-	2,743	-	17,437	-
	54.25	-	50.19	-131.58	-	100	-	72.59	-
common persimmon	4,747	-	1,961	2,787	-	-	-	-	-
	71.67	-	100	100	-	-	-	-	-
American beech	449,245	-	158,165	482	42,908	-20,377	50,151	82,024	135,891
	19.88	-	24	6,034.85	31.59	-249.14	38.07	32.11	31.6
white ash	42,093	-	-8,224	1,322	24,915	68,549	-110,573	-67,415	133,518
	561.39	-	-578.49	3,006.61	168.38	30.69	-88.19	-132.94	126.51
green ash	38,070	-	3,179	4,078	6,090	20,864	-	-	3,859
	47.94	-	114.93	100	100	61.85	-	-	100
blue ash	-42,265	-	-	1,211	-	-53,949	-	-	10,473
	-115.79	-	-	100	-	-110	-	-	100
honey locust	2,109	-	-	2,109	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
black walnut	242,993	-	76,197	48,245	35,920	-10,118	16,596	54,189	21,963
	34.36	-	32.04	27.35	48.96	-459.91	58.16	78.86	57.97
sweetgum	121,024	-	32,410	27,848	29,764	22,517	8,485	-	-
	24.46	-	43.55	35.33	38.61	59.33	100	-	-

(Table 41a continued on next page)

(Table 41a continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
yellow-poplar	2,544,134	-	358,816	102,206	209,665	76,430	209,111	537,426	1,050,479
	18.19	-	24.53	69.94	55.35	248.17	80.34	40.51	25.48
black gum	105,638	-	50,241	5,996	8,546	8,977	11,008	7,003	13,868
	27.42	-	37.42	67.12	66.47	63.36	100	100	76.22
American sycamore	492,392	-	56,043	34,488	72,525	70,250	54,980	48,920	155,185
	21.49	-	61.42	38.68	30.79	43.72	49.45	55.32	48.07
eastern cottonwood	71,746	-	-	5,348	10,550	14,132	52,993	-74,526	63,250
	144.7	-	-	101.29	100	63.11	52.92	-118.93	47.14
bigtooth aspen	75,244	-	44,974	-6,744	27,459	9,555	-	-	-
	44.16	-	44.13	-256.03	47.41	58	-	-	-
black cherry	154,761	-	78,098	-25,140	20,351	14,443	9,728	-	57,281
	34.86	-	35.27	-107.97	59.45	63.92	73.06	-	53.92
white oak	1,918,502	-	221,653	125,588	184,953	324,406	472,929	297,659	291,314
	21.05	-	22.95	33.43	52.9	30.54	27.04	40.8	97.94
scarlet oak	-223,041	-	25,774	342	-19,755	-62,401	34,983	-247,068	45,085
	-89.19	-	54.41	100	-218.95	-110.69	48.33	-61.69	46.41
northern pin oak	37,358	-	8,993	15,687	-	-	12,678	-	-
	48.15	-	100	59.02	-	-	100	-	-
shingle oak	16,678	-	11,519	5,159	-	-	-	-	-
	59.45	-	78.86	78.59	-	-	-	-	-
chinkapin oak	11,394	-	10,909	-9,155	-14,498	15,433	2,418	-	6,287
	426.48	-	83.92	-198.55	-199.63	57.04	100	-	100
pin oak	34,313	-	10,149	-	-10,071	2,471	23,883	-	7,881
	131.01	-	82.73	-	-342.49	100	100	-	100
chestnut oak	792,830	-	172,995	20,259	37,367	95,753	159,338	107,090	200,027
	35.42	-	23.76	283.42	207.27	109.26	69.83	98.39	67.26
northern red oak	-210	-	86,347	25,434	53,444	86,504	6,408	-191,195	-67,153
	188,508.94	-	44.76	128.82	83.27	96.1	1,622.31	-119.18	-430.14

(Table 41a continued on next page)

(Table 41a continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
post oak	32,093	-	16,708	6,666	6,858	1,860	-	-	-
	46.8	-	68.57	64.3	59.59	100	-	-	-
black oak	878,888	-	81,160	-2,052	61,362	194,895	6,676	-44,349	581,196
	44.39	-	36.57	1,714.41	134.1	33.53	2,162.64	-447.43	46.12
black locust	42,581	-	21,913	10,570	1,977	4,454	-	3,668	-
	39.09	-	57.76	58.88	100	100	-	100	-
sassafras	84,180	-	119,106	32,441	-57,368	-19,006	9,006	-	-
	86.04	-	27.06	29.7	-78.94	-213.64	100	-	-
American basswood	82,284	-	17,621	7,399	17,779	3,579	22,789	-	13,118
	32.6	-	60.57	47.38	78.03	100	62.07	-	100
American elm	-14,563	-	12,315	-31,359	712	-	3,770	-	-
	-265.35	-	105.8	-115.39	100	-	100	-	-
slippery elm	-100,753	-	15,791	-11,860	5,436	7,259	-	-117,378	-
	-127.47	-	109.75	-166.67	71.08	100	-	-106.68	-

**RETURN TO LIST OF
TABLES**

Table 50. — Annual mortality of trees (at least 5 inches d.b.h.), in cubic feet per year, on forest land by species and diameter class, Indiana State Forests 2013 – 2015

Estimate: Total-Mortality of all live on forestland (cuft per year)

Sampling Error percent: Simple Random Sampling: Total Mortality of all live on forestland (cuft per year)

	Diameter class	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	21.0-22.9	23.0 +
Species	4,534,550	250,489	320,144	361,255	431,416	550,081	549,672	455,203	365,997	572,788	677,504
	6.86	8.22	9.24	10.19	12.7	13.03	16.16	20.75	24.02	21.11	25.21
eastern red cedar	49,803	10,162	7,007	9,670	4,137	18,827	-	-	-	-	-
	32.81	32.9	51.02	58.24	100	58.17	-	-	-	-	-
shortleaf pine	44,815	-	1,444	11,979	5,531	-	25,861	-	-	-	-
	46.33	-	100	61.6	100	-	71.92	-	-	-	-
red pine	151,356	7,088	21,567	44,748	34,776	35,634	-	7,543	-	-	-
	28.54	48.52	50.76	31.4	43.11	61.05	-	100	-	-	-
eastern white pine	239,655	3,034	8,136	23,447	26,143	28,141	30,638	17,499	27,549	28,799	46,269
	34.37	53.35	45.72	44.76	46.81	58.47	71.22	100	100	100	100
Virginia pine	238,665	5,953	9,708	28,849	46,813	48,321	66,534	-	-	-	32,488
	26.46	51.91	45.32	35.79	36.06	46.12	45.97	-	-	-	100
boxelder	7,023	896	-	6,127	-	-	-	-	-	-	-
	62.98	100	-	70.69	-	-	-	-	-	-	-
red maple	162,553	22,431	9,661	19,146	17,255	7,254	-	14,175	-	-	72,631
	46.65	23.32	45.74	44.9	57.78	100	-	100	-	-	100
silver maple	32,144	1,192	-	4,376	-	-	15,684	10,891	-	-	-
	61.05	100	-	100	-	-	100	100	-	-	-
sugar maple	223,390	43,540	37,887	16,774	28,493	35,346	24,799	17,613	-	18,938	-
	20.97	23.98	25	45.3	45.84	50.42	100	100	-	100	-
European Alder	11,266	1,082	1,410	3,680	5,093	-	-	-	-	-	-
	90.83	100	100	100	100	-	-	-	-	-	-
American hornbeam	527	527	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-

(Table 50 continued on next page)

(Table 50 continued)

Species	Diameter class	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	21.0-22.9	23.0 +
bitternut hickory	4,767	-	-	4,767	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-
pignut hickory	59,486	3,451	6,536	2,707	6,781	28,957	11,053	-	-	-	-
	38.01	52.19	58.38	100	100	59.08	100	-	-	-	-
shagbark hickory	4,157	1,773	2,384	-	-	-	-	-	-	-	-
	65.04	71.93	100	-	-	-	-	-	-	-	-
hackberry	16,597	722	1,386	3,509	3,766	7,214	-	-	-	-	-
	54.17	100	100	100	100	100	-	-	-	-	-
eastern redbud	2,440	1,263	1,177	-	-	-	-	-	-	-	-
	60.71	71.23	100	-	-	-	-	-	-	-	-
flowering dogwood	11,059	9,775	1,284	-	-	-	-	-	-	-	-
	62.64	69.64	100	-	-	-	-	-	-	-	-
common persimmon	5,830	-	5,830	-	-	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-	-	-
American beech	168,442	1,255	8,715	3,670	3,885	11,500	15,501	16,368	-	-	107,547
	45.5	70.93	45.6	100	100	100	100	100	-	-	67.05
white ash	275,238	12,422	10,056	10,571	57,492	36,902	27,185	17,144	50,012	25,651	27,803
	27.83	29.78	48.35	49.99	41.78	50.28	71.12	100	60.03	100	100
green ash	7,048	-	3,024	-	4,024	-	-	-	-	-	-
	87.71	-	75.64	-	100	-	-	-	-	-	-
blue ash	20,930	728	-	-	-	-	-	20,202	-	-	-
	96.57	100	-	-	-	-	-	100	-	-	-
black walnut	18,942	1,548	1,597	-	-	-	-	15,796	-	-	-
	83.99	72.03	100	-	-	-	-	100	-	-	-
	4,549	3,550	999	-	-	-	-	-	-	-	-
	57.81	68.53	100	-	-	-	-	-	-	-	-
yellow-poplar	613,489	40,058	60,930	37,659	73,506	57,111	76,274	120,459	72,306	29,396	45,791
	17.38	20.37	21.86	32.51	36.21	45.33	45.35	47.7	58.63	100	100

(Table 50 continued on next page)

(Table 50 continued)

Species	Diameter class	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	21.0-22.9	23.0 +
Osage-orange	3,311	-	-	3,311	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-
white mulberry	686	-	686	-	-	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-	-	-
black gum	1,820	1,820	-	-	-	-	-	-	-	-	-
	58.31	58.31	-	-	-	-	-	-	-	-	-
eastern hophornbeam	4,258	1,350	-	2,908	-	-	-	-	-	-	-
	71.9	70.83	-	100	-	-	-	-	-	-	-
American sycamore	14,735	2,443	5,690	-	6,602	-	-	-	-	-	-
	58.88	73.99	72.75	-	100	-	-	-	-	-	-
eastern cottonwood	26,605	-	2,060	-	-	-	-	-	-	24,544	-
	92.52	-	100	-	-	-	-	-	-	100	-
bigtooth aspen	17,291	889	5,749	3,472	-	7,181	-	-	-	-	-
	52.76	100	75.7	100	-	100	-	-	-	-	-
black cherry	43,794	9,048	6,058	11,839	-	16,849	-	-	-	-	-
	32.97	28.44	60.81	57.77	-	70.66	-	-	-	-	-
white oak	355,804	4,002	16,708	21,303	29,890	30,484	23,588	36,936	36,068	44,547	112,277
	27.46	50.65	34.19	41.4	44.82	50.09	70.83	70.94	71.42	70.73	60.75
scarlet oak	130,115	-	-	3,645	-	-	20,178	31,777	-	74,515	-
	45.14	-	-	100	-	-	71.16	70.93	-	58.2	-
bur oak	827	827	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
chinkapin oak	20,055	577	1,483	-	-	7,639	10,356	-	-	-	-
	90.05	100	100	-	-	100	100	-	-	-	-
pin oak	16,450	1,006	3,296	-	-	-	12,148	-	-	-	-
	76.76	100	100	-	-	-	100	-	-	-	-
chestnut oak	345,344	2,064	6,385	20,442	13,143	59,440	79,630	53,544	42,315	38,196	30,185
	23.55	58.27	51.72	38.28	58.56	36.37	35.8	63.01	70.81	71.26	100

(Table 50 continued on next page)

(Table 50 continued)

Species	Diameter class	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	21.0-22.9	23.0 +
northern red oak	391,279	3,331	6,544	3,303	19,292	17,496	22,237	41,553	45,021	128,673	103,830
	24.58	50.44	57.83	100	59.16	70.82	70.71	57.8	70.75	45.14	59.14
post oak	14,741	-	5,406	2,729	-	6,606	-	-	-	-	-
	64.52	-	78.31	100	-	100	-	-	-	-	-
black oak	418,160	998	8,447	-	9,678	24,615	45,316	17,288	92,726	120,407	98,684
	23.68	100	46.17	-	70.84	57.89	62.38	100	45.09	45.24	59.46
black locust	10,708	3,623	3,913	-	3,172	-	-	-	-	-	-
	50.91	58.01	100	-	100	-	-	-	-	-	-
sassafras	221,032	35,406	39,123	40,522	20,372	26,504	42,689	16,417	-	-	-
	21.6	18.36	24	26.92	51.75	73.33	50.16	100	-	-	-
American elm	58,358	6,850	4,454	12,452	5,592	29,011	-	-	-	-	-
	30.65	34.02	59.84	52.46	70.94	50.96	-	-	-	-	-
slippery elm	65,006	3,803	3,401	3,649	5,981	9,051	-	-	-	39,121	-
	63.23	51.89	100	100	100	100	-	-	-	100	-

Table 51. — Annual mortality of sawtimber trees (International 1/4 inch rule), in board feet per year, on forest land by species and diameter class, Indiana State Forests 2013 – 2015

Estimate: Total-Mortality of sawtimber on forestland (bdft per year)

Sampling Error percent: Simple Random Sampling: Total Mortality of sawtimber on forestland (bdft per year)

	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
Species	16,153,229	622,624	1,789,646	2,369,788	2,467,376	2,002,141	1,768,506	2,609,385	2,523,764
	8.45	18.8	14.03	13.86	17.11	22.29	24.16	21.55	26.68
eastern red cedar	74,086	19,503	-	54,582	-	-	-	-	-
	58.46	100	-	70.85	-	-	-	-	-
shortleaf pine	224,641	58,942	27,552	-	138,147	-	-	-	-
	48.61	62	100	-	71.93	-	-	-	-
red pine	580,701	205,164	166,674	170,644	-	38,220	-	-	-
	29.19	31.41	43.04	61.08	-	100	-	-	-
eastern white pine	1,064,826	109,485	97,363	135,186	145,927	83,013	131,602	141,027	221,223
	35.37	44.77	52.68	58.34	71.32	100	100	100	100
Virginia pine	1,162,272	141,166	236,916	251,100	355,007	-	-	-	178,084
	28.33	35.85	36.06	46.14	45.93	-	-	-	100
red maple	328,610	-	73,827	-	-	-	-	-	254,782
	78.61	-	57.79	-	-	-	-	-	100
silver maple	67,450	-	-	-	67,450	-	-	-	-
	100	-	-	-	100	-	-	-	-
sugar maple	477,632	-	112,672	166,582	116,530	81,848	-	-	-
	36.64	-	51.47	50.45	100	100	-	-	-
pignut hickory	196,630	-	33,533	109,009	54,087	-	-	-	-
	50.86	-	100	70.77	100	-	-	-	-
hackberry	33,038	-	-	33,038	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
American beech	135,217	-	-	56,482	-	78,735	-	-	-
	71.66	-	-	100	-	100	-	-	-

(Table 51 continued on next page)

(Table 51 continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
white ash	917,129	-	231,912	130,205	69,945	-	235,043	120,126	129,898
	31.83	-	45	58.08	100	-	60.03	100	100
blue ash	94,690	-	-	-	-	94,690	-	-	-
	100	-	-	-	-	100	-	-	-
black walnut	71,630	-	-	-	-	71,630	-	-	-
	100	-	-	-	-	100	-	-	-
yellow-poplar	2,472,934	50,002	348,130	291,710	401,078	622,092	374,566	155,880	229,476
	21.42	70.79	37.91	45.44	45.35	47.85	58.85	100	100
American sycamore	28,360	-	28,360	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
eastern cottonwood	121,520	-	-	-	-	-	-	121,520	-
	100	-	-	-	-	-	-	100	-
bigtooth aspen	34,460	-	-	34,460	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
black cherry	93,439	17,651	-	75,787	-	-	-	-	-
	60.39	100	-	70.71	-	-	-	-	-
white oak	1,389,288	-	146,113	147,504	109,951	168,142	163,016	197,227	457,336
	29.87	-	44.81	50.08	70.79	70.98	71.42	70.73	59.74
scarlet oak	600,687	-	-	-	99,067	153,444	-	348,175	-
	46.13	-	-	-	71.09	70.91	-	58.17	-
chinkapin oak	85,054	-	-	36,457	48,596	-	-	-	-
	100	-	-	100	100	-	-	-	-
pin oak	58,952	-	-	-	58,952	-	-	-	-
	100	-	-	-	100	-	-	-	-
chestnut oak	1,458,729	-	65,345	293,204	329,773	250,457	205,199	177,176	137,575
	25.56	-	58.61	36.41	38.34	62.12	70.82	71.61	100
northern red oak	1,801,653	-	94,795	86,333	109,545	204,513	217,710	619,311	469,446
	25.1	-	59.19	70.84	70.71	57.81	70.74	45.14	59.02

(Table 51 continued on next page)

(Table 51 continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
black oak	1,901,280	-	24,912	120,512	221,520	83,308	441,368	563,716	445,944
	24.25	-	100	57.91	62.38	100	45.07	45.18	59.25
sassafras	272,138	-	58,288	-	141,800	72,049	-	-	-
	41.95	-	58.1	-	57.92	100	-	-	-
American elm	171,787	20,711	15,539	135,537	-	-	-	-	-
	42.85	100	100	50.84	-	-	-	-	-
slippery elm	234,398	-	27,714	41,456	-	-	-	165,228	-
	73.63	-	100	100	-	-	-	100	-

Table 51a. — Annual mortality of sawtimber trees (Doyle rule), in board feet per year, on forest land by species and diameter class, Indiana State Forests 2013 – 2015

Estimate: Total-Mortality of sawtimber on forestland (bdft per year - DOYLE)

Sampling Error percent: Simple Random Sampling: Total Mortality of sawtimber on forestland (bdft per year - DOYLE)

	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
Species	10,835,923	184,587	778,773	1,266,304	1,516,880	1,328,736	1,288,119	2,054,395	2,418,129
	9.64	20.28	13.96	13.97	17.17	22.23	24.29	21.58	27.34
eastern red cedar	39,444	6,738	-	32,706	-	-	-	-	-
	61.18	100	-	70.85	-	-	-	-	-
shortleaf pine	128,966	20,364	13,170	-	95,432	-	-	-	-
	55.02	62	100	-	71.93	-	-	-	-
red pine	282,176	70,884	79,670	102,250	-	29,372	-	-	-
	31.48	31.41	43.04	61.08	-	100	-	-	-
eastern white pine	779,519	37,827	46,540	81,003	100,806	63,795	112,823	121,918	214,808
	40.37	44.77	52.68	58.34	71.32	100	100	100	100
Virginia pine	726,771	48,773	113,246	150,459	245,239	-	-	-	169,055
	32.96	35.85	36.06	46.14	45.93	-	-	-	100
red maple	319,953	-	30,801	-	-	-	-	-	289,153
	90.54	-	57.79	-	-	-	-	-	100
silver maple	39,674	-	-	-	39,674	-	-	-	-
	100	-	-	-	100	-	-	-	-
sugar maple	254,572	-	47,007	85,257	68,543	53,766	-	-	-
	39.29	-	51.47	50.45	100	100	-	-	-
pignut hickory	101,595	-	13,990	55,791	31,814	-	-	-	-
	51.78	-	100	70.77	100	-	-	-	-
hackberry	16,909	-	-	16,909	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
American beech	80,628	-	-	28,907	-	51,721	-	-	-
	73.49	-	-	100	-	100	-	-	-

(Table 51a continued on next page)

(Table 51a continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
white ash	575,469	-	96,754	66,639	41,142	-	168,761	94,046	108,127
	34.6	-	45	58.08	100	-	60.03	100	100
blue ash	62,202	-	-	-	-	62,202	-	-	-
	100	-	-	-	-	100	-	-	-
black walnut	47,054	-	-	-	-	47,054	-	-	-
	100	-	-	-	-	100	-	-	-
yellow-poplar	1,521,096	-	145,240	149,297	235,914	408,652	268,939	122,038	191,016
	23.94	-	37.91	45.44	45.35	47.85	58.85	100	100
American sycamore	11,832	-	11,832	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
eastern cottonwood	95,138	-	-	-	-	-	-	95,138	-
	100	-	-	-	-	-	-	100	-
bigtooth aspen	17,637	-	-	17,637	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
black cherry	38,788	-	-	38,788	-	-	-	-	-
	70.71	-	-	70.71	-	-	-	-	-
white oak	1,025,487	-	60,958	75,492	64,673	110,453	117,046	154,409	442,456
	34.43	-	44.81	50.08	70.79	70.98	71.42	70.73	62.52
scarlet oak	431,655	-	-	-	58,271	100,798	-	272,587	-
	47.32	-	-	-	71.09	70.91	-	58.17	-
chinkapin oak	47,243	-	-	18,659	28,584	-	-	-	-
	100	-	-	100	100	-	-	-	-
pin oak	34,676	-	-	-	34,676	-	-	-	-
	100	-	-	-	100	-	-	-	-
chestnut oak	942,051	-	27,262	150,062	193,973	164,525	147,333	138,711	120,185
	27.58	-	58.61	36.41	38.34	62.12	70.82	71.61	100
northern red oak	1,407,923	-	39,549	44,185	64,434	134,344	156,316	484,859	484,236
	27.76	-	59.19	70.84	70.71	57.81	70.74	45.14	59.69

(Table 51a continued on next page)

(Table 51a continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
black oak	1,414,424	-	10,393	61,678	130,298	54,725	316,902	441,333	399,094
	25.64	-	100	57.91	62.38	100	45.07	45.18	60.06
sassafras	155,054	-	24,318	-	83,407	47,329	-	-	-
	44.48	-	58.1	-	57.92	100	-	-	-
American elm	75,851	-	6,483	69,368	-	-	-	-	-
	47.27	-	100	50.84	-	-	-	-	-
slippery elm	162,137	-	11,562	21,217	-	-	-	129,357	-
	81.16	-	100	100	-	-	-	100	-

**RETURN TO LIST OF
TABLES**

Table 60. — Annual removals of trees (at least 5 inches d.b.h.), in cubic feet per year, on forest land by species and diameter class, Indiana State Forests 2013 – 2015

Estimate: Total-Removals of all live on forestland (cuft per year)

Sampling Error percent: Simple Random Sampling: Total Removals of all live on forestland (cuft per year)

	Diameter class	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	21.0-22.9	23.0 +
Species	3,775,850	72,968	92,923	120,310	223,580	307,372	458,504	391,312	505,740	380,123	1,223,018
	10.47	13.39	19.93	19.83	19.24	18.41	16.82	20.39	22.94	30.38	21.36
eastern red cedar	5,630	-	1,240	-	4,390	-	-	-	-	-	-
	100	-	100	-	100	-	-	-	-	-	-
shortleaf pine	15,425	-	-	11,146	4,279	-	-	-	-	-	-
	100	-	-	100	100	-	-	-	-	-	-
red pine	24,078	1,676	9,454	8,169	4,780	-	-	-	-	-	-
	100	100	100	100	100	-	-	-	-	-	-
eastern white pine	5,211	-	-	5,211	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-
Virginia pine	54,773	-	3,016	-	17,388	21,812	-	12,557	-	-	-
	53.28	-	100	-	58.59	100	-	100	-	-	-
red maple	185,493	11,660	9,429	12,470	19,088	35,708	35,673	35,655	-	-	25,809
	26.43	33.63	44.84	53.25	57.99	49.89	57.97	73.56	-	-	100
silver maple	6,081	-	-	-	-	6,081	-	-	-	-	-
	100	-	-	-	-	100	-	-	-	-	-
sugar maple	290,829	23,808	25,658	23,011	31,487	45,251	52,608	-	89,006	-	-
	24.18	22.49	30.84	42.26	55.02	52.42	50.04	-	50.67	-	-
bitternut hickory	24,362	707	-	-	-	-	-	-	23,655	-	-
	97.14	100	-	-	-	-	-	-	100	-	-
pignut hickory	185,601	1,188	6,616	6,559	13,089	24,808	50,577	34,342	48,422	-	-
	32.35	70.87	44.99	70.82	72.33	58.1	50.4	71.17	70.98	-	-

(Table 60 continued on next page)

(Table 60 continued)

Species	Diameter class	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	21.0-22.9	23.0 +
shagbark hickory	49,982	-	-	-	-	-	17,891	15,136	16,955	-	-
	57.72	-	-	-	-	-	100	100	100	-	-
eastern redbud	621	621	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
flowering dogwood	3,982	2,343	1,638	-	-	-	-	-	-	-	-
	73.64	61.5	100	-	-	-	-	-	-	-	-
common persimmon	1,262	1,262	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
American beech	132,055	2,778	3,478	14,551	14,775	7,391	10,869	12,919	17,968	-	47,325
	42.52	73.73	75.33	50.96	58.27	100	100	100	100	-	100
white ash	137,140	731	3,472	-	5,396	9,346	35,892	43,233	18,978	20,090	-
	34.81	100	70.74	-	100	100	57.95	57.74	100	100	-
green ash	35,771	-	-	-	-	-	-	-	-	-	35,771
	100	-	-	-	-	-	-	-	-	-	100
black walnut	24,810	-	-	-	-	-	-	-	-	24,810	-
	100	-	-	-	-	-	-	-	-	100	-
sweetgum	14,029	-	-	1,705	5,636	6,689	-	-	-	-	-
	63.3	-	-	100	100	100	-	-	-	-	-
yellow-poplar	851,791	5,876	5,715	3,167	11,782	8,807	8,291	40,637	101,360	179,451	486,704
	26.47	64.46	62.08	100	70.71	100	100	70.96	50.42	47.21	40.21
black gum	27,112	5,120	1,554	6,599	-	-	13,839	-	-	-	-
	57.59	38.53	100	70.8	-	-	100	-	-	-	-
eastern hophornbeam	673	673	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
American sycamore	1,185	-	1,185	-	-	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-	-	-
bigtooth aspen	133,890	-	-	3,388	10,161	10,430	56,285	53,626	-	-	-
	40.06	-	-	100	70.72	100	45.36	58.18	-	-	-

(Table 60 continued on next page)

(Table 60 continued)

Species	Diameter class	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	21.0-22.9	23.0 +
black cherry	9,584	-	-	-	-	9,584	-	-	-	-	-
	100	-	-	-	-	100	-	-	-	-	-
white oak	342,404	993	-	3,782	5,490	22,970	21,798	36,452	48,278	29,455	173,186
	26.97	100	-	100	100	58.8	71.11	57.93	59.19	100	41.09
shingle oak	3,995	995	3,000	-	-	-	-	-	-	-	-
	100	100	100	-	-	-	-	-	-	-	-
chestnut oak	172,338	975	-	3,765	-	19,516	48,333	35,847	20,874	-	43,029
	29.73	100	-	100	-	57.77	44.86	58.41	100	-	70.67
northern red oak	151,356	992	-	-	10,532	6,695	18,866	-	-	-	114,271
	45.12	100	-	-	71.47	100	70.71	-	-	-	57.96
black oak	610,818	-	3,886	2,746	9,978	37,158	37,102	49,183	47,526	126,317	296,923
	24.33	-	72.47	100	100	44.83	57.76	57.71	70.84	45.02	39.4
sassafras	208,215	8,031	10,267	14,039	44,001	20,213	37,801	21,725	52,139	-	-
	58.02	37.25	41.54	47.42	50.05	71.73	74.2	100	100	-	-
American basswood	20,178	932	-	-	6,568	-	12,678	-	-	-	-
	70.81	100	-	-	100	-	100	-	-	-	-
American elm	36,703	768	3,315	-	4,761	7,280	-	-	20,579	-	-
	61.28	100	77.71	-	100	100	-	-	100	-	-
slippery elm	8,473	838	-	-	-	7,635	-	-	-	-	-
	90.65	100	-	-	-	100	-	-	-	-	-

Table 61. — Removals of sawtimber trees (International 1/4 inch rule), in board feet, on forest land by species and diameter class, Indiana State Forests 2013 – 2015

Estimate: Total-Removals of sawtimber on forestland (bdft per year)

Sampling Error percent: Simple Random Sampling: Total Removals of sawtimber on forestland (bdft per year)

	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
Species	16,075,857	139,811	1,034,183	1,388,148	2,131,886	1,874,887	2,362,333	1,597,549	5,547,061
	10.9	53.76	19.22	18.84	17.02	20.4	23.26	30.89	21.39
shortleaf pine	78,064	56,288	21,776	-	-	-	-	-	-
	100	100	100	-	-	-	-	-	-
red pine	60,832	37,967	22,865	-	-	-	-	-	-
	100	100	100	-	-	-	-	-	-
eastern white pine	23,794	23,794	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-
Virginia pine	269,126	-	87,538	115,230	-	66,358	-	-	-
	56.5	-	58.62	100	-	100	-	-	-
red maple	668,586	21,763	81,725	153,331	152,814	152,015	-	-	106,939
	30	100	57.99	49.89	57.96	73.51	-	-	100
silver maple	26,153	-	-	26,153	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
sugar maple	1,026,379	-	150,134	215,196	250,263	-	410,786	-	-
	30	-	55.2	52.5	50.04	-	50.74	-	-
bitternut hickory	116,404	-	-	-	-	-	116,404	-	-
	100	-	-	-	-	-	100	-	-
pignut hickory	783,883	-	64,261	121,380	193,655	168,192	236,396	-	-
	35.57	-	72.29	58.11	58.26	71.18	70.97	-	-
shagbark hickory	238,526	-	-	-	84,930	72,179	81,417	-	-
	57.71	-	-	-	100	100	100	-	-
American beech	524,799	-	73,430	36,347	53,043	62,516	86,003	-	213,461
	47.71	-	58.27	100	100	100	100	-	100

(Table 61 continued on next page)

(Table 61 continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
white ash	525,425	-	24,234	43,043	166,613	202,333	89,202	-	-
	38.38	-	100	100	57.96	57.74	100	-	-
green ash	159,557	-	-	-	-	-	-	-	159,557
	100	-	-	-	-	-	-	-	100
black walnut	109,802	-	-	-	-	-	-	109,802	-
	100	-	-	-	-	-	-	100	-
sweetgum	54,919	-	25,028	29,890	-	-	-	-	-
	70.73	-	100	100	-	-	-	-	-
yellow-poplar	3,948,970	-	57,678	44,039	43,428	206,007	533,898	764,998	2,298,922
	26.22	-	70.71	100	100	71.02	50.54	44.75	39.38
black gum	61,686	-	-	-	61,686	-	-	-	-
	100	-	-	-	100	-	-	-	-
bigtooth aspen	650,126	-	47,280	50,757	284,003	268,086	-	-	-
	41.33	-	70.73	100	45.4	58.24	-	-	-
black cherry	42,970	-	-	42,970	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
white oak	1,444,912	-	26,984	109,970	101,774	168,765	166,762	130,747	739,910
	27.42	-	100	58.77	71.09	57.93	71.3	100	41.02
chestnut oak	803,683	-	-	97,399	235,024	176,323	97,360	-	197,577
	30.26	-	-	57.78	44.86	58.53	100	-	70.64
northern red oak	708,600	-	51,392	32,819	93,207	-	-	-	531,182
	44.93	-	71.52	100	70.71	-	-	-	57.92
black oak	2,729,617	-	48,664	145,396	180,614	237,021	226,407	592,001	1,299,514
	24.3	-	100	50.22	57.75	57.7	70.83	45.03	39.05
sassafras	777,968	-	196,960	90,358	168,653	95,093	226,902	-	-
	66.08	-	50.1	71.73	74.25	100	100	-	-
American basswood	94,819	-	32,639	-	62,180	-	-	-	-
	73.97	-	100	-	100	-	-	-	-

(Table 61 continued on next page)

(Table 61 continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
American elm	112,391	-	21,594	-	-	-	90,797	-	-
	82.99	-	100	-	-	-	100	-	-
slippery elm	33,868	-	-	33,868	-	-	-	-	-
	100	-	-	100	-	-	-	-	-

Table 61a. — Removals of sawtimber trees (Doyle rule), in board feet, on forest land by species and diameter class, Indiana State Forests 2013 – 2015

Estimate: Total-Removals of sawtimber on forestland (bdft per year - DOYLE)

Sampling Error percent: Simple Random Sampling: Total Removals of sawtimber on forestland (bdft per year - DOYLE)

	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
Species	12,030,499	40,786	439,497	720,525	1,253,976	1,239,019	1,696,155	1,250,721	5,389,821
	12.55	60.94	19.17	19.23	17.02	20.39	23.26	30.89	22.56
shortleaf pine	29,856	19,447	10,409	-	-	-	-	-	-
	100	100	100	-	-	-	-	-	-
red pine	24,047	13,118	10,929	-	-	-	-	-	-
	100	100	100	-	-	-	-	-	-
eastern white pine	8,221	8,221	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-
Virginia pine	161,885	-	41,843	69,046	-	50,996	-	-	-
	58.6	-	58.62	100	-	100	-	-	-
red maple	391,330	-	34,096	78,475	89,885	99,859	-	-	89,016
	34.2	-	57.99	49.89	57.96	73.51	-	-	100
silver maple	13,385	-	-	13,385	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
sugar maple	614,922	-	62,636	110,137	147,204	-	294,944	-	-
	32.19	-	55.2	52.5	50.04	-	50.74	-	-
bitternut hickory	83,578	-	-	-	-	-	83,578	-	-
	100	-	-	-	-	-	100	-	-
pignut hickory	483,057	-	26,810	62,122	113,908	110,485	169,732	-	-
	37.18	-	72.29	58.11	58.26	71.18	70.97	-	-
shagbark hickory	155,828	-	-	-	49,956	47,415	58,457	-	-
	57.8	-	-	-	100	100	100	-	-
American beech	369,733	-	30,635	18,602	31,200	41,067	61,750	-	186,479
	55.33	-	58.27	100	100	100	100	-	100

(Table 61a continued on next page)

(Table 61a continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
white ash	327,101	-	10,110	22,029	98,002	132,913	64,047	-	-
	39.24	-	100	100	57.96	57.74	100	-	-
green ash	181,081	-	-	-	-	-	-	-	181,081
	100	-	-	-	-	-	-	-	100
black walnut	85,964	-	-	-	-	-	-	85,964	-
	100	-	-	-	-	-	-	100	-
sweetgum	25,740	-	10,442	15,298	-	-	-	-	-
	71.71	-	100	100	-	-	-	-	-
yellow-poplar	3,627,257	-	24,063	22,539	25,544	135,326	383,339	598,917	2,437,528
	29.02	-	70.71	100	100	71.02	50.54	44.75	40.46
black gum	36,283	-	-	-	36,283	-	-	-	-
	100	-	-	-	100	-	-	-	-
bigtooth aspen	388,859	-	19,725	25,977	167,051	176,105	-	-	-
	42.61	-	70.73	100	45.4	58.24	-	-	-
black cherry	21,992	-	-	21,992	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
white oak	1,087,278	-	11,258	56,283	59,863	110,861	119,735	102,362	626,915
	28.46	-	100	58.77	71.09	57.93	71.3	100	41.09
chestnut oak	538,284	-	-	49,849	138,241	115,826	69,904	-	164,463
	31.79	-	-	57.78	44.86	58.53	100	-	70.64
northern red oak	550,494	-	21,441	16,797	54,824	-	-	-	457,431
	48.89	-	71.52	100	70.71	-	-	-	58.01
black oak	2,229,598	-	20,302	74,414	106,237	155,699	162,560	463,478	1,246,907
	27.02	-	100	50.22	57.75	57.7	70.83	45.03	40.41
sassafras	453,002	-	82,172	46,245	99,202	62,467	162,916	-	-
	69.14	-	50.1	71.73	74.25	100	100	-	-
American basswood	50,191	-	13,617	-	36,574	-	-	-	-
	77.68	-	100	-	100	-	-	-	-

(Table 61a continued on next page)

(Table 61a continued)

Species	Diameter class	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 +
American elm	74,201	-	9,009	-	-	-	65,192	-	-
	88.66	-	100	-	-	-	100	-	-
slippery elm	17,333	-	-	17,333	-	-	-	-	-
	100	-	-	100	-	-	-	-	-

RETURN TO LIST OF TABLES