

# Indiana DNR State Forest Properties Report of Continuous Forest Inventory (CFI) Summary of years 2012-2016



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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 156,042 acres), a sampling rate of approximately one plot for every 40 acres. Information in this report was 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, and 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 2012-2016, which constitutes one entire cycle. With 20% of the plots measured annually, the 2016 plots were the same plots measured in 2011, thus the 2011 data were replaced with the 2016 data. Because plot re-measurement

(measuring the same plot at time two) has only occurred on 80% (2013, 2014, 2015 and 2016) 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 fifth reported results of the established continuous forest inventory (CFI), with the first four panels of annual plots (80% 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:

- 156,042 total acres; 151,092 forested acres with the balance in non-forest (i.e., campgrounds) and water.
- 96% of the forested acres are hardwoods.
- 82% of the forested acres are sawlog-sized stands.
- Forests contain 58.1 million live trees.
- Sugar maple trees and seedlings are more abundant than any other species, with American beech a close second (11.9 and 11.2 million trees, respectively).
- 338.8 million cubic feet of total live tree volume.
- 973 million board feet (Doyle) of net sawlog volume.
- White oaks followed by red oaks are the species groups with the most sawlog volume.
- 63% of the sawlog volume is considered grade 1 or 2.
- Japanese honeysuckle and multiflora rose are the most common invasive species, with bush honeysuckle overtaking stiltgrass as the third most commonly found invasive species present.

## **FOREST COMPOSITION**

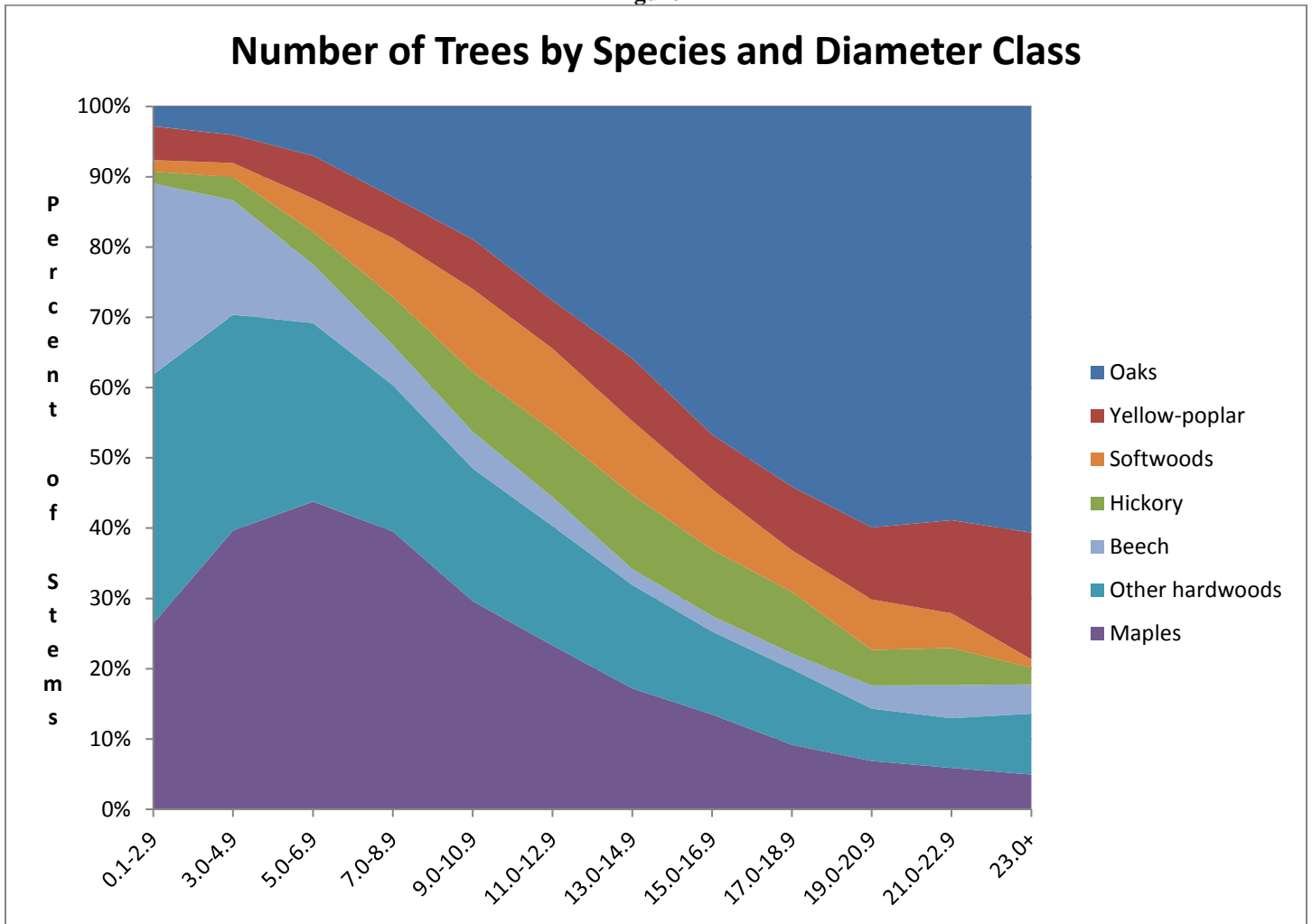
### **Area**

State Forest lands comprise approximately 156,042 acres located primarily in the southern third of Indiana. An estimated 151,092 of these acres are considered forestland (land considered stocked with trees or seedlings that are at minimum 1 acre in size and 120 feet in width), with the remaining ~5,000 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). As 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 (30,900 acres, 20%), white oak (18,417 acres, 12%), mixed upland hardwoods (14,243 acres, 9%), and chestnut oak (14,161 acres, 9%) (Table 1). A total of 82% 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" dbh) and seedling/saplings (small diameter or 1.0-4.9" dbh) (Table 1).

### **Number of Live Trees**

It is estimated that there are 58.1 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 11.9 million and 11.2 million trees, respectively (Table 2). More than half of the number of trees were less than 3 inches dbh with 41.9 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 the 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” dbh and larger was 338.8 million cubic feet. Hardwoods constituted 316.3 million cubic feet (cuft) or 93%. Oaks made up 145.3 million cuft or 43%, maples were 48.5 million cuft or 13%, yellow poplar was 46.3 million cuft or 13%, and hickories were 24.0 million cuft or 7% of the total volume (Table 3). Approximately 43.1 million cuft or 13% of the volume is in pole-sized trees (trees <11” dbh) with the remainder being sawlog-sized (11” and greater dbh). A total of 72.0 million cuft or 21% is 23” or greater dbh (Table 3). It was estimated that 328.5 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” dbh and greater, softwoods 9” dbh and greater).

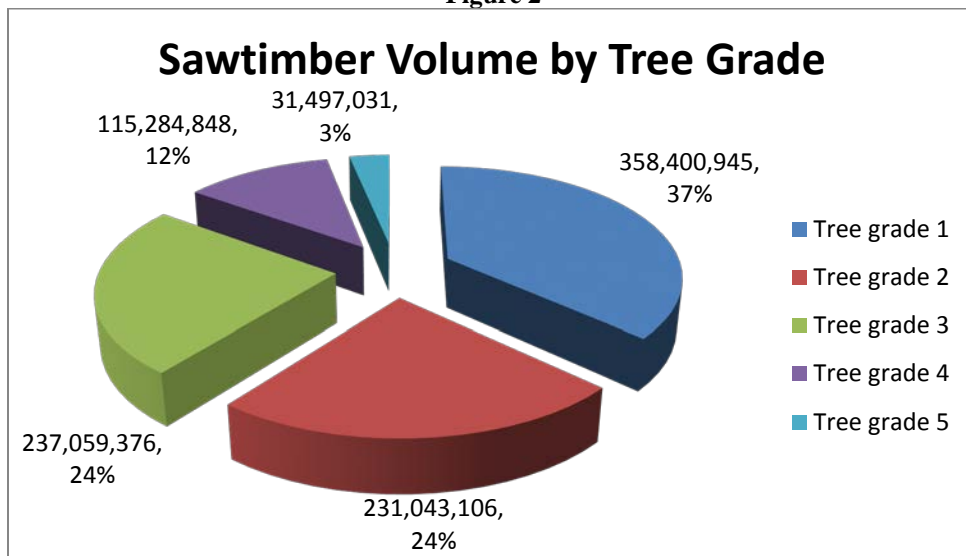
**Volume of Sawtimber-sized Trees**

The total net sawtimber volume was 973 million board feet Doyle scale (6,442 Bdft/acre). Yellow poplar was the most voluminous species, with 166.2 million board feet (MMBF) or 17%, followed by white oak, chestnut oak, and black oak with 160.7, 119.4, and 107.0 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 358.4 MMBF of the total net sawtimber volume was grade 1 and 231.0 and 237.0 MMBF in grades 2 and 3, respectively (Figure 2). Nearly 99 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 80% of the total sample (four 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" dbh and above, was 3.43 million cuft per year. Hardwoods actually grew 3.60 million cuft/yr or 105% of the total growth, while cedar and pines lost 171 thousand cuft/yr. Oaks constituted 1.16 million cuft or 34%, maples were 988,000 cuft or 29%, yellow poplar was 616,000 cuft or 18%, and hickories were 505,000 cuft or 15% of the total growth (Table 5). Species groups showing negative growth (a negative growth value would mean that mortality was larger than the gross growth) besides the pines mentioned above, were sassafras, scarlet oak, ashes, and elms. Approximately 620,000 cuft or 18% of the growth is in pole-sized trees (trees <11" dbh), with the remainder being sawlog-sized (11" and greater dbh).

Looking at sawlog-sized volume net growth, trees collectively grew an average of 11.2 million board feet Doyle annually. Hardwoods grew 11.3 million bdft./, while cedar and pines lost 122 thousand bdft./yr. Oaks constituted 3.5 million bdft or 31%, yellow poplar was 2.4 million bdft. or 21%, maples were 2.0 million bdft. or 18%, and hickories were 1.5 million bdft. or 13% of the total growth (Table 6). Species or species groups showing negative growth (a negative growth value would mean that mortality was larger than the gross growth) were Virginia pine and other pines and cedar.

### **Mortality**

The average annual volume mortality of all trees was 4.48 million cuft per year. Hardwoods accounted for 3.8 million cuft/yr or 85% of the total mortality. Yellow poplar was 579,000 cuft or 13%, and four oak species were the next individual species with the most volume lost to mortality, with chestnut oak losing 460,000 cuft, black oak losing 449,000 cuft, white oak losing 354,000 cuft, and Northern red oak losing 342,000 cuft. Collectively all the oak species accounted for 1.75 million cuft or 39% of all mortality (Table 7).

Looking at sawlog-sized volume mortality, the forests lost an average of nearly 10.5 million bdft Doyle annually. Hardwoods accounted for 8.7 million bdft/yr or 84%. Oaks constituted 5.3 million bdft or 51%, yellow poplar was 1.4 million bdft or 14%, ashes were 532,000 bdft or 5%, and maples were 522,000 bdft or 5% of the total mortality (Table 8).

Some of the high mortality is easily understood. The ash decline can be attributed to the emerald ash borer. Ash will continue to increase in mortality loss, the elms to Dutch elm disease, and sassafras probably due to a combination of canker diseases that favor that species. The reasons for mortality of other tree species, however, are more complex. Several possible factors such as intermittent recent droughts over the last 20 years, the latest in 2012, an outbreak of tulip scale attacking the yellow poplar a few years ago, other possible insects and diseases, and the natural age progression of many individual tree species could be contributing to the volume lost to mortality.

### **Removals**

The average annual volume removals of all trees was 3.6 million cuft per year. Hardwoods accounted for 3.3 million cuft/yr or 93% of the total removals. Yellow poplar was 723,000 cuft or 20%, followed by black oak at 638,000 cuft, sugar maple at 267,000 cuft, and white oak at 25,000 cuft (Table 9).

Looking at sawlog-sized volume removals, 11.4 million bdft Doyle was removed annually. Hardwoods accounted for 11.0 million bdft/yr. A total of 4.4 million bdft or 38% of the removals were oaks, while yellow poplar and maples followed at 3.0 million bdft or 26% and 924,000 bdft or 8%, respectively (Table 10).

### **Standing Dead Trees**

There were an estimated 1.8 million standing dead trees 5" dbh and greater. The individual species with the largest number of standing dead trees was sassafras, with 280,000 stems. Virginia pine was second with 164,000 standing dead trees with white oak, chestnut oak and yellow poplar following with 158,000, 150,000 and 139,000 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 1.8 million standing dead trees, 950,000 had a

diameter from 5-9" dbh, 591,000 were from 9-15" dbh, 154,000 were from 15-19" dbh, and the remaining 110,000 were 19" dbh and greater (Table 11).

## **Invasive Species**

Crews identify any invasive species they find on plots and measure the area of the plot each species occupies. These area estimates are then expanded to the entire 151,092 forested acres to estimate a total area that each invasive species occupies. Some plots may have multiple species present. The majority of plots are free from invasive species. There were an estimated 1,057 cumulative acres (about 0.7%) with invasive species present. Japanese (vine) honeysuckle and multiflora rose are the most prevalent invasive species, covering approximately 385 and 287 acres, respectively. Bush honeysuckle was next, covering 79 acres. Other species of interest were black locust and stiltgrass (approximately 69 acres each), garlic mustard (52 acres), autumn olive (41 acres), and Russian olive (38 acres). Of note, it appears that bush honeysuckle, multiflora rose and Russian olive 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 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 with third-party certification from SFI® program ([www.sfiprogram.org](http://www.sfiprogram.org)) and FSC® in mind, the DNR Division of Forestry began designing a Continuous Forest Inventory (CFI) system in 2007 on state forest lands (FSC-C012858). The USDA Forest Service Forest Inventory and Analysis (FIA) program was chosen to mirror for several reasons. The 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 calendar year 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 four annual panels of plots (80% of the total sample) have been updated with 2013, 2014, 2015 and 2016 data and the 2008, 2009, 2010 and 2011 data dropped from the total estimate calculations. Later years will follow the same protocol.

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## **Quality Assurance/Quality Control**

The CFI program is the key program that provides the information needed to assess the status and trends of the DNR 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 are striving 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 the field staff member has a comfort level for what is expected, 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 found 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 measures 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 does 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 % 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 2011 through 2015 (last year's report), 2012 through 2016 (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 (1/24<sup>th</sup> acre) circular subplot with the offset 6.8-foot-radius (1/300<sup>th</sup> acre) microplot. Trees with a dbh 5 inches and larger are measured on the 24-foot-radius circular subplot. All trees 1 inch dbh 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](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 not have if every member of the population had been observed and included in the estimate. The CFI inventory of DNR 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 % 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% inventory been taken using these methods, the results would have been within the limits indicated (i.e., 67% 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 above.

### **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**

This collected data is 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, 2012-2016.

Table 2.—Number of all live trees by species and diameter class, State Forest Properties, 2012-2016.

Table 3.—Net volume of all live trees by species and diameter class, State Forest Properties, 2012-2016.

Table 4.—Sawtimber volume of all live trees by species and diameter class, State Forest Properties, 2012-2016.

Table 5.—Net growth of all live trees by species and diameter class, State Forest Properties, 2013-2016.

Table 6.—Net growth of sawtimber by species and diameter class, State Forest Properties, 2013-2016.

Table 7.—Mortality of all live trees by species and diameter class, State Forest Properties, 2013-2016.

Table 8.—Mortality of sawtimber by species and diameter class, State Forest Properties, 2013-2016.

Table 9.—Removals of all live trees by species and diameter class, State Forest Properties, 2013-2016.

Table 10.—Removals of sawtimber by species and diameter class, State Forest Properties, 2013-2016.

Table 11.—Number of standing dead trees 5” dbh and greater by species and diameter class, State Forest Properties, 2011-2016.

Table 1.—Area of forestland by forest type group and stand size class, State Forest Properties, 2012-2016.

**Estimate: Total-Area of forestland (acres)**

Forest type	Stand-size	Large diameter	Medium diameter	Small diameter	Nonstocked
<b>All</b>	151,092	123,987	10,904	12,613	3,588
<b>White oak / red oak / hickory</b>	30,900	27,330	2,108	1,462	-
<b>Mixed upland hardwoods</b>	14,243	11,359	832	2,052	-
<b>White oak</b>	18,417	17,969	367	81	-
<b>Chestnut oak</b>	14,161	13,756	325	79	-
<b>Yellow poplar</b>	9,174	7,034	1,268	872	-
<b>Pine/Hardwood</b>	5,649	4,835	613	201	-
<b>Chestnut oak / black oak / scarlet oak</b>	5,700	5,233	222	245	-
<b>Sugar maple / beech / yellow birch</b>	5,946	4,814	603	528	-
<b>Yellow poplar / white oak / red oak</b>	3,553	3,059	288	205	-
<b>Hard maple / basswood</b>	5,724	4,494	684	546	-
<b>Northern red oak</b>	4,448	4,326	40	81	-
<b>Cherry / white ash / yellow poplar</b>	4,810	2,518	649	1,642	-
<b>Other miscellaneous hardwood forest types</b>	22,927	12,192	2,737	4,410	3,588
<b>Miscellaneous softwood forest types</b>	5,446	5,065	169	211	-

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Table 2.—Number of all live trees by species and diameter class, State Forest Properties, 2012-2016.

Estimate: 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	58,144,579	32,364,344	9,571,334	4,069,910	2,766,301	2,030,999	1,767,569	1,430,239	1,232,367	1,002,351	737,283	517,047	654,835
sugar maple	11,951,451	6,218,489	2,681,242	1,227,834	744,277	408,704	271,903	173,252	101,273	61,244	32,050	18,571	12,612
American beech	11,193,336	8,801,472	1,558,970	338,839	157,602	106,043	72,923	32,087	27,288	22,254	24,298	24,370	27,190
other hardwood species	5,638,882	3,890,400	882,048	244,870	153,304	112,970	93,755	75,347	62,467	41,631	31,586	20,872	29,630
red maple	4,790,570	2,278,793	1,112,691	545,222	338,154	182,019	134,304	67,664	59,803	25,628	17,636	11,928	16,729
Yellow poplar	3,182,032	1,553,242	378,740	247,780	161,401	143,491	120,477	128,101	95,810	90,967	75,366	68,493	118,163
sassafras	2,302,710	1,409,746	376,645	191,931	119,504	94,848	61,373	25,338	14,578	6,813	979	-	955
other oaks	2,023,410	476,675	206,706	102,924	114,497	108,533	135,029	125,829	154,524	176,830	130,479	111,173	180,211
redcedar and pine species	1,993,927	526,228	195,379	192,592	230,937	239,662	207,749	149,430	106,107	59,246	53,320	25,485	7,792
white oak	1,855,682	257,702	48,626	98,171	142,025	142,026	171,333	172,365	212,204	188,525	164,311	109,675	148,718
eastern hophornbeam	1,803,525	1,562,399	218,805	16,481	4,861	-	-	-	979	-	-	-	-
flowering dogwood	1,722,720	1,277,669	390,776	53,292	983	-	-	-	-	-	-	-	-
chestnut oak	1,713,629	182,898	133,650	83,610	100,572	133,153	181,712	214,213	208,643	176,769	146,843	83,479	68,088
blackgum	1,697,853	938,747	377,406	193,644	80,585	45,921	23,511	13,643	13,645	5,844	1,948	973	1,987
ash species	1,546,095	994,168	171,535	96,173	51,915	49,256	47,222	39,099	28,442	32,275	12,692	7,818	15,502
pignut hickory	1,226,692	317,510	205,844	113,505	114,179	116,322	99,560	78,163	68,481	58,538	24,313	17,618	12,659
American elm	1,070,903	639,344	244,039	92,259	58,919	16,791	7,772	6,801	2,983	983	1,012	-	-
other hickories	792,835	231,995	109,200	76,820	75,915	56,705	66,266	73,467	47,704	29,357	12,665	9,839	2,903
black cherry	689,431	341,088	120,555	61,328	52,067	34,370	34,598	14,861	10,869	7,867	4,933	983	5,912
other elms	667,352	404,580	134,341	60,538	35,397	9,823	9,827	4,961	3,935	1,996	-	974	979
black walnut	281,541	61,197	24,137	32,097	29,210	30,365	28,253	35,618	12,630	15,584	2,852	4,796	4,802

Table 3.—Net volume of all live trees by species and diameter class, State Forest Properties, 2012-2016.

Estimate: 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	338,845,276	9,587,474	14,324,382	19,279,506	27,299,802	32,906,732	40,137,998	43,824,731	41,836,221	37,606,933	72,041,497
white oak	52,385,494	224,960	722,145	1,308,434	2,486,046	3,682,506	6,386,406	7,709,559	8,635,877	7,307,554	13,922,007
yellow-poplar	46,386,190	657,446	932,213	1,577,133	2,216,373	3,527,216	3,837,412	4,955,636	5,435,697	6,249,347	16,997,718
chestnut oak	39,464,400	189,534	467,371	1,172,146	2,491,912	4,332,472	5,962,003	6,692,309	7,194,858	5,148,261	5,813,535
sugar maple	31,633,550	3,187,497	4,148,178	4,096,296	4,518,486	4,314,845	3,597,612	2,906,176	2,011,765	1,432,226	1,420,467
black oak	30,249,341	97,810	191,388	374,074	806,649	1,215,588	2,529,061	3,951,019	4,081,872	4,916,875	12,085,005
Red cedar and pine species	22,529,423	423,560	1,144,279	2,201,088	3,154,836	3,346,397	3,525,743	2,686,470	3,190,299	1,967,334	889,414
northern red oak	16,474,582	83,100	202,146	408,620	626,794	819,857	1,340,116	2,228,019	2,388,802	2,259,513	6,117,615
red maple	15,317,470	1,327,669	1,771,821	1,776,188	2,091,784	1,534,149	1,934,097	1,152,286	1,043,995	884,589	1,800,892
pignut hickory	15,079,092	256,596	609,160	1,150,875	1,627,544	1,931,570	2,470,735	2,821,155	1,508,450	1,422,612	1,280,395
American beech	12,648,551	773,311	809,032	969,548	1,128,323	749,439	892,656	985,773	1,426,417	1,856,931	3,057,120
other hardwood species	12,207,079	1,359,930	1,554,215	1,848,652	2,110,846	1,904,679	1,965,778	1,398,656	1,110,344	757,534	1,713,267
ash species	8,055,595	210,040	249,837	448,451	710,295	955,127	963,591	1,466,627	735,410	554,213	1,762,002
other hickories	8,924,496	184,217	400,503	560,012	1,102,022	1,796,579	1,674,394	1,393,018	764,820	766,598	282,334
American sycamore	6,737,497	75,588	117,001	199,652	341,031	486,132	736,871	856,506	671,398	958,705	2,294,612
other oaks	6,725,116	70,773	202,781	250,433	589,312	788,254	1,006,652	1,341,099	819,809	670,996	985,004
sassafras	3,855,721	3,659	-	-	-	-	-	-	-	-	-
black walnut	3,557,292	73,329	139,597	259,792	399,817	761,366	362,666	620,356	158,417	311,973	469,978
black cherry	3,038,120	116,428	230,741	298,068	476,968	325,136	354,678	342,961	279,291	71,386	542,463
elms	1,954,196	210,375	289,257	184,456	243,426	249,404	398,342	81,895	273,831	70,285	279,638
other maples	1,622,072	59,770	142,716	188,940	177,338	186,014	199,185	235,212	104,869	-	328,030

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Table 4.—Sawtimber volume of all live trees by species and diameter class, State Forest Properties, 2012-2016.

Estimate: Total-All live net sawtimber volume on forestland (bdft - FIA 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 +
<b>All</b>	973,285,305	2,711,709	53,285,375	80,169,586	114,560,295	138,731,975	144,894,501	139,055,339	299,876,525
<b>Yellow poplar</b>	166,238,644	-	4,584,733	9,034,008	11,639,878	16,784,185	20,364,855	24,459,075	79,371,910
<b>white oak</b>	160,729,131	-	5,052,698	8,860,147	17,693,707	23,526,097	27,943,752	25,358,538	52,294,192
<b>chestnut oak</b>	119,478,741	-	4,964,202	10,637,940	17,065,421	20,973,850	24,198,966	18,528,055	23,110,307
<b>black oak</b>	107,065,471	-	1,583,917	3,042,344	7,294,609	12,749,186	14,018,186	18,409,795	49,967,434
<b>northern red oak</b>	57,750,135	-	1,213,171	2,088,832	3,935,585	7,281,092	8,461,833	8,622,873	26,146,749
<b>sugar maple</b>	54,075,807	-	8,741,716	10,039,885	9,734,445	8,763,406	6,623,917	4,814,520	5,357,918
<b>pignut hickory</b>	40,769,904	-	3,294,741	4,859,085	7,250,506	9,087,257	5,396,258	5,525,024	5,357,034
<b>other hardwood species</b>	37,693,388	-	4,256,492	5,014,493	6,568,956	4,969,489	4,981,319	2,790,727	9,111,914
<b>eastern white pine</b>	33,148,296	319,703	1,241,524	2,387,573	4,797,381	5,558,006	8,956,054	7,463,534	2,424,521
<b>American beech</b>	32,708,708	-	2,177,347	1,851,705	2,513,514	2,762,833	4,348,799	6,828,332	12,226,177
<b>red maple</b>	27,252,826	-	3,565,955	3,227,702	4,762,882	3,154,953	3,107,628	3,004,389	6,429,317
<b>ash species</b>	22,651,995	-	1,253,988	2,176,069	2,589,306	4,375,754	2,520,050	2,067,750	7,669,078
<b>Virginia pine</b>	22,300,527	1,225,554	3,419,672	4,628,635	5,106,132	3,351,602	3,757,568	342,977	468,385
<b>American sycamore</b>	22,271,855	-	650,191	1,154,865	2,038,993	2,489,466	2,157,565	3,595,695	10,185,079
<b>other oaks</b>	19,118,077	-	1,095,596	1,820,171	2,805,329	4,166,436	2,822,662	2,475,172	3,932,709
<b>shagbark hickory</b>	15,129,244	-	1,638,900	2,988,863	3,274,725	2,565,756	2,022,792	1,807,392	830,817
<b>other pines and red cedar</b>	12,690,140	1,166,452	2,339,802	2,321,885	2,116,848	1,363,662	1,263,405	734,799	1,383,287
<b>black walnut</b>	9,069,169	-	806,643	1,847,875	1,030,240	1,944,025	531,601	1,124,235	1,784,550
<b>other hickories</b>	7,273,022	-	593,772	1,459,771	1,526,696	1,850,334	650,094	856,479	335,874
<b>black cherry</b>	5,870,225	-	810,316	727,740	815,144	1,014,587	767,196	245,975	1,489,268

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Table 5.—Net growth of all live trees by species and diameter class, State Forest Properties, 2013-2016.

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

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+
<b>All</b>	3,430,934	236,264	178,172	206,444	274,043	304,684	413,311	427,950	530,973	204,756	654,337
sugar maple	653,551	125,826	116,917	109,048	81,140	69,372	53,981	22,881	36,182	19,278	18,926
yellow poplar	615,896	10,459	785	32,144	38,080	60,798	50,550	35,084	74,099	97,920	215,975
white oak	602,944	3,103	-1,954	10,563	26,432	59,061	66,303	91,711	142,527	96,085	109,112
pignut hickory	339,254	5,514	7,193	26,978	34,523	32,852	66,958	56,930	49,518	36,277	22,511
red maple	306,619	48,339	53,423	43,701	49,421	30,839	48,094	19,434	29,352	13,213	-29,197
black oak	250,443	1,847	1,090	2,296	3,571	3,493	31,938	45,792	-5,261	-12,862	178,540
chestnut oak	193,843	2,290	-2,111	7,024	11,790	9,312	32,907	15,226	58,770	15,946	42,690
American sycamore	163,010	998	1,661	6,883	11,018	12,936	24,739	21,191	25,755	21,463	36,366
other hardwood species	141,849	20,538	-342	14,026	6,368	15,321	36,685	7,013	27,944	-6,400	20,698
other oaks	137,619	2,746	58	421	13,489	7,343	14,278	47,200	30,558	-22,412	43,938
shagbark hickory	118,147	2,039	5,237	7,090	15,470	30,235	24,723	10,712	10,911	6,410	5,321
black walnut	87,102	3,172	4,320	4,535	11,663	21,087	12,941	1,625	4,747	15,954	7,058
American beech	63,928	38,594	29,742	31,659	23,747	11,187	-2,590	2,303	-6,632	-18,927	-45,155
other hickories	47,894	1,962	1,611	2,544	4,259	12,795	13,097	6,562	4,276	786	-
black cherry	47,573	599	5,056	-2,621	13,202	-3,401	9,485	3,961	4,369	2,157	14,766
other maples	27,723	1,781	8,439	-2,498	2,356	6,657	-4,340	7,553	183	-	7,592
scarlet oak	-26,241	199	-292	-1,054	1,774	3,306	-2,220	-4,706	12,862	-51,525	15,414
elms	-31,664	2,355	7,215	-2,574	-4,599	-16,143	2,148	2,400	1,201	-26,203	2,537
ash species	-60,005	-4,487	-8,173	-6,946	-28,885	-8,212	-1,491	8,107	-27,539	-10,029	27,650
sassafras	-77,534	-17,599	-19,909	-10,299	433	-4,678	-26,595	-4,176	3,415	1,049	826
Red cedar and pine species	-171,015	-14,012	-31,792	-66,476	-41,208	-49,474	-38,279	31,146	53,736	26,575	-41,231

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Table 6.—Net growth of sawtimber by species and diameter class, State Forest Properties, 2013-2016.

Estimate: Total-Net growth of sawtimber on forestland (bdft per year - 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	11,213,913	-37,281	2,942,030	814,561	1,255,523	1,389,369	1,725,804	725,126	2,398,782
yellow poplar	2,408,546	-	379,966	162,595	197,752	122,051	275,705	376,787	893,690
white oak	1,770,089	-	241,685	135,659	179,983	249,107	425,612	293,463	244,578
sugar maple	1,332,561	-	679,660	161,325	152,425	86,825	112,132	81,578	58,615
pignut hickory	1,075,804	-	202,318	97,399	192,642	181,571	174,195	136,240	91,439
black oak	813,093	-	81,458	5,785	93,628	135,529	-40,375	-78,593	615,661
red maple	603,178	-	334,303	95,216	114,750	75,634	83,340	41,464	-141,529
chestnut oak	598,998	-	168,139	1,091	75,134	24,923	170,868	22,491	136,352
American sycamore	555,428	-	70,124	31,741	69,476	77,699	73,259	77,925	155,204
other hardwood species	553,152	-	300,283	45,273	52,466	58,216	104,877	-116,178	108,213
American beech	380,348	-	168,114	26,549	53,186	3,487	-13,511	15,926	126,596
shagbark hickory	337,069	-	78,962	73,886	69,320	33,461	37,223	23,146	21,071
northern red oak	264,023	-	84,691	11,816	42,936	111,188	60,773	-111,836	64,455
eastern white pine	249,044	-9,387	-13,966	3,168	44,893	59,886	158,233	87,101	-80,885
black walnut	240,126	-	59,007	49,911	35,788	4,398	14,855	55,734	20,433
black cherry	165,335	-	88,107	-8,043	17,838	10,987	7,760	6,755	41,931
other hickories	122,021	-	13,567	32,354	37,665	21,146	14,904	2,384	-
other oaks	70,012	-	76,488	27,961	-10,452	13,757	76,259	-177,649	63,648
ash species	45,957	-	3,170	5,404	18,891	47,214	-92,421	-40,935	104,634
other pines and red cedar	-96,695	-19,521	-35,379	-54,918	-45,644	-651	30,097	29,321	-
Virginia pine	-274,175	-8,372	-38,665	-89,610	-137,158	72,939	52,017	-	-125,325

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Table 7.—Mortality of all live trees by species and diameter class, State Forest Properties, 2013-2016.

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

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+
<b>All</b>	4,482,791	277,186	330,354	380,669	469,284	495,338	497,654	460,258	360,453	579,326	632,269
<b>yellow poplar</b>	579,708	50,072	54,417	38,590	61,227	42,001	73,635	85,853	50,418	48,719	74,776
<b>chestnut oak</b>	460,299	5,369	12,316	19,702	31,254	60,179	74,498	79,890	52,951	60,296	63,845
<b>black oak</b>	448,941	1,879	6,360	8,669	19,722	22,958	33,916	46,793	99,215	133,192	76,236
<b>white oak</b>	354,796	4,962	17,851	19,830	30,158	21,277	34,743	49,180	27,297	32,463	117,034
<b>northern red oak</b>	342,552	2,821	5,933	12,598	14,205	20,653	23,760	31,228	45,906	99,591	85,856
<b>Virginia pine</b>	279,626	9,956	20,692	41,841	53,823	62,968	65,759	-	-	-	24,587
<b>white ash</b>	243,197	14,282	11,877	19,208	43,698	29,121	27,605	12,975	45,242	19,413	19,776
<b>other hardwood species</b>	232,525	39,230	41,470	36,934	39,721	30,714	-	24,851	-	19,607	-
<b>sassafras</b>	199,271	35,742	41,312	37,847	19,346	18,807	32,995	13,221	-	-	-
<b>sugar maple</b>	198,379	38,166	32,669	25,745	30,737	26,030	17,639	13,818	-	13,575	-
<b>American beech</b>	197,099	1,600	7,194	2,777	6,373	8,704	18,692	12,841	18,888	42,910	77,120
<b>eastern white pine</b>	183,990	2,399	7,621	19,280	20,158	21,487	23,481	12,543	20,536	21,468	35,017
<b>red maple</b>	175,044	30,439	14,955	17,126	26,271	18,149	-	10,082	-	-	58,021
<b>elms</b>	112,673	11,613	10,168	13,728	14,808	33,194	-	-	-	29,163	-
<b>red pine</b>	110,464	5,221	18,493	27,620	24,624	27,004	-	7,502	-	-	-
<b>scarlet oak</b>	107,896	-	2,299	2,343	4,484	-	14,250	25,591	-	58,929	-
<b>Red cedar and pine species</b>	81,939	13,653	6,091	17,790	10,827	13,738	19,841	-	-	-	-
<b>hickories</b>	70,280	4,574	7,851	7,237	10,159	20,944	7,105	12,410	-	-	-
<b>other oaks</b>	41,766	1,716	8,482	4,151	-	10,211	17,206	-	-	-	-
<b>other maples</b>	33,799	2,082	-	7,654	4,534	-	12,529	7,000	-	-	-

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+
other ashes	28,545	1,407	2,304	-	3,157	7,198	-	14,480	-	-	-

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Table 8.—Mortality of sawtimber by species and diameter class, State Forest Properties, 2013-2016.

Estimate: Total-Mortality of sawtimber on forestland (bdft per year - 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+
<b>All</b>	10,473,917	-	834,826	1,141,604	1,354,240	1,371,443	1,219,566	2,007,513	2,375,205
<b>black oak</b>	1,471,467	-	-	-	27,926	-	-	-	-
<b>yellow poplar</b>	1,442,963	-	-	16,914	-	-	-	-	-
<b>chestnut oak</b>	1,268,251	-	9,134	-	41,123	81,176	-	215,567	-
<b>northern red oak</b>	1,189,539	-	-	13,374	20,489	-	-	-	-
<b>white oak</b>	1,037,908	30,711	-	-	-	-	-	76,001	-
<b>Virginia pine</b>	767,871	43,815	130,045	196,452	242,104	-	-	-	127,942
<b>eastern white pine</b>	589,284	-	36,121	61,865	77,304	45,727	84,104	90,884	162,568
<b>ash species</b>	532,033	-	-	12,027	-	-	-	-	-
<b>other oaks</b>	408,790	71,327	61,273	80,511	95,676	147,171	88,581	112,535	479,963
<b>red maple</b>	293,315	-	46,819	15,506	-	-	-	-	230,990
<b>other hardwoods</b>	239,656	15,320	234,022	237,361	307,381	450,031	404,188	334,524	405,625
<b>red pine</b>	206,975	-	-	-	-	-	-	-	-
<b>American beech</b>	190,401	-	-	-	-	-	-	-	-
<b>elms</b>	189,250	-	62,589	109,641	166,417	249,217	499,701	862,170	711,271
<b>sugar maple</b>	189,129	177,867	35,382	62,812	48,753	42,181	-	-	-
<b>other pines and red cedar</b>	142,101	-	19,563	25,659	73,214	-	-	-	-

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+
<b>sassafras</b>	122,320	-	59,660	151,846	187,766	249,741	142,990	219,402	256,845
<b>pignut hickory</b>	121,604	-	-	-	-	38,874	-	-	-
<b>black walnut</b>	33,727	-	56,466	77,485	-	29,210	-	-	-
<b>black cherry</b>	27,802	-							
<b>American sycamore</b>	9,529	339,040	30,319	11,336	-	-	-	-	-

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Table 9.—Removals of all live trees by species and diameter class, State Forest Properties, 2013-2016.

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

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+
<b>All</b>	3,593,740	70,959	89,182	109,207	225,124	303,739	484,325	381,634	448,665	358,090	1,122,816
<b>yellow poplar</b>	723,509	8,754	11,254	2,253	18,760	5,661	8,291	41,455	86,761	126,267	414,053
<b>black oak</b>	637,986	-	2,835	4,992	7,828	34,714	29,142	49,498	36,937	105,737	366,303
<b>sugar maple</b>	267,404	22,015	21,882	19,009	32,924	40,130	50,639	13,423	67,382	-	-
<b>white oak</b>	251,061	800	1,089	2,711	3,905	16,995	15,948	26,581	36,395	23,721	122,917
<b>Red cedar and pine species</b>	232,781	1,077	11,600	23,797	53,853	61,169	57,934	23,350	-	-	-
<b>other hardwood species</b>	231,327	16,702	10,090	9,110	12,851	29,113	60,812	10,766	40,493	15,947	25,443
<b>chestnut oak</b>	208,276	693	-	4,843	3,527	26,022	36,877	53,716	27,940	20,902	33,757
<b>sassafras</b>	178,387	6,291	9,486	10,628	34,428	15,535	29,301	15,572	41,989	15,158	-
<b>American beech</b>	174,270	3,087	3,935	11,055	11,438	5,798	8,527	9,189	28,265	35,606	57,370
<b>red maple</b>	162,787	9,360	8,434	9,939	13,465	29,642	43,602	28,097	-	-	20,248
<b>northern red oak</b>	158,775	799	-	3,412	11,322	5,349	27,083	10,616	17,471	-	82,723
<b>pignut hickory</b>	140,245	858	6,021	4,801	9,587	18,564	39,908	25,164	35,342	-	-
<b>white ash</b>	123,742	524	2,556	-	4,234	6,648	33,450	31,884	29,692	14,754	-
<b>bigtooth aspen</b>	103,191	-	-	2,658	7,002	8,399	42,809	42,322	-	-	-

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Table 10.—Removals of sawtimber by species and diameter class, State Forest Properties, 2013-2016.

Estimate: Total-Removals of sawtimber on forestland (bdft per year - 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+
<b>All</b>	11,454,108	39,274	449,804	740,047	1,364,519	1,217,481	1,510,862	1,207,835	4,924,287
<b>yellow poplar</b>	3,001,477	-	37,938	14,487	25,544	136,763	328,546	420,781	2,037,417
<b>black oak</b>	2,402,123	-	15,928	73,687	83,433	156,388	126,332	388,055	1,558,299
<b>white oak</b>	789,619	-	8,008	41,646	43,801	80,829	88,245	82,436	444,656
<b>chestnut oak</b>	653,655	-	7,272	66,007	105,507	172,251	94,418	79,173	129,026
<b>Red cedar and pine species</b>	631,062	39,274	119,943	181,097	199,600	91,151	-	-	-
<b>other hardwood species</b>	601,356	-	25,099	53,793	167,480	33,725	137,204	55,255	128,800
<b>sugar maple</b>	563,000	-	59,303	97,547	141,410	41,407	223,331	-	-
<b>American beech</b>	543,651	-	23,718	14,594	24,477	29,210	96,604	130,391	224,657
<b>northern red oak</b>	541,903	-	23,074	13,418	78,636	34,287	60,892	-	331,597
<b>sassafras</b>	404,469	-	64,299	35,545	76,905	44,775	131,202	51,743	-
<b>pignut hickory</b>	360,334	-	19,639	46,488	89,361	80,961	123,885	-	-
<b>red maple</b>	347,604	-	24,051	65,148	109,884	78,685	-	-	69,835
<b>white ash</b>	313,185	-	7,932	15,669	91,355	98,028	100,201	-	-
<b>bigtooth aspen</b>	300,669	-	13,602	20,921	127,126	139,021	-	-	-

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Table 11.—Number of standing dead trees 5” dbh and greater by species and diameter class, State Forest Properties, 2011-2016.

**Estimate: 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	1,806,174	561,300	389,310	273,762	180,688	136,921	90,339	63,476	50,654	25,467	34,257
sassafras	280,025	148,403	66,445	34,932	16,565	4,883	6,843	1,953	-	-	-
Virginia pine	164,807	26,712	42,417	24,715	31,500	21,684	10,876	4,931	986	-	986
white oak	157,801	33,360	26,513	23,421	12,791	19,646	12,775	9,819	9,705	986	8,785
chestnut oak	149,917	15,657	22,217	26,405	21,365	22,271	16,629	7,757	8,750	3,907	4,957
Yellow poplar	138,895	47,658	31,946	14,560	14,536	6,764	6,865	7,831	2,899	3,893	1,944
eastern red cedar	116,818	65,854	26,534	16,709	2,899	3,850	-	-	-	-	973
other hardwoods	97,131	32,662	25,421	15,653	13,617	6,831	979	1,962	-	-	-
sugar maple	91,444	32,967	27,343	13,713	6,774	5,816	983	2,864	-	983	-
black oak	90,530	7,792	8,753	8,760	12,652	6,777	9,765	9,758	12,659	8,748	4,865
red pine	82,036	17,584	31,498	19,495	8,649	3,878	-	932	-	-	-
eastern white pine	59,844	14,665	10,650	15,713	3,917	4,024	3,903	1,995	4,978	-	-
ashes	56,619	18,543	10,782	6,785	6,802	3,965	1,985	3,927	2,844	986	-
northern red oak	52,987	7,872	3,900	8,794	3,957	5,937	5,876	4,896	3,905	2,982	4,868
red maple	52,057	19,545	8,932	13,726	4,945	1,968	955	974	-	-	1,013
elms	47,069	21,554	7,771	5,876	3,940	5,934	-	-	983	1,012	-
other oaks	41,435	6,892	14,795	5,897	2,956	2,949	4,999	979	1,966	-	-
black locust	39,945	23,073	6,961	4,979	3,948	983	-	-	-	-	-
American beech	30,251	2,942	4,840	4,878	3,957	955	2,910	955	979	1,969	5,865
black cherry	28,098	11,682	5,758	3,831	1,992	3,881	-	955	-	-	-
hickories	22,424	4,868	5,831	2,896	1,947	3,925	1,970	986	-	-	-
other softwoods	6,042	1,012	-	2,025	979	-	2,025	-	-	-	-

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# List of Estimate Tables

\*All tables contain forest attribute estimates for Indiana State Forest properties for measurements taken from 2012 to 2016, 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 2012-2016

Table 2. — Area of forest land, in acres, by forest type and stand age, Indiana State Forests 2012-2016

Table 3. — Area of forest land, in acres, by state forest and forest type, Indiana State Forests 2012-2016

Table 4. — Area of forest land, in acres, by state forest and stand-size class, Indiana State Forests 2012-2016

Table 5. — Area of forest land, in acres, by state forest and stand age, Indiana State Forests 2012-2016

Table 6. — Area of forest land, in acres, by state forest and site productivity class, Indiana State Forests 2012-2016

Table 7. — Area of forest land, in acres, by state forest and site index, Indiana State Forests 2012-2016

## Number of Trees

Table 10.—Number of live trees on forest land by species and diameter class, Indiana State Forests 2012-2016

Table 11. — Number of live trees on forest land by species group and diameter class, Indiana State Forests 2012-2016

Table 12. — Number of standing dead trees (at least 5 inch dbh) on forest land by species and diameter class, Indiana State Forests 2012-2016

Table 13. — Number of standing dead trees (at least 5 inch dbh) on forest land by decay code and diameter class, Indiana State Forests 2012-2016

Table 14. — Number of live trees on forest land by cavity present and diameter class, Indiana State Forests 2012-2016

## Volume of Trees – All Live

Table 20. — Net volume of live trees (at least 5 inches dbh), in cubic feet, on forest land by species and diameter class, Indiana State Forests 2012-2016

Table 21. — Net volume of live trees (at least 5 inches dbh), in cubic feet, on forest land by state forest and major species group, Indiana State Forests 2012-2016

Table 22. — Net volume of live trees (at least 5 inches dbh), in cubic feet, on forest land by state forest and species group, Indiana State Forests 2012-2016

Table 23. — Net volume of live trees (at least 5 inches dbh), in cubic feet, on forest land by tree class and diameter class, Indiana State Forests 2012-2016

## **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 2012-2016

Table 30a. — Net volume of sawtimber trees (Doyle rule), in board feet, on forest land by species and diameter class, Indiana State Forests 2012-2016

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 2012-2016

Table 31a. — Net volume of sawtimber trees (Doyle rule), in board feet, on forest land by species group and diameter class, Indiana State Forests 2012-2016

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 2012-2016

Table 32a. — Net volume of sawtimber trees (Doyle rule), in board feet, on forest land by tree grade and cull proportion, Indiana State Forests 2012-2016

## **Growth**

Table 40. — Annual net volume growth of live trees (at least 5 inches dbh), in cubic feet per year, on forest land by species and diameter class, Indiana State Forests 2013-2016

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 2013-2016

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 2013-2016

## **Mortality**

Table 50. — Annual mortality of trees (at least 5 inches dbh), in cubic feet per year, on forest land by species and diameter class, Indiana State Forests 2013-2016

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 - 2016

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 - 2016

## **Removals**

Table 60. — Annual removals of trees (at least 5 inches dbh), in cubic feet per year, on forest land by species and diameter class, Indiana State Forests 2013 – 2016

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 - 2016

Table 61a. — Removals of sawtimber trees (Doyle rule), in board feet, on forest land by species and diameter class, Indiana State Forests 2013 - 2016

**Table 1. -- Area of forestland, in acres, by forest type and stand-size class, Indiana State Forests 2012 - 2016**

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
<b>All</b>	151,092	123,987	10,904	12,613	3,588
	<b>0.3</b>	<b>0.82</b>	<b>5.86</b>	<b>5.42</b>	<b>10.43</b>
<b>Jack pine</b>	40	40	-	-	-
	<b>100</b>	<b>100</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Red pine</b>	735	735	-	-	-
	<b>23.33</b>	<b>23.33</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Eastern white pine</b>	1,837	1,794	-	42	-
	<b>14.61</b>	<b>14.78</b>	<b>-</b>	<b>100</b>	<b>-</b>
<b>Shortleaf pine</b>	162	121	41	-	-
	<b>49.98</b>	<b>57.74</b>	<b>100</b>	<b>-</b>	<b>-</b>
<b>Virginia pine</b>	2,672	2,375	128	169	-
	<b>12.19</b>	<b>12.93</b>	<b>55.55</b>	<b>48.58</b>	<b>-</b>
<b>White pine / red oak / white ash</b>	536	453	83	-	-
	<b>27.64</b>	<b>30.05</b>	<b>70.72</b>	<b>-</b>	<b>-</b>
<b>Eastern redcedar / hardwood</b>	1,016	652	323	41	-
	<b>19.74</b>	<b>24.76</b>	<b>35.25</b>	<b>100</b>	<b>-</b>
<b>Shortleaf pine / oak</b>	287	245	42	-	-
	<b>37.78</b>	<b>40.8</b>	<b>100</b>	<b>-</b>	<b>-</b>
<b>Virginia pine / southern red oak</b>	1,018	815	81	122	-
	<b>19.92</b>	<b>22.26</b>	<b>70.71</b>	<b>57.74</b>	<b>-</b>
<b>Other pine / hardwood</b>	2,792	2,670	84	38	-
	<b>11.83</b>	<b>12.14</b>	<b>69.93</b>	<b>81.81</b>	<b>-</b>
<b>Post oak / blackjack oak</b>	220	220	-	-	-
	<b>42</b>	<b>42</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Chestnut oak</b>	14,161	13,756	325	79	-
	<b>4.83</b>	<b>4.91</b>	<b>35.28</b>	<b>70.71</b>	<b>-</b>
<b>White oak / red oak / hickory</b>	30,900	27,330	2,108	1,462	-
	<b>3.21</b>	<b>3.46</b>	<b>13.78</b>	<b>16.6</b>	<b>-</b>
<b>White oak</b>	18,417	17,969	367	81	-
	<b>4.35</b>	<b>4.42</b>	<b>33.22</b>	<b>70.72</b>	<b>-</b>
<b>Northern red oak</b>	4,448	4,326	40	81	-
	<b>9.38</b>	<b>9.52</b>	<b>100</b>	<b>70.71</b>	<b>-</b>

Forest type	Stand-size	Large diameter	Medium diameter	Small diameter	Nonstocked
Yellow-poplar / white oak / red oak	3,553	3,059	288	205	-
	10.58	11.42	37.74	44.7	-
Sassafras / persimmon	2,847	1,028	646	1,173	-
	11.74	19.57	24.95	18.51	-
Sweetgum / yellow-poplar	747	496	125	84	42
	23.37	28.7	57.74	70.59	100
Scarlet oak	808	808	-	-	-
	22.28	22.28	-	-	-
Yellow-poplar	9,174	7,034	1,268	872	-
	6.41	7.39	17.75	21.42	-
Black walnut	1,740	1,456	284	-	-
	15.04	16.43	37.77	-	-
Black locust	643	228	41	374	-
	24.97	41.06	100	33.2	-
Chestnut oak / black oak / scarlet oak	5,700	5,233	222	245	-
	8.16	8.53	41.54	40.72	-
Red maple / oak	2,964	2,237	429	298	-
	11.48	13.3	30.21	36.25	-
Mixed upland hardwoods	14,243	11,359	832	2,052	-
	4.91	5.52	21.86	13.89	-
Sweetgum / Nuttall oak / willow oak	124	124	-	-	-
	57.69	57.69	-	-	-
Overcup oak / water hickory	65	65	-	-	-
	73.21	73.21	-	-	-
Sweetbay / swamp tupelo / red maple	245	163	-	81	-
	40.82	50.01	-	70.65	-
Black ash / American elm / red maple	122	122	-	-	-
	57.76	57.76	-	-	-
River birch / sycamore	1,541	1,351	108	82	-
	16.11	17.26	58.75	70.74	-
Cottonwood	545	545	-	-	-
	27.07	27.07	-	-	-
Willow	42	-	-	42	-
	100	-	-	100	-
Sycamore / pecan / American elm	974	808	123	42	-
	20.32	22.31	57.65	100	-

Forest type	Stand-size	Large diameter	Medium diameter	Small diameter	Nonstocked
Sugarberry / hackberry / elm / green ash	1,027	607	283	137	-
	19.65	25.76	37.77	52.46	-
Silver maple / American elm	209	125	84	-	-
	44.63	57.74	70.59	-	-
Red maple / lowland	538	415	83	41	-
	27.62	31.51	70.72	100	-
Sugar maple / beech / yellow birch	5,946	4,814	603	528	-
	8.08	9.02	25.76	27.71	-
Black cherry	126	126	-	-	-
	57.46	57.46	-	-	-
Hard maple / basswood	5,724	4,494	684	546	-
	8.19	9.29	24.19	26.97	-
Red maple / upland	168	168	-	-	-
	49.65	49.65	-	-	-
Aspen	402	322	80	-	-
	31.52	35.29	70.65	-	-
Paulownia	40	-	40	-	-
	100	-	100	-	-
Other exotic hardwoods	82	-	-	82	-
	70.74	-	-	70.74	-
Eastern redcedar	572	449	82	41	-
	26.43	29.9	70.65	100	-
Cherry / white ash / yellow-poplar	4,810	2,518	649	1,642	-
	9.02	12.59	24.97	15.57	-
Elm / ash / black locust	1,392	246	288	858	-
	16.81	40.82	36.48	21.47	-
Nonstocked	3,546	-	-	-	3,546
	10.49	-	-	-	10.49
Other	1,198	83	41	1,075	-
	18.22	70.72	100	19.21	-

End of Table 1 - Return

**Table 2. -- Area of forestland, in acres, by forest type and stand age, Indiana State Forests 2012 - 2016**

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	151,092	6,630	4,082	19,269	38,156	40,273	29,589	10,383	2,218	493
	0.3	7.58	9.8	4.21	2.8	2.72	3.26	5.9	13.27	28.35
Jack pine	40	-	-	-	40	-	-	-	-	-
	100	-	-	-	100	-	-	-	-	-
Red pine	735	-	79	535	121	-	-	-	-	-
	23.33	-	70.71	27.39	57.74	-	-	-	-	-
Eastern white pine	1,837	-	81	529	949	278	-	-	-	-
	14.61	-	70.77	27.71	20.41	38.03	-	-	-	-
Shortleaf pine	162	-	-	40	121	-	-	-	-	-
	49.98	-	-	100	57.71	-	-	-	-	-
Virginia pine	2,672	166	282	881	855	364	82	41	-	-
	12.19	48.53	37.81	21.28	21.77	33.27	70.65	100	-	-
White pine / red oak / white ash	536	-	-	207	287	-	42	-	-	-
	27.64	-	-	44.67	37.78	-	100	-	-	-
Eastern redcedar / hardwood	1,016	41	162	283	285	123	82	41	-	-
	19.74	100	49.94	37.7	37.66	57.7	70.65	100	-	-
Shortleaf pine / oak	287	-	41	84	122	40	-	-	-	-
	37.78	-	100	70.71	57.75	100	-	-	-	-
Virginia pine / southern red oak	1,018	81	40	286	203	204	122	82	-	-
	19.92	70.71	100	37.76	44.71	44.68	57.71	70.65	-	-
Other pine / hardwood	2,792	8	126	782	687	288	451	369	82	-
	11.83	100	57.31	22.85	24.21	37.67	29.91	33.12	70.65	-

Forest type	Stand Age	0 - 19	20 - 39	40 - 59	60 - 79	80 - 99	100 - 119	120 - 139	140 - 159	160 +
Post oak / blackjack oak	220	-	-	-	41	82	56	41	-	-
	42	-	-	-	100	70.65	77.5	100	-	-
Chestnut oak	14,161	204	-	285	1,378	4,237	4,442	2,612	842	161
	4.83	44.64	-	37.77	16.97	9.51	9.3	12.18	21.61	49.96
White oak / red oak / hickory	30,900	125	121	2,022	7,869	11,129	7,062	1,969	482	120
	3.21	57.74	57.71	14.04	6.93	5.79	7.36	14.2	28.79	57.7
White oak	18,417	123	6	325	2,524	6,466	6,562	1,915	366	130
	4.35	57.64	100	35.33	12.54	7.73	7.64	14.43	33.27	54.78
Northern red oak	4,448	40	81	203	961	1,702	1,014	405	41	-
	9.38	100	70.72	44.7	20.33	15.32	19.94	31.59	100	-
Yellow-poplar / white oak / red oak	3,553	42	124	694	1,106	1,099	244	243	-	-
	10.58	100	57.74	24.2	19.14	19.17	40.83	40.75	-	-
Sassafras / persimmon	2,847	198	81	341	1,011	692	443	80	-	-
	11.74	44.83	70.71	33.87	19.89	24.18	30.11	70.71	-	-
Sweetgum / yellow-poplar	747	84	42	416	82	82	41	-	-	-
	23.37	70.71	100	31.39	70.71	70.74	100	-	-	-
Scarlet oak	808	-	-	123	-	242	242	201	-	-
	22.28	-	-	57.75	-	40.81	40.75	44.67	-	-
Yellow-poplar	9,174	423	757	2,099	3,776	1,428	485	165	41	-
	6.41	30.52	22.97	13.71	10.21	16.7	28.81	49.94	100	-
Black walnut	1,740	-	119	529	768	158	165	-	-	-
	15.04	-	57.75	27.59	22.82	50.03	49.98	-	-	-
Black locust	643	126	124	232	78	40	42	-	-	-
	24.97	57.67	57.74	41.04	70.78	100	100	-	-	-
Chestnut oak/black oak/scarlet oak	5,700	41	41	326	1,271	1,737	1,763	481	41	-
	8.16	100	100	35.35	17.64	15.13	14.91	28.78	100	-

Forest type	Stand Age	0 - 19	20 - 39	40 - 59	60 - 79	80 - 99	100 - 119	120 - 139	140 - 159	160 +
Red maple / oak	2,964	40	34	1,145	967	294	282	161	41	-
	11.48	100	100	18.76	20.13	36.37	37.77	49.96	100	-
Mixed upland hardwoods	14,243	724	497	2,308	4,051	3,690	2,375	515	41	41
	4.91	23.38	28.32	13.02	9.75	10.27	12.86	27.72	100	100
Sweetgum / Nuttall oak / willow oak	124	-	-	82	42	-	-	-	-	-
	57.69	-	-	70.74	100	-	-	-	-	-
Overcup oak / water hickory	65	-	-	-	65	-	-	-	-	-
	73.21	-	-	-	73.21	-	-	-	-	-
Sweetbay / swamp tupelo / red maple	245	-	-	40	41	81	82	-	-	-
	40.82	-	-	100	100	70.65	70.74	-	-	-
Black ash/American elm/red maple	122	-	-	-	40	82	-	-	-	-
	57.76	-	-	-	100	70.74	-	-	-	-
River birch / sycamore	1,541	82	190	248	738	202	41	-	-	41
	16.11	70.74	45.2	40.64	23.49	44.73	100	-	-	100
Cottonwood	545	-	-	295	166	84	-	-	-	-
	27.07	-	-	37.26	49.84	70.55	-	-	-	-
Willow	42	-	-	42	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-
Sycamore / pecan / American elm	974	-	125	315	369	42	41	42	39	-
	20.32	-	57.65	35.44	33.31	100	100	100	100	-
Sugarberry / hackberry / elm / green ash	1,027	16	80	322	366	202	41	-	-	-
	19.65	100	70.71	35.23	33.32	44.74	100	-	-	-
Silver maple / American elm	209	-	-	42	84	83	-	-	-	-
	44.63	-	-	100	70.59	70.72	-	-	-	-
Red maple / lowland	538	-	83	247	82	84	42	-	-	-
	27.62	-	70.72	40.76	70.74	70.55	100	-	-	-



Forest type	Stand Age	0 - 19	20 - 39	40 - 59	60 - 79	80 - 99	100 - 119	120 - 139	140 - 159	160 +
Sugar maple / beech / yellow birch	5,946	81	121	688	1,866	1,575	1,133	443	40	-
	8.08	70.72	57.71	24.23	14.65	15.9	18.83	30.11	100	-
Black cherry	126	-	-	-	42	42	42	-	-	-
	57.46	-	-	-	100	100	100	-	-	-
Hard maple / basswood	5,724	83	40	602	2,056	1,571	877	415	81	-
	8.19	70.72	100	25.74	13.89	15.92	21.31	30.56	70.72	-
Red maple / upland	168	-	42	-	84	42	-	-	-	-
	49.65	-	100	-	70.55	100	-	-	-	-
Aspen	402	-	40	82	80	80	120	-	-	-
	31.52	-	100	70.74	70.65	70.72	57.71	-	-	-
Paulownia	40	40	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-
Other exotic hardwoods	82	42	-	-	-	-	40	-	-	-
	70.74	100	-	-	-	-	100	-	-	-
Eastern redceder	572	-	41	245	204	41	41	-	-	-
	26.43	-	100	40.65	44.57	100	100	-	-	-
Cherry / white ash / yellow-poplar	4,810	163	245	1,054	1,568	1,095	523	81	81	-
	9.02	49.95	40.79	19.56	15.95	19.18	27.65	70.72	70.72	-
Elm / ash / black locust	1,392	73	196	245	468	83	328	-	-	-
	16.81	71.55	44.83	39.56	29.19	70.72	35.35	-	-	-
Nonstocked	3,546	3,546	-	-	-	-	-	-	-	-
	10.49	10.49	-	-	-	-	-	-	-	-
Other	1,198	40	40	41	242	510	245	82	-	-
	18.22	100	100	100	40.78	27.83	40.8	70.71	-	-

End of Table 2 - Return

**Table 3. — Area of forest land, in acres, by state forest and forest type, Indiana State Forests 2012 - 2016**

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 redcedar / hardwood	Shortleaf pine / oak	Virginia pine / southern red oak	Other pine / hardwood
All	151,092	40	735	1,837	162	2,672	536	1,016	287	1,018	2,792
	0.3	100	23.33	14.61	49.98	12.19	27.64	19.74	37.78	19.92	11.83
Clark State Forest	25,187	-	-	123	-	774	41	41	-	410	1,598
	0.49	-	-	57.64	-	22.62	100	100	-	31.39	15.52
Covered Bridge State Forest	262	-	-	-	-	-	-	-	-	-	-
	14.29	-	-	-	-	-	-	-	-	-	-
Ferdinand State Forest	12,462	-	126	378	-	252	210	-	84	-	463
	0.89	-	57.54	32.89	-	40.49	44.43	-	70.59	-	29.59
Greene-Sullivan State Forest	6,075	-	-	295	-	394	126	-	42	84	168
	4.8	-	-	37.26	-	31.62	57.46	-	100	70.55	49.65
Harrison-Crawford State Forest	23,881	-	122	163	82	449	-	817	41	204	171
	0.46	-	57.64	49.87	70.65	29.9	-	22	100	44.57	47.76
Jackson-Washington State Forest	17,924	-	79	-	40	198	-	119	-	79	79
	0.92	-	70.63	-	100	44.53	-	57.61	-	70.63	70.63
Martin State Forest	7,875	-	40	81	40	-	-	-	40	81	81
	0.24	-	100	70.53	100	-	-	-	100	70.53	70.53
Morgan-Monroe State Forest	24,959	-	41	272	-	41	-	-	-	-	-
	0.65	-	100	37.89	-	100	-	-	-	-	-
Owen-Putnam State Forest	6,402	40	121	51	-	126	40	-	-	40	192
	1.21	100	57.38	82.2	-	55.14	100	-	-	100	44.42

State Forest	Forest type	Jack pine	Red pine	Eastern white pine	Shortleaf pine	Virginia pine	White pine / red oak / white ash	Eastern redcedar / hardwood	Shortleaf pine / oak	Virginia pine / southern red oak	Other pine / hardwood
Salamonie State Forest	1,443	-	-	232	-	-	39	-	-	-	39
	1.85	-	-	37.97	-	-	100	-	-	-	100
Selmier State Forest	311	-	-	-	-	-	-	-	-	-	-
	12.5	-	-	-	-	-	-	-	-	-	-
Yellowwood State Forest	24,312	-	205	242	-	438	80	40	80	119	-
	0.69	-	43.4	40.16	-	29.91	70.65	100	70.65	57.64	-

(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
All	220	14,161	30,900	18,417	4,448	3,553	2,847	747	808	9,174	1,740
	42	4.83	3.21	4.35	9.38	10.58	11.74	23.37	22.28	6.41	15.04
Clark State Forest	-	5,941	3,820	4,672	613	656	82	123	123	983	82
	-	7.28	9.55	8.44	25.53	24.7	70.65	57.64	57.64	20.03	70.65
Covered Bridge State Forest	-	-	75	-	37	-	-	-	-	-	37
	-	-	65.47	-	100	-	-	-	-	-	100
Ferdinand State Forest	-	210	2,985	1,472	126	673	84	168	42	715	126
	-	44.43	10.41	15.93	57.54	24.37	70.59	49.75	100	23.6	57.54
Greene-Sullivan State Forest	-	42	421	84	84	168	126	337	-	-	252
	-	100	30.95	70.55	70.55	49.65	57.46	34.77	-	-	40.35
Harrison-Crawford State Forest	220	122	6,982	4,001	898	245	611	41	41	1,919	286
	42	57.64	6.46	9.24	20.94	40.65	25.51	100	100	14.01	37.6

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
Jackson-Washington State Forest	-	4,125	4,154	793	317	397	312	40	40	754	40
	-	8.64	8.58	21.89	35.09	31.31	35.13	100	100	22.49	100
Martin State Forest	-	-	2,006	1,053	162	121	40	-	-	949	243
	-	-	12.26	18.3	49.61	57.44	100	-	-	19.31	40.3
Morgan-Monroe State Forest	-	1,343	4,461	2,645	773	692	692	-	244	1,640	163
	-	16.96	8.68	11.76	22.61	23.94	23.94	-	40.66	15.21	49.88
Owen-Putnam State Forest	-	-	1,213	243	485	283	462	-	-	591	40
	-	-	16.54	40.19	27.87	37.09	28.27	-	-	24.81	100
Salamonie State Forest	-	-	232	-	75	-	-	-	-	39	232
	-	-	37.97	-	69.77	-	-	-	-	100	37.97
Selmier State Forest	-	-	117	-	-	-	-	39	-	39	39
	-	-	50	-	-	-	-	100	-	100	100
Yellowwood State Forest	-	2,377	4,434	3,454	875	318	438	-	318	1,546	199
	-	12.3	8.59	9.97	20.96	35.16	29.91	-	35.16	15.53	44.58

(Table 3 continued)

State Forest	Black locust	Chestnut oak / black oak / scarlet oak	Red maple / oak	Mixed upland hardwoods	Sweet-gum / Nuttall oak / willow oak	Overcup oak / water hickory	Sweet-bay / swamp tupelo / red maple	Black ash / American elm / red maple	River birch / sycamore	Cottonwood	Willow
All	643	5,700	2,964	14,243	124	65	245	122	1,541	545	42
	24.97	8.16	11.48	4.91	57.69	73.21	40.82	57.76	16.11	27.07	100
Clark State Forest	-	656	882	946	-	41	41	-	164	-	-
	-	24.7	21.01	20.28	-	100	100	-	49.88	-	-
Covered Bridge State Forest	37	-	-	-	-	-	-	-	-	-	-
	100	-	-	-	-	-	-	-	-	-	-
Ferdinand State Forest	125	168	277	792	84	-	42	42	84	-	-
	57.55	49.75	37.61	22.27	70.59	-	100	100	70.59	-	-
Greene-Sullivan State Forest	210	-	421	210	-	-	-	-	487	505	42
	44.3	-	30.95	44.3	-	-	-	-	28.4	28.12	100
Harrison-Crawford State Forest	82	490	122	1,030	-	-	-	-	163	-	-
	70.65	28.6	57.64	19.43	-	-	-	-	49.87	-	-
Jackson-Washington State Forest	40	595	516	1,150	40	24	40	79	159	40	-
	100	25.42	27.37	18	100	100	100	70.71	49.84	100	-
Martin State Forest	-	62	81	891	-	-	40	-	81	-	-
	-	73.85	70.53	20.13	-	-	100	-	70.53	-	-
Morgan-Monroe State Forest	-	1,587	191	6,473	-	-	81	-	203	-	-
	-	15.52	43.75	6.85	-	-	70.65	-	44.58	-	-
Owen-Putnam State Forest	40	-	116	889	-	-	-	-	40	-	-
	100	-	57.49	19.89	-	-	-	-	100	-	-

State Forest	Black locust	Chestnut oak / black oak / scarlet oak	Red maple / oak	Mixed upland hardwoods	Sweet-gum / Nuttall oak / willow oak	Overcup oak / water hickory	Sweet-bay / swamp tupelo / red maple	Black ash / American elm / red maple	River birch / sycamore	Cottonwood	Willow
Salamonie State Forest	-	-	-	77	-	-	-	-	-	-	-
	-	-	-	69.75	-	-	-	-	-	-	-
Selmier State Forest	-	-	-	39	-	-	-	-	-	-	-
	-	-	-	100	-	-	-	-	-	-	-
Yellowwood State Forest	108	2,142	358	1,745	-	-	-	-	159	-	-
	58.24	13.03	33.12	14.55	-	-	-	-	49.88	-	-

<b>(Table 3 continued)</b>											
<b>State Forest</b>	<b>Sycamore / pecan / American elm</b>	<b>Sugar- berry / hackberry / elm / green ash</b>	<b>Silver maple / American elm</b>	<b>Red maple / lowland</b>	<b>Sugar maple / beech / yellow birch</b>	<b>Black cherry</b>	<b>Hard maple / basswood</b>	<b>Red maple / upland</b>	<b>Aspen</b>	<b>Paulownia</b>	<b>Other exotic hard- woods</b>
<b>All</b>	974	1,027	209	538	5,946	126	5,724	168	402	40	82
	20.32	19.65	44.63	27.62	8.08	57.46	8.19	49.65	31.52	100	70.74
<b>Clark State Forest</b>	41	-	-	41	697	-	615	-	-	-	-
	100	-	-	100	23.94	-	25.53	-	-	-	-
<b>Covered Bridge State Forest</b>	-	-	-	-	-	-	37	-	-	-	-
	-	-	-	-	-	-	100	-	-	-	-
<b>Ferdinand State Forest</b>	250	126	126	252	463	-	294	-	-	-	-
	40.5	57.54	57.54	40.49	29.65	-	37.42	-	-	-	-
<b>Greene-Sullivan State Forest</b>	241	58	42	84	42	126	-	168	42	-	42
	40.58	77.75	100	70.55	100	57.46	-	49.65	100	-	100
<b>Harrison-Crawford State Forest</b>	119	286	41	-	857	-	1,120	-	-	-	-
	57.69	37.6	100	-	21.45	-	18.58	-	-	-	-
<b>Jackson- Washington State Forest</b>	-	199	-	40	1,230	-	940	-	-	40	40
	-	44.65	-	100	17.36	-	19.93	-	-	100	100
<b>Martin State Forest</b>	121	81	-	40	364	-	283	-	-	-	-
	57.44	70.53	-	100	32.64	-	37.21	-	-	-	-
<b>Morgan-Monroe State Forest</b>	81	41	-	41	936	-	692	-	81	-	-
	70.65	100	-	100	20.48	-	23.94	-	70.65	-	-
<b>Owen-Putnam State Forest</b>	40	81	-	-	364	-	277	-	-	-	-
	100	70.49	-	-	32.5	-	37.14	-	-	-	-
<b>Salamonie State Forest</b>	-	116	-	-	-	-	271	-	-	-	-
	-	56.15	-	-	-	-	34.6	-	-	-	-

State Forest	Sycamore / pecan / American elm	Sugar-berry / 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
Selmier State Forest	-	-	-	-	39	-	-	-	-	-	-
	-	-	-	-	100	-	-	-	-	-	-
Yellowwood State Forest	80	40	-	40	955	-	1,194	-	279	-	-
	70.65	100	-	100	20.04	-	17.83	-	37.62	-	-

(Table 3 continued)

State Forest	Eastern redceder	Cherry / white ash / yellow-poplar	Elm / ash / black locust	Nonstocked	Not Collected
All	572	4,810	1,392	3,546	1,198
	26.43	9.02	16.81	10.49	18.22
Clark State Forest	-	287	82	369	246
	-	37.61	70.65	32.31	40.66
Covered Bridge State Forest	-	-	-	37	-
	-	-	-	100	-
Ferdinand State Forest	-	673	168	294	84
	-	24.37	49.75	37.42	70.59
Greene-Sullivan State Forest	-	126	286	318	-
	-	57.46	37.36	35.14	-
Harrison-Crawford State Forest	572	972	245	286	82
	26.43	20.03	40.65	37.6	70.65
Jackson-Washington State Forest	-	516	79	317	278
	-	27.37	70.63	35.09	37.55



State Forest	Eastern redceder	Cherry / white ash / yellow- poplar	Elm / ash / black locust	Nonstocked	Not Collected
Martin State Forest	-	324	40	405	121
	-	34.71	100	30.88	57.44
Morgan-Monroe State Forest	-	732	300	407	107
	-	23.25	35.56	31.4	58.73
Owen-Putnam State Forest	-	323	59	121	121
	-	34.58	75.06	57.38	57.38
Salamonie State Forest	-	39	12	39	-
	-	100	100	100	-
Selmier State Forest	-	-	-	-	-
	-	-	-	-	-
Yellowwood State Forest	-	818	119	952	159
	-	21.55	57.64	19.87	49.88

End of Table 3 - Return

**Table 4. — Area of forest land, in acres, by state forest and stand-size class, Indiana State Forests 2012 - 2016**

Estimate: Area of forestland(acres)

Sampling Error percent: Area of forestland(acres)

State Forest	Stand-size	Large diameter	Medium diameter	Small diameter	Nonstocked
<b>All</b>	151,092	123,987	10,904	12,613	3,588
	0.3	0.82	5.86	5.42	10.43
<b>Clark State Forest</b>	25,187	21,227	1,672	1,919	369
	0.49	1.81	15.03	14.04	32.31
<b>Covered Bridge State Forest</b>	262	224	-	-	37
	14.29	21.82	-	-	100
<b>Ferdinand State Forest</b>	12,462	9,693	968	1,506	294
	0.89	3.23	20.06	15.68	37.42
<b>Greene-Sullivan State Forest</b>	6,075	4,498	397	820	360
	4.8	6.9	31.21	21.44	33.01
<b>Harrison-Crawford State Forest</b>	23,881	19,935	2,050	1,610	286
	0.46	1.9	13.49	15.35	37.6
<b>Jackson-Washington State Forest</b>	17,924	14,757	1,507	1,343	317
	0.92	2.38	15.56	16.53	35.09
<b>Martin State Forest</b>	7,875	5,933	669	868	405
	0.24	4.11	23.4	20.3	30.88
<b>Morgan-Monroe State Forest</b>	24,959	21,147	1,396	2,009	407
	0.65	1.84	16.56	13.54	31.4
<b>Owen-Putnam State Forest</b>	6,402	5,216	409	655	121
	1.21	3.96	30.35	23.28	57.38
<b>Salamonie State Forest</b>	1,443	1,082	206	116	39
	1.85	9.83	39.81	56.15	100
<b>Selmier State Forest</b>	311	234	78	-	-
	12.5	25	66.14	-	-
<b>Yellowwood State Forest</b>	24,312	20,040	1,552	1,767	952
	0.69	1.99	15.52	14.37	19.87

End of Table 4 - Return

**Table 5. — Area of forest land, in acres, by state forest and stand age, Indiana State Forests 2012 - 2016**

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	151,092	6,630	4,082	19,269	38,156	40,273	29,589	10,383	2,218	493
	0.3	7.58	9.8	4.21	2.8	2.72	3.26	5.9	13.27	28.35
Clark State Forest	25,187	943	408	1,689	4,082	6,690	5,920	4,179	942	335
	0.49	20.28	31.01	15.02	9.18	6.72	7.29	9.06	20.48	34.47
Covered Bridge State Forest	262	37	-	-	75	112	37	-	-	-
	14.29	100	-	-	65.47	48.8	100	-	-	-
Ferdinand State Forest	12,462	834	463	1,892	4,743	3,187	1,135	168	39	-
	0.89	21.66	29.65	13.78	7.47	9.95	18.4	49.75	100	-
Greene-Sullivan State Forest	6,075	591	474	2,991	1,304	463	252	-	-	-
	4.8	25.25	28.45	9.68	16.65	29.44	40.35	-	-	-
Harrison-Crawford State Forest	23,881	620	785	3,010	5,755	6,941	5,405	1,242	122	-
	0.46	25.21	22.36	10.89	7.36	6.48	7.66	17.6	57.64	-
Jackson-Washington State Forest	17,924	827	342	1,522	4,273	4,799	3,439	1,729	833	159
	0.92	21.35	33.29	15.49	8.46	7.84	9.67	14.38	21.34	49.84
Martin State Forest	7,875	827	202	1,012	3,485	2,186	81	81	-	-
	0.24	20.84	44.26	18.72	8.03	11.6	70.53	70.53	-	-
Morgan-Monroe State Forest	24,959	641	692	2,686	6,661	7,484	5,818	895	81	-
	0.65	24.75	23.94	11.6	6.73	6.2	7.36	20.96	70.65	-
Owen-Putnam State Forest	6,402	162	162	1,174	2,080	1,981	647	196	-	-
	1.21	49.53	49.53	16.7	11.53	11.98	23.81	44.25	-	-
Salamonie State Forest	1,443	77	77	515	579	155	39	-	-	-
	1.85	69.75	69.75	22.11	20.36	47.93	100	-	-	-
Selmier State Forest	311	-	-	195	78	39	-	-	-	-
	12.5	-	-	31.62	66.14	100	-	-	-	-

State Forest	Stand Age	0 - 19	20 - 39	40 - 59	60 - 79	80 - 99	100 - 119	120 - 139	140 - 159	160 +
Yellowwood State Forest	24,312	1,070	478	2,582	5,040	6,236	6,815	1,892	199	-
	0.69	18.64	28.61	11.74	7.94	6.92	6.52	13.9	44.58	-

End of Table 5 - Return

**Table 6. — Area of forest land, in acres, by state forest and site productivity class, Indiana State Forests 2012 - 2016**

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	151,092	699	1,061	15,679	58,937	53,310	20,961	445
	0.3	23.89	19.54	4.78	2.03	2.21	4	30.07
Clark State Forest	25,187	41	82	1,305	6,397	10,308	6,972	82
	0.49	100	70.65	17.24	6.91	4.87	6.54	70.65
Covered Bridge State Forest	262	-	37	-	75	149	-	-
	14.29	-	100	-	65.47	37.8	-	-
Ferdinand State Forest	12,462	168	126	1,766	5,534	3,818	1,050	-
	0.89	49.75	57.54	14.35	6.56	8.79	19.19	-
Greene-Sullivan State Forest	6,075	79	210	594	2,233	1,429	1,320	210
	4.8	70.69	44.3	25.68	11.91	15.77	16.47	44.3
Harrison-Crawford State Forest	23,881	82	122	1,479	8,664	10,130	3,364	41
	0.46	70.65	57.64	16.07	5.5	4.84	10.22	100
Jackson-Washington State Forest	17,924	-	40	1,666	5,406	7,140	3,633	40
	0.92	-	100	14.73	7.21	5.85	9.37	100
Martin State Forest	7,875	40	40	1,174	4,434	1,984	202	-
	0.24	100	100	17.18	6.33	12.39	44.26	-
Morgan-Monroe State Forest	24,959	91	122	3,377	11,678	7,737	1,953	-
	0.65	63.91	57.64	10.24	4.35	6.05	13.88	-
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	1,443	77	-	194	823	310	39	-
	1.85	69.75	-	42.23	14.38	31.84	100	-
Selmier State Forest	311	-	-	156	156	-	-	-
	12.5	-	-	39.53	39.53	-	-	-
Yellowwood State Forest	24,312	80	159	2,655	10,061	9,180	2,105	72
	0.69	70.65	49.88	11.57	4.86	5.24	13.16	71.03

End of Table 6 - Return

**Table 7. — Area of forest land, in acres, by state forest and site index, Indiana State Forests 2012 - 2016**

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	151,092	157	1,148	9,841	21,670	30,383	31,878	21,608	26,429	7,977
	0.3	50.2	18.63	6.13	3.94	3.27	3.14	3.99	3.52	6.83
Clark State Forest	25,187	-	663	3,247	6,358	5,394	2,766	1,604	2,042	3,114
	0.49	-	24.45	10.49	6.96	7.73	11.47	15.42	13.51	10.76
Covered Bridge State Forest	262	-	-	-	-	-	187	37	37	-
	14.29	-	-	-	-	-	29.28	100	100	-
Ferdinand State Forest	12,462	-	-	294	1,135	2,565	2,755	2,187	3,064	462
	0.89	-	-	37.42	18.4	11.47	10.92	12.65	10.22	29.65
Greene-Sullivan State Forest	6,075	84	42	168	631	884	1,092	1,114	1,371	688
	4.8	70.55	100	49.65	24.96	20.78	18.43	18.17	16.1	23.63
Harrison-Crawford State Forest	23,881	41	245	2,531	4,874	5,831	4,340	2,776	2,957	286
	0.46	100	40.65	12.03	8.18	7.29	8.78	11.42	10.99	37.6
Jackson-Washington State Forest	17,924	-	159	1,466	2,682	3,683	3,332	2,284	2,493	1,825
	0.92	-	49.84	15.78	11.22	9.29	9.9	12.33	11.78	14
Martin State Forest	7,875	-	-	121	283	1,295	2,186	1,803	2,186	-
	0.24	-	-	57.44	37.21	16.2	11.6	13.15	11.6	-
Morgan-Monroe State Forest	24,959	-	-	1,180	2,604	4,494	6,986	3,825	5,503	366
	0.65	-	-	18.15	11.86	8.63	6.51	9.52	7.61	33.12
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	1,443	-	-	-	116	155	579	310	283	-
	1.85	-	-	-	56.15	47.93	20.36	31.84	33.06	-
Selmier State Forest	311	-	-	-	-	-	39	117	156	-
	12.5	-	-	-	-	-	100	50	39.53	-

State Forest	Site index	21 - 30	31 - 40	41 - 50	51 - 60	61 - 70	71 - 80	81 - 90	91 - 199	Not Collected
Yellowwood State Forest	24,312	32	40	792	2,865	5,239	6,201	3,975	4,133	1,035
	0.69	100	100	22.03	11.1	7.74	6.93	9.17	8.97	19.22

End of Table 7 - Return

End of Area Tables - Return

**Table 10. — Number of live trees on forest land by species and diameter class, Indiana State Forests 2012 - 2016**

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	58,144,579	32,364,344	9,571,334	4,069,910	2,766,301	2,030,999	1,767,569	1,430,239	1,232,367	1,002,351	737,283	517,047	654,835
	1.64	2.57	3.72	1.88	2.17	2.51	2.52	2.81	2.96	3.28	3.73	4.41	3.98
eastern redcedar	673,174	194,622	122,519	115,605	102,075	63,834	43,100	19,654	7,860	2,924	983	-	-
	12.87	30.52	31.47	13.23	14	16.91	18.45	23.14	39.4	57.71	100	-	-
Norway spruce	979	-	-	-	-	-	979	-	-	-	-	-	-
	100	-	-	-	-	-	100	-	-	-	-	-	-
shortleaf pine	54,505	-	-	1,987	8,955	14,901	9,904	5,917	5,880	3,982	1,012	955	1,012
	30.49	-	-	70.72	48.54	41.57	44.43	52.58	40.81	61.59	100	100	100
red pine	158,762	-	12,243	6,901	32,204	42,035	29,188	21,499	7,823	1,932	3,007	955	974
	25.01	-	100	51.19	36.04	28.39	25.25	24.79	46.33	70.71	74.83	100	100
eastern white pine	384,885	60,742	35,399	29,655	27,564	27,224	33,095	35,428	42,111	31,649	34,608	22,589	4,820
	14.95	52.25	57.7	24.52	23.05	21	19.8	22.76	18.56	21.09	22.22	25.65	44.62
Virginia pine	719,596	270,864	25,218	38,444	59,126	91,668	91,483	66,932	41,420	18,759	13,710	986	986
	22.19	54.79	70.59	23.8	17.74	14.77	14.28	15.31	16.69	30.16	26.63	100	100
baldcypress	2,026	-	-	-	1,013	-	-	-	1,013	-	-	-	-
	70.55	-	-	-	100	-	-	-	100	-	-	-	-
boxelder	123,374	37,103	24,260	20,639	18,657	10,980	6,818	2,921	1,013	-	983	-	-
	25.32	57.71	70.71	24.35	37.52	34.99	37.77	57.71	100	-	100	-	-
black maple	983	-	-	-	-	-	-	983	-	-	-	-	-
	100	-	-	-	-	-	-	100	-	-	-	-	-
red maple	4,790,570	2,278,793	1,112,691	545,222	338,154	182,019	134,304	67,664	59,803	25,628	17,636	11,928	16,729
	5.38	8.7	11.06	5.29	6.05	8.7	9.46	12.43	13.13	20.32	24.74	28.8	24.2



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	117,075	61,628	-	9,110	11,048	11,051	6,074	4,020	5,062	5,062	1,012	-	3,007
	33.38	52.37	-	39.71	45.48	39.54	40.66	49.96	44.59	59.91	100	-	57.68
sugar maple	11,951,451	6,218,489	2,681,242	1,227,834	744,277	408,704	271,903	173,252	101,273	61,244	32,050	18,571	12,612
	3.39	5.13	7.08	3.33	3.99	5.22	6.15	8.08	10.32	12.87	18.33	24.1	27.67
Ohio buckeye	98,478	61,217	23,855	8,618	2,873	1,915	-	-	-	-	-	-	-
	40.22	52.8	70.74	50.11	57.75	70.74	-	-	-	-	-	-	-
ailanthus	39,511	35,681	-	932	983	1,915	-	-	-	-	-	-	-
	52.47	57.61	-	100	100	70.74	-	-	-	-	-	-	-
European Alder	205,910	201,859	-	1,013	2,026	1,013	-	-	-	-	-	-	-
	98.03	100	-	100	70.55	100	-	-	-	-	-	-	-
serviceberry spp.	74,309	73,322	-	986	-	-	-	-	-	-	-	-	-
	46.51	47.12	-	100	-	-	-	-	-	-	-	-	-
roundleaf serviceberry	1,013	-	-	1,013	-	-	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-	-	-
pawpaw	1,043,540	1,030,932	12,609	-	-	-	-	-	-	-	-	-	-
	16.64	16.71	100	-	-	-	-	-	-	-	-	-	-
river birch	139,259	75,183	37,834	11,113	6,075	7,028	2,026	-	-	-	-	-	-
	40.49	52.7	57.67	66.27	52.62	42.59	100	-	-	-	-	-	-
paper birch	974	-	-	974	-	-	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-	-	-
American hornbeam	1,041,344	911,955	108,908	19,523	958	-	-	-	-	-	-	-	-
	12.35	13.4	33.31	24.51	100	-	-	-	-	-	-	-	-
bitternut hickory	144,199	36,533	11,894	8,603	12,756	14,712	11,694	19,681	10,678	11,791	1,937	3,920	-
	18.73	57.76	100	33.33	27.65	25.77	28.83	25.34	30.09	28.81	70.72	50.01	-
pignut hickory	1,226,692	317,510	205,844	113,505	114,179	116,322	99,560	78,163	68,481	58,538	24,313	17,618	12,659
	7.69	20.26	25.73	9.92	9.7	10.07	10.23	11.74	12.34	13.45	19.94	23.52	27.69

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	21,529	-	12,609	1,012	2,953	2,956	-	-	1,998	-	-	-	-
	65.2	-	100	100	57.75	57.75	-	-	70.72	-	-	-	-
shagbark hickory	593,621	182,846	84,697	64,197	57,253	38,054	49,540	49,818	33,062	16,592	9,716	5,919	1,929
	11.28	29.09	37.79	13.41	14.17	15.92	14.51	14.18	18.03	24.19	31.56	40.83	70.71
mockernut hickory	29,513	12,616	-	3,008	1,941	983	4,020	3,968	1,966	-	1,012	-	-
	49.03	100	-	57.74	70.72	100	61.32	49.98	70.65	-	100	-	-
red hickory	3,973	-	-	-	1,012	-	1,012	-	-	974	-	-	974
	61.58	-	-	-	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	329,142	219,688	70,500	9,658	10,761	1,941	6,807	2,898	-	1,915	1,013	2,978	983
	21.77	27.18	47.02	34.59	37.53	70.72	42.93	75.07	-	70.74	100	57.71	100
eastern redbud	573,742	318,392	220,229	25,391	6,806	2,924	-	-	-	-	-	-	-
	17.23	25.54	23.44	24.7	37.76	57.74	-	-	-	-	-	-	-
flowering dogwood	1,722,720	1,277,669	390,776	53,292	983	-	-	-	-	-	-	-	-
	10.34	11.6	19.19	19.46	100	-	-	-	-	-	-	-	-
hawthorn spp.	12,201	12,201	-	-	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-	-	-
persimmon spp.	1,910	-	-	-	-	1,910	-	-	-	-	-	-	-
	100	-	-	-	-	100	-	-	-	-	-	-	-
common persimmon	222,665	85,947	98,090	18,880	11,913	3,903	1,966	1,966	-	-	-	-	-
	37.9	51.4	49.98	22.81	35.14	61.35	70.65	70.65	-	-	-	-	-
American beech	11,193,336	8,801,472	1,558,970	338,839	157,602	106,043	72,923	32,087	27,288	22,254	24,298	24,370	27,190
	3.8	4.36	8.88	6.01	8.29	10.52	12.17	17.34	19.51	21.65	20.73	22.21	19.52

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 ash	1,196,773	748,165	134,887	68,904	42,156	41,395	41,204	35,191	25,405	27,355	10,733	6,860	14,519
	10.52	15.34	30.12	13.29	15.16	16.74	16.05	18.31	19.54	20.13	30.11	37.79	25.75
green ash	339,493	246,003	36,648	24,320	6,810	6,878	6,018	2,925	3,037	3,937	1,959	958	-
	27.29	30.75	57.75	27.83	37.75	37.76	40.69	57.76	74.44	49.98	100	100	-
blue ash	9,829	-	-	2,949	2,949	983	-	983	-	983	-	-	983
	37.22	-	-	74.49	57.64	100	-	100	-	100	-	-	100
honeylocust	106,856	81,282	12,243	932	4,706	1,907	-	2,847	-	979	1,959	-	-
	77.08	100	100	100	71.96	70.73	-	74.02	-	100	100	-	-
butternut	1,992	-	-	979	-	-	-	1,013	-	-	-	-	-
	70.72	-	-	100	-	-	-	100	-	-	-	-	-
black walnut	281,541	61,197	24,137	32,097	29,210	30,365	28,253	35,618	12,630	15,584	2,852	4,796	4,802
	15.9	44.71	70.72	19.23	26.05	24.89	18.92	17.48	27.57	24.86	57.75	44.73	44.71
sweetgum	433,914	250,152	50,436	26,895	24,977	20,175	17,080	20,141	14,038	5,998	2,024	1,012	986
	21.69	30.8	49.75	24.3	24.16	28.85	26.79	28.11	28.45	40.61	100	100	100
yellow-poplar	3,182,032	1,553,242	378,740	247,780	161,401	143,491	120,477	128,101	95,810	90,967	75,366	68,493	118,163
	9.95	16.9	21.57	11.02	10.02	9.84	10.44	10.32	11.01	11.42	11.98	12.97	10.28
Osage-orange	12,609	12,609	-	-	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-	-	-
apple spp.	2,959	-	-	2,959	-	-	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-	-	-
sweet crab apple	12,616	12,616	-	-	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-	-	-
mulberry spp.	2,026	-	-	-	1,013	1,013	-	-	-	-	-	-	-
	70.55	-	-	-	100	100	-	-	-	-	-	-	-
white mulberry	14,408	11,612	-	932	-	932	932	-	-	-	-	-	-
	93.58	100	-	100	-	100	100	-	-	-	-	-	-

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+
red mulberry	2,026	-	-	2,026	-	-	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-	-	-
blackgum	1,697,853	938,747	377,406	193,644	80,585	45,921	23,511	13,643	13,645	5,844	1,948	973	1,987
	9.01	13.55	18.46	8.39	12.29	14.5	20.36	26.67	26.66	40.81	70.71	100	70.72
eastern hophornbeam	1,803,525	1,562,399	218,805	16,481	4,861	-	-	-	979	-	-	-	-
	9.9	10.67	23.52	24.19	44.73	-	-	-	100	-	-	-	-
paulownia	1,941	-	-	955	986	-	-	-	-	-	-	-	-
	70.72	-	-	100	100	-	-	-	-	-	-	-	-
American sycamore	264,661	85,892	12,243	25,867	17,937	17,751	17,877	16,912	18,810	16,841	9,811	10,956	13,764
	17.41	42.78	100	28.29	26.04	27.12	31.45	25.55	26.13	24.14	31.6	30.1	28.51
balsam poplar	974	-	-	-	-	-	974	-	-	-	-	-	-
	100	-	-	-	-	-	100	-	-	-	-	-	-
eastern cottonwood	33,306	-	-	-	1,013	1,968	3,038	4,051	4,051	4,051	7,032	2,026	6,077
	22.87	-	-	-	100	70.74	57.46	49.65	49.65	49.65	47.26	70.55	40.35
bigtooth aspen	82,870	12,616	11,933	7,735	5,766	8,803	10,728	5,798	9,759	3,890	2,932	1,953	958
	30.51	100	100	58.39	57.62	40.14	30.09	47	40.19	49.98	74.6	70.71	100
quaking aspen	1,934	-	-	-	979	-	-	-	-	-	955	-	-
	70.72	-	-	-	100	-	-	-	-	-	100	-	-
pin cherry	986	-	-	986	-	-	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-	-	-
black cherry	689,431	341,088	120,555	61,328	52,067	34,370	34,598	14,861	10,869	7,867	4,933	983	5,912
	12.09	20.75	31.62	16.63	14.81	18.22	18.23	27.51	30.11	35.32	44.69	100	40.82
white oak	1,855,682	257,702	48,626	98,171	142,025	142,026	171,333	172,365	212,204	188,525	164,311	109,675	148,718
	4.99	26.4	61.46	10.82	9.16	8.97	8.49	8.03	7.42	7.68	7.94	9.71	8.57
swamp white oak	2,925	-	-	-	-	-	-	-	1,012	-	1,913	-	-
	57.76	-	-	-	-	-	-	-	100	-	70.71	-	-

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+
scarlet oak	113,812	24,179	-	1,937	7,744	2,924	14,634	10,741	8,822	19,437	8,836	5,819	8,739
	18.08	70.72	-	70.72	35.28	57.74	27.56	30.1	33.32	23.32	33.23	40.82	33.28
northern pin oak	7,026	-	-	-	1,013	-	1,013	3,008	979	-	1,013	-	-
	37.65	-	-	-	100	-	100	57.74	100	-	100	-	-
shingle oak	33,425	12,286	-	8,063	3,038	3,038	3,038	2,979	-	-	983	-	-
	39.85	100	-	35.04	57.46	57.64	57.46	57.71	-	-	100	-	-
chinkapin oak	240,645	72,425	73,228	16,602	19,525	11,714	10,812	10,805	11,781	9,830	974	1,966	983
	22.45	40.83	47.11	28.11	24.26	31.03	32.55	32.63	31.02	34.55	100	70.65	100
pin oak	29,628	-	-	3,931	2,864	3,012	5,933	1,971	6,004	2,942	983	1,013	974
	28.63	-	-	50.01	100	57.65	40.79	70.74	40.78	74.5	100	100	100
willow oak	12,286	12,286	-	-	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-	-	-
chestnut oak	1,713,629	182,898	133,650	83,610	100,572	133,153	181,712	214,213	208,643	176,769	146,843	83,479	68,088
	6.61	39.49	35.12	12.76	11.56	10.76	8.88	8.08	8.08	8.78	8.56	11.16	13.1
northern red oak	672,874	196,246	72,797	30,206	36,181	40,939	40,024	33,935	41,127	50,813	41,758	31,295	57,553
	10.22	26.47	40.78	20.09	19.62	16.78	18.34	20.14	15.36	14.05	16.14	18.15	13.11
post oak	38,332	-	-	983	8,846	7,863	4,914	8,846	4,914	983	-	983	-
	27.93	-	-	100	39.88	39.35	52.8	39.88	52.8	100	-	100	-
black oak	872,457	159,253	60,681	41,202	35,286	39,043	54,661	53,544	79,885	92,825	74,019	70,097	111,962
	7.32	27.67	44.7	17.78	18.33	17.24	14.2	13.86	12.15	10.74	11.93	11.82	10.14
black locust	380,656	136,976	162,198	31,101	17,992	10,927	9,770	6,946	958	1,916	-	973	900
	24.76	35.08	36.78	29.27	30.19	32.59	34.47	43.01	100	70.65	-	100	100
willow spp.	13,591	12,616	-	974	-	-	-	-	-	-	-	-	-
	93.11	100	-	100	-	-	-	-	-	-	-	-	-
black willow	2,025	-	-	2,025	-	-	-	-	-	-	-	-	-
	70.71	-	-	70.71	-	-	-	-	-	-	-	-	-

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+
sassafras	2,302,710	1,409,746	376,645	191,931	119,504	94,848	61,373	25,338	14,578	6,813	979	-	955
	9.03	13.05	19.59	11.12	11.85	11.92	14.89	22.2	31.73	37.6	100	-	100
American basswood	109,247	35,706	24,094	9,642	4,822	3,928	8,652	4,851	8,776	979	3,865	974	2,955
	32.14	57.75	70.72	37.4	44.73	61.18	33.1	44.68	40.11	100	50	100	57.7
winged elm	53,342	49,381	-	983	2,978	-	-	-	-	-	-	-	-
	46.41	49.98	-	100	57.71	-	-	-	-	-	-	-	-
American elm	1,070,903	639,344	244,039	92,259	58,919	16,791	7,772	6,801	2,983	983	1,012	-	-
	11.67	16.04	23.38	12.02	13.58	24.14	35.33	37.81	57.75	100	100	-	-
slippery elm	614,010	355,199	134,341	59,555	32,419	9,823	9,827	4,961	3,935	1,996	-	974	979
	14.8	20.38	32.72	16.54	18.37	31.61	31.59	44.7	49.93	70.72	-	100	100
Russian-olive	113,546	100,929	12,616	-	-	-	-	-	-	-	-	-	-
	52.97	52.72	100	-	-	-	-	-	-	-	-	-	-
Other or unknown tree	14,258	12,286	-	986	-	986	-	-	-	-	-	-	-
	93.33	100	-	100	-	100	-	-	-	-	-	-	-

End of Table 10 - Return

**Table 11. — Number of live trees on forest land by species group and diameter class, Indiana State Forests 2012 - 2016**

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	58,144,579	32,364,344	9,571,334	4,069,910	2,766,301	2,030,999	1,767,569	1,430,239	1,232,367	1,002,351	737,283	517,047	654,835
	1.64	2.57	3.72	1.88	2.17	2.51	2.52	2.81	2.96	3.28	3.73	4.41	3.98
Loblolly and shortleaf pine	54,505	-	-	1,987	8,955	14,901	9,904	5,917	5,880	3,982	1,012	955	1,012
	30.49	-	-	70.72	48.54	41.57	44.43	52.58	40.81	61.59	100	100	100
Other yellow pines	719,596	270,864	25,218	38,444	59,126	91,668	91,483	66,932	41,420	18,759	13,710	986	986
	22.19	54.79	70.59	23.8	17.74	14.77	14.28	15.31	16.69	30.16	26.63	100	100
Eastern white and red pine	543,648	60,742	47,642	36,556	59,768	69,259	62,284	56,927	49,935	33,582	37,615	23,544	5,794
	12.85	52.25	49.98	22.08	22.11	19.07	15.72	16.9	17.23	20.28	21.27	24.94	40.75
Cypress	2,026	-	-	-	1,013	-	-	-	1,013	-	-	-	-
	70.55	-	-	-	100	-	-	-	100	-	-	-	-
Other eastern softwoods	674,154	194,622	122,519	115,605	102,075	63,834	44,079	19,654	7,860	2,924	983	-	-
	12.85	30.52	31.47	13.23	14	16.91	18.18	23.14	39.4	57.71	100	-	-
Select white oaks	2,099,251	330,128	121,854	114,772	161,550	153,740	182,145	183,170	224,997	198,355	167,198	111,641	149,701
	5.15	23.1	37.46	10.08	8.55	8.6	8.19	7.82	7.18	7.48	7.86	9.61	8.53
Select red oaks	672,874	196,246	72,797	30,206	36,181	40,939	40,024	33,935	41,127	50,813	41,758	31,295	57,553
	10.22	26.47	40.78	20.09	19.62	16.78	18.34	20.14	15.36	14.05	16.14	18.15	13.11
Other white oaks	1,751,961	182,898	133,650	84,593	109,417	141,016	186,626	223,059	213,558	177,751	146,843	84,462	68,088
	6.49	39.49	35.12	12.66	11.1	10.39	8.75	7.91	7.99	8.75	8.56	11.09	13.1
Other red oaks	1,068,634	208,004	60,681	55,134	49,945	48,016	79,279	72,242	95,691	115,203	85,833	76,929	121,676
	6.63	24.17	44.7	15.08	15.69	15.32	12.08	11.95	10.92	9.72	11.11	11.26	9.77
Hickory	2,019,528	549,506	315,043	190,325	190,094	173,027	165,826	151,630	116,186	87,895	36,979	27,456	15,563
	5.97	15.79	20.37	7.82	7.73	8.16	8.15	8.58	9.46	10.86	16.14	18.81	24.92
Hard maple	11,952,434	6,218,489	2,681,242	1,227,834	744,277	408,704	271,903	174,235	101,273	61,244	32,050	18,571	12,612
	3.39	5.13	7.08	3.33	3.99	5.22	6.15	8.09	10.32	12.87	18.33	24.1	27.67

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+
Soft maple	4,907,645	2,340,421	1,112,691	554,331	349,202	193,070	140,379	71,684	64,865	30,690	18,648	11,928	19,736
	5.31	8.57	11.06	5.24	6.02	8.49	9.21	12.04	12.57	19.59	24.01	28.8	22.29
Beech	11,193,336	8,801,472	1,558,970	338,839	157,602	106,043	72,923	32,087	27,288	22,254	24,298	24,370	27,190
	3.8	4.36	8.88	6.01	8.29	10.52	12.17	17.34	19.51	21.65	20.73	22.21	19.52
Sweetgum	433,914	250,152	50,436	26,895	24,977	20,175	17,080	20,141	14,038	5,998	2,024	1,012	986
	21.69	30.8	49.75	24.3	24.16	28.85	26.79	28.11	28.45	40.61	100	100	100
Tupelo and blackgum	1,697,853	938,747	377,406	193,644	80,585	45,921	23,511	13,643	13,645	5,844	1,948	973	1,987
	9.01	13.55	18.46	8.39	12.29	14.5	20.36	26.67	26.66	40.81	70.71	100	70.72
Ash	1,546,095	994,168	171,535	96,172	51,915	49,256	47,222	39,099	28,442	32,275	12,692	7,818	15,502
	10.07	13.79	26.68	12.01	13.63	15.13	14.92	17.21	19.16	18.35	29.76	35.35	24.93
Cottonwood and aspen	119,085	12,616	11,933	7,735	7,758	10,770	14,741	9,849	13,811	7,941	10,918	3,978	7,035
	22.13	100	100	58.39	46.51	35.24	25.73	34.39	31.85	35.23	37.47	49.95	37.42
Basswood	109,247	35,706	24,094	9,642	4,822	3,928	8,652	4,851	8,776	979	3,865	974	2,955
	32.14	57.75	70.72	37.4	44.73	61.18	33.1	44.68	40.11	100	50	100	57.7
Yellow-poplar	3,182,032	1,553,242	378,740	247,780	161,401	143,491	120,477	128,101	95,810	90,967	75,366	68,493	118,163
	9.95	16.9	21.57	11.02	10.02	9.84	10.44	10.32	11.01	11.42	11.98	12.97	10.28
Black walnut	281,541	61,197	24,137	32,097	29,210	30,365	28,253	35,618	12,630	15,584	2,852	4,796	4,802
	15.9	44.71	70.72	19.23	26.05	24.89	18.92	17.48	27.57	24.86	57.75	44.73	44.71
Other eastern soft hardwoods	5,692,242	3,273,841	1,044,272	486,885	323,176	195,447	147,097	75,705	52,188	36,414	18,731	15,891	22,593
	5.4	7.91	11.38	6.36	6.87	8.23	9.37	12.25	15.23	16.32	22.89	24.94	21.68
Other eastern hard hardwoods	2,451,356	1,593,487	663,307	107,163	36,607	18,682	12,668	11,759	958	2,895	1,959	973	900
	9.49	11.34	16.3	13.89	21.15	25.1	29.68	33.25	100	57.71	100	100	100
Eastern noncommercial hardwoods	4,971,620	4,297,797	573,167	73,270	16,646	8,748	1,013	-	979	-	-	-	-
	7.34	8.17	14.49	13.55	24.2	36.72	100	-	100	-	-	-	-

End of Table 11 - Return



**Table 12. — Number of standing dead trees (at least 5 inch dbh) on forest land by species and diameter class, Indiana State Forests 2012 - 2016**

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+
<b>All</b>	1,806,174	561,300	389,310	273,762	180,688	136,921	90,339	63,476	50,654	25,467	34,257
	2.95	4.77	5.96	6.24	7.87	8.86	10.76	12.66	14.04	19.55	16.83
<b>eastern redcedar</b>	116,818	65,854	26,534	16,709	2,899	3,850	-	-	-	-	973
	12.89	14.32	22.25	23.92	74.28	49.98	-	-	-	-	100
<b>shortleaf pine</b>	6,042	1,012	-	2,025	979	-	2,025	-	-	-	-
	40.73	100	-	70.71	100	-	70.71	-	-	-	-
<b>red pine</b>	82,036	17,584	31,498	19,495	8,649	3,878	-	932	-	-	-
	24.64	30.17	35.09	30.06	36.71	49.98	-	100	-	-	-
<b>eastern white pine</b>	59,844	14,665	10,650	15,713	3,917	4,024	3,903	1,995	4,978	-	-
	18.87	30.59	37.28	29.26	50	49.94	50	70.72	44.7	-	-
<b>Virginia pine</b>	164,807	26,712	42,417	24,715	31,500	21,684	10,876	4,931	986	-	986
	10.86	23.7	17.13	19.85	20.11	23.87	29.95	44.58	100	-	100
<b>boxelder</b>	1,966	-	-	1,966	-	-	-	-	-	-	-
	70.65	-	-	70.65	-	-	-	-	-	-	-
<b>red maple</b>	52,057	19,545	8,932	13,726	4,945	1,968	955	974	-	-	1,013
	14.14	22.29	33.3	26.69	44.7	70.74	100	100	-	-	100
<b>silver maple</b>	4,957	1,012	-	1,012	1,996	937	-	-	-	-	-
	44.71	100	-	100	70.72	100	-	-	-	-	-
<b>sugar maple</b>	91,444	32,967	27,343	13,713	6,774	5,816	983	2,864	-	983	-
	10.67	17.06	19.45	28.54	37.78	40.77	100	57.61	-	100	-
<b>European Alder</b>	2,026	1,013	-	1,013	-	-	-	-	-	-	-
	70.55	100	-	100	-	-	-	-	-	-	-

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	958	-	958	-	-	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-	-	-
river birch	4,049	2,024	1,012	-	-	1,013	-	-	-	-	-
	61.17	70.59	100	-	-	100	-	-	-	-	-
American hornbeam	974	974	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
pignut hickory	16,606	1,938	3,918	2,896	973	3,925	1,970	986	-	-	-
	24.2	70.72	50.01	57.7	100	49.98	70.74	100	-	-	-
shellbark hickory	958	-	958	-	-	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-	-	-
shagbark hickory	4,860	2,930	955	-	974	-	-	-	-	-	-
	44.68	57.74	100	-	100	-	-	-	-	-	-
American chestnut	955	-	-	-	955	-	-	-	-	-	-
	100	-	-	-	100	-	-	-	-	-	-
hackberry	2,970	1,012	-	-	983	974	-	-	-	-	-
	57.74	100	-	-	100	100	-	-	-	-	-
eastern redbud	5,861	4,906	955	-	-	-	-	-	-	-	-
	40.76	44.63	100	-	-	-	-	-	-	-	-
flowering dogwood	5,902	1,970	3,931	-	-	-	-	-	-	-	-
	40.76	70.74	49.87	-	-	-	-	-	-	-	-
common persimmon	4,973	2,024	1,966	-	983	-	-	-	-	-	-
	52.69	70.59	100	-	100	-	-	-	-	-	-
American beech	30,251	2,942	4,840	4,878	3,957	955	2,910	955	979	1,969	5,865
	19	57.74	44.71	44.71	49.99	100	57.74	100	100	70.71	40.79
white ash	49,774	16,577	8,853	6,785	5,847	2,953	1,985	2,944	2,844	986	-
	16.35	25.49	37.04	37.74	47.23	57.75	70.72	57.74	57.25	100	-

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+
green ash	4,879	983	1,929	-	955	1,012	-	-	-	-	-
	52.6	100	70.71	-	100	100	-	-	-	-	-
blue ash	1,966	983	-	-	-	-	-	983	-	-	-
	70.65	100	-	-	-	-	-	100	-	-	-
honeylocust	974	-	974	-	-	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-	-	-
butternut	958	-	958	-	-	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-	-	-
black walnut	5,855	974	983	974	958	983	-	983	-	-	-
	40.76	100	100	100	100	100	-	100	-	-	-
sweetgum	7,997	3,011	1,949	2,024	1,012	-	-	-	-	-	-
	43.34	57.67	70.76	70.59	100	-	-	-	-	-	-
yellow-poplar	138,895	47,658	31,946	14,560	14,536	6,764	6,865	7,831	2,899	3,893	1,944
	10.27	17.31	18.32	25.79	28.91	37.75	37.77	39.35	57.71	50	70.72
Osage-orange	955	-	-	955	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-
white mulberry	1,864	932	932	-	-	-	-	-	-	-	-
	100	100	100	-	-	-	-	-	-	-	-
blackgum	8,819	7,832	-	986	-	-	-	-	-	-	-
	33.31	35.32	-	100	-	-	-	-	-	-	-
eastern hophornbeam	955	-	-	955	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-
American sycamore	5,945	3,037	1,949	-	958	-	-	-	-	-	-
	47.37	57.67	70.76	-	100	-	-	-	-	-	-
eastern cottonwood	1,992	-	1,992	-	-	-	-	-	-	-	-
	70.72	-	70.72	-	-	-	-	-	-	-	-
bigtooth aspen	11,566	955	1,944	2,864	3,844	-	979	979	-	-	-
	31.08	100	70.72	57.61	49.98	-	100	100	-	-	-

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+
quaking aspen	958	-	958	-	-	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-	-	-
black cherry	28,098	11,682	5,758	3,831	1,992	3,881	-	955	-	-	-
	19.35	28.69	46.49	49.99	70.72	49.95	-	100	-	-	-
white oak	157,801	33,360	26,513	23,421	12,791	19,646	12,775	9,819	9,705	986	8,785
	8.54	17.55	19.17	20.35	27.69	23.38	27.66	31.58	31.56	100	33.3
scarlet oak	6,895	-	1,998	1,944	1,973	-	-	979	-	-	-
	37.75	-	70.72	70.72	70.65	-	-	100	-	-	-
shingle oak	4,965	1,995	1,957	1,013	-	-	-	-	-	-	-
	52.77	70.72	70.71	100	-	-	-	-	-	-	-
bur oak	974	974	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
chinkapin oak	13,752	1,966	4,914	1,957	983	983	983	-	1,966	-	-
	30.09	70.65	44.57	70.71	100	100	100	-	70.65	-	-
pin oak	6,003	974	1,012	-	-	-	4,016	-	-	-	-
	58.03	100	100	-	-	-	79.45	-	-	-	-
chestnut oak	149,917	15,657	22,217	26,405	21,365	22,271	16,629	7,757	8,750	3,907	4,957
	9.97	24.85	24.82	19.02	23.07	23.38	24.17	35.28	36.9	49.98	44.64
northern red oak	52,987	7,872	3,900	8,794	3,957	5,937	5,876	4,896	3,905	2,982	4,868
	14.5	35.32	50	36.86	49.98	40.78	40.76	44.68	49.99	57.74	44.74
post oak	8,846	983	4,914	983	-	1,966	-	-	-	-	-
	42.87	100	52.8	100	-	70.65	-	-	-	-	-
black oak	90,530	7,792	8,753	8,760	12,652	6,777	9,765	9,758	12,659	8,748	4,865
	10.57	35.34	33.32	33.3	27.68	37.77	34.61	31.59	27.69	33.31	44.71
black locust	39,945	23,073	6,961	4,979	3,948	983	-	-	-	-	-
	22.1	26.78	37.73	44.6	50.01	100	-	-	-	-	-
sassafras	280,025	148,403	66,445	34,932	16,565	4,883	6,843	1,953	-	-	-
	7.9	9.97	13.53	17.03	28.22	53.01	37.77	70.71	-	-	-

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 basswood	4,855	986	-	-	1,928	1,941	-	-	-	-	-
	44.73	100	-	-	70.71	70.72	-	-	-	-	-
American elm	30,393	11,819	6,759	3,884	2,957	3,993	-	-	983	-	-
	18.94	28.84	37.66	49.92	57.71	49.96	-	-	100	-	-
slippery elm	16,676	9,735	1,012	1,992	983	1,941	-	-	-	1,012	-
	28.27	31.63	100	70.72	100	70.72	-	-	-	100	-
unknown hardwood	6,834	-	2,947	2,904	-	983	-	-	-	-	-
	51.46	-	57.7	74.74	-	100	-	-	-	-	-

End of Table 12 - Return

**Table 13. — Number of standing dead trees (at least 5 inch dbh) on forest land by decay code and diameter class, Indiana State Forests 2012 - 2016**

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 +	
<b>All</b>		1,806,174	561,300	389,310	273,762	180,688	136,921	90,339	63,476	50,654	25,467	34,257
		2.95	4.77	5.96	6.24	7.87	8.86	10.76	12.66	14.04	19.55	16.83
<b>1: All limbs and branches present</b>		338,172	106,634	86,889	52,869	32,172	23,450	9,848	9,808	8,705	2,979	4,817
		6.45	10.2	12.03	14.49	17.33	20.35	31.56	31.6	33.25	57.74	44.72
<b>2: Few limbs and no fine branches</b>		363,869	109,859	76,360	55,725	41,905	16,597	16,579	17,546	15,500	6,889	6,909
		5.86	10.17	11.92	13.38	15.87	24.22	25.63	24.81	24.93	37.78	37.79
<b>3: Only limb stubs present</b>		530,681	156,829	102,609	76,338	50,880	53,786	30,505	21,475	20,602	9,783	7,874
		4.95	8.6	10.45	11.76	14.55	14.32	17.87	21.26	21.76	31.54	35.25
<b>4: Few or no limb stubs remain</b>		408,838	139,058	84,185	59,478	41,080	31,308	22,577	12,655	3,885	2,871	11,743
		5.59	9.47	11.98	13.28	15.73	18.13	20.79	27.69	49.99	57.7	28.83
<b>5: No evidence of branches remain</b>		164,614	48,920	39,267	29,351	14,652	11,780	10,830	1,992	1,962	2,945	2,914
		10.84	15.08	23.31	20.55	25.79	28.84	37.83	70.72	70.71	57.7	57.71

End of Table 13 - Return

**Table 14. — Number of live trees on forest land by cavity present and diameter class, Indiana State Forests 2012 - 2016**

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 Presenc e	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	58,144,57 9	32,364,34 4	9,571,33 4	4,069,91 0	2,766,30 1	2,030,99 9	1,767,56 9	1,430,23 9	1,232,36 7	1,002,35 1	737,283	517,047	654,835
	1.64	2.57	3.72	1.88	2.17	2.51	2.52	2.81	2.96	3.28	3.73	4.41	3.98
Tree Cavity	541,098	-	-	110,980	87,551	85,818	67,279	49,543	40,802	32,817	21,532	17,585	27,192
	4.81	-	-	9.74	10.73	11.79	12.45	13.89	16.06	17.04	21.23	24.82	18.83
No Tree Cavity	57,603,48 1	32,364,34 4	9,571,33 4	3,958,93 0	2,678,75 0	1,945,18 1	1,700,29 0	1,380,69 6	1,191,56 5	969,534	715,751	499,462	627,643
	1.65	2.57	3.72	1.91	2.2	2.56	2.57	2.86	3	3.33	3.76	4.49	4.06

End of Table 14 - Return

End of Number of Trees Tables

**Table 20. — Net volume of live trees (at least 5 inches dbh), in cubic feet, on forest land by species and diameter class, Indiana State Forests 2012 - 2016**

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+
<b>All</b>	338,845,276	9,587,474	14,324,382	19,279,506	27,299,802	32,906,732	40,137,998	43,824,731	41,836,221	37,606,933	72,041,497
	1.29	1.91	2.19	2.53	2.54	2.83	2.98	3.3	3.77	4.5	4.23
<b>eastern redcedar</b>	2,348,009	237,052	452,537	485,458	504,562	328,706	196,433	99,363	43,897	-	-
	12.85	13.07	13.9	17.17	19.02	22.94	39.87	58.43	100	-	-
<b>Norway spruce</b>	16,983	-	-	-	16,983	-	-	-	-	-	-
	100	-	-	-	100	-	-	-	-	-	-
<b>shortleaf pine</b>	1,205,625	4,240	51,906	157,963	159,988	137,734	212,144	196,464	66,400	86,139	132,646
	29.03	71.73	48.25	41.6	44.68	53.6	40.99	60.53	100	100	100
<b>red pine</b>	2,204,043	17,066	164,053	381,860	426,302	472,780	245,661	82,986	190,668	78,311	144,356
	21.43	52.44	35.44	28.77	25.39	24.91	46.2	71.78	74.73	100	100
<b>eastern white pine</b>	9,060,281	70,700	140,843	265,536	548,068	826,030	1,418,255	1,455,503	2,084,206	1,728,932	522,206
	14.08	24.21	23.73	21.8	19.95	21.84	18.97	21.21	22.27	25.72	44.87
<b>Virginia pine</b>	7,661,110	94,502	329,996	910,271	1,498,933	1,581,147	1,424,822	852,154	805,128	73,952	90,206
	10.13	23.24	17.73	14.65	14.28	15.45	16.86	29.22	26.7	100	100
<b>baldcypress</b>	33,372	-	4,944	-	-	-	28,428	-	-	-	-
	86.4	-	100	-	-	-	100	-	-	-	-
<b>boxelder</b>	432,076	39,593	80,603	88,165	86,910	61,466	24,101	-	51,240	-	-
	27.15	25.35	37.24	35.65	38.3	59.26	100	-	100	-	-
<b>black maple</b>	30,153	-	-	-	-	30,153	-	-	-	-	-
	100	-	-	-	-	100	-	-	-	-	-
<b>red maple</b>	15,317,470	1,327,669	1,771,821	1,776,188	2,091,784	1,534,149	1,934,097	1,152,286	1,043,995	884,589	1,800,892
	6.11	5.4	6.14	8.79	9.51	12.49	13.28	20.44	24.86	28.85	25.21



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	1,159,843	20,177	62,113	100,775	90,428	94,395	175,084	235,212	53,629	-	328,030
	31.13	40.15	45.66	39.9	40.87	50.08	44.93	59.41	100	-	58.12
sugar maple	31,633,550	3,187,497	4,148,178	4,096,296	4,518,486	4,314,845	3,597,612	2,906,176	2,011,765	1,432,226	1,420,467
	3.5	3.4	4.11	5.31	6.2	8.09	10.37	13.06	18.3	24.31	28.52
Ohio buckeye	47,568	18,593	15,408	13,567	-	-	-	-	-	-	-
	51.22	51.7	58.43	71.6	-	-	-	-	-	-	-
ailanthus	22,706	2,293	5,214	15,199	-	-	-	-	-	-	-
	72.1	100	100	71.1	-	-	-	-	-	-	-
European Alder	18,068	2,235	9,135	6,698	-	-	-	-	-	-	-
	58.79	100	70.76	100	-	-	-	-	-	-	-
serviceberry spp.	2,421	2,421	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
roundleaf serviceberry	1,840	1,840	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
river birch	140,520	25,196	26,788	61,056	27,480	-	-	-	-	-	-
	39.47	70.91	51.91	41.37	100	-	-	-	-	-	-
paper birch	2,190	2,190	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
American hornbeam	39,002	33,712	5,289	-	-	-	-	-	-	-	-
	26.95	24.72	100	-	-	-	-	-	-	-	-
bitternut hickory	2,286,147	21,349	71,732	153,107	202,395	506,304	379,360	547,319	113,477	291,103	-
	14.85	34.4	28.28	26.05	28.99	25.62	30.17	29.27	70.72	50.27	-
pignut hickory	15,079,092	256,596	609,160	1,150,875	1,627,544	1,931,570	2,470,735	2,821,155	1,508,450	1,422,612	1,280,395
	6.07	10.26	9.85	10.12	10.33	11.84	12.43	13.5	20	23.6	27.79
shellbark hickory	118,504	2,649	15,779	28,194	-	-	71,881	-	-	-	-
	50.38	100	59.16	58.63	-	-	70.72	-	-	-	-
shagbark hickory	6,053,339	151,981	295,275	371,926	814,251	1,207,359	1,149,882	805,584	581,088	475,495	200,499
	8.53	14	14.31	16.09	14.64	14.36	17.98	24.27	31.62	40.91	70.79

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+
mockernut hickory	321,244	8,238	11,434	6,785	68,346	82,916	73,271	-	70,255	-	-
	34.41	59.27	72.27	100	61.48	50.42	70.78	-	100	-	-
red hickory	145,262	-	6,283	-	17,030	-	-	40,115	-	-	81,835
	64.64	-	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	648,042	19,428	46,707	15,237	95,802	64,507	-	73,445	58,143	186,847	87,927
	27.13	36.36	37.98	71.23	42.09	73.04	-	71.13	100	58.38	100
eastern redbud	77,740	36,896	22,255	18,589	-	-	-	-	-	-	-
	27.02	27.65	38.58	57.83	-	-	-	-	-	-	-
flowering dogwood	101,818	97,673	4,145	-	-	-	-	-	-	-	-
	22.69	20.79	100	-	-	-	-	-	-	-	-
persimmon spp.	15,179	-	-	15,179	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-
common persimmon	196,743	38,678	55,187	32,730	28,868	41,281	-	-	-	-	-
	24.57	23.63	40.09	61.23	70.68	70.71	-	-	-	-	-
American beech	12,648,551	773,311	809,032	969,548	1,128,323	749,439	892,656	985,773	1,426,417	1,856,931	3,057,120
	7.51	6.2	8.42	10.58	12.42	17.51	19.71	21.86	21.17	22.39	20.17
white ash	7,105,850	150,053	205,636	372,358	613,284	864,024	867,624	1,245,592	622,327	491,152	1,673,798
	9.87	13.43	15.58	17.58	16.54	18.53	19.63	19.99	30.2	37.84	26.65
green ash	757,318	52,806	28,413	64,543	97,011	70,189	95,967	172,245	113,083	63,061	-
	26.29	29.5	39.25	38.13	40.88	58.14	75.72	50.03	100	100	-
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
honeylocust	256,953	2,703	18,319	18,813	-	56,375	-	38,442	122,302	-	-
	67.25	100	72.27	70.72	-	72.93	-	100	100	-	-

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+
butternut	19,682	1,569	-	-	-	18,113	-	-	-	-	-
	92.37	100	-	-	-	100	-	-	-	-	-
black walnut	3,557,292	73,329	139,597	259,792	399,817	761,366	362,666	620,356	158,417	311,973	469,978
	12.33	20.21	25.7	24.44	18.99	17.35	27.72	24.89	57.91	44.88	45.03
sweetgum	2,110,393	58,008	122,786	179,107	288,454	433,818	472,002	266,359	112,578	62,573	114,709
	17.68	25.38	23.88	30.04	26.45	28	29.01	40.67	100	100	100
yellow-poplar	46,386,190	657,446	932,213	1,577,133	2,216,373	3,527,216	3,837,412	4,955,636	5,435,697	6,249,347	16,997,718
	5.52	11.23	10.04	9.91	10.45	10.29	11.15	11.48	12.01	13.16	10.72
apple spp.	6,483	6,483	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
mulberry spp.	12,180	-	4,546	7,634	-	-	-	-	-	-	-
	72.8	-	100	100	-	-	-	-	-	-	-
white mulberry	18,109	1,192	-	5,621	11,296	-	-	-	-	-	-
	93.47	100	-	100	100	-	-	-	-	-	-
red mulberry	3,755	3,755	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
blackgum	2,856,629	380,733	370,111	390,207	350,656	288,672	430,367	259,677	106,261	75,436	204,509
	10.97	8.63	12.4	14.74	20.62	26.79	26.82	40.87	70.95	100	71.38
eastern hophornbeam	69,041	25,149	18,421	-	-	-	25,471	-	-	-	-
	39.91	25	45.96	-	-	-	100	-	-	-	-
paulownia	8,774	3,172	5,602	-	-	-	-	-	-	-	-
	73.37	100	100	-	-	-	-	-	-	-	-
American sycamore	6,737,497	75,588	117,001	199,652	341,031	486,132	736,871	856,506	671,398	958,705	2,294,612
	14.79	28.56	26.21	27.35	31.7	25.68	26.13	24.41	31.81	30.2	30.12
balsam poplar	14,469	-	-	-	14,469	-	-	-	-	-	-
	100	-	-	-	100	-	-	-	-	-	-
eastern cottonwood	2,147,045	-	5,501	16,326	48,228	97,132	138,623	187,629	469,032	159,337	1,025,237
	28.26	-	100	70.72	58	49.78	49.72	49.85	47.4	70.56	43.74

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+
bigtooth aspen	1,304,625	19,930	32,325	93,574	168,510	136,405	322,068	162,228	150,636	139,355	79,593
	25.65	61.83	58.86	40.93	30.38	47.14	40.69	50.04	74.12	70.8	100
quaking aspen	51,940	-	5,686	-	-	-	-	-	46,254	-	-
	89.72	-	100	-	-	-	-	-	100	-	-
pin cherry	1,854	1,854	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
black cherry	3,038,120	116,428	230,741	298,068	476,968	325,136	354,678	342,961	279,291	71,386	542,463
	12.23	16.98	15.34	18.35	18.52	26.95	30.51	35.42	45.53	100	41.91
white oak	52,385,494	224,960	722,145	1,308,434	2,486,046	3,682,506	6,386,406	7,709,559	8,635,877	7,307,554	13,922,007
	3.87	11.17	9.32	9.06	8.52	8.09	7.43	7.71	7.99	9.76	8.77
swamp white oak	137,386	-	-	-	-	-	34,931	-	102,455	-	-
	58.6	-	-	-	-	-	100	-	70.8	-	-
scarlet oak	3,256,084	4,527	36,974	28,656	214,464	224,436	266,000	801,223	487,112	401,712	790,979
	14.07	74.4	35.81	57.9	28.07	30.46	33.36	23.25	33.32	40.91	33.45
northern pin oak	180,411	-	4,554	-	14,144	65,784	33,250	-	62,678	-	-
	45.49	-	100	-	100	59.15	100	-	100	-	-
shingle oak	214,551	18,647	14,141	23,223	43,999	62,470	-	-	52,072	-	-
	33.71	35.95	58.52	59.07	58.27	57.92	-	-	100	-	-
chinkapin oak	1,616,645	36,434	97,378	106,841	160,861	210,407	344,239	382,172	53,264	131,573	93,475
	16.7	27.27	24.72	31.46	32.56	32.35	31.4	34.48	100	70.65	100
pin oak	747,365	9,261	10,817	31,539	96,201	46,951	197,091	118,665	62,228	74,062	100,550
	34.66	50.41	100	58.69	41.52	70.83	40.98	74.83	100	100	100
chestnut oak	39,464,400	189,534	467,371	1,172,146	2,491,912	4,332,472	5,962,003	6,692,309	7,194,858	5,148,261	5,813,535
	4.44	12.88	11.71	10.96	8.89	8.07	8.05	8.79	8.6	11.19	13.2
northern red oak	16,474,582	83,100	202,146	408,620	626,794	819,857	1,340,116	2,228,019	2,388,802	2,259,513	6,117,615
	6.9	20.83	20.62	16.91	18.64	19.72	15.41	14.08	16.15	18.27	13.42
post oak	572,674	1,904	38,917	60,174	59,643	178,206	131,141	39,039	-	63,649	-
	28.35	100	39.8	42.52	54.27	39.82	54.76	100	-	100	-

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 oak	30,249,341	97,810	191,388	374,074	806,649	1,215,588	2,529,061	3,951,019	4,081,872	4,916,875	12,085,005
	5.64	18.51	18.35	17.16	14.3	13.87	12.25	10.72	11.97	11.85	10.3
black locust	703,990	58,366	73,212	96,569	127,907	140,421	31,896	66,355	-	71,068	38,195
	23.48	29.07	30.6	32.84	35.75	44.25	100	74.24	-	100	100
willow spp.	1,747	1,747	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
black willow	3,659	3,659	-	-	-	-	-	-	-	-	-
	71.38	71.38	-	-	-	-	-	-	-	-	-
sassafras	3,855,721	386,079	548,467	781,227	818,798	521,609	423,538	270,816	45,138	-	60,049
	9.74	11.34	12.1	12.15	15.03	21.79	33.48	38.57	100	-	100
American basswood	1,275,866	22,072	25,224	43,819	140,798	115,159	310,877	46,760	221,235	70,285	279,638
	21.34	39.98	46.08	61.38	33.49	44.84	40.25	100	50.25	100	58.35
winged elm	15,320	1,952	13,367	-	-	-	-	-	-	-	-
	53.61	100	59.7	-	-	-	-	-	-	-	-
American elm	989,723	186,351	250,666	140,637	102,628	134,245	87,465	35,135	52,596	-	-
	12.48	12.53	13.78	24.54	35.78	38.08	58.45	100	100	-	-
slippery elm	949,153	123,934	154,596	81,319	121,473	106,346	121,813	73,705	-	62,918	103,048
	17.81	16.83	18.99	32.01	31.75	45.07	50.52	70.72	-	100	100
Other or unknown tree	8,527	1,881	-	6,646	-	-	-	-	-	-	-
	80.97	100	-	100	-	-	-	-	-	-	-

End of Table 20 - Return

**Table 21. — Net volume of live trees (at least 5 inches dbh), in cubic feet, on forest land by state forest and major species group, Indiana State Forests 2012 - 2016**

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	338,845,276	22,529,423	316,315,853
	1.29	7.25	1.35
Clark State Forest	53,228,515	3,797,780	49,430,735
	2.89	15.79	2.98
Covered Bridge State Forest	459,410	-	459,410
	37.79	-	37.79
Ferdinand State Forest	31,742,620	3,721,518	28,021,102
	4.84	20.77	5.17
Greene-Sullivan State Forest	12,890,315	2,264,559	10,625,756
	8.82	21.59	10.04
Harrison-Crawford State Forest	51,964,385	4,051,871	47,912,515
	2.89	13.03	3.2
Jackson-Washington State Forest	39,938,837	826,528	39,112,309
	3.5	31.28	3.6
Martin State Forest	16,680,268	1,137,221	15,543,047
	6.79	40.25	7.08
Morgan-Monroe State Forest	54,202,185	1,248,778	52,953,407
	3.38	32.39	3.44
Owen-Putnam State Forest	15,898,391	1,442,320	14,456,071
	6.23	32.37	6.56
Salamonie State Forest	3,467,398	1,093,702	2,373,696
	13.92	37.45	16.93
Selmier State Forest	914,421	-	914,421
	27.05	-	27.05
Yellowwood State Forest	57,458,530	2,945,146	54,513,384
	3.04	20.66	3.15

End of Table 21 - Return

**Table 22. — Net volume of live trees (at least 5 inches dbh), in cubic feet, on forest land by state forest and species group, Indiana State Forests 2012 - 2016**

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 softwood	Select white oaks	Select red oaks	Other white oaks	Other red oaks	Hickory	Hard maple	Soft maple
All	338,845,276	1,205,625	7,661,110	11,264,324	33,372	2,364,992	54,139,525	16,474,582	40,037,074	34,647,751	24,003,589	31,663,702	16,477,313
	1.29	29.03	10.13	12.08	86.4	12.78	3.76	6.9	4.39	5.23	4.7	3.51	6.1
Clark State Forest	53,228,515	100,516	3,135,404	541,202	-	20,658	11,004,484	1,847,776	16,021,658	2,771,918	2,460,154	3,713,560	2,876,521
	2.89	100	15.42	62.05	-	64.43	7.95	19.92	6.41	17.64	13.86	11.22	11.48
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	31,742,620	466,597	601,027	2,653,894	-	-	4,713,083	843,691	561,312	2,840,999	3,182,675	2,019,172	2,700,794
	4.84	49.19	34.18	27.13	-	-	12.94	27.93	49.38	18.98	13.39	14.19	17.74
Greene-Sullivan State Forest	12,890,315	33,828	870,197	1,324,684	33,372	2,478	204,893	292,951	149,227	737,806	185,922	-	1,968,118
	8.82	73.19	30.19	31.97	86.4	100	46.48	45.86	100	32.34	68.67	-	23.71
Harrison-Crawford State Forest	51,964,385	230,700	1,210,618	503,818	-	2,106,734	12,323,859	3,704,935	1,269,127	5,092,108	3,643,238	6,981,310	1,165,568
	2.89	59.2	30.13	38.34	-	14	7.83	14.78	24.81	12.89	10.44	6.86	20.27
Jackson-Washington State Forest	39,938,837	86,139	418,377	208,834	-	113,177	4,219,192	1,268,119	11,290,899	3,303,530	3,916,247	4,818,533	1,600,004
	3.5	100	41.73	61.28	-	34.53	13.59	25.26	8.32	17.59	11.98	9.45	15.79
Martin State Forest	16,680,268	218,690	73,842	839,129	-	5,560	2,766,792	529,507	-	1,451,375	2,048,866	1,453,574	490,516
	6.79	80.02	61.26	50.05	-	74.13	17.34	36.37	-	25.01	18.35	13.18	26.19

State Forest	Species group	Loblolly and shortleaf pine	Other yellow pines	Eastern white and red pine	Cypress	Other eastern softwood	Select white oaks	Select red oaks	Other white oaks	Other red oaks	Hickory	Hard maple	Soft maple
Morgan-Monroe State Forest	54,202,185	-	107,938	1,080,170	-	60,670	8,309,001	2,748,016	4,084,718	8,676,565	3,755,687	5,304,741	2,079,224
	3.38	-	52.2	36.87	-	55.63	10.24	15.25	14.77	10.83	12.45	8.65	14.5
Owen-Putnam State Forest	15,898,391	-	255,346	1,176,407	-	10,567	1,541,681	1,963,102	-	417,352	1,200,251	1,657,807	682,540
	6.23	-	51	37.52	-	100	25.64	22.84	-	55.8	21.7	15.47	26.53
Salamonie State Forest	3,467,398	-	-	1,089,153	-	4,549	39,495	317,644	-	-	226,763	489,957	-
	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
Yellowwood State Forest	57,458,530	69,155	988,361	1,847,033	-	40,598	8,982,427	2,934,627	6,660,133	8,990,679	3,224,229	5,079,104	2,881,502
	3.04	71.32	27.17	29.06	-	91.65	8.86	15.85	11.56	9.89	11.7	8.72	15.37

(Table 22 continued)

State Forest	Beech	Sweetgum	Tupelo and blackgum	Ash	Cottonwood and aspen	Basswood	Yellow-poplar	Black walnut	Other eastern soft hardwoods	Other eastern hard hardwoods	Eastern non-commercial hardwoods
All	12,648,551	2,110,393	2,856,629	8,055,594	3,518,079	1,275,866	46,386,190	3,557,292	16,888,045	1,293,549	282,129
	7.51	17.68	10.97	9.14	19.7	21.34	5.52	12.33	7.04	19.07	17.02
Clark State Forest	2,138,693	352,925	609,673	335,550	55,771	205,772	3,767,992	117,865	1,104,589	10,333	35,501
	19.13	39.53	18.03	44.02	58.17	67.88	17.59	42.04	29.99	41.72	36.34
Covered Bridge State Forest	-	-	-	-	-	-	-	13,356	11,438	38,195	-
	-	-	-	-	-	-	-	100	49.68	100	-
Ferdinand State Forest	462,605	958,576	324,558	962,340	-	-	6,249,045	260,045	1,875,628	60,739	5,839
	31.84	30.13	38.12	22.1	-	-	16.34	40.12	20.07	45.22	62.06



State Forest	Beech	Sweetgum	Tupelo and blackgum	Ash	Cottonwood and aspen	Basswood	Yellow-poplar	Black walnut	Other eastern soft hardwoods	Other eastern hard hardwoods	Eastern non-commercial hardwoods
<b>Greene-Sullivan State Forest</b>	-	645,520	2,680	129,449	2,186,490	-	660,775	459,064	2,708,844	256,588	37,429
	-	27.29	100	37.09	27.76	-	38.21	34.67	17.82	25.84	53.42
<b>Harrison-Crawford State Forest</b>	893,786	1,557	403,606	2,405,488	-	212,960	6,279,272	478,343	2,690,812	307,243	59,304
	27.64	100	29.19	16.08	-	55.45	13.6	28.92	14.57	22.29	35.6
<b>Jackson-Washington State Forest</b>	1,747,659	100,186	260,838	1,316,540	155,020	82,740	3,737,630	140,821	1,081,027	31,201	42,123
	19.01	51.01	42.42	24.83	54.14	65.94	20.07	46.61	17.97	44.98	44.76
<b>Martin State Forest</b>	732,524	-	245,449	512,261	14,469	70,285	3,672,292	400,831	1,130,738	13,148	10,420
	32.64	-	49.05	41.43	100	100	21.71	35.94	32.35	73.52	54.05
<b>Morgan-Monroe State Forest</b>	2,963,670	-	364,098	1,094,465	458,580	330,473	9,056,148	455,838	3,018,972	207,942	45,271
	17	-	27.39	26.77	39.6	39.55	12.7	33.79	19.61	78.21	58.38
<b>Owen-Putnam State Forest</b>	540,279	-	206,085	135,746	223,035	160,715	4,060,043	179,907	1,395,906	80,930	10,694
	28.74	-	57.3	46.22	100	57.07	16.83	46.72	20.11	98.6	45.75
<b>Salamonie State Forest</b>	16,715	-	-	48,521	-	36,163	299,923	528,342	279,137	76,775	14,261
	82.53	-	-	73.95	-	73.28	58.01	38.71	29.76	78.92	68.43
<b>Selmier State Forest</b>	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	-
<b>Yellowwood State Forest</b>	3,097,515	-	436,850	1,065,074	424,714	176,758	8,355,336	415,144	1,564,801	203,200	21,288
	14.58	-	18.27	26.25	33.98	45.86	13.31	38.12	26.28	55.47	40.72

End of Table 22 - Return

**Table 23. — Net volume of live trees (at least 5 inches dbh), in cubic feet, on forest land by tree class and diameter class, Indiana State Forests 2012 - 2016**

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 +
<b>All</b>	338,845,276	9,587,474	14,324,382	19,279,506	27,299,802	32,906,732	40,137,998	43,824,731	41,836,221	37,606,933	72,041,497
	1.29	1.91	2.19	2.53	2.54	2.83	2.98	3.3	3.77	4.5	4.23
<b>Growing stock</b>	328,458,817	8,539,809	13,155,130	18,164,561	26,051,722	31,680,809	39,369,549	42,925,720	40,994,654	36,930,030	70,646,833
	1.33	2.05	2.28	2.62	2.62	2.9	3.01	3.35	3.83	4.55	4.28
<b>Rough cull</b>	8,233,113	964,816	1,058,779	939,337	1,057,707	1,009,811	536,232	644,830	744,668	418,799	858,135
	6.02	5.21	7.04	9.73	11.46	13.47	21.94	24.89	25.28	38.12	32.78
<b>Rotten cull</b>	2,153,346	82,849	110,473	175,608	190,373	216,112	232,217	254,181	96,899	258,104	536,529
	13.36	13.78	16.85	19.77	22.61	24.42	27.86	31.9	58.38	41.57	36.55

End of Table 23 - Return

**End of Volume of Trees – All Live Table**

**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 2012 - 2016**

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	1,394,738,368	9,885,853	125,832,896	154,422,159	191,876,428	209,179,553	198,639,858	177,276,974	327,624,646
	1.49	10.5	2.63	2.91	3.02	3.38	3.85	4.6	4.32
eastern redcedar	5,630,170	1,728,869	1,963,123	854,092	581,637	317,249	185,200	-	-
	18.76	21.48	22.67	31.47	53.1	70.71	100	-	-
Norway spruce	79,039	-	79,039	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
shortleaf pine	5,979,904	778,137	803,891	710,274	1,115,469	1,039,673	357,019	461,981	713,460
	29.41	41.7	44.67	53.66	41.01	60.49	100	100	100
red pine	9,831,419	1,786,657	2,048,932	2,310,610	1,237,084	417,524	931,484	387,989	711,140
	21.74	28.78	25.3	24.98	46.34	71.59	74.31	100	100
eastern white pine	43,621,984	1,195,813	2,597,330	3,984,602	6,944,674	7,232,279	10,446,814	8,633,354	2,587,118
	14.3	21.97	19.92	21.85	18.86	21.19	22.25	25.74	44.88
Virginia pine	37,091,271	4,396,376	7,313,250	7,937,957	7,539,064	4,619,921	4,383,026	396,735	504,943
	10.51	14.95	14.6	15.67	16.89	29.47	26.7	100	100
baldcypress	130,153	-	-	-	130,153	-	-	-	-
	100	-	-	-	100	-	-	-	-
boxelder	698,247	-	253,572	214,669	-	-	230,005	-	-
	43.5	-	50.23	71.13	-	-	100	-	-
black maple	146,947	-	-	146,947	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
red maple	42,576,261	-	8,547,352	6,306,569	8,097,385	4,802,790	4,328,173	3,837,513	6,656,480
	8.35	-	9.85	12.92	13.71	21.2	25.65	28.85	27.32

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	3,976,154	-	263,309	413,054	645,414	1,031,194	235,036	-	1,388,147
	36.6	-	50.02	50.08	50.03	59.4	100	-	58.05
sugar maple	91,780,524	-	20,953,299	19,729,136	16,549,550	13,340,548	9,225,511	6,149,598	5,832,883
	5.13	-	6.34	8.29	10.69	13.38	18.61	25.65	29.47
river birch	124,319	-	124,319	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
bitternut hickory	9,708,608	-	1,007,191	2,528,674	1,892,858	2,619,061	566,840	1,093,983	-
	16.43	-	28.99	25.64	30.18	30.24	70.73	58.17	-
pignut hickory	64,542,402	-	7,984,102	9,494,109	12,326,599	13,833,547	7,515,679	7,057,126	6,331,239
	6.81	-	10.43	11.96	12.44	13.63	20	23.61	27.79
shellbark hickory	347,761	-	-	-	347,761	-	-	-	-
	70.72	-	-	-	70.72	-	-	-	-
shagbark hickory	25,340,095	-	3,928,333	5,839,904	5,567,366	3,905,854	2,817,259	2,308,585	972,794
	9.55	-	14.64	14.36	17.99	24.27	31.62	40.91	70.8
mockernut hickory	1,347,781	-	330,721	323,557	354,919	-	338,584	-	-
	38.78	-	61.52	57.76	70.79	-	100	-	-
red hickory	686,525	-	85,318	-	-	197,705	-	-	403,501
	66.49	-	100	-	-	100	-	-	100
hackberry	2,109,709	-	446,796	298,459	-	179,107	243,208	587,589	354,550
	32.43	-	42.22	72.99	-	100	100	70.65	100
common persimmon	322,048	-	133,160	188,888	-	-	-	-	-
	50.67	-	70.7	70.72	-	-	-	-	-
American beech	45,061,257	-	5,218,953	3,618,024	4,273,231	4,205,866	6,056,823	8,721,845	12,966,514
	9.53	-	13.17	18	20.34	22.96	23.16	22.88	21.53
white ash	28,851,622	-	2,565,902	3,829,804	3,951,415	5,610,331	2,970,079	2,340,309	7,583,781
	10.96	-	17.44	19.15	20.03	20.36	30.2	37.84	26.35
green ash	2,874,295	-	439,822	324,896	450,667	818,337	539,740	300,833	-
	31.83	-	40.9	58.19	75.77	50.04	100	100	-

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 +
blue ash	745,180	-	-	97,094	-	232,550	-	-	415,535
	65.14	-	-	100	-	100	-	-	100
honeylocust	976,449	-	-	259,761	-	174,188	542,500	-	-
	75.91	-	-	72.86	-	100	100	-	-
butternut	83,994	-	-	83,994	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
black walnut	14,450,977	-	1,933,468	3,610,540	1,751,513	2,959,393	740,391	1,435,988	2,019,683
	13.09	-	19.01	17.31	27.71	24.89	57.92	44.86	44.98
sweetgum	7,898,346	-	1,316,332	1,986,818	2,140,224	1,195,485	502,556	279,693	477,238
	19.45	-	26.42	27.99	28.96	40.65	100	100	100
yellow-poplar	219,719,558	-	10,989,292	17,651,441	19,788,979	25,550,594	28,363,308	31,664,941	85,711,001
	5.87	-	10.52	10.43	11.29	11.68	12.13	13.55	10.67
blackgum	7,748,880	-	1,611,380	1,330,769	1,961,812	1,174,764	477,139	328,121	864,896
	17.27	-	20.61	26.79	26.8	40.86	70.91	100	71.24
American sycamore	29,026,073	-	1,558,464	2,256,477	3,466,496	3,789,718	3,004,966	4,592,790	10,357,162
	15.62	-	31.61	25.75	26.15	25.85	33.42	30.25	29.61
balsam poplar	67,111	-	67,111	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
eastern cottonwood	10,304,237	-	217,465	473,963	663,795	946,123	2,418,381	805,860	4,778,651
	28.11	-	58.1	49.81	49.72	49.98	47.4	70.55	42.58
bigtooth aspen	5,631,847	-	784,424	664,224	1,632,163	824,509	741,656	642,712	342,159
	28.28	-	30.48	47.16	40.8	50.06	74.08	70.77	100
quaking aspen	223,265	-	-	-	-	-	223,265	-	-
	100	-	-	-	-	-	100	-	-
black cherry	9,374,422	-	1,942,272	1,421,922	1,385,827	1,544,507	1,068,519	314,184	1,697,191
	15.37	-	20.08	26.84	33.52	35.41	50.25	100	50.47
white oak	225,452,639	-	12,110,972	17,311,737	30,081,107	35,813,817	38,918,874	32,390,520	58,825,611
	3.95	-	8.57	8.24	7.44	7.7	8.04	9.8	8.75

<b>Species</b>	<b>Diameter class</b>	<b>9.0-10.9</b>	<b>11.0-12.9</b>	<b>13.0-14.9</b>	<b>15.0-16.9</b>	<b>17.0-18.9</b>	<b>19.0-20.9</b>	<b>21.0-22.9</b>	<b>23.0 +</b>
<b>swamp white oak</b>	628,428	-	-	-	163,950	-	464,479	-	-
	58.46	-	-	-	100	-	70.78	-	-
<b>scarlet oak</b>	15,126,943	-	996,387	1,037,350	1,315,366	3,785,586	2,368,744	1,924,618	3,698,893
	14.43	-	29.13	31.87	33.36	23.88	33.31	40.89	33.41
<b>northern pin oak</b>	858,073	-	69,678	325,088	163,135	-	300,171	-	-
	46.29	-	100	59.05	100	-	100	-	-
<b>shingle oak</b>	721,877	-	157,879	308,795	-	-	255,203	-	-
	45.81	-	71.04	57.92	-	-	100	-	-
<b>chinkapin oak</b>	5,971,167	-	646,273	797,797	1,526,071	1,784,908	243,785	581,046	391,286
	18.82	-	36.58	35.58	32.92	34.46	100	70.65	100
<b>pin oak</b>	3,369,041	-	471,145	232,818	970,773	581,809	298,902	350,482	463,112
	35.62	-	41.53	70.81	40.95	74.86	100	100	100
<b>chestnut oak</b>	178,400,286	-	11,898,855	20,900,828	29,012,956	31,928,528	33,703,296	23,933,663	27,022,162
	4.6	-	9.06	8.17	8.02	8.97	8.73	11.33	13.2
<b>northern red oak</b>	76,081,036	-	2,907,889	4,081,344	6,690,896	11,084,019	11,785,282	11,014,016	28,517,589
	7.05	-	18.16	19.72	15.41	14.08	16.14	18.26	13.32
<b>post oak</b>	2,264,989	-	284,704	854,565	630,051	190,271	-	305,397	-
	31.56	-	54.71	39.69	55.04	100	-	100	-
<b>black oak</b>	138,274,597	-	3,796,541	5,944,400	12,401,579	19,408,107	19,523,936	23,514,874	53,685,159
	5.71	-	14.73	13.99	12.23	10.71	12.1	11.85	10.37
<b>black locust</b>	1,549,529	-	457,763	441,237	143,533	195,696	-	311,299	-
	38.1	-	42.57	50.22	100	100	-	100	-
<b>sassafras</b>	7,348,332	-	3,000,033	1,749,902	1,463,415	1,134,982	-	-	-
	17.84	-	16.71	24.3	41.83	40.76	-	-	-
<b>American basswood</b>	5,374,372	-	657,450	579,671	1,551,871	231,198	1,086,316	341,552	926,314
	23.11	-	35.38	44.84	40.24	100	50.24	100	71.47
<b>American elm</b>	1,734,421	-	393,611	552,721	400,725	149,657	237,706	-	-
	26.45	-	41.07	41.03	58.49	100	100	-	-

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 +
slippery elm	2,473,804	-	475,792	412,678	564,945	328,159	-	267,778	424,453
	27.97	-	35.45	50.24	50.54	70.72	-	100	100

End of Table 30 - Return

**Table 30a. — Net volume of sawtimber trees (FIA Doyle rule), in board feet, on forest land by species and diameter class, Indiana State Forests 2012 - 2016**

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

Sampling Error percent: Simple Random Sampling: Total All live net sawtimber volume on forestland (bdft - FIA 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	973,285,305	2,711,709	53,285,375	80,169,586	114,560,295	138,731,975	144,894,501	139,055,339	299,876,525
	1.74	11.1	2.66	2.94	3.03	3.4	3.88	4.63	4.47
eastern redcedar	2,699,551	445,034	938,373	511,772	401,795	243,806	158,772	-	-
	21.96	23.09	22.67	31.47	53.1	70.71	100	-	-
Norway spruce	37,780	-	37,780	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
shortleaf pine	4,005,250	227,615	384,260	425,596	770,566	798,989	306,072	399,382	692,770
	31.59	41.09	44.67	53.66	41.01	60.49	100	100	100
red pine	5,857,649	493,803	979,389	1,384,517	854,577	320,867	798,561	335,417	690,517
	25.22	29.68	25.3	24.98	46.34	71.59	74.31	100	100
eastern white pine	33,148,296	319,703	1,241,524	2,387,573	4,797,381	5,558,006	8,956,054	7,463,534	2,424,521
	14.65	25.4	19.92	21.85	18.86	21.19	22.25	25.74	44.93
Virginia pine	22,300,527	1,225,554	3,419,672	4,628,635	5,106,132	3,351,602	3,757,568	342,977	468,385
	11.26	15.82	14.76	15.99	17.12	30.65	26.7	100	100
baldcypress	89,910	-	-	-	89,910	-	-	-	-
	100	-	-	-	100	-	-	-	-

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 +
boxelder	380,802	-	105,790	109,868	-	-	165,144	-	-
	49.93	-	50.23	71.13	-	-	100	-	-
black maple	75,208	-	-	75,208	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
red maple	27,252,826	-	3,565,955	3,227,702	4,762,882	3,154,953	3,107,628	3,004,389	6,429,317
	9.94	-	9.85	12.92	13.71	21.2	25.65	28.85	28.41
silver maple	2,782,247	-	109,853	211,401	379,632	677,391	168,756	-	1,235,214
	38.85	-	50.02	50.08	50.03	59.4	100	-	58.51
sugar maple	54,075,807	-	8,741,716	10,039,885	9,734,445	8,763,406	6,623,917	4,814,520	5,357,918
	5.89	-	6.34	8.32	10.69	13.38	18.61	25.65	30.63
river birch	51,866	-	51,866	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
bitternut hickory	5,811,687	-	420,200	1,294,175	1,113,379	1,720,461	406,991	856,479	-
	17.48	-	28.99	25.64	30.18	30.24	70.73	58.17	-
pignut hickory	40,769,904	-	3,294,741	4,859,085	7,250,506	9,087,257	5,396,258	5,525,024	5,357,034
	7.42	-	10.49	11.96	12.44	13.63	20	23.61	27.83
shellbark hickory	204,553	-	-	-	204,553	-	-	-	-
	70.72	-	-	-	70.72	-	-	-	-
shagbark hickory	15,129,244	-	1,638,900	2,988,863	3,274,725	2,565,756	2,022,792	1,807,392	830,817
	10.74	-	14.64	14.36	17.99	24.27	31.62	40.91	70.91
mockernut hickory	755,440	-	137,977	165,596	208,764	-	243,103	-	-
	42.13	-	61.52	57.76	70.79	-	100	-	-
red hickory	501,342	-	35,595	-	-	129,873	-	-	335,874
	72.06	-	100	-	-	100	-	-	100
hackberry	1,386,584	-	186,403	152,752	-	117,655	174,624	460,023	295,127
	36.36	-	42.22	72.99	-	100	100	70.65	100
common persimmon	152,227	-	55,554	96,673	-	-	-	-	-
	51.72	-	70.7	70.72	-	-	-	-	-



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 beech	32,708,708	-	2,177,347	1,851,705	2,513,514	2,762,833	4,348,799	6,828,332	12,226,177
	10.81	-	13.17	18	20.34	22.96	23.16	22.88	22.12
white ash	20,328,169	-	1,070,494	1,960,094	2,324,223	3,685,426	2,132,517	1,832,228	7,323,187
	12.8	-	17.44	19.15	20.03	20.36	30.2	37.84	27.26
green ash	1,775,479	-	183,494	166,282	265,083	537,566	387,533	235,522	-
	34.12	-	40.9	58.19	75.77	50.04	100	100	-
blue ash	548,347	-	-	49,693	-	152,762	-	-	345,891
	69.49	-	-	100	-	100	-	-	100
honeylocust	636,885	-	-	132,946	-	114,424	389,515	-	-
	80.57	-	-	72.86	-	100	100	-	-
butternut	42,988	-	-	42,988	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
black walnut	9,069,169	-	806,643	1,847,875	1,030,240	1,944,025	531,601	1,124,235	1,784,550
	14.73	-	19.01	17.31	27.71	24.89	57.92	44.86	45.2
sweetgum	4,606,943	-	549,174	1,016,853	1,258,880	785,314	360,835	218,971	416,915
	21.01	-	26.42	27.99	28.96	40.65	100	100	100
yellow-poplar	166,238,644	-	4,584,733	9,034,008	11,639,878	16,784,185	20,364,855	24,459,075	79,371,910
	6.47	-	10.52	10.43	11.29	11.68	12.13	13.67	11
blackgum	4,654,159	-	672,268	681,088	1,153,938	771,702	342,586	256,886	775,692
	19.56	-	20.61	26.79	26.8	40.86	70.91	100	71.91
American sycamore	22,271,855	-	650,191	1,154,865	2,038,993	2,489,466	2,157,565	3,595,695	10,185,079
	17.68	-	31.61	25.75	26.15	25.85	33.42	30.25	30.73
balsam poplar	27,999	-	27,999	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
eastern cottonwood	8,652,858	-	90,726	242,574	390,444	621,508	1,736,398	630,908	4,940,300
	31.1	-	58.1	49.81	49.72	49.98	47.4	70.55	44.42
bigtooth aspen	3,489,371	-	327,262	339,950	960,038	541,620	532,509	503,179	284,813
	30.43	-	30.48	47.16	40.8	50.06	74.08	70.77	100

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	160,304	-	-	-	-	-	160,304	-	-
	100	-	-	-	-	-	100	-	-
black cherry	5,870,225	-	810,316	727,740	815,144	1,014,587	767,196	245,975	1,489,268
	17.82	-	20.08	26.84	33.52	35.41	50.25	100	50.91
white oak	160,729,131	-	5,052,698	8,860,147	17,693,707	23,526,097	27,943,752	25,358,538	52,294,192
	4.25	-	8.57	8.24	7.44	7.7	8.04	9.8	8.93
swamp white oak	429,931	-	-	-	96,435	-	333,496	-	-
	59.31	-	-	-	100	-	70.78	-	-
scarlet oak	10,600,906	-	415,693	530,916	773,698	2,486,751	1,700,758	1,506,783	3,186,306
	15.67	-	29.13	31.87	33.36	23.88	33.31	40.89	33.54
northern pin oak	506,929	-	29,070	166,380	95,956	-	215,523	-	-
	50.65	-	100	59.05	100	-	100	-	-
shingle oak	407,144	-	65,867	158,041	-	-	183,236	-	-
	51.55	-	71.04	57.92	-	-	100	-	-
chinkapin oak	3,719,845	-	269,625	408,312	897,635	1,172,506	175,038	454,901	341,828
	20.22	-	36.58	35.58	32.92	34.46	100	70.65	100
pin oak	2,162,496	-	196,562	119,156	571,009	382,190	214,611	274,392	404,575
	37.87	-	41.53	70.81	40.95	74.86	100	100	100
chestnut oak	119,478,741	-	4,964,202	10,637,940	17,065,421	20,973,850	24,198,966	18,528,055	23,110,307
	4.88	-	9.06	8.19	8.02	8.97	8.73	11.41	13.48
northern red oak	57,750,135	-	1,213,171	2,088,832	3,935,585	7,281,092	8,461,833	8,622,873	26,146,749
	7.71	-	18.16	19.72	15.41	14.08	16.14	18.26	13.72
post oak	1,290,826	-	118,779	437,366	370,596	124,989	-	239,096	-
	32.84	-	54.71	39.69	55.04	100	-	100	-
black oak	107,065,471	-	1,583,917	3,042,344	7,294,609	12,749,186	14,018,186	18,409,795	49,967,434
	6.17	-	14.73	13.99	12.23	10.71	12.1	11.85	10.6
black locust	873,499	-	190,979	225,825	84,426	128,553	-	243,716	-
	42.41	-	42.57	50.22	100	100	-	100	-

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	3,753,564	-	1,251,614	895,600	860,781	745,570	-	-	-
	19.05	-	16.71	24.3	41.83	40.76	-	-	-
American basswood	3,476,075	-	274,288	296,676	912,810	151,874	779,975	267,401	793,051
	25.28	-	35.38	44.84	40.24	100	50.24	100	71.74
American elm	951,787	-	164,215	282,882	235,707	98,310	170,673	-	-
	28.88	-	41.07	41.03	58.49	100	100	-	-
slippery elm	1,538,022	-	198,501	211,209	332,300	215,568	-	209,643	370,802
	32.76	-	35.45	50.24	50.54	70.72	-	100	100

End of Table 30a - Return

**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 2012 - 2016**

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	1,394,738,368	9,885,853	125,832,896	154,422,159	191,876,428	209,179,553	198,639,858	177,276,974	327,624,646
	1.49	10.5	2.63	2.91	3.02	3.38	3.85	4.6	4.32
Loblolly and shortleaf pine	5,979,904	778,137	803,891	710,274	1,115,469	1,039,673	357,019	461,981	713,460
	29.41	41.7	44.67	53.66	41.01	60.49	100	100	100
Other yellow pines	37,091,271	4,396,376	7,313,250	7,937,957	7,539,064	4,619,921	4,383,026	396,735	504,943
	10.51	14.95	14.6	15.67	16.89	29.47	26.7	100	100
Eastern white and red pine	53,453,403	2,982,470	4,646,262	6,295,211	8,181,758	7,649,802	11,378,298	9,021,343	3,298,258
	12.33	19.32	15.66	16.51	17.45	20.41	21.28	25.01	41.28
Cypress	130,153	-	-	-	130,153	-	-	-	-
	100	-	-	-	100	-	-	-	-
Other eastern softwoods	5,709,209	1,728,869	2,042,162	854,092	581,637	317,249	185,200	-	-
	18.55	21.48	22.14	31.47	53.1	70.71	100	-	-
Select white oaks	232,052,234	-	12,757,245	18,109,534	31,771,128	37,598,726	39,627,139	32,971,567	59,216,897
	3.85	-	8.32	8.05	7.21	7.5	7.96	9.7	8.71
Select red oaks	76,081,036	-	2,907,889	4,081,344	6,690,896	11,084,019	11,785,282	11,014,016	28,517,589
	7.05	-	18.16	19.72	15.41	14.08	16.14	18.26	13.32
Other white oaks	180,665,275	-	12,183,559	21,755,393	29,643,007	32,118,799	33,703,296	24,239,060	27,022,162
	4.55	-	8.94	8	7.94	8.93	8.73	11.26	13.2
Other red oaks	158,350,532	-	5,491,631	7,848,451	14,850,853	23,775,502	22,746,956	25,789,974	57,847,164
	5.3	-	12.7	12.14	10.99	9.66	11.27	11.29	9.97
Hickory	101,973,172	-	13,335,665	18,186,244	20,489,503	20,556,167	11,238,363	10,459,694	7,707,534
	5.27	-	8.33	8.69	9.5	11.03	16.19	19.24	25.03

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 +
Hard maple	91,927,471	-	20,953,299	19,876,083	16,549,550	13,340,548	9,225,511	6,149,598	5,832,883
	5.14	-	6.34	8.31	10.69	13.38	18.61	25.65	29.47
Soft maple	46,552,415	-	8,810,662	6,719,623	8,742,799	5,833,984	4,563,209	3,837,513	8,044,626
	8.23	-	9.66	12.49	13.2	20.32	24.86	28.85	24.71
Beech	45,061,257	-	5,218,953	3,618,024	4,273,231	4,205,866	6,056,823	8,721,845	12,966,514
	9.53	-	13.17	18	20.34	22.96	23.16	22.88	21.53
Sweetgum	7,898,346	-	1,316,332	1,986,818	2,140,224	1,195,485	502,556	279,693	477,238
	19.45	-	26.42	27.99	28.96	40.65	100	100	100
Tupelo and blackgum	7,748,880	-	1,611,380	1,330,769	1,961,812	1,174,764	477,139	328,121	864,896
	17.27	-	20.61	26.79	26.8	40.86	70.91	100	71.24
Ash	32,471,097	-	3,005,724	4,251,794	4,402,083	6,661,218	3,509,819	2,641,142	7,999,317
	10.25	-	16.03	17.94	19.57	18.52	29.82	35.41	25.5
Cottonwood and aspen	16,226,460	-	1,069,000	1,138,187	2,295,957	1,770,632	3,383,302	1,448,572	5,120,809
	20.39	-	26.04	34.46	32.31	35.45	38.14	50.26	40.29
Basswood	5,374,372	-	657,450	579,671	1,551,871	231,198	1,086,316	341,552	926,314
	23.11	-	35.38	44.84	40.24	100	50.24	100	71.47
Yellow-poplar	219,719,558	-	10,989,292	17,651,441	19,788,979	25,550,594	28,363,308	31,664,941	85,711,001
	5.87	-	10.52	10.43	11.29	11.68	12.13	13.55	10.67
Black walnut	14,450,977	-	1,933,468	3,610,540	1,751,513	2,959,393	740,391	1,435,988	2,019,683
	13.09	-	19.01	17.31	27.71	24.89	57.92	44.86	44.98
Other eastern soft hardwoods	52,973,321	-	8,194,860	6,990,823	7,281,408	7,126,130	4,784,405	5,762,340	12,833,356
	9.6	-	10.57	13	16.99	17.58	25.27	26.15	25.16
Other eastern hard hardwoods	2,848,026	-	590,923	889,886	143,533	369,884	542,500	311,299	-
	33.76	-	36.61	36.01	100	70.83	100	100	-

End of Table 31 - Return

**Table 31a. — Net volume of sawtimber trees (FIA Doyle rule), in board feet, on forest land by species group and diameter class, Indiana State Forests 2012 - 2016**

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

Sampling Error percent: Simple Random Sampling: Total All live net sawtimber volume on forestland (bdft - FIA 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 +
<b>All</b>	973,285,305	2,711,709	53,285,375	80,169,586	114,560,295	138,731,975	144,894,501	139,055,339	299,876,525
	1.74	11.1	2.66	2.94	3.03	3.4	3.88	4.63	4.47
<b>Loblolly and shortleaf pine</b>	4,005,250	227,615	384,260	425,596	770,566	798,989	306,072	399,382	692,770
	31.59	41.09	44.67	53.66	41.01	60.49	100	100	100
<b>Other yellow pines</b>	22,300,527	1,225,554	3,419,672	4,628,635	5,106,132	3,351,602	3,757,568	342,977	468,385
	11.26	15.82	14.76	15.99	17.12	30.65	26.7	100	100
<b>Eastern white and red pine</b>	39,005,945	813,506	2,220,913	3,772,091	5,651,958	5,878,873	9,754,615	7,798,951	3,115,038
	13.01	20.56	15.66	16.51	17.45	20.41	21.28	25.01	41.4
<b>Cypress</b>	89,910	-	-	-	89,910	-	-	-	-
	100	-	-	-	100	-	-	-	-
<b>Other eastern softwoods</b>	2,737,331	445,034	976,153	511,772	401,795	243,806	158,772	-	-
	21.7	23.09	22.14	31.47	53.1	70.71	100	-	-
<b>Select white oaks</b>	164,878,907	-	5,322,323	9,268,459	18,687,777	24,698,603	28,452,285	25,813,440	52,636,020
	4.16	-	8.32	8.05	7.21	7.5	7.96	9.7	8.89
<b>Select red oaks</b>	57,750,135	-	1,213,171	2,088,832	3,935,585	7,281,092	8,461,833	8,622,873	26,146,749
	7.71	-	18.16	19.72	15.41	14.08	16.14	18.26	13.72
<b>Other white oaks</b>	120,769,567	-	5,082,981	11,075,306	17,436,017	21,098,839	24,198,966	18,767,151	23,110,307
	4.84	-	8.94	8.02	7.94	8.93	8.73	11.33	13.48
<b>Other red oaks</b>	120,742,946	-	2,291,108	4,016,837	8,735,272	15,618,127	16,332,315	20,190,971	53,558,315
	5.75	-	12.7	12.14	10.99	9.66	11.27	11.29	10.19
<b>Hickory</b>	63,172,170	-	5,527,413	9,307,720	12,051,926	13,503,346	8,069,145	8,188,895	6,523,726
	5.76	-	8.36	8.69	9.5	11.03	16.19	19.24	25.07

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 +
Hard maple	54,151,015	-	8,741,716	10,115,092	9,734,445	8,763,406	6,623,917	4,814,520	5,357,918
	5.9	-	6.34	8.34	10.69	13.38	18.61	25.65	30.63
Soft maple	30,035,073	-	3,675,808	3,439,103	5,142,514	3,832,344	3,276,384	3,004,389	7,664,531
	9.7	-	9.66	12.49	13.2	20.32	24.86	28.85	25.61
Beech	32,708,708	-	2,177,347	1,851,705	2,513,514	2,762,833	4,348,799	6,828,332	12,226,177
	10.81	-	13.17	18	20.34	22.96	23.16	22.88	22.12
Sweetgum	4,606,943	-	549,174	1,016,853	1,258,880	785,314	360,835	218,971	416,915
	21.01	-	26.42	27.99	28.96	40.65	100	100	100
Tupelo and blackgum	4,654,159	-	672,268	681,088	1,153,938	771,702	342,586	256,886	775,692
	19.56	-	20.61	26.79	26.8	40.86	70.91	100	71.91
Ash	22,651,994	-	1,253,988	2,176,068	2,589,305	4,375,754	2,520,050	2,067,750	7,669,079
	11.91	-	16.03	17.94	19.57	18.52	29.82	35.41	26.41
Cottonwood and aspen	12,330,532	-	445,987	582,524	1,350,482	1,163,128	2,429,211	1,134,087	5,225,113
	23.47	-	26.04	34.46	32.31	35.45	38.14	50.26	42.35
Basswood	3,476,075	-	274,288	296,676	912,810	151,874	779,975	267,401	793,051
	25.28	-	35.38	44.84	40.24	100	50.24	100	71.74
Yellow-poplar	166,238,644	-	4,584,733	9,034,008	11,639,878	16,784,185	20,364,855	24,459,075	79,371,910
	6.47	-	10.52	10.43	11.29	11.68	12.13	13.67	11
Black walnut	9,069,169	-	806,643	1,847,875	1,030,240	1,944,025	531,601	1,124,235	1,784,550
	14.73	-	19.01	17.31	27.71	24.89	57.92	44.86	45.2
Other eastern soft hardwoods	36,247,693	-	3,418,896	3,577,903	4,282,924	4,681,155	3,435,203	4,511,336	12,340,277
	11.63	-	10.57	13	16.99	17.58	25.27	26.15	26.36
Other eastern hard hardwoods	1,662,612	-	246,533	455,444	84,426	242,977	389,515	243,716	-
	38.35	-	36.61	36.01	100	70.83	100	100	-

End of Table 31a - Return

**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 2012 - 2016**

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%	41 - 50%
All	1,394,738,368	1,378,568,555	12,651,428	1,525,149	1,895,288	97,949
	1.49	1.5	18.83	42.58	44.12	100
Tree grade 1	457,665,315	455,989,967	1,261,176	414,172	-	-
	3.21	3.22	63	100	-	-
Tree grade 2	337,890,880	337,608,474	282,406	-	-	-
	2.98	2.98	100	-	-	-
Tree grade 3	386,584,269	384,759,567	1,483,094	341,608	-	-
	2.56	2.56	38.04	76.4	-	-
4: Gradeable log but does not meet grade 3 standards	169,014,227	166,530,545	1,514,014	89,382	880,286	-
	4.41	4.44	40.19	100	72.44	-
5: Graded but does not contain gradeable log in the butt 16' log	43,583,677	33,680,002	8,110,739	679,986	1,015,001	97,949
	8.92	9.66	24.85	61.39	53.41	100

End of Table 32 - Return



**Table 32a. — Net volume of sawtimber trees (FIA Doyle rule), in board feet, on forest land by tree grade and cull proportion, Indiana State Forests 2012 - 2016**

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

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

Tree grade	Cull proportion	0 - 10%	11- 20%	21 - 30%	31 - 40%	41 - 50%
<b>All</b>	973,285,305	960,858,721	9,903,761	1,065,994	1,406,699	50,130
	1.74	1.75	21.76	48.01	50.07	100
<b>Tree grade 1</b>	358,400,945	357,009,893	1,029,231	361,821	-	-
	3.48	3.49	65.44	100	-	-
<b>Tree grade 2</b>	231,043,106	230,840,338	202,767	-	-	-
	3.38	3.38	100	-	-	-
<b>Tree grade 3</b>	237,059,376	235,933,098	933,056	193,223	-	-
	3.06	3.07	43.69	77.99	-	-
<b>4: Gradeable log but does not meet grade 3 standards</b>	115,284,848	113,505,514	998,326	45,746	735,263	-
	5.35	5.39	45.99	100	79.25	-
<b>5: Graded but does not contain gradeable log in the butt 16' log</b>	31,497,031	23,569,878	6,740,381	465,205	671,436	50,130
	10.39	11.11	28.33	70.07	59.07	100
	10.39	11.11	28.33	70.07	59.07	100

End of Table 32a - Return

End of Volume of Trees – Sawtimber

**Table 40. — Annual net volume growth of live trees (at least 5 inches dbh), in cubic feet per year, on forest land by species and diameter class, Indiana State Forests 2013 - 2016**

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	3,430,934	236,264	178,172	206,444	274,043	304,684	413,311	427,950	530,973	204,756	654,337
	8.31	9.07	15.61	17.23	18.99	20.57	19.93	20.02	16.21	56.68	23.77
eastern redcedar	-3,215	-2,357	2,375	-783	-435	-6,805	2,404	2,385	-	-	-
	-384.2	-114.07	116.33	-577.73	-982.31	-115.93	61.92	76.72	-	-	-
Norway spruce	654	-	-	-	654	-	-	-	-	-	-
	100	-	-	-	100	-	-	-	-	-	-
shortleaf pine	-9,416	-	-466	-6,514	139	3,777	-15,084	5,273	-	3,459	-
	-173.69	-	-221.14	-82.44	3,451.44	63.13	-91.39	71.33	-	100	-
red pine	-73,351	-4,613	-15,324	-22,066	-17,240	-16,934	-63	-7,364	7,221	3,032	-
	-41.28	-49.95	-49.89	-38.49	-56.28	-93.9	2,491.02	-100	100	100	-
eastern white pine	39,387	328	-3,638	-12,766	-10,114	303	11,545	14,845	35,787	20,084	-16,987
	155.55	377.96	-80.51	-59.46	-85.65	4,184.94	151.18	85.53	70.08	117.95	-192.21
Virginia pine	-126,274	-7,370	-14,867	-24,347	-14,212	-29,815	-38,153	16,007	10,728	-	-24,244
	-40.82	-40.55	-35.39	-44.76	-107.55	-70.77	-65.4	50.1	34.97	-	-98.26
baldcypress	1,200	-	128	-	-	-	1,072	-	-	-	-
	89.89	-	100	-	-	-	100	-	-	-	-
boxelder	7,675	127	3,786	-2,588	2,642	1,641	-	-	2,067	-	-
	63.98	679.26	57.7	-99.26	47.3	71.94	-	-	100	-	-
red maple	306,619	48,339	53,423	43,701	49,421	30,839	48,094	19,434	29,352	13,213	-29,197
	21.68	15.3	13.43	22.26	27.05	41.49	18.91	60.46	34.78	41.22	-197.97

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	20,048	1,654	4,653	90	-286	5,016	-4,340	7,553	-1,884	-	7,592
	118	63.84	45.81	3,714.33	-1,683.52	58.27	-292	149	-100	-	70.71
sugar maple	653,551	125,826	116,917	109,048	81,140	69,372	53,981	22,881	36,182	19,278	18,926
	6.85	7.67	9.32	11.31	18.4	22.85	37	69.79	22.53	84.37	33.18
Ohio buckeye	-10,949	995	250	324	-	-	-	-12,518	-	-	-
	-114.53	47.87	84.29	71.2	-	-	-	-100	-	-	-
ailanthus	-620	-156	-887	422	-	-	-	-	-	-	-
	-215.75	-228.73	-100	100	-	-	-	-	-	-	-
European Alder	-7,108	-620	-474	-2,347	-3,668	-	-	-	-	-	-
	-99.02	-127.07	-239.39	-100	-100	-	-	-	-	-	-
serviceberry spp.	15	15	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
river birch	-10,261	-392	-403	-1,174	-	-8,292	-	-	-	-	-
	-86.22	-138.91	-321.23	-185.35	-	-100	-	-	-	-	-
American hornbeam	2,545	2,370	175	-	-	-	-	-	-	-	-
	47.07	50.56	100	-	-	-	-	-	-	-	-
bitternut hickory	40,552	1,759	1,078	1,858	3,476	12,472	9,104	6,562	3,456	786	-
	20.95	46.64	54.51	196.21	40.4	37.35	39.43	46.67	62.6	130.62	-
pignut hickory	339,254	5,514	7,193	26,978	34,523	32,852	66,958	56,930	49,518	36,277	22,511
	12.53	34.3	44.24	17.04	26.23	44.09	24.24	28.79	35.97	32.67	31.89
shellbark hickory	3,289	111	287	571	-	-	2,320	-	-	-	-
	61.99	100	100	78.67	-	-	75.96	-	-	-	-
shagbark hickory	118,147	2,039	5,237	7,090	15,470	30,235	24,723	10,712	10,911	6,410	5,321
	11.38	62.94	45.64	48.2	20.98	21.96	23.03	35.85	39.1	63.09	77.27
mockernut hickory	4,053	92	246	115	783	323	1,673	-	820	-	-
	49.13	77.18	100	100	62.93	100	100	-	100	-	-
hackberry	9,073	1,649	1,316	-1,360	3,408	-3,343	-	2,993	-	4,410	-
	90.42	55.65	143.97	-183.37	103.18	-138.51	-	74.05	-	70.25	-

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	-1,148	397	-2,545	1,001	-	-	-	-	-	-	-
	-217.35	367.33	-76.63	63.86	-	-	-	-	-	-	-
flowering dogwood	-4,246	-1,176	-3,070	-	-	-	-	-	-	-	-
	-54.82	-121.04	-61.15	-	-	-	-	-	-	-	-
persimmon spp.	850	-	-	850	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-
common persimmon	1,710	492	-2,174	308	1,373	1,710	-	-	-	-	-
	258.15	220.72	-178.88	100	70.84	70.66	-	-	-	-	-
American beech	63,928	38,594	29,742	31,659	23,747	11,187	-2,590	2,303	-6,632	-18,927	-45,155
	106.35	10.94	16.16	17.47	30.81	84.88	-532.84	564.64	-292.29	-161.4	-107.38
white ash	-61,016	-5,230	-7,263	-10,161	-27,558	-3,733	-6,440	15,712	-31,223	-10,029	24,911
	-104.01	-73.11	-58.46	-64.73	-63.28	-366.1	-244.24	93.42	-81.13	-186.59	122.5
green ash	9,143	735	-1,390	1,658	-1,327	-4,831	4,949	4,992	3,684	-	671
	88.54	136.13	-125.45	60.29	-253.62	-146.69	60.03	61.67	100	-	100
blue ash	-8,132	8	480	1,557	-	352	-	-12,597	-	-	2,068
	-146.37	2,780.52	72.94	100	-	100	-	-109.77	-	-	100
honeylocust	8,305	45	539	550	-	913	-	2,615	3,644	-	-
	79.12	100	266.13	72.46	-	100	-	100	100	-	-
black walnut	87,102	3,172	4,320	4,535	11,663	21,087	12,941	1,625	4,747	15,954	7,058
	26.8	44.27	49.4	72.14	26.54	22.63	46.19	701.46	57.95	74.87	51.73
sweetgum	44,841	-2,087	759	4,644	10,470	10,887	11,106	6,939	2,124	-	-
	20.72	-88.03	288.21	37.25	33.25	32.04	34.53	52.84	100	-	-
yellow-poplar	615,896	10,459	785	32,144	38,080	60,798	50,550	35,084	74,099	97,920	215,975
	17.57	99.6	1,414.38	38.77	57.29	34.98	61.5	113.16	43.93	48.87	29.39
Osage-orange	-2,320	-	-	-2,320	-	-	-	-	-	-	-
	-100	-	-	-100	-	-	-	-	-	-	-
apple spp.	287	287	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-

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 +
mulberry spp.	2,035	-	181	1,854	-	-	-	-	-	-	-
	91.49	-	100	100	-	-	-	-	-	-	-
white mulberry	256	8	-616	89	776	-	-	-	-	-	-
	96.7	100	-100	100	100	-	-	-	-	-	-
red mulberry	48	48	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
blackgum	65,545	15,088	9,688	10,307	7,927	4,255	6,709	2,527	4,230	1,663	3,150
	12.92	19.26	19.06	22.59	33.71	42.79	39.06	61.47	72.7	100	76.25
eastern hophornbeam	-2,034	-478	477	-2,032	-	-	-	-	-	-	-
	-106.16	-135.45	69.22	-100	-	-	-	-	-	-	-
American sycamore	163,010	998	1,661	6,883	11,018	12,936	24,739	21,191	25,755	21,463	36,366
	15.92	156.73	191.82	44.65	72.97	34.14	28.13	40.54	36.08	46.45	40.22
eastern cottonwood	17,202	-	-1,445	1,050	-	1,633	3,737	3,372	11,281	-15,475	13,049
	123	-	-100	100	-	101.13	79.49	64.26	53.13	-117.96	46.76
bigtooth aspen	3,987	-436	-929	-1,018	-8,726	932	7,621	2,495	1,423	-	2,626
	341.75	-181.44	-362.75	-464.52	-86.6	533.61	43.47	58.33	100	-	100
black cherry	47,573	599	5,056	-2,621	13,202	-3,401	9,485	3,961	4,369	2,157	14,766
	33.09	795.74	64.15	-209.85	28.23	-258.25	46.58	64.1	59.42	100	48.5
white oak	602,944	3,103	-1,954	10,563	26,432	59,061	66,303	91,711	142,527	96,085	109,112
	16.13	75.42	-268.6	68.98	47.63	21.75	49.89	31.95	21.34	28.16	57.82
scarlet oak	-26,241	199	-292	-1,054	1,774	3,306	-2,220	-4,706	12,862	-51,525	15,414
	-174.47	100	-792.81	-215.21	259.07	47.02	-491.45	-380.75	40.15	-63.95	36.51
northern pin oak	9,029	-	379	-	748	4,754	-	-	3,148	-	-
	47.61	-	100	-	100	59.57	-	-	100	-	-
shingle oak	8,343	1,059	-10	641	2,328	2,618	-	-	1,707	-	-
	36.77	49.18	9,403.64	73.21	60.38	62.41	-	-	100	-	-
bur oak	-530	-530	-	-	-	-	-	-	-	-	-
	-100	-100	-	-	-	-	-	-	-	-	-

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 +
chinkapin oak	13,105	333	2,730	3,158	2,197	-3,163	-2,003	7,815	579	-	1,460
	102.84	151.79	58.8	39.42	45.13	-175.85	-377.49	40.84	100	-	100
pin oak	12,589	-209	-2,200	-986	3,320	360	-771	3,199	5,288	2,940	1,648
	104.67	-243.72	-100	-226.32	51.83	100	-	83.94	100	100	100
chestnut oak	193,843	2,290	-2,111	7,024	11,790	9,312	32,907	15,226	58,770	15,946	42,690
	42.66	108.99	-221.98	104.66	111.58	221.09	76.25	217.36	49.06	196.95	93.67
northern red oak	96,451	2,049	1,891	-1,206	4,163	4,446	14,814	35,744	19,836	-26,117	40,830
	83.59	86.07	170.86	-472.21	218.28	271.09	91.58	56.09	133.92	-179.21	127.83
post oak	-1,368	44	-2,732	-1,186	733	-1,672	2,238	442	-	765	-
	-427.75	100	-104.36	-156.69	58.67	-265.41	51.91	100	-	100	-
black oak	250,443	1,847	1,090	2,296	3,571	3,493	31,938	45,792	-5,261	-12,862	178,540
	37.22	65.74	294.86	203.11	263.37	334.94	68.9	55.5	-725.75	-397.93	30.8
black locust	2,625	1,213	-701	-1,746	540	4,291	500	-2,337	-	865	-
	321.99	293.35	-452.84	-261.6	473.2	55.49	100	-150.78	-	100	-
black willow	1,279	1,279	-	-	-	-	-	-	-	-	-
	71.18	71.18	-	-	-	-	-	-	-	-	-
sassafras	-77,534	-17,599	-19,909	-10,299	433	-4,678	-26,595	-4,176	3,415	1,049	826
	-44.37	-31.77	-42.19	-86.23	2,026.06	-291.69	-59.09	-270.96	77.19	100	100
American basswood	17,566	1,495	-483	2,760	-5,732	2,335	7,012	927	5,242	2,137	1,873
	57.81	55.66	-301.16	59.6	-113.18	47.9	56.43	100	57.3	100	152.41
winged elm	666	146	520	-	-	-	-	-	-	-	-
	59.42	100	70.76	-	-	-	-	-	-	-	-
American elm	-5,581	2,141	4,818	-866	-4,556	-9,038	434	286	1,201	-	-
	-268.31	115.57	62.96	-560.38	-124.04	-132.28	70.8	100	76.15	-	-
slippery elm	-26,749	68	1,877	-1,708	-43	-7,105	1,714	2,114	-	-26,203	2,537
	-111.89	3,452.93	152.48	-179.31	-	-95.34	71.05	100	-	-107.16	100

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 +
Other or unknown tree	2,366	502	-	1,864	-	-	-	-	-	-	-
	81.54	100	-	100	-	-	-	-	-	-	-

End of Table 40 - Return

**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 - 2016**

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	18,863,372	-135,663	7,078,678	1,631,849	2,169,339	2,085,820	2,349,235	912,168	2,787,170
	6.91	-77.08	5.85	17.86	17.66	19.39	17.34	58.61	22.81
eastern redcedar	18,033	36,902	1,533	-34,306	6,443	7,461	-	-	-
	259.15	86.25	1,107.36	-85.51	83.72	85.7	-	-	-
Norway spruce	3,166	-	3,166	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
shortleaf pine	-32,602	-22,589	1,616	20,298	-79,872	28,982	-	18,962	-
	-269.35	-129.36	1,485.62	63.14	-92.08	71.29	-	100	-
red pine	-229,104	-70,815	-80,327	-77,645	2,137	-37,291	35,107	14,954	-
	-55.7	-60.11	-57.82	-98.19	322.69	-100	100	100	-
eastern white pine	296,295	-27,170	-29,219	5,287	64,987	77,926	184,572	100,754	-80,842
	97	-144.65	-132.24	1,150.98	129.62	78.24	65.86	115.45	-193.84
Virginia pine	-429,688	-24,232	-80,889	-149,550	-198,550	94,911	60,675	-	-132,053
	-62.84	-259	-93.91	-73.35	-66.79	48.68	33.68	-	-98.86
baldcypress	5,218	-	-	-	5,218	-	-	-	-
	100	-	-	-	100	-	-	-	-
boxelder	41,183	-	29,536	2,943	-	-	8,704	-	-
	52.53	-	66.36	100	-	-	100	-	-
red maple	1,357,578	1,569	801,301	186,042	195,087	115,138	116,073	52,962	-110,593
	19.11	100	15.95	26.56	17.48	25.33	36.08	41.3	-184.29
silver maple	102,910	-	18,970	21,724	-18,924	60,214	-7,720	-	28,646
	93.01	-	169.64	58.28	-287.99	62.95	-100	-	70.71
sugar maple	2,665,209	-	1,629,098	315,211	259,139	132,173	156,173	104,199	69,214
	8.58	-	10.41	23.54	35.72	53.36	23.04	29.27	35.55
Ohio buckeye	-54,932	-	-	-	-	-54,932	-	-	-
	-100	-	-	-	-	-100	-	-	-
river birch	-36,497	-	-	-36,497	-	-	-	-	-
	-100	-	-	-100	-	-	-	-	-
bitternut hickory	187,554	-	28,743	61,675	45,008	32,191	16,890	3,046	-
	20.87	-	55.79	37.36	39.5	46.7	62.59	169.99	-



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 +
pignut hickory	1,803,954	-	484,943	190,306	327,512	276,406	242,611	174,020	108,156
	12.15	-	18.98	35.3	24.33	29.01	35.92	32.96	31.88
shellbark hickory	11,045	-	-	-	11,045	-	-	-	-
	75.94	-	-	-	75.94	-	-	-	-
shagbark hickory	608,791	-	189,265	144,366	117,851	50,938	51,843	29,564	24,963
	12.65	-	26.41	21.97	23.03	35.83	39.07	65.61	77.07
mockernut hickory	17,166	-	3,774	1,542	7,981	-	3,868	-	-
	54.65	-	63	100	100	-	100	-	-
hackberry	100,899	-	96,483	-15,701	-	4,152	-	15,964	-
	53.7	-	50.1	-135.61	-	100	-	72.61	-
common persimmon	26,897	-	19,273	7,624	-	-	-	-	-
	63.58	-	84.31	70.65	-	-	-	-	-
American beech	690,980	-	402,958	51,874	90,422	5,309	-18,817	20,343	138,892
	25.23	-	20.42	89.66	24.85	1,173.22	-473.11	408.57	28.82
white ash	21,999	-	-430	30,557	8,264	106,707	-146,272	-52,286	75,458
	1,121.43	-	20,203.41	179.78	749.69	26.41	-81.4	-167.57	162.28
green ash	54,190	-	8,028	-21,695	23,853	24,033	17,551	-	2,418
	64.01	-	86.97	-150	60.03	61.67	100	-	100
blue ash	-48,152	-	-	1,696	-	-58,867	-	-	9,018
	-115.88	-	-	100	-	-109.99	-	-	100
honeylocust	30,355	-	-	4,098	-	11,329	14,928	-	-
	87.55	-	-	100	-	100	100	-	-
black walnut	433,917	12,300	141,436	97,521	60,844	6,695	20,689	71,189	23,243
	25.88	100	30.2	22.88	46.61	773.98	58.34	76.31	51.99
sweetgum	218,205	-	83,004	48,458	48,393	29,542	8,810	-	-
	23.1	-	41.71	32.03	34.48	52.98	100	-	-
yellow-poplar	3,565,620	-16,691	910,752	317,692	336,199	185,798	383,990	481,271	966,609
	15.63	-100	19.5	34.44	47.07	111.21	44.18	51.38	31.38
blackgum	190,233	-	95,604	18,936	29,379	10,827	17,726	6,569	11,193
	23.19	-	35.42	42.81	39.03	61.6	72.56	100	75.33
American sycamore	831,142	-	168,083	62,018	118,115	118,281	102,032	99,534	163,077
	16.61	-	48.19	34.26	27.98	32.68	38.13	46.47	39.35
eastern cottonwood	79,867	-	-	8,347	18,400	17,186	58,839	-76,044	53,139
	132.58	-	-	101.29	80.83	63.18	53.06	-118.9	46.78
bigtooth aspen	80,954	-15,151	23,654	7,549	40,929	11,477	5,996	-	6,499
	87.16	-100	209.51	323.49	43.59	58.16	100	-	100

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	309,888	-	211,185	-15,715	30,327	16,726	10,807	8,628	47,930
	27.45	-	30.02	-251.23	52.11	64.05	73.28	100	53.73
white oak	2,840,857	-12,834	579,304	265,062	305,990	379,217	592,775	374,841	356,503
	14.89	-100	18.89	22.83	44.36	35.01	22.72	31.04	70.58
scarlet oak	-81,862	-	66,965	14,879	-11,891	-29,248	58,094	-243,039	62,377
	-268.48	-	61.82	50.45	-448.51	-295.32	40.16	-63.53	36.66
northern pin oak	54,560	-	17,219	23,235	-	-	14,105	-	-
	47.79	-	100	59.46	-	-	100	-	-
shingle oak	42,600	-	22,057	12,770	-	-	7,773	-	-
	48.39	-	78.9	62.39	-	-	100	-	-
chinkapin oak	39,845	-	22,167	-11,272	-11,807	33,204	2,395	-	5,158
	160.63	-	72.59	-226.23	-300.91	41.6	100	-	100
pin oak	81,639	-	26,222	1,761	-4,349	14,957	23,842	12,790	6,416
	78.9	-	64.11	100	-1,093.27	83.93	100	100	100
chestnut oak	1,000,365	-	403,018	2,131	127,736	37,940	237,977	28,728	162,835
	39.45	-	25.27	4,749.81	90.31	411.35	52.98	506.51	111.52
northern red oak	546,850	16,591	202,998	23,087	72,996	169,261	84,642	-142,848	120,122
	70.02	100	37.53	257.29	91.63	58	151.83	-157.54	193.73
post oak	57,610	-	28,706	13,258	10,278	2,030	-	3,337	-
	42.75	-	68.6	49.81	51.9	100	-	100	-
black oak	1,064,015	-	195,250	11,302	159,177	206,317	-56,233	-100,387	648,589
	40.64	-	37.05	506.38	67.41	59.08	-322.59	-237.19	35.28
black locust	61,235	-	35,813	15,463	2,160	4,358	-	3,441	-
	39.97	-	57.49	59.33	100	100	-	100	-
sassafras	218,097	-	237,687	59,423	-73,504	-19,859	10,102	4,248	-
	47.38	-	24.38	26.68	-83.28	-251.2	100	100	-
American basswood	97,303	-	3,677	11,317	33,191	4,388	23,840	9,526	11,364
	43.24	-	830.7	47.91	56.4	100	57.29	100	100
American elm	-37,702	-13,542	19,691	-51,663	1,851	1,117	4,845	-	-
	-177.61	-100	176.99	-107.21	70.78	100	75.98	-	-
slippery elm	-44,308	-	56,364	-13,563	7,323	8,827	-	-112,097	8,838
	-290.62	-	67.11	-184.43	71.15	100	-	-106.35	100

End of Table 41 - Return

**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 - 2016**

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	11,213,913	-37,281	2,942,030	814,561	1,255,523	1,389,369	1,725,804	725,126	2,398,782
	8.73	-90.99	5.93	19.18	18.65	19.29	17.3	58.03	26.02
eastern redcedar	3,111	12,750	733	-20,556	4,451	5,734	-	-	-
	754.33	86.25	1,107.36	-85.51	83.72	85.7	-	-	-
Norway spruce	1,513	-	1,513	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
shortleaf pine	-11,379	-7,804	772	12,163	-55,176	22,273	-	16,393	-
	-515.11	-129.36	1,485.62	63.14	-92.08	71.29	-	100	-
red pine	-93,545	-24,467	-38,397	-46,525	1,476	-28,658	30,097	12,928	-
	-79.66	-60.11	-57.82	-98.19	322.69	-100	100	100	-
eastern white pine	249,044	-9,387	-13,966	3,168	44,893	59,886	158,233	87,101	-80,885
	97.47	-144.65	-132.24	1,150.98	129.62	78.24	65.86	115.45	-187.84
Virginia pine	-274,175	-8,372	-38,665	-89,610	-137,158	72,939	52,017	-	-125,325
	-69.74	-259	-93.91	-73.35	-66.79	48.68	33.68	-	-98.88
baldcypress	3,605	-	-	-	3,605	-	-	-	-
	100	-	-	-	100	-	-	-	-
boxelder	20,078	-	12,323	1,506	-	-	6,249	-	-
	51.76	-	66.36	100	-	-	100	-	-
red maple	603,178	-	334,303	95,216	114,750	75,634	83,340	41,464	-141,529
	40.4	-	15.95	26.56	17.48	25.33	36.08	41.3	-162.99
silver maple	66,344	-	7,914	11,118	-11,131	39,554	-5,543	-	24,431
	88.83	-	169.64	58.28	-287.99	62.95	-100	-	70.72
sugar maple	1,332,561	-	679,660	161,325	152,425	86,825	112,132	81,578	58,615
	8.79	-	10.41	23.54	35.72	53.36	23.04	29.27	35.22
Ohio buckeye	-36,085	-	-	-	-	-36,085	-	-	-
	-100	-	-	-	-	-100	-	-	-
river birch	-18,679	-	-	-18,679	-	-	-	-	-
	-100	-	-	-100	-	-	-	-	-
bitternut hickory	105,689	-	11,992	31,565	26,474	21,146	12,127	2,384	-
	21.05	-	55.79	37.36	39.5	46.7	62.59	169.99	-
pignut hickory	1,075,804	-	202,318	97,399	192,642	181,571	174,195	136,240	91,439
	12.72	-	18.98	35.3	24.33	29.01	35.92	32.96	31.98

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 +
shellbark hickory	6,496	-	-	-	6,496	-	-	-	-
	75.94	-	-	-	75.94	-	-	-	-
shagbark hickory	337,069	-	78,962	73,886	69,320	33,461	37,223	23,146	21,071
	12.87	-	26.41	21.97	23.03	35.83	39.07	65.61	76.52
mockernut hickory	9,836	-	1,575	789	4,695	-	2,777	-	-
	57.17	-	63	100	100	-	100	-	-
hackberry	47,443	-	40,253	-8,036	-	2,728	-	12,498	-
	52.21	-	50.1	-135.61	-	100	-	72.61	-
common persimmon	11,943	-	8,041	3,902	-	-	-	-	-
	61.2	-	84.31	70.65	-	-	-	-	-
American beech	380,348	-	168,114	26,549	53,186	3,487	-13,511	15,926	126,596
	30.48	-	20.42	89.66	24.85	1,173.22	-473.11	408.57	28.61
white ash	38,841	-	-179	15,639	4,861	70,096	-105,023	-40,935	94,382
	467.45	-	-203.41	179.78	749.69	26.41	-81.4	-167.57	127.08
green ash	37,411	-	3,349	-11,103	14,030	15,788	12,602	-	2,745
	56.31	-	86.97	-150	60.03	61.67	100	-	100
blue ash	-30,295	-	-	868	-	-38,670	-	-	7,507
	-115.77	-	-	100	-	-109.99	-	-	100
honeylocust	20,257	-	-	2,097	-	7,442	10,718	-	-
	90.24	-	-	100	-	100	100	-	-
black walnut	240,126	-	59,007	49,911	35,788	4,398	14,855	55,734	20,433
	30.44	-	30.2	22.88	46.61	773.98	58.34	76.31	51.83
sweetgum	113,625	-	34,629	24,801	28,464	19,406	6,325	-	-
	22.33	-	41.71	32.03	34.48	52.98	100	-	-
yellow-poplar	2,408,546	-	379,966	162,595	197,752	122,051	275,705	376,787	893,690
	17.23	-	19.5	34.44	47.07	111.21	44.18	51.38	31.21
blackgum	102,036	-	39,886	9,692	17,280	7,112	12,727	5,142	10,196
	22.68	-	35.42	42.81	39.03	61.6	72.56	100	76.74
American sycamore	555,428	-	70,124	31,741	69,476	77,699	73,259	77,925	155,204
	17.12	-	48.19	34.26	27.98	32.68	38.13	46.47	39.83
eastern cottonwood	59,623	-	-	4,272	10,823	11,289	42,247	-59,535	50,527
	139.07	-	-	101.29	80.83	63.18	53.06	-118.9	47.26
bigtooth aspen	55,061	-	9,869	3,864	24,075	7,539	4,305	-	5,410
	55.03	-	209.51	323.49	43.59	58.16	100	-	100
black cherry	165,335	-	88,107	-8,043	17,838	10,987	7,760	6,755	41,931
	26.74	-	30.02	-251.23	52.11	64.05	73.28	100	53.91
white oak	1,770,089	-	241,685	135,659	179,983	249,107	425,612	293,463	244,578
	19.36	-	18.89	22.83	44.36	35.01	22.72	31.04	105.85

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 +
scarlet oak	-85,681	-	27,938	7,615	-6,995	-19,213	41,712	-190,275	53,537
	-186.95	-	61.82	50.45	-448.51	-295.32	40.16	-63.53	36.53
northern pin oak	29,203	-	7,184	11,892	-	-	10,128	-	-
	48.7	-	100	59.46	-	-	100	-	-
shingle oak	21,319	-	9,202	6,536	-	-	5,581	-	-
	46.92	-	78.9	62.39	-	-	100	-	-
chinkapin oak	24,572	-	9,248	-5,769	-6,945	21,812	1,720	-	4,506
	144.69	-	72.59	-226.23	-300.91	41.6	100	-	100
pin oak	51,845	-	10,940	901	-2,558	9,825	17,118	10,013	5,605
	76.87	-	64.11	100	-1,093.27	83.93	100	100	100
chestnut oak	598,998	-	168,139	1,091	75,134	24,923	170,868	22,491	136,352
	46.21	-	25.27	4,749.81	90.31	411.35	52.98	506.51	118.24
northern red oak	264,023	-	84,691	11,816	42,936	111,188	60,773	-111,836	64,455
	123.41	-	37.53	257.29	91.63	58	151.83	-157.54	376.73
post oak	28,754	-	11,976	6,786	6,046	1,333	-	2,613	-
	39	-	68.6	49.81	51.9	100	-	100	-
black oak	813,093	-	81,458	5,785	93,628	135,529	-40,375	-78,593	615,661
	40.7	-	37.05	506.38	67.41	59.08	-322.59	-237.19	34.08
black locust	29,683	-	14,941	7,914	1,271	2,863	-	2,694	-
	38.4	-	57.49	59.33	100	100	-	100	-
sassafras	83,874	-	99,163	30,413	-43,235	-13,045	7,253	3,325	-
	68.34	-	24.38	26.68	-83.28	-251.2	100	100	-
American basswood	64,234	-	1,534	5,792	19,523	2,882	17,117	7,458	9,928
	36.84	-	830.7	47.91	56.4	100	57.29	100	100
American elm	-12,925	-	8,215	-26,441	1,089	733	3,479	-	-
	-247.51	-	176.99	-107.21	70.78	100	75.98	-	-
slippery elm	-53,360	-	23,515	-6,942	4,307	5,798	-	-87,760	7,721
	-180.33	-	67.11	-184.43	71.15	100	-	-106.35	100

End of Table 41a - Return

End of Growth

**Table 50. — Annual mortality of trees (at least 5 inches dbh), in cubic feet per year, on forest land by species and diameter class, Indiana State Forests 2013 - 2016  
2008-2012**

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	4,482,791	277,186	330,354	380,669	469,284	495,338	497,654	460,258	360,453	579,326	632,269
	5.85	7.17	7.7	8.51	10.37	11.69	14.32	17.62	20.65	18.57	22.75
eastern redcedar	47,558	13,653	5,015	8,780	6,372	13,738	-	-	-	-	-
	27.8	41.37	51.07	50.53	71.67	57.84	-	-	-	-	-
shortleaf pine	34,381	-	1,076	9,010	4,455	-	19,841	-	-	-	-
	46.19	-	100	61.47	100	-	71.52	-	-	-	-
red pine	110,464	5,221	18,493	27,620	24,624	27,004	-	7,502	-	-	-
	28.16	48.64	43.9	32.38	42.24	60.66	-	100	-	-	-
eastern white pine	183,990	2,399	7,621	19,280	20,158	21,487	23,481	12,543	20,536	21,468	35,017
	33.67	53.58	41.63	43.62	46.11	58.25	71.82	100	100	100	100
Virginia pine	279,626	9,956	20,692	41,841	53,823	62,968	65,759	-	-	-	24,587
	19.49	33.21	27.19	28.16	30.39	34.1	38.86	-	-	-	100
boxelder	5,584	1,193	-	4,392	-	-	-	-	-	-	-
	57.71	72.12	-	70.73	-	-	-	-	-	-	-
red maple	175,044	30,439	14,955	17,126	26,271	18,149	-	10,082	-	-	58,021
	35.34	21.68	35.24	40.98	40.96	58.1	-	100	-	-	100
silver maple	28,215	889	-	3,262	4,534	-	12,529	7,000	-	-	-
	54.67	100	-	100	100	-	100	100	-	-	-
sugar maple	198,379	38,166	32,669	25,745	30,737	26,030	17,639	13,818	-	13,575	-
	18.18	20.84	23.09	32.08	39.36	50.68	100	100	-	100	-
Ohio buckeye	13,529	-	-	-	-	-	-	13,529	-	-	-
	100	-	-	-	-	-	-	100	-	-	-
ailanthus	1,340	356	984	-	-	-	-	-	-	-	-
	100	100	100	-	-	-	-	-	-	-	-

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 +
European Alder	9,000	864	1,127	2,940	4,069	-	-	-	-	-	-
	90.85	100	100	100	100	-	-	-	-	-	-
river birch	13,068	606	1,329	2,244	-	8,889	-	-	-	-	-
	72.14	100	100	100	-	100	-	-	-	-	-
American hornbeam	393	393	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
bitternut hickory	3,064	-	-	3,064	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-
pignut hickory	61,645	2,922	5,981	2,124	10,159	20,944	7,105	12,410	-	-	-
	33.84	46.29	50.19	100	70.91	59.13	100	100	-	-	-
shagbark hickory	5,571	1,652	1,870	2,049	-	-	-	-	-	-	-
	52.88	60.72	100	100	-	-	-	-	-	-	-
hackberry	12,805	538	1,921	2,515	2,699	5,132	-	-	-	-	-
	50.63	100	70.75	100	100	100	-	-	-	-	-
eastern redbud	5,210	3,011	2,199	-	-	-	-	-	-	-	-
	38.5	41.37	71.61	-	-	-	-	-	-	-	-
flowering dogwood	13,093	9,586	3,508	-	-	-	-	-	-	-	-
	43.1	54.78	59.06	-	-	-	-	-	-	-	-
common persimmon	5,426	1,247	4,179	-	-	-	-	-	-	-	-
	78.77	71.86	100	-	-	-	-	-	-	-	-
American beech	197,099	1,600	7,194	2,777	6,373	8,704	18,692	12,841	18,888	42,910	77,120
	35.16	60.09	41.88	100	70.92	100	70.86	100	100	72.19	67.59
white ash	243,197	14,282	11,877	19,208	43,698	29,121	27,605	12,975	45,242	19,413	19,776
	24.99	24.62	37.47	35.57	41.48	45.82	58.22	100	58.45	100	100
green ash	13,543	885	2,304	-	3,157	7,198	-	-	-	-	-
	64.38	100	76.73	-	100	100	-	-	-	-	-
blue ash	15,002	522	-	-	-	-	-	14,480	-	-	-
	96.57	100	-	-	-	-	-	100	-	-	-
honeylocust	928	-	928	-	-	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-	-	-

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 walnut	15,923	1,105	1,145	2,351	-	-	-	11,322	-	-	-
	73.09	71.98	100	100	-	-	-	100	-	-	-
sweetgum	7,455	4,119	3,336	-	-	-	-	-	-	-	-
	45.57	50.97	58.62	-	-	-	-	-	-	-	-
yellow-poplar	579,708	50,072	54,417	38,590	61,227	42,001	73,635	85,853	50,418	48,719	74,776
	16.08	20.06	19.76	27.76	34.07	45.42	38.55	46.87	58.11	71.17	72.29
Osage-orange	2,597	-	-	2,597	-	-	-	-	-	-	-
	100	-	-	100	-	-	-	-	-	-	-
white mulberry	682	-	682	-	-	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-	-	-
blackgum	2,765	2,765	-	-	-	-	-	-	-	-	-
	58.68	58.68	-	-	-	-	-	-	-	-	-
eastern hophornbeam	3,249	967	-	2,282	-	-	-	-	-	-	-
	73.33	70.86	-	100	-	-	-	-	-	-	-
American sycamore	11,504	1,831	4,357	-	5,317	-	-	-	-	-	-
	59.13	73.85	72.24	-	100	-	-	-	-	-	-
eastern cottonwood	21,253	-	1,646	-	-	-	-	-	-	19,607	-
	92.54	-	100	-	-	-	-	-	-	100	-
bigtooth aspen	31,700	1,018	4,148	6,324	15,594	4,616	-	-	-	-	-
	38.08	71.18	77.54	71.29	50.29	100	-	-	-	-	-
black cherry	35,730	8,089	4,635	10,929	-	12,077	-	-	-	-	-
	29.99	25.79	59.16	50.47	-	70.69	-	-	-	-	-
white oak	354,796	4,962	17,851	19,830	30,158	21,277	34,743	49,180	27,297	32,463	117,034
	23.31	38.77	28.52	35.73	38.06	50.34	50.24	50.66	71.44	70.78	51.59
scarlet oak	107,896	-	2,299	2,343	4,484	-	14,250	25,591	-	58,929	-
	43.42	-	100	100	100	-	72.01	70.95	-	58.36	-
shingle oak	1,087	-	1,087	-	-	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-	-	-
bur oak	588	588	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-



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 +
chinkapin oak	14,375	413	1,063	-	-	5,476	7,423	-	-	-	-
	90.06	100	100	-	-	100	100	-	-	-	-
pin oak	15,150	715	2,457	2,195	-	-	9,783	-	-	-	-
	68.27	100	100	100	-	-	100	-	-	-	-
chestnut oak	460,299	5,369	12,316	19,702	31,254	60,179	74,498	79,890	52,951	60,296	63,845
	17.39	41.21	39.54	33.62	41	30.76	32.07	40.71	50.29	50.3	58.01
northern red oak	342,552	2,821	5,933	12,598	14,205	20,653	23,760	31,228	45,906	99,591	85,856
	22.61	45.11	50.96	45.55	60.52	58.08	57.78	57.75	57.99	45.26	58.39
post oak	10,566	-	3,875	1,956	-	4,735	-	-	-	-	-
	64.56	-	78.33	100	-	100	-	-	-	-	-
black oak	448,941	1,879	6,360	8,669	19,722	22,958	33,916	46,793	99,215	133,192	76,236
	19.58	58.35	46.77	50.29	45.33	50.78	61.49	50.42	38.25	38.58	59.02
black locust	13,933	2,735	3,891	4,752	2,555	-	-	-	-	-	-
	46.59	58.83	83.18	100	100	-	-	-	-	-	-
sassafras	199,271	35,742	41,312	37,847	19,346	18,807	32,995	13,221	-	-	-
	18.76	15.62	21.68	24.57	46.49	73.91	50.24	100	-	-	-
American basswood	10,942	-	1,455	-	9,487	-	-	-	-	-	-
	73.19	-	100	-	71.55	-	-	-	-	-	-
American elm	55,594	6,823	6,378	9,202	10,115	23,076	-	-	-	-	-
	27.23	31.06	41.05	51.45	59.57	51.04	-	-	-	-	-
slippery elm	57,079	4,790	3,790	4,526	4,693	10,118	-	-	-	29,163	-
	54.22	50.21	74.64	73.79	100	71.5	-	-	-	100	-

End of Table 50 - Return

**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 - 2016**

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 +
	15,661,774	616,414	1,927,181	2,127,551	2,203,207	2,071,184	1,679,526	2,553,244	2,459,544
<b>Species</b>	<b>7.36</b>	<b>16.34</b>	<b>11.5</b>	<b>12.53</b>	<b>15.31</b>	<b>18.5</b>	<b>21.14</b>	<b>19.24</b>	<b>23.8</b>
eastern redcedar	85,718	24,158	18,738	42,822	-	-	-	-	-
	<b>46.21</b>	<b>71.51</b>	<b>100</b>	<b>70.88</b>	-	-	-	-	-
shortleaf pine	172,512	44,340	22,188	-	105,984	-	-	-	-
	<b>48.41</b>	<b>61.86</b>	<b>100</b>	-	<b>71.53</b>	-	-	-	-
red pine	428,607	126,817	118,129	129,314	-	38,009	-	-	-
	<b>29.48</b>	<b>32.38</b>	<b>42.19</b>	<b>60.69</b>	-	<b>100</b>	-	-	-
eastern white pine	817,347	88,888	75,567	103,245	111,906	59,502	98,104	105,129	167,424
	<b>34.63</b>	<b>43.78</b>	<b>51.69</b>	<b>58.14</b>	<b>71.95</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Virginia pine	1,291,609	206,446	272,061	327,857	350,469	-	-	-	134,776
	<b>21.45</b>	<b>28.22</b>	<b>30.33</b>	<b>34.08</b>	<b>38.84</b>	-	-	-	<b>100</b>
red maple	359,238	13,187	112,221	30,297	-	-	-	-	203,533
	<b>58.76</b>	<b>100</b>	<b>40.97</b>	<b>100</b>	-	-	-	-	<b>100</b>
silver maple	73,285	-	19,402	-	53,882	-	-	-	-
	<b>78.15</b>	-	<b>100</b>	-	<b>100</b>	-	-	-	-
sugar maple	354,635	-	84,809	122,729	82,886	64,212	-	-	-
	<b>36.57</b>	-	<b>52.46</b>	<b>50.74</b>	<b>100</b>	<b>100</b>	-	-	-
Ohio buckeye	59,179	-	-	-	-	59,179	-	-	-
	<b>100</b>	-	-	-	-	<b>100</b>	-	-	-
river birch	39,079	-	-	39,079	-	-	-	-	-
	<b>100</b>	-	-	<b>100</b>	-	-	-	-	-
pignut hickory	224,494	-	50,095	79,053	34,766	60,580	-	-	-
	<b>42.88</b>	-	<b>70.93</b>	<b>70.74</b>	<b>100</b>	<b>100</b>	-	-	-
hackberry	23,500	-	-	23,500	-	-	-	-	-
	<b>100</b>	-	-	<b>100</b>	-	-	-	-	-
American beech	275,363	-	-	42,746	-	61,770	89,501	81,346	-
	<b>51.69</b>	-	-	<b>100</b>	-	<b>100</b>	<b>100</b>	<b>100</b>	-
white ash	747,365	-	176,400	88,520	86,518	-	212,620	90,912	92,394
	<b>31.24</b>	-	<b>44.66</b>	<b>58.48</b>	<b>71.6</b>	-	<b>58.45</b>	<b>100</b>	<b>100</b>
green ash	33,048	-	-	33,048	-	-	-	-	-
	<b>100</b>	-	-	<b>100</b>	-	-	-	-	-
blue ash	67,871	-	-	-	-	67,871	-	-	-
	<b>100</b>	-	-	-	-	<b>100</b>	-	-	-

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 walnut	51,343	-	-	-	-	51,343	-	-	-
	100	-	-	-	-	100	-	-	-
yellow-poplar	2,234,192	55,948	292,196	214,377	347,413	443,517	260,817	255,030	364,894
	20.44	57.77	35.46	45.48	41.37	47.05	58.25	71.08	72
American sycamore	22,840	-	22,840	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
eastern cottonwood	97,076	-	-	-	-	-	-	97,076	-
	100	-	-	-	-	-	-	100	-
bigtooth aspen	111,404	16,581	72,673	22,150	-	-	-	-	-
	47.54	100	50.42	100	-	-	-	-	-
black cherry	65,668	11,346	-	54,322	-	-	-	-	-
	61.02	100	-	70.74	-	-	-	-	-
white oak	1,391,912	13,492	146,868	102,987	162,658	224,039	123,372	143,741	474,754
	25.2	100	38.05	50.35	50.27	50.66	71.44	70.8	51.03
scarlet oak	490,727	-	21,894	-	69,914	123,574	-	275,344	-
	45.01	-	100	-	71.9	70.93	-	58.33	-
chinkapin oak	60,964	-	-	26,132	34,833	-	-	-	-
	100	-	-	100	100	-	-	-	-
pin oak	47,476	-	-	-	47,476	-	-	-	-
	100	-	-	-	100	-	-	-	-
chestnut oak	1,907,791	-	143,001	296,690	319,222	380,181	199,151	280,243	289,303
	19.2	-	43.76	30.79	33.86	40.21	58.06	50.45	57.94
northern red oak	1,532,118	-	69,816	101,674	117,140	153,682	222,721	479,303	387,782
	23.7	-	60.56	58.07	57.77	57.75	57.98	45.25	58.24
black oak	2,024,119	-	80,206	112,552	165,786	225,700	473,241	621,949	344,685
	20.26	-	50.57	50.8	61.48	50.4	38.24	38.52	58.84
sassafras	213,804	-	43,426	-	112,355	58,024	-	-	-
	42.44	-	58.49	-	58	100	-	-	-
American basswood	27,110	-	27,110	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
American elm	158,818	15,210	35,799	107,809	-	-	-	-	-
	39.31	100	71.37	50.91	-	-	-	-	-
slippery elm	171,559	-	21,742	26,647	-	-	-	123,170	-
	74.54	-	100	100	-	-	-	100	-

End of Table 51 - Return

**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 - 2016**

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	10,473,917	169,520	834,826	1,141,604	1,354,240	1,371,443	1,219,566	2,007,513	2,375,205
	8.47	18.39	11.47	12.64	15.38	18.47	21.23	19.25	24.38
eastern redcedar	42,962	8,347	8,957	25,659	-	-	-	-	-
	49.17	71.51	100	70.88	-	-	-	-	-
shortleaf pine	99,139	15,320	10,606	-	73,214	-	-	-	-
	54.7	61.86	100	-	71.53	-	-	-	-
red pine	206,975	43,815	56,466	77,485	-	29,210	-	-	-
	33.26	32.38	42.19	60.69	-	100	-	-	-
eastern white pine	589,284	30,711	36,121	61,865	77,304	45,727	84,104	90,884	162,568
	40.09	43.78	51.69	58.14	71.95	100	100	100	100
Virginia pine	767,871	71,327	130,045	196,452	242,104	-	-	-	127,942
	25.18	28.22	30.33	34.08	38.84	-	-	-	100
red maple	293,315	-	46,819	15,506	-	-	-	-	230,990
	79.17	-	40.97	100	-	-	-	-	100
silver maple	39,788	-	8,095	-	31,694	-	-	-	-
	82.21	-	100	-	100	-	-	-	-
sugar maple	189,129	-	35,382	62,812	48,753	42,181	-	-	-
	39.24	-	52.46	50.74	100	100	-	-	-
Ohio buckeye	38,874	-	-	-	-	38,874	-	-	-
	100	-	-	-	-	100	-	-	-
river birch	20,001	-	-	20,001	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
pignut hickory	121,604	-	20,900	40,460	20,449	39,795	-	-	-
	45.35	-	70.93	70.74	100	100	-	-	-
hackberry	12,027	-	-	12,027	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
American beech	190,401	-	-	21,877	-	40,577	64,261	63,686	-
	53.32	-	-	100	-	100	100	100	-
white ash	470,534	-	73,594	45,305	50,890	-	152,661	71,175	76,909
	33.54	-	44.66	58.48	71.6	-	58.45	100	100
green ash	16,914	-	-	16,914	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
blue ash	44,585	-	-	-	-	44,585	-	-	-
	100	-	-	-	-	100	-	-	-

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 walnut	33,727	-	-	-	-	33,727	-	-	-
	100	-	-	-	-	100	-	-	-
yellow-poplar	1,442,963	-	121,904	109,718	204,348	291,347	187,266	199,663	328,716
	23.91	-	35.46	45.48	41.37	47.05	58.25	71.08	72.94
American sycamore	9,529	-	9,529	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
eastern cottonwood	76,001	-	-	-	-	-	-	76,001	-
	100	-	-	-	-	-	-	100	-
bigtooth aspen	41,655	-	30,319	11,336	-	-	-	-	-
	45.67	-	50.42	100	-	-	-	-	-
black cherry	27,802	-	-	27,802	-	-	-	-	-
	70.74	-	-	70.74	-	-	-	-	-
white oak	1,037,908	-	61,273	52,709	95,676	147,171	88,581	112,535	479,963
	29.57	-	38.05	50.35	50.27	50.66	71.44	70.8	52.74
scarlet oak	347,001	-	9,134	-	41,123	81,176	-	215,567	-
	46.84	-	100	-	71.9	70.93	-	58.33	-
chinkapin oak	33,863	-	-	13,374	20,489	-	-	-	-
	100	-	-	100	100	-	-	-	-
pin oak	27,926	-	-	-	27,926	-	-	-	-
	100	-	-	-	100	-	-	-	-
chestnut oak	1,268,251	-	59,660	151,846	187,766	249,741	142,990	219,402	256,845
	20.58	-	43.76	30.79	33.86	40.21	58.06	50.45	58.22
northern red oak	1,189,539	-	29,127	52,037	68,902	100,954	159,914	375,246	403,359
	26.61	-	60.56	58.07	57.77	57.75	57.98	45.25	59.14
black oak	1,471,467	-	33,462	57,604	97,515	148,263	339,787	486,924	307,912
	21.4	-	50.57	50.8	61.48	50.4	38.24	38.52	59.54
sassafras	122,320	-	18,117	-	66,087	38,116	-	-	-
	44.97	-	58.49	-	58	100	-	-	-
American basswood	11,310	-	11,310	-	-	-	-	-	-
	100	-	100	-	-	-	-	-	-
American elm	70,112	-	14,936	55,177	-	-	-	-	-
	42.85	-	71.37	50.91	-	-	-	-	-
slippery elm	119,138	-	9,071	13,638	-	-	-	96,430	-
	82.1	-	100	100	-	-	-	100	-

End of Table 51a - Return

### End of Mortality

**Table 60. — Annual removals of trees (at least 5 inches dbh), in cubic feet per year, on forest land by species and diameter class, Indiana State Forests 2013 - 2016**

**2008-2012**

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	3,593,740	70,959	89,182	109,207	225,124	303,739	484,325	381,634	448,665	358,090	1,122,816
	9.5	13.52	16.45	18.07	20.83	18.43	16.15	18.03	20.73	26.25	18.87
eastern redcedar	11,351	-	3,241	-	3,147	4,963	-	-	-	-	-
	73.54	-	77.53	-	100	100	-	-	-	-	-
shortleaf pine	12,101	-	-	8,744	3,357	-	-	-	-	-	-
	100	-	-	100	100	-	-	-	-	-	-
red pine	44,134	1,077	6,076	5,251	25,213	6,516	-	-	-	-	-
	73.8	100	100	100	88.66	100	-	-	-	-	-
eastern white pine	98,522	-	-	9,802	-	33,182	41,691	13,847	-	-	-
	96.12	-	-	72.06	-	100	100	100	-	-	-
Virginia pine	66,673	-	2,283	-	22,136	16,508	16,243	9,503	-	-	-
	38.54	-	100	-	45.13	100	70.65	100	-	-	-
red maple	162,787	9,360	8,434	9,939	13,465	29,642	43,602	28,097	-	-	20,248
	24.33	31.92	41	53.44	58.39	44.67	44.96	74.14	-	-	100
silver maple	6,081	-	-	-	-	6,081	-	-	-	-	-
	100	-	-	-	-	100	-	-	-	-	-
sugar maple	267,404	22,015	21,882	19,009	32,924	40,130	50,639	13,423	67,382	-	-
	21.52	20.22	28.62	39.25	45.1	46.92	44.81	100	50.9	-	-
bitternut hickory	15,724	519	-	-	-	-	-	-	15,205	-	-
	96.75	100	-	-	-	-	-	-	100	-	-
pignut hickory	140,245	858	6,021	4,801	9,587	18,564	39,908	25,164	35,342	-	-
	31.88	70.8	41.11	70.91	71.96	58.09	50.5	71.34	70.87	-	-
shagbark hickory	37,234	-	-	-	-	-	14,408	10,766	12,060	-	-
	58.06	-	-	-	-	-	100	100	100	-	-

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	1,330	1,330	-	-	-	-	-	-	-	-	-
	74.47	74.47	-	-	-	-	-	-	-	-	-
flowering dogwood	2,851	1,677	1,174	-	-	-	-	-	-	-	-
	73.71	61.56	100	-	-	-	-	-	-	-	-
common persimmon	941	941	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
American beech	174,270	3,087	3,935	11,055	11,438	5,798	8,527	9,189	28,265	35,606	57,370
	35.63	56.59	61.23	50.82	58.29	100	100	100	71.03	70.78	74.43
white ash	123,742	524	2,556	-	4,234	6,648	33,450	31,884	29,692	14,754	-
	31.55	100	70.71	-	100	100	50.57	57.79	71	100	-
green ash	41,514	-	-	-	-	-	16,070	-	-	-	25,443
	67.13	-	-	-	-	-	70.72	-	-	-	100
black walnut	18,522	-	-	2,575	-	-	-	-	-	15,947	-
	87.21	-	-	100	-	-	-	-	-	100	-
sweetgum	11,550	-	-	1,705	4,502	5,343	-	-	-	-	-
	62.1	-	-	100	100	100	-	-	-	-	-
yellow-poplar	723,509	8,754	11,254	2,253	18,760	5,661	8,291	41,455	86,761	126,267	414,053
	23.71	46.78	45.04	100	62.25	100	100	57.71	45.4	47.35	35.58
blackgum	21,584	4,496	1,114	4,830	-	-	11,145	-	-	-	-
	57.78	36.47	100	70.88	-	-	100	-	-	-	-
eastern hophornbeam	433	433	-	-	-	-	-	-	-	-	-
	100	100	-	-	-	-	-	-	-	-	-
American sycamore	11,999	-	3,019	-	-	-	8,979	-	-	-	-
	77.02	-	72.33	-	-	-	100	-	-	-	-
bigtooth aspen	103,191	-	-	2,658	7,002	8,399	42,809	42,322	-	-	-
	40.92	-	-	100	70.93	100	45.75	58.36	-	-	-
black cherry	11,419	4,549	-	-	-	6,870	-	-	-	-	-
	72.16	100	-	-	-	100	-	-	-	-	-
white oak	251,061	800	1,089	2,711	3,905	16,995	15,948	26,581	36,395	23,721	122,917
	26.91	100	100	100	100	58.54	70.91	58.02	59.04	100	41.2

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 +
shingle oak	2,864	713	2,151	-	-	-	-	-	-	-	-
	100	100	100	-	-	-	-	-	-	-	-
chestnut oak	208,276	693	-	4,843	3,527	26,022	36,877	53,716	27,940	20,902	33,757
	24.91	100	-	71.17	100	44.78	44.93	46.49	71.31	100	70.7
northern red oak	158,775	799	-	3,412	11,322	5,349	27,083	10,616	17,471	-	82,723
	35.5	100	-	100	58.84	100	60.34	100	100	-	58.33
black oak	637,986	-	2,835	4,992	7,828	34,714	29,142	49,498	36,937	105,737	366,303
	21.57	-	74.17	71.17	100	41.22	57.82	50.13	71.05	41.23	32.35
sassafras	178,387	6,291	9,486	10,628	34,428	15,535	29,301	15,572	41,989	15,158	-
	54.45	35.2	37.92	47.92	50.77	72.49	75.38	100	100	100	-
American basswood	16,250	751	-	-	5,289	-	10,210	-	-	-	-
	70.83	100	-	-	100	-	100	-	-	-	-
American elm	24,884	618	2,632	-	3,060	5,346	-	-	13,228	-	-
	59.19	100	74.12	-	100	100	-	-	100	-	-
slippery elm	6,147	675	-	-	-	5,473	-	-	-	-	-
	89.7	100	-	-	-	100	-	-	-	-	-

End of Table 60 - Return



**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 - 2016**

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 +
	15,432,386	160,089	1,041,580	1,394,358	2,269,421	1,833,223	2,104,265	1,542,770	5,086,680
<b>Species</b>	<b>9.92</b>	<b>41.14</b>	<b>21.3</b>	<b>18.92</b>	<b>16.44</b>	<b>18.03</b>	<b>20.93</b>	<b>26.55</b>	<b>18.81</b>
eastern redcedar	23,147	-	-	23,147	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
shortleaf pine	61,243	44,159	17,084	-	-	-	-	-	-
	100	100	100	-	-	-	-	-	-
red pine	178,706	24,404	122,129	32,172	-	-	-	-	-
	81.13	100	88.79	100	-	-	-	-	-
eastern white pine	477,401	45,108	-	159,703	204,201	68,389	-	-	-
	96.34	72.15	-	100	100	100	-	-	-
Virginia pine	333,879	-	111,713	87,207	84,739	50,220	-	-	-
	40.04	-	45.18	100	70.65	100	-	-	-
red maple	592,960	17,526	57,648	127,292	186,815	119,783	-	-	83,897
	27.49	100	58.39	44.67	44.95	74.08	-	-	100
silver maple	26,153	-	-	26,153	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
sugar maple	947,235	-	142,146	190,597	240,412	63,035	311,046	-	-
	26.71	-	48.81	46.99	44.82	100	50.99	-	-
bitternut hickory	74,821	-	-	-	-	-	74,821	-	-
	100	-	-	-	-	-	100	-	-
pignut hickory	585,618	-	47,074	90,833	151,922	123,247	172,542	-	-
	35.36	-	71.93	58.1	58.46	71.35	70.87	-	-
shagbark hickory	177,648	-	-	-	68,397	51,340	57,911	-	-
	58.04	-	-	-	100	100	100	-	-
American beech	733,922	-	56,849	28,515	41,614	44,467	134,547	166,549	261,382
	38.61	-	58.29	100	100	100	71	70.78	74.14
white ash	493,724	-	19,012	30,616	155,312	149,228	139,556	-	-
	34.17	-	100	100	50.59	57.79	71	-	-
green ash	188,175	-	-	-	74,684	-	-	-	113,490
	66.52	-	-	-	70.72	-	-	-	100
black walnut	82,877	12,300	-	-	-	-	-	70,577	-
	86.44	100	-	-	-	-	-	100	-
sweetgum	43,872	-	19,994	23,878	-	-	-	-	-
	70.78	-	100	100	-	-	-	-	-

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	3,352,198	-	90,935	28,307	43,428	208,195	457,585	537,465	1,986,283
	23.9	-	62.03	100	100	57.73	45.53	44.77	34.8
blackgum	49,678	-	-	-	49,678	-	-	-	-
	100	-	-	-	100	-	-	-	-
American sycamore	41,898	-	-	-	41,898	-	-	-	-
	100	-	-	-	100	-	-	-	-
bigtooth aspen	501,237	-	32,602	40,876	216,127	211,632	-	-	-
	42.23	-	70.98	100	45.81	58.42	-	-	-
black cherry	30,800	-	-	30,800	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
white oak	1,051,455	-	19,194	81,372	74,466	123,045	122,904	105,295	525,180
	27.57	-	100	58.51	70.9	58.01	71.61	100	41.13
chestnut oak	975,627	-	17,432	128,970	179,373	262,219	131,501	101,128	155,005
	25.44	-	100	44.77	44.95	46.48	71.22	100	70.66
northern red oak	753,245	16,591	55,307	26,218	133,688	52,195	84,808	-	384,438
	35.26	100	58.88	100	60.32	100	100	-	58.28
black oak	2,810,689	-	38,178	143,976	141,845	238,070	175,950	495,664	1,577,005
	21.23	-	100	45.19	57.79	50.13	71.04	41.23	31.79
sassafras	671,302	-	154,120	69,451	130,747	68,160	182,733	66,092	-
	61.55	-	50.82	72.51	75.43	100	100	100	-
American basswood	76,361	-	26,285	-	50,076	-	-	-	-
	73.99	-	100	-	100	-	-	-	-
American elm	72,241	-	13,880	-	-	-	58,361	-	-
	83.01	-	100	-	-	-	100	-	-
slippery elm	24,276	-	-	24,276	-	-	-	-	-
	100	-	-	100	-	-	-	-	-

End of Table 61 - Return

**Table 61a. — Removals of sawtimber trees (Doyle rule), in board feet, on forest land by species and diameter class, Indiana State Forests 2013 - 2016**

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	11,454,108	39,274	449,804	740,047	1,364,519	1,217,481	1,510,862	1,207,835	4,924,287
	11.2	52.82	21.82	19.85	17.04	18.05	20.93	26.55	19.79
eastern redcedar	13,870	-	-	13,870	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
shortleaf pine	23,423	15,257	8,166	-	-	-	-	-	-
	100	100	100	-	-	-	-	-	-
red pine	86,087	8,432	58,378	19,278	-	-	-	-	-
	83.99	100	88.79	100	-	-	-	-	-
eastern white pine	304,897	15,585	-	95,694	141,062	52,557	-	-	-
	98	72.15	-	100	100	100	-	-	-
Virginia pine	202,785	-	53,399	52,255	58,538	38,594	-	-	-
	41.56	-	45.18	100	70.65	100	-	-	-
red maple	347,604	-	24,051	65,148	109,884	78,685	-	-	69,835
	31.16	-	58.39	44.67	44.95	74.08	-	-	100
silver maple	13,385	-	-	13,385	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
sugar maple	563,000	-	59,303	97,547	141,410	41,407	223,331	-	-
	28.68	-	48.81	46.99	44.82	100	50.99	-	-
bitternut hickory	53,721	-	-	-	-	-	53,721	-	-
	100	-	-	-	-	-	100	-	-
pignut hickory	360,334	-	19,639	46,488	89,361	80,961	123,885	-	-
	36.91	-	71.93	58.1	58.46	71.35	70.87	-	-
shagbark hickory	115,536	-	-	-	40,231	33,725	41,580	-	-
	57.85	-	-	-	100	100	100	-	-
American beech	543,651	-	23,718	14,594	24,477	29,210	96,604	130,391	224,657
	42.11	-	58.29	100	100	100	71	70.78	74.62
white ash	313,185	-	7,932	15,669	91,355	98,028	100,201	-	-
	35.1	-	100	100	50.59	57.79	71	-	-
green ash	172,730	-	-	-	43,929	-	-	-	128,800
	76.71	-	-	-	70.72	-	-	-	100
black walnut	55,255	-	-	-	-	-	-	55,255	-
	100	-	-	-	-	-	-	100	-
sweetgum	20,562	-	8,342	12,221	-	-	-	-	-
	71.76	-	100	100	-	-	-	-	-

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	3,001,477	-	37,938	14,487	25,544	136,763	328,546	420,781	2,037,417
	26.43	-	62.03	100	100	57.73	45.53	44.77	36.1
blackgum	29,220	-	-	-	29,220	-	-	-	-
	100	-	-	-	100	-	-	-	-
American sycamore	24,645	-	-	-	24,645	-	-	-	-
	100	-	-	-	100	-	-	-	-
bigtooth aspen	300,669	-	13,602	20,921	127,126	139,021	-	-	-
	43.52	-	70.98	100	45.81	58.42	-	-	-
black cherry	15,763	-	-	15,763	-	-	-	-	-
	100	-	-	100	-	-	-	-	-
white oak	789,619	-	8,008	41,646	43,801	80,829	88,245	82,436	444,656
	28.53	-	100	58.51	70.9	58.01	71.61	100	41.17
chestnut oak	653,655	-	7,272	66,007	105,507	172,251	94,418	79,173	129,026
	26.62	-	100	44.77	44.95	46.48	71.22	100	70.66
northern red oak	541,903	-	23,074	13,418	78,636	34,287	60,892	-	331,597
	39.37	-	58.88	100	60.32	100	100	-	58.45
black oak	2,402,123	-	15,928	73,687	83,433	156,388	126,332	388,055	1,558,299
	23.78	-	100	45.19	57.79	50.13	71.04	41.23	33.16
sassafras	404,469	-	64,299	35,545	76,905	44,775	131,202	51,743	-
	62.78	-	50.82	72.51	75.43	100	100	100	-
American basswood	40,421	-	10,966	-	29,455	-	-	-	-
	77.7	-	100	-	100	-	-	-	-
American elm	47,694	-	5,791	-	-	-	41,903	-	-
	88.67	-	100	-	-	-	100	-	-
slippery elm	12,424	-	-	12,424	-	-	-	-	-
	100	-	-	100	-	-	-	-	-

End of Table 61a - Return

**End of Removals**