Ohio's Forests, 2011: Statistics, Methods, and Quality Assurance

USDA United States Department of Agriculture

Forest Service

Forest Inventory Methods

Strategic Model

The Forest Inventory and Analysis program of the Northern Research Station (NRS FIA) is part of the national enhanced FIA program that focuses on a set of six strategic objectives (McRoberts 2005):

- A standard set of variables with nationally consistent meanings and measurements
- Field inventories of all forested lands
- Nationally consistent estimation
- Adherence to national precision standards
- Consistent reporting and data distribution
- Credibility with users and stakeholders

To ensure that these six strategic objectives are achieved, 10 strategic approaches have been prescribed:

- A national set of prescribed core variables with a national field manual that prescribes measurement procedures and protocols for each variable
- A nationally consistent plot configuration
- A nationally consistent sampling design
- Estimation using standardized formulas for sample-based estimators
- A national database of FIA data with core standards and user-friendly public access
- A national information management system
- A nationally consistent set of tables of estimates of prescribed core variables
- Publication of statewide tables with estimates of prescribed core variables at 5-year intervals
- Documentation of the technical aspects of the FIA program including procedures, protocols, and techniques
- Peer review and publication of the technical documentation for general access

The result of the strategic objectives and approaches is an inventory program with identifiably new features and a nationally consistent plot configuration, a nationally consistent sampling design for all lands, annual measurement of a proportion of plots in each state, nationally consistent estimation techniques and algorithms, and integration of the ground sampling components of the FIA inventory and the detection monitoring by the U.S. Forest Service's Forest Health Monitoring (FHM) program.

Plot Configuration

The national FIA plot design consists of four 24-foot-radius subplots configured as a central subplot and three peripheral subplots (Fig. 75). Centers of the peripheral subplots are located at distances of 120 feet from the central subplot at azimuths of 0°, 120°, and 240° from the center of the central subplot. Each tree with a diameter at breast height (d.b.h.) of 5 inches or greater is measured on these subplots. Each subplot contains a 6.8-foot-radius microplot with center located 12 feet east of the subplot center on which each tree with d.b.h. between 1 and 5 inches is measured. Forest conditions that occur on any of the four subplots are identified and recorded. If the area of the condition is 1 acre or greater,

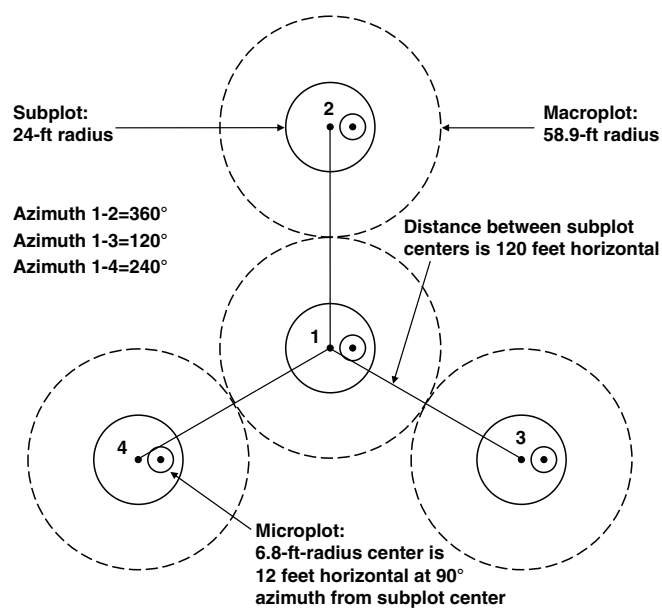

Figure 75.—FIA plot design (adapted from Bechtold and Patterson 2005).

the condition is mapped on the subplot. Factors that differentiate forest conditions include forest type, stand-size class, stand origin, land use, ownership, and density.

Sample Design

Based on historic sampling errors, a sampling intensity of approximately one plot per 6,000 acres is necessary to satisfy national FIA precision guidelines. Therefore, FIA divided the area of the United States into nonoverlapping, 5,937-acre hexagons and has established a sample plot location in each hexagon. This array of field plots is designated the federal base sample and is considered an equal probability sample; its measurement is funded by the Federal government.

The federal base sample is divided into five interpenetrating, panels or subsamples, each of which provides complete, systematic coverage of a state. Each year, plots in a single panel are measured and panels are selected on a 5-year, rotating basis (McRoberts 1999) that is the plots measured in 2006 were measured again in 2011 and the plots measured in 2004 were measured again in 2009. For estimation purposes, the measurement of each panel of plots is considered an independent, equal probability sample of all lands in a state and the remeasurement of a panel is considered an equal probability sample of change occurring on all lands in a state.

Three-phase Inventory

FIA conducts inventories in three phases. Phase 1 (P1) uses remotely sensed data to obtain initial plot land cover observations and to stratify land area in the population of interest to increase the precision of estimates. In Phase 2 (P2), field crews visit the physical locations of permanent field plots to measure traditional inventory variables such as tree species, diameter, and height. In Phase 3 (P3), field crews visit a subset of P2 plots to obtain measurements for an additional suite of variables associated with forest and ecosystem health. The three phases of the enhanced FIA program are discussed in greater detail in the following sections.

Phase 1

Aerial photographs, digital orthoquads (DOQs: digitally scanned aerial photographs), and satellite imagery are used for initial plot measurement via remotely sensed data and stratification. P1 plot measurement consists of observations of conditions at the plot locations using aerial photographs or DOQs. Analysts determine a digitized geographic location for each field plot, and a human interpreter assigns the plot a land cover/use. Lands satisfying FIA's definition of forest land include commercial timberland, some pastured land with trees, forest plantations, unproductive forested land, and reserved, noncommercial forested land. In addition, forest land requires minimum stocking levels, a 1-acre minimum area, and a minimum bole-to-bole width of 120 feet with continuous canopy. Forest land excludes wooded strips and windbreaks less than 120 feet wide and idle farmland or other previously nonforest land that currently is below minimum stocking levels. All plot locations that could possibly contain forest land, plus any additional plots that contained forest land at the previous measurement are selected for further measurement via field-crew visits in P2.

The combination of natural variability among plots and budgetary constraints prohibits measurement of a sufficient number of plots to satisfy national precision standards for most inventory variables unless the estimation process is enhanced using ancillary data. Thus, the land area is stratified by using remotely sensed data to facilitate stratified estimation.

NRS-FIA uses canopy density classes to derive strata. Canopy density information was obtained from the 2001 National Land Cover Database (NLCD). The NLCD 2001 canopy density layer for the United States was produced through a cooperative project conducted by the Multi-Resolution Land Characteristics (MRLC) Consortium (http://www.mrlc.gov/). The layer characterizes subtle variations of forest canopy density as a percentage estimate of forest canopy cover (0–100) within every 30-m pixel over the United States. The method employed to map canopy density for NLCD 2001 is described in detail in Homer et al. (2007).

Strata Construction

The strata construction methods used by Northern FIA were developed to work well across the entire 24-state region. Using plot location information (center of the center subplot), a percent canopy density value was assigned to each plot. Plots were then aggregated into one of the five canopy cover classes based on the center of the center subplot. The percent canopy cover classification scheme consists of five groupings: (1) 0 to 5 percent, (2) 6 to 50 percent, (3) 51 to 65 percent, (4) 66 to 80 percent, and (5) 81 to 100 percent. These groupings were based on observed natural clumping of pixel values.

In addition to the classification of every pixel into one of the five canopy cover classes, every pixel was also assigned to an ownership class. The Protected Areas Database (Conservation Biology Institute 2010) was initially used and then state-specific data were added. The largest ownership class, based on pixel counts, was private ownership at 7.0 million acres. Every pixel was also assigned to a county based on the location of the pixel center. If there were not a sufficient number of plots within a canopy cover class/ownership class/county for valid estimation purposes then specific collapsing rules were used to combine classes until sufficient sample sizes were obtained. These collapsed classes defined the strata used in the estimation. NRS-FIA required a minimum of 4 plots per stratum. Stratified estimation requires that two tasks be accomplished. First, each plot must be assigned to a stratum. Next, the proportion of the total area in each stratum must be calculated. The first task is accomplished by assigning each plot to the stratum assigned for the pixel containing the center of the center subplot. The second task is accomplished by calculating the proportion of pixels in each stratum. The population estimate for a variable is calculated as the sum across all strata of the product of each stratum's observed proportion (from P1) and the variable's estimated mean per unit area for the stratum (from P2). Details of the stratum assignments used are presented in the estimation section of this report that follows the P2 and P3 descriptions.

Phase 2

In P2, field crews record a variety of data for plot locations determined in P1 to include accessible forest land. Before visiting plot locations, field crews consult county land records to determine the ownership of plots and then seek permission from private landowners to measure plots on their lands. At the plot field crews determine the location of the geographic center of the center subplot using global positioning system (GPS) receivers. They record condition-level observations that include land cover, forest type, stand origin, stand age, stand-size class, site-productivity class, history of forest disturbance, and land use for every condition (major land use of forest stand at least 1 acre in size) that occurs on the plot. They also record information on condition boundaries when multiple conditions are found on a plot. For each tree, field crews record a variety of observations and measurements, including condition, species, live/dead status, lean, diameter, height, crown ratio (percent of tree height represented by crown), crown class (dominant, codominant, suppressed), damage, and decay status. All trees measured in the previous measurement of the plot are remeasured or otherwise accounted for and any new trees that have grown onto the plot are measured. Office staff use statistical models based on field-crew measurements to calculate values for additional variables, including individual-tree volume, per unit area estimates of number of trees, volume, and biomass by plot, condition, species group, and live/dead status. The remeasurement of every tree enables the calculation of components of change including growth, mortality, and removals. Details of the data collection procedures used in P2 are available at http://www.nrs.fs.fed.us/fia/data-collection/ and on the DVD included with this report.

Phase 3

The third phase of the enhanced FIA program focuses on forest health. P3 is administered cooperatively by the FIA program, other Forest Service programs, other Federal agencies, State natural resource agencies, and universities, and it is partially integrated with the Forest Health Monitoring (FHM) program. The FHM program

consists of four interrelated and complementary activities: detection monitoring, evaluation monitoring, intensive site ecosystem monitoring, and research on monitoring techniques. Detection monitoring consists of systematic aerial and ground surveys designed to collect baseline information on the current condition of forest ecosystems and to detect changes from those baselines over time. Evaluation monitoring studies examine the extent, severity, and probable causes of changes in forest health identified through the detection monitoring surveys. The intensive site ecosystem monitoring program conducts research into regionally specific ecological processes at a network of sites located in representative forested ecosystems. Research on monitoring techniques focuses on developing and refining indicator measurements to improve the efficiency and reliability of data collection and analysis at all levels of the program.

The ground survey portion of the FHM detection monitoring program was integrated into the FIA program as P3 in 1999. The P3 sample consists of a 1:16 subset of the P2 plots with one P3 plot for approximately every 96,000 acres. P3 measurements are obtained by field crews during the growing season and include an extended suite of ecological data: soil quality (erosion, compaction, and chemistry), vegetation diversity and structure, and down woody material. The incidence and severity of ozone injury for selected bioindicator species also are monitored as part of an associated sampling scheme. All P2 measurements are collected on each P3 plot at the same time as the P3 measurements. Additional information on the collection procedures used in P3 is available at http://www.nrs.fs.fed.us/fia/topics/.

P3 variables are selected to address specific criteria outlined by the Montreal Process Working Group for the conservation and sustainable management of temperate and boreal forests (Montreal Process 1995) and are based on the concept of indicator variables. Observations of an indicator variable represent an index of ecosystem functions that can be monitored over time to assess trends. Indicator variables are used in conjunction with each other, P2 data, data from FHM evaluation monitoring studies, and ancillary data to address ecological issues such as vegetation diversity, fuel loading, regional air-quality gradients, and carbon storage. The P2 and P3 data of the enhanced FIA program are a primary source of reporting data for the Montreal Process Criteria and Indicators (for more information, see Woodall et al. 2011).

Estimation

Most of the estimates and analysis presented in this report (Core Tables 1-32, 54-61a, and 65) are based on averages observed on 4,320 plots located across Ohio. These plots are located within 45 unique strata (Table A) defined by combinations of the five P1 canopy cover classes: (1) 0 to 5 percent, (2) 6 to 50 percent, (3) 51 to 65 percent, (4) 66 to 80 percent, and (5) 81 to 100 percent, a land ownership classification created from the Protected Areas Database, and county groups (FIA units). Nationally consistent algorithms were used to assign forest type and stand-size class to each condition observed on a plot. For NRS-FIA, panels are measured on an annual basis so that five panel estimates are equivalent to 5-year moving average estimates. Field plot measurements are combined with P1 estimates in the compilation process and table production. Procedures described in Bechtold and Patterson (2005) for stratified estimation with observed stratum areas were used in conjunction with the strata presented in Table A to produce all estimates. Table A shows the total area and number of plots within each stratum.

Integration with Previous Inventories

In 2011, FIA completed the second full annual inventory of plots within Ohio. The 2011 panel, along with those surveyed in 2007, 2008, 2009, and 2010, comprise the dataset for this second annual inventory referred to as the 2011 annual inventory of Ohio. Previous inventories of Ohio's forest resources were completed for 1952 (Hutchison and Morgan 1956), 1968 (Kingsley and Mayer 1970), 1979 (Dennis and Birch 1981), 1991 (Griffith et al. 1993), and 2006 (Widmann et al. 2009).

Data from new inventories often are compared with data from earlier inventories to determine trends in forest resources. However, for the comparisons to be valid, the procedures used in the two inventories must be similar. Identical classification procedures were used for the 2006 and 2011 inventories therefore comparisons made between these inventories is relatively uncomplicated.

Comparisons with the earlier inventories (1952, 1968, 1979, 1991,) are more problematic as there were changes in plot design, measurements taken, and classification methods between each of these inventories. For the sake of consistency, a new, national plot design was implemented by all five regional FIA units in 1999. The new design uses fixed-radius subplots exclusively. In Southern New England, this design was used in the1998 inventories. Prior to this new plot design, fixed and variable-radius subplots were used. Both designs have strong points but they often produce different classifications for individual plot characteristics. Procedures for assigning condition attributes such as forest type, stand-age, and stocking, for example, changed significantly with the introduction of the new annual plot design. Unpublished FIA research comparing these plot designs, however, showed no noticeable difference in volume and tree-count estimates.

For additional information on the sample protocols and estimation procedures for the first two phases of the FIA program, see Bechtold and Patterson (2005). For additional information on P3 indicator sampling protocols, see the P3 field guides and database documentation which can be found at http://www.fia.fs.fed.us/library/ and on the DVD included with this report.

Quality of the Estimates

The four primary sources of error common to all sample-based estimates are sampling, measurement, prediction, and nonresponse error. For each of these sources of error, a definition within the context of the FIA 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 2011 FIA inventory of Ohio is based on a sample of 4,320 plots located randomly across the State (a total area of 26,448,518 acres), a sampling rate of about one plot for every 6,151 acres.

The procedures for statistical estimation outlined in the previous section and described in detail in Bechtold and Patterson (2005) provide the estimates of the population totals and means presented in this report. Along with every estimate is an associated sampling error that is typically expressed as a percentage of the estimated value but that can also be expressed in the same units as the estimate or as a confidence interval (the estimated value plus or minus the sampling error). This sampling error is the primary measure of the reliability of an estimate. A sampling error can be interpreted to mean that had a 100-percent inventory been taken using these methods, the chances are two out of three that the results would have been within the limits indicated (i.e., 68-percent confidence interval).

The sampling errors for State-level estimates of the major attributes presented in this report are shown in Table B. Table OH-65 presents sampling errors for these estimates at the inventory unit and county group levels.

Estimates for classifications smaller than the State totals presented in Table B will have larger sampling errors. For example, Table OH-65 shows that the sampling

error for timberland area in any county is higher than that for total timberland area in the State. To compute an approximate sampling error for an estimate that is smaller than a State total, use the following formula:

$$E = \frac{(SE)\sqrt{(\text{State total estimate})}}{\sqrt{(\text{Smaller estimate})}} \quad (1)$$

where:

E = approximate sampling error for smaller estimate
SE = sampling error for State total estimate

For example, to compute the error on the area of National Forest System forest land in the State, proceed as follows:

The total National Forest System forest land area in the State from Table OH-2 is estimated at 241,300 acres.

The total area of all forest land in the State from Table OH-2 is 8,088,300 acres.

The State total error for forest land area from Table B is 1.64 percent.

Using formula (1):

$$\textbf{Sampling Error} = \frac{(1.64)\sqrt{(8{,}088{,}300)}}{\sqrt{(241{,}300)}} = \textbf{9.5 percent.}$$

This approximation works well for estimates of area, volume, number of trees, and biomass. It is less effective for estimates of growth, removals, or mortality. Individuals seeking more accurate sampling errors should use the estimation tools available at http://fiatools.fs.fed.us.

The estimators used by FIA 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 nonresponse 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 FIA 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 FIA plot, 30 to 70 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 FIA observations are made to the highest standards possible, a regular program of quality assurance and quality control is an integral part of all FIA data collection efforts. This program begins with the documentation of protocols and procedures used in the inventory followed by intensive crew training. To assess the quality of the data collected by these trained crews, a random sample of at least 4 percent of all plots are measured independently by a different expert crew. These independent measurements are referred to as blind checks. The purpose of these blind checks is to assess the quality of field measurements. The second measurement on these blind check plots is done by a Quality Assurance (QA) crew. In all cases, QA crews have as much or more experience and training in FIA field measurements than standard FIA crews.

The quality of field measurements is assessed nationally through a set of measurement quality objectives (MQOs) that are set for every data item we collect. Each MQO consists of two parts: a tolerance or acceptable level of measurement error, and an objective in terms of the percent of measurements within tolerance. The blind check measurements are used to observe how often individual field crews are meeting these objectives and

to assess the overall compliance among all crews. Table C shows the compliance rates for various measurements used to compute the estimates included in this report and in other NRS-FIA reports. The columns labeled Ohio come from blind check measurements of plots used in this report, and the columns labeled All NRS-FIA States come from all measurements made by FIA crews within the entire 24-state area where the Northern Research Station implemented the FIA program over 2007-2011. Training and supervision of crews is a regional effort and crews often work in more than one state. Regional data quality observations reflect the overall measurement quality of all data collected by FIA in the NRS region.

In addition to the percent compliance to measurement quality objectives, the blind check observations were used to test for relative bias in the field crew measurements. Relative bias is defined here as a tendency for the standard field crew measurements to be higher or lower than those measurements taken by the QA crews. The estimated relative bias and limits of 95-percent confidence intervals (based on parametric bootstrap estimates) for the relative bias are presented in Table D.

The blind check measurements do not provide direct observations of true bias in field measurements (average difference between field measurements and true values) because they are paired observations of two field measurements. The QA crew in these blind checks typically has more training and experience with FIA field measurements than the first crew, but both crews use the same methods and instruments to obtain the measurements. These methods were the best available and were selected for use nationwide by FIA; they are commonly used by other similar natural resource inventories. A basic assumption is that the methods, when correctly applied, provide unbiased observations of the attribute they are designed to measure. Under this assumption, relative bias observations in Table D provide observations of bias due to the difference in experience and training between the field and QA crews. In most cases there is no significant bias.

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, FIA 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. Change estimates such as growth, mortality, and removals are based on these model-based predictions of volume from both the current plot measurements and the measurements taken in the previous inventory.

In comparing FIA 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.

Nonresponse Error

Nonresponse error refers to the error caused by not being able to observe some of the elements in the sample. In FIA, nonresponse occurs when crews are unable to measure a plot (or a portion of a plot) at a selected location. Nonresponse 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.

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.

Nonresponse 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, nonresponse can bias the estimates if the portion of the population not being sampled differs from the portion being sampled. In FIA, unlike many survey samples, nonresponse rates are relatively low. In the 2011 Ohio inventory, a total of 4,464 sample plots were selected to be observed. Of the total sample plots selected for observation, 4,320 are in the sample used for the estimation of current resources. There were 144 plots where crews were unable to obtain owner permission to measure the plot or where hazardous conditions prevented the crew from measuring all or part of the plot. Even though an overall response rate of 97 percent is very high, it can cause considerable bias if not properly accounted for. The major source of nonresponse is denied access to plots. Denied access plots primarily occur on lands in private ownership. Also, the observations needed for plots on nonforest and water land classes do not usually require crews to physically enter the land and permission is not needed to obtain the observation because it can be obtained from aerial photos or other remotely sensed information sources.

The stratified estimation process used by FIA with strata defined by three ownership classes (inland census water, public, and private) and five canopy cover classes reduces the possible effects of bias caused by nonresponse. Under the stratified estimation process used by FIA, nonresponses are removed from the sample, and stratum estimates (means, totals, and sampling errors) are obtained from only those plots with valid observations. The net effect in the estimates of means and totals is that the average of the observed plots within the stratum (ownership class-forest cover class) becomes the estimate for all nonresponses within that stratum. The nonresponse rate in one stratum does not affect the estimate in other strata. The response rate within each stratum is presented in Table E for the Ohio 2011 inventory and for all FIA inventories conducted by the Northern Research Station over the same period.

The nonresponse plots in this inventory were not permanently removed from the FIA 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, the hazardous conditions may have changed, or other circumstances that caused us to drop plots from a specific inventory cycle will probably be different.

Glossary

Accretion: The estimated net growth on trees that were measured during the previous inventory (divided by the number of growing seasons between surveys to produce average annual accretion). It does not include growth on trees cut during the period or those trees that died. This component uses the incremental change in volume between two inventories.

Average annual mortality of growing stock: The average annual change in cubic-foot volume of sound wood in growing-stock trees that died over a defined measurement cycle.

Average annual mortality of sawtimber: The average annual change in board-foot volume of sound wood in sawtimber trees that died over a defined measurement cycle.

Average annual net growth of growing stock: The average annual change in cubic-foot volume of sound wood in live growing-stock trees, and the total volume of trees entering diameter classes greater than 5.0 inches d.b.h., through ingrowth, less volume losses resulting from natural causes. Natural causes include mortality except that due to logging damage, timber stand improvement, or conversion to a nonforest land use.

Average annual net growth of sawtimber: The average annual change in the board-foot volume of live sawtimber trees, and the total volume of trees reaching sawtimber size, less volume losses resulting from natural causes. Natural causes include mortality except that due to logging damage, timber stand improvement, or conversion to a nonforest land use.

Average annual removals from growing stock: The average cubic-foot volume of wood in live growing-stock trees removed annually for roundwood forest products, in addition to the volume in logging residues or mortality due to logging damage (harvest removals). This component of change also includes the volumes of growing-stock trees removed due to land use changes (other removals).

Average annual removals from sawtimber: The average board-foot volume of wood in live sawtimber trees removed annually for roundwood forest products, in addition to the volume of logging residues or mortality due to logging damage (harvest removals). This component of change also includes the volumes of sawtimber trees removed due to land use changes (other removals).

Basal area: Tree area in square feet of the cross section at breast height of a single tree. When the basal areas of all trees in a stand are summed, the result is usually expressed as square feet of basal area per acre.

Bioindicator species: A tree, woody shrub, or nonwoody herb species that responds to ambient levels of ozone pollution with distinct visible foliar symptoms that is easy to diagnose.

Board foot: A unit of lumber measuring 1-foot long, 1-foot wide, and 1-inch thick, or its equivalent. International ¼-inch rule is used as the U.S. Forest Service standard log rule in the eastern United States.

Bulk density: The mass of soil per unit of volume. A measure of the ratio of pore space to solid materials in a given soil. It is expressed in units of grams per cubic centimeter of oven-dry soil.

Census water: Lakes, reservoirs, ponds, and similar bodies of water 4.5 acres in size or larger; and rivers or canals more than 200 feet wide (U.S. Census definition).

Coarse woody debris (CWD): Dead branches, twigs, and wood splinters 3.0 inches in diameter and larger measured at the smallest end.

Commercial species: Tree species currently or prospectively suitable for industrial wood products; excludes species of typically small size, poor form, or inferior quality, e.g., hawthorn and sumac.

Compacted live crown ratio: The percent of the total length of the tree that supports a full, live crown. To determine compacted live crown ratio for trees that have uneven length crowns, lower branches are visually transferred to fill holes in the upper portions of the crown, until a full, even crown is created.

Condition: A delineation of a land area based upon land use, forest type, stand size, regeneration status, reserved status, tree density, and owner class.

Corporate: An ownership class of private lands owned by corporations.

County and municipal: A class of public lands owned by counties or local public agencies, or lands leased by these governmental units for more than 50 years.

Cropland: Land under cultivation within the last 24 months, including cropland harvested, crop failures, cultivated summer fallow, idle cropland used only for pasture, orchards, active Christmas tree plantations indicated by annual shearing, nurseries, and land in soil improvement crops, but excluding land cultivated in developing improved pasture.

Crown: The part of a tree or woody plant bearing live branches or foliage.

Crown dieback: Recent mortality of branches with fine twigs, which begins at the terminal portion of a branch and proceeds toward the trunk. Dieback is considered only when it occurs in the upper and outer portions of the tree. When whole branches are dead in the upper crown, without obvious signs of damage such as breaks or animal injury, it is assumed the branches died from the terminal portion of the branch. Dead branches in the lower portion of the live crown are assumed to have died from competition and shading.

Cull decrement: The net volume of rough and rotten cull trees in the previous inventory that are classified as growing-stock trees in the current inventory (divided by the number of growing seasons between inventories to compute average annual cull decrement).

Cull increment: The net volume of growing-stock trees in the previous inventory that are classified as rough and rotten cull trees in the current inventory (divided by the number of growing seasons between inventories to compute average annual cull increment).

Cull tree: A live tree, 5.0 inches in d.b.h. or larger, that is unmerchantable for saw logs now or prospectively because of rot, roughness, or species. (See definitions for rotten and rough trees.)

Decay class: Qualitative assessment of stage of decay (five classes) of coarse woody debris based on visual assessments of color of wood, presence/absence of twigs and branches, texture of rotten portions, and structural integrity.

Diameter at breast height (d.b.h.): The diameter outside bark of a standing tree measured 4.5 feet above the ground.

Diameter at root collar (d.r.c.): The diameter outside bark of a bole measured at the root collar of a shrub or tree. Also called basal diameter.

Diameter class: A classification of trees based on diameter outside bark measured at breast height (4.5 feet above ground). With 2-inch diameter classes, the 6-inch class, for example, includes trees 5.0 through 6.9 inches diameter at breast height (d.b.h).

Dry ton: A unit of measure of dry weight equivalent to 2,000 pounds or 907.1848 Kg.

Dry weight: The weight of wood and bark as it would be if it had been oven dried; usually expressed in pounds or tons.

Down woody material (DWM): Woody pieces of trees and shrubs that have been uprooted (no longer supporting growth) or severed from their root system, not self-supporting, and lying on the ground.

Duff: A soil layer dominated by organic material derived from the decomposition of plant and animal litter and deposited on either an organic or a mineral surface. This layer is distinguished from the litter layer in that the original organic material has undergone sufficient decomposition that the source of this material (e.g., individual plant parts) can no longer be identified.

Effective cation exchange capacity (ECEC): The sum of cations that a soil can adsorb in its natural pH. Expressed in units of centimoles of positive charge per kilogram of soil.

Federal: An ownership class of public lands owned by the U.S. Government.

Fiber products: Products derived from wood and bark residues, such as pulp, composition board products, and wood chips.

Fine materials: Wood residues not suitable for chipping, such as planer shavings and sawdust.

Fine woody debris (FWD): Dead branches, twigs, and wood splinters 0.1 to 2.9 inches in diameter.

Forest industry: An ownership class of private lands owned by companies or individuals operating wood-using plants.

Forest land: Land at least 10 percent stocked by forest trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. Forest land includes transition zones, such as areas between heavily forested and nonforested lands that are at least 10 percent stocked with forest trees and forest areas adjacent to urban and builtup lands. Also included are pinyon-juniper and chaparral areas in the West and afforested areas. The minimum area for classification of forest land is 1 acre. Roadside, streamside, and shelterbelt strips of trees must have a crown width of at least 120 feet to qualify as forest land. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 120 feet wide.

Forest type: A classification of forest land based on the species presently forming a plurality of the live-tree stocking.

Forest-type group: A combination of forest types that share closely associated species or site requirements and are generally combined for brevity of reporting.

Fuel class: Categories of forest fire fuels defined by the approximate amount of time it takes for moisture conditions to fluctuate. Large coarse woody debris pieces take longer to dry out than smaller fine woody pieces.

1,000-hour fuels: Coarse woody debris with a transect diameter ≥ 3.0 inches and ≥ 3.0 feet long.

100-hour fuels: Fine woody debris with a transect diameter between 1.0 and 2.9 inches.

10-hour fuels: Fine woody debris with a transect diameter between 0.25 and 0.9 inches.

1-hour fuels: Fine woody debris with a transect diameter < 0.24 inches.

Major eastern forest-type groups:

White-red-jack pine: Forests in which eastern white pine, red pine, or jack pine, singly or in combination, comprise a plurality of the stocking. Common associates include hemlock, aspen, birch, and maple.

Oak-pine: Forests in which hardwoods (usually upland oaks) comprise a plurality of the stocking, but in which pine or eastern redcedar comprises 25 to 50 percent of the stocking. Common associates include gum, hickory, and yellow-poplar.

Oak-hickory: Forests in which upland oaks or hickory, singly or in combination, comprise a plurality of the stocking except where pines comprise 25 to 50 percent, in which case the stand is classified as oak-pine. Common associates include yellow-poplar, elm, maple, and black walnut.

Oak-gum-cypress: Bottomland forests in which tupelo, blackgum, sweetgum, oaks, or southern cypress, singly or in combination, comprise a plurality of the stocking except where pines comprise 25 to 50 percent, in which case the stand is classified as oak-pine. Common associates include cottonwood, willow, ash, elm, hackberry, and maple.

Elm-ash-cottonwood: Forests in which elm, ash, or cottonwood, singly or in combination, comprise a plurality of the stocking. Common associates include willow, sycamore, beech, and maple.

Maple-beech-birch: Forests in which maple, beech, or yellow birch, singly or in combination, comprise a plurality of the stocking. Common associates include hemlock, elm, basswood, and white pine.

Aspen-birch: Forests in which aspen, balsam poplar, paper birch, or gray birch, singly or in combination, comprise a plurality of the stocking. Common associates include maple and balsam fir.

Gross growth: The sum of accretion and ingrowth.

Growing stock: A classification of timber inventory that includes live trees of commercial species meeting specified standards of quality or vigor. Cull trees are excluded. When associated with volume, this includes only trees 5.0 inches d.b.h. and larger.

Growing-stock volume: Net or gross volume in cubic feet of growing-stock trees 5.0 inches and larger d.b.h. measured from the 1-foot stump to a minimum 4.0-inch top diameter outside bark on the central stem, or to the point where the central stem splits into limbs. Net volume equals gross volume minus deduction for cull defects.

Hardwood: A dicotyledonous tree, usually broad-leaved and deciduous.

Soft hardwoods: A category of hardwood species with wood generally of low specific gravity (less than 0.5). Notable examples include red maple, paper birch, quaking aspen, and American elm.

Hard hardwoods: A category of hardwood species with wood generally of high specific gravity (greater than 0.5). Notable examples include sugar maple, yellow birch, black walnut, and oaks.

Industrial wood: All commercial roundwood products except fuelwood.

Ingrowth: The estimated net volume of trees that became 5.0 inches and larger d.b.h. during the period between inventories (divided by the number of growing seasons between surveys to produce average annual ingrowth). Also, the estimated net volume of trees 5.0 inches and larger d.b.h. that are growing on land that was reclassified from noncommercial forest land or nonforest land to timberland.

Introduction: The intentional or unintentional escape, release, dissemination, or placement of a species into an ecosystem as a result of human activity. "Introduced" is not synonymous and should not be confused with the term "invasive" (USDA definition).

Invasive species: Those species whose introduction does, or is likely to, cause economic or environmental harm or harm to human health. For the purpose of this policy only, a plant species is considered "invasive" only when it occurs on the Federal or State-specific noxious weed list or a list developed by the State-specific Department of Agriculture with their partners and approved by the State Technical Committee that prohibits or cautions its use due to invasive qualities (USDA definition).

Land area: The area of dry land and land temporarily or partly covered by water, such as marshes, swamps, and river flood plains; streams, sloughs, estuaries, and canals less than 200 feet wide; and lakes, reservoirs, and ponds less than 4.5 acres in area.

Land use: A classification of land that indicates the primary use at the time of the inventory. Major categories are forest land and nonforest land.

Litter: Undecomposed or only partially decomposed organic material that can be readily identified (e.g., plant leaves, twigs).

Live aboveground biomass: The aboveground volume of live trees (including bark but excluding foliage) reported in dry tons (dry weight). Biomass has four components:

> ***Bole:*** Biomass of a tree from 1 foot above the ground to a 4-inch top outside bark or to a point where the central stem breaks into limbs.
>
> ***Tops and limbs:*** Total biomass of a tree from a 1-foot stump minus the bole.
>
> ***Saplings:*** Total aboveground biomass of a tree from 1.0 to 4.9 inches d.b.h.
>
> ***Stump:*** Biomass of a tree 5 inches d.b.h. and larger from the ground to a height of 1 foot.

Live cull: A classification that includes live, cull trees. When associated with volume, it is the net volume in live, cull trees that are 5.0 inches d.b.h. and larger.

Logging residues: The unused portions of growing-stock and nongrowing-stock trees cut or killed by logging and left in the woods.

Merchantable: Refers to a pulpwood or saw log section that meets pulpwood or saw log specifications, respectively.

National Forest: An ownership class of Federal lands, designated by Executive order or statute as National Forests or purchase units, and other lands under the administration of the Forest Service including experimental areas.

Net cubic-foot volume: The gross volume in cubic feet less deductions for rot, roughness, and poor form. Volume is computed for the central stem from a 1-foot stump to a minimum 4.0-inch top diameter outside bark, or to the point where the central stem breaks into limbs.

Net board-foot volume: The gross volume in board feet less the deductions for rot, roughness, and poor form. Volume is computed from the 1-foot stump to a minimum 7.0-inch diameter outside bark for softwoods and a minimum 9.0-inch outside bark for hardwoods on the central stem. This estimate includes all softwoods 9.0 inches d.b.h. and larger, and all hardwoods 11.0 inches d.b.h. and larger.

Noncensus water: Streams/rivers 120 to 200 feet wide and bodies of water 1 to 4.5 acres in size, where the U.S. Bureau of the Census (1990) classifies such water as land.

Noncommercial species: Tree species of typically small size, poor form, or inferior quality, which normally do not develop into trees suitable for industrial wood products.

Nonforest land: Land that has never supported forests and lands formerly forested where use of timber management is precluded by development for other uses. (Note: Includes area used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining clearings, powerline clearings of any width, and 1- to 4.5-acre areas of water classified by the U.S. Bureau of the Census as land. If intermingled in forest areas, unimproved roads and nonforest strips must be more than 120 feet wide, and clearings, etc., must be more than 1 acre in area to qualify as nonforest land.)

Nonindustrial private: An ownership class of private lands where the owner does not operate wood-using plants.

Nonnative species: Within a particular ecosystem, any species (including its seeds, eggs, spores, or other biological material capable of propagating that species;) that is not native to that ecosystem (USDA definition).

Nonstocked areas: Timberland less than 10 percent stocked with all live trees.

Ownership unit: A classification of ownership encompassing all types of legal entities having an ownership interest in land, regardless of the number of people involved. A unit may be an individual; a combination of persons; a legal entity such as a corporation, partnership, club, or trust; or a public agency. An ownership unit has control of a parcel or group of parcels of land.

Owner class: A classification of land into categories of ownership.

Forest industry: Land owned by private companies that operate primary wood-using mills.

Nonindustrial private: Land owned by other corporate, individuals, or trusts (NGOs) that do not operate primary wood-using mills.

Other corporate: Land owned by timber investment or real estate companies.

Public: Land owned by federal, state, county, or municipal government.

Ozone: A regional, gaseous air pollutant produced primarily through sunlight-driven chemical reactions of nitrogen dioxide and hydrocarbons in the atmosphere and causing foliar injury to deciduous trees, conifers, shrubs, and herbaceous species.

Ozone bioindicator site: An open area used for ozone injury evaluations on ozone-sensitive species. The area must meet certain site selection guidelines on size, condition, and plant counts to be used for ozone injury evaluations in FIA.

Physiographic class: A measure of soil and water conditions that affect tree growth on a site. The physiographic classes are:

Xeric: Very dry soils where excessive drainage seriously limits both growth and species occurrence. These sites are usually on upland and upper half slopes.

Xeromesic: Moderately dry soils where excessive drainage limits growth and species occurrence to some extent. These sites are usually on the lower half slopes.

Mesic: Deep, well-drained soils. Growth and species occurrence are limited only by climate. These include all cove sites and bottomlands along intermittent streams.

Hydromesic: Moderately wet soils where insufficient drainage or infrequent flooding limits growth and species occurrence to some extent.

Hydric: Very wet sites where excess water seriously limits both growth and species occurrence.

Poletimber trees: Live trees at least 5.0 inches d.b.h. but smaller than sawtimber trees.

Primary wood-using mill: A mill that converts roundwood products into other wood products. Common examples are sawmills that convert saw logs into lumber and pulp mills that convert pulpwood into paper.

Productivity class: A classification of forest land in terms of potential annual cubic-foot volume growth per acre at culmination of mean annual increment in fully stocked natural stands.

Pulpwood: Roundwood, whole-tree chips, or wood residues used for the production of wood pulp.

Reserved forest land: Forest land withdrawn from timber utilization through statute, administrative regulation, or designation without regard to productive status. Examples include national forest wilderness areas, national parks, and national monuments.

Residues: Bark and woody materials that are generated in primary wood-using mills when roundwood products are converted to other products. Examples are slabs, edgings, trimmings, miscuts, sawdust, shavings, veneer cores and clippings, and pulp screenings. Includes bark residues and wood residues (both coarse and fine materials) but excludes logging residues.

Rotten tree: A live tree of commercial species that does not contain a saw log now or prospectively primarily because of rot (that is, when rot accounts for more than 50 percent of the total cull volume).

Rough tree: (a) A live tree of commercial species that does not contain a saw log now or prospectively primarily because of roughness (that is, when sound cull due to such factors as poor form, splits, or cracks accounts for more than 50 percent of the total cull volume); or (b) a live tree of noncommercial species.

Roundwood products: Logs, bolts, and other round timber generated from harvesting trees for industrial or consumer use. Roundwood products include saw logs, veneer, cooperage logs, bolts, pulpwood logs, fuelwood, pilings, poles posts, ties, mine timbers, and various other round or split products.

Salvable dead tree: A downed or standing dead tree considered currently or potentially merchantable by regional standards.

Saplings: Live trees 1.0 inch through 4.9 inches d.b.h.

Saw log: A log meeting minimum standards of diameter, length, and defect, including logs at least 8 feet long, sound and straight, and with a minimum diameter inside bark of 6 inches for softwoods and 8 inches for hardwoods, or meeting other combinations of size and defect specified by regional standards.

Sawtimber tree: A live tree of commercial species containing at least a 12-foot saw log or two noncontiguous saw logs 8 feet or longer, and meeting regional specifications for freedom from defect. Softwoods must be at least 9.0 inches d.b.h. Hardwoods must be at least 11.0 inches diameter outside bark (d.o.b.).

Sawtimber volume: Net or gross volume in board-foot (International ¼-inch rule) or cubic-foot of the saw log portion of live sawtimber trees measured from the 1-foot stump to a minimum 7.0-inch top diameter outside bark (for softwoods) or a 9.0-inch top diameter outside bark (for hardwoods), on the central stem, or to the point where the central stem splits into smaller limbs. Net volume equals gross volume minus deduction for rough and rotten cull.

Seedling: Live tree smaller than 1.0 inch d.b.h./d.r.c. and at least 6.0 inches in height for softwoods and 12.0 inches in height for hardwoods.

Site index: An expression of forest site quality based on the height of a free-growing dominant or codominant tree of a representative species in the forest type at age 50.

Snag: A standing dead tree. In the current inventory, a snag must be 5.0 inches d.b.h./d.r.c. and 4.5 feet tall, and have a lean angle less than 45 degrees from vertical. A snag may be either self-supported by its roots or supported by another tree or snag.

Softwood: A coniferous tree, usually evergreen, having needles or scale-like leaves.

Sound dead: The net volume in salvable dead trees.

Species group: A combination of tree species that share closely associated understory plants or site requirements.

Stand: A group of trees on a minimum of 1 acre of forest land that is stocked by forest trees of any size.

Standing dead tree: A standing dead tree must be at least 5 inches d.b.h. or larger, at least 4.5 feet in height, and have a lean of less than 45 degrees from the vertical. A snag should be self-supported or supported by another tree.

Stand-size class: A classification of forest land based on the size class of live trees in the area. The classes include:

> ***Nonstocked:*** Forest land stocked with less than 10 percent of full stocking with live trees. Examples are recently cutover areas or recently reverted agricultural fields.

Sapling-seedling: Forest land stocked with at least 10 percent of full stocking with live trees with half or more of such stocking in seedlings or saplings or both.

Poletimber: Forest land stocked with at least 10 percent of full stocking with live trees with half or more of such stocking in poletimber or sawtimber trees or both, and in which the stocking of poletimber exceeds that of sawtimber.

Sawtimber: Forest land stocked with at least 10 percent of full stocking with live trees with half or more of such stocking in poletimber or sawtimber trees or both, and in which the stocking of sawtimber is at least equal to that of poletimber.

State: An ownership class of public lands owned by states or lands leased by states for more than 50 years.

Stocking: The degree of occupancy of land by trees, measured by basal area or number of trees by size and spacing, or both, compared to a stocking standard; that is, the basal area or number of trees, or both, required to fully utilize the growth potential of the land.

Stocking class: At the tree level, stocking is the density expressed as a percent of total tree density required to fully utilize the growth potential of the land. At the stand level it is expressed as the sum of the stocking values of all trees sampled. The classes include:

Overstocked: Forest stand with stocking ≥100 percent.

Fully stocked: Forest stand that contains 60 to 99 percent of full stocking.

Moderately stocked: Forest stand that contains 35 to 59 percent of full stocking.

Poorly stocked: Forest stand that contains only 10 to 34 percent of full stocking.

Nonstocked: Forest stand with less than 10 percent of full stocking.

Sum06: The sum of all hourly average ozone concentrations greater than or equal to 0.06 ppm that occur between June 1 and August 31. It is a widely recognized threshold for ozone injury to sensitive plants.

Timberland: Forest land that is producing or is capable of producing crops of industrial wood and not withdrawn from timber utilization by statute or administrative regulation. (Note: Areas qualifying as timberland are capable of producing in excess of 20 cubic feet per acre per year of industrial wood in natural stands. Currently inaccessible and inoperable areas are included.)

Timber products output: All timber products cut from roundwood and byproducts of wood manufacturing plants. Roundwood products include logs, bolts, or other round sections cut from growing-stock trees, cull trees, salvable dead trees, trees on nonforest land, noncommercial species, sapling-size trees, and limbwood. Byproducts from primary manufacturing plants include slabs, edging, trimmings, miscuts, sawdust, shavings, veneer cores and clippings, and screenings of pulpmills that are used as pulpwood chips or other products.

Tree: A woody plant usually having one or more erect perennial stems, a stem diameter at breast height of at least 3 inches, a more or less definitely formed crown of foliage, and a height of at least 15 feet at maturity.

Tree class: A classification of tree quality or condition of the tree for saw log production. Tree class for sawtimber-size trees is based on current conditions. Tree class for poletimber-size trees is based on the prospected determination or forecast of the potential tree quality when the tree reaches sawtimber size.

Tree size class: A classification of trees based on diameter at breast height, including sawtimber trees, poletimber trees, saplings, and seedlings.

Tops: The wood of a tree above the merchantable height (or above the point on the stem 4.0 inches diameter outside bark (d.o.b.) or to the point where the central stem breaks into limbs). It includes the usable material in the uppermost stem.

Total live tree biomass: The total mass of live trees and associated saplings expressed in pounds or tons (dry weight) per unit area. The total tree and sapling biomass (excluding foliage) has five components:

Bole: Biomass of a tree from 1 foot above the ground to a 4-inch top outside bark or to a point where the central stem splits into smaller limbs. This includes protruding twigs from the central stem.

Tops and limbs: Total biomass of a tree from the 12-inch stump minus the bole. This does not include any twigs protruding from the central stem below the 4-inch top.

Sapling trees: Total biomass of a tree from 1 to 4.9 inches diameter measured at the root collar d.b.h. or d.r.c.

Stump: Total biomass of a tree 5 inches d.b.h. and larger from the ground to a height of 1 foot.

Belowground: Total biomass of the belowground portion of the stump and the coarse roots of all trees and saplings.

Urban forest land: Land that would otherwise meet the criteria for timberland but is in an urban-suburban area surrounded by commercial, industrial, or residential development and not likely to be managed for the production of industrial wood products on a continuing basis. Wood removed would be for land clearing, fuelwood, or esthetic purposes. Such forest land may be associated with industrial, commercial, residential subdivision, industrial parks, golf course perimeters, airport buffer strips, and public urban parks that qualify as forest land.

Unreserved forest land: Forest land not withdrawn from harvest by statute or administrative regulation. Includes forest lands that are not capable of producing in excess of 20 cubic feet per acre per year of industrial wood in natural stands.

Veneer log: A roundwood product from which veneer is sliced or sawn and that usually meets certain standards of minimum diameter and length and maximum defect.

Weight: The weight of wood and bark, oven-dry basis (approximately 12 percent moisture content).

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*All tables contain forest attribute estimates for Ohio for measurements taken from 2007 to 2011, except where indicated.

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

Table A.—Area and number of plots in each stratum used for stratification and estimation, Ohio, 2011

Unit code	Estimation unit description[a]	Canopy cover stratum[b]	Acres	Selected[c]	Office selected[d]	Field selected[e]	Field sampled[f]	Field sampled forested[g]	Total plots sampled for change[h]	Field sampled plots for change[i]	Not measured[j]
1	Inland Census Water Unit 1	Canopy cover 0 - 100	20,660	4	3	1	1	1	4	1	0
1	Private Unit 1	Canopy cover 0 - 5	1,401,586	225	166	59	54	40	221	40	5
1	Private Unit 1	Canopy cover 6 - 65	204,540	26	15	11	11	11	26	11	0
1	Private Unit 1	Canopy cover 66 - 80	146,422	33	1	32	29	26	31	26	3
1	Private Unit 1	Canopy cover 81 - 100	1,278,034	224	4	220	204	203	220	202	16
1	Public Unit 1	Canopy cover 0 - 100	174,704	29	0	29	29	29	29	29	0
1	Wayne NF	Canopy cover 0 - 100	103,990	21	0	21	21	21	17	17	0
2	Inland Census Water Unit 2	Canopy cover 0 - 100	11,828	4	3	1	1	1	4	1	0
2	Private Unit 2	Canopy cover 0 - 5	532,130	95	66	29	25	18	92	17	4
2	Private Unit 2	Canopy cover 51 - 65	72,877	13	0	13	11	11	13	11	2
2	Private Unit 2	Canopy cover 6 - 50	91,566	16	2	14	12	11	14	11	2
2	Private Unit 2	Canopy cover 66 - 80	121,117	25	0	25	23	23	23	22	2
2	Private Unit 2	Canopy cover 81 - 100	1,066,198	179	0	179	161	160	173	156	18
2	Public Unit 2	Canopy cover 0 - 100	76,027	11	0	11	11	11	11	11	0
2	Wayne NF	Canopy cover 0 - 100	89,134	18	0	18	17	17	15	14	1
3	Inland Census Water Unit 3	Canopy cover 0 - 100	30199	4	4	0	0	0	4	0	0
3	Private Unit 3	Canopy cover 0 - 5	1175446	188	119	69	61	42	183	42	8
3	Private Unit 3	Canopy cover 51 - 65	117676	18	3	15	14	13	16	12	1
3	Private Unit 3	Canopy cover 6 - 50	203043	33	7	26	25	20	32	19	1
3	Private Unit 3	Canopy cover 66 - 80	202025	41	7	34	33	32	41	32	1
3	Private Unit 3	Canopy cover 81 - 100	1558132	263	4	259	236	233	253	225	23
3	Public Unit 3	Canopy cover 0 - 100	136665	25	2	23	23	23	25	23	0
3	Wayne NF	Canopy cover 0 - 100	44567	9	0	9	9	9	8	8	0
4	Inland Census Water Unit 4	Canopy cover 0 - 100	73823	16	14	2	2	1	15	1	0
4	Private Unit 4	Canopy cover 0 - 5	2993302	505	422	83	80	60	499	60	3
4	Private Unit 4	Canopy cover 51 - 65	183329	27	7	20	19	18	27	18	1
4	Private Unit 4	Canopy cover 6 - 50	290526	31	8	23	20	17	29	17	3
4	Private Unit 4	Canopy cover 66 - 80	344513	64	10	54	53	53	62	51	1
4	Private Unit 4	Canopy cover 81 - 100	1110308	195	11	184	168	158	187	156	16
4	Public Unit 4	Canopy cover 0 - 80	77149	18	8	10	9	8	17	8	1
4	Public Unit 4	Canopy cover 81 - 100	105843	16	0	16	16	15	16	15	0
5	Inland Census Water Unit 5	Canopy cover 0 - 100	28238	6	6	0	0	0	6	0	0
5	Private Unit 5	Canopy cover 0 - 5	3795175	621	558	63	58	43	614	41	5
5	Private Unit 5	Canopy cover 51 - 65	114114	22	4	18	18	16	21	15	0
5	Private Unit 5	Canopy cover 6 - 50	243648	45	27	18	17	16	41	14	1
5	Private Unit 5	Canopy cover 66 - 80	181710	28	4	24	24	24	28	24	0

(Table A continued on next page)

(Table A continued)

Unit code	Estimation unit description[a]	Canopy cover stratum[b]	Acres	Selected[c]	Office selected[d]	Field selected[e]	Field sampled[f]	Field sampled forested[g]	Total plots sampled for change[h]	Field sampled plots for change[i]	Not measured[j]
5	Private Unit 5	Canopy cover 81 - 100	388742	75	0	75	67	66	69	63	8
5	Public Unit 5	Canopy cover 0 - 100	75699	14	2	12	12	12	14	12	0
6	Inland Census Water Unit 6	Canopy cover 0 - 100	76855	14	14	0	0	0	13	0	0
6	Private Unit 6	Canopy cover 0 - 5	6536190	1087	1000	87	78	61	1078	59	9
6	Private Unit 6	Canopy cover 51 - 65	101559	19	7	12	12	11	19	11	0
6	Private Unit 6	Canopy cover 6 - 50	138201	20	7	13	12	8	19	8	1
6	Private Unit 6	Canopy cover 66 - 80	186243	33	3	30	26	26	30	25	4
6	Private Unit 6	Canopy cover 81 - 100	468527	89	3	86	82	81	87	80	4
6	Public Unit 6	Canopy cover 0 - 100	76258	15	3	12	12	11	14	10	0
		Total	26,448,518	4,464	2,524	1,940	1,796	1,660	4,360	1,618	144

[a]Description of the sub-population undergoing post-stratification. County groups are defined by one or more contiguous counties used for population estimation.

[b]A stratum within each estimation unit defined by partitioning the full range of percent canopy (0 - 100%) into 5 strata

[c]Total plots selected to be sampled

[d]Plots determined to have no chance of being forested during a prefield interpretation procedure. These plots are withheld from field sampling and considered remotely sampled.

[e]Plots determined to have some chance of being forested or that were forested or non-sampled on a previous visit.

[f]Field selected plots that were successfully sampled in the field.

[g]Field selected plots that were successfully sampled in the field and found to intersect forest land.

[h]Plots in the sample that were successfully sampled in the previous cycle.

[i]Plots in the sample that were successfully sampled in the previous cycle and that were sent to the field for sampling.

[j]Plots selected as part of the sample, but completely non-sampled.

Table B.—State-level estimates of major forest resource attributes and their sampling errors, Ohio, 2011

Item	State total	Sampling error
Growing stock:	*million cubic feet*	*percent*
Volume	13,740.6	2.00
Average annual net growth	383.3	3.58
Average annual removals	187.7	9.60
Average annual mortality	118.3	6.11
Sawtimber:	*million board feet*[a]	
Volume	50,619.7	2.56
Average annual net growth	1,827.2	3.62
Average annual removals	758.1	10.14
Average annual mortality	392.9	8.70
Area:	*thousand acres*	
Forest land	8,088.3	1.06
Timberland	7,864.9	1.12
Biomass (aboveground live trees and saplings):	*million dry tons*	
Forest land	477.1	1.64
Timberland	462.5	1.71

[a]International ¼-inch rule.

All results for timberland except where indicated.

Table C.—Compliance to measurement quality objectives (MQO) tolerances of variables based on blind check plots, Ohio, 2011

			Ohio		All NRS States	
Variable	Tolerance	Objective (%)	% of data within tolerance	Observations	% of data within tolerance	Observations
Plot Level						
National Variables						
Distance to Road	No Tolerance	90.0	64.4	73	81.8	2,194
Water on Plot	No Tolerance	90.0	78.1	73	85.3	2,194
Regional Variables						
Elevation	±50 feet	99.0	91.2	34	88.4	2,041
Latitude - decimal degrees	±0.0001 degree	99.0	100.0	34	100.0	2,043
Longitude - decimal degrees	±0.0001 degree	99.0	88.2	34	88.2	2,043
Latitude - distance	±140 feet		.	.	.	.
Longitude - distance	±140 feet		.	.	.	.
Number of plots				77		2,321
Condition Level						
National Variables						
Condition Status	No Tolerance	99.0	99.1	228	98.6	5,469
Reserve Status	No Tolerance	99.0	100.0	228	99.7	5,469
Owner Group	No Tolerance	99.0	100.0	90	97.7	2,831
Forest Type (Type)	No Tolerance	95.0	84.4	90	87.3	2,831
Forest Type (Group)	No Tolerance	99.0	94.4	90	92.7	2,831
Stand Size	No Tolerance	99.0	92.2	90	90.0	2,831
Regeneration Status	No Tolerance	99.0	96.7	90	98.1	2,831
Tree Density	No Tolerance	99.0	100.0	90	96.6	2,831
Owner Class	No Tolerance	99.0	91.1	90	94.7	2,831
Owner Status	No Tolerance	99.0	98.9	90	98.7	2,831
Regeneration Species	No Tolerance	99.0	97.8	90	98.3	2,831
Stand Age	±10 percent	95.0	95.6	90	84.0	2,831
Disturbance 1	No Tolerance	99.0	76.7	90	88.7	2,781
Disturbance Year 1	±1 year	99.0	83.3	12	85.8	204
Disturbance 2	No Tolerance	99.0	83.3	30	88.3	480
Disturbance Year 2	±1 year	99.0	100.0	2	76.2	21
Disturbance 3	No Tolerance	99.0	100.0	6	98.6	70

(Table C continued on next page)

(Table C continued)

Variable	Tolerance	Objective (%)	Ohio: % of data within tolerance	Ohio: Observations	All NRS States: % of data within tolerance	All NRS States: Observations
Disturbance Year 3	±1 year	99.0	.	.	50.0	2
Treatment 1	No Tolerance	99.0	98.9	90	97.8	2,781
Treatment Year 1	±1 year	99.0	100.0	5	94.6	185
Treatment 2	No Tolerance	99.0	66.7	6	82.2	241
Treatment Year 2	±1 year	99.0	100.0	1	97.4	39
Treatment 3	No Tolerance	99.0	100.0	3	94.9	79
Treatment Year 3	±1 year	99.0	.	.	66.7	3
Physiographic Class	No Tolerance	80.0	98.9	90	83.6	2,831
Present Nonforest Use	No Tolerance	99.0	89.0	228	87.2	5,469
Regional Variables						
NC Land Use	No Tolerance	99.0	100.0	182	100.0	4,397
Number of conditions				228		5,469
Boundary Level						
National Variables						
Boundary Change	No Tolerance	99.0	65.0	40	81.0	751
Constrasting Condition	No Tolerance	99.0	92.5	40	94.4	751
Left Azimuth	±10 degrees	90.0	67.5	40	86.6	751
Corner Mapped	No Tolerance	90.0	92.5	40	95.7	751
Corner Azimuth	±10 degrees	90.0	66.7	3	95.5	66
Corner Distance	±1 foot	90.0	66.7	3	90.9	66
Right Azimuth	±10 degrees	90.0	65.0	40	86.7	751
Number of boundaries				40		751
Subplot Level						
National Variables						
Subplot Center Condition	No Tolerance	99.0	97.7	308	98.1	9,139
Microplot Center Condition	No Tolerance	99.0	96.8	308	97.8	9,139
Slope	±10 percent	90.0	97.2	246	98.4	7,836
Aspect	±10 degrees	90.0	80.4	240	92.3	7,573
Snow/Water Depth	±0.5 foot		83.0	271	70.1	8,296
Number of subplots				308		9,139

(Table C continued on next page)

(Table C continued)

Variable	Tolerance	Objective (%)	Ohio		All NRS States	
			% of data within tolerance	Observations	% of data within tolerance	Observations
Tree Level						
National Variables						
DBH	±0.1 inch per 20 inches	95.0	94.5	1,022	95.4	34,614
DRC	±0.1 inch per 20 inches	95.0	.	.	67.6	34
Azimuth	±10 degrees	90.0	99.6	1,205	99.3	38,716
Horizontal Distance	±0.2 foot per 1.0 foot	90.0	98.8	1,205	98.7	38,716
Species	No Tolerance	95.0	97.8	1,205	98.2	39,019
Tree Genus	No Tolerance	99.0	99.3	1,201	99.6	38,971
Tree Status	No Tolerance	95.0	98.1	1,205	98.9	39,019
Rotten/Missing Cull	±10 percent	90.0	97.5	834	98.2	25,267
Total Length	±10 percent	90.0	67.6	828	78.8	24,961
Actual Length	±10 percent	90.0	66.0	94	73.3	3,031
Compacted Crown Ratio	±10 percent	80.0	75.2	958	83.6	31,866
Uncompacted Crown Ratio (P3)	±10 percent	90.0	.	.	66.7	15
Crown Class	No Tolerance	85.0	80.1	958	81.4	31,866
Decay Class	±1 class	90.0	98.4	184	95.0	5,590
Cause of Death	No Tolerance	80.0	77.7	184	83.6	5,590
Condition	No Tolerance	99.0	96.3	1,205	98.3	39,019
Mortality Year	±1 year	70.0	.	.	.	.
Crown Position	No Tolerance		.	.	71.4	14
Crown Light Exposure	±1 class	85.0	.	.	73.3	15
Sapling Crown Vigor Class	No Tolerance	85.0	.	.	100.0	1
Crown Density	±10 percent	90.0	.	.	57.1	14
Crown Dieback	±10 percent	90.0	.	.	100.0	14
Transparency	±10 percent	90.0	.	.	71.4	14
Regional Variables						
NC Tree Class	No Tolerance	90.0	85.5	1,027	91.6	34,570
NC Damage Agent 1	No Tolerance	90.0	79.4	958	87.7	31,866
NC Damage Agent 2	No Tolerance	90.0	84.2	297	80.7	7,509
Missouri Damage Code	No Tolerance		.	.	.	.
Utilization	No Tolerance	99.0	100.0	52	100.0	1,145

(Table C continued on next page)

(Table C continued)

Variable	Tolerance	Objective (%)	Ohio		All NRS States	
			% of data within tolerance	Observations	% of data within tolerance	Observations
NC Tree Grade	No Tolerance	90.0	.	.	.	.
DBH-Live & Trees with Decay Code 1 or 2	±0.1 inch per 20 inches	95.0	94.3	976	95.2	33,008
DBH-Trees with Decay Codes 3, 4 or 5	±1 inch per 20 inches	95.0	100.0	46	99.6	1,585
Total Length-trees 40 feet and greater	±10 percent	90.0	71.0	720	80.5	19,962
Total Length-trees less than 40 feet	±10 percent	90.0	45.4	108	71.9	4,999
Total Length-trees less than 5 inches DBH	±10 percent	90.0	33.3	3	61.2	232
Number of trees				1,205		39,019
Seedling Level						
National Variables						
Species	No Tolerance	85.0	87.0	284	92.2	7,696
Genus	No Tolerance	90.0	94.7	284	96.8	7,696
Seedling Count	±20 percent	90.0	54.2	284	64.7	7,696
Seedling Count (coded)	No Tolerance	90.0	58.1	284	69.4	7,696
Number of microplots				104		7,696
Site Tree Level						
National Variables						
Condition List	No Tolerance	99.0	100.0	21	93.1	2,800
Diameter	±0.1 inch per 20 inches	95.0	100.0	21	97.5	2,800
Species	No Tolerance	95.0	100.0	21	99.0	2,800
Genus	No Tolerance	99.0	100.0	21	99.9	2,800
Azimuth	±10 degrees	90.0	100.0	21	98.8	2,800
Distance	±5 feet	90.0	100.0	21	99.0	2,800
Total Length	±10 percent	90.0	95.2	21	98.4	2,800
Diameter Age	±5 years	95.0	100.0	21	97.4	2,800
Regional Variables						
Site Index Method	No Tolerance	99	100	21	100	2800
Field Site Index	No Tolerance	99	100	21	100	2800
Number of site trees				21		2800

Table D.—Observed relative bias values (Average [field crew—QA crew]) for measurement variables, blind check plots, Ohio, 2011

Variable	Unit of measure	Ohio				All NRS States			
		Relative bias	95% CI limits Lower	95% CI limits Upper	Number of observations	Relative bias	95% CI limits Lower	95% CI limits Upper	Number of observations
Plot Level									
National Variables									
Distance to Road	code	-0.2	-0.4	0.0	73	0.0	-0.1	0.0	2,194
Water on Plot	code	0.8	0.2	1.5	73	0.1	0.0	0.2	2,194
Regional Variables									
Elevation	foot	-1.8	-11.0	10.1	34	290.8	96.6	580.4	2,041
Latitude - decimal degrees	degree	0.0	0.0	0.0	34	0.0	0.0	0.0	2,043
Longitude - decimal degrees	degree	0.0	0.0	0.0	34	0.0	0.0	0.0	2,043
Latitude - distance	foot				.				.
Longitude - distance	foot				.				.
Number of plots					77				2,321
Condition Level									
National Variables									
Condition Status	code	0.0	0.0	0.0	228	0.0	0.0	0.0	5,469
Reserve Status	code	0.0	0.0	0.0	228	0.0	0.0	0.0	5,469
Owner Group	code	0.0	0.0	0.0	90	0.2	0.0	0.4	2,831
Forest Type (Type)	code	-9.8	-26.0	2.8	90	3.9	-0.2	7.6	2,831
Forest Type (Group)	code	-10.0	-26.7	3.3	90	4.0	-0.1	7.7	2,831
Stand Size	code	0.0	-0.1	0.0	90	0.0	0.0	0.0	2,831
Regeneration Status	code	0.0	0.0	0.0	90	0.0	0.0	0.0	2,831
Tree Density	code	0.0	0.0	0.0	90	0.0	0.0	0.0	2,831
Owner Class	code	0.0	-0.2	0.1	90	0.2	-0.1	0.4	2,831
Owner Status	code	0.0	0.0	0.0	90	0.0	0.0	0.0	2,831
Regeneration Species	code	-11.0	-36.1	0.0	90	0.4	-1.3	2.5	2,831
Stand Age	year	0.5	0.0	1.3	90	-0.5	-1.3	0.1	2,831
Disturbance 1	code	-5.4	-10.0	-0.5	90	-0.1	-0.6	0.4	2,781
Disturbance Year 1	year	1,331.8	0.0	3,329.8	12	470.2	78.4	861.9	204
Disturbance 2	code	-4.9	-11.6	0.3	30	-2.2	-3.7	-0.9	480

(Table D continued on next page)

(Table D continued)

Variable	Unit of measure	Ohio Relative bias	Ohio 95% CI limits Lower	Ohio 95% CI limits Upper	Ohio Number of observations	All NRS States Relative bias	All NRS States 95% CI limits Lower	All NRS States 95% CI limits Upper	All NRS States Number of observations
Disturbance Year 2	year	0.0	0.0	0.0	2	-380.2	-1,902.3	1,141.9	21
Disturbance 3	code	0.0	0.0	0.0	6	0.3	0.0	1.0	70
Disturbance Year 3	year				.	1.0	0.0	2.0	2
Treatment 1	code	-0.4	-1.3	0.0	90	0.0	-0.1	0.1	2,781
Treatment Year 1	year	-0.2	-0.6	0.0	5	0.1	0.0	0.2	185
Treatment 2	code	0.0	-16.7	13.3	6	3.3	1.2	5.5	241
Treatment Year 2	year	0.0	0.0	0.0	1	0.0	-0.2	0.2	39
Treatment 3	code	0.0	0.0	0.0	3	-0.8	-2.5	0.4	79
Treatment Year 3	year				.	-0.7	-2.0	0.0	3
Physiographic Class	code	0.0	0.0	0.0	90	0.1	0.0	0.3	2,831
Present Nonforest Use	code	0.8	0.2	1.3	228	0.1	0.0	0.2	5,469
Regional Variables									
NC Land Use	code	0.0	0.0	0.0	182	0.0	0.0	0.0	4,397
Number of conditions					228				5,469
Boundary Level									
National Variables									
Boundary Change	code	-0.3	-0.5	0.0	40	0.0	-0.1	0.0	751
Constrasting Condition	cond	0.0	-0.1	0.1	40	0.0	0.0	0.1	751
Left Azimuth	degree	-2.4	-19.4	13.8	40	0.9	-2.1	3.9	751
Corner Mapped	code	0.0	-0.1	0.1	40	0.0	0.0	0.0	751
Corner Azimuth	degree	-12.0	-34.0	-0.7	3	-0.5	-2.1	1.1	66
Corner Distance	foot	1.3	0.3	3.0	3	-0.1	-0.3	0.2	66
Right Azimuth	degree	21.8	3.0	48.1	40	0.5	-2.7	4.0	751
Number of boundaries					40				751

(Table D continued on next page)

(Table D continued)

Variable	Unit of measure	Ohio Relative bias	Ohio 95% CI limits Lower	Ohio 95% CI limits Upper	Ohio Number of observations	All NRS States Relative bias	All NRS States 95% CI limits Lower	All NRS States 95% CI limits Upper	All NRS States Number of observations
Subplot Level									
National Variables									
Subplot Center Condition	code	0.0	0.0	0.0	308	0.0	0.0	0.0	9,139
Microplot Center Condition	code	0.0	0.0	0.0	308	0.0	0.0	0.0	9,139
Slope	percent	0.2	-0.3	0.6	246	0.1	0.0	0.1	7,836
Aspect	degree	-0.4	-3.0	2.2	240	1.0	0.3	1.8	7,573
Snow/Water Depth	foot	0.2	-0.2	0.5	271	-0.2	-0.3	-0.1	8,296
Number of subplots					308				9,139
Tree Level									
National Variables									
DBH	inch	0.0	0.0	0.0	1,022	0.0	0.0	0.0	34,614
DRC	inch				.	0.1	-0.2	0.3	34
Azimuth	degree	0.0	-0.2	0.2	1,205	0.0	-0.1	0.0	38,716
Horizontal Distance	foot	0.0	0.0	0.1	1,205	0.0	0.0	0.0	38,716
Species	code	-0.8	-2.1	0.2	1,205	0.0	-0.2	0.2	39,019
Tree Genus	code	-0.8	-1.7	0.3	1,201	0.0	-0.2	0.2	38,971
Tree Status	code	0.0	0.0	0.0	1,205	0.0	0.0	0.0	39,019
Rotten/Missing Cull	percent	-0.2	-0.5	0.1	834	-0.1	-0.2	-0.1	25,267
Total Length	foot	0.8	-0.3	1.7	828	0.3	0.1	0.4	24,961
Actual Length	foot	-1.9	-4.8	1.6	94	-2.3	-3.8	-1.0	3,031
Compacted Crown Ratio	percent	0.9	0.2	1.6	958	0.0	-0.2	0.1	31,866
Uncompacted Crown Ratio (P3)	percent				.	6.3	-4.8	12.7	15
Crown Class	code	0.0	-0.1	0.0	958	0.0	0.0	0.0	31,866
Decay Class	code	0.0	-0.1	0.1	184	0.0	0.0	0.0	5,590
Cause of Death	code	2.2	0.7	4.0	184	2.2	1.9	2.6	5,590
Condition	code	0.0	0.0	0.0	1,205	0.0	0.0	0.0	39,019
Mortality Year	year				.				.
Crown Position	code				.	0.1	-0.3	0.4	14
Crown Light Exposure	code				.	-0.4	-1.1	0.2	15

(Table D continued on next page)

(Table D continued)

Variable	Unit of measure	Ohio Relative bias	Ohio 95% CI limits Lower	Ohio 95% CI limits Upper	Ohio Number of observations	All NRS States Relative bias	All NRS States 95% CI limits Lower	All NRS States 95% CI limits Upper	All NRS States Number of observations
Sapling Crown Vigor Class	code				.	0.0	0.0	0.0	1
Crown Density	percent				.	-0.4	-9.1	7.9	14
Crown Dieback	percent				.	-1.4	-3.2	-0.4	14
Transparency	percent				.	-4.3	-8.8	0.4	14
Regional Variables									
NC Tree Class	code	0.0	-0.1	0.0	1,027	0.0	0.0	0.0	34,570
NC Damage Agent 1	code	9.2	0.3	16.5	958	5.6	4.5	6.8	31,866
NC Damage Agent 2	code	33.7	17.5	53.9	297	19.5	15.4	22.8	7,509
Missouri Damage Code	code				.				.
Utilization	code	0.0	0.0	0.0	52	0.0	0.0	0.0	1,145
NC Tree Grade	code				.				.
DBH-Live & Trees with Decay Code 1 or 2	inch	0.0	0.0	0.0	976	0.0	0.0	0.0	33,008
DBH-Trees with Decay Codes 3, 4 or 5	inch	0.0	-0.1	0.0	46	0.0	0.0	0.0	1,585
Total Length-trees 40 feet and greater	foot	2.0	1.2	2.8	720	0.9	0.8	1.0	19,962
Total Length-trees less than 40 feet	foot	-7.1	-11.4	-3.6	108	-2.1	-2.8	-1.5	4,999
Total Length-trees less than 5 inches DBH	foot	10.7	0.0	17.9	3	-1.8	-3.7	0.1	232
Number of trees					1,205				39,019
Seedling Level									
National Variables									
Species	code	0.0	-0.1	0.0	284	0.0	0.0	0.0	7,696
Genus	code	0.0	0.0	0.0	284	0.0	0.0	0.0	7,696
Seedling Count	number	-8.9	-15.3	-3.1	284	-16.4	-22.3	-12.7	7,696
Seedling Count (coded)	number	0.1	0.0	0.2	284	0.0	0.0	0.0	7,696
Number of microplots					104				7,696

(Table D continued on next page)

(Table D continued)

Variable	Unit of measure	Ohio				All NRS States			
		Relative bias	95% CI limits Lower	95% CI limits Upper	Number of observations	Relative bias	95% CI limits Lower	95% CI limits Upper	Number of observations
Site Tree Level									
National Variables									
Condition List	code	0.0	0.0	0.0	21	-5.6	-16.4	2.0	2,800
Diameter	inch	0.0	0.0	0.0	21	0.0	0.0	0.0	2,800
Species	code	0.0	0.0	0.0	21	0.0	-0.1	0.1	2,800
Genus	code	0.0	0.0	0.0	21	0.0	0.0	0.1	2,800
Azimuth	degree	-0.1	-0.6	0.1	21	0.1	-0.4	0.5	2,800
Distance	foot	0.0	-0.1	0.0	21	0.0	0.0	0.1	2,800
Total Length	foot	-1.5	-4.4	0.1	21	-0.1	-0.3	0.1	2,800
Diameter Age	year	0.1	0.0	0.3	21	0.1	0.0	0.2	2,800
Regional Variables									
Site Index Method	code	0	0	0	21	0	0	0	2800
Field Site Index	feet	0	0	0	21	0	0	0	2800
Number of site trees					21				2800

Table E.—FIA nonresponse by strata, Ohio, 2011

Owner	strata(um) code	plots selected	Sampled	Denied access	Hazardous	Other	Response Rate (%)
				number of plots			
Inland Census Water Unit 1	12345	4	3.75	0	0.25	0	[illegible]
Inland Census Water Unit 2	12345	4	3.75	0	0.25	0	93.75
Inland Census Water Unit 3	12345	4	4	0	0	0	100
Inland Census Water Unit 4	12345	16	16	0	0	0	100
Inland Census Water Unit 5	12345	6	6	0	0	0	100
Inland Census Water Unit 6	12345	14	14	0	0	0	100
Private Unit 1	1	225	219	5.75	0.25	0	97.33
Private Unit 1	4	33	28.95	4.05	0	0	87.71
Private Unit 1	5	224	205.39	18.51	0.1	0	91.69
Private Unit 1	23	26	25.75	0	0.25	0	99.04
Private Unit 2	1	95	91	4	0	0	95.79
Private Unit 2	2	16	13.75	2.25	0	0	85.94
Private Unit 2	3	13	10.98	2	0.02	0	84.43
Private Unit 2	4	25	23	2	0	0	92
Private Unit 2	5	179	160.5	18.5	0	0	89.66
Private Unit 3	1	188	179	9	0	0	95.21
Private Unit 3	2	33	31.35	1.58	0.07	0	95.01
Private Unit 3	3	18	17	1	0	0	94.44
Private Unit 3	4	41	39.5	1.25	0.25	0	96.34
Private Unit 3	5	263	239.65	23	0.35	0	91.12
Private Unit 4	1	505	501	4	0	0	99.21
Private Unit 4	2	31	26.89	3	1.11	0	86.74
Private Unit 4	3	27	26	1	0	0	96.3
Private Unit 4	4	64	63	1	0	0	98.44
Private Unit 4	5	195	176.47	17.75	0.78	0	90.5
Private Unit 5	1	621	614	6	1	0	98.87
Private Unit 5	2	45	43.75	1	0.25	0	97.22
Private Unit 5	3	22	21.75	0	0.25	0	98.86
Private Unit 5	4	28	27.75	0	0.25	0	99.11

(Table E continued on next page)

(Table E continued)

Owner and strata	plots selected	Sampled	Denied access	Hazardous		Other	Response Rate (%)
				number of plots			
Private Unit 5	5	75	65.98	8.77	0.25	0	[illegible]
Private Unit 6	1	1087	1078	9	0	0	99.17
Private Unit 6	2	20	19	1	0	0	95
Private Unit 6	3	19	18.5	0	0.5	0	97.37
Private Unit 6	4	33	29	4	0	0	87.88
Private Unit 6	5	89	83.75	4.75	0.5	0	94.1
Public Unit 1	12345	29	29	0	0	0	100
Public Unit 2	12345	11	11	0	0	0	100
Public Unit 3	12345	25	24.7	0	0.3	0	98.78
Public Unit 4	5	16	15.75	0	0.25	0	98.44
Public Unit 4	1234	18	17	0	1	0	94.44
Public Unit 5	12345	14	14	0	0	0	100
Public Unit 6	12345	15	15	0	0	0	100
Wayne NF	12345	48	46.39	1	0.61	0	96.64
Total		4,464.0	4,300.0	155.2	8.8	0.0	

Strata codes:

1: Canopy cover 0 - 5

2: Canopy cover 6 - 50

3: Canopy cover 51 - 65

4: Canopy cover 66 - 80

5: Canopy cover 81 - 100

Table OH-1.—Percentage of area by land status, Ohio, 2011

Land status	Percentage of area
Accessible forest land	
Unreserved forest land	
Timberland	27.6
Unproductive	0.1
Total unreserved forest land	27.7
Reserved forest land	
Productive	0.7
Unproductive	- -
Total reserved forest land	0.7
All accessible forest land	28.4
Nonforest and other land	
Nonforest land	66.6
Water	
Census	0.9
Non-Census	0.5
All nonforest and other land	68.0
Nonsampled land	
Access denied	3.4
Hazardous conditions	0.2
Other	- -
All land	100.0
Total area (thousands of acres)	26,449

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

Table OH-2.—Area of forest land, in thousand acres, by owner class and forest-land status, Ohio, 2011

Owner class	Unreserved forests			Reserved forests			All forest land
	Timberland	Unproductive	Total	Productive	Unproductive	Total	
Forest Service							
National forest	241.3	- -	241.3	- -	- -	- -	241.3
Other Federal							
National Park Service	- -	- -	- -	15.7	- -	15.7	15.7
Fish and Wildlife Service	10.7	- -	10.7	- -	- -	- -	10.7
Department of Defense or Energy	24.3	- -	24.3	- -	- -	- -	24.3
Other Federal	10.8	- -	10.8	1.1	- -	1.1	11.9
State and local government							
State	444.5	- -	444.5	78.1	- -	78.1	522.6
Local (county, municipal, etc.)	187.2	- -	187.2	100.8	- -	100.8	288.0
Other non-Federal lands	15.8	- -	15.8	- -	- -	- -	15.8
Private							
Undifferentiated private	6,930.2	27.7	6,957.9	- -	- -	- -	6,957.9
All owners	7,864.9	27.7	7,892.6	195.7	- -	195.7	8,088.3

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 100 acres. Columns and rows may not add to their totals due to rounding.

Table OH-3.—Area of forest land, in thousand acres, by forest-type group and productivity class, Ohio, 2011

Forest-type group	Site-productivity class (cubic feet/acre/year)							All classes
	0-19	20-49	50-84	85-119	120-164	165-224	225+	
White / red / jack pine group	- -	7.7	12.0	21.8	38.0	- -	- -	79.4
Loblolly / shortleaf pine group	- -	19.0	45.6	4.7	- -	- -	- -	69.3
Other eastern softwoods group	- -	30.7	5.1	- -	- -	- -	- -	35.8
Fir / spruce / mountain hemlock grou	- -	- -	8.2	- -	- -	- -	- -	8.2
Exotic softwoods group	- -	9.5	7.2	9.5	3.2	- -	- -	29.4
Other softwoods group	6.1	- -	- -	- -	- -	- -	- -	6.1
Oak / pine group	4.3	70.1	33.5	38.7	4.7	- -	- -	151.4
Oak / hickory group	10.8	1,784.7	2,194.6	907.8	165.2	- -	- -	5,063.1
Oak / gum / cypress group	- -	- -	11.0	8.3	- -	- -	- -	19.3
Elm / ash / cottonwood group	4.9	328.0	231.7	153.5	73.5	- -	- -	791.6
Maple / beech / birch group	1.6	569.9	813.5	218.3	10.1	- -	- -	1,613.4
Aspen / birch group	- -	24.5	9.9	51.2	- -	- -	- -	85.5
Other hardwoods group	- -	10.2	11.7	7.1	- -	- -	- -	29.0
Exotic hardwoods group	- -	10.1	6.2	10.4	4.4	- -	- -	31.2
Nonstocked	- -	49.6	19.9	- -	6.2	- -	- -	75.7
All forest-type groups	27.7	2,914.1	3,410.0	1,431.3	305.2	- -	- -	8,088.3

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 100 acres. Columns and rows may not add to their totals due to rounding.

Table OH-4.—Area of forest land, in thousand acres, by forest-type group, ownership group, and forest-land status, Ohio, 2011

Forest-type group	Forest Service		Other Federal		State and local government		Undifferentiated private		All forest land
	Timber-land	Other forest land	Timber-land	Other forest land	Timber-land	Other forest land	Timber-land	Other forest land	
White / red / jack pine group	12.3	- -	- -	- -	20.3	- -	46.8	- -	79.4
Loblolly / shortleaf pine group	- -	- -	- -	- -	6.4	- -	62.8	- -	69.3
Other eastern softwoods group	- -	- -	- -	- -	3.1	- -	32.7	- -	35.8
Fir / spruce / mountain hemlock group	- -	- -	- -	- -	- -	- -	8.2	- -	8.2
Exotic softwoods group	- -	- -	- -	- -	7.1	- -	22.3	- -	29.4
Other softwoods group	- -	- -	- -	- -	- -	- -	- -	6.1	6.1
Oak / pine group	5.1	- -	- -	- -	1.4	- -	140.6	4.3	151.4
Oak / hickory group	188.5	- -	26.1	6.6	420.3	91.3	4,319.4	10.8	5,063.1
Oak / gum / cypress group	- -	- -	- -	- -	6.7	- -	12.6	- -	19.3
Elm / ash / cottonwood group	15.7	- -	16.6	9.1	77.5	33.1	634.7	4.9	791.6
Maple / beech / birch group	12.0	- -	3.1	1.1	85.0	46.9	1,463.8	1.6	1,613.4
Aspen / birch group	6.4	- -	- -	- -	- -	- -	79.1	- -	85.5
Other hardwoods group	1.3	- -	- -	- -	- -	- -	27.7	- -	29.0
Exotic hardwoods group	- -	- -	- -	- -	8.0	6.3	16.8	- -	31.2
Nonstocked	- -	- -	- -	- -	11.6	1.4	62.7	- -	75.7
All forest-type groups	241.3	- -	45.8	16.8	647.5	178.9	6,930.2	27.7	8,088.3

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 100 acres. Columns and rows may not add to their totals due to rounding.

Table OH-5.—Area of forest land, in thousand acres, by forest-type group and stand-size class, Ohio, 2011

Forest-type group	Stand-size class					All size classes
	Large diameter	Medium diameter	Small diameter	Chaparral	Nonstocked	
White / red / jack pine group	68.3	9.4	1.7	- -	- -	79.4
Loblolly / shortleaf pine group	23.1	24.9	21.3	- -	- -	69.3
Other eastern softwoods group	- -	21.0	14.8	- -	- -	35.8
Fir / spruce / mountain hemlock grou	8.2	- -	- -	- -	- -	8.2
Exotic softwoods group	15.1	14.3	- -	- -	- -	29.4
Other softwoods group	- -	- -	6.1	- -	- -	6.1
Oak / pine group	83.1	32.7	35.6	- -	- -	151.4
Oak / hickory group	3,377.7	1,116.3	569.1	- -	- -	5,063.1
Oak / gum / cypress group	11.0	6.7	1.6	- -	- -	19.3
Elm / ash / cottonwood group	531.2	136.3	124.1	- -	- -	791.6
Maple / beech / birch group	1,144.9	339.8	128.7	- -	- -	1,613.4
Aspen / birch group	41.9	34.0	9.6	- -	- -	85.5
Other hardwoods group	10.9	- -	18.1	- -	- -	29.0
Exotic hardwoods group	6.3	21.0	3.9	- -	- -	31.2
Nonstocked	- -	- -	- -	- -	75.7	75.7
All forest-type groups	5,321.7	1,756.4	934.4	- -	75.7	8,088.3

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 100 acres. Columns and rows may not add to their totals due to rounding.

Table OH-6.—Area of forest land, in thousand acres, by forest-type group and stand-age class, Ohio, 2011

Forest-type group	Non stocked	Stand-age class (years)											All classes
		1-20	21-40	41-60	61-80	81-100	101-120	121-140	141-160	161-180	181-200	201+	
White / red / jack pine group	- -	3.2	15.1	36.0	23.4	1.6	- -	- -	- -	- -	- -	- -	79.4
Loblolly / shortleaf pine group	- -	31.3	14.9	16.6	6.5	- -	- -	- -	- -	- -	- -	- -	69.3
Other eastern softwoods group	- -	0.9	5.1	29.8	- -	- -	- -	- -	- -	- -	- -	- -	35.8
Fir / spruce / mountain hemlock group	- -	- -	4.7	3.5	- -	- -	- -	- -	- -	- -	- -	- -	8.2
Exotic softwoods group	- -	1.6	21.0	6.8	- -	- -	- -	- -	- -	- -	- -	- -	29.4
Other softwoods group	- -	- -	6.1	- -	- -	- -	- -	- -	- -	- -	- -	- -	6.1
Oak / pine group	- -	41.0	14.5	68.8	20.9	6.2	- -	- -	- -	- -	- -	- -	151.4
Oak / hickory group	- -	387.2	671.5	1,737.4	1,446.0	609.9	187.4	10.9	8.6	- -	- -	4.3	5,063.1
Oak / gum / cypress group	- -	- -	1.6	17.7	- -	- -	- -	- -	- -	- -	- -	- -	19.3
Elm / ash / cottonwood group	- -	107.6	175.0	276.8	178.7	52.1	1.3	- -	- -	- -	- -	- -	791.6
Maple / beech / birch group	- -	47.7	229.2	584.6	482.5	212.0	42.3	9.1	- -	- -	- -	- -	1,613.4
Aspen / birch group	- -	13.7	17.8	40.2	12.5	1.3	- -	- -	- -	- -	- -	- -	85.5
Other hardwoods group	- -	4.6	14.3	- -	10.1	- -	- -	- -	- -	- -	- -	- -	29.0
Exotic hardwoods group	- -	8.0	16.9	6.2	- -	- -	- -	- -	- -	- -	- -	- -	31.2
Nonstocked	75.7	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	75.7
All forest-type groups	75.7	646.9	1,207.6	2,824.6	2,180.6	883.1	231.0	20.0	8.6	- -	- -	4.3	8,088.3

All table cells without observations in the inventory sample are indicated by –. Table value of 0.0 indicates the acres round to less than 100 acres. Columns and rows may not add to their totals due to rounding.

Table OH-7.—Area of forest land, in thousand acres, by forest-type group and stand origin, Ohio, 2011

Forest-type group	Stand origin		All forest land
	Natural stands	Artificial regeneration	
White / red / jack pine group	19.7	59.7	79.4
Loblolly / shortleaf pine group	27.0	42.2	69.3
Other eastern softwoods group	31.1	4.7	35.8
Fir / spruce / mountain hemlock grou	8.2	- -	8.2
Exotic softwoods group	2.5	26.9	29.4
Other softwoods group	6.1	- -	6.1
Oak / pine group	131.2	20.2	151.4
Oak / hickory group	4,943.5	119.6	5,063.1
Oak / gum / cypress group	19.3	- -	19.3
Elm / ash / cottonwood group	732.7	58.9	791.6
Maple / beech / birch group	1,586.7	26.7	1,613.4
Aspen / birch group	85.5	- -	85.5
Other hardwoods group	29.0	- -	29.0
Exotic hardwoods group	27.0	4.2	31.2
Nonstocked	73.1	2.6	75.7
All forest-type groups	7,722.6	365.7	8,088.3

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 100 acres. Columns and rows may not add to their totals due to rounding.

Table OH-8.—Area of forest land, in thousand acres, by forest-type group and disturbance class, Ohio, 2011

	Disturbance class									
Forest-type group	None	Insects	Disease	Weather	Fire	Domestic animals	Wild animals	Human	Other	All forest land
White / red / jack pine group	72.4	- -	- -	- -	- -	- -	- -	- -	7.0	79.4
Loblolly / shortleaf pine group	67.7	- -	- -	- -	- -	1.6	- -	- -	- -	69.3
Other eastern softwoods group	34.5	- -	- -	- -	- -	1.3	- -	- -	- -	35.8
Fir / spruce / mountain hemlock group	8.2	- -	- -	- -	- -	- -	- -	- -	- -	8.2
Exotic softwoods group	13.0	- -	- -	- -	- -	- -	- -	2.5	13.9	29.4
Other softwoods group	- -	- -	- -	- -	- -	- -	- -	6.1	- -	6.1
Oak / pine group	129.0	- -	- -	- -	5.1	0.7	- -	8.8	7.8	151.4
Oak / hickory group	3,726.6	21.0	15.4	125.8	3.1	186.2	157.1	68.1	759.8	5,063.1
Oak / gum / cypress group	13.0	- -	- -	- -	- -	- -	- -	- -	6.3	19.3
Elm / ash / cottonwood group	479.8	- -	8.2	94.0	- -	9.9	42.4	18.9	138.4	791.6
Maple / beech / birch group	1,136.3	6.5	5.6	38.8	- -	45.8	26.4	43.8	310.3	1,613.4
Aspen / birch group	48.8	- -	3.1	7.3	- -	- -	5.5	- -	20.8	85.5
Other hardwoods group	16.4	- -	- -	7.1	- -	- -	- -	- -	5.5	29.0
Exotic hardwoods group	10.1	- -	- -	- -	- -	- -	- -	4.4	16.7	31.2
Nonstocked	46.2	- -	- -	10.9	- -	4.6	- -	11.4	2.6	75.7
All forest-type groups	5,802.1	27.5	32.3	283.8	8.2	250.0	231.3	163.9	1,289.2	8,088.3

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 100 acres. Columns and rows may not add to their totals due to rounding.

Table OH-9.—Area of timberland, in thousand acres, by forest-type group and stand-size class, Ohio, 2011

Forest-type group	Stand-size class					All size classes
	Large diameter	Medium diameter	Small diameter	Chaparral	Nonstocked	
White / red / jack pine group	68.3	9.4	1.7	- -	- -	79.4
Loblolly / shortleaf pine group	23.1	24.9	21.3	- -	- -	69.3
Other eastern softwoods group	- -	21.0	14.8	- -	- -	35.8
Fir / spruce / mountain hemlock grou	8.2	- -	- -	- -	- -	8.2
Exotic softwoods group	15.1	14.3	- -	- -	- -	29.4
Oak / pine group	83.1	28.3	35.6	- -	- -	147.1
Oak / hickory group	3,299.9	1,094.1	560.4	- -	- -	4,954.3
Oak / gum / cypress group	11.0	6.7	1.6	- -	- -	19.3
Elm / ash / cottonwood group	499.7	130.4	114.4	- -	- -	744.5
Maple / beech / birch group	1,108.5	338.4	117.0	- -	- -	1,563.9
Aspen / birch group	41.9	34.0	9.6	- -	- -	85.5
Other hardwoods group	10.9	- -	18.1	- -	- -	29.0
Exotic hardwoods group	- -	21.0	3.9	- -	- -	24.9
Nonstocked	- -	- -	- -	- -	74.4	74.4
All forest-type groups	5,169.6	1,722.6	898.3	- -	74.4	7,864.9

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 100 acres. Columns and rows may not add to their totals due to rounding.

Table OH-10.—Number of live trees (at least 1 inch d.b.h/d.r.c.), in thousand trees, on forest land by species group, species, and diameter class, Ohio, 2011

Species group	Diameter class (inches)															All classes
	1.0-2.9	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	21.0-24.9	25.0-28.9	29.0-32.9	33.0-36.9	37.0+	
Softwood species groups																
Eastern softwood species groups																
Loblolly and shortleaf pines	7,606	4,085	2,035	494	151	- -	40	- -	- -	- -	- -	- -	- -	- -	- -	14,412
Other yellow pines	15,747	4,369	5,262	3,460	2,783	1,737	1,231	463	77	42	- -	- -	- -	- -	- -	35,172
Eastern white and red pines	4,381	7,591	4,559	4,944	3,759	2,895	1,529	1,464	949	350	37	75	- -	- -	- -	32,534
Spruce and balsam fir	- -	1,415	305	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	1,720
Eastern hemlock	934	472	530	532	377	268	384	191	117	38	151	- -	- -	- -	- -	3,992
Cypress	- -	- -	39	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	39
Other eastern softwoods	20,030	14,197	8,561	4,880	2,384	1,369	474	251	108	- -	85	- -	- -	- -	- -	52,338
All softwoods	48,698	32,130	21,291	14,311	9,452	6,269	3,658	2,369	1,251	430	273	75	- -	- -	- -	140,208
Hardwood species groups																
Eastern hardwood species groups																
Select white oaks	32,832	9,134	8,787	7,364	6,959	5,524	5,212	4,701	2,861	2,108	2,836	876	408	151	172	89,925
Select red oaks	37,410	9,563	7,151	4,254	3,153	3,079	2,278	2,132	1,805	1,304	2,073	765	472	292	220	75,949
Other white oaks	3,732	3,318	2,911	2,978	2,447	2,246	2,487	2,326	1,702	890	820	193	40	40	- -	26,129
Other red oaks	48,364	12,615	9,090	6,582	5,125	4,172	4,004	3,715	2,293	2,013	1,904	448	107	38	149	100,620
Hickory	85,001	21,687	18,715	15,986	12,644	10,027	7,750	4,391	2,607	1,366	964	115	39	- -	- -	181,293
Yellow birch	- -	1,057	263	65	82	- -	- -	38	- -	- -	- -	- -	- -	- -	- -	1,505
Hard maple	347,059	98,327	43,124	24,678	15,749	10,645	6,904	4,694	2,868	1,645	1,606	494	137	63	- -	557,993
Soft maple	272,407	100,340	49,807	35,906	27,135	15,383	9,920	7,647	3,909	2,351	1,799	672	- -	75	64	527,415
Beech	71,646	17,186	7,663	4,676	3,238	2,082	1,882	1,361	1,047	721	919	638	171	75	38	113,343
Sweetgum	- -	472	376	148	245	140	62	70	- -	- -	- -	30	- -	- -	- -	1,543
Tupelo and blackgum	40,061	15,492	5,755	3,032	1,791	1,030	581	302	117	39	39	42	- -	- -	- -	68,281
Ash	146,322	50,137	28,846	19,563	13,045	8,642	6,331	3,986	2,919	1,799	1,310	217	182	34	33	283,365
Cottonwood and aspen	29,097	5,435	6,111	5,046	4,226	4,089	2,960	1,688	988	522	578	143	31	- -	36	60,950
Basswood	22,291	12,303	4,718	3,536	2,751	1,631	1,411	971	562	292	114	112	- -	- -	- -	50,692
Yellow-poplar	94,287	25,938	15,975	14,476	7,996	6,967	6,204	5,046	3,655	1,771	2,141	770	335	38	33	185,634
Black walnut	10,874	5,054	5,794	4,718	4,321	3,620	2,599	1,473	1,190	541	436	94	- -	- -	- -	40,714
Other eastern soft hardwoods	419,715	170,903	90,455	54,406	33,722	20,544	11,881	7,209	4,368	1,885	2,828	826	569	68	73	819,451
Other eastern hard hardwoods	127,048	39,526	14,127	6,883	5,192	3,166	1,880	981	619	354	349	62	31	- -	- -	200,220
Eastern noncommercial hardwoods	476,541	79,970	24,502	11,325	4,865	3,509	1,164	911	511	263	115	- -	35	- -	- -	603,710
All hardwoods	2,264,689	678,459	344,171	225,621	154,685	106,497	75,508	53,642	34,019	19,863	20,832	6,497	2,557	872	818	3,988,732
All species groups	2,313,387	710,589	365,462	239,932	164,138	112,766	79,166	56,011	35,271	20,293	21,105	6,573	2,557	872	818	4,128,940

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates the number of trees rounds to less than 1,000 trees. Columns and rows may not add to their totals due to rounding.

Table OH-11.—Number of growing-stock trees (at least 1 inch d.b.h.), in thousand trees, on timberland by species group, species, and diameter class, Ohio, 2011

Species group	Diameter class (inches)													All classes
	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	21.0-24.9	25.0-28.9	29.0-32.9	33.0-36.9	37.0+	
Softwood species groups														
Eastern softwood species groups														
Loblolly and shortleaf pines	1,740	457	151	- -	40	- -	- -	- -	- -	- -	- -	- -	- -	2,387
Other yellow pines	3,893	2,627	2,470	1,737	1,154	423	77	42	- -	- -	- -	- -	- -	12,424
Eastern white and red pines	4,113	4,673	3,526	2,746	1,498	1,464	949	312	37	75	- -	- -	- -	19,394
Spruce and balsam fir	305	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	305
Eastern hemlock	377	341	266	268	306	191	117	38	113	- -	- -	- -	- -	2,016
Cypress	39	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	39
Other eastern softwoods	5,328	3,057	1,633	898	438	184	70	- -	85	- -	- -	- -	- -	11,692
All softwoods	15,795	11,155	8,046	5,648	3,437	2,261	1,214	391	235	75	- -	- -	- -	48,257
Hardwood species groups														
Eastern hardwood species groups														
Select white oaks	7,007	6,203	6,191	5,143	4,825	4,555	2,555	1,926	2,280	658	368	151	67	41,928
Select red oaks	5,582	3,804	2,639	2,649	1,851	1,710	1,575	1,142	1,910	651	290	213	143	24,161
Other white oaks	2,236	2,608	2,146	2,210	2,298	2,178	1,702	770	743	112	40	- -	- -	17,043
Other red oaks	7,681	5,928	4,859	3,572	3,894	3,522	2,253	1,858	1,652	409	107	38	30	35,805
Hickory	15,050	14,400	11,743	9,132	7,343	4,180	2,354	1,257	739	76	- -	- -	- -	66,273
Yellow birch	33	27	82	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	142
Hard maple	31,859	20,036	13,419	9,315	5,868	4,021	2,486	1,263	964	303	33	33	- -	89,600
Soft maple	33,019	24,891	19,796	10,972	7,567	6,014	3,072	1,765	1,506	457	- -	42	64	109,166
Beech	4,243	3,029	2,584	1,546	1,398	878	831	534	669	416	72	37	- -	16,238
Sweetgum	337	108	245	140	62	70	- -	- -	- -	30	- -	- -	- -	993
Tupelo and blackgum	3,568	2,311	1,409	884	503	263	117	39	39	42	- -	- -	- -	9,175
Ash	16,429	13,199	9,110	6,396	5,289	3,237	2,619	1,656	1,017	184	108	34	33	59,310
Cottonwood and aspen	4,922	4,246	3,644	3,693	2,851	1,688	988	522	545	107	31	- -	36	23,272
Basswood	2,609	2,461	1,827	1,397	1,261	857	524	292	114	75	- -	- -	- -	11,418
Yellow-poplar	13,790	12,966	7,601	6,280	5,688	4,647	3,579	1,649	2,062	770	294	38	33	59,395
Black walnut	2,967	3,533	2,827	2,854	2,040	1,249	806	471	365	61	- -	- -	- -	17,174
Other eastern soft hardwoods	41,248	30,612	20,301	13,559	8,732	5,138	3,402	1,316	2,054	687	495	68	35	127,646
Other eastern hard hardwoods	5,050	3,388	2,941	1,800	1,187	708	336	210	208	- -	- -	- -	- -	15,829
All hardwoods	197,632	153,749	113,363	81,540	62,657	44,917	29,200	16,670	16,867	5,040	1,837	654	442	724,568
All species groups	213,427	164,904	121,409	87,189	66,093	47,178	30,413	17,062	17,102	5,115	1,837	654	442	772,825

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates the number of trees rounds to less than 1,000 trees. Columns and rows may not add to their totals due to rounding.

Table OH-12.—Net volume of live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, by owner class and forest-land status, Ohio, 2011

Owner class	Unreserved forests			Reserved forests			All forest land
	Timberland	Unproductive	Total	Productive	Unproductive	Total	
Forest Service							
National forest	539.4	- -	539.4	- -	- -	- -	539.4
Other Federal							
National Park Service	- -	- -	- -	26.0	- -	26.0	26.0
Fish and Wildlife Service	8.3	- -	8.3	- -	- -	- -	8.3
Department of Defense or Energy	65.7	- -	65.7	- -	- -	- -	65.7
Other Federal	- -	- -	- -	5.1	- -	5.1	5.1
State and local government							
State	1,038.1	- -	1,038.1	144.9	- -	144.9	1,183.1
Local (county, municipal, etc.)	377.7	- -	377.7	309.8	- -	309.8	687.4
Other non-Federal lands	45.7	- -	45.7	- -	- -	- -	45.7
Private							
Undifferentiated private	13,810.3	15.6	13,825.9	- -	- -	- -	13,825.9
All owners	15,885.2	15.6	15,900.8	485.8	- -	485.8	16,386.6

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table OH-13.—Net volume of live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by forest-type group, forest type, and stand-size class, Ohio, 2011

Forest-type group	Stand-size class					All size classes
	Large diameter	Medium diameter	Small diameter	Chaparral	Nonstocked	
White / red / jack pine group	249.8	23.0	- -	- -	- -	272.9
Loblolly / shortleaf pine group	62.8	26.7	1.0	- -	- -	90.6
Other eastern softwoods group	- -	17.6	3.3	- -	- -	20.9
Fir / spruce / mountain hemlock grou	16.8	- -	- -	- -	- -	16.8
Exotic softwoods group	46.3	8.5	- -	- -	- -	54.8
Oak / pine group	168.7	22.3	4.5	- -	- -	195.5
Oak / hickory group	8,860.1	1,530.3	136.5	- -	- -	10,527.0
Oak / gum / cypress group	26.2	12.1	1.1	- -	- -	39.3
Elm / ash / cottonwood group	1,367.1	131.7	14.4	- -	- -	1,513.2
Maple / beech / birch group	2,915.2	460.0	55.4	- -	- -	3,430.6
Aspen / birch group	133.8	52.8	1.0	- -	- -	187.6
Other hardwoods group	8.1	- -	3.0	- -	- -	11.1
Exotic hardwoods group	5.5	13.0	- -	- -	- -	18.6
Nonstocked	- -	- -	- -	- -	7.7	7.7
All forest-type groups	13,860.4	2,298.2	220.3	- -	7.7	16,386.6

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table OH-14.—Net volume of live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by species group, species, and ownership group, Ohio, 2011

	Ownership group				
Species group	Forest Service	Other Federal	State and local government	Undifferentiated private	All owners
Softwood species groups					
Eastern softwood species groups					
Loblolly and shortleaf pines	- -	- -	0.3	8.4	8.7
Other yellow pines	3.0	- -	17.7	118.1	138.9
Eastern white and red pines	22.7	0.7	65.8	221.3	310.5
Spruce and balsam fir	- -	- -	- -	0.7	0.7
Eastern hemlock	- -	- -	2.4	41.5	43.9
Cypress	- -	- -	- -	0.1	0.1
Other eastern softwoods	0.1	0.2	3.0	104.8	108.1
All softwoods	25.9	0.9	89.2	494.9	610.9
Hardwood species groups					
Eastern hardwood species groups					
Select white oaks	79.6	13.4	183.3	939.6	1,216.0
Select red oaks	42.6	13.4	141.3	665.6	862.8
Other white oaks	25.7	- -	120.2	282.1	428.1
Other red oaks	26.6	3.3	97.9	768.1	896.0
Hickory	40.6	20.3	99.1	1,126.5	1,286.5
Yellow birch	- -	- -	2.9	0.5	3.4
Hard maple	36.7	5.9	128.9	1,255.0	1,426.5
Soft maple	31.1	6.3	198.6	1,682.2	1,918.2
Beech	16.9	2.7	58.6	425.0	503.1
Sweetgum	4.1	- -	- -	10.7	14.7
Tupelo and blackgum	3.4	- -	10.6	89.0	103.0
Ash	25.3	2.3	104.1	1,165.0	1,296.7
Cottonwood and aspen	14.8	0.7	59.5	443.1	518.1
Basswood	3.5	2.5	55.6	204.0	265.6
Yellow-poplar	88.7	10.9	243.3	1,293.0	1,635.8
Black walnut	3.1	4.8	46.7	317.3	371.9
Other eastern soft hardwoods	54.3	8.5	238.3	2,186.8	2,488.0
Other eastern hard hardwoods	3.7	5.7	23.1	262.8	295.2
Eastern noncommercial hardwoods	12.9	3.5	15.1	214.5	246.1
All hardwoods	513.5	104.1	1,827.0	13,331.0	15,775.7
All species groups	539.4	105.0	1,916.2	13,825.9	16,386.6

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table OH-15.—Net volume of live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by species group, species, and diameter class, Ohio, 2011

Species group	Diameter class (inches)													All classes
	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	21.0-24.9	25.0-28.9	29.0-32.9	33.0-36.9	37.0+	
Softwood species groups														
Eastern softwood species groups														
Loblolly and shortleaf pines	4	3	1	- -	1	- -	- -	- -	- -	- -	- -	- -	- -	9
Other yellow pines	14	19	29	29	28	14	3	2	- -	- -	- -	- -	- -	139
Eastern white and red pines	13	31	44	54	40	52	45	21	3	8	- -	- -	- -	311
Spruce and balsam fir	1	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	1
Eastern hemlock	1	3	3	4	9	6	5	2	11	- -	- -	- -	- -	44
Cypress	0	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0
Other eastern softwoods	17	23	21	19	10	7	4	- -	8	- -	- -	- -	- -	108
All softwoods	49	77	98	105	89	80	57	25	21	8	- -	- -	- -	611
Hardwood species groups														
Eastern hardwood species groups														
Select white oaks	21	39	72	95	131	165	129	127	205	91	64	32	47	1,216
Select red oaks	18	25	35	56	59	75	84	78	165	87	68	51	64	863
Other white oaks	6	16	25	38	61	75	73	48	56	18	6	6	- -	428
Other red oaks	21	38	58	74	105	135	108	119	142	50	17	7	23	896
Hickory	47	108	165	211	238	184	142	95	78	14	3	- -	- -	1,287
Yellow birch	1	0	1	- -	- -	1	- -	- -	- -	- -	- -	- -	- -	3
Hard maple	103	156	185	200	186	174	136	98	114	49	13	11	- -	1,427
Soft maple	100	200	294	268	250	269	177	129	136	66	- -	14	16	1,918
Beech	15	26	37	40	52	52	51	45	74	71	20	17	3	503
Sweetgum	1	1	3	3	2	2	- -	- -	- -	4	- -	- -	- -	15
Tupelo and blackgum	12	16	18	17	15	11	5	2	3	4	- -	- -	- -	103
Ash	72	128	160	170	179	149	149	115	105	27	26	8	10	1,297
Cottonwood and aspen	18	35	53	84	88	70	51	34	50	18	6	- -	12	518
Basswood	11	23	33	35	44	42	33	22	10	14	- -	- -	- -	266
Yellow-poplar	42	104	109	156	209	234	223	137	223	110	68	9	11	1,636
Black walnut	13	25	41	60	62	50	48	32	31	11	- -	- -	- -	372
Other eastern soft hardwoods	191	289	343	360	310	262	206	104	217	95	84	14	14	2,488
Other eastern hard hardwoods	27	33	47	46	41	32	22	20	22	4	1	- -	- -	295
Eastern noncommercial hardwoods	37	44	36	42	22	26	18	11	6	- -	4	- -	- -	246
All hardwoods	754	1,304	1,714	1,954	2,054	2,007	1,656	1,214	1,639	733	380	168	200	15,776
All species groups	803	1,381	1,812	2,059	2,142	2,087	1,713	1,239	1,660	741	380	168	200	16,387

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

Table OH-16.—Net volume of live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by forest-type group and stand origin, Ohio, 2011

Forest-type group	Stand origin		All forest land
	Natural stands	Artificial regeneration	
White / red / jack pine group	57.5	215.4	272.9
Loblolly / shortleaf pine group	58.6	32.0	90.6
Other eastern softwoods group	17.9	3.0	20.9
Fir / spruce / mountain hemlock grou	16.8	- -	16.8
Exotic softwoods group	1.7	53.0	54.8
Oak / pine group	168.7	26.8	195.5
Oak / hickory group	10,365.9	161.1	10,527.0
Oak / gum / cypress group	39.3	- -	39.3
Elm / ash / cottonwood group	1,426.7	86.4	1,513.2
Maple / beech / birch group	3,388.4	42.2	3,430.6
Aspen / birch group	187.6	- -	187.6
Other hardwoods group	11.1	- -	11.1
Exotic hardwoods group	16.8	1.8	18.6
Nonstocked	7.7	- -	7.7
All forest-type groups	15,764.9	621.6	16,386.6

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table OH-17.—Net volume of growing-stock trees (at least 5 inches d.b.h.), in million cubic feet, on timberland by species group and diameter class, Ohio, 2011

Species group	Diameter class (inches)													All classes
	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	21.0-24.9	25.0-28.9	29.0-32.9	33.0-36.9	37.0+	
Softwood species groups														
Eastern softwood species groups														
Loblolly and shortleaf pines	3	3	1	- -	1	- -	- -	- -	- -	- -	- -	- -	- -	8
Other yellow pines	11	16	27	29	27	13	3	2	- -	- -	- -	- -	- -	128
Eastern white and red pines	12	29	41	51	39	52	45	19	3	8	- -	- -	- -	301
Spruce and balsam fir	1	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	1
Eastern hemlock	1	2	2	4	8	6	5	2	8	- -	- -	- -	- -	38
Cypress	0	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0
Other eastern softwoods	12	16	16	14	9	6	3	- -	8	- -	- -	- -	- -	84
All softwoods	40	65	88	98	84	78	56	23	19	8	- -	- -	- -	560
Hardwood species groups														
Eastern hardwood species groups														
Select white oaks	18	34	66	90	122	160	118	117	171	75	57	32	20	1,080
Select red oaks	15	23	30	49	49	62	75	69	153	75	45	42	47	734
Other white oaks	6	15	22	37	57	72	73	41	53	11	6	- -	- -	392
Other red oaks	18	35	56	65	103	130	106	111	129	47	17	7	7	832
Hickory	41	100	156	197	228	178	133	90	65	11	- -	- -	- -	1,200
Yellow birch	0	0	1	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	1
Hard maple	84	134	162	181	166	155	123	80	77	34	5	7	- -	1,209
Soft maple	76	153	232	206	204	226	145	103	121	51	- -	9	16	1,543
Beech	10	19	31	32	42	36	44	36	61	56	12	9	- -	386
Sweetgum	1	1	3	3	2	2	- -	- -	- -	4	- -	- -	- -	15
Tupelo and blackgum	8	13	15	15	14	10	5	2	3	4	- -	- -	- -	89
Ash	48	94	120	133	157	130	137	107	87	24	20	8	10	1,074
Cottonwood and aspen	16	31	47	77	86	70	51	34	48	14	6	- -	12	490
Basswood	7	17	24	30	40	37	32	22	10	10	- -	- -	- -	229
Yellow-poplar	38	96	105	145	193	218	220	131	218	110	60	9	11	1,556
Black walnut	8	20	31	50	52	44	36	28	28	8	- -	- -	- -	305
Other eastern soft hardwoods	110	190	236	261	245	202	171	82	171	83	77	14	8	1,849
Other eastern hard hardwoods	13	20	33	32	29	25	15	13	18	- -	- -	- -	- -	198
All hardwoods	515	997	1,370	1,604	1,788	1,758	1,482	1,066	1,413	615	304	136	132	13,180
All species groups	555	1,062	1,458	1,702	1,873	1,836	1,538	1,089	1,431	624	304	136	132	13,741

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

Table OH-18.—Net volume of growing-stock trees (at least 5 inches d.b.h.), in million cubic feet, on timberland by species group and ownership group, Ohio, 2011

Species group	Ownership group				All owners
	Forest Service	Other Federal	State and local government	Undifferentiated private	
Softwood species groups					
Eastern softwood species groups					
Loblolly and shortleaf pines	- -	- -	0.3	7.9	8.2
Other yellow pines	2.8	- -	14.5	111.0	128.2
Eastern white and red pines	21.6	0.2	65.1	214.0	300.9
Spruce and balsam fir	- -	- -	- -	0.7	0.7
Eastern hemlock	- -	- -	0.5	37.5	38.0
Cypress	- -	- -	- -	0.1	0.1
Other eastern softwoods	0.1	0.2	1.6	82.4	84.2
All softwoods	24.5	0.3	82.0	453.5	560.3
Hardwood species groups					
Eastern hardwood species groups					
Select white oaks	79.4	11.8	131.7	856.8	1,079.7
Select red oaks	42.2	5.8	62.6	623.1	733.6
Other white oaks	25.7	- -	103.5	262.6	391.7
Other red oaks	25.8	3.1	80.6	722.4	831.9
Hickory	39.0	19.1	75.6	1,066.4	1,200.0
Yellow birch	- -	- -	1.2	0.1	1.3
Hard maple	32.0	5.7	81.8	1,089.2	1,208.8
Soft maple	27.3	2.3	128.9	1,385.0	1,543.4
Beech	12.9	- -	29.5	343.2	385.6
Sweetgum	4.1	- -	- -	10.5	14.5
Tupelo and blackgum	3.3	- -	8.6	77.3	89.2
Ash	23.9	0.1	70.5	979.8	1,074.3
Cottonwood and aspen	14.1	0.7	45.3	430.0	490.1
Basswood	3.4	2.5	36.8	186.2	228.9
Yellow-poplar	88.4	- -	200.5	1,266.6	1,555.5
Black walnut	2.6	4.1	32.2	265.8	304.7
Other eastern soft hardwoods	46.0	2.3	137.4	1,663.7	1,849.4
Other eastern hard hardwoods	1.6	0.4	11.1	184.7	197.7
All hardwoods	471.5	57.9	1,237.8	11,413.2	13,180.3
All species groups	496.0	58.2	1,319.7	11,866.6	13,740.6

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table OH-19.—Net volume of sawtimber trees, in million board feet (International ¼-inch rule), on timberland by species group and diameter class, Ohio, 2011

Species group	Diameter class (inches)											All classes
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-24.9	25.0-28.9	29.0-32.9	33.0-36.9	37.0+	
Softwood species groups												
Eastern softwood species groups												
Loblolly and shortleaf pines	4	- -	4	- -	- -	- -	- -	- -	- -	- -	- -	8
Other yellow pines	85	113	115	60	13	12	- -	- -	- -	- -	- -	398
Eastern white and red pines	135	208	177	250	226	97	15	45	- -	- -	- -	1,153
Eastern hemlock	7	14	30	24	22	8	37	- -	- -	- -	- -	141
Other eastern softwoods	50	53	39	28	11	- -	44	- -	- -	- -	- -	225
All softwoods	281	387	365	362	272	117	96	45	- -	- -	- -	1,924
Hardwood species groups												
Eastern hardwood species groups												
Select white oaks	- -	323	518	750	576	605	936	441	351	205	138	4,844
Select red oaks	- -	166	202	279	361	350	813	429	271	263	326	3,458
Other white oaks	- -	127	221	303	330	193	264	59	34	- -	- -	1,531
Other red oaks	- -	220	423	586	511	556	680	266	103	44	49	3,437
Hickory	- -	679	947	837	657	463	355	66	- -	- -	- -	4,004
Hard maple	- -	650	690	714	597	402	428	203	32	44	- -	3,760
Soft maple	- -	670	809	995	692	525	632	284	- -	58	107	4,772
Beech	- -	114	181	173	223	191	345	334	74	60	- -	1,695
Sweetgum	- -	10	7	11	- -	- -	- -	20	- -	- -	- -	48
Tupelo and blackgum	- -	51	57	43	24	11	14	25	- -	- -	- -	225
Ash	- -	460	658	607	674	557	489	140	126	51	64	3,827
Cottonwood and aspen	- -	265	359	327	249	176	266	82	37	- -	82	1,843
Basswood	- -	110	171	179	159	114	52	55	- -	- -	- -	839
Yellow-poplar	- -	498	806	1,023	1,092	677	1,211	651	378	61	75	6,471
Black walnut	- -	179	220	206	177	147	151	46	- -	- -	- -	1,127
Other eastern soft hardwoods	- -	910	1,039	950	853	423	937	486	480	90	56	6,222
Other eastern hard hardwoods	- -	113	125	117	72	66	100	- -	- -	- -	- -	593
All hardwoods	- -	5,545	7,432	8,100	7,247	5,455	7,672	3,587	1,885	876	898	48,696
All species groups	281	5,932	7,797	8,462	7,519	5,572	7,768	3,631	1,885	876	898	50,620

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

Table OH-19a.—Net volume of sawtimber trees, in million board feet (Scribner rule) on timberland by species group and diameter class, Ohio, 2011

Species group	Diameter class (inches)											All classes
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-24.9	25.0-28.9	29.0-32.9	33.0-36.9	37.0+	
Softwood species groups												
Eastern softwood species groups												
Loblolly and shortleaf pines	1	- -	2	- -	- -	- -	- -	- -	- -	- -	- -	4
Other yellow pines	29	54	69	41	10	10	- -	- -	- -	- -	- -	214
Eastern white and red pines	47	99	106	173	173	83	13	43	- -	- -	- -	737
Eastern hemlock	2	7	18	16	17	7	34	- -	- -	- -	- -	101
Other eastern softwoods	17	25	23	19	9	- -	41	- -	- -	- -	- -	134
All softwoods	97	185	219	250	209	100	87	43	- -	- -	- -	1,190
Hardwood species groups												
Eastern hardwood species groups												
Select white oaks	- -	135	265	441	379	435	747	396	398	232	157	3,585
Select red oaks	- -	69	103	164	237	251	653	388	308	299	370	2,843
Other white oaks	- -	53	113	178	217	138	210	51	38	- -	- -	999
Other red oaks	- -	92	217	345	336	399	546	240	117	50	56	2,395
Hickory	- -	283	485	492	431	332	283	63	- -	- -	- -	2,370
Hard maple	- -	271	353	420	392	289	344	184	36	50	- -	2,339
Soft maple	- -	280	414	585	455	377	509	252	- -	66	121	3,060
Beech	- -	48	93	102	147	137	278	302	84	68	- -	1,258
Sweetgum	- -	4	3	7	- -	- -	- -	18	- -	- -	- -	32
Tupelo and blackgum	- -	21	29	25	16	8	11	22	- -	- -	- -	132
Ash	- -	192	337	357	443	400	390	127	143	58	73	2,520
Cottonwood and aspen	- -	110	184	192	163	127	214	74	42	- -	93	1,200
Basswood	- -	46	87	105	104	82	41	48	- -	- -	- -	514
Yellow-poplar	- -	208	412	602	717	486	968	577	429	69	85	4,553
Black walnut	- -	75	113	121	116	106	120	42	- -	- -	- -	692
Other eastern soft hardwoods	- -	379	532	559	560	303	755	439	544	102	64	4,238
Other eastern hard hardwoods	- -	47	64	69	48	47	83	- -	- -	- -	- -	357
All hardwoods	- -	2,313	3,804	4,764	4,761	3,917	6,153	3,222	2,139	994	1,019	33,085
All species groups	97	2,498	4,022	5,014	4,969	4,017	6,240	3,264	2,139	994	1,019	34,275

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

Table OH-20.—Net volume of saw log portion of sawtimber trees, in million cubic feet, on timberland by species group, species, and ownership group, Ohio, 2011

Species group	Ownership group				All owners
	Forest Service	Other Federal	State and local government	Undifferentiated private	
Softwood species groups					
Eastern softwood species groups					
Loblolly and shortleaf pines	- -	- -	0.3	1.7	1.9
Other yellow pines	1.7	- -	11.7	75.3	88.7
Eastern white and red pines	16.0	- -	54.5	161.4	231.9
Eastern hemlock	- -	- -	0.2	31.9	32.1
Other eastern softwoods	- -	- -	0.5	48.9	49.5
All softwoods	17.7	- -	67.2	319.2	404.0
Hardwood species groups					
Eastern hardwood species groups					
Select white oaks	58.8	9.6	101.8	630.2	800.3
Select red oaks	33.9	4.8	48.9	470.7	558.3
Other white oaks	19.7	- -	82.5	187.7	289.9
Other red oaks	18.2	2.4	58.6	522.0	601.2
Hickory	23.9	13.1	50.1	646.7	733.9
Hard maple	19.0	3.2	47.2	605.7	675.1
Soft maple	10.9	0.6	73.4	800.5	885.4
Beech	7.8	- -	20.8	242.9	271.6
Sweetgum	2.2	- -	- -	6.2	8.4
Tupelo and blackgum	1.3	- -	5.0	36.2	42.5
Ash	17.4	- -	43.4	606.9	667.6
Cottonwood and aspen	10.5	- -	35.4	278.0	323.9
Basswood	1.8	2.1	25.9	118.4	148.1
Yellow-poplar	62.6	- -	154.0	875.6	1,092.2
Black walnut	1.8	2.2	23.6	173.2	200.8
Other eastern soft hardwoods	25.5	- -	80.9	969.3	1,075.7
Other eastern hard hardwoods	0.6	- -	6.9	99.6	107.1
All hardwoods	316.0	37.9	858.6	7,269.6	8,482.0
All species groups	333.6	37.9	925.8	7,588.7	8,886.1

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table OH-21.—Average annual net growth of live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, by owner class and forest-land status, Ohio, 2011

Owner class	Unreserved forests			Reserved forests			All forest land
	Timberland	Unproductive	Total	Productive	Unproductive	Total	
Forest Service							
National forest	9.9	- -	9.9	0.3	- -	0.3	10.2
Other Federal							
National Park Service	- -	- -	- -	1.4	- -	1.4	1.4
Department of Defense or Energy	0.2	- -	0.2	- -	- -	- -	0.2
Other Federal	0.5	- -	0.5	- -	- -	- -	0.5
State and local government							
State	12.8	- -	12.8	2.1	- -	2.1	14.9
Local (county, municipal, etc.)	6.2	- -	6.2	9.2	- -	9.2	15.4
Other non-Federal lands	0.6	- -	0.6	- -	- -	- -	0.6
Private							
Undifferentiated private	439.7	0.1	439.8	- -	- -	- -	439.8
All owners	469.9	0.1	470.0	13.0	- -	13.0	483.0

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table OH-22.—Average annual net growth of live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by forest-type group and stand-size class, Ohio, 2011

Forest-type group	Stand-size class					All size classes
	Large diameter	Medium diameter	Small diameter	Chaparral	Non stocked	
White / red / jack pine group	4.8	4.8	- -	- -	- -	9.5
Loblolly / shortleaf pine group	1.5	1.1	0.8	- -	- -	3.5
Other eastern softwoods group	- -	0.7	0.1	- -	- -	0.8
Fir / spruce / mountain hemlock grou	2.1	- -	- -	- -	- -	2.1
Exotic softwoods group	0.9	0.5	- -	- -	- -	1.4
Oak / pine group	5.0	0.2	0.7	- -	- -	5.8
Oak / hickory group	190.5	76.5	19.3	- -	- -	286.3
Oak / gum / cypress group	0.2	0.7	- -	- -	- -	0.8
Elm / ash / cottonwood group	52.2	13.4	2.4	- -	- -	68.0
Maple / beech / birch group	61.1	26.2	6.0	- -	- -	93.3
Aspen / birch group	4.3	3.2	0.4	- -	- -	7.8
Other hardwoods group	0.2	0.7	0.8	- -	- -	1.6
Exotic hardwoods group	- -	0.3	0.7	- -	- -	1.0
Nonstocked	- -	- -	- -	- -	0.8	0.8
All forest-type groups	322.8	128.1	31.3	- -	0.8	483.0

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table OH-23.—Average annual net growth of live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by species group and ownership group, Ohio, 2011

Species group	Ownership group				
	Forest Service	Other Federal	State and local government	Undifferentiated private	All owners
Softwood species groups					
Eastern softwood species groups					
Loblolly and shortleaf pines	- -	- -	-0.1	1.2	1.0
Other yellow pines	0.1	- -	-0.5	0.0	-0.4
Eastern white and red pines	1.9	0.0	1.3	8.9	12.1
Spruce and balsam fir	- -	- -	- -	0.0	0.0
Eastern hemlock	- -	- -	0.1	1.1	1.2
Cypress	- -	- -	- -	0.0	0.0
Other eastern softwoods	0.0	0.0	0.1	5.5	5.7
All softwoods	2.1	0.0	0.9	16.7	19.7
Hardwood species groups					
Eastern hardwood species groups					
Select white oaks	0.9	0.1	1.1	16.3	18.5
Select red oaks	1.1	0.6	6.2	26.8	34.7
Other white oaks	0.7	- -	1.6	6.9	9.2
Other red oaks	0.1	0.4	2.3	22.6	25.4
Hickory	0.7	0.1	0.8	26.8	28.4
Yellow birch	- -	- -	0.0	-0.1	0.0
Hard maple	1.1	0.2	1.7	44.5	47.5
Soft maple	0.2	0.4	4.5	72.3	77.3
Beech	-1.6	0.0	0.9	10.2	9.5
Sweetgum	- -	- -	- -	0.4	0.4
Tupelo and blackgum	0.1	- -	0.4	2.4	2.9
Ash	0.3	-0.1	1.1	21.8	23.1
Cottonwood and aspen	0.6	0.1	1.5	13.8	16.1
Basswood	0.0	- -	-0.2	7.6	7.5
Yellow-poplar	2.6	0.5	5.7	55.9	64.8
Black walnut	0.1	0.2	0.7	11.3	12.3
Other eastern soft hardwoods	1.1	0.3	1.3	68.2	70.9
Other eastern hard hardwoods	-0.4	-0.9	0.0	4.3	2.9
Eastern noncommercial hardwoods	0.3	0.1	0.5	11.0	12.0
All hardwoods	8.1	2.1	30.1	423.1	463.4
All species groups	10.2	2.1	30.9	439.8	483.0

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table OH-24.—Average annual net growth of growing-stock trees (at least 5 inches d.b.h.), in million cubic feet, on timberland by species group and ownership group, Ohio, 2011

Species group	Ownership group				All owners
	Forest Service	Other Federal	State and local government	Undifferentiated private	
Softwood species groups					
Eastern softwood species groups					
Loblolly and shortleaf pines	- -	- -	-0.1	1.1	0.9
Other yellow pines	0.1	- -	0.1	-0.2	0.1
Eastern white and red pines	1.7	0.0	1.2	8.1	11.0
Spruce and balsam fir	- -	- -	- -	0.0	0.0
Eastern hemlock	- -	- -	0.0	1.0	1.0
Cypress	- -	- -	- -	0.0	0.0
Other eastern softwoods	0.0	0.0	0.1	4.7	4.8
All softwoods	1.8	0.0	1.3	14.7	17.9
Hardwood species groups					
Eastern hardwood species groups					
Select white oaks	0.7	0.6	2.1	15.8	19.2
Select red oaks	1.0	1.0	1.6	21.8	25.4
Other white oaks	0.6	- -	1.0	5.8	7.4
Other red oaks	0.2	0.4	2.2	20.6	23.4
Hickory	0.8	0.4	0.5	25.4	27.1
Yellow birch	- -	- -	- -	-0.1	-0.1
Hard maple	0.9	0.2	1.5	35.6	38.2
Soft maple	0.3	0.4	1.9	54.0	56.7
Beech	0.0	- -	0.6	7.4	7.9
Sweetgum	- -	- -	- -	0.4	0.4
Tupelo and blackgum	0.1	- -	0.3	1.9	2.2
Ash	0.5	-0.2	1.5	15.9	17.7
Cottonwood and aspen	0.6	0.2	1.4	11.7	13.9
Basswood	0.1	- -	-0.4	6.7	6.3
Yellow-poplar	2.7	1.7	4.0	50.6	58.9
Black walnut	0.1	0.1	1.5	8.7	10.5
Other eastern soft hardwoods	1.8	0.0	1.4	43.2	46.5
Other eastern hard hardwoods	0.1	0.1	-0.1	3.8	3.8
All hardwoods	10.3	4.9	21.1	329.1	365.5
All species groups	12.1	5.0	22.4	343.8	383.3

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table OH-25.—Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, by owner class and forest-land status, Ohio, 2011

Owner class	Unreserved forests			Reserved forests			All forest land
	Timberland	Unproductive	Total	Productive	Unproductive	Total	
Forest Service							
National forest	4.4	- -	4.4	0.3	- -	0.3	4.7
Other Federal							
National Park Service	- -	- -	- -	0.0	- -	0.0	0.0
Other Federal	0.5	- -	0.5	- -	- -	- -	0.5
State and local government							
State	11.9	- -	11.9	3.3	- -	3.3	15.2
Local (county, municipal, etc.)	3.2	- -	3.2	2.2	- -	2.2	5.3
Other non-Federal lands	0.9	- -	0.9	- -	- -	- -	0.9
Private							
Undifferentiated private	155.1	- -	155.1	- -	- -	- -	155.1
All owners	175.9	- -	175.9	5.8	- -	5.8	181.7

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table OH-26.—Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by forest-type group and stand-size class, Ohio, 2011

Forest-type group	Stand-size class					All size classes
	Large diameter	Medium diameter	Small diameter	Chaparral	Non stocked	
White / red / jack pine group	1.3	0.1	- -	- -	- -	1.3
Loblolly / shortleaf pine group	1.4	0.3	- -	- -	- -	1.8
Other eastern softwoods group	- -	0.0	0.0	- -	- -	0.0
Exotic softwoods group	0.3	0.8	- -	- -	- -	1.1
Oak / pine group	2.9	1.1	- -	- -	- -	4.0
Oak / hickory group	89.0	20.2	1.4	- -	- -	110.6
Oak / gum / cypress group	0.6	0.2	- -	- -	- -	0.8
Elm / ash / cottonwood group	15.7	4.3	0.1	- -	- -	20.1
Maple / beech / birch group	32.3	6.8	0.6	- -	- -	39.7
Aspen / birch group	0.6	0.8	0.0	- -	- -	1.4
Other hardwoods group	- -	0.6	0.0	- -	- -	0.6
Exotic hardwoods group	- -	- -	0.1	- -	- -	0.1
Nonstocked	- -	- -	- -	- -	0.0	0.0
All forest-type groups	144.0	35.4	2.3	- -	0.0	181.7

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table OH-27.—Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by species group and ownership group, Ohio, 2011

Species group	Ownership group				All owners
	Forest Service	Other Federal	State and local government	Undifferentiated private	
Softwood species groups					
Eastern softwood species groups					
Loblolly and shortleaf pines	- -	- -	0.2	- -	0.2
Other yellow pines	0.0	- -	0.9	3.8	4.7
Eastern white and red pines	0.1	- -	0.5	2.0	2.6
Spruce and balsam fir	- -	- -	- -	0.0	0.0
Other eastern softwoods	- -	- -	- -	0.9	0.9
All softwoods	0.1	- -	1.7	6.6	8.4
Hardwood species groups					
Eastern hardwood species groups					
Select white oaks	0.7	- -	1.8	9.5	12.0
Select red oaks	0.1	- -	0.1	3.6	3.7
Other white oaks	0.1	- -	1.0	1.3	2.3
Other red oaks	0.9	0.1	0.6	8.5	10.2
Hickory	0.1	- -	1.1	9.0	10.2
Yellow birch	- -	- -	- -	0.1	0.1
Hard maple	0.1	- -	2.0	9.3	11.4
Soft maple	0.8	- -	1.5	8.6	10.9
Beech	0.7	- -	0.2	3.1	4.0
Tupelo and blackgum	- -	- -	- -	0.4	0.4
Ash	0.1	0.3	1.8	24.8	27.0
Cottonwood and aspen	0.1	- -	0.8	7.3	8.2
Basswood	0.0	- -	1.2	0.2	1.5
Yellow-poplar	0.1	- -	0.2	5.4	5.7
Black walnut	- -	- -	0.3	1.1	1.4
Other eastern soft hardwoods	0.8	0.1	6.5	45.8	53.1
Other eastern hard hardwoods	0.0	- -	0.4	6.8	7.2
Eastern noncommercial hardwoods	0.1	0.0	0.2	3.7	4.0
All hardwoods	4.6	0.5	19.7	148.5	173.3
All species groups	4.7	0.5	21.4	155.1	181.7

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table OH-28.—Average annual mortality of growing-stock trees (at least 5 inches d.b.h.), in million cubic feet, on timberland by species group and ownership group, Ohio, 2011

Species group	Ownership group				
	Forest Service	Other Federal	State and local government	Undifferentiated private	All owners
Softwood species groups					
Eastern softwood species groups					
Loblolly and shortleaf pines	- -	- -	0.2	- -	0.2
Other yellow pines	0.0	- -	0.0	3.2	3.2
Eastern white and red pines	0.1	- -	0.4	1.7	2.2
Other eastern softwoods	- -	- -	- -	0.5	0.5
All softwoods	0.1	- -	0.6	5.4	6.1
Hardwood species groups					
Eastern hardwood species groups					
Select white oaks	0.6	- -	1.3	4.8	6.7
Select red oaks	- -	- -	0.0	3.0	3.0
Other white oaks	0.1	- -	0.8	1.2	2.1
Other red oaks	0.6	- -	0.3	7.2	8.2
Hickory	0.1	- -	0.7	6.8	7.7
Yellow birch	- -	- -	- -	0.1	0.1
Hard maple	0.1	- -	1.1	6.4	7.5
Soft maple	0.6	- -	1.1	3.9	5.5
Beech	0.3	- -	- -	1.3	1.6
Tupelo and blackgum	- -	- -	- -	0.2	0.2
Ash	0.1	0.3	0.7	17.8	18.9
Cottonwood and aspen	0.1	- -	- -	5.8	5.9
Basswood	0.0	- -	1.0	0.2	1.2
Yellow-poplar	0.1	- -	0.2	4.4	4.7
Black walnut	- -	- -	0.0	0.7	0.7
Other eastern soft hardwoods	0.3	0.0	3.2	30.9	34.5
Other eastern hard hardwoods	- -	- -	0.1	3.4	3.5
All hardwoods	3.0	0.3	10.7	98.1	112.2
All species groups	3.1	0.3	11.3	103.5	118.3

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table OH-29.—Average annual removals of live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by species group and ownership group, Ohio, 2011

Species group	Ownership group				All owners
	Forest Service	Other Federal	State and local government	Undifferentiated private	
Softwood species groups					
Eastern softwood species groups					
Other yellow pines	- -	- -	- -	3.1	3.1
Eastern white and red pines	- -	- -	1.9	7.0	8.9
Spruce and balsam fir	- -	- -	- -	0.1	0.1
Other eastern softwoods	- -	- -	- -	0.8	0.8
All softwoods	- -	- -	1.9	11.0	12.9
Hardwood species groups					
Eastern hardwood species groups					
Select white oaks	- -	- -	2.1	18.4	20.6
Select red oaks	- -	- -	- -	13.1	13.1
Other white oaks	- -	- -	2.6	9.4	12.1
Other red oaks	- -	- -	3.2	18.0	21.2
Hickory	- -	- -	- -	9.7	9.7
Hard maple	- -	- -	- -	13.4	13.4
Soft maple	- -	- -	0.1	19.1	19.2
Beech	- -	- -	- -	10.0	10.0
Tupelo and blackgum	- -	- -	0.0	0.8	0.8
Ash	- -	- -	1.0	11.9	12.9
Cottonwood and aspen	- -	- -	- -	3.6	3.6
Basswood	- -	- -	0.4	0.8	1.2
Yellow-poplar	- -	0.5	0.5	24.6	25.6
Black walnut	- -	- -	- -	2.8	2.8
Other eastern soft hardwoods	- -	- -	0.7	34.0	34.7
Other eastern hard hardwoods	- -	- -	0.1	3.5	3.6
Eastern noncommercial hardwoods	- -	- -	0.0	0.9	0.9
All hardwoods	- -	0.5	10.8	194.1	205.4
All species groups	- -	0.5	12.7	205.1	218.3

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table OH-30.—Average annual removals of growing-stock trees (at least 5 inches d.b.h.), in million cubic feet, on timberland by species group and ownership group, Ohio, 2011

Species group	Ownership group				All owners
	Forest Service	Other Federal	State and local government	Undifferentiated private	
Softwood species groups					
Eastern softwood species groups					
Other yellow pines	- -	- -	- -	2.9	2.9
Eastern white and red pines	- -	- -	1.8	7.6	9.4
Spruce and balsam fir	- -	- -	- -	0.1	0.1
Other eastern softwoods	- -	- -	- -	0.6	0.6
All softwoods	- -	- -	1.8	11.3	13.1
Hardwood species groups					
Eastern hardwood species groups					
Select white oaks	- -	- -	1.4	13.7	15.1
Select red oaks	- -	- -	0.3	12.9	13.2
Other white oaks	- -	- -	1.0	8.2	9.1
Other red oaks	- -	- -	2.7	15.3	18.1
Hickory	- -	- -	0.0	9.0	9.1
Hard maple	- -	- -	- -	12.3	12.3
Soft maple	- -	- -	0.4	16.1	16.5
Beech	- -	- -	- -	8.1	8.1
Tupelo and blackgum	- -	- -	0.0	0.7	0.8
Ash	- -	- -	1.4	9.7	11.0
Cottonwood and aspen	- -	- -	0.1	3.2	3.3
Basswood	- -	- -	0.2	0.7	0.9
Yellow-poplar	- -	- -	1.6	22.5	24.1
Black walnut	- -	- -	0.7	1.8	2.5
Other eastern soft hardwoods	- -	- -	1.5	26.4	27.9
Other eastern hard hardwoods	- -	- -	0.2	2.4	2.6
All hardwoods	- -	- -	11.6	163.0	174.6
All species groups	- -	- -	13.4	174.3	187.7

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic feet. Columns and rows may not add to their totals due to rounding.

Table OH-31.—Aboveground dry weight of live trees (at least 1 inch d.b.h/d.r.c.), in thousand dry short tons, by owner class and forest-land status, Ohio, 2011

Owner class	Unreserved forests			Reserved forests			All forest land
	Timberland	Unproductive	Total	Productive	Unproductive	Total	
Forest Service							
National forest	15,664	- -	15,664	- -	- -	- -	15,664
Other Federal							
National Park Service	- -	- -	- -	685	- -	685	685
Fish and Wildlife Service	275	- -	275	- -	- -	- -	275
Department of Defense or Energy	2,274	- -	2,274	- -	- -	- -	2,274
Other Federal	6	- -	6	134	- -	134	140
State and local government							
State	29,057	- -	29,057	4,230	- -	4,230	33,287
Local (county, municipal, etc.)	10,871	- -	10,871	9,146	- -	9,146	20,018
Other non-Federal lands	984	- -	984	- -	- -	- -	984
Private							
Undifferentiated private	403,362	425	403,788	- -	- -	- -	403,788
All owners	462,494	425	462,919	14,196	- -	14,196	477,115

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates the aboveground tree biomass rounds to less than 1,000 dry tons. Columns and rows may not add to their totals due to rounding.

Table OH-32.—Aboveground dry weight of live trees (at least 1 inch d.b.h/d.r.c.), in thousand dry short tons, on forest land by species group and diameter class, Ohio, 2011

Species group	Diameter class (inches)															All classes
	1.0-2.9	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	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
Softwood species groups																
Eastern softwood species groups																
Loblolly and shortleaf pines	35	72	82	57	28	- -	20	- -	- -	- -	- -	- -	- -	- -	- -	293
Other yellow pines	57	105	299	403	611	605	600	306	62	52	- -	- -	- -	- -	- -	3,100
Eastern white and red pines	13	127	219	526	747	915	678	886	763	361	49	- -	142	- -	- -	5,426
Spruce and balsam fir	- -	24	11	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	35
Eastern hemlock	1	8	21	47	63	71	168	108	94	35	45	165	- -	- -	- -	825
Cypress	- -	- -	1	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	1
Other eastern softwoods	69	184	343	446	401	349	176	131	70	- -	- -	127	- -	- -	- -	2,295
All softwoods	174	520	976	1,479	1,850	1,941	1,642	1,431	988	448	94	291	142	- -	- -	11,975
Hardwood species groups																
Eastern hardwood species groups																
Select white oaks	165	236	719	1,303	2,324	3,010	4,159	5,210	4,170	3,968	4,408	2,390	1,900	1,109	4,716	39,786
Select red oaks	210	304	605	805	1,120	1,776	1,863	2,366	2,645	2,460	3,024	2,230	1,593	1,166	5,775	27,943
Other white oaks	8	99	225	535	796	1,198	1,918	2,378	2,285	1,511	1,377	455	591	- -	415	13,789
Other red oaks	228	372	716	1,242	1,855	2,355	3,319	4,224	3,433	3,709	2,849	1,738	1,006	573	1,540	29,157
Hickory	335	643	1,722	3,727	5,512	7,113	7,925	6,049	4,746	3,089	1,877	797	148	358	105	44,147
Yellow birch	- -	31	18	12	30	- -	- -	37	- -	- -	- -	- -	- -	- -	- -	129
Hard maple	1,588	3,177	3,381	4,843	5,548	5,977	5,594	5,152	4,077	2,974	2,158	1,581	848	786	828	48,512
Soft maple	1,287	2,806	2,760	5,284	7,595	6,776	6,291	6,751	4,455	3,351	2,073	1,385	1,301	412	730	53,258
Beech	296	407	472	765	1,050	1,146	1,507	1,494	1,471	1,335	1,174	1,024	1,094	1,007	1,259	15,500
Sweetgum	- -	9	23	19	65	64	38	57	- -	- -	- -	- -	84	- -	- -	359
Tupelo and blackgum	134	357	306	412	433	420	355	251	113	53	65	- -	104	- -	- -	3,003
Ash	538	1,227	2,328	3,850	4,622	4,825	5,127	4,313	4,239	3,282	2,075	1,088	371	400	1,261	39,545
Cottonwood and aspen	102	116	395	736	1,082	1,682	1,760	1,383	1,024	687	538	496	267	102	352	10,723
Basswood	71	257	203	397	580	574	735	694	556	362	167	- -	160	89	- -	4,846
Yellow-poplar	315	574	965	2,224	2,293	3,221	4,248	4,803	4,513	2,750	3,073	1,439	1,871	335	1,744	34,367
Black walnut	52	118	368	668	1,094	1,573	1,630	1,287	1,293	802	632	223	191	97	- -	10,028
Other eastern soft hardwoods	1,381	3,771	5,249	7,470	8,630	8,861	7,619	6,374	5,048	2,576	2,886	2,521	1,290	994	2,725	67,396
Other eastern hard hardwoods	513	963	988	1,134	1,583	1,545	1,354	1,015	758	644	264	470	57	117	54	11,460
Eastern noncommercial hardwoods	1,449	1,623	1,309	1,465	1,196	1,346	654	750	623	323	204	58	- -	- -	192	11,192
All hardwoods	8,673	17,090	22,753	36,889	47,408	53,464	56,094	54,588	45,449	33,877	28,843	17,893	12,876	7,546	21,695	465,140
All species groups	8,847	17,610	23,729	38,368	49,258	55,405	57,736	56,019	46,437	34,325	28,937	18,185	13,019	7,546	21,695	477,115

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates the aboveground tree biomass rounds to less than 1,000 dry tons. Columns and rows may not add to their totals due to rounding.

Table OH-54.—Area of forest land, in thousand acres, by inventory unit, county, and forest-land status, Ohio, 2011

Inventory unit and county	Unreserved forests			Reserved forests			All forest land
	Timberland	Unproductive	Total	Productive	Unproductive	Total	
South-Central							
Adams	227.1	- -	227.1	6.0	- -	6.0	233.2
Brown	67.2	- -	67.2	- -	- -	- -	67.2
Clermont	99.8	- -	99.8	- -	- -	- -	99.8
Gallia	175.6	1.0	176.7	- -	- -	- -	176.7
Highland	93.8	- -	93.8	- -	- -	- -	93.8
Jackson	166.3	- -	166.3	- -	- -	- -	166.3
Lawrence	244.9	- -	244.9	- -	- -	- -	244.9
Pike	164.9	- -	164.9	- -	- -	- -	164.9
Ross	203.5	- -	203.5	- -	- -	- -	203.5
Scioto	280.3	- -	280.3	7.6	- -	7.6	287.9
Total	1,723.5	1.0	1,724.5	13.6	- -	13.6	1,738.1
Southeastern							
Athens	236.2	- -	236.2	6.9	- -	6.9	243.1
Meigs	190.9	- -	190.9	- -	- -	- -	190.9
Vinton	210.6	- -	210.6	- -	- -	- -	210.6
Hocking/Perry	363.3	- -	363.3	6.9	- -	6.9	370.3
Morgan/Washington	376.3	- -	376.3	6.9	- -	6.9	383.2
Total	1,377.3	- -	1,377.3	20.7	- -	20.7	1,398.1
East-Central							
Belmont	214.5	- -	214.5	12.0	- -	12.0	226.6
Carroll	109.4	- -	109.4	- -	- -	- -	109.4
Coshocton	195.6	1.6	197.1	- -	- -	- -	197.1
Guernsey	202.8	- -	202.8	- -	- -	- -	202.8
Harrison	163.3	- -	163.3	- -	- -	- -	163.3
Holmes	88.2	- -	88.2	- -	- -	- -	88.2
Jefferson	134.1	- -	134.1	- -	- -	- -	134.1
Monroe	218.3	- -	218.3	- -	- -	- -	218.3
Muskingum	211.9	- -	211.9	- -	- -	- -	211.9
Noble	142.4	8.1	150.5	- -	- -	- -	150.5
Tuscarawas	193.8	3.3	197.1	- -	- -	- -	197.1
Total	1,874.4	12.9	1,887.3	12.0	- -	12.0	1,899.3

(Table OH-54 continued on next page)

(Table OH-54 continued)

Inventory unit and county	Unreserved forests			Reserved forests			All forest land
	Timberland	Unproductive	Total	Productive	Unproductive	Total	
Northeastern							
Ashtabula	217.8	- -	217.8	- -	- -	- -	217.8
Columbiana	146.2	- -	146.2	- -	- -	- -	146.2
Cuyahoga	51.0	- -	51.0	24.6	- -	24.6	75.5
Mahoning	52.8	- -	52.8	6.3	- -	6.3	59.1
Trumbull	178.1	- -	178.1	6.7	- -	6.7	184.9
Ashland/Richland	173.4	- -	173.4	6.7	- -	6.7	180.1
Erie/Huron	67.2	4.3	71.5	- -	- -	- -	71.5
Lorain/Medina	119.1	- -	119.1	13.1	- -	13.1	132.2
Portage/Summit	168.7	3.1	171.9	33.3	- -	33.3	205.2
Stark/Wayne	115.9	- -	115.9	- -	- -	- -	115.9
Geauga/Lake	186.8	- -	186.8	18.5	- -	18.5	205.3
Total	1,477.0	7.5	1,484.5	109.2	- -	109.2	1,593.7
Southwestern							
Butler/Hamilton	159.8	- -	159.8	5.9	- -	5.9	165.7
Clark/Darke/Miami	91.2	- -	91.2	11.3	- -	11.3	102.5
Clinton/Greene/Montgomery/Preble/Warren	216.1	- -	216.1	5.9	- -	5.9	222.0
Fairfield/Licking	147.8	0.2	148.0	- -	- -	- -	148.0
Fayette/Franklin/Madison/Pickaway	71.9	- -	71.9	9.5	- -	9.5	81.3
Total	686.8	0.2	687.0	32.5	- -	32.5	719.5
Northwestern							
Knox	83.0	- -	83.0	- -	- -	- -	83.0
Allen/Auglaize/Mercer/Putnam/Van Wert	91.0	- -	91.0	- -	- -	- -	91.0
Champaign/Logan/Shelby/Union	104.3	- -	104.3	7.6	- -	7.6	111.9
Crawford/Hardin/Wyandot	51.9	- -	51.9	- -	- -	- -	51.9
Delaware/Marion/Morrow	116.8	- -	116.8	- -	- -	- -	116.8
Hancock/Ottawa/Sandusky/Seneca/Wood	108.1	6.1	114.2	- -	- -	- -	114.2
Defiance/Fulton/Henry/Lucas/Paulding/Williams	170.8	- -	170.8	- -	- -	- -	170.8
Total	725.8	6.1	731.9	7.6	- -	7.6	739.5
All counties	7,864.9	27.7	7,892.6	195.7	- -	195.7	8,088.3

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 100 acres. Columns and rows may not add to their totals due to rounding.

Allen/Auglaize/Mercer/Putnam/Van Wert = Allen, Mercer, Auglaize, Putnam, and Van Wert Counties
Champaign/Logan/Shelby/Union = Champaign, Shelby, Logan, and Union Counties
Clark/Darke/Miami = Clark, Miami, and Darke Counties
Clinton/Greene/Montgomery/Preble/Warren = Montgomery, Clinton, Greene, Preble, and Warren Counties
Crawford/Hardin/Wyandot = Crawford, Wyandot, and Hardin Counties
Defiance/Fulton/Henry/Lucas/Paulding/Williams = Defiance, Lucas, Fulton, Henry, Paulding, and Williams Counties
Delaware/Marion/Morrow = Marion, Delaware, and Morrow Counties
Fayette/Franklin/Madison/Pickaway = Franklin, Fayette, Madison, and Pickaway Counties
Hancock/Ottawa/Sandusky/Seneca/Wood = Ottawa, Seneca, Hancock, Sandusky, and Wood Counties

Table OH-55.—Area of forest land, in thousand acres, by inventory unit, county, ownership group, and forest-land status, Ohio, 2011

Inventory unit and county	Forest Service		Other Federal		State and local government		Undifferentiated private		All forest land
	Timber-land	Other forest land	Timber-land	Other forest land	Timber-land	Other forest land	Timber-land	Other forest land	
South-Central									
Adams	- -	- -	- -	- -	31.9	6.0	195.2	- -	233.2
Brown	- -	- -	- -	- -	- -	- -	67.2	- -	67.2
Clermont	- -	- -	- -	- -	- -	- -	99.8	- -	99.8
Gallia	14.0	- -	- -	- -	6.0	- -	155.6	1.0	176.7
Highland	- -	- -	- -	- -	6.0	- -	87.8	- -	93.8
Jackson	- -	- -	- -	- -	12.2	- -	154.1	- -	166.3
Lawrence	72.8	- -	- -	- -	- -	- -	172.1	- -	244.9
Pike	- -	- -	- -	- -	22.0	- -	142.8	- -	164.9
Ross	- -	- -	- -	- -	48.4	- -	155.1	- -	203.5
Scioto	10.2	- -	- -	- -	62.8	7.6	207.3	- -	287.9
Total	97.1	- -	- -	- -	189.4	13.6	1,437.0	1.0	1,738.1
Southeastern									
Athens	15.4	- -	- -	- -	24.0	6.9	196.8	- -	243.1
Meigs	- -	- -	- -	- -	7.5	- -	183.3	- -	190.9
Vinton	- -	- -	- -	- -	32.1	- -	178.5	- -	210.6
Hocking/Perry	57.3	- -	- -	- -	6.9	6.9	299.1	- -	370.3
Morgan/Washington	26.0	- -	- -	- -	- -	6.9	350.3	- -	383.2
Total	98.7	- -	- -	- -	70.6	20.7	1,208.1	- -	1,398.1
East-Central									
Belmont	- -	- -	- -	- -	20.5	12.0	194.1	- -	226.6
Carroll	- -	- -	- -	- -	- -	- -	109.4	- -	109.4
Coshocton	- -	- -	- -	- -	16.6	- -	179.0	1.6	197.1
Guernsey	- -	- -	- -	- -	11.4	- -	191.5	- -	202.8
Harrison	- -	- -	- -	- -	16.8	- -	146.4	- -	163.3
Holmes	- -	- -	- -	- -	1.6	- -	86.6	- -	88.2
Jefferson	- -	- -	- -	- -	4.2	- -	129.9	- -	134.1
Monroe	40.5	- -	- -	- -	4.4	- -	173.5	- -	218.3
Muskingum	- -	- -	- -	- -	21.7	- -	190.3	- -	211.9
Noble	5.1	- -	- -	- -	22.4	- -	114.8	8.1	150.5
Tuscarawas	- -	- -	- -	- -	5.5	- -	188.3	3.3	197.1
Total	45.6	- -	- -	- -	125.1	12.0	1,703.7	12.9	1,899.3

(Table OH-55 continued on next page)

(Table OH-55 continued)

Inventory unit and county	Forest Service		Other Federal		State and local government		Undifferentiated private		All forest land
	Timber-land	Other forest land	Timber-land	Other forest land	Timber-land	Other forest land	Timber-land	Other forest land	
Northeastern									
Ashtabula	- -	- -	- -	- -	4.0	- -	213.8	- -	217.8
Columbiana	- -	- -	- -	- -	16.9	- -	129.3	- -	146.2
Cuyahoga	- -	- -	- -	- -	20.5	24.6	30.4	- -	75.5
Mahoning	- -	- -	2.6	- -	2.7	6.3	47.4	- -	59.1
Trumbull	- -	- -	- -	- -	21.6	6.7	156.5	- -	184.9
Ashland/Richland	- -	- -	3.4	- -	8.5	6.7	161.5	- -	180.1
Erie/Huron	- -	- -	10.8	- -	2.8	- -	53.6	4.3	71.5
Lorain/Medina	- -	- -	- -	- -	14.9	13.1	104.2	- -	132.2
Portage/Summit	- -	- -	5.7	16.8	36.1	16.5	127.0	3.1	205.2
Stark/Wayne	- -	- -	- -	- -	15.9	- -	100.0	- -	115.9
Geauga/Lake	- -	- -	- -	- -	14.1	18.5	172.7	- -	205.3
Total	- -	- -	22.5	16.8	158.1	92.3	1,296.4	7.5	1,593.7
Southwestern									
Butler/Hamilton	- -	- -	- -	- -	32.7	5.9	127.1	- -	165.7
Clark/Darke/Miami	- -	- -	- -	- -	- -	11.3	91.2	- -	102.5
Clinton/Greene/Montgomery/Preble/Warren	- -	- -	2.7	- -	21.3	5.9	192.1	- -	222.0
Fairfield/Licking	- -	- -	- -	- -	5.9	- -	141.9	0.2	148.0
Fayette/Franklin/Madison/Pickaway	- -	- -	5.4	- -	17.8	9.5	48.6	- -	81.3
Total	- -	- -	8.1	- -	77.8	32.5	600.9	0.2	719.5
Northwestern									
Knox	- -	- -	- -	- -	- -	- -	83.0	- -	83.0
Allen/Auglaize/Mercer/Putnam/Van Wert	- -	- -	- -	- -	4.9	- -	86.1	- -	91.0
Champaign/Logan/Shelby/Union	- -	- -	- -	- -	- -	7.6	104.3	- -	111.9
Crawford/Hardin/Wyandot	- -	- -	- -	- -	2.8	- -	49.1	- -	51.9
Delaware/Marion/Morrow	- -	- -	4.6	- -	- -	- -	112.2	- -	116.8
Hancock/Ottawa/Sandusky/Seneca/Wood	- -	- -	10.7	- -	- -	- -	97.5	6.1	114.2
Defiance/Fulton/Henry/Lucas/Paulding/Willia	- -	- -	- -	- -	18.9	- -	151.9	- -	170.8
Total	- -	- -	15.2	- -	26.6	7.6	684.0	6.1	739.5
All counties	241.3	- -	45.8	16.8	647.5	178.9	6,930.2	27.7	8,088.3

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 100 acres. Columns and rows may not add to their totals due to rounding.
Allen/Auglaize/Mercer/Putnam/Van Wert = Allen, Mercer, Auglaize, Putnam, and Van Wert Counties
Champaign/Logan/Shelby/Union = Champaign, Shelby, Logan, and Union Counties
Clark/Darke/Miami = Clark, Miami, and Darke Counties
Clinton/Greene/Montgomery/Preble/Warren = Montgomery, Clinton, Greene, Preble, and Warren Counties
Crawford/Hardin/Wyandot = Crawford, Wyandot, and Hardin Counties
Defiance/Fulton/Henry/Lucas/Paulding/Williams = Defiance, Lucas, Fulton, Henry, Paulding, and Williams Counties
Delaware/Marion/Morrow = Marion, Delaware, and Morrow Counties
Fayette/Franklin/Madison/Pickaway = Franklin, Fayette, Madison, and Pickaway Counties
Hancock/Ottawa/Sandusky/Seneca/Wood = Ottawa, Seneca, Hancock, Sandusky, and Wood Counties

Table OH-57.—Area of timberland, in thousand acres, by inventory unit, county, and stand-size class, Ohio, 2011

Inventory unit and county	Stand-size class					All size classes
	Large diameter	Medium diameter	Small diameter	Chaparral	Nonstocked	
South-Central						
Adams	145.4	48.8	33.0	- -	- -	227.1
Brown	38.1	26.0	3.0	- -	- -	67.2
Clermont	67.2	23.4	9.2	- -	- -	99.8
Gallia	85.9	56.6	33.1	- -	- -	175.6
Highland	58.7	25.9	9.3	- -	- -	93.8
Jackson	102.0	30.1	28.0	- -	6.2	166.3
Lawrence	166.8	53.3	24.8	- -	- -	244.9
Pike	115.3	28.0	21.6	- -	- -	164.9
Ross	169.5	27.9	6.1	- -	- -	203.5
Scioto	179.5	48.6	50.8	- -	1.5	280.3
Total	1,128.3	368.6	218.8	- -	7.7	1,723.5
Southeastern						
Athens	199.8	25.3	11.1	- -	- -	236.2
Meigs	134.8	29.7	26.4	- -	- -	190.9
Vinton	123.7	47.9	39.0	- -	- -	210.6
Hocking/Perry	239.5	79.1	39.9	- -	4.8	363.3
Morgan/Washington	273.8	66.8	34.2	- -	1.5	376.3
Total	971.6	248.9	150.6	- -	6.3	1,377.3
East-Central						
Belmont	112.4	68.8	27.1	- -	6.2	214.5
Carroll	67.8	37.0	3.4	- -	1.3	109.4
Coshocton	135.6	39.5	20.4	- -	- -	195.6
Guernsey	121.0	44.9	31.8	- -	5.1	202.8
Harrison	65.1	65.9	32.2	- -	- -	163.3
Holmes	80.8	4.5	1.6	- -	1.3	88.2
Jefferson	97.8	28.2	8.1	- -	- -	134.1
Monroe	157.5	42.0	13.4	- -	5.5	218.3
Muskingum	142.8	49.3	17.2	- -	2.6	211.9
Noble	68.0	61.8	12.6	- -	- -	142.4
Tuscarawas	121.5	41.3	27.2	- -	3.8	193.8
Total	1,170.3	483.3	194.9	- -	25.9	1,874.4

(Table OH-57 continued on next page)

(Table OH-57 continued)

Inventory unit and county	Stand-size class					All size classes
	Large diameter	Medium diameter	Small diameter	Chaparral	Nonstocked	
Northeastern						
Ashtabula	102.0	70.6	43.7	- -	1.5	217.8
Columbiana	82.4	45.0	14.2	- -	4.5	146.2
Cuyahoga	31.4	10.0	1.5	- -	8.1	51.0
Mahoning	24.5	16.9	11.4	- -	- -	52.8
Trumbull	54.5	94.3	27.8	- -	1.6	178.1
Ashland/Richland	137.7	25.6	8.8	- -	1.4	173.4
Erie/Huron	48.7	7.7	10.8	- -	- -	67.2
Lorain/Medina	107.9	11.3	- -	- -	- -	119.1
Portage/Summit	82.5	45.7	31.9	- -	8.6	168.7
Stark/Wayne	104.8	6.3	4.9	- -	- -	115.9
Geauga/Lake	115.7	52.1	18.9	- -	- -	186.8
Total	891.9	385.6	173.9	- -	25.6	1,477.0
Southwestern						
Butler/Hamilton	98.6	45.2	14.8	- -	1.3	159.8
Clark/Darke/Miami	53.1	23.7	14.5	- -	- -	91.2
Clinton/Greene/Montgomery/Preble/Warren	144.3	34.1	37.7	- -	- -	216.1
Fairfield/Licking	126.2	8.2	13.3	- -	- -	147.8
Fayette/Franklin/Madison/Pickaway	53.9	1.2	16.7	- -	- -	71.9
Total	476.0	112.4	97.0	- -	1.3	686.8
Northwestern						
Knox	49.4	23.8	9.8	- -	- -	83.0
Allen/Auglaize/Mercer/Putnam/Van Wert	78.4	8.1	4.5	- -	- -	91.0
Champaign/Logan/Shelby/Union	75.3	16.9	12.0	- -	- -	104.3
Crawford/Hardin/Wyandot	33.9	12.7	5.3	- -	- -	51.9
Delaware/Marion/Morrow	89.8	14.2	12.7	- -	- -	116.8
Hancock/Ottawa/Sandusky/Seneca/Wood	73.3	21.5	8.8	- -	4.5	108.1
Defiance/Fulton/Henry/Lucas/Paulding/Williams	131.3	26.6	9.8	- -	3.0	170.8
Total	531.4	123.8	63.0	- -	7.6	725.8
All counties	5,169.6	1,722.6	898.3	- -	74.4	7,864.9

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 100 acres. Columns and rows may not add to their totals due to rounding.

Allen/Auglaize/Mercer/Putnam/Van Wert = Allen, Mercer, Auglaize, Putnam, and Van Wert Counties
Champaign/Logan/Shelby/Union = Champaign, Shelby, Logan, and Union Counties
Clark/Darke/Miami = Clark, Miami, and Darke Counties
Clinton/Greene/Montgomery/Preble/Warren = Montgomery, Clinton, Greene, Preble, and Warren Counties
Crawford/Hardin/Wyandot = Crawford, Wyandot, and Hardin Counties
Defiance/Fulton/Henry/Lucas/Paulding/Williams = Defiance, Lucas, Fulton, Henry, Paulding, and Williams Counties
Delaware/Marion/Morrow = Marion, Delaware, and Morrow Counties
Fayette/Franklin/Madison/Pickaway = Franklin, Fayette, Madison, and Pickaway Counties
Hancock/Ottawa/Sandusky/Seneca/Wood = Ottawa, Seneca, Hancock, Sandusky, and Wood Counties

Table OH-58.—Area of timberland, in thousand acres, by inventory unit, county, and stocking class, Ohio, 2011

Inventory unit and county	Stocking class of growing-stock trees					All classes
	Nonstocked	Poorly stocked	Moderately stocked	Fully stocked	Over-stocked	
South-Central						
Adams	3.5	55.0	119.3	40.1	9.3	227.1
Brown	1.6	15.9	32.0	15.8	2.0	67.2
Clermont	- -	51.0	31.6	17.2	- -	99.8
Gallia	3.2	58.0	56.8	50.4	7.3	175.6
Highland	1.6	28.4	38.4	25.5	- -	93.8
Jackson	6.9	18.4	75.5	54.2	11.3	166.3
Lawrence	- -	69.0	104.4	64.1	7.5	244.9
Pike	10.7	26.1	67.5	54.2	6.2	164.9
Ross	0.0	48.3	82.0	66.4	6.7	203.5
Scioto	1.6	51.4	99.8	115.1	12.4	280.3
Total	29.2	421.5	707.2	502.9	62.7	1,723.5
Southeastern						
Athens	8.0	39.0	125.9	53.9	9.3	236.2
Meigs	1.1	37.1	107.4	42.5	2.7	190.9
Vinton	10.3	22.1	89.9	73.1	15.2	210.6
Hocking/Perry	4.8	72.5	174.1	105.5	6.5	363.3
Morgan/Washington	7.0	103.3	170.7	90.9	4.3	376.3
Total	31.2	274.1	668.0	365.9	38.1	1,377.3
East-Central						
Belmont	22.9	99.3	68.4	18.5	5.5	214.5
Carroll	6.9	34.6	53.2	14.8	- -	109.4
Coshocton	7.1	60.4	84.9	43.2	- -	195.6
Guernsey	13.3	72.2	82.5	32.5	2.2	202.8
Harrison	6.8	62.2	79.9	13.0	1.4	163.3
Holmes	1.8	15.2	48.2	23.0	- -	88.2
Jefferson	1.6	94.8	34.4	3.3	- -	134.1
Monroe	11.9	110.9	71.0	24.5	- -	218.3
Muskingum	18.6	48.0	102.2	40.3	2.9	211.9
Noble	11.0	48.8	48.7	27.6	6.3	142.4
Tuscarawas	10.6	51.1	95.3	23.3	13.6	193.8
Total	112.6	697.4	768.7	263.9	31.8	1,874.4

(Table OH-58 continued on next page)

(Table OH-58 continued)

Inventory unit and county	Stocking class of growing-stock trees					
	Nonstocked	Poorly stocked	Moderately stocked	Fully stocked	Over-stocked	All classes
Northeastern						
Ashtabula	12.9	60.7	60.8	83.4	- -	217.8
Columbiana	13.6	56.7	53.7	22.2	- -	146.2
Cuyahoga	13.0	11.5	13.8	10.8	1.8	51.0
Mahoning	1.5	14.5	25.7	11.1	- -	52.8
Trumbull	5.7	34.2	78.5	56.6	3.1	178.1
Ashland/Richland	5.8	30.8	69.8	67.0	- -	173.4
Erie/Huron	0.2	10.4	39.0	9.9	7.7	67.2
Lorain/Medina	0.3	26.5	47.3	43.5	1.5	119.1
Portage/Summit	25.3	52.7	62.3	25.5	2.9	168.7
Stark/Wayne	12.3	16.3	47.3	37.9	2.1	115.9
Geauga/Lake	12.6	21.8	78.0	74.5	- -	186.8
Total	103.3	336.0	576.2	442.4	19.1	1,477.0
Southwestern						
Butler/Hamilton	11.7	44.1	54.2	42.3	7.5	159.8
Clark/Darke/Miami	4.2	22.7	40.7	22.8	0.9	91.2
Clinton/Greene/Montgomery/Preble/Warren	13.6	51.5	89.2	51.0	10.7	216.1
Fairfield/Licking	8.4	30.8	54.7	49.4	4.5	147.8
Fayette/Franklin/Madison/Pickaway	- -	29.9	16.4	17.3	8.2	71.9
Total	37.9	179.2	255.2	182.8	31.8	686.8
Northwestern						
Knox	1.4	39.2	27.2	13.8	1.4	83.0
Allen/Auglaize/Mercer/Putnam/Van Wert	0.4	9.1	37.7	33.7	10.1	91.0
Champaign/Logan/Shelby/Union	0.6	33.9	36.6	31.6	1.5	104.3
Crawford/Hardin/Wyandot	4.1	6.8	27.1	7.2	6.7	51.9
Delaware/Marion/Morrow	3.0	33.6	39.7	36.9	3.6	116.8
Hancock/Ottawa/Sandusky/Seneca/Wood	6.2	29.3	37.7	34.9	- -	108.1
Defiance/Fulton/Henry/Lucas/Paulding/Williams	3.5	31.5	68.9	56.6	10.3	170.8
Total	19.3	183.5	274.8	214.8	33.5	725.8
All counties	333.3	2,091.7	3,250.2	1,972.7	217.0	7,864.9

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Allen/Auglaize/Mercer/Putnam/Van Wert = Allen, Mercer, Auglaize, Putnam, and Van Wert Counties
Champaign/Logan/Shelby/Union = Champaign, Shelby, Logan, and Union Counties
Clark/Darke/Miami = Clark, Miami, and Darke Counties
Clinton/Greene/Montgomery/Preble/Warren = Montgomery, Clinton, Greene, Preble, and Warren Counties
Crawford/Hardin/Wyandot = Crawford, Wyandot, and Hardin Counties
Defiance/Fulton/Henry/Lucas/Paulding/Williams = Defiance, Lucas, Fulton, Henry, Paulding, and Williams Counties
Delaware/Marion/Morrow = Marion, Delaware, and Morrow Counties
Fayette/Franklin/Madison/Pickaway = Franklin, Fayette, Madison, and Pickaway Counties
Hancock/Ottawa/Sandusky/Seneca/Wood = Ottawa, Seneca, Hancock, Sandusky, and Wood Counties

Table OH-59.—Net volume of growing-stock trees (at least 5 inches d.b.h.), in million cubic feet, and sawtimber trees, in million board feet (International ¼-inch rule) on timberland by inventory unit, county, and major species group, Ohio, 2011

Inventory unit and county	Growing stock					Sawtimber				
	Major species group					Major species group				
	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
	(In million cubic feet)					(In million board feet)				
South-Central										
Adams	3.6	15.9	157.5	210.3	387.3	13.4	12.1	660.1	836.7	1,522.2
Brown	- -	2.5	37.1	81.7	121.3	- -	5.5	154.7	265.5	425.8
Clermont	- -	1.1	81.8	86.5	169.4	- -	- -	299.1	313.4	612.5
Gallia	9.9	1.3	54.9	147.1	213.3	14.7	2.4	152.4	436.0	605.5
Highland	- -	2.4	59.5	97.9	159.9	- -	3.0	265.7	350.8	619.5
Jackson	9.2	12.8	127.1	127.3	276.4	20.6	45.2	405.4	422.5	893.7
Lawrence	7.0	0.1	172.3	241.8	421.2	20.1	- -	579.1	912.4	1,511.7
Pike	29.4	1.1	108.0	162.9	301.4	69.9	2.6	357.3	607.4	1,037.2
Ross	6.4	- -	158.4	291.5	456.4	18.5	- -	671.4	1,145.3	1,835.2
Scioto	6.1	- -	147.6	336.9	490.7	23.2	- -	464.8	1,326.6	1,814.6
Total	71.6	37.2	1,104.3	1,784.1	2,997.2	180.5	70.8	4,010.0	6,616.7	10,877.9
Southeastern										
Athens	47.1	- -	123.8	308.2	479.1	183.2	- -	459.7	1,162.2	1,805.1
Meigs	16.4	0.1	107.5	204.9	328.8	38.0	- -	388.9	752.7	1,179.7
Vinton	10.9	- -	198.3	184.3	393.5	39.0	- -	664.1	723.4	1,426.5
Hocking/Perry	28.5	12.9	354.9	334.9	731.2	122.6	49.3	1,282.2	1,326.6	2,780.7
Morgan/Washington	35.7	- -	264.0	347.0	646.7	119.0	- -	1,021.9	1,214.1	2,355.0
Total	138.7	13.0	1,048.4	1,379.2	2,579.3	501.8	49.3	3,816.8	5,179.1	9,547.0
East-Central										
Belmont	0.8	0.1	150.3	118.1	269.2	- -	- -	575.4	387.9	963.3
Carroll	0.5	- -	94.8	102.4	197.7	- -	- -	347.0	416.2	763.1
Coshocton	5.4	- -	194.1	153.8	353.4	23.9	- -	654.3	623.3	1,301.5
Guernsey	34.3	- -	123.4	133.6	291.4	160.2	- -	362.1	491.8	1,014.0
Harrison	30.1	- -	143.4	46.3	219.8	135.0	- -	435.3	118.6	688.9
Holmes	4.7	- -	101.0	106.5	212.2	21.5	- -	413.6	433.5	868.6
Jefferson	4.2	- -	108.5	52.1	164.8	16.1	- -	347.5	154.0	517.6
Monroe	24.9	- -	137.7	165.1	327.7	87.7	- -	433.3	659.4	1,180.4
Muskingum	3.1	0.4	217.8	143.8	365.1	5.2	- -	767.1	505.3	1,277.6
Noble	16.6	0.1	99.3	116.9	232.9	59.7	- -	300.4	429.7	789.8
Tuscarawas	12.6	- -	191.7	95.2	299.5	34.1	- -	723.4	386.9	1,144.4
Total	137.3	0.5	1,562.2	1,233.8	2,933.7	543.4	- -	5,359.2	4,606.6	10,509.2

(Table OH-59 continued on next page)

(Table OH-59 continued)

Inventory unit and county	Growing stock					Sawtimber				
	Major species group					Major species group				
	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
	(In million cubic feet)					(In million board feet)				
Northeastern										
Ashtabula	1.1	7.0	167.9	141.3	317.4	3.3	27.7	477.0	460.8	968.7
Columbiana	1.0	1.6	93.9	104.8	201.2	2.8	4.4	323.4	419.3	749.9
Cuyahoga	- -	0.4	62.7	27.7	90.8	- -	1.3	239.1	86.4	326.9
Mahoning	- -	- -	36.7	40.9	77.6	- -	- -	86.2	167.5	253.7
Trumbull	0.5	0.6	121.3	114.2	236.6	1.2	- -	222.5	419.9	643.7
Ashland/Richland	19.2	1.9	90.6	237.3	349.1	66.9	7.8	304.0	935.5	1,314.2
Erie/Huron	- -	- -	49.5	72.3	121.7	- -	- -	187.1	318.2	505.4
Lorain/Medina	10.5	4.5	145.7	153.7	314.5	39.2	20.5	577.0	605.1	1,241.9
Portage/Summit	3.0	9.6	129.0	94.3	235.9	12.9	50.4	443.0	361.6	867.9
Stark/Wayne	- -	0.8	164.2	114.2	279.2	- -	1.9	683.4	526.5	1,211.8
Geauga/Lake	16.0	22.6	147.9	186.2	372.7	61.6	79.0	479.4	635.9	1,255.8
Total	51.4	49.0	1,209.4	1,286.8	2,596.6	188.0	193.0	4,022.0	4,936.8	9,339.8
Southwestern										
Butler/Hamilton	- -	1.6	97.7	163.9	263.2	- -	0.7	398.7	634.6	1,034.1
Clark/Darke/Miami	- -	- -	55.6	93.8	149.3	- -	- -	205.7	365.7	571.4
Clinton/Greene/Montgomery/Preble/Wa	0.7	4.8	119.3	229.8	354.7	- -	9.9	458.0	933.1	1,401.0
Fairfield/Licking	6.2	8.3	114.8	174.7	304.1	20.4	20.5	502.4	712.3	1,255.6
Fayette/Franklin/Madison/Pickaway	0.4	- -	34.8	79.1	114.4	1.5	- -	151.6	358.1	511.1
Total	7.3	14.8	422.2	741.3	1,185.6	21.9	31.2	1,716.3	3,003.8	4,773.1
Northwestern										
Knox	15.1	- -	64.7	51.5	131.4	68.8	- -	215.5	173.0	457.3
Allen/Auglaize/Mercer/Putnam/Van Wer	- -	0.1	28.0	232.4	260.5	- -	- -	94.2	1,051.3	1,145.5
Champaign/Logan/Shelby/Union	5.4	- -	57.6	121.1	184.1	14.8	- -	197.7	460.1	672.7
Crawford/Hardin/Wyandot	- -	- -	36.3	87.9	124.1	- -	- -	141.3	361.5	502.9
Delaware/Marion/Morrow	1.4	0.0	71.7	141.0	214.2	3.6	- -	283.6	533.1	820.3
Hancock/Ottawa/Sandusky/Seneca/Wo	1.0	0.4	43.9	142.6	187.9	- -	1.4	133.6	575.2	710.3
Defiance/Fulton/Henry/Lucas/Paulding/	16.1	- -	134.1	195.8	346.0	55.7	- -	463.3	744.6	1,263.7
Total	39.0	0.6	436.3	972.3	1,448.2	142.9	1.4	1,529.4	3,898.9	5,572.6
All counties	445.3	115.0	5,782.7	7,397.6	13,740.6	1,578.4	345.7	20,453.7	28,241.8	50,619.7

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic or board feet. Columns and rows may not add to their totals due to rounding.
Allen/Auglaize/Mercer/Putnam/Van Wert = Allen, Mercer, Auglaize, Putnam, and Van Wert Counties
Champaign/Logan/Shelby/Union = Champaign, Shelby, Logan, and Union Counties
Clark/Darke/Miami = Clark, Miami, and Darke Counties
Clinton/Greene/Montgomery/Preble/Warren = Montgomery, Clinton, Greene, Preble, and Warren Counties
Crawford/Hardin/Wyandot = Crawford, Wyandot, and Hardin Counties
Defiance/Fulton/Henry/Lucas/Paulding/Williams = Defiance, Lucas, Fulton, Henry, Paulding, and Williams Counties
Delaware/Marion/Morrow = Marion, Delaware, and Morrow Counties
Fayette/Franklin/Madison/Pickaway = Franklin, Fayette, Madison, and Pickaway Counties
Hancock/Ottawa/Sandusky/Seneca/Wood = Ottawa, Seneca, Hancock, Sandusky, and Wood Counties

Table OH-59a.—Net volume of growing-stock trees (at least 5 inches d.b.h.), in million cubic feet, and sawtimber trees, in million board feet (Scribner rule), on timberland by inventory unit, county, and major species group, Ohio, 2011

Inventory unit and county	Growing stock					Sawtimber				
	Major species group					Major species group				
	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
	(In million cubic feet)					(In million board feet)				
South-Central										
Adams	3.6	15.9	157.5	210.3	387.3	7.6	5.7	485.1	608.6	1,106.9
Brown	- -	2.5	37.1	81.7	121.3	- -	3.9	110.2	182.4	296.4
Clermont	- -	1.1	81.8	86.5	169.4	- -	- -	198.1	216.1	414.2
Gallia	9.9	1.3	54.9	147.1	213.3	7.4	1.4	89.0	257.8	355.6
Highland	- -	2.4	59.5	97.9	159.9	- -	1.4	212.3	239.2	452.8
Jackson	9.2	12.8	127.1	127.3	276.4	10.5	33.7	249.0	260.8	553.9
Lawrence	7.0	0.1	172.3	241.8	421.2	10.2	- -	382.0	625.0	1,017.2
Pike	29.4	1.1	108.0	162.9	301.4	36.4	1.6	236.2	358.5	632.7
Ross	6.4	- -	158.4	291.5	456.4	14.4	- -	544.8	783.2	1,342.5
Scioto	6.1	- -	147.6	336.9	490.7	21.0	- -	311.9	845.1	1,178.1
Total	71.6	37.2	1,104.3	1,784.1	2,997.2	107.5	47.6	2,818.5	4,376.7	7,350.3
Southeastern										
Athens	47.1	- -	123.8	308.2	479.1	110.4	- -	313.9	766.4	1,190.8
Meigs	16.4	0.1	107.5	204.9	328.8	19.7	- -	244.8	496.2	760.8
Vinton	10.9	- -	198.3	184.3	393.5	23.0	- -	431.1	474.6	928.7
Hocking/Perry	28.5	12.9	354.9	334.9	731.2	78.5	32.6	887.0	913.7	1,911.7
Morgan/Washington	35.7	- -	264.0	347.0	646.7	66.5	- -	665.8	820.3	1,552.5
Total	138.7	13.0	1,048.4	1,379.2	2,579.3	298.1	32.6	2,542.6	3,471.2	6,344.5
East-Central										
Belmont	0.8	0.1	150.3	118.1	269.2	- -	- -	422.0	250.9	672.9
Carroll	0.5	- -	94.8	102.4	197.7	- -	- -	218.4	299.7	518.2
Coshocton	5.4	- -	194.1	153.8	353.4	14.2	- -	387.5	436.2	837.9
Guernsey	34.3	- -	123.4	133.6	291.4	113.7	- -	198.9	332.3	644.9
Harrison	30.1	- -	143.4	46.3	219.8	95.8	- -	272.0	61.3	429.0
Holmes	4.7	- -	101.0	106.5	212.2	15.9	- -	297.0	301.0	613.9
Jefferson	4.2	- -	108.5	52.1	164.8	9.8	- -	207.0	90.1	306.8
Monroe	24.9	- -	137.7	165.1	327.7	53.2	- -	262.9	464.4	780.5
Muskingum	3.1	0.4	217.8	143.8	365.1	2.4	- -	513.4	319.8	835.5
Noble	16.6	0.1	99.3	116.9	232.9	32.3	- -	179.4	296.3	507.9
Tuscarawas	12.6	- -	191.7	95.2	299.5	15.3	- -	532.0	271.9	819.2
Total	137.3	0.5	1,562.2	1,233.8	2,933.7	352.6	- -	3,490.4	3,123.7	6,966.7

(Table OH-59a continued on next page)

(Table OH-59a continued)

Inventory unit and county	Growing stock					Sawtimber				
	Major species group					Major species group				
	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
	(In million cubic feet)					(In million board feet)				
Northeastern										
Ashtabula	1.1	7.0	167.9	141.3	317.4	1.3	20.7	286.2	289.9	598.2
Columbiana	1.0	1.6	93.9	104.8	201.2	1.7	2.5	210.2	301.8	516.2
Cuyahoga	- -	0.4	62.7	27.7	90.8	- -	0.5	174.7	58.3	233.4
Mahoning	- -	- -	36.7	40.9	77.6	- -	- -	46.0	125.7	171.7
Trumbull	0.5	0.6	121.3	114.2	236.6	0.4	- -	127.5	269.4	397.4
Ashland/Richland	19.2	1.9	90.6	237.3	349.1	37.9	6.7	178.3	602.6	825.5
Erie/Huron	- -	- -	49.5	72.3	121.7	- -	- -	151.7	236.9	388.6
Lorain/Medina	10.5	4.5	145.7	153.7	314.5	20.1	13.4	407.4	417.4	858.3
Portage/Summit	3.0	9.6	129.0	94.3	235.9	11.1	44.1	267.6	253.4	576.2
Stark/Wayne	- -	0.8	164.2	114.2	279.2	- -	0.9	470.5	389.5	860.9
Geauga/Lake	16.0	22.6	147.9	186.2	372.7	36.9	44.0	291.5	418.5	790.8
Total	51.4	49.0	1,209.4	1,286.8	2,596.6	109.5	132.7	2,611.7	3,363.4	6,217.2
Southwestern										
Butler/Hamilton	- -	1.6	97.7	163.9	263.2	- -	0.3	309.8	472.3	782.3
Clark/Darke/Miami	- -	- -	55.6	93.8	149.3	- -	- -	141.7	242.1	383.8
Clinton/Greene/Montgomery/Preble	0.7	4.8	119.3	229.8	354.7	- -	4.9	316.5	679.4	1,000.8
Fairfield/Licking	6.2	8.3	114.8	174.7	304.1	10.0	8.7	362.7	466.9	848.3
Fayette/Franklin/Madison/Pickaway	0.4	- -	34.8	79.1	114.4	0.5	- -	116.0	264.1	380.6
Total	7.3	14.8	422.2	741.3	1,185.6	10.5	13.8	1,246.7	2,124.8	3,395.8
Northwestern										
Knox	15.1	- -	64.7	51.5	131.4	48.2	- -	137.8	100.5	286.6
Allen/Auglaize/Mercer/Putnam/Van	- -	0.1	28.0	232.4	260.5	- -	- -	63.4	876.2	939.6
Champaign/Logan/Shelby/Union	5.4	- -	57.6	121.1	184.1	6.1	- -	120.8	351.5	478.3
Crawford/Hardin/Wyandot	- -	- -	36.3	87.9	124.1	- -	- -	94.3	261.3	355.6
Delaware/Marion/Morrow	1.4	0.0	71.7	141.0	214.2	2.2	- -	215.3	373.1	590.6
Hancock/Ottawa/Sandusky/Seneca	1.0	0.4	43.9	142.6	187.9	- -	0.5	73.5	423.2	497.2
Defiance/Fulton/Henry/Lucas/Paulc	16.1	- -	134.1	195.8	346.0	27.8	- -	328.0	496.8	852.6
Total	39.0	0.6	436.3	972.3	1,448.2	84.3	0.5	1,033.1	2,882.6	4,000.5
All counties	445.3	115.0	5,782.7	7,397.6	13,740.6	962.4	227.3	13,743.0	19,342.4	34,275.1

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic or board feet. Columns and rows may not add to their totals due to rounding.

Allen/Auglaize/Mercer/Putnam/Van Wert = Allen, Mercer, Auglaize, Putnam, and Van Wert Counties
Champaign/Logan/Shelby/Union = Champaign, Shelby, Logan, and Union Counties
Clark/Darke/Miami = Clark, Miami, and Darke Counties
Clinton/Greene/Montgomery/Preble/Warren = Montgomery, Clinton, Greene, Preble, and Warren Counties
Crawford/Hardin/Wyandot = Crawford, Wyandot, and Hardin Counties
Defiance/Fulton/Henry/Lucas/Paulding/Williams = Defiance, Lucas, Fulton, Henry, Paulding, and Williams Counties
Delaware/Marion/Morrow = Marion, Delaware, and Morrow Counties
Fayette/Franklin/Madison/Pickaway = Franklin, Fayette, Madison, and Pickaway Counties
Hancock/Ottawa/Sandusky/Seneca/Wood = Ottawa, Seneca, Hancock, Sandusky, and Wood Counties

Table OH-60.—Average annual net growth of growing-stock trees (at least 5 inches d.b.h.), in million cubic feet, and sawtimber trees, in million board feet (International ¼-inch rule) on timberland by inventory unit, county, and major species group, Ohio, 2011

Inventory unit and county	Growing stock					Sawtimber				
	Major species group					Major species group				
	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
	(In million cubic feet)					(In million board feet)				
South-Central										
Adams	0.2	0.4	3.6	5.7	9.9	0.6	0.4	17.2	28.1	46.3
Brown	- -	0.1	1.3	2.2	3.6	- -	0.1	6.1	9.3	15.5
Clermont	- -	0.0	3.3	1.7	5.1	- -	- -	15.3	5.3	20.6
Gallia	-0.1	0.0	1.9	2.9	4.8	-0.8	0.1	6.6	11.4	17.3
Highland	- -	0.1	1.4	1.7	3.1	- -	0.1	9.8	6.8	16.8
Jackson	0.9	0.3	4.8	2.9	8.8	0.8	1.3	20.0	14.3	36.5
Lawrence	0.1	0.0	4.4	4.4	8.9	0.7	- -	20.2	19.4	40.4
Pike	2.1	0.2	3.9	3.8	10.0	4.5	0.6	16.1	22.6	43.8
Ross	0.3	- -	5.4	6.1	11.8	-0.1	- -	31.7	30.7	62.3
Scioto	-0.1	- -	4.1	2.7	6.7	-0.1	- -	16.5	13.0	29.4
Total	3.4	1.0	34.1	34.1	72.7	5.5	2.6	159.6	160.9	328.7
Southeastern										
Athens	0.8	- -	2.4	4.7	7.9	5.1	- -	13.8	26.2	45.1
Meigs	0.8	0.0	3.0	3.1	6.8	0.8	- -	15.9	16.1	32.8
Vinton	0.2	- -	6.7	5.6	12.5	1.1	- -	30.0	27.7	58.8
Hocking/Perry	0.4	0.4	11.8	10.5	23.0	3.2	1.7	56.4	52.2	113.6
Morgan/Washington	0.7	- -	6.3	9.6	16.6	3.5	- -	38.2	43.3	85.0
Total	2.8	0.4	30.1	33.5	66.8	13.6	1.7	154.4	165.5	335.3
East-Central										
Belmont	-0.1	0.0	1.1	3.5	4.5	- -	- -	10.4	15.2	25.6
Carroll	0.0	- -	4.8	3.0	7.8	- -	- -	22.7	14.2	37.0
Coshocton	-0.5	- -	6.0	4.8	10.4	-1.8	- -	28.2	18.9	45.3
Guernsey	0.3	- -	3.9	3.5	7.7	1.8	- -	16.7	14.6	33.1
Harrison	0.7	- -	4.5	1.6	6.8	4.1	- -	20.5	6.4	30.9
Holmes	0.1	- -	2.8	3.2	6.1	0.5	- -	15.6	18.2	34.4
Jefferson	0.3	- -	3.5	1.6	5.4	1.2	- -	18.4	6.9	26.4
Monroe	1.5	- -	1.2	3.0	5.7	7.9	- -	10.2	13.8	31.9
Muskingum	0.5	0.0	6.7	4.6	11.9	0.9	- -	35.5	18.6	55.1
Noble	0.5	0.0	2.5	4.5	7.5	2.7	- -	13.0	19.7	35.5
Tuscarawas	0.8	- -	9.6	3.4	13.8	3.3	- -	41.4	16.6	61.3
Total	4.1	0.0	46.6	36.8	87.6	20.6	- -	232.5	163.2	416.3

(Table OH-60 continued on next page)

(Table OH-60 continued)

Inventory unit and county	Growing stock					Sawtimber				
	Major species group					Major species group				
	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
	(In million cubic feet)					(In million board feet)				
Northeastern										
Ashtabula	0.2	0.1	8.3	5.1	13.8	0.6	0.6	34.0	25.7	60.8
Columbiana	0.0	0.2	3.5	4.3	8.1	0.0	0.9	15.2	21.5	37.6
Cuyahoga	0.0	0.0	1.7	1.0	2.7	0.0	0.3	7.4	3.1	10.8
Mahoning	- -	- -	1.2	1.3	2.5	- -	- -	4.7	6.0	10.7
Trumbull	0.0	0.0	5.9	4.6	10.5	0.3	- -	13.8	19.7	33.8
Ashland/Richland	0.1	0.1	3.1	6.5	9.8	1.4	0.2	14.8	33.9	50.4
Erie/Huron	- -	- -	3.5	1.6	5.1	- -	- -	15.8	10.9	26.7
Lorain/Medina	0.3	0.1	4.1	1.5	6.1	1.9	0.5	22.3	7.9	32.7
Portage/Summit	0.1	1.8	5.3	4.8	12.0	0.2	10.2	27.6	22.3	60.2
Stark/Wayne	- -	0.0	4.1	2.7	6.8	- -	0.2	21.8	15.3	37.3
Geauga/Lake	0.4	0.2	4.4	2.7	7.7	2.2	1.7	20.5	11.7	36.0
Total	1.2	2.6	45.2	36.2	85.2	6.6	14.4	198.0	177.9	397.0
Southwestern										
Butler/Hamilton	- -	0.1	4.0	5.2	9.3	- -	0.0	21.7	19.2	40.9
Clark/Darke/Miami	- -	- -	1.6	3.9	5.5	- -	- -	9.4	18.3	27.6
Clinton/Greene/Montgomery/Preble/Warre	0.0	1.0	4.2	5.8	11.0	- -	2.2	19.4	31.8	53.3
Fairfield/Licking	0.2	0.6	2.8	5.1	8.7	1.8	2.7	16.3	27.2	48.0
Fayette/Franklin/Madison/Pickaway	0.0	- -	0.7	1.6	2.4	0.3	- -	4.4	10.9	15.6
Total	0.3	1.6	13.4	21.6	36.9	2.0	4.9	71.2	107.3	185.5
Northwestern										
Knox	0.2	- -	2.6	2.4	5.2	1.4	- -	13.1	10.6	25.1
Allen/Auglaize/Mercer/Putnam/Van Wert	- -	0.0	0.4	5.0	5.4	- -	- -	1.7	25.9	27.6
Champaign/Logan/Shelby/Union	0.3	- -	3.3	4.2	7.8	1.4	- -	16.5	17.8	35.6
Crawford/Hardin/Wyandot	- -	- -	1.2	1.2	2.4	- -	- -	5.0	5.1	10.1
Delaware/Marion/Morrow	0.0	0.0	1.5	4.0	5.5	0.1	- -	6.0	15.0	21.1
Hancock/Ottawa/Sandusky/Seneca/Wood	-0.2	0.1	1.6	0.2	1.7	-0.2	0.3	7.8	4.6	12.5
Defiance/Fulton/Henry/Lucas/Paulding/Wi	0.0	- -	5.0	1.2	6.2	0.1	- -	24.4	8.0	32.5
Total	0.3	0.1	15.6	18.2	34.2	2.7	0.3	74.5	87.0	164.5
All counties	12.1	5.7	185.1	180.4	383.3	51.2	23.9	890.3	861.8	1,827.2

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic or board feet. Columns and rows may not add to their totals due to rounding.

Allen/Auglaize/Mercer/Putnam/Van Wert = Allen, Mercer, Auglaize, Putnam, and Van Wert Counties
Champaign/Logan/Shelby/Union = Champaign, Shelby, Logan, and Union Counties
Clark/Darke/Miami = Clark, Miami, and Darke Counties
Clinton/Greene/Montgomery/Preble/Warren = Montgomery, Clinton, Greene, Preble, and Warren Counties
Crawford/Hardin/Wyandot = Crawford, Wyandot, and Hardin Counties
Defiance/Fulton/Henry/Lucas/Paulding/Williams = Defiance, Lucas, Fulton, Henry, Paulding, and Williams Counties
Delaware/Marion/Morrow = Marion, Delaware, and Morrow Counties
Fayette/Franklin/Madison/Pickaway = Franklin, Fayette, Madison, and Pickaway Counties
Hancock/Ottawa/Sandusky/Seneca/Wood = Ottawa, Seneca, Hancock, Sandusky, and Wood Counties

Table OH-60a.—Average annual net growth of growing-stock trees (at least 5 inches d.b.h.), in million cubic feet, and sawtimber, in million board feet (Scribner rule), on timberland by inventory unit, county, and major species group, Ohio, 2011

Inventory unit and county	Growing stock					Sawtimber				
	Major species group					Major species group				
	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
	(In million cubic feet)					(In million board feet)				
South-Central										
Adams	0.2	0.4	3.6	5.7	9.9	0.3	0.2	10.9	18.5	29.9
Brown	- -	0.1	1.3	2.2	3.6	- -	0.1	4.1	4.9	9.1
Clermont	- -	0.0	3.3	1.7	5.1	- -	- -	9.2	3.2	12.3
Gallia	-0.1	0.0	1.9	2.9	4.8	-0.5	0.0	3.5	4.6	7.6
Highland	- -	0.1	1.4	1.7	3.1	- -	0.1	6.7	3.9	10.7
Jackson	0.9	0.3	4.8	2.9	8.8	0.3	0.9	11.4	7.1	19.8
Lawrence	0.1	0.0	4.4	4.4	8.9	0.4	- -	12.2	12.2	24.8
Pike	2.1	0.2	3.9	3.8	10.0	2.1	0.3	8.9	12.3	23.6
Ross	0.3	- -	5.4	6.1	11.8	0.0	- -	25.1	18.1	43.1
Scioto	-0.1	- -	4.1	2.7	6.7	0.0	- -	9.7	3.7	13.4
Total	3.4	1.0	34.1	34.1	72.7	2.6	1.6	101.7	88.5	194.4
Southeastern										
Athens	0.8	- -	2.4	4.7	7.9	3.1	- -	7.3	15.1	25.5
Meigs	0.8	0.0	3.0	3.1	6.8	0.2	- -	9.2	8.6	18.0
Vinton	0.2	- -	6.7	5.6	12.5	0.5	- -	17.3	16.5	34.2
Hocking/Perry	0.4	0.4	11.8	10.5	23.0	2.0	1.1	34.2	32.4	69.7
Morgan/Washington	0.7	- -	6.3	9.6	16.6	2.1	- -	22.3	28.1	52.4
Total	2.8	0.4	30.1	33.5	66.8	7.9	1.1	90.3	100.6	199.9
East-Central										
Belmont	-0.1	0.0	1.1	3.5	4.5	- -	- -	6.3	8.5	14.8
Carroll	0.0	- -	4.8	3.0	7.8	- -	- -	13.6	9.1	22.7
Coshocton	-0.5	- -	6.0	4.8	10.4	-1.3	- -	16.1	10.7	25.5
Guernsey	0.3	- -	3.9	3.5	7.7	1.1	- -	8.1	8.4	17.7
Harrison	0.7	- -	4.5	1.6	6.8	2.8	- -	11.7	3.1	17.6
Holmes	0.1	- -	2.8	3.2	6.1	0.4	- -	10.5	12.1	23.0
Jefferson	0.3	- -	3.5	1.6	5.4	0.7	- -	10.1	3.8	14.7
Monroe	1.5	- -	1.2	3.0	5.7	3.7	- -	6.2	6.5	16.4
Muskingum	0.5	0.0	6.7	4.6	11.9	0.5	- -	20.0	10.2	30.7
Noble	0.5	0.0	2.5	4.5	7.5	1.5	- -	7.0	12.4	20.8
Tuscarawas	0.8	- -	9.6	3.4	13.8	1.4	- -	27.2	10.4	39.0
Total	4.1	0.0	46.6	36.8	87.6	10.8	- -	136.8	95.2	242.9

(Table OH-60a continued on next page)

(Table OH-60a continued)

Inventory unit and county	Growing stock					Sawtimber				
	Major species group					Major species group				
	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
	(In million cubic feet)					(In million board feet)				
Northeastern										
Ashtabula	0.2	0.1	8.3	5.1	13.8	0.3	0.4	19.3	14.3	34.2
Columbiana	0.0	0.2	3.5	4.3	8.1	0.0	0.5	9.0	13.2	22.7
Cuyahoga	0.0	0.0	1.7	1.0	2.7	0.0	0.1	4.6	2.1	6.8
Mahoning	- -	- -	1.2	1.3	2.5	- -	- -	2.4	3.9	6.2
Trumbull	0.0	0.0	5.9	4.6	10.5	0.1	- -	7.1	11.2	18.3
Ashland/Richland	0.1	0.1	3.1	6.5	9.8	0.8	0.2	8.2	18.1	27.3
Erie/Huron	- -	- -	3.5	1.6	5.1	- -	- -	16.1	7.8	23.9
Lorain/Medina	0.3	0.1	4.1	1.5	6.1	1.0	0.2	13.9	-0.9	14.2
Portage/Summit	0.1	1.8	5.3	4.8	12.0	0.1	9.1	16.9	14.3	40.5
Stark/Wayne	- -	0.0	4.1	2.7	6.8	- -	0.1	12.2	10.1	22.3
Geauga/Lake	0.4	0.2	4.4	2.7	7.7	1.2	0.8	11.6	6.4	19.9
Total	1.2	2.6	45.2	36.2	85.2	3.5	11.3	121.0	100.5	236.4
Southwestern										
Butler/Hamilton	- -	0.1	4.0	5.2	9.3	- -	0.0	19.2	12.3	31.5
Clark/Darke/Miami	- -	- -	1.6	3.9	5.5	- -	- -	5.8	12.2	17.9
Clinton/Greene/Montgomery/Preble	0.0	1.0	4.2	5.8	11.0	- -	1.1	12.0	20.1	33.2
Fairfield/Licking	0.2	0.6	2.8	5.1	8.7	0.7	1.0	9.8	16.5	28.0
Fayette/Franklin/Madison/Pickaway	0.0	- -	0.7	1.6	2.4	0.1	- -	3.5	7.8	11.4
Total	0.3	1.6	13.4	21.6	36.9	0.8	2.1	50.2	68.9	121.9
Northwestern										
Knox	0.2	- -	2.6	2.4	5.2	1.1	- -	7.5	5.6	14.1
Allen/Auglaize/Mercer/Putnam/Van	- -	0.0	0.4	5.0	5.4	- -	- -	1.0	19.6	20.7
Champaign/Logan/Shelby/Union	0.3	- -	3.3	4.2	7.8	0.6	- -	10.5	11.4	22.4
Crawford/Hardin/Wyandot	- -	- -	1.2	1.2	2.4	- -	- -	3.3	3.8	7.1
Delaware/Marion/Morrow	0.0	0.0	1.5	4.0	5.5	0.0	- -	3.6	8.3	11.9
Hancock/Ottawa/Sandusky/Seneca	-0.2	0.1	1.6	0.2	1.7	-0.1	0.1	4.0	1.9	5.9
Defiance/Fulton/Henry/Lucas/Paulc	0.0	- -	5.0	1.2	6.2	0.1	- -	14.3	6.3	20.7
Total	0.3	0.1	15.6	18.2	34.2	1.7	0.1	44.2	56.8	102.8
All counties	12.1	5.7	185.1	180.4	383.3	27.2	16.2	544.3	510.6	1,098.3

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic or board feet. Columns and rows may not add to their totals due to rounding.

Allen/Auglaize/Mercer/Putnam/Van Wert = Allen, Mercer, Auglaize, Putnam, and Van Wert Counties
Champaign/Logan/Shelby/Union = Champaign, Shelby, Logan, and Union Counties
Clark/Darke/Miami = Clark, Miami, and Darke Counties
Clinton/Greene/Montgomery/Preble/Warren = Montgomery, Clinton, Greene, Preble, and Warren Counties
Crawford/Hardin/Wyandot = Crawford, Wyandot, and Hardin Counties
Defiance/Fulton/Henry/Lucas/Paulding/Williams = Defiance, Lucas, Fulton, Henry, Paulding, and Williams Counties
Delaware/Marion/Morrow = Marion, Delaware, and Morrow Counties
Fayette/Franklin/Madison/Pickaway = Franklin, Fayette, Madison, and Pickaway Counties
Hancock/Ottawa/Sandusky/Seneca/Wood = Ottawa, Seneca, Hancock, Sandusky, and Wood Counties

Table OH-61.—Average annual removals of growing-stock trees (at least 5 inches d.b.h.), in million cubic feet, and sawtimber trees, in million board feet (International ¼-rule), on timberland by inventory unit, county, and major species group, Ohio, 2011

Inventory unit and county	Growing stock					Sawtimber				
	Major species group					Major species group				
	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
	(In million cubic feet)					(In million board feet)				
South-Central										
Adams	- -	0.3	2.2	1.6	4.1	- -	0.1	8.8	8.0	16.9
Brown	- -	0.0	0.3	0.4	0.7	- -	- -	0.4	1.0	1.4
Clermont	- -	0.1	0.1	1.9	2.1	- -	- -	0.5	6.8	7.3
Gallia	0.9	- -	0.4	1.8	3.1	3.3	- -	1.2	8.8	13.3
Highland	- -	- -	0.0	0.4	0.4	- -	- -	- -	- -	- -
Jackson	4.0	- -	1.6	1.7	7.3	0.4	- -	8.0	6.9	15.3
Lawrence	- -	- -	2.0	0.6	2.6	- -	- -	9.4	1.5	10.9
Pike	2.0	- -	1.5	4.0	7.5	8.2	- -	3.9	13.9	26.0
Ross	- -	- -	0.2	2.9	3.1	- -	- -	0.4	12.5	13.0
Scioto	0.7	- -	4.5	13.3	18.5	2.4	- -	15.8	62.6	80.9
Total	7.5	0.4	12.9	28.6	49.4	14.3	0.1	48.4	122.1	185.0
Southeastern										
Athens	- -	- -	0.2	- -	0.2	- -	- -	- -	- -	- -
Meigs	0.1	- -	2.7	1.5	4.3	0.4	- -	10.3	5.0	15.7
Vinton	- -	- -	1.1	11.5	12.6	- -	- -	4.1	48.5	52.6
Hocking/Perry	0.0	- -	7.7	0.8	8.5	- -	- -	35.2	2.1	37.3
Morgan/Washington	- -	- -	5.8	0.4	6.2	- -	- -	30.1	1.5	31.6
Total	0.2	- -	17.5	14.3	31.9	0.4	- -	79.7	57.0	137.2
East-Central										
Belmont	- -	- -	3.4	2.3	5.7	- -	- -	12.5	7.8	20.3
Carroll	- -	- -	1.9	0.1	2.0	- -	- -	7.6	- -	7.6
Coshocton	- -	- -	3.2	3.0	6.2	- -	- -	13.4	14.3	27.7
Guernsey	1.7	- -	0.5	2.1	4.3	5.9	- -	1.4	10.3	17.6
Harrison	- -	- -	0.3	0.6	0.9	- -	- -	0.5	3.3	3.8
Holmes	- -	- -	0.7	2.4	3.1	- -	- -	3.3	13.4	16.7
Jefferson	- -	- -	4.1	1.9	6.0	- -	- -	19.2	8.3	27.6
Monroe	- -	- -	1.0	0.4	1.4	- -	- -	5.0	1.8	6.8
Muskingum	1.3	- -	0.1	3.1	4.4	6.1	- -	- -	12.0	18.1
Noble	0.1	- -	0.2	- -	0.3	0.5	- -	0.7	- -	1.2
Tuscarawas	- -	- -	4.6	1.4	5.9	- -	- -	19.0	3.9	22.8
Total	3.1	- -	20.0	17.3	40.4	12.5	- -	82.6	75.1	170.2

(Table OH-61 continued on next page)

(Table OH-61 continued)

Inventory unit and county	Growing stock					Sawtimber				
	Major species group					Major species group				
	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
	(In million cubic feet)					(In million board feet)				
Northeastern										
Ashtabula	- -	- -	3.1	5.5	8.5	- -	- -	10.7	23.1	33.8
Columbiana	- -	- -	0.2	0.6	0.8	- -	- -	0.4	2.9	3.4
Cuyahoga	0.3	- -	1.5	4.9	6.6	1.1	- -	4.8	20.2	26.1
Mahoning	- -	- -	1.5	3.4	5.0	- -	- -	5.1	16.2	21.3
Trumbull	- -	0.1	1.5	4.0	5.6	- -	- -	3.9	16.2	20.1
Ashland/Richland	- -	- -	0.7	2.3	3.0	- -	- -	3.2	9.7	12.9
Erie/Huron	- -	- -	0.2	1.5	1.7	- -	- -	0.8	6.6	7.4
Lorain/Medina	- -	- -	- -	0.6	0.6	- -	- -	- -	2.8	2.8
Portage/Summit	- -	- -	1.7	2.7	4.4	- -	- -	6.1	10.3	16.4
Stark/Wayne	- -	- -	1.2	1.5	2.7	- -	- -	5.5	8.1	13.6
Geauga/Lake	- -	0.2	4.8	3.1	8.1	- -	0.6	20.0	6.5	27.1
Total	0.3	0.3	16.5	29.9	47.0	1.1	0.6	60.4	122.7	184.9
Southwestern										
Butler/Hamilton	- -	- -	1.1	- -	1.1	- -	- -	6.4	- -	6.4
Clinton/Greene/Montgomery/Preble	- -	- -	0.2	1.5	1.7	- -	- -	- -	6.4	6.4
Fairfield/Licking	- -	- -	0.1	0.3	0.4	- -	- -	- -	0.8	0.8
Fayette/Franklin/Madison/Pickaway	- -	- -	1.3	1.5	2.7	- -	- -	3.9	6.7	10.6
Total	- -	- -	2.8	3.3	6.0	- -	- -	10.3	14.0	24.2
Northwestern										
Knox	1.4	- -	0.0	0.7	2.1	4.6	- -	- -	3.0	7.7
Champaign/Logan/Shelby/Union	- -	- -	0.1	0.5	0.7	- -	- -	- -	2.5	2.5
Crawford/Hardin/Wyandot	- -	- -	- -	0.0	0.0	- -	- -	- -	- -	- -
Delaware/Marion/Morrow	- -	- -	1.9	2.5	4.3	- -	- -	8.0	10.7	18.7
Hancock/Ottawa/Sandusky/Seneca	- -	- -	0.2	- -	0.2	- -	- -	0.7	- -	0.7
Defiance/Fulton/Henry/Lucas/Paulc	- -	- -	1.9	3.9	5.8	- -	- -	7.9	19.1	27.0
Total	1.4	- -	4.1	7.6	13.1	4.6	- -	16.6	35.3	56.6
All counties	12.4	0.6	73.7	100.9	187.7	33.0	0.8	298.1	426.3	758.1

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic or board feet. Columns and rows may not add to their totals due to rounding.

Allen/Auglaize/Mercer/Putnam/Van Wert = Allen, Mercer, Auglaize, Putnam, and Van Wert Counties
Champaign/Logan/Shelby/Union = Champaign, Shelby, Logan, and Union Counties
Clark/Darke/Miami = Clark, Miami, and Darke Counties
Clinton/Greene/Montgomery/Preble/Warren = Montgomery, Clinton, Greene, Preble, and Warren Counties
Crawford/Hardin/Wyandot = Crawford, Wyandot, and Hardin Counties
Defiance/Fulton/Henry/Lucas/Paulding/Williams = Defiance, Lucas, Fulton, Henry, Paulding, and Williams Counties
Delaware/Marion/Morrow = Marion, Delaware, and Morrow Counties
Fayette/Franklin/Madison/Pickaway = Franklin, Fayette, Madison, and Pickaway Counties
Hancock/Ottawa/Sandusky/Seneca/Wood = Ottawa, Seneca, Hancock, Sandusky, and Wood Counties

Table OH-61a.—Average annual removals of growing-stock trees (at least 5 inches d.b.h.) in million board feet, and sawtimber trees, in million board feet (Scribner rule) on timberland by inventory unit, county, and major species group, Ohio, 2011

Inventory unit and county	Growing stock					Sawtimber				
	Major species group					Major species group				
	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
	(In million cubic feet)					(In million board feet)				
South-Central										
Adams	- -	0.3	2.2	1.6	4.1	- -	0.0	5.0	5.6	10.7
Brown	- -	0.0	0.3	0.4	0.7	- -	- -	0.2	0.5	0.7
Clermont	- -	0.1	0.1	1.9	2.1	- -	- -	0.2	4.4	4.6
Gallia	0.9	- -	0.4	1.8	3.1	2.3	- -	0.7	6.5	9.5
Highland	- -	- -	0.0	0.4	0.4	- -	- -	- -	- -	- -
Jackson	4.0	- -	1.6	1.7	7.3	0.1	- -	9.1	4.0	13.3
Lawrence	- -	- -	2.0	0.6	2.6	- -	- -	5.6	0.9	6.5
Pike	2.0	- -	1.5	4.0	7.5	4.8	- -	1.7	8.2	14.8
Ross	- -	- -	0.2	2.9	3.1	- -	- -	0.2	8.2	8.4
Scioto	0.7	- -	4.5	13.3	18.5	1.3	- -	9.2	48.6	59.0
Total	7.5	0.4	12.9	28.6	49.4	8.6	0.0	31.8	86.9	127.4
Southeastern										
Athens	- -	- -	0.2	- -	0.2	- -	- -	- -	- -	- -
Meigs	0.1	- -	2.7	1.5	4.3	0.2	- -	6.4	2.8	9.4
Vinton	- -	- -	1.1	11.5	12.6	- -	- -	2.6	32.4	35.0
Hocking/Perry	0.0	- -	7.7	0.8	8.5	- -	- -	23.8	1.3	25.1
Morgan/Washington	- -	- -	5.8	0.4	6.2	- -	- -	26.3	0.7	27.1
Total	0.2	- -	17.5	14.3	31.9	0.2	- -	59.3	37.2	96.6
East-Central										
Belmont	- -	- -	3.4	2.3	5.7	- -	- -	8.4	5.5	13.9
Carroll	- -	- -	1.9	0.1	2.0	- -	- -	4.5	- -	4.5
Coshocton	- -	- -	3.2	3.0	6.2	- -	- -	8.3	9.6	17.9
Guernsey	1.7	- -	0.5	2.1	4.3	2.7	- -	0.9	7.1	10.7
Harrison	- -	- -	0.3	0.6	0.9	- -	- -	0.2	2.6	2.8
Holmes	- -	- -	0.7	2.4	3.1	- -	- -	2.0	11.3	13.3
Jefferson	- -	- -	4.1	1.9	6.0	- -	- -	12.9	5.5	18.3
Monroe	- -	- -	1.0	0.4	1.4	- -	- -	3.3	1.2	4.5
Muskingum	1.3	- -	0.1	3.1	4.4	3.9	- -	- -	8.1	12.0
Noble	0.1	- -	0.2	- -	0.3	0.2	- -	0.3	- -	0.5
Tuscarawas	- -	- -	4.6	1.4	5.9	- -	- -	16.2	2.5	18.7
Total	3.1	- -	20.0	17.3	40.4	6.9	- -	56.9	53.3	117.1

(Table OH-61a continued on next page)

(Table OH-61a continued)

Inventory unit and county	Growing stock					Sawtimber				
	Major species group					Major species group				
	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species	Pine	Other softwoods	Soft hardwoods	Hard hardwoods	All species
	(In million cubic feet)					(In million board feet)				
Northeastern										
Ashtabula	- -	- -	3.1	5.5	8.5	- -	- -	5.9	15.5	21.4
Columbiana	- -	- -	0.2	0.6	0.8	- -	- -	0.2	2.1	2.3
Cuyahoga	0.3	- -	1.5	4.9	6.6	0.6	- -	2.8	13.7	17.1
Mahoning	- -	- -	1.5	3.4	5.0	- -	- -	2.9	11.3	14.2
Trumbull	- -	0.1	1.5	4.0	5.6	- -	- -	1.7	9.2	10.9
Ashland/Richland	- -	- -	0.7	2.3	3.0	- -	- -	1.8	6.5	8.3
Erie/Huron	- -	- -	0.2	1.5	1.7	- -	- -	0.4	3.3	3.7
Lorain/Medina	- -	- -	- -	0.6	0.6	- -	- -	- -	1.7	1.7
Portage/Summit	- -	- -	1.7	2.7	4.4	- -	- -	3.3	5.4	8.8
Stark/Wayne	- -	- -	1.2	1.5	2.7	- -	- -	3.8	6.7	10.6
Geauga/Lake	- -	0.2	4.8	3.1	8.1	- -	0.4	18.5	3.2	22.1
Total	0.3	0.3	16.5	29.9	47.0	0.6	0.4	41.3	78.6	120.9
Southwestern										
Butler/Hamilton	- -	- -	1.1	- -	1.1	- -	- -	6.1	- -	6.1
Clinton/Greene/Montgomery/Preble	- -	- -	0.2	1.5	1.7	- -	- -	- -	3.8	3.8
Fairfield/Licking	- -	- -	0.1	0.3	0.4	- -	- -	- -	0.4	0.4
Fayette/Franklin/Madison/Pickaway	- -	- -	1.3	1.5	2.7	- -	- -	2.7	4.9	7.6
Total	- -	- -	2.8	3.3	6.0	- -	- -	8.8	9.1	17.9
Northwestern										
Knox	1.4	- -	0.0	0.7	2.1	2.1	- -	- -	2.4	4.4
Champaign/Logan/Shelby/Union	- -	- -	0.1	0.5	0.7	- -	- -	- -	1.5	1.5
Crawford/Hardin/Wyandot	- -	- -	- -	0.0	0.0	- -	- -	- -	- -	- -
Delaware/Marion/Morrow	- -	- -	1.9	2.5	4.3	- -	- -	5.4	8.8	14.2
Hancock/Ottawa/Sandusky/Seneca	- -	- -	0.2	- -	0.2	- -	- -	0.3	- -	0.3
Defiance/Fulton/Henry/Lucas/Paulc	- -	- -	1.9	3.9	5.8	- -	- -	5.2	13.6	18.8
Total	1.4	- -	4.1	7.6	13.1	2.1	- -	10.9	26.2	39.2
All counties	12.4	0.6	73.7	100.9	187.7	18.4	0.4	209.0	291.3	519.1

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 100,000 cubic or board feet. Columns and rows may not add to their totals due to rounding.

Allen/Auglaize/Mercer/Putnam/Van Wert = Allen, Mercer, Auglaize, Putnam, and Van Wert Counties
Champaign/Logan/Shelby/Union = Champaign, Shelby, Logan, and Union Counties
Clark/Darke/Miami = Clark, Miami, and Darke Counties
Clinton/Greene/Montgomery/Preble/Warren = Montgomery, Clinton, Greene, Preble, and Warren Counties
Crawford/Hardin/Wyandot = Crawford, Wyandot, and Hardin Counties
Defiance/Fulton/Henry/Lucas/Paulding/Williams = Defiance, Lucas, Fulton, Henry, Paulding, and Williams Counties
Delaware/Marion/Morrow = Marion, Delaware, and Morrow Counties
Fayette/Franklin/Madison/Pickaway = Franklin, Fayette, Madison, and Pickaway Counties
Hancock/Ottawa/Sandusky/Seneca/Wood = Ottawa, Seneca, Hancock, Sandusky, and Wood Counties

Table OH-65.—Sampling errors, in percent, for net volume, average annual net growth, average annual removals, and average annual mortality on timberland, and forest and timberland area by inventory unit and county, Ohio, 2011

Inventory unit and county	Forest area	Timberland area	Growing stock				Sawtimber			
			Volume	Average annual net growth	Average annual removals	Average annual mortality	Volume	Average annual net growth	Average annual removals	Average annual mortality
South-Central										
Adams	15.23	15.46	20.46	23.86	56.41	41.06	23.45	23.49	63.94	64.23
Brown	26.15	26.15	37.07	31.72	100.00	79.39	46.43	35.42	100.00	- -
Clermont	22.26	22.26	29.37	41.42	87.67	53.40	33.59	44.87	87.71	63.68
Gallia	17.02	17.11	21.04	40.55	67.75	54.84	23.43	56.71	66.27	70.40
Highland	24.49	24.49	28.79	46.31	93.67	60.21	31.94	38.61	- -	76.98
Jackson	18.28	18.28	22.16	24.13	71.26	50.02	24.46	27.14	78.65	86.28
Lawrence	14.18	14.18	16.67	18.77	75.46	34.92	18.53	19.67	80.03	39.73
Pike	17.83	17.83	21.75	26.70	50.63	48.45	23.94	25.66	51.41	62.04
Ross	15.70	15.70	19.34	22.40	81.70	34.15	22.55	21.78	94.16	48.48
Scioto	13.10	13.32	16.80	58.06	36.48	28.25	18.23	62.38	37.34	32.37
Total	2.28	2.35	4.41	8.32	21.17	13.39	5.74	8.75	22.31	18.22
Southeastern										
Athens	14.35	14.53	17.51	24.69	79.90	32.05	18.82	23.07	- -	42.03
Meigs	16.38	16.38	19.74	24.16	46.86	35.70	21.99	25.50	53.65	41.91
Vinton	15.04	15.04	20.35	20.38	48.59	30.06	23.64	20.51	47.79	58.55
Hocking/Perry	11.27	11.39	14.31	17.96	47.84	35.77	16.04	17.50	46.50	52.16
Morgan/Washington	10.74	10.79	14.49	15.66	65.80	25.07	16.55	16.41	67.39	31.09
Total	2.14	2.29	4.96	7.35	27.21	14.03	6.29	7.16	27.57	19.83
East-Central										
Belmont	14.97	15.42	22.12	36.13	52.34	31.25	26.03	35.71	61.72	40.76
Carroll	20.95	20.95	30.97	28.51	66.48	57.97	34.88	36.16	78.34	96.40
Coshocton	16.57	16.59	19.99	24.93	51.80	43.17	22.45	25.92	52.66	54.81
Guernsey	15.49	15.49	22.42	22.34	55.64	36.54	24.68	28.52	55.65	54.20
Harrison	18.14	18.14	23.91	23.82	76.72	37.13	28.52	24.47	96.40	47.78
Holmes	24.35	24.35	26.66	26.45	64.59	42.06	27.52	26.39	66.03	63.43
Jefferson	19.63	19.63	21.40	24.06	38.97	38.46	22.58	23.50	39.80	45.73
Monroe	15.76	15.76	19.92	38.67	81.58	32.69	21.79	38.71	84.55	41.84
Muskingum	15.64	15.64	20.11	22.92	60.08	36.87	22.04	23.41	66.83	47.32
Noble	18.89	19.50	25.95	45.31	100.00	57.60	29.33	38.53	100.00	61.48
Tuscarawas	15.92	16.11	21.77	23.06	55.47	48.57	25.24	24.23	70.06	65.83
Total	2.08	2.16	4.65	7.34	18.10	12.42	5.92	7.56	20.13	17.42

(Table OH-65 continued on next page)

(Table OH-65 continued)

Inventory unit and county	Forest area	Timberland area	Growing stock				Sawtimber			
			Volume	Average annual net growth	Average annual removals	Average annual mortality	Volume	Average annual net growth	Average annual removals	Average annual mortality
Northeastern										
Ashtabula	14.87	14.87	21.59	24.13	56.89	33.81	26.12	22.31	57.14	56.51
Columbiana	18.61	18.61	27.10	24.86	57.87	60.76	29.94	26.13	72.79	78.54
Cuyahoga	25.17	30.21	39.84	52.81	70.57	69.54	43.89	60.87	69.80	70.53
Mahoning	29.61	31.07	43.74	43.95	98.33	79.21	49.89	45.98	99.26	85.21
Trumbull	16.94	17.23	21.65	27.08	57.77	39.35	25.74	26.22	61.47	50.33
Ashland/Richland	16.46	16.66	20.85	24.85	43.72	36.63	22.13	25.67	47.69	52.85
Erie/Huron	26.80	27.78	33.84	46.57	91.58	68.02	36.27	48.83	91.86	66.14
Lorain/Medina	19.14	20.10	25.08	36.82	99.26	45.68	26.18	38.19	99.26	62.18
Portage/Summit	15.41	16.96	25.39	41.39	66.84	49.41	28.11	40.59	72.47	53.55
Stark/Wayne	21.37	21.37	26.59	29.85	54.65	48.44	27.29	30.92	55.69	55.65
Geauga/Lake	16.06	17.01	21.40	30.01	51.87	36.41	23.35	30.97	67.02	50.99
Total	2.92	3.31	5.89	8.82	22.70	15.00	7.00	9.07	24.13	23.26
Southwestern										
Butler/Hamilton	16.77	17.07	23.17	36.45	89.39	43.62	27.18	36.55	100.00	100.00
Clark/Darke/Miami	19.75	20.39	28.37	34.14	- -	44.24	30.44	34.18	- -	- -
Clinton/Greene/Montgomery/Preble/Warren	13.79	14.02	18.55	21.31	50.47	36.19	19.59	20.03	51.51	64.50
Fairfield/Licking	16.42	16.42	22.85	22.08	65.82	59.78	23.97	22.17	100.00	77.15
Fayette/Franklin/Madison/Pickaway	24.19	26.20	44.32	39.05	100.00	46.83	48.16	37.33	100.00	63.49
Total	4.38	4.84	8.26	11.74	60.98	25.22	9.75	10.85	61.93	45.57
Northwestern										
Knox	24.45	24.45	35.20	32.53	85.01	50.09	41.28	34.95	80.00	74.59
Allen/Auglaize/Mercer/Putnam/Van Wert	21.66	21.66	28.32	27.63	- -	48.52	32.22	28.71	- -	100.00
Champaign/Logan/Shelby/Union	20.11	20.82	30.14	43.04	75.31	78.35	34.92	42.31	90.90	100.00
Crawford/Hardin/Wyandot	29.81	29.81	37.89	54.11	91.98	47.23	39.33	57.39	- -	51.03
Delaware/Marion/Morrow	19.25	19.25	27.40	48.56	93.44	59.47	31.79	50.96	94.20	78.80
Hancock/Ottawa/Sandusky/Seneca/Wood	20.07	20.44	28.72	100.00	100.00	49.89	29.75	78.54	100.00	58.26
Defiance/Fulton/Henry/Lucas/Paulding/Willia	16.06	16.06	22.15	36.54	40.24	32.22	25.42	35.12	41.99	38.03
Total	4.31	4.35	7.67	16.64	38.80	19.83	9.70	15.08	38.90	25.79
All counties	1.05	1.13	2.21	3.71	10.61	6.33	2.79	3.70	11.12	9.05

Sampling errors that exceed 100% are reported as 100%.
Allen/Auglaize/Mercer/Putnam/Van Wert = Allen, Mercer, Auglaize, Putnam, and Van Wert Counties
Champaign/Logan/Shelby/Union = Champaign, Shelby, Logan, and Union Counties
Clark/Darke/Miami = Clark, Miami, and Darke Counties
Clinton/Greene/Montgomery/Preble/Warren = Montgomery, Clinton, Greene, Preble, and Warren Counties
Crawford/Hardin/Wyandot = Crawford, Wyandot, and Hardin Counties
Defiance/Fulton/Henry/Lucas/Paulding/Williams = Defiance, Lucas, Fulton, Henry, Paulding, and Williams Counties
Delaware/Marion/Morrow = Marion, Delaware, and Morrow Counties
Fayette/Franklin/Madison/Pickaway = Franklin, Fayette, Madison, and Pickaway Counties
Hancock/Ottawa/Sandusky/Seneca/Wood = Ottawa, Seneca, Hancock, Sandusky, and Wood Counties

Appendix A. Tree Species in Ohio

Tree species measured on field plots in Ohio's 2011 inventory.

Common Name	Scientific name
Balsam fir	*Abies balsamea*
Eastern redcedar	*Juniperus virginiana*
Norway spruce	*Picea abies*
Blue spruce	*Picea pungens*
Red spruce	*Picea rubens*
Shortleaf pine	*Pinus echinata*
Red pine	*Pinus resinosa*
Pitch pine	*Pinus rigida*
Eastern white pine	*Pinus strobus*
Scotch pine	*Pinus sylvestris*
Loblolly pine	*Pinus taeda*
Virginia pine	*Pinus virginiana*
Austrian pine	*Pinus nigra*
Baldcypress	*Taxodium distichum*
Eastern hemlock	*Tsuga canadensis*
Boxelder	*Acer negundo*
Black maple	*Acer nigrum*
Red maple	*Acer rubrum*
Silver maple	*Acer saccharinum*
Sugar maple	*Acer saccharum*
Norway maple	*Acer platanoides*
Ohio buckeye	*Aesculus glabra*
Yellow buckeye	*Aesculus flava*
Ailanthus	*Ailanthus altissima*
European alder	*Alnus glutinosa*
Serviceberry spp.	*Amelanchier* spp.
Pawpaw	*Asimina triloba*
Yellow birch	*Betula alleghaniensis*
Sweet birch	*Betula lenta*
River birch	*Betula nigra*
Gray birch	*Betula populifolia*
American hornbeam/musclewood	*Carpinus caroliniana*
Bitternut hickory	*Carya cordiformis*
Pignut hickory	*Carya glabra*
Shellbark hickory	*Carya laciniosa*
Shagbark hickory	*Carya ovata*
Mockernut hickory	*Carya alba*
Chinese chestnut	*Castanea mollissima*
Northern catalpa	*Catalpa speciosa*
Hackberry	*Celtis occidentalis*
Eastern redbud	*Cercis canadensis*
Yellowwood	*Cladrastis kentukea*
Flowering dogwood	*Cornus florida*
Hawthorn spp.	*Crataegus* spp.
Common persimmon	*Diospyros virginiana*
American beech	*Fagus grandifolia*
White ash	*Fraxinus americana*
Black ash	*Fraxinus nigra*
Green ash	*Fraxinus pennsylvanica*
Blue ash	*Fraxinus quadrangulata*

Common Name	Scientific name
Honeylocust	*Gleditsia triacanthos*
Kentucky coffeetree	*Gymnocladus dioicus*
Butternut	*Juglans cinerea*
Black walnut	*Juglans nigra*
Sweetgum	*Liquidambar styraciflua*
Yellow-poplar	*Liriodendron tulipifera*
Osage-orange	*Maclura pomifera*
Cucumbertree	*Magnolia acuminata*
Umbrella magnolia	*Magnolia tripetala*
Sweet crab apple	*Malus coronaria*
White mulberry	*Morus alba*
Red mulberry	*Morus rubra*
Blackgum	*Nyssa sylvatica*
Eastern hophornbeam	*Ostrya virginiana*
Sourwood	*Oxydendrum arboreum*
Paulownia, empress-tree	*Paulownia tomentosa*
American sycamore	*Platanus occidentalis*
Eastern cottonwood	*Populus deltoides*
Bigtooth aspen	*Populus grandidentata*
Quaking aspen	*Populus tremuloides*
Cherry and plum spp.	*Prunus* spp.
Pin cherry	*Prunus pensylvanica*
Black cherry	*Prunus serotina*
Chokecherry	*Prunus virginiana*
American plum	*Prunus americana*
Sweet cherry, domesticated	*Prunus avium*
White oak	*Quercus alba*
Swamp white oak	*Quercus bicolor*
Scarlet oak	*Quercus coccinea*
Shingle oak	*Quercus imbricaria*
Overcup oak	*Quercus lyrata*
Bur oak	*Quercus macrocarpa*
Swamp chestnut oak	*Quercus michauxii*
Chinkapin oak	*Quercus muehlenbergii*
Pin oak	*Quercus palustris*
Chestnut oak	*Quercus prinus*
Northern red oak	*Quercus rubra*
Post oak	*Quercus stellata*
Black oak	*Quercus velutina*
Black locust	*Robinia pseudoacacia*
Willow spp.	*Salix* spp.
Black willow	*Salix nigra*
Sassafras	*Sassafras albidum*
European mountain-ash	*Sorbus aucuparia*
American basswood	*Tilia americana*
Winged elm	*Ulmus alata*
American elm	*Ulmus americana*
Siberian elm	*Ulmus pumila*
Slippery elm	*Ulmus rubra*
Rock elm	*Ulmus serotina*

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