

**The Forest Inventory and Analysis Database: Database Description and
Users Guide Version 2.1**

**National Forest Inventory and Analysis Program
U.S. Department of Agriculture, Forest Service**

Foreword

Forest Inventory and Analysis (FIA) is a continuing endeavor mandated by Congress in the Forest and Rangeland Renewable Resources Planning Act of 1974 and the McSweeney-McNary Forest Research Act of 1928. FIA's primary objective is to determine the extent, condition, volume, growth, and depletions of timber on the Nation's forest land. Before 1999, all inventories were conducted on a periodic basis. With the passage of the 1998 Farm Bill, FIA is required to collect data on 20 percent of the plots annually within each State. This kind of up-to-date information is essential to frame realistic forest policies and programs. USDA Forest Service regional research stations are responsible for conducting these inventories and publishing summary reports for individual States.

In addition to published reports, the Forest Service can also provide portions of the data collected in each inventory to those interested in further analysis. This report describes a standard format in which data can be obtained. This standard format, referred to as the Forest Inventory and Analysis Database (FIADB) structure, was developed to provide users with as much data as possible in a consistent manner among States. FIADB files can be obtained for any State inventory conducted after 1988 (Eastern U.S.) or 1994 (Western U.S.). Files for many State inventories conducted before this time may also be available; however, some data fields may be empty or the items may have been collected or computed differently. Annual inventories begun after 1998 use a common plot design and common data collection procedures nationwide, resulting in greater consistency among FIA units than earlier inventories. Data field definitions note inconsistencies caused by different sampling designs and processing methods.

As well, there has been an ongoing effort to develop a National Information Management System (NIMS) to process and store annual inventory data. Changes in the FIADB structure have allowed for data processing and storage with NIMS. Members of the team that developed NIMS, led by Charles Liff, are Carol L. Alerich, Larry L. Bednar, Gary J. Brand, Kurt Campbell, Laurie Klevgard, Kevin Nimerfro, Larry Royer, Mark E. Rubey, Geetha Sendhil, Ron Wanek, Charles Washington, Shirley Waters, and Sharon W. Woudenberg. Bryan L. Lanier and Richard Teck of the National Forest System were liaisons to the team.

Acknowledgments

The material in this document is based on previous efforts to provide a uniform database for multiple FIA units (Hansen *et al.* 1992, Woudenberg and Farrenkopf 1995, Miles *et al.* 2001).

The following persons contributed to this document as editors and compilers: Carol L. Alerich (U.S. Forest Service, Northeast Research Station), Laurie Klevgard (University of Nevada-Las Vegas), Charles Liff (U.S. Forest Service, Rocky Mountain Research Station), Patrick D. Miles (U.S. Forest Service, North Central Research Station), Barbara Knight (U.S. Forest Service, formerly of the North Central Research Station), and Barbara L. Conkling (North Carolina State University under Cooperative Agreement Forest Health Assessment SRS-05-CA-11330146-180 between the U.S. Forest Service Southern Research Station and North Carolina State University, an equal opportunity employer). In addition, we thank William Bechtold (U.S. Forest Service, Southern Research Station), Mark Hansen (U.S. Forest Service, North Central Research Station), and other members of the Statistics band for their valuable assistance.

Changes

Clarifications were made to version 2.1 of the FIA database user guide and the date recorded in the user guide page header (March 9, 2007). In the Condition table, the definition of RESERVCD (item 11) was made consistent with the definition from version 2.0 of the FIA National Field Guide. In the Tree table, PREV_WDLSTEM (item 127) was renumbered as item 124, TPAMORT_UNADJ (item 124) was renumbered as item 125, TPAREMV_UNADJ (item 125) was renumbered as item 126, and TPAGROW_UNADJ (item 126) was renumbered as item 127. These changes ordered these four variables the same as in the database.

Major changes from version 1.7 to version 2.1 of the FIA database user guide. **Additional changes made in the user guide to add or clarify definitions, and to provide more information to the user are not documented in this table.**

FIADB variable name	Table Name	Action	Old Text	New Text
P3_OZONE_IND	Survey	Added this variable		
RDCD	Plot	Dropped this variable		
RDUSECD	Plot	Dropped this variable		
PUBUSECD	Plot	Dropped this variable		
REUSECD1	Plot	Dropped this variable		
REUSECD2	Plot	Dropped this variable		
REUSECD3	Plot	Dropped this variable		
NOTES	Plot	Dropped this variable		
FIELD_VISIT	Plot	Added this variable		
ECO_UNIT_PNW (PNW)	Plot	Added this variable		
TOPO_POSITION_PNW (PNW)	Plot	Added this variable		
STATUSCD	Subplot	Deleted code 0	No accessible forest land condition class sampled.	

FIADB variable name	Table Name	Action	Old Text	New Text
STATUSCD	Subplot	Change in definition of code 1	At least one accessible forest land condition class sampled	Sampled - at least one accessible forest land condition present on subplot
STATUSCD	Subplot	Added code 2		Sampled - no accessible forest land condition present on subplot
STATUSCD	Subplot	Added code 3		Nonsampled
LANDCLCD	Condition	Change in definition of code 5	Denied access area	Nonsampled
LANDCLCD	Condition	Dropped code 6	Area too hazardous to visit	
LANDCLCD	Condition	Dropped code 7	Area that is not in sample, e.g., in Canada or Mexico	
FLDSZCD	Condition	Change in code 0 from 1.7 user guide	Nonstocked: Meeting the definition of accessible land and one of the following applies: 1) less than 10 percent stocked by trees of any size, and not classified as chaparral, or 2) for forest types where stocking standards are not available, less than 5 percent crown cover of trees of any size	Nonstocked: Meeting the definition of accessible land and one of the following applies (1) less than 10 percent stocked by trees of any size, and not classified as cover trees (see code 6), or (2) for several western woodland species where stocking standards are not available, less than 5 percent crown cover of trees of any size

FIADB variable name	Table Name	Action	Old Text	New Text
FLDSZCD	Condition	Change in code 1 from 1.7 user guide	>0.0 – 4.9 inches. At least 10 percent stocking (or 5 percent crown cover if stocking tables are not available) in trees of any size; and at least one-third of the crown cover is in trees less than 5.0 inches DBH/DRC	≤ 4.9 inches (seedlings / saplings). At least 10 percent stocking (or 5 percent crown cover if stocking standards are not available) in trees of any size; and at least 2/3 of the crown cover is in trees less than 5.0 inches DBH/DRC
FLDSZCD	Condition	Change in code 2 from 1.7 user guide	5.0 – 8.9 inches (softwoods)/ 5.0 – 10.9 inches (hardwoods). At least 10 percent stocking (or 5 percent crown cover if stocking tables are not available) in trees of any size; and at least one-third of the crown cover is in trees greater than 5.0 inches DBH/DRC and the plurality of the crown cover is in softwoods 5.0 – 8.9 inches in diameter and/or hardwoods 5.0 –10.9 in DBH, and for western woodland trees 5.0 – 8.9 inches in DRC	5.0 – 8.9 inches (softwoods)/ 5.0 – 10.9 inches (hardwoods). At least 10 percent stocking (or 5 percent crown cover if stocking standards are not available) in trees of any size; and at least one-third of the crown cover is in trees greater than 5.0 inches DBH/DRC and the plurality of the crown cover is in softwoods 5.0 – 8.9 inches diameter and/or hardwoods 5.0 –10.9 in DBH, and/or for western woodland trees 5.0 – 8.9 inches DRC

FIADB variable name	Table Name	Action	Old Text	New Text
FLDSZCD	Condition	Change in code 3 from 1.7 user guide	9.0 – 19.9 inches (softwoods)/ 11.0 – 19.9 inches (hardwoods). At least 10 percent stocking (or 5 percent crown cover if stocking tables are not available) in trees of any size; and at least one-third of the crown cover is in trees greater than 5.0 inches DBH/DRC and the plurality of the crown cover is in softwoods 9.0 – 19.9 inches in diameter and/or hardwoods 11.0 –19.9 in DBH, and for western woodland trees 9.0 – 19.9 inches in DRC	9.0 – 19.9 inches (softwoods)/ 11.0 – 19.9 inches (hardwoods). At least 10 percent stocking (or 5 percent crown cover if stocking standards are not available) in trees of any size; and at least one-third of the crown cover is in trees greater than 5.0 inches DBH/DRC and the plurality of the crown cover is in softwoods 9.0 – 19.9 inches diameter and/or hardwoods between 11.0 –19.9 in DBH, and for western woodland trees 9.0 – 19.9 inches DRC
FLDSZCD	Condition	Change in wording of code 4 from 1.7 user guide	20.0 – 39.9 inches. At least 10 percent stocking (or 5 percent crown cover if stocking tables are not available) in trees of any size; and at least one-third of the crown cover is in trees greater than 5.0 inches DBH/DRC and the plurality of the crown cover is in trees 20.0 – 39.9 inches DBH	20.0 – 39.9 inches. At least 10 percent stocking (or 5 percent crown cover if stocking standards are not available) in trees of any size; and at least one-third of the crown cover is in trees greater than 5.0 inches DBH/DRC and the plurality of the crown cover is in trees 20.0 – 39.9 inches DBH

FIADB variable name	Table Name	Action	Old Text	New Text
FLDSZCD	Condition	Change in wording of code 5 from 1.7 user guide	40.0+ inches. At least 10 percent stocking (or 5 percent crown cover if stocking tables are not available) in trees of any size; and at least one-third of the crown cover is in trees greater than 5.0 inches DBH/DRC and the plurality of the crown cover is in trees over 40.0+ inches DBH	40.0+ inches. At least 10 percent stocking (or 5 percent crown cover if stocking standards are not available) in trees of any size; and at least one-third of the crown cover is in trees greater than 5.0 inches DBH/DRC and the plurality of the crown cover is in trees \geq 40.0 inches DBH
FLDSZCD	Condition	Change in wording of code 6 from 1.7 user guide	Cover trees (non-tallied): Less than 10 percent stocking by trees of any size, and greater than 5 percent crown cover of species that comprise cover trees.	Cover trees (trees not on species list, used for plots classified as nonforest): Less than 10 percent stocking by trees of any size, and greater than 5 percent crown cover of species that comprise cover trees.
PHYSCLCD	Condition	Change in code 24	Narrow Flood plains/ Bottomlands – Flood plains and bottomlands less than 1/4-mile in width along rivers and streams. These sites are normally well drained but are subjected to occasional flooding during periods of heavy or extended precipitation. Includes associated levees, benches, and terraces within a 1 mile limit. Excludes swamps, sloughs, and bogs.	Narrow Flood plains/Bottomlands – Flood plains and bottomlands less than 1/4-mile in width along rivers and streams. These sites are normally well drained but are subjected to occasional flooding during periods of heavy or extended precipitation. Includes associated levees, benches, and terraces within a 1/4 mile limit. Excludes swamps, sloughs, and bogs.

FIADB variable name	Table Name	Action	Old Text	New Text
PHYSCLCD	Condition	Change in code 25	Broad Floodplains/ Bottomlands - Floodplains and bottomlands less than ¼ mile or wider along rivers and streams. These sites are normally well drained but are subjected to occasional flooding during periods of heavy or extended precipitation. Includes associated levees, benches, and terraces within a ¼ mile limit. Excludes swamps, sloughs, and bogs with year-round water problems within the ¼ mile limit.	Broad Floodplains/ Bottomlands - Floodplains and bottomlands less than ¼ mile or wider along rivers and streams. These sites are normally well drained but are subjected to occasional flooding during periods of heavy or extended precipitation. Includes associated levees, benches, and terraces. Excludes swamps, sloughs, and bogs with year-round water problems.
DSTRBCD1, DSTRBCD2 , and DSTRBCD3	Condition	Added code 11		Insect damage to understory vegetation
DSTRBCD1, DSTRBCD2 , and DSTRBCD3	Condition	Added code 12		Insect damage to trees, including seedlings and saplings
DSTRBCD1, DSTRBCD2 , and DSTRBCD3	Condition	Added code 21		Disease damage to understory vegetation
DSTRBCD1, DSTRBCD2 , and DSTRBCD3	Condition	Added code 22		Disease damage to trees, including seedlings and saplings
DSTRBCD1, DSTRBCD2 , and DSTRBCD3	Condition	Added code 55		Earth movement/avalanches
PASTNFCD	Condition	Dropped this variable		
NFYEAR	Condition	Dropped this variable		
PREVCOND	Condition	Dropped this variable		

FIADB variable name	Table Name	Action	Old Text	New Text
CONDPROP_SAMP	Condition	Dropped this variable		
MICRPROP_SAMP	Condition	Dropped this variable		
MACRPROP_SAMP	Condition	Dropped this variable		
SUBPPROP_SAMP	Condition	Dropped this variable		
SUBPPROP_ALL	Condition	Dropped this variable		
SUBPPROP_CHNG	Condition	Dropped this variable		
SUBPPROP_CURR	Condition	Dropped this variable		
SITECL_METHOD	Condition	Changed text in code 3	Site index estimated in either the field or office	Site index or site productivity class estimated either in the field or office
SITECL_METHOD	Condition	Changed text in code 4	Site index estimated by the height intercept method during this inventory	Site index or site productivity class estimated by the height intercept method during this inventory
SITECL_METHOD	Condition	Changed text in code 5	Site index estimated using multiple site trees	Site index or site productivity class estimated using multiple site trees
SITECL_METHOD	Condition	Changed text in code 6	Site index estimated using default values	Site index or site productivity class estimated using default values
SOIL_ROOTING_DEPTH_PNW (PNW)	Condition	Added this variable		
GROUND_LAND_CLASS_PNW (PNW)	Condition	Added this variable		
PLANT_STOCKABILITY_FACTOR_PNW (PNW)	Condition	Added this variable		

FIADB variable name	Table Name	Action	Old Text	New Text
LEANCD	Tree	Dropped this variable		
UTILCD	Tree	Dropped this variable		
AGENTCD	Tree	Change in definition of code 70	Unknown, not sure, other (include notes)	Unknown/not sure/other - includes death from human activity not related to silvicultural or landclearing activity (accidental, random, etc.) TREE NOTES required.
AGENTCD	Tree	Change in definition of code 80	Human-caused (cultural, logging, accidental, etc.)	Silvicultural or landclearing activity (death caused by harvesting or other silvicultural activity, including girdling, chaining, etc., or to landclearing activity)
AGENTCD	Tree	Dropped code 90	Physical (hit by falling tree)	
CVIGORCD	Tree	Changed code 3	Saplings may have any uncompact live crown ratio and have 1 to 20 percent normal foliage or the percent of foliage missing combined with the percent of leaves that are over 50 percent damaged or missing should equal 80 percent or more of the live crown. Twigs and branches that are dead because of normal shading are not included.	Saplings may have any uncompact live crown ratio and have 1 to 20 percent normal foliage or the percent of foliage missing combined with the percent of leaves that are over 50 percent damaged or missing should equal 80 percent or more of the live crown. Twigs and branches that are dead because of normal shading are not included. Code is also used for saplings that have no crown by definition.
CDENCD	Tree	Clarified code 99	96-99%	96-100%
CDIEBKCD	Tree	Clarified code 99	96-99%	96-100%

FIADB variable name	Table Name	Action	Old Text	New Text
TRANSCD	Tree	Clarified code 99	96-99%	96-100%
NOTES	Tree	Dropped this variable		
MIST_CL_CD	Tree	Clarified code 0	Sum = 0	Hawksworth tree DMR rating of 0, no infection
MIST_CL_CD	Tree	Clarified code 1	Sum = 1	Hawksworth tree DMR rating of 1, light infection
MIST_CL_CD	Tree	Clarified code 2	Sum = 2	Hawksworth tree DMR rating of 2, light infection
MIST_CL_CD	Tree	Clarified code 3	Sum = 3	Hawksworth tree DMR rating of 3, medium infection
MIST_CL_CD	Tree	Clarified code 4	Sum = 4	Hawksworth tree DMR rating of 4, medium infection
MIST_CL_CD	Tree	Clarified code 5	Sum = 5	Hawksworth tree DMR rating of 5, heavy infection
MIST_CL_CD	Tree	Clarified code 6	Sum = 6	Hawksworth tree DMR rating of 6, heavy infection
RECONCILECD	Tree	Added code 5		Shrank – live tree that shrank below threshold diameter on microplots/subplot/annular plot.
RECONCILECD	Tree	Added code 6		Missing – tree was tallied in previous inventory, but is now missing due to natural causes such as landslide, fire, etc.
RECONCILECD	Tree	Added code 7		Cruiser error – erroneously tallied at previous inventory

FIADB variable name	Table Name	Action	Old Text	New Text
RECONCILECD	Tree	Added code 8		Procedural change – tree was tallied at the previous inventory, but is no longer tallied due to a definition or procedural change
STATUSCD	Tree	Dropped code 4	Missing - tree was tallied in previous inventory but now is missing.	
TREECLCD_SRS	Tree	Added the code definitions to the user guide		
TREECLCD_RMRS	Tree	Added the code definitions to the user guide		
PREV_STATUS_CD	Tree	Added the code definitions to the user guide		
TPAMORT_UNADJ	Tree	Added this variable		
TPAREMV_UNADJ	Tree	Added this variable		
TPAGROW_UNADJ	Tree	Added this variable		
COUNTCD	Seedling	Dropped this variable (see TREECOUNT in user guide)		
NOTES	Sitetree	Dropped this variable		
Species code 0841	Appendix F	Corrected associated code	Species group code = 22	Species group code = 27
Species Virginia roundleaf birch	Appendix F	Corrected species code	0037	0377

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Chapter 1 -- The FIA Database

This document describes a database that has a uniform data structure for FIA inventories nationwide. Its creation is part of an ongoing effort by FIA to produce consistent inventory data and summaries nationwide. Specifically, the intent is to provide data to:

- 1) Produce standard FIA tables of timber resource statistics (refer to Appendix B),
- 2) Meet Resource Planning Act Assessment data requirements,
- 3) Provide users with a common source for integrated FIA plot and tree data, and
- 4) Estimate changes in forest land area and timber volume between successive FIA inventories.

The FIADB replaces two FIA regional databases, one for the Eastern States (Eastwide database) and the other for the Western States (Westwide database), which are documented in separate documents (Hansen et al. 1992, Woudenberg and Farrenkopf 1995). A new national plot design provided the impetus for replacing these two databases. FIA units adopted this design in all State inventories initiated after 1998. An overview of the design is presented in Chapter 2.

This user's guide describes a "third generation" of the FIADB. With the ongoing effort to develop and use NIMS to process and store annual inventory data, the original FIADB structure, as described in the document "The Forest Inventory and Analysis Database: Database description and Users Manual Version 1.7," was modified. Several of the variables that have been added to the FIADB data structure are variables needed to process data in NIMS. Some of these variables are regionally specific and are identified by region, both in the table structure description and in the variable description. See Chapter 3 for the description of the database. This user's guide supports version 2.1 of the FIADB and version 2.0 of the FIA field methods guide.

Although specifically intended to store data collected with the new design, the FIADB also stores data from FIA inventories completed before the adoption of the annual inventory method, the national plot design, common data collection procedures, and common processing and storage of annual inventory data. These older inventories are always included in the database if they are the most recently completed inventory in a State. Optionally, FIA units may include data from other older inventories. The level of data consistency among these older inventories varies depending on when, where, and how the data were collected and compiled. Generally, notes are provided in Chapter 3 indicating when a data element differs among FIA units or between successive inventories. We have also noted when differences occur between these older inventories and those conducted using the new national plot design. We recommend that users contact the FIA unit that produced any of these older inventories for additional details.

The database contains extensive data on forest area attributes and on the status of live and standing dead trees. However, it does not include all data collected and compiled by FIA units. In particular, data on dead and down trees, understory (non-tree) vegetation, and many abiotic attributes are not included. Users should contact individual FIA units to see if these data are available.

Users needing estimates of change in seedling density, forest land area, or timberland volume should note the following cautions. Tree lists contained in this database may be significantly truncated on plots that sample very young stands predominantly stocked with seedlings (trees

less than 1 inch at the point of diameter measure). Seedlings often are tallied in FIA inventories only to the extent necessary to determine if some minimum number of them are present, which means that seedlings are often underreported. The database is not designed to provide valid estimates of change in forest land area between successive inventories that predate the new national plot design. Computations of various components of volume change should carefully mimic the examples given in Chapter 4.

Data for individual States are available through the Internet at: <http://www.fs.fed.us>. This is the Internet address for the Forest Service's National Headquarters and should remain unchanged for the immediate future. From this page, users should click on "Research & Development", then "Forest Inventory and Analysis", and finally "Online databases". Users accessing the FIA Web site can either download the data as comma-delimited files in FIADB format or use a Web-based program to generate their own customized reports.

Chapter 2 describes FIA sampling and estimation procedures and Chapter 3 provides detailed documentation of the database. Chapter 4 presents algorithms on how to compute estimates of area; current timber volume; biomass; number of trees; and annual timber volume growth, mortality, and removals.

Chapter 2 -- FIA Sampling and Estimation Procedures

To understand the types of data available, FIADB users need a basic concept of FIA sampling and estimation procedures. A general discussion of these sampling procedures follows. Before the new common sampling design, specific sampling methods varied among FIA units and even among States within an FIA unit. Users who require additional information about sampling procedures for a specific State should contact the group responsible for that State's inventory. As new inventories are completed, the common sampling design being implemented will produce greater consistency in the compiled data.

Remote Sensing

Each State inventory begins with the interpretation of a remotely sensed, or “phase 1,” sample that classifies the land by various remote sensing classes. The total area of a sample comes from outside sources (usually Bureau of Census reports). The remote sensing classifications are based on land use (such as pasture, cropland, urban). For forested land, more detailed classes are sometimes defined based on criteria such as forest type, volume per acre, stand size, stand density, ownership, and/or stand age. Then, ground plots are measured to adjust the remote sensing sample for changes since its acquisition date and to correct any misclassification. Ground plots also provide estimates that cannot be made from a remotely sensed sample. The remote sensing classification of these ground plots, together with the area estimates from the remote sensing sample, is used to assign area expansion factors to all ground plots. These area expansion factors are used to weight plot-level estimates when computing estimates for selected strata of the population. Selection criteria for remote sensing classes and computation of area expansion factors differ from State to State. Users interested in the details of how these expansion factors were assigned to the ground plots for a particular State should contact the appropriate FIA unit.

Ground Sampling

FIA ground plots, or “phase 2” plots, are designed to cover a 1-acre sample area; however, not all trees on the acre are measured. Recent inventories use a national standard, fixed-radius plot layout for sample tree selection. Various arrangements of fixed-radius and variable-radius (prism) subplots were used to select sample trees in older inventories. Ground plots may be new plots that have never been measured, or remeasurement plots that were measured during a previous inventory. For all plots, several observations are recorded for each sample tree, including its diameter, species, and other measurements that enable the prediction of the tree's volume, growth rate, and quality. These tree measurements form the basis of the data on the tree records in the FIADB.

Some of the data items in the FIADB come directly from field measurements; others are computed from tree measurements. Net cubic-foot volume is a computed item. Each FIA unit uses a volume equation to compute this volume based on diameter, taken either at breast height (DBH) or root collar (DRC), and other tree and/or stand attributes. Although equations vary from State to State, they were all designed to estimate the same volume. Users interested in the details of equations for a particular State should contact the appropriate FIA unit.

One important computed item is the tree expansion factor. This item expresses the number of trees per acre that each sampled tree represents in the current inventory. It is the inverse of the size of the plot the tree was sampled on. For example, if the plot design samples trees under 5 inches DBH on a single fixed-radius plot covering 1/100th acre, this item would have the value of 100 trees per acre for a tree less than 5 inches DBH. If trees 5 inches DBH and larger are sampled with ten 37.5 BAF (English) prism points, as was common with FIA plots in the Eastern U.S., the expansion factor would depend on the DBH of the tree. Under such a sample, a 14.0-inch tree would have an expansion factor of 3.51 trees per acre, again the inverse of the plot size¹.

A national plot design was adopted in the mid-1990's. Now all FIA units have implemented a common sampling design consisting of four 24.0-foot radius subplots (each subplot is approximately 1/24th acre) for trees at least 5 inches in diameter and four 6.8-foot radius microplots (each microplot is approximately 1/300th acre) for smaller trees. Therefore, tree expansion factors are approximately 6 for trees at least 5 inches in diameter and approximately 75 for the smaller trees. Subplot 1 is the center of the cluster with the other three subplots located 120 feet away at azimuths of 360°, 120°, and 240°, respectively. Another characteristic of the new design is the mapping of differing forest conditions. Reserved status, owner group, forest type, stand-size class, regeneration status, and stand density define a forest condition. If two or more conditions occur within a plot, the boundary between them is mapped and the proportion of the plot in each condition is recorded or calculated.

Data items collected for a condition are estimates of average attributes for the portion of the plot in that condition. Previous inventories did not map conditions. Instead, some attributes were assigned the value determined for the plot center, or subplots were shifted so that they fell within the same stand as the plot center.

Computed expansion factors are needed to estimate growth, mortality, and removals. Growth can be estimated by measuring the tree at two times, by measuring growth rings on an increment core, or by using a model. The method used, along with the sampling design, determines the value for the expansion factors needed to compute growth. Mortality can also be estimated from remeasured or new plots. With inventories that have remeasurement plots, mortality is based on trees that die during the remeasurement period. In cases where new plots provide estimates of mortality, mortality is estimated from either a mortality prediction equation that predicts the probability that a tree will die over some time period, or from a field estimate of mortality based on the measurement of dead trees and an estimate of when they died. Depending on the inventory design, removals may be estimated from observations of trees cut on either new or remeasured plots.

We have tried with the FIADB to provide as consistent data as possible from one State to another. Therefore, although differences in field and estimation procedures do exist among States, the data in the FIADB for different States are compatible. Differences that do exist are

¹ The plot size of a 14.0 inch tree on a single 37.5 BAF (English) prism plot would be:

$$((14.0 \text{ inches})^2 \times \pi) / (37.5 \text{ ft}^2/\text{acre} \times 2^2 \times ((12 \text{ inches})^2) / 1 \text{ ft}^2) = .0285 \text{ acres.}$$

The plot size of this tree on a ten point cluster would be ten times this or .285 acres, producing an expansion factor of 3.51.

minor and should have little or no impact on most uses of these data. Consistency will increase as inventories incorporating the new common sampling design are completed.

Accuracy Standards

Forest inventory plans are designed to meet sampling error standards for area, volume, growth, and removals provided in the Forest Service Handbook (FSH 4809.11). These standards, along with other guidelines, are aimed at obtaining comprehensive and comparable information on timber resources for all parts of the country. FIA inventories are commonly designed to meet the specified sampling errors at the State level at the 67 percent confidence limit (one standard error). The Forest Service Handbook mandates that the sampling error for area cannot exceed 3 percent error per 1 million acres of timberland. Five percent (Eastern U.S.) or 10 percent (Western U.S.) error per 1 billion cubic feet of growing stock on timberland is applied to volume, removals, and net annual growth. Unlike the mandated sampling error for area, sampling errors for volume, removals, and growth are only targets.

FIA inventories are extensive inventories that provide reliable estimates for large sampling areas. As data are subdivided into smaller and smaller areas, such as a geographic unit or a county, the sampling errors increase and the reliability of the estimates goes down. For example, a State with 5 million acres of timberland would have a maximum allowable sampling error of 1.3 percent ($3\% \times (1,000,000)^{-5} / (5,000,000)^{-5}$), a geographic unit within that State with 1 million acres of timberland would have a 3.0 percent maximum allowable sampling error ($3\% \times (1,000,000)^{-5} / (1,000,000)^{-5}$), and a county within that State with 100 thousand acres would have a 9.5 percent maximum allowable sampling error ($3\% \times (1,000,000)^{-5} / (100,000)^{-5}$) at the 67 percent confidence level.

Chapter 3 -- Database Structure

The FIA Database is a relational database structured for the Oracle Database Management System. By the nature of the way FIA data are collected and compiled, these Oracle tables are hierarchical. This structure makes it easy to produce flat files for customers who do not have access to, or the capability of, database management on their computer system.

Table Descriptions

There are twelve tables in the FIA Database (SURVEY, COUNTY, PLOT, SUBPLOT, COND, TREE, SEEDLING, SITETREE, BOUNDARY, ESTN_UNIT_STRATUM, PLOT_POP_STRATUM_ASSGN and SUBP_COND). The SURVEY table provides information on where and when surveys were conducted. The SURVEY table is for reference use only. The COUNTY table is merely a lookup table for the county and unit names. The ESTN_UNIT_STRATUM and PLOT_POP_STRATUM_ASSGN tables provide summarized stratified phase 1 information that can be used with the field data to generate stratified random sampling estimates and associated sampling errors. The SUBP_COND table contains information about the proportion of a subplot in a condition. The other seven tables closely reflect the manner in which data are collected on a field plot. A row in the PLOT table provides information relevant to the entire 1-acre plot. A row in the SUBPLOT table describes the features of a single subplot. A row in the COND table provides information on the discrete combination of landscape attributes that define the condition (a condition will have the same land class, reserved status, owner group, forest type, stand-size class, regeneration status, and stand density). A row in the TREE table is used to describe each tree 1 inch in diameter and larger found on a microplot or subplot. A row in the SEEDLING table provides a count of the number of trees of a species found on a microplot that are less than 1 inch in diameter but at least 6 inches in length for conifer species or at least 12 inches in length for hardwood species. A row in the SITETREE table provides information on one of the site trees collected to provide site index information for a condition. A row in the BOUNDARY table provides a description of the demarcation line between two conditions that occur on a single subplot.

For each column or variable in a table, there is a section that describes the unabbreviated name and detailed description of the variable. Coded items also include a list of the codes and their meanings.

Core Optional Variables

Several variables throughout this guide are indicated as *Core Optional*. Items or codes specified as *Core Optional* are not required by individual units; however, if the item is collected or coded, it is done as specified in the "Forest inventory and analysis national core field guide, volume 1: field data collection procedures for phase 2 plots, version 2.0," which is cited in the Literature Cited Section.

Throughout this document are references to the macroplot. This is a *Core Optional* plot design where data are collected on four 58.9 foot radius macroplots, rather than on the *Core* plot design of four 24.0 foot radius subplots. This plot design is used primarily by the Pacific Northwest Research Station, but may be used by other stations; for information about a particular state, contact the appropriate FIA unit for more information.

Data Storage and Format

FIA uses the Oracle Database Management System to store the FIADB data. In this system, a variable may be of type VARCHAR2 (a character variable) or type NUMBER (a number variable, which may be integer or real). An example of a VARCHAR2(28) variable is SURVEY.STATENM, which contains the state names, up to 28 characters; 'Pennsylvania' would be a valid value. An example of a NUMBER variable is TREE.AZIMUTH, which stores the values of tree azimuth, and is defined as a NUMBER(3) variable. The range of values that could be stored in a NUMBER(3) variable is -999 to 999; however, in this document, only **valid** values are described. Valid values for TREE.AZIMUTH, as described in the field guide and in this document, are 001 to 360, but the database will store these values as 1 to 360. When the data are retrieved as output from the database, they should be displayed as 001 to 360 to accurately represent the data as collected by the field crews. With a simple selection of the data and with a lack of formatting of the data by the user, the data will not appear as described; the output must be formatted to correctly display the data. This may be accomplished with any number of software packages; In Excel, for example, this can be done by customizing the cell formats accordingly.

Fuzzing and Swapping

In its amendment of the Food Securities Act, Congress directed FIA to ensure that FIA plot data cannot be linked to its owner. This ensures the privacy of the owner. Because plot coordinates can be used to identify the owner, FIA stopped providing public access to these coordinates. However, a revised policy has been released and new methods for making approximate coordinates available for all plots have been developed.

FIA customers want to know where the plots are in order to perform analyses by user-defined polygons and for relating FIA plot data to other map-based information, such as soils maps and satellite imagery. In order to accommodate this need, FIA will provide approximate coordinates for all plots – both public and private. The general methods that FIA uses to provide these coordinates are described below.

In the past, FIA provided approximate coordinates for its periodic data in the FIADB. These coordinates were within 1.0 miles of the exact plot location (this is called fuzzing). However, due to the large size of many ownerships, the data could be linked to these owners. The original coordinates are restored to the FIADB but up to 20% of the private plot coordinates are swapped with another similar private plot within the same county. This ensures that county summaries and any breakdowns by categories, such as ownership class, will be the same as before. This is because only the coordinates of the plot are swapped – all the other plot characteristics remain the same. The only difference will be when users want to subdivide the county using a polygon. Even then, results will be similar because swapped plots are chosen to be similar based on attributes such as forest type, stand-size class, latitude and longitude (each FIA unit has chosen its own attributes for defining similarity).

For the plot data collected under the new annual system, plot numbers are reassigned to sever the link from the unswapped coordinates stored in the FIADB prior to the change in the law. Private

plots are also swapped using the method described above – re-measured annual plots are swapped independently of the periodic data. All annual plot coordinates are fuzzed, but less than before – within 0.5 miles for most plots and up to 1.0 miles on a small subset of them. This was done to make it difficult to locate the plot on the ground, while maintaining a good correlation between the plot data and map-based characteristics.

All variables on the data that are assigned by laying a Geographic Information System layer over the plot locations, such as COND.CONGCD, would be assigned using the fuzzed and swapped coordinate.

Summary of Condition Proportions

There are several variables that deal with condition proportions in this database. Because of the way in which this database was built (newer variables were appended to the previously established structure), these variables are spread throughout the database structure. Below is listing of all the condition proportion variables, with the location of each variable in the COND table. In all listings below, the CONDPROP variables are based on the subplot if COND.PROP_BASIS equals “SUBP”; they are based on the macroplot if COND.PROP_BASIS equals “MACR.”

The condition proportions below are unadjusted (i.e. any outside-of-the-population, denied-access, or hazardous conditions are not excluded but are given a proportion of the area of the plot); used for classification such as forest type and stand-size class.

Variable	Location in COND table	Plot type
CONDPROP	9	Subplot or macroplot (see PROP_BASIS)
MICRPROP	48	Microplot
MACRPROP	60	Macroplot
SUBPPROP	68	Subplot

The condition proportions below are adjusted over the stratum to exclude outside-of-the-population plots and conditions; used for the estimate of total area, including denied-access and hazardous area.

Variable	Location in COND table	Plot type
CONDPROP_ALL	70	Subplot or macroplot (see PROP_BASIS)
MICRPROP_ALL	76	Microplot
MACRPROP_ALL	73	Macroplot

The condition proportions below are adjusted over the stratum to exclude outside-of-the-population, denied-access, and hazardous plots and conditions; used for estimates of forest land and timberland that exclude denied-access and hazardous area.

Variable	Location in COND table	Plot type
CONDPROP_CURR	72	Subplot or macroplot (see PROP_BASIS)
MICRPROP_CURR	78	Microplot
MACRPROP_CURR	75	Macroplot

The condition proportions below are adjusted over the stratum to exclude outside-of-the-population, denied-access, and hazardous plots and conditions; also excludes plots that are not remeasured; used for estimates of change on forest land and timberland where denied-access and hazardous areas are not reported on.

Variable	Location in COND table	Plot type
CONDPROP_CHNG	71	Subplot or macroplot (see PROP_BASIS)
MICRPROP_CHNG	77	Microplot
MACRPROP_CHNG	74	Macroplot

Regional Variables

Variables that have been added to the data structure in this “second generation” of FIADB are those needed to process data in NIMS. Some of these variables are regionally specific, and are identified, by region, both in the table structure description (e.g. the variable is labeled with “(NERS)”) and in the variable description (e.g. the variable description text contains the phrase “Specific to Northeastern Research Station.”).

For regionally specific questions about the data, please contact the following persons:

Research Station	RSCD	States	Contact	Phone
Rocky Mountain (RMRS)	22	AZ,CO,ID,MT,NV,NM,UT,WY	Mark Rubey	801-625-5647
North Central (NCRS)	23	IL,IN,IA,KS,MI,MN,MO,NE,ND,SD,WI	Gary Brand	651-649-5170
Northeast (NERS)	24	CT,DE,ME,MD,MA,NH,NJ,NY,OH,PA,RI,VT,WV	Carol Alerich	610-557-4068
Pacific Northwest (PNWRS)	26,27	AK,CA,HI,OR,WA	Ron Wanek	503-808-2048
Southern (SRS)	33	AL,AR,FL,GA,KY,LA,MS,NC,OK,SC,TN,TX,VA	Larry Royer	828-257-4370

Survey Table (Oracle table name is SURVEY)

	Column Name	Oracle data type	Value or unit of measure	Key data item
1	TABLENM	VARCHAR2 (8)	SURVEY	
2	STATECD	NUMBER (4)	Coded	X
3	CYCLE	NUMBER (2)	Number	X
4	SUBCYCLE	NUMBER (2)	Number	X
5	STATEAB	VARCHAR2 (2)	Name	
6	STATENM	VARCHAR2 (28)	Name	
7	INVYR	NUMBER (4)	Year (YYYY)	
8	MODDATE	NUMBER (8)	Month-Day-Year (MMDDYYYY)	
9	CENSUSYR	NUMBER (4)	Year (YYYY)	
10	NFSYR	NUMBER (4)	Year (YYYY)	
11	RSCD	NUMBER (2)	Coded	
12	NUMPANEL	NUMBER (2)	Number	
13	NOTES	VARCHAR2 (2000)	Character	
14	CN	VARCHAR2(34)	Character	PK
15	SUBDIVCD	NUMBER (4)	Coded	
16	CYCLELEN	NUMBER (2)	Years	
17	NUMSUBPANEL	NUMBER (2)	Number	
18	CREATED_BY	VARCHAR2 (30)	Character	
19	CREATED_DATE	DATE	DD-MON-YYYY	
20	CREATED_IN_INSTANCE	NUMBER (6)	Number	
21	MODIFIED_BY	VARCHAR2 (30)	Character	
22	MODIFIED_DATE	DATE	DD-MON-YYYY	
23	MODIFIED_IN_INSTANCE	NUMBER (6)	Number	
24	P3_OZONE_IND	VARCHAR2 (1)		

1. TABLENM Table name. Identifies the table to which the record belongs. Always equals 'SURVEY.'

2. STATECD State code. Bureau of the Census Federal Information Processing Standards (FIPS) two-digit code for each State. Refer to table 1 at the end of the description of the SURVEY table.

3. CYCLE Inventory cycle number. For example, a 4 shows the data came from the fourth inventory of that State. A cycle number greater than 1 does not necessarily mean that information for previous cycles resides in the database.

4. SUBCYCLE Inventory subcycle number. For an annual inventory that takes n years to measure all plots, subcycle shows in which of the n years of the cycle the data were measured. Subcycle is 0 for a periodic inventory.
5. STATEAB State abbreviation. The two-character State abbreviation. Refer to table 1 at the end of the description of the SURVEY table.
6. STATENM State name. Refer to table 1 at the end of the description of the SURVEY table.
7. INVYR Inventory year. The calendar year that best represents when the inventory data were collected (e.g., 1994). FIA data are often collected over more than 1 year; however, a specific year is selected that best represents the inventory cycle's subcycle. FIA publications based on an inventory are said to be an analysis of the forest resource as of this date.
8. MODDATE Modification date. Date the data were last modified for this State, cycle, and subcycle. Initially this is the date when the data are first loaded into the database. If any modifications are made to any of the records (Survey, County, Plot, Subplot, Condition, Tree, Seedling, Site Tree, Boundary, Estimation Unit Stratum, Plot Population Stratum Assignment, or Subplot Condition), MODDATE will be changed to the date the modification was made.
9. CENSUSYR Census year. The year (e.g., 1990 or 2000) of the Bureau of the Census area figures to which total State area is reconciled.
10. NFSYR National Forest System Area Control Year. The Forest Service produces an annual report entitled "Land Areas of the National Forest System." Forest Inventory area estimates of lands administered by the Forest Service are reconciled to match, at a minimum, the State total reported numbers. Area for individual National Forests may not match if part of a Forest is administered by another Forest. FIA reports area by administered Forest and the Land Area report is based on proclaimed Forest. NFSYR is the year of the report that is associated with the collection dates of the inventory data (null if not applicable).
11. RSCD Region or Station Code. Identification number of the Forest Service Region or Station that provided the inventory data. Refer to table 1 at the end of the description of the SURVEY table.

Code Region or Station and phone number.
 - 1 Region 1, Northern Region
 - 2 Region 2, Rocky Mountain Region
 - 3 Region 3, Southwestern Region
 - 4 Region 4, Intermountain Region
 - 5 Region 5, Pacific Southwest Region
 - 6 Region 6, Pacific Northwest Region

- 8 Region 8, Southern Region
- 9 Region 9, Eastern Region
- 10 Region 10, Alaska Region
- 22 Rocky Mountain Research Station
- 23 North Central Research Station
- 24 Northeastern Research Station
- 26 Pacific Northwest Research Station
- 27 Alaska - Pacific Northwest Research Station
- 33 Southern Research Station

12. NUMPANEL Number of panels. All states were divided into 5 panels for the annual inventory system, in which 20 percent of the plots in a cycle are measured in a panel. Equal to 5 for annual inventories; null for periodic inventories.

13. NOTES Notes. An optional item where notes about the inventory may be stored.

14. CN Sequence number. A unique sequence number used to identify a survey record.

15. SUBDIVCD Subdivision code. This variable is used to indicate that part of a State survey has been temporally intensified. For example, in California the National Forest System plots in Region 5 were collected over a five year period while the rest of the plots in the state were collected over a ten year period. Two different Subdivision codes would be used for California. Set to one if subdivisoning is not done.

16. CYCLELEN Cycle length. Indicates the number of years taken to complete the cycle. The 1998 Farm Bill contained an unfunded mandate that annual inventories be conducted over a 5 year period. Therefore, CYCLELEN frequently equals 5. However, if funding is insufficient, the cycle length may exceed five years (especially likely in the western U.S. and Alaska); if extra funding is available, the cycle length may be shortened to less than five years.

17. NUMSUBPANEL

Number of subpanels. This is the number of subpanels each panel is divided into. A subpanel is used for temporal de-intensification of the sampling grid. Western states decompose each panel into two subpanels to accommodate a ten-year cycle. This means that 10 percent of the plots are measured in each subpanel. Null if subpaneling is not used.

18. CREATED_BY The user who created the record.

19. CREATED_DATE

The date the record was created. Date will be in the form DD-MON-YYYY.

20. CREATED_IN_INSTANCE

The database instance in which the record was created. This uniquely identifies which computer system was used to create the record.

21. MODIFIED_BY

The user who modified the record. This field will be null if the data have not been modified since initial creation.

22. MODIFIED_DATE

The date the record was last modified. This field will be null if the data have not been modified since initial creation. Date will be in the form DD-MON-YYYY.

23. MODIFIED_IN_INSTANCE

The database instance in which the record was modified. This field will be null if the data have not been modified since initial creation.

24. P3_OZONE_IND

Phase 3 ozone indicator. Values are Y (yes) and N (no). If Y, then the Survey is for a P3 ozone inventory. If N, then the Survey is not for a P3 ozone inventory.

Table 1. Codes used for STATENM, STATEAB, and STATECD. Also listed is the Region or Station code (RSCD) of the FIA unit responsible for collecting data in that state or area under U.S. sovereignty.

STATENM	STATEAB	STATECD	RSCD	STATENM	STATEAB	STATECD	RSCD
Alabama	AL	01	33	Nebraska	NE	31	23
Alaska	AK	02	27	Nevada	NV	32	22
Arizona	AZ	04	22	New Hampshire	NH	33	24
Arkansas	AR	05	33	New Jersey	NJ	34	24
California	CA	06	26	New Mexico	NM	35	22
Colorado	CO	08	22	New York	NY	36	24
Connecticut	CT	09	24	North Carolina	NC	37	33
Delaware	DE	10	24	North Dakota	ND	38	23
District of Columbia	DC	11	24	Ohio	OH	39	24
Florida	FL	12	33	Oklahoma	OK	40	33
Georgia	GA	13	33	Oregon	OR	41	26
Hawaii	HI	15	26	Pennsylvania	PA	42	24
Idaho	ID	16	22	Rhode Island	RI	44	24
Illinois	IL	17	23	South Carolina	SC	45	33
Indiana	IN	18	23	South Dakota	SD	46	23
Iowa	IA	19	23	Tennessee	TN	47	33
Kansas	KS	20	23	Texas	TX	48	33
Kentucky	KY	21	33	Utah	UT	49	22
Louisiana	LA	22	33	Vermont	VT	50	24
Maine	ME	23	24	Virginia	VA	51	33
Maryland	MD	24	24	Washington	WA	53	26
Massachusetts	MA	25	24	West Virginia	WV	54	24
Michigan	MI	26	23	Wisconsin	WI	55	23
Minnesota	MN	27	23	Wyoming	WY	56	22
Mississippi	MS	28	33	Puerto Rico	PR	72	33
Missouri	MO	29	23	U.S. Virgin Islands	VI	78	33
Montana	MT	30	22				

County Table (Oracle table name is COUNTY)

	Column name	Oracle data type	Value or unit of measure	Key data item
1	TABLENM	VARCHAR2 (8)	COUNTY	
2	STATECD	NUMBER (4)	Coded	X
3	UNITCD	NUMBER (2)	Coded	X
4	COUNTYCD	NUMBER (3)	Coded	X
5	COUNTYNM	VARCHAR2 (50)	Name	
6	CN	VARCHAR2 (34)	Character	PK
7	CREATED_BY	VARCHAR2 (30)	Character	
8	CREATED_DATE	DATE	DD-MON-YYYY	
9	CREATED_IN_INSTANCE	NUMBER (6)	NUMBER	
10	MODIFIED_BY	VARCHAR2 (30)	Character	
11	MODIFIED_DATE	DATE	DD-MON-YYYY	
12	MODIFIED_IN_INSTANCE	NUMBER (6)	Number	

1. TABLENM Table name. Identifies the table to which the record belongs. Always equals 'COUNTY.'
2. STATECD State code. Bureau of the Census Federal Information Processing Standards (FIPS) two-digit code for each State. Refer to table 1 at the end of the description of the SURVEY table.
3. UNITCD Survey unit code. Forest Inventory and Analysis survey unit identification number. Survey units are usually groups of counties within each State. For periodic inventories, Survey units may be made up of lands of particular owners. Refer to Appendix C for codes.
4. COUNTYCD County code. The identification number for a county, parish, watershed, borough, or similar governmental unit in a State. FIPS codes from the Bureau of the Census, 1990, are used. Refer to Appendix C for codes.
5. COUNTYNM County name. County name as recorded by the Bureau of the Census, 1990, for individual counties, or the name given to a similar governmental unit by the FIA program. Only the first 28 characters of the name are used. Refer to Appendix C for names.
6. CN Sequence number. A unique sequence number used to identify a county record.
7. CREATED_BY The user who created the record.

8. CREATED_DATE

The date the record was created. Date will be in the form DD-MON-YYYY.

9. CREATED_IN_INSTANCE

The database instance in which the record was created. This uniquely identifies which computer system was used to create the record.

10. MODIFIED_BY

The user who modified the record. This field will be null if the data have not been modified since initial creation.

11. MODIFIED_DATE

The date the record was last modified. This field will be null if the data have not been modified since initial creation. Date will be in the form DD-MON-YYYY.

12. MODIFIED_IN_INSTANCE

The database instance in which the record was modified. This field will be null if the data have not been modified since initial creation.

Plot Table (Oracle table name is PLOT)

Column name	Oracle data type	Value or unit of measure	Key data item	Needed ¹	Field Guide Item#
1	TABLNM	VARCHAR2 (8)	PLOT		
2	STATECD	NUMBER (4)	Coded	X A	1.1
3	CYCLE	NUMBER (2)	Number	X A	
4	SUBCYCLE	NUMBER (2)	Number	X A	
5	UNITCD	NUMBER (2)	Coded	X A	
6	COUNTYCD	NUMBER (3)	Coded	X A	1.2
7	PLOT	NUMBER (5)	Number	X A	1.3
8	MEASYEAR	NUMBER (4)	Year (YYYY)	A	1.8.1
9	MEASMON	NUMBER (2)	Month (MM)	A	1.8.2
10	MEASDAY	NUMBER (2)	Day (DD)	A	1.8.3
11	REMPER	NUMBER (3,1)	Years	A	
12	KINDCD	NUMBER (2)	Coded	A	1.5
13	DESIGNCD	NUMBER (4)	Coded	A	
14	RDDISTCD	NUMBER (2)	Coded	F	1.10
15	WATERCD	NUMBER (2)	Coded	F	1.11
16	LAT	NUMBER (8,6)	Decimal degree	A	1.14.6
17	LON	NUMBER (9,6)	Decimal degree	A	1.14.7
18	ELEV	NUMBER (5)	Feet	F	1.14.14
19	EXPCURR	NUMBER (13,4)	Acres	A	
20	EXPVOL	NUMBER (13,4)	Acres	A	
21	EXPGROW	NUMBER (13,4)	Acres	A	
22	GROWCD	NUMBER (2)	Coded	A	
23	EXPMORT	NUMBER (13,4)	Acres	A	
24	MORTCD	NUMBER (2)	Coded	A	
25	EXPREMV	NUMBER (13,4)	Acres	A	
26	EXPCHNG	NUMBER (13,4)	Acres	A	
27	P2PANEL	NUMBER (2)	Number	A	
28	P3PANEL	NUMBER (2)	Number	A	
29	ECOSUBCD	VARCHAR2 (7)	Name	A	
30	CONGCD	NUMBER (4)	Number	A	
31	MANUAL	NUMBER (3,1)	Number	A	1.7
32	CN	VARCHAR2 (34)	Character	PK A	
33	SRV_CN	VARCHAR2 (34)	Character	FK A	
34	CTY_CN	VARCHAR2 (34)	Character	FK A	
35	SUBPANEL	NUMBER (2)	Number	A	

Column name	Oracle data type	Value or unit of measure	Key data item	Needed ¹	Field Guide Item#
36	RSCD_EVALID_EXPCURR	NUMBER (8)	Cross-reference number	A	
37	RSCD_EVALID_EXPVOL	NUMBER (8)	Cross-reference number	A	
38	RSCD_EVALID_EXPGROW	NUMBER (8)	Cross-reference number	A	
39	RSCD_EVALID_EXPMORT	NUMBER (8)	Cross-reference number	A	
40	RSCD_EVALID_EXPREMV	NUMBER (8)	Cross-reference number	A	
41	RSCD_EVALID_EXPCHNG	NUMBER (8)	Cross-reference number	A	
42	RSCD_EVALID_EXPALL	NUMBER (8)	Cross-reference number	A	
43	EXPALL	NUMBER (13,4)	Number	A	
44	LASTCYCLEMEAS	NUMBER (2)	Number	A	
45	LASTSUBCYCLEMEAS	NUMBER (2)	Number	A	
46	KINDCD_NC (NCRS)	NUMBER (2)	Coded	A	
47	QA_STATUS	NUMBER (1)	Coded	X A	1.12
48	CREW_TYPE	NUMBER (1)	Coded	A	1.13
49	MANUAL_DB	NUMBER (3,1)	Number	A	1.7
50	CREATED_BY	VARCHAR2 (30)	Character	A	
51	CREATED_DATE	DATE	DD-MON-YYYY	A	
52	CREATED_IN_INSTANCE	NUMBER (6)	Number	A	
53	MODIFIED_BY	VARCHAR2 (30)	Character	A	
54	MODIFIED_DATE	DATE	DD-MON-YYYY	A	
55	MODIFIED_IN_INSTANCE	NUMBER (6)	Number	A	
56	MICROPLOT_LOC	VARCHAR2 (12)	Description	A	
57	DECLINATION	NUMBER (4,1)			1.9
58	PREV_PLT_CN	VARCHAR2 (34)	Character		
59	PLOT_STATUS_CD	NUMBER (1)	Coded		1.4, 8.3.4
60	PLOT_NONSAMPLE_REASN_CD	NUMBER (2)	Coded		8.3.5
61	EMAP_HEX	NUMBER (7)			
62	REPLACED_PLOT_NBR	NUMBER (5)	Number		1.6
63	ECO_UNIT_PNW (PNW)	VARCHAR2 (10)			
64	TOPO_POSITION_PNW (PNW)	VARCHAR2 (2)			
65	FIELD_VISIT	VARCHAR2 (1)			

¹ A = all plots

F = all forested plots (where at least one condition is COND.COND_STATUS_CD = 1)

1. TABLENM Table name. Identifies the table to which the record belongs. Always equals 'PLOT.'

2. STATECD State code. Bureau of the Census Federal Information Processing Standards (FIPS) two-digit code for each State. Refer to table 1 at the end of the description of the SURVEY table.
3. CYCLE Inventory cycle number. Identifies the cycle number for the inventory data. For example, a 4 shows the data came from the fourth inventory of that State. A cycle number greater than 1 does not necessarily mean that information for previous cycles resides in the database.
4. SUBCYCLE Inventory subcycle number. For an annual inventory that takes n years to measure all plots, subcycle shows in which of the n years of the cycle the data were measured. Subcycle is 0 for a periodic inventory.
5. UNITCD Survey unit code. Forest Inventory and Analysis survey unit identification number. Survey units are usually groups of counties within each State. For periodic inventories, Survey units may be made up of lands of particular owners. Refer to Appendix C for codes.
6. COUNTYCD County code. The identification number for a county, parish, watershed, borough, or similar governmental unit in a State. FIPS codes from the Bureau of the Census, 1990, are used. Refer to Appendix C for codes.
7. PLOT Phase 2 plot number. An identifier for a plot. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.
8. MEASYEAR Measurement year. The year in which the plot was completed. This year may differ from INVYR in the SURVEY table.
9. MEASMON Measurement month. The month in which the plot was completed.

Code	Description
01	January
02	February
03	March
04	April
05	May
06	June
07	July
08	August
09	September
10	October
11	November
12	December
10. MEASDAY Measurement day. The day of the month in which the plot was completed.

11. REMPER Remeasurement period. The number of years between measurements of remeasured plots. For data processed with NIMS, REMPER is the number of years between measurements (to the nearest 0.1 year); it is null for new or other plots that are not used for growth, removals, or mortality estimates. For data processed with systems other than NIMS, remeasurement period is based on the number of growing seasons between measurements; it is either null or zero for new or other plots that are not used for growth, removals, or mortality estimates. Allocation of parts of the growing season by month is different for each FIA program. Contact the appropriate FIA program for information on how this is done for a particular State. NOTE: it is **not** valid to use REMPER to estimate periodic change.

12. KINDCD Sample kind code. A code to indicate whether the plot is being measured for the first time, had been measured in a previous cycle and is being remeasured, or had been remeasured previously but could not be relocated and this is the replacement.

Code	Description
0	Periodic inventory plot
1	Initial plot establishment of the National design plot
2	Remeasurement of a previously established National design plot – field visited or remotely classified
3	Replacement of a previously established National design plot
4	Modeled
9	Not sampled

13. DESIGNCD Plot design code. A code to indicate the type of plot design used to collect the data. Contact appropriate FIA program for specific code descriptions.

Code	Description
001	National FIA mapped plot design consisting of 4 fixed-radius subplots
100-199	Northeastern Station (NERS)
200-299	Southern Station (SRS)
300-399	North Central Station (NCRS)
333	a plot created for area control and gaps in FIA sampling
400-499	Rocky Mountain Station (RMRS)
500-599	Pacific Northwest Station (PNWRS)
600-699	Alaska

14. RDDISTCD Horizontal distance to improved road code. The straight-line distance from plot center to the nearest improved road, which is a road of any width that is maintained as evidenced by pavement, gravel, grading, ditching, and/or other improvements. New in annual inventory.

Code	Description
1	100 ft. or less
2	101 ft. to 300 ft.
3	301 ft. to 500 ft.
4	501 ft. to 1000 ft.
5	1001 ft. to 1/2 mile
6	1/2 to 1 mile
7	1 to 3 miles
8	3 to 5 miles
9	Greater than 5 miles

15. WATERCD Water on plot code. Water body less than 1 acre in size or a stream less than 30 feet wide that has the greatest impact on the area within the forest land portion of the four subplots. The coding hierarchy is listed in order from large permanent water to temporary water. New in annual inventory.

Code	Description
0	None - no water sources within the accessible forest land CONDITION CLASS
1	Permanent streams or ponds too small to qualify as noncensus water
2	Permanent water in the form of deep swamps, bogs, marshes without standing trees present and less than 1.0 ac in size, or with standing trees
3	Ditch/canal – human made channels used as a means of moving water, e.g., for irrigation or drainage, which are too small to qualify as noncensus water
4	Temporary streams
5	Flood zones – evidence of flooding when bodies of water exceed their natural banks
9	Other temporary water – specified in plot-level notes.

16. LAT Latitude NAD 83 datum. The approximate latitude of the plot in decimal degrees. The precision of this item along the meridian is ± 1542 m at latitude 45 degrees north. However, in some cases the county centroid may be entered when the actual location is not available. Actual plot locations cannot be released. The LAT is based on fuzzed and swapped plot coordinates.

17. LON Longitude NAD 83 datum. The approximate longitude of the plot in decimal degrees. The precision of this item along the parallel is ± 1094 m at latitude 45 degrees. However, in some cases the county centroid may be entered when the actual location is not available. Actual plot locations cannot be released. The LON is based on fuzzed and swapped plot coordinates.

18. ELEV Elevation. The distance the plot is located above sea level, recorded in feet (NAD 83 datum). Negative values indicate distance below sea level. The ELEV is based on fuzzed and swapped plot coordinates.
19. EXPCURR Expansion factor for current estimates of area (based on number of sampled plots only). The number of acres the sample plot represents for making current estimates of area, where the sample excludes outside-of-the-population, denied-access, and hazardous plots. The sum of EXPCURR over sampled plot-level records (excluding outside-of-the-population, denied-access, and hazardous plots) for a particular State is the total area of the State. The number of acres a condition represents can be determined by multiplying EXPCURR times CONDPROP_CURR (in the COND table). See Chapter 4 for calculation algorithms.
20. EXPVOL Expansion factor for current estimates of volume (based on number of sampled plots only). The number of acres the sample plot represents for making current estimates of volume, biomass, and number of trees; where the sample excludes outside-of-the-population, denied-access, and hazardous plots. For example, growing-stock volume would be "expanded" over the appropriate acreage by multiplying EXPVOL times the product of VOLCFNET and TPACURR (both in the TREE table). See Chapter 4 for calculation algorithms.
21. EXPGROW Expansion factor for estimates of growth (based on number of sampled plots only). The number of acres the sample plot represents for estimating growth. For example, growing stock growth would be "expanded" over the appropriate acreage by multiplying EXPGROW times the product of GROWCFGS and TPAGROW (both in the TREE table). Total growth in a State is calculated by summing these expanded estimates from all trees on all plots in a particular State in the FIADB. Some plots may have a value of zero in this field. For example, in a State where both remeasured and new plots exist for a cycle, growth estimates might only be based on remeasurement plots. Therefore, new or other plots that are not used for growth estimates would have a value of zero in EXPGROW. See Chapter 4 for calculation algorithms.
22. GROWCD Type of annual volume growth code. A code to indicate how volume growth is estimated. Current annual growth is an estimate of the change in volume that occurred in a 1-year period ending when the plot was measured. Periodic annual growth is an estimate of the average annual change in volume occurring between two measurements, usually the current cycle and previous cycle.

Code	Description
1	Current annual
2	Periodic annual

23. EXPMORT Expansion factor for estimates of mortality (based on number of sampled plots only). The number of acres the sample plot represents for estimating mortality. Growing stock mortality would be "expanded" over the appropriate acreage by multiplying EXPMORT times the product of MORTCFGS and TPAMORT (both in the TREE table). Total mortality in a State is calculated by summing these expanded estimates from all trees on all plots in a particular State in the FIADB. Some plots may have a value of zero in this field. For example, in a State where both remeasured and new plots exist for a cycle, mortality estimates might only be based on remeasurement plots. Therefore, new or other plots that are not used for mortality estimates would have a value of zero in EXPMORT. See Chapter 4 for calculation algorithms.
24. MORTCD Type of annual mortality volume code. A code to indicate how mortality volume is estimated. Current annual mortality is an estimate of the volume of trees dying during a 1-year period ending when the plot was measured. Periodic annual mortality is an estimate of the average annual volume of trees dying between two measurements, usually the current cycle and previous cycle.
- | Code | Description |
|------|-----------------|
| 1 | Current annual |
| 2 | Periodic annual |
25. EXPREMV Expansion factor for estimates of removals (based on number of sampled plots only). The number of acres the sample plot represents for estimating removals. For example, growing stock removals would be "expanded" over the appropriate acreage by multiplying EXPREMV times the product of REMVCFGS and TPAREMV (both in the TREE table). In inventories where removals are only estimated on remeasurement plots, EXPREMV = 0 for new, temporary, or other plots that are not used for removals estimates. See Chapter 4 for calculation algorithms.
26. EXPCHNG Expansion factor for estimates of periodic change (based on number of sampled plots only). The number of acres that the sample plot represents for estimating periodic area change.
27. P2PANEL Phase 2 panel number. Forest Inventory and Analysis panel number. This is recorded for inventories begun after 1998. A panel is a sample in which the same elements are measured on two or more occasions. FIA divides the plots in a cycle into five panels that can be used to independently sample the population. The value for P2PANEL ranges from 1 to 5 for annual inventories and is null for periodic inventories.
28. P3PANEL Phase 3 panel number. A panel is a sample in which the same elements are measured on two or more occasions. FIA divides the plots in a cycle into five panels that can be used to independently sample the population. The

value for P3PANEL ranges from 1 to 5 for those plots where phase 3 data were collected.

- 29. ECOSUBCD Ecological subsection code. An area of similar surficial geology, lithology, geomorphic process, soil groups, subregional climate, and potential natural communities. Subsection boundaries usually correspond with discrete changes in geomorphology. Subsection information is used for broad planning and assessment. Subsection codes may consist of up to six characters and were developed by the Forest Service as part of the National Hierarchical Framework of Ecological Units. The ECOSUBCD is based on fuzzed and swapped plot coordinates.
- 30. CONGCD Congressional district code. A territorial division of a State from which a member of the U.S. House of Representatives is elected. Based on the current Census, congressional districts in the United States are apportioned to the States based on population; each State receives at least one congressional district. The congressional district code assigned to a plot (regardless of when it was measured) is for the most recent Congress; the assignment is made based on the plot's approximate coordinates. CONGCD is a four-digit number. The first two digits are the State FIPS code and the last two digits are the congressional district number. If a State has only one congressional district the congressional district number is 00. If a plot's congressional district assignment falls in a state other than the plot's actual state due to using the approximate coordinates, the congressional district code ends in 99. The CONGCD is based on fuzzed and swapped plot coordinates.
- 31. MANUAL Field guide (manual) version number. Version of the National Field Guide used to describe procedures for collecting data on the plot. New in annual inventory. This is the version of the guide with which the data were collected. Value is 0.0 if data were collected with a regional field guide.
- 32. CN Sequence number. A unique sequence number used to identify a plot record.
- 33. SRV_CN Survey sequence number. Foreign key linking the plot record to the survey record.
- 34. CTY_CN County sequence number. Foreign key linking the plot record to the county record.
- 35. SUBPANEL Subpanel assignment for plot for those regions using subpaneling. Null if subpaneling is not used.
- 36. RSCD_EVALID_EXPCURR

Link to the appropriate evaluation method that is used for calculating EXPCURR. The value of EXPCURR can be computed in many different ways, but only one may be stored in the database. This variable provides

the connection to the information about the evaluation found in the ESTN_UNIT_STRATUM table that is used to compute the stored EXPCURR. The first two digits of RSCD_EVAL_EXPCURR are equivalent to RSCD (the Region or Station code) and the last six digits are equivalent to the EVALID (evaluation identifier) found in the ESTN_UNIT_STRATUM table. Further information describing the evaluation used to compute the stored EXPCURR may be found in the ESTN_UNIT_STRATUM table.

37. RSCD_EVALID_EXPVOL

Link to the appropriate evaluation method that is used for calculating EXPVOL. The value of EXPVOL can be computed in many different ways, but only one may be stored in the database. This variable provides the connection to the information about the evaluation found in the ESTN_UNIT_STRATUM table that is used to compute the stored EXPVOL. The first two digits of RSCD_EVAL_EXPVOL are equivalent to RSCD (the Region or Station code) and the last six digits are equivalent to the EVALID (evaluation identifier) found in the ESTN_UNIT_STRATUM table. Further information describing the evaluation used to compute the stored EXPVOL may be found in the ESTN_UNIT_STRATUM table.

38. RSCD_EVALID_EXPGROW

Link to the appropriate evaluation method that is used for calculating EXPGROW. The value of EXPGROW can be computed in many different ways, but only one may be stored in the database. This variable provides the connection to the information about the evaluation found in the ESTN_UNIT_STRATUM table that is used to compute the stored EXPGROW. The first two digits of RSCD_EVAL_EXPGROW are equivalent to RSCD (the Region or Station code) and the last six digits are equivalent to the EVALID (evaluation identifier) found in the ESTN_UNIT_STRATUM table. Further information describing the evaluation used to compute the stored EXPGROW may be found in the ESTN_UNIT_STRATUM table.

39. RSCD_EVALID_EXPMORT

Link to the appropriate evaluation method that is used for calculating EXPMORT. The value of EXPMORT can be computed in many different ways, but only one may be stored in the database. This variable provides the connection to the information about the evaluation found in the ESTN_UNIT_STRATUM table that is used to compute the stored EXPMORT. The first two digits of RSCD_EVAL_EXPMORT are equivalent to RSCD (the Region or Station code) and the last six digits are equivalent to the EVALID (evaluation identifier) found in the ESTN_UNIT_STRATUM table. Further information describing the

evaluation used to compute the stored EXPMORT may be found in the ESTN_UNIT_STRATUM table.

40. RSCD_EVALID_EXPREMV

Link to the appropriate evaluation method that is used for calculating EXPREMV. The value of EXPREMV can be computed in many different ways, but only one may be stored in the database. This variable provides the connection to the information about the evaluation found in the ESTN_UNIT_STRATUM table that is used to compute the stored EXPREMV. The first two digits of RSCD_EVAL_EXPREMV are equivalent to RSCD (the Region or Station code) and the last six digits are equivalent to the EVALID (evaluation identifier) found in the ESTN_UNIT_STRATUM table. Further information describing the evaluation used to compute the stored EXPREMV may be found in the ESTN_UNIT_STRATUM table.

41. RSCD_EVALID_EXPCHNG

Link to the appropriate evaluation method that is used for calculating EXPCHNG. The value of EXPCHNG can be computed in many different ways, but only one may be stored in the database. This variable provides the connection to the information about the evaluation found in the ESTN_UNIT_STRATUM table that is used to compute the stored EXPCHNG. The first two digits of RSCD_EVAL_EXPCHNG are equivalent to RSCD (the Region or Station code) and the last six digits are equivalent to the EVALID (evaluation identifier) found in the ESTN_UNIT_STRATUM table. Further information describing the evaluation used to compute the stored EXPCHNG may be found in the ESTN_UNIT_STRATUM table.

42. RSCD_EVALID_EXPALL

Link to the appropriate evaluation method that is used for calculating EXPALL. The value of EXPALL can be computed in many different ways, but only one may be stored in the database. This variable provides the connection to the information about the evaluation found in the ESTN_UNIT_STRATUM table that is used to compute the stored EXPALL. The first two digits of RSCD_EVAL_EXPALL are equivalent to RSCD (the Region or Station code) and the last six digits are equivalent to the EVALID (evaluation identifier) found in the ESTN_UNIT_STRATUM table. Further information describing the evaluation used to compute the stored EXPALL may be found in the ESTN_UNIT_STRATUM table.

43. EXPALL

Expansion factor for current estimates of all area in the population (based on total number of plots). The number of acres the sample plot represents for making current estimates of area, where the sample includes denied-

access and hazardous plots, but excludes outside-of-the-population plots. The sum of EXPALL over all plot-level records (including denied-access and hazardous plots) for a particular State is the total area of the State. The number of acres a condition represents when the sample includes denied-access and hazardous plots can be determined by multiplying EXPALL times CONDPROP_ALL (in the COND table). See Chapter 4 for calculation algorithms.

44. LASTCYCLEMEAS

Previous inventory cycle number. Identifies the most recent prior cycle number.

45. LASTSUBCYCLEMEAS

Previous inventory subcycle number. Identifies the most recent prior subcycle number.

46. KINDCD_NC Sample kind code. **Specific to North Central Research Station.** All other Stations record null for this variable. Contact North Central Research Station for codes and more information.

47. QA_STATUS The code indicates the type of plot data collected.

Code	Description
1	Standard production plot
2	Cold check
3	Reference plot (off grid)
4	Training/practice plot (off grid)
5	Botched plot file (disregard during data processing)
6	Blind check
7	Production plot (hot check)

48. CREW_TYPE A code identifying the type of crew measuring the plot.

Code	Description
1	Standard field crew
2	QA crew (any QA crew member present collecting data)

49. MANUAL_DB Version of the National Field Guide used to describe procedures for collecting data on the plot. New in annual inventory. The data in the database have been standardized to this version. The current version of the Field Guide is Version 2.0. See the Literature Cited Section for more details about this document.

50. CREATED_BY The user who created the record.

51. CREATED_DATE

The date the record was created. Date will be in the form DD-MON-YYYY.

52. CREATED_IN_INSTANCE

The database instance in which the record was created. This uniquely identifies which computer system was used to create the record.

53. MODIFIED_BY

The user who modified the record. This field will be null if the data have not been modified since initial creation.

54. MODIFIED_DATE

The date the record was last modified. This field will be null if the data have not been modified since initial creation. Date will be in the form DD-MON-YYYY.

55. MODIFIED_IN_INSTANCE

The database instance in which the record was modified. This field will be null if the data have not been modified since initial creation.

56. MICROPLOT_LOC

Microplot location. Values are 'OFFSET' or 'CENTER'. The offset microplot center is located 12 feet due East (90 degrees) of subplot center. The current standard described in Version 2.0 of the Field Guide is that the microplot is located in the 'OFFSET' location, but some earlier inventories, including some early panels of the annual inventory, may contain data where the microplot was located at the 'CENTER' location.

57. DECLINATION

Declination. The azimuth correction used to adjust magnetic north to true north. All azimuths are assumed to be magnetic azimuths unless otherwise designated. The Portland FIA unit historically has corrected all compass readings for true north. This field is to be used only in cases where units are adjusting azimuths to correspond to true north; for units using magnetic azimuths, this field will always be set = 0 in the office. This field carries a decimal place because the USGS corrections are provided to the nearest half degree. DECLINATION is defined as:

$$\text{DECLINATION} = (\text{TRUE NORTH} - \text{MAGNETIC NORTH})$$

58. PREV_PLT_CN

Previous plot sequence number. Foreign key linking the plot record to the previous inventory's plot record for this location. Only populated on remeasurement plots.

59. PLOT_STATUS_CD

Plot status code. A code that describes the sampling status of the plot.

Code	Description
1	Sampled – at least one accessible forest land condition present on plot or previously had at least one accessible forest land condition on plot
2	Sampled – no accessible forest land condition present on plot and no previously accessible forest land condition on plot
3	Nonsampled

60. PLOT_NONSAMPLE_REASN_CD

Plot nonsampled reason code. For entire plots that cannot be sampled, one of the following reasons is recorded.

Code	Description
01	Outside U.S. boundary – Assign this code to condition classes beyond the U.S. border. Entire plots would only be assigned this code if it is determined that a previously measured plot is currently beyond the U.S. border.
02	Denied access area – Any area within the sampled area of a plot to which access is denied by the legal owner, or to which an owner of the only reasonable route to the plot denies access. There are no minimum area or width requirements for a condition class delineated by denied access. Because a denied-access condition can become accessible in the future, it remains in the sample and is re-examined at the next occasion to determine if access is available. In some regions denied access plots may be replaced; check with the field supervisor regarding regional protocols for plot replacement.
03	Hazardous situation – Any area within the sampled area on plot that cannot be accessed because of a hazard or danger, for example cliffs, quarries, strip mines, illegal substance plantations, temporary high water, etc. Although the hazard is not likely to

change over time, a hazardous condition remains in the sample and is re-examined at the next occasion to determine if the hazard is still present. There are no minimum size or width requirements for a condition class delineated by a hazardous condition. In some regions hazardous plots may be replaced; check with the field supervisor regarding regional protocols for plot replacement.

- 05 Lost data – The plot data file was discovered to be corrupt after a panel was completed and submitted for processing. This code is assigned to entire plots or full subplots that could not be processed, and is applied at the time of processing after notification to the region. Note: This code is for office use only.
- 06 Lost plot – This code applies to whole plots that cannot be relocated. This situation requires notification of the field supervisor. Whenever this code is assigned, a replacement plot is required. The plot that is lost is assigned SAMPLE KIND = 2 and NONSAMPLED REASON = 6. The replacement plot is assigned SAMPLE KIND = 3.
- 07 Plot in wrong location – This code applies to whole plots that can be relocated, but their placement is beyond the tolerance limits for plot location. This situation requires verification by the regional office. Whenever this code is assigned, a replacement plot is required. The plot that is lost is assigned SAMPLE KIND = 2 and NONSAMPLED REASON = 7. The replacement plot is assigned SAMPLE KIND = 3.
- 08 Skipped visit – This code applies to whole plots that are skipped (i.e., the entire plot should be assigned to this condition class). It is used for plots that are not completed prior to the time a panel is finished and submitted for processing. Note: This code is for office use only.
- 09 Dropped intensified plot - This code applies only to regions engaged in intensification. It is used for intensified plots that have been dropped due to a change in grid density.

Note:

- This code is for office use only.
- This code is primarily intended for regions engaged in sub-paneling for intensification purposes.
- Plot records for dropped subpanels may be generated with the information management system.

10 Other – This code is used whenever a plot or condition class is not sampled due to a reason other than one of the specific reasons already listed. A field note is required to describe the situation.

61. EMAP_HEX EMAP hexagon. The identifier for the approximately 160,000 acre Environmental Monitoring and Assessment Program (EMAP) hexagon in which the plot is located. EMAP hexagons are available to the public, cover the conterminous U.S., and have been used in summarizing and aggregating data about numerous natural resources

62. REPLACED_PLOT_NBR

Replaced plot number. Previous plot number identifying the plot that is being replaced.

63. ECO_UNIT_PNW (PNW)

Ecological unit in PNW. This is the ecological unit used to identify PNW stockability algorithms.

64. TOPO_POSITION_PNW (PNW)

Topographic position in PNW.

65. FIELD_VISIT

Field visit. Values are Y (yes) and N (no). All plots are examined in the office to determine if they have the potential to sample forest land. If this indicator has a value of Y, then the plot will be visited on the ground by a field crew. Plots with an N will not be field-visited.

Subplot Table (Oracle table name is SUBPLOT)

	Column Name	Oracle data type	Value or unit of measure	Key data item	Field Guide Item#
1	TABLENM	VARCHAR2 (8)	SUBPLOT		
2	STATECD	NUMBER (4)	Coded	X	
3	CYCLE	NUMBER (2)	Number	X	
4	SUBCYCLE	NUMBER (2)	Number	X	
5	UNITCD	NUMBER (2)	Coded	X	
6	COUNTYCD	NUMBER (3)	Coded	X	
7	PLOT	NUMBER (5)	Number	X	
8	SUBP	NUMBER (3)	Number	X	3.1
9	SUBPCOND	NUMBER (1)	Number		3.4
10	MICRCOND	NUMBER (1)	Number		3.5
11	SLOPE	NUMBER (3)	Percent		3.6
12	ASPECT	NUMBER (3)	Degrees		3.7
13	WATERDEP	NUMBER (2,1)	Feet		3.8
14	CN	VARCHAR2 (34)	Character	PK	
15	PLT_CN	VARCHAR2 (34)	Character	FK	
16	MACRCOND	NUMBER (1)	Number		
17	CREATED_BY	VARCHAR2 (30)	Character		
18	CREATED_DATE	DATE	DD-MON-YYYY		
19	CREATED_IN_INSTANCE	NUMBER (6)	Number		
20	MODIFIED_BY	VARCHAR2 (30)	Character		
21	MODIFIED_DATE	DATE	DD-MON-YYYY		
22	MODIFIED_IN_INSTANCE	NUMBER (6)	Number		
23	STATUSCD	NUMBER (1)	Number		3.2
24	CONDLIST	NUMBER (4)	Number		3.9
25	P2A_GRM_FLG	VARCHAR2 (1)			
26	PREV_SBP_CN	VARCHAR2 (34)			
27	POINT_NONSAMPLE_REASN_CD	NUMBER (2)			3.3

1. TABLENM Table name. Identifies the table to which the record belongs. Always equals 'SUBPLOT.'
2. STATECD State code. Bureau of the Census Federal Information Processing Standards (FIPS) two-digit code for each State. Refer to table 1 at the end of the description of the SURVEY table.
3. CYCLE Inventory cycle number. Identifies the cycle number for the inventory data. For example, a 4 shows the data came from the fourth inventory of

that State. A cycle number greater than 1 does not necessarily mean that information for previous cycles resides in the database.

4. SUBCYCLE Inventory subcycle number. For an annual inventory that takes n years to measure all plots, subcycle shows in which of the n years of the cycle the data were measured. Subcycle is 0 for a periodic inventory.
5. UNITCD Survey unit code. Forest Inventory and Analysis survey unit identification number. Survey units are usually groups of counties within each State. For periodic inventories, Survey units may be made up of lands of particular owners. Refer to Appendix C for codes.
6. COUNTYCD County code. The identification number for a county, parish, watershed, borough, or similar governmental unit in a State. FIPS codes from the Bureau of the Census, 1990, are used. Refer to Appendix C for codes.
7. PLOT Phase 2 plot number. An identifier for a plot. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.
8. SUBP Subplot number. Number of the subplot. Annual inventories have subplot number values of 1 through 4. Periodic inventories subplot numbers will vary. For more information, contact the appropriate FIA unit.
9. SUBPCOND Subplot center condition. Condition number for the condition at the center of the subplot.
10. MICRCOND Microplot center condition. Condition number for the condition at the center of the microplot.
11. SLOPE Subplot slope. The angle of slope, in percent, of the subplot, determined by sighting along the average incline or decline of the subplot. If the slope changes gradually, an average slope is recorded. If the slope changes across the subplot but is predominately of one direction, the predominant slope is recorded. Valid values are 000 through 155.
12. ASPECT Subplot aspect. The direction of slope, to the nearest degree, of the subplot, determined along the direction of slope. If the aspect changes gradually, an average aspect is recorded. If the aspect changes across the subplot but is predominately of one direction, the predominant aspect is recorded. North is recorded as 360. When slope is less than 5 percent, there is no aspect; is recorded as 000.
13. WATERDEP Snow/water depth. The approximate depth in feet of water or snow covering the subplot when data were collected. New in annual inventory.
14. CN Sequence number. A unique sequence number used to identify a subplot record.

15. PLT_CN Plot sequence number. Foreign key linking the subplot record to the plot record.
16. MACRCOND Macroplot center condition. Condition number for the condition at the center of the macroplot. Null if macroplot is not measured.
17. CREATED_BY The user who created the record.
18. CREATED_DATE
The date the record was created. Date will be in the form DD-MON-YYYY.
19. CREATED_IN_INSTANCE
The database instance in which the record was created. This uniquely identifies which computer system was used to create the record.
20. MODIFIED_BY
The user who modified the record. This field will be null if the data have not been modified since initial creation.
21. MODIFIED_DATE
The date the record was last modified. This field will be null if the data have not been modified since initial creation. Date will be in the form DD-MON-YYYY.
22. MODIFIED_IN_INSTANCE
The database instance in which the record was modified. This field will be null if the data have not been modified since initial creation.
23. STATUSCD Subplot/macroplot status code. A code to indicate whether forest land was sampled on the subplot/macroplot or not.
- | Code | Description |
|------|--|
| 1 | Sampled – at least one accessible forest land condition present on subplot |
| 2 | Sampled – no accessible forest land condition present on subplot |
| 3 | Nonsampled |
24. CONDLIST Subplot/macroplot condition list. This is a listing of all condition classes located within the 24.0/58.9 ft. radius around the subplot/macroplot center. A maximum of four conditions is permitted at any individual subplot/macroplot. *Core Optional.*

25. P2A_GRM_FLG

Periodic to annual growth, removal, and mortality flag. “Y” is used to indicate if this subplot is used in computing growth, removal, and mortality estimates from periodic inventories to annual inventories.

26. PREV_SBP_CN

Previous subplot sequence number. Foreign key linking the subplot record to the previous inventory’s subplot record for this subplot. Only populated on annual remeasured plots.

27. POINT_NONSAMPLE_REASN_CD

Point nonsampled reason code. If an entire subplot (or macroplot) could not be sampled, a code is recorded to provide the explanation about why the sample could not be taken.

Code Description

- | | |
|----|---|
| 01 | Outside U.S. boundary – Assign this code to condition classes beyond the U.S. border. |
| 02 | Denied access area – Any area within the sampled area of a plot to which access is denied by the legal owner, or to which an owner of the only reasonable route to the plot denies access. There are no minimum area or width requirements for a condition class delineated by denied access. Because a denied-access condition can become accessible in the future, it remains in the sample and is re-examined at the next occasion to determine if access is available. In some regions denied access plots may be replaced; check with the field supervisor regarding regional protocols for plot replacement. |
| 03 | Hazardous situation – Any area within the sampled area on plot that cannot be accessed because of a hazard or danger, for example cliffs, quarries, strip mines, illegal substance plantations, temporary high water, etc. Although the hazard is not likely to change over time, a hazardous condition remains in the sample and is re-examined at the next occasion to determine if the hazard is still present. There are no minimum size or width requirements for a condition class delineated by a hazardous condition. In some regions hazardous plots may be replaced; check with the field supervisor regarding regional protocols for plot replacement. |
| 04 | Time limitation – This code applies to full subplots that cannot be sampled due to a time restriction. This code is reserved for areas |

with limited access, and in situations where it is imperative for the crew to leave before the plot can be completed (e.g., scheduled helicopter rendezvous). Use of this code requires notification to the field supervisor. This code should not be used for an entire plot (use code 8 (skipped visit) when an entire plot is skipped; see Section 8.3.5).

- 05 Lost data – The plot data file was discovered to be corrupt after a panel was completed and submitted for processing. This code is assigned to entire plots or full subplots that could not be processed, and is applied at the time of processing after notification to the region. Note: This code is for office use only.
- 10 Other – This code is used whenever a plot or condition class is not sampled due to a reason other than one of the specific reasons already listed. A field note is required to describe the situation.

Condition Table (Oracle table name is COND)

Column Name	Oracle data type	Value or unit of measure	Key data item	Mapped design recorded only	Other designs	Field Guide Item#
1 TABLENM	VARCHAR2 (8)	COND				
2 STATECD	NUMBER (4)	Coded	X	A	A	
3 CYCLE	NUMBER (2)	Number	X	A	A	
4 SUBCYCLE	NUMBER (2)	Number	X	A	A	
5 UNITCD	NUMBER (2)	Coded	X	A	A	
6 COUNTYCD	NUMBER (3)	Coded	X	A	A	
7 PLOT	NUMBER (5)	Number	X	A	A	
8 CONDIC	NUMBER (1)	Number	X	A	A	2.4.1
9 CONDPROP	NUMBER (5,4)	Proportion		A	A	
10 LANDCLCD	NUMBER (1)	Coded		A	A	2.4.2
11 RESERVCD	NUMBER (2)	Coded		F	F	2.5.1
12 OWNCD	NUMBER (2)	Coded		F	F	2.5.7
13 OWNGRPCD	NUMBER (2)	Coded		F	F	2.5.2
14 FORINDCD	NUMBER (2)	Coded		F	F	2.5.8
15 ADFORCD	NUMBER (4)	Coded		P	P	
16 FORTYPCD	NUMBER (3)	Coded		F	F	
17 FLDTYPCD	NUMBER (3)	Coded		F	F	2.5.3
18 MAPDEN	NUMBER (1)	Coded		F		2.5.6
19 STDAGE	NUMBER (4)	Years		F	O	2.5.10
20 STDSZCD	NUMBER (2)	Coded		F	T	
21 FLDSZCD	NUMBER (2)	Coded		F	T	2.5.4
22 SITECLCD	NUMBER (2)	Coded		F	F	
23 SICOND	NUMBER (3)	Feet		F	O	
24 SIBASE	NUMBER (3)	Years		F	O	
25 SISP	NUMBER (3)	Coded		F	O	
26 STDORGCD	NUMBER (2)	Coded		F	O	2.5.5
27 STDORGSP	NUMBER (3)	Coded		F		2.5.9
28 SLOPE	NUMBER (3)	Percent		F	F	
29 ASPECT	NUMBER (3)	Degrees		F	F	
30 PHYSCLCD	NUMBER (2)	Coded		F		2.5.23
31 GSSTKCD	NUMBER (2)	Coded		F	T	
32 ALSTKCD	NUMBER (2)	Coded		F	O	
33 TRTOPCD	NUMBER (2)	Coded		N	N	

Column Name	Oracle data type	Value or unit of measure	Key data item	Mapped design recorded only	Other designs	Field Guide Item#
34 DSTRBCD1	NUMBER (2)	Coded		F		2.5.11
35 DSTRBYR1	NUMBER (4)	Year		F		2.5.12
36 DSTRBCD2	NUMBER (2)	Coded		F		2.5.13
37 DSTRBYR2	NUMBER (4)	Year		F		2.5.14
38 DSTRBCD3	NUMBER (2)	Coded		F		2.5.15
39 DSTRBYR3	NUMBER (4)	Year		F		2.5.16
40 TRTCD1	NUMBER (2)	Coded		F		2.5.17
41 TRTYR1	NUMBER (4)	Year		F		2.5.18
42 TRTCD2	NUMBER (2)	Coded		F		2.5.19
43 TRTYR2	NUMBER (4)	Year		F		2.4.20
44 TRTCD3	NUMBER (2)	Coded		F		2.5.21
45 TRTYR3	NUMBER (4)	Year		F		2.5.22
46 PRESNFCD	NUMBER (2)	Coded		NF		2.4.24
47 BALIVE	NUMBER (9,4)	Square feet		F		
48 MICRPROP	NUMBER (5,4)	Proportion		A		
49 DAMINDEX	NUMBER (5,2)	Number		F		
50 CN	VARCHAR2 (34)	Character	PK	A	A	
51 PLT_CN	VARCHAR2 (34)	Character	FK	A	A	
52 FLDAGE	NUMBER (4)	Number		F		2.5.10
53 ALSTK	NUMBER (7,4)	Percent		F		
54 GSSTK	NUMBER (7,4)	Percent		F		
55 CONDPUN (SRS)	NUMBER (5,4)	Proportion		A		
56 FORTYPCDCALC	NUMBER (3)	Character		F		
57 HABTYPCD1 (RMRS, PNWRS, NCRS)	VARCHAR2 (10)	Character		F		
58 HABTYPCD2 (RMRS, PNWRS, NCRS)	VARCHAR2 (10)	Character		F		
59 MIXEDCONFCD (PNWRS)	VARCHAR2 (1)	Character		F		
60 MACRPROP	NUMBER (5,4)	Proportion		A		
61 CREATED_BY	VARCHAR2 (30)	Character		A	A	
62 CREATED_DATE	DATE	DD-MON-YYYY		A	A	
63 CREATED_IN_INSTANCE	NUMBER (6)	Number		A	A	
64 MODIFIED_BY	VARCHAR2 (30)	Character		A	A	
65 MODIFIED_DATE	DATE	DD-MON-YYYY		A	A	
66 MODIFIED_IN_INSTANCE	NUMBER (6)	Number		A	A	
67 VOL_LOC_GRP	VARCHAR2 (200)	Character		F		
68 SUBPPROP	NUMBER (5,4)	Proportion		A		
69 PROP_BASIS	VARCHAR2(12)	Character		A		

Column Name	Oracle data type	Value or unit of measure	Key data item	Mapped design recorded only	Other designs	Field Guide Item#
70 CONDPROP_ALL	NUMBER (5,4)	Proportion		P		
71 CONDPROP_CHNG	NUMBER (5,4)	Proportion		S		
72 CONDPROP_CURR	NUMBER (5,4)	Proportion		S		
73 MACRPROP_ALL	NUMBER (5,4)	Proportion		P		
74 MACRPROP_CHNG	NUMBER (5,4)	Proportion		S		
75 MACRPROP_CURR	NUMBER (5,4)	Proportion		S		
76 MICRPROP_ALL	NUMBER (5,4)	Proportion		P		
77 MICRPROP_CHNG	NUMBER (5,4)	Proportion		S		
78 MICRPROP_CURR	NUMBER (5,4)	Proportion		S		
79 SITECLCDEST	NUMBER (2)	Coded		F		
80 SITETREE_TREE	NUMBER (4)	Number		F		
81 SITECL_METHOD	NUMBER (2)	Number		F		
82 COND_STATUS_CD	NUMBER (1)	Number		A		2.4.2
83 COND_NONSAMPLE_REASN_CD	NUMBER(2)	Coded				2.4.3
84 HABTYPCD1_PUB_CD	VARCHAR2(10)					
85 HABTYPCD1_DESCR_PUB_CD	VARCHAR2(10)					
86 HABTYPCD2_PUB_CD	VARCHAR2(10)					
87 HABTYPCD2_DESCR_PUB_CD	VARCHAR2(10)					
88 SOIL_ROOTING_DEPTH_PNW (PNW)	VARCHAR2 (1)					
89 GROUND_LAND_CLASS_PNW (PNW) PLANT_STOCKABILITY_FACTOR_PN	VARCHAR2 (3)					
90 W (PNW)	NUMBER					

- ¹ A = all conditions regardless of condition class status
P = all conditions excluding outside-of-the-population conditions
S = all conditions in the sample (excluding outside-of-the-population, denied-access, and hazardous conditions)
F = all forested conditions (LANDCLCD = 1)
T = all timberland conditions (LANDCLCD = 1, SITECLCD < 7)
N = nonindustrial private timberland RPA requirement, optional on all other timberland conditions
O = optional on forested conditions, not collected on nonforest conditions
NF = nonforest conditions

1. TABLENM Table name. Identifies the table to which the record belongs. Always equals 'COND.'

2. STATECD State code. Bureau of the Census Federal Information Processing Standards (FIPS) two-digit code for each State. Refer to table 1 at the end of the description of the SURVEY table.

3. CYCLE Inventory cycle number. Identifies the cycle number for the inventory data. For example, a 4 shows the data came from the fourth inventory of that State. A cycle number greater than 1 does not necessarily mean that information for previous cycles resides in the database.
4. SUBCYCLE Inventory subcycle number. For an annual inventory that takes n years to measure all plots, subcycle shows in which of the n years of the cycle the data were measured. Subcycle is 0 for a periodic inventory.
5. UNITCD Survey unit code. Forest Inventory and Analysis survey unit identification number. Survey units are usually groups of counties within each State. For periodic inventories, Survey units may be made up of lands of particular owners. Refer to Appendix C for codes.
6. COUNTYCD County code. The identification number for a county, parish, watershed, borough, or similar governmental unit in a State. FIPS codes from the Bureau of the Census, 1990, are used. Refer to Appendix C for codes.
7. PLOT Phase 2 plot number. An identifier for a plot. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.
8. CONDID Condition class number. Unique identifying number assigned to each condition on a plot. A condition is initially defined by condition class status. Differences in reserved status, owner group, forest type, stand-size class, regeneration status, and stand density further define condition for forest land. Mapped nonforest conditions are also assigned numbers. At the time of the plot establishment, the condition class at plot center (the center of subplot 1) is usually designated as condition class 1. Other condition classes are assigned numbers sequentially at the time each condition class is delineated. On a plot, each sampled condition class must have a unique number that can change at remeasurement to reflect new conditions on the plot.
9. CONDPROP Condition proportion, based on the sampling design. Unadjusted proportion of the plot that is in the condition. The sum of all condition proportions for a plot equals 1.0000. The value in column PROP_BASIS determines if CONDPROP is based on the subplot or the macroplot. Used to classify condition attributes, such as forest type and stand size class.
10. LANDCLCD Land class code. See also COND_STATUS_CD. Now referred to as condition class status code. A code to indicate the basic land cover. Starting with annual inventory protocols, land class code was renamed condition class status code. To maintain a link to periodic data, both variables, LANDCLCD and COND_STATUS_CD, are maintained. Both have the same value.

Code	Description
1	Land that is within the population of interest, is accessible, is on a subplot that can be occupied at subplot center, can safely be visited, and meets at least one of the two following criteria: (a) the condition is at least 10-percent stocked by trees of any size or has been at least 10-percent stocked in the past. Additionally, the condition is not subject to nonforest use(s) that prevent normal tree regeneration and succession such as regular mowing, intensive grazing, or recreation activities; or (b) in several western woodland types where stocking cannot be determined, and the condition has at least 5 percent crown cover by trees of any size, or has had at least 5 percent cover in the past. Additionally, the condition is not subject to nonforest use that prevents normal regeneration and succession such as regular mowing, chaining, or recreation activities. To qualify as forest land, the prospective condition must be at least 1.0 ac in size and 120.0 ft wide measured stem-to-stem. Forested strips must be 120.0 ft wide for a continuous length of at least 363.0 ft in order to meet the acre threshold. Forested strips that do not meet these requirements are classified as part of the adjacent nonforest land.
2	Nonforest land is any land within the sample that does not meet the definition of accessible forest land or any of the other types of basic land covers. To qualify, the area must be at least 1.0 ac in size and 120.0 ft wide, with some exceptions that are described in the document "Forest inventory and analysis national core field guide, volume 1: field data collection procedures for phase 2 plots, version 2.0". Evidence of "possible" or future development or conversion is not considered. A nonforest land condition will remain in the sample and will be examined at the next occasion to see if it has become forest land.
3	Noncensus water: Lakes, reservoirs, ponds, and similar bodies of water 1.0 ac to 4.5 ac in size. Rivers, streams, canals, etc., 30.0 ft to 200 ft wide (1990 U.S. Census definition). This definition was used in the 1990 census and applied when the data became available. Earlier inventories defined noncensus water differently.
4	Census water: Lakes, reservoirs, ponds, and similar bodies of water 4.5 ac in size and larger; and rivers, streams, canals, etc., more than 200 ft wide (1990 U.S. Census definition).
5	Nonsampled : conditions within accessible forest land are delineated, regardless of size, as a separate condition.

11. RESERVCD Reserved status code. Reserved land is land that is withdrawn by law(s) prohibiting the management of the land for the production of wood products (not merely controlling or prohibiting wood- harvesting methods). Such authority is vested in a public agency or department, and supersedes rights of ownership. The prohibition against management for wood products cannot be changed through decision of the land manager

(management agency) or through a change in land management personnel, but rather is permanent in nature.

Code	Description
0	Not reserved
1	Reserved

12. OWNCD Owner class code. A code to indicate the class in which the landowner (at the time of the inventory) belongs.

Code	Description
11	National Forest : Lands administered by USDA Forest Service, National Forest System
12	National Grassland
13	Other Forest Service
21	National Park Service: Lands administered by USDI National Park Service
22	Bureau of Land Management: Lands administered by USDI Bureau of Land Management
23	Fish and Wildlife Service
24	Department of Defense/Energy
25	Other federal
31	State
32	Local (County, Municipal, etc)
33	Other non-federal public
41	Corporate
42	Non-governmental conservation/natural resources organization
43	Unincorporated local partnership/association/club
44	Native American (Indian)
45	Individual
46	Undifferentiated private (assigned when there are too few privately-owned plots in a population where an estimate of land area by owner class code may violate the landowners' privacy)

13. OWNGRPCD Owner group code. A broader group of landowner classes.

Code	Description
10	Forest Service (OWNCD 11, 12, 13)
20	Other federal (OWNCD 21, 22, 23, 24, 25)
30	State and local government (OWNCD 31, 32, 33)
40	Private (OWNCD 41, 42, 43, 44, 45,46)

14. FORINDCD Private owner industrial status code. A code to indicate whether the landowner owns and operates a primary wood processing plant. A primary wood processing plant is any commercial operation that originates the primary processing of wood on a regular and continuing basis. Examples include: pulp or paper mill, sawmill, panel board mill, post or pole mill.

Code	Description
0	Land is not owned by industrial owner with wood processing plant
1	Land is owned by industrial owner with wood processing plant

15. ADFORCD Administered forest code. Identifies the administrative unit (Forest Service Region and National Forest) in which the condition is located. The first two digits of the four digit code are for the Region number and the last two digits are for the Administered National Forest number. Refer to Appendix E for codes. Recorded in coordination with plot measurement date.

16. FORTYPCD Forest type code, derived by algorithm. The forest typing algorithm is a hierarchical procedure. The algorithm begins by comparing the live tree stocking of softwoods and hardwoods and continues in a stepwise fashion comparing successively smaller subgroups of the preceding aggregation of initial types. The aggregated initial type groups used at each step of the process are called combined type groups. Each initial type group can occur in more than one of these combined groups. The stepwise progression proceeds in most cases until a plurality of an initial type group is identified. In certain situations, the algorithm may revert to the field call. These situations are what would cause this variable to differ from FORTYPCDCALC. Refer to Appendix D for a detailed list of forest type codes. Information on how data are assigned to these types for a particular State can be obtained by contacting the appropriate FIA unit. Nonstocked forest land has a live tree stocking < 10.

17. FLDTYPCD Forest type code (assigned by the field crew). Forest type is based on the tree species or species groups forming a plurality of all live stocking. Refer to Appendix D for a detailed list of forest type codes. Information on how data are assigned to these types for a particular State can be obtained by contacting the appropriate FIA unit. Nonstocked forest land has a live tree stocking < 10.

18. MAPDEN Tree density class code. Code that indicates the relative density classification of the condition. Delineation by density class is done only when the less-dense condition is 50 percent or less as dense as the denser condition. Codes other than 1 are used to indicate that tree density is the only factor differentiating two conditions. New in annual inventory.

Code	Description
1	Initial tree density class
2	Density class 2 – density different than density of the condition assigned a tree density class of 1
3	Density class 3 – density different than densities of the conditions assigned tree density classes of 1 and 2

19. STDAGE Stand age. For annual inventories (MANUAL > 1.0), stand age is equal to the field-recorded stand age (FLDAGE) with two exceptions. One

exception is if field-recorded stand age equals either 998 or 999, then stand age is computed. The other exception is that RMRS always computes stand age using field recorded tree ages from trees in the calculated stand size class. If no tree ages are available, then RMRS sets this attribute equal to the field recorded stand age. For all inventories, nonstocked stands have stand age set to 0. In periodic inventories, stand age is determined using local procedures. Annual inventory data will contain stand ages assigned to the nearest year. For some older inventories, stand age was recorded in 10-year classes for stands < 100 years old, 20-year age classes for stands between 100 and 200 years, and 100-year age classes if older than 200 years. These classes were converted to store the midpoint of the age class in years. Age is difficult to measure and therefore stand age may have large measurement errors.

20. STDSZCD

Stand-size class code (derived by algorithm). A classification of the predominant (based on stocking) diameter class of live trees within the condition. Large diameter trees are at least 11.0 inches diameter for hardwoods and at least 9.0 inches diameter for softwoods. Medium diameter trees are at least 5.0 inches diameter but not as large as large diameter trees. Small diameter trees are less than 5.0 inches diameter.

Code Description

- 1 Large diameter: Stands with an all live stocking of at least 10 (base 100); with more than 50 percent of the stocking in medium and large diameter trees; and with the stocking of large diameter trees equal to or greater than the stocking of medium diameter trees
- 2 Medium diameter: Stands with an all live stocking of at least 10 (base 100); with more than 50 percent of the stocking in medium and large diameter trees; and with the stocking of large diameter trees less than the stocking of medium diameter trees
- 3 Small diameter: Stands with an all live stocking value of at least 10 (base 100) on which at least 50 percent of the stocking is in small diameter trees
- 4 Chaparral: Forest land with all live stocking less than 10 and at least 5 percent cover by species that make up chaparral communities
- 5 Nonstocked: Forest land with all live stocking less than 10

21. FLDSZCD

Field stand-size class code (assigned by the field crew). A classification of the predominant (based on stocking) diameter class of live trees within the condition.

Code Description

- 0 Nonstocked: Meeting the definition of accessible land and one of the following applies (1) less than 10 percent stocked by trees of any size, and not classified as cover trees (see code 6), or (2) for several western woodland species where stocking standards are not available, less than 5 percent crown cover of trees of any size

- 1 ≤ 4.9 inches (seedlings / saplings). At least 10 percent stocking (or 5 percent crown cover if stocking standards are not available) in trees of any size; and at least 2/3 of the crown cover is in trees less than 5.0 inches DBH/DRC
- 2 5.0 – 8.9 inches (softwoods)/ 5.0 – 10.9 inches (hardwoods). At least 10 percent stocking (or 5 percent crown cover if stocking standards are not available) in trees of any size; and at least one-third of the crown cover is in trees greater than 5.0 inches DBH/DRC and the plurality of the crown cover is in softwoods 5.0 – 8.9 inches diameter and/or hardwoods 5.0 –10.9 in DBH, and/or for western woodland trees 5.0 – 8.9 inches DRC
- 3 9.0 – 19.9 inches (softwoods)/ 11.0 – 19.9 inches (hardwoods). At least 10 percent stocking (or 5 percent crown cover if stocking standards are not available) in trees of any size; and at least one-third of the crown cover is in trees greater than 5.0 inches DBH/DRC and the plurality of the crown cover is in softwoods 9.0 – 19.9 inches diameter and/or hardwoods between 11.0 –19.9 in DBH, and for western woodland trees 9.0 – 19.9 inches DRC
- 4 20.0 – 39.9 inches. At least 10 percent stocking (or 5 percent crown cover if stocking standards are not available) in trees of any size; and at least one-third of the crown cover is in trees greater than 5.0 inches DBH/DRC and the plurality of the crown cover is in trees 20.0 – 39.9 inches DBH
- 5 40.0+ inches. At least 10 percent stocking (or 5 percent crown cover if stocking standards are not available) in trees of any size; and at least one-third of the crown cover is in trees greater than 5.0 inches DBH/DRC and the plurality of the crown cover is in trees ≥ 40.0 inches DBH
- 6 Cover trees (trees not on species list, used for plots classified as nonforest): Less than 10 percent stocking by trees of any size, and greater than 5 percent crown cover of species that comprise cover trees.

22. SITECLCD Site productivity class code. A classification of forest land in terms of inherent capacity to grow crops of industrial wood. Identifies the potential growth in cubic feet/acre/year and is based on the culmination of mean annual increment of fully stocked natural stands. For data stored in the database that were processed outside of NIMS, this variable may be assigned based on the site productivity determined with the site trees, or from some other source, but the actual source of the site productivity class code is not known. For data processed with NIMS, this variable may either be assigned based on the site trees available for the plot, or, if no valid site trees are available, this variable is set equal to SITECLCDEST, a default value that is either an estimated or predicted site productivity class. If SITECLCDEST is used to populate SITECLCD, the variable SITECL_METHOD is set to 6.

Code	Description
1	225+ cubic feet/acre/year
2	165-224 cubic feet/acre/year
3	120-164 cubic feet/acre/year
4	85-119 cubic feet/acre/year
5	50-84 cubic feet/acre/year
6	20-49 cubic feet/acre/year
7	0-19 cubic feet/acre/year

23. **SICOND** The site index (in feet) within the condition. This represents the average total length that dominant and co-dominant trees in fully-stocked, even-aged stands will obtain at key ages.
24. **SIBASE** Site index base age. The base age (in years) of the site index curves used to derive site index.
25. **SISP** Site index species code. The species upon which the site index is based.
26. **STDORGCD** Regeneration status (stand origin) code. Method of stand regeneration for the trees in the condition. An artificially regenerated stand is established by planting or artificial seeding.

Code	Description
0	Natural stands
1	Clear evidence of artificial regeneration

27. **STDORGSP** Artificial regeneration (stand origin) species code. The species code for the predominant artificially regenerated species (only when **STDORGCD** = 1).
28. **SLOPE** Slope. The angle of slope, in percent, of the condition. Valid values are 000 through 155 for data collected in 1999 and after, and 000 through 200 on data collected before 1999. Before 1999, the field crew measured condition slope by sighting along the average incline or decline of the condition. Beginning in 1999, slope is collected on subplots but no longer collected for conditions. For plots taken in 1999 and after, the slope from the subplot representing the greatest percentage of the condition will be assigned as a surrogate. In the event that two or more subplots represent the same amount of area in the condition, the slope from the lower numbered subplot is used.
29. **ASPECT** Aspect. The direction of slope, to the nearest degree, for most of the condition. North is recorded as 360. When slope is less than 5 percent, there is no aspect and this item is set to zero. Before 1999, the field crew measured condition aspect. Beginning in 1999, aspect is collected on subplots but no longer collected for conditions. For plots taken in 1999 and after, the aspect from the subplot representing the greatest percentage of the condition will be assigned as a surrogate. In the event that two or

more subplots represent the same percentage of area in the condition, the slope from the lower numbered subplot is used.

30. PHYSCLCD Physiographic class code. The general effect of land form, topographical position, and soil on moisture available to trees. These codes are new in annual inventory; older inventories have been updated to these codes when possible.

Code Description

Xeric sites (normally low or deficient in available moisture)

- 11 Dry Tops - Ridge tops with thin rock outcrops and considerable exposure to sun and wind.
- 12 Dry Slopes - Slopes with thin rock outcrops and considerable exposure to sun and wind. Includes most mountain/steep slopes with a southern or western exposure.
- 13 Deep Sands - Sites with a deep, sandy surface subject to rapid loss of moisture following precipitation. Typical examples include sand hills, ridges, and flats in the South, sites along the beach and shores of lakes and streams.
- 19 Other Xeric - All dry physiographic sites not described above.

Mesic sites (normally moderate but adequate available moisture)

- 21 Flatwoods - Flat or fairly level sites outside of flood plains. Excludes deep sands and wet, swampy sites.
- 22 Rolling Uplands - Hills and gently rolling, undulating terrain and associated small streams. Excludes deep sands, all hydric sites, and streams with associated flood plains.
- 23 Moist Slopes and Coves - Moist slopes and coves with relatively deep, fertile soils. Often these sites have a northern or eastern exposure and are partially shielded from wind and sun. Includes moist mountain tops and saddles.
- 24 Narrow Flood plains/Bottomlands – Flood plains and bottomlands less than 1/4-mile in width along rivers and streams. These sites are normally well drained but are subjected to occasional flooding during periods of heavy or extended precipitation. Includes associated levees, benches, and terraces within a 1/4 mile limit. Excludes swamps, sloughs, and bogs.
- 25 Broad Floodplains/Bottomlands - Floodplains and bottomlands less than ¼ mile or wider along rivers and streams. These sites are normally well drained but are subjected to occasional flooding during periods of heavy or extended precipitation. Includes associated levees, benches, and terraces. Excludes swamps, sloughs, and bogs with year-round water problems.
- 29 Other Mesic - All moderately moist physiographic sites not described above.

Hydric sites (normally abundant or overabundant moisture all year)

- 31 Swamps/Bogs - Low, wet, flat, forested areas usually quite extensive that are flooded for long periods except during periods of extreme drought. Excludes cypress ponds and small drains.
- 32 Small Drains - Narrow, stream-like, wet strands of forest land often without a well-defined stream channel. These areas are poorly drained or flooded throughout most of the year and drain the adjacent higher ground.
- 33 Bays and wet pocosins - Low, wet, boggy sites characterized by peaty or organic soils. May be somewhat dry during periods of extended drought. Examples include sites in the Lake States with lowland swamp conifers.
- 34 Beaver ponds.
- 35 Cypress ponds.
- 39 Other hydric - All other hydric physiographic sites.

31. GSSTKCD Growing-stock stocking code. A code to indicate the stocking of the condition by growing-stock trees, including seedlings. Growing-stock trees are those where tree class (TREE.TREECLCD) equals 2 and species group (TREE.SPGRPCD) is equal to other than 23 (western woodland softwoods), 43 (eastern noncommercial hardwoods), and 48 (western woodland hardwoods).

Code	Description	
1	Overstocked	(100+ %)
2	Fully stocked	(60 – 99%)
3	Medium stocked	(35 – 59%)
4	Poorly stocked	(10 – 34%)
5	Nonstocked	(0 – 9%)

32. ALSTKCD All live stocking code. A code to indicate the stocking of the condition by live trees, including seedlings. Data are in classes as listed for GSSTKCD above. This variable may not be present for some older inventories.

33. TRTOPCD Treatment opportunity class code. Identifies the physical opportunity to improve stand conditions by applying management practices. Determined only for timberland (LANDCLCD=1, SITECLCD 1-6, and RESERVCD=0). This variable is mandatory for nonindustrial private lands AND optional for other ownerships.

Code	Description
1	Regeneration without site preparation: The area is characterized by the absence of a manageable stand because of inadequate stocking of growing stock. Growth will be much below the potential for the site if the area is left alone. Prospects are not good for natural regeneration. Artificial regeneration will require little or no site preparation.

- 2 Regeneration with site preparation: The area is characterized by the absence of a manageable stand because of inadequate stocking of growing stock. Growth will be much below the potential for the site if the area is left alone. Either natural or artificial regeneration will require site preparation.
 - 3 Stand conversion: The area is characterized by stands of undesirable, chronically diseased, or off-site (found where not normally expected) species. Growth and quality will be much below the potential for the site if the area is left alone. The best prospect is for conversion to a different forest type or species.
 - 4 Thinning seedlings and saplings: The stand is characterized by a dense stocking of growing stock. Stagnation appears likely if left alone. Stocking must be reduced to help crop trees attain dominance.
 - 5 Thinning poletimber: The stand is characterized by a dense stocking of growing stock. Stocking must be reduced to prevent stagnation or to confine growth to selected, high-quality crop trees.
 - 6 Other stocking control: The stand is characterized by an adequate stocking of seedlings, saplings, and poletimber growing stock, mixed with competing vegetation either overtopping or otherwise inhibiting the development of crop trees. The undesirable material must be removed to release overtopped trees, to prevent stagnation, or to improve composition, form, or growth of the residual stand.
 - 7 Other intermediate treatments: The stand would benefit from other special treatments, such as fertilization to improve the growth potential of the site, and pruning to improve the quality of individual crop trees.
 - 8 Clearcut harvest: The area is characterized by a mature or overmature sawtimber stand of sufficient volume to justify a commercial harvest. The best prospect is to harvest the stand and regenerate.
 - 9 Partial cut harvest: The stand is characterized by poletimber- or sawtimber-size trees with sufficient merchantable volume for a commercial harvest, which will meet intermediate stand treatment needs or prepare the stand for natural regeneration. The stand is of a favored species composition and may be even or uneven aged. Included are such treatments as commercial thinning, seed tree, or shelterwood regeneration, and use of the selection system to maintain an uneven-age stand.
 - 10 Salvage harvest: The stand is characterized by excessive damage to merchantable timber because of fire, insects, disease, wind, ice, or other destructive agents. The best prospect is to remove damaged or threatened material.
 - 11 No treatment: No silvicultural treatment is needed.
34. DSTRBCD1 Disturbance 1 code. A code to indicate the kind of disturbance occurring since the last measurement or within the last 5 years for new plots. The area affected by the disturbance must be at least 1 acre in size. A significant level of disturbance (mortality or damage to 25 percent of the

trees in the condition) is required. This attribute is new in annual inventory. Codes 11, 12, 21, 22, and 55 are valid where MANUAL (PLOT table) is 2.0 and later.

Code	Description
0	No visible disturbance
10	Insect damage
11	insect damage to understory vegetation
12	insect damage to trees, including seedlings and saplings
20	Disease damage
21	disease damage to understory vegetation
22	disease damage to trees, including seedlings and saplings
30	Fire damage (from crown and ground fire, either prescribed or natural)
31	Ground fire damage
32	Crown fire damage
40	Animal damage
41	Beaver (includes flooding caused by beaver)
42	Porcupine
43	Deer/ungulate
44	Bear (CORE OPTIONAL)
45	Rabbit (CORE OPTIONAL)
46	Domestic animal/livestock (includes grazing)
50	Weather damage
51	Ice
52	Wind (includes hurricane, tornado)
53	Flooding (weather induced)
54	Drought
55	Earth movement/avalanches
60	Vegetation (suppression, competition, vines)
70	Unknown / not sure / other (include in NOTES)
80	Human-caused damage – any significant threshold of human-caused damage not described in the DISTURBANCE codes or in the TREATMENT codes.

35. DSTRBYR1 Disturbance year 1. Year in which Disturbance 1 is estimated to have occurred. If the disturbance occurs continuously over a period of time, the value 9999 is used. This attribute is new in annual inventory.
36. DSTRBCD2 Disturbance 2 code. The second disturbance code, if the stand has experienced more than one disturbance. See DSTRBCD1 for more information. This attribute is new in annual inventory.
37. DSTRBYR2 Disturbance year 2. The year in which Disturbance 2 occurred. See DSTRBYR1 for more information. This attribute is new in annual inventory.

- 38. DSTRBCD3 Disturbance 3 code. The third disturbance code, if the stand has experienced more than two disturbances. See DSTRBCD1 for more information. This attribute is new in annual inventory.
- 39. DSTRBYR3 Disturbance year 3. The year in which Disturbance 3 occurred. See DSTRBYR1 for more information. This attribute is new in annual inventory.
- 40. TRTCD1 Stand Treatment 1 code. A code to indicate the type of stand treatment that has occurred since the last measurement or within the last 5 years for new plots. The area affected by the treatment must be at least 1 acre in size. Inventories conducted before 1999 may record treatments occurring within the last 20 years for new plots. New in annual inventory.

Code	Description
00	No observable treatment.
10	Cutting – The removal of one or more trees from a stand.
20	Site preparation – Clearing, slash burning, chopping, disking, bedding, or other practices clearly intended to prepare a site for either natural or artificial regeneration.
30	Artificial regeneration - Planting or direct seeding has resulted in a stand at least 50 percent stocked with live trees of any size.
40	Natural regeneration – Growth of existing trees and/or natural seeding has resulted in a stand at least 50 percent stocked with live trees of any size.
50	Other silvicultural treatment – The use of fertilizers, herbicides, girdling, pruning, or other activities (not already listed above) designed to improve the commercial value of the residual stand.

- 41. TRTYR1 Treatment year 1. Year in which Stand Treatment 1 is estimated to have occurred. New in annual inventory.
- 42. TRTCD2 Stand treatment 2. A code to indicate the type of stand treatment that has occurred since the last measurement or within the last 5 years for new plots. Inventories conducted before 1999 may record treatments occurring within the last 20 years for new plots. Use same codes as TRTCD1. New in annual inventory.
- 43. TRTYR2 Treatment year 2. Year in which Stand Treatment 2 is estimated to have occurred. New in annual inventory.
- 44. TRTCD3 Stand Treatment 3 code. A code to indicate the type of stand treatment that has occurred since the last measurement or within the last 5 years for new plots. Inventories conducted before 1999 may record treatments occurring within the last 20 years for new plots. Use same codes as TRTCD1. New in annual inventory.

45. TRTYR3 Treatment year 3. Year in which Stand Treatment 3 is estimated to have occurred. New in annual inventory.

46. PRESNFCD Present nonforest land use code. A code to indicate the kind of land use occurring now for conditions that were previously classified as forest but are now classified as nonforest. New in annual inventory.

Code	Description
10	Agricultural land
11	Cropland
12	Pasture (improved through cultural practices)
13	Idle farmland
14	Orchard
15	Christmas tree plantation
20	Rangeland
30	Developed
31	Cultural (business, residential, other intense human activity)
32	Rights-of-way (improved road, railway, power line)
33	Recreation (park, golf course, ski run)
40	Other (undeveloped beach, marsh, bog, non-census water)
90	Not sampled
91	Census water
92	Denied access
93	Hazardous
94	Not in the sample

47. BALIVE Live tree basal area per unit area. Basal area in square-feet per acre of all live trees over 1 inch DBH/DRC sampled in the condition.

48. MICRPROP Microplot condition proportion, based on the sampling design. Unadjusted proportion of the microplots that are in the condition. The sum of all microplot condition proportions for a plot equals 1.0000.

49. DAMINDEX Damage index. A number from 0 to 100 indicating the relative tree damage for the condition.

50. CN Sequence number. A unique sequence number used to identify a condition record.

51. PLT_CN Plot sequence number. Foreign key linking the condition record to the plot record.

52. FLDAGE Field-recorded stand age. The stand age as assigned by the field crew. Based on the average total age, to the nearest year, of the trees in the field-recorded stand size class of the condition, determined using local procedures. For non-stocked stands, 0 is stored. If all of the trees in a condition class are of a species that by regional standards cannot be bored

for age (e.g., mountain mahogany, tupelo), 998 is recorded. If tree cores are not counted in the field, but are collected and sent to the office for the counting of rings, 999 is recorded.

53. ALSTK All-live-tree stocking percent. The sum of stocking percent values of all live trees on the condition. The percent is then assigned to a stocking class, which is found in ALSTKCD.
54. GSSTK Growing-stock stocking percent. The sum of stocking percent values of all growing stock trees on the condition. The percent is then assigned to a stocking class, which is found in GSSTKCD.
55. CONDPROPUN
Unadjusted subplot condition proportion. **Specific to Southern Research Station.** All other Stations record null for this variable. Contact Southern Research Station for more information.
56. FORTYPCDCALC
Calculated forest type code. Refer to Appendix D for a detailed list of forest type codes.
57. HABTYPCD1 Habitat type code 1. **Specific to Rocky Mountain, Pacific Northwest, and North Central Research Stations.** A code indicating the primary habitat type (or community type) for this condition. Habitat type captures information about both the overstory and understory vegetation and usually describes the vegetation that is predicted to become established after all successional stages of the ecosystem are completed without any disturbance. This code can be translated using the publication in which it was named and described (see HABTYPCD1_PUB_CD and HABTYPCD1_DESCR_PUB_CD).
58. HABTYPCD2 Secondary condition habitat type. See HABTYPCD1.
59. MIXEDCONFCD
Mixed conifer code. **Specific to Pacific Northwest Research Station.** All other Stations record null for this variable. Contact Pacific Northwest Research Station for more information. An indicator to show if there is a calculated forest type for mixed conifer site. Yes/No field (Y/N).

To classify as a mixed conifer site the condition class must be capable of being stocked with greater than 70% conifers and one of the following must be true:

1.) Douglas-fir predominates and the county is not Del Norte, Humbolt, Marin, Mendocino, Napa, San Mateo, Santa Clara, Santa Cruz, or Sonoma

- 2.) Sugar pine or incense-cedar predominate
- 3.) Ponderosa pine and/or Jeffrey pine, either singly or in combination, predominate, but make up less than 80% of the conifer stocking
- 4.) White fir and/or red fir and/or Shasta red fir, either singly or in combination, predominate, but make up less than 80% of the conifer stocking

On a mixed conifer site, a complex association of ponderosa pine, sugar pine, Douglas-fir, white fir, and red fir may exist. Incense-cedar may also be a component. Generally these five or six conifer species are intermixed, either as single trees or in small groups. Vertical mixing is also common with one to three species in the overstory and one or two species in the understory. Mixed conifer sites are often on east facing slopes of the coast range, and on the west-facing and higher elevation east-facing slopes of the Cascades and Sierra Nevadas.

60. **MACRPROP** Macroplot condition proportion, based on the sampling design. Unadjusted proportion of the macroplots that are in the condition. The sum of all macroplot condition proportions for a plot equals 1.0000. If PROP_BASIS equals "MACR", this will equal CONDPROP.
61. **CREATED_BY** The user who created the record.
62. **CREATED_DATE**

The date the record was created. Date will be in the form DD-MON-YYYY.
63. **CREATED_IN_INSTANCE**

The database instance in which the record was created. This uniquely identifies which computer system was used to create the record.
64. **MODIFIED_BY**

The user who modified the record. This field will be null if the data have not been modified since initial creation.
65. **MODIFIED_DATE**

The date the record was last modified. This field will be null if the data have not been modified since initial creation. Date will be in the form DD-MON-YYYY.

66. MODIFIED_IN_INSTANCE

The database instance in which the record was modified. This field will be null if the data have not been modified since initial creation.

67. VOL_LOC_GRP

Volume location group. A regional identifier to indicate what equations are used for volume, biomass, site index, etc. For the specific codes used in a particular Region or State, contact the FIA program responsible for that Region or State.

68. SUBPPROP Subplot condition proportion, based on the sampling design. Unadjusted proportion of the subplots that are in the condition. The sum of all subplot condition proportions for a plot equals 1.0000. If PROP_BASIS equals "SUBP", this will equal CONDPROP.

69. PROP_BASIS Proportion basis. Valid values are either "SUBP" or "MACR". This indicates whether the proportions stored in CONDPROP, CONDPROP_ALL, CONDPROP_CHNG, and CONDPROP_CURR are based on the subplot (SUBP) or on the macroplot (MACR).

70. CONDPROP_ALL

Condition proportion for total area estimation. The proportion, based on the plot design (either the subplot or the macroplot), is calculated by excluding any outside-of-the-population conditions from the sample and adjusting over all plots in the stratum in which the plot is classified. Strata are described in the Estimation Unit Stratum table. A null indicates an outside-of-the-population condition. The value in column PROP_BASIS determines if CONDPROP_ALL is based on the subplot or the macroplot. Used along with EXPALL in the total area estimate, which will include denied-access and hazardous area.

71. CONDPROP_CHNG

Condition proportion for change estimation. Only plots measured at two points in time will have a value in this variable; new plots will contain a null. The value in column PROP_BASIS determines if CONDPROP_CHNG is based on the subplot or the macroplot. **THIS VARIABLE IS NOT POPULATED USING A NATIONAL STANDARD AT THIS TIME.**

72. CONDPROP_CURR

Condition proportion for current estimation. The proportion, based on the plot design (either the subplot or the macroplot), is calculated by excluding any outside-of-the-population, denied-access, or hazardous conditions from the sample and adjusting over all plots in the stratum in

which the plot is classified. Strata are described in the Estimation Unit Stratum table. A null indicates an outside-of-the-population, denied-access, or hazardous condition. The value in column PROP_BASIS determines if CONDPROP_CURR is based on the subplot or the macroplot. Used along with EXPCURR in current forest/timberland estimates.

73. MACRPROP_ALL

Macroplot condition proportion (total area basis). The proportion, based on the macroplot design, is calculated by excluding any outside-of-the-population conditions from the sample and adjusting over all plots in the stratum in which the plot is classified. Strata are described in the Estimation Unit Stratum table. A null indicates an outside-of-the-population condition. If PROP_BASIS equals "MACR", this will equal CONDPROP_ALL.

74. MACRPROP_CHNG

Macroplot condition proportion (change estimation basis). Only plots measured at two points in time will have a value in this variable; new plots will contain a null. If PROP_BASIS equals "MACR", this will equal CONDPROP_CHNG. **THIS VARIABLE IS NOT POPULATED USING A NATIONAL STANDARD AT THIS TIME.**

75. MACRPROP_CURR

Macroplot condition proportion (current estimation basis). The proportion, based on the macroplot design, is calculated by excluding any outside-of-the-population, denied-access, or hazardous conditions from the sample and adjusting over all plots in the stratum in which the plot is classified. Strata are described in the Estimation Unit Stratum table. A null indicates an outside-of-the-population, denied-access, or hazardous condition. If PROP_BASIS equals "MACR", this will equal CONDPROP_CURR.

76. MICRPROP_ALL

Microplot condition proportion (total area basis). The proportion, based on the microplot design, is calculated by excluding any outside-of-the-population conditions from the sample and adjusting over all plots in the stratum in which the plot is classified. Strata are described in the Estimation Unit Stratum table. A null indicates an outside-of-the-population condition.

77. MICRPROP_CHNG

Microplot condition proportion (change estimation basis). Only plots measured at two points in time will have a value in this variable; new plots

will contain a null. **THIS VARIABLE IS NOT POPULATED USING A NATIONAL STANDARD AT THIS TIME.**

78. MICRPROP_CURR

Microplot condition proportion (current estimation basis). The proportion, based on the microplot design, is calculated by excluding any outside-of-the-population, denied-access, or hazardous conditions from the sample and adjusting over all plots in the stratum in which the plot is classified. Strata are described in the Estimation Unit Stratum table. A null indicates an outside-of-the-population, denied-access, or hazardous condition.

79. SITECLCDEST

Estimated site productivity class code. In NIMS processing, this default code is an estimated or predicted indicator of site productivity and is used as the variable SITECLCD if no valid site tree is available. When SITECLCDEST is used as SITECLCD, SITECL_METHOD is set to 6. For data stored in the database that were processed prior to the use of NIMS, this variable is null.

Code	Description
1	225+ cubic feet/acre/year
2	165-224 cubic feet/acre/year
3	120-164 cubic feet/acre/year
4	85-119 cubic feet/acre/year
5	50-84 cubic feet/acre/year
6	20-49 cubic feet/acre/year
7	0-19 cubic feet/acre/year

80. SITETREE_TREE

Site tree tree number. Selected SITETREE tree number.

81. SITECL_METHOD

Site class method. A code identifying the method for determining site index or estimated site productivity class.

Code	Description
1	Tree measurement (length, age, etc.) collected during this inventory.
2	Tree measurement (length, age, etc.) collected during a previous inventory.
3	Site index or site productivity class estimated either in the field or office.
4	Site index or site productivity class estimated by the height intercept method during this inventory.

- 5 Site index or site productivity class estimated using multiple site trees.
- 6 Site index or site productivity class estimated using default values.

82. COND_STATUS_CD

Condition status code. A code to indicate the basic land cover. Synonymous with LANDCLCD. See LANDCLCD for codes and descriptions.

83. COND_NONSAMPLE_REASN_CD

Condition nonsampled reason code. The reason why the condition was not sampled.

Code	Description
------	-------------

- | | |
|----|---|
| 01 | Outside U.S. boundary – Assign this code to condition classes beyond the U.S. border. |
| 02 | Denied access area – Any area within the sampled area of a plot to which access is denied by the legal owner, or to which an owner of the only reasonable route to the plot denies access. There are no minimum area or width requirements for a condition class delineated by denied access. Because a denied-access condition can become accessible in the future, it remains in the sample and is re-examined at the next occasion to determine if access is available. In some regions denied access plots may be replaced; check with the field supervisor regarding regional protocols for plot replacement. |
| 03 | Hazardous situation – Any area within the sampled area on plot that cannot be accessed because of a hazard or danger, for example cliffs, quarries, strip mines, illegal substance plantations, temporary high water, etc. Although the hazard is not likely to change over time, a hazardous condition remains in the sample and is re-examined at the next occasion to determine if the hazard is still present. There are no minimum size or width requirements for a condition class delineated by a hazardous condition. In some regions hazardous plots may be replaced; check with the field supervisor regarding regional protocols for plot replacement. |
| 10 | Other – This code is used whenever a plot or condition class is not sampled due to a reason other than one of the specific reasons listed. A field note is required to describe the situation. |

84. HABTYPCD1_PUB_CD

Habitat type code 1 publication code. **Specific to Rocky Mountain, Pacific Northwest, and North Central Research Stations.** A code to indicate the publication that lists the name for the primary condition habitat type code (HABTYPCD1). Contact the appropriate station for the publication.

85. HABTYPCD1_DESCR_PUB_CD

Habitat type code 1 description publication code. **Specific to Rocky Mountain, Pacific Northwest, and North Central Research Stations.** A code to indicate the publication that gives a description for habitat type code 1 (HABTYPCD1). This publication may or may not be the same publication that lists the name of the habitat type (HABTYPCD1_PUB_CD). Contact the appropriate station for the publication.

86. HABTYPCD2_PUB_CD

Habitat type code 2 publication code. **Specific to Rocky Mountain, Pacific Northwest, and North Central Research Stations.** A code to indicate the publication that lists the name for the secondary condition habitat type code (HABTYPCD2). Contact the appropriate station for the publication.

87. HABTYPCD2_DESCR_PUB_CD

Habitat type code 2 description publication code. **Specific to Rocky Mountain, Pacific Northwest, and North Central Research Stations.** A code to indicate the publication that gives a description for habitat type code 2 (HABTYPCD2). This publication may or may not be the same publication that lists the name of the habitat type (HABTYPCD2_PUB_CD). Contact the appropriate station for the publication.

88. SOIL_ROOTING_DEPTH_PNW (PNW)

Soil rooting depth in PNW. Indicates the soil rooting depth

Code	Description
1	< 20 inches
2	≥ 20 inches

89. GROUND_LAND_CLASS_PNW (**PNW**)

Ground land class in PNW.

90. PLANT_STOCKABILITY_FACTOR_PNW (**PNW**)

Plant stockability factor in PNW.

Tree Table (Oracle table name is TREE)

	Column name	Oracle data type	Value or unit of measure	Key data item	Field Guide Item#
1	TABLENM	VARCHAR2 (8)	TREE		
2	STATECD	NUMBER (4)	Coded	X	
3	CYCLE	NUMBER (2)	Number	X	
4	SUBCYCLE	NUMBER (2)	Number	X	
5	UNITCD	NUMBER (2)	Coded	X	
6	COUNTYCD	NUMBER (3)	Coded	X	
7	PLOT	NUMBER (5)	Number	X	
8	SUBP	NUMBER (3)	Number	X	5.1
9	TREE	NUMBER (9)	Number	X	5.2
10	CONCID	NUMBER (1)	Number		5.3
11	AZIMUTH	NUMBER (3)	Degrees		5.4
12	DIST	NUMBER (3,1)	Feet		5.5
13	PREVCOND	NUMBER (1)	Number		
14	PREVSUBC	NUMBER (2)	Number		
15	STATUSCD	NUMBER (1)	Coded		5.7
16	SPCD	NUMBER (4)	Coded		5.8
17	SPGRPCD	NUMBER (2)	Coded		
18	DIA	NUMBER (5,2)	Inches		5.9.2, 5.9.4
19	DIAHTCD	NUMBER (1)	Coded		5.22
20	HT	NUMBER (3)	Feet		5.12
21	HTCD	NUMBER (2)	Coded		5.14
22	ACTUALHT	NUMBER (3)	Feet		5.13
23	TREECLCD	NUMBER (2)	Coded		
24	CR	NUMBER (3)	Percent		5.17
25	CCLCD	NUMBER (2)	Coded		5.15
26	TREEGRCD (NCRS,NERS,SRS)	NUMBER (2)	Coded		
27	AGENTCD	NUMBER (2)	Coded		5.19
28	CULL	NUMBER (3)	Percent		5.11
29	DAMLOC1	NUMBER (2)	Coded		5.18.1
30	DAMTYP1	NUMBER (2)	Coded		5.18.2
31	DAMSEV1	NUMBER (2)	Coded		5.18.3
32	DAMLOC2	NUMBER (2)	Coded		5.18.4
33	DAMTYP2	NUMBER (2)	Coded		5.18.5
34	DAMSEV2	NUMBER (2)	Coded		5.18.6
35	DECAYCD	NUMBER (2)	Coded		5.21

	Column name	Oracle data type	Value or unit of measure	Key data item	Field Guide Item#
36	STOCKING	NUMBER (7,4)	Percent		
37	WDLDSTEM	NUMBER (3)	Number		
38	TPACURR	NUMBER (11,6)	Trees/acre		
39	TPAMORT	NUMBER (11,6)	Trees/acre/yr.		
40	TPAREMV	NUMBER (11,6)	Trees/acre/yr.		
41	TPAGROW	NUMBER (11,6)	Trees/acre		
42	VOLCFNET	NUMBER (11,6)	Cu. ft./tree		
43	VOLCFGRS	NUMBER (11,6)	Cu. ft./tree		
44	VOLCSNET	NUMBER (11,6)	Cu. ft./tree		
45	VOLCSGRS	NUMBER (11,6)	Cu. ft./tree		
46	VOLBFNET	NUMBER (11,6)	Bd. ft./tree		
47	VOLBFGRS	NUMBER (11,6)	Bd. ft./tree		
48	VOLCFSND	NUMBER (11,6)	Cu. ft./tree		
49	GROWCFGS	NUMBER (11,6)	Cu. ft./year/tree		
50	GROWBFSL	NUMBER (11,6)	Bd. ft./year/tree		
51	GROWCFAL	NUMBER (11,6)	Cu. ft./year/tree		
52	MORTCFGS	NUMBER (11,6)	Cu. ft./tree		
53	MORTBFSL	NUMBER (11,6)	Bd. ft./tree		
54	MORTCFAL	NUMBER (11,6)	Cu. ft./tree		
55	REMVCFGS	NUMBER (11,6)	Cu. ft./tree		
56	REMVBFSL	NUMBER (11,6)	Bd. ft./tree		
57	REMVCFAL	NUMBER (11,6)	Cu. ft./tree		
58	DRYBIOT	NUMBER (13,6)	Ovendry lbs./tree		
59	DRYBIOM	NUMBER (13,6)	Ovendry lbs./tree		
60	DIACHECK	NUMBER (2)	Coded		5.10
61	MORTYR	NUMBER (4)	Year		5.20
62	SALVCD	NUMBER (2)	Coded		
63	UNCRCD	NUMBER (3)	Percent		5.16
64	CPOSCD	NUMBER (2)	Coded		12.7
65	CLIGHTCD	NUMBER (2)	Coded		12.6
66	CVIGORCD	NUMBER (2)	Coded		12.8
67	CDENCD	NUMBER (3)	Coded		12.9
68	CDIEBKCD	NUMBER (3)	Coded		12.10
69	TRANSCD	NUMBER (3)	Coded		12.11
70	CN	VARCHAR2 (34)	Character	PK	
71	PLT_CN	VARCHAR2 (34)	Character	FK	

	Column name	Oracle data type	Value or unit of measure	Key data item	Field Guide Item#
72	TREEHISTCD (NCRS,NERS,SRS)	NUMBER (2)	Coded		
73	DIACALC (NCRS,SRS)	NUMBER (5,2)	Inches		
74	BHAGE (PNWRS,RMRS)	NUMBER (4)	Years		
75	TOTAGE (PNWRS,RMRS)	NUMBER (4)	Years		
76	CULLDEAD (RMRS)	NUMBER (3)	Percent		
77	CULLFORM (RMRS)	NUMBER (3)	Percent		
78	CULLMSTOP(RMRS)	NUMBER (3)	Percent		
79	CULLBF (NERS)	NUMBER (3)	Percent		
80	CULLCF (NERS)	NUMBER (3)	Percent		
81	BFSND (NERS)	NUMBER (3)	Percent		
82	CFSND (NERS)	NUMBER (3)	Percent		
83	SAWHT (NERS)	NUMBER (2)	Feet		
84	BOLEHT (NERS)	NUMBER (2)	Feet		
85	FORMCL (PNWRS)	NUMBER (1)	Coded		
86	HTCALC (SRS)	NUMBER (3)	Feet		
87	HRDWD_CLUMP_CD (PNWRS)	NUMBER (1)	Coded		
88	SITREE (NCRS)	NUMBER (3)	Feet		
89	CREATED_BY	VARCHAR2 (30)	Character		
90	CREATED_DATE	DATE	DD-MON-YYYY		
91	CREATED_IN_INSTANCE	NUMBER (6)	Number		
92	MODIFIED_BY	VARCHAR2 (30)	Character		
93	MODIFIED_DATE	DATE	DD-MON-YYYY		
94	MODIFIED_IN_INSTANCE	NUMBER (6)	Number		
95	MORTCD	NUMBER (1)	Coded		5.7.3
96	HTDMP	NUMBER (3,1)	Feet		5.22
97	ROUGHULL	NUMBER (2)	Percent		5.23
98	MIST_CL_CD	NUMBER (1)	Coded		5.24
99	TPA	NUMBER (11,6)	Trees/acre		
100	CULL_FLD	NUMBER (2)	Percent		5.11
101	RECONCILECD	NUMBER (1)	Coded		5.7.1
102	PREVDIA	NUMBER (5,2)	Inches		5.9.1, 5.9.3
103	FGROWCFGS	NUMBER (11,6)	Cu. ft./year/tree		
104	FGROWBFSL	NUMBER (11,6)	Bd. ft./year/tree		
105	FGROWCFAL	NUMBER (11,6)	Cu. ft./year/tree		
106	FMORTCFGS	NUMBER (11,6)	Cu. ft./tree		
107	FMORTBFSL	NUMBER (11,6)	Bd. ft./tree		

Column name	Oracle data type	Value or unit of measure	Key data item	Field Guide Item#
108	FMORTCFAL	NUMBER (11,6)	Cu. ft./tree	
109	FREMVCFGS	NUMBER (11,6)	Cu. ft./tree	
110	FREMVBFSL	NUMBER (11,6)	Bd. ft./tree	
111	FREMVCFAL	NUMBER (11,6)	Cu. ft./tree	
112	TPACURR_SAMP	NUMBER (11,6)	Trees/acre	
113	TPAGROW_SAMP	NUMBER (11,6)	Trees/acre	
114	TPAMORT_SAMP	NUMBER (11,6)	Trees/acre	
115	TPAREMV_SAMP	NUMBER (11,6)	Trees/acre	
116	P2A_GRM_FLG	VARCHAR2 (1)		
117	PREV_TRE_CN	VARCHAR2 (34)	Unique index	
118	TREECLCD_NERS	NUMBER (2)	Coded	
119	TREECLCD_SRS	NUMBER (2)	Coded	
120	TREECLCD_NCRS	NUMBER (2)	Coded	
121	TREECLCD_RMRS	NUMBER (2)	Coded	
122	STANDING_DEAD_CD	NUMBER (2)	Coded	5.7.2
123	PREV_STATUS_CD	NUMBER (1)		5.6
124	PREV_WDLSTEM	NUMBER (3)		
125	TPAMORT_UNADJ	NUMBER (11,6)		
126	TPAREMV_UNADJ	NUMBER (11,6)		
127	TPAGROW_UNADJ	NUMBER (11,6)		

1. **TABLENM** Table name. Identifies the table to which the record belongs. Always equals 'TREE.'
2. **STATECD** State code. Bureau of the Census Federal Information Processing Standards (FIPS) two-digit code for each State. Refer to table 1 at the end of the description of the SURVEY table.
3. **CYCLE** Inventory cycle number. Identifies the cycle number for the inventory data. For example, a 4 shows the data came from the fourth inventory of that State. A cycle number greater than 1 does not necessarily mean that information for previous cycles resides in the database.
4. **SUBCYCLE** Inventory subcycle number. For an annual inventory that takes n years to measure all plots, subcycle shows in which of the n years of the cycle the data were measured. Subcycle is 0 for a periodic inventory.
5. **UNITCD** Survey unit code. Forest Inventory and Analysis survey unit identification number. Survey units are usually groups of counties within each state. For

periodic inventories, Survey units may be made up of lands of particular owners. Refer to Appendix C for codes.

6. COUNTYCD County code. The identification number for a county, parish, watershed, borough, or similar governmental unit in a State. FIPS codes from the Bureau of the Census, 1990, are used. Refer to Appendix C for codes.
7. PLOT Phase 2 plot number. An identifier for a plot. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.
8. SUBP Subplot number. Number of the subplot on which the tree was measured. Annual inventories have subplot number values of 1 through 4. Periodic inventories subplot numbers will vary. For more information, contact the appropriate FIA unit.
9. TREE Tree record number. A number used to uniquely identify a tree on a subplot.
10. CONDID Condition class number. Unique identifying number assigned to each condition on a plot. A condition is initially defined by condition class status. Differences in reserved status, owner group, forest type, stand-size class, regeneration status, and stand density further define condition for forest land. Mapped nonforest conditions are also assigned numbers. At the time of the plot establishment, the condition class at plot center (the center of subplot 1) is usually designated as condition class 1. Other condition classes are assigned numbers sequentially at the time each condition class is delineated. On a plot, each sampled condition class must have a unique number that can change at remeasurement to reflect new conditions on the plot.
11. AZIMUTH Azimuth. The direction, to the nearest degree, from subplot center (microplot center for saplings) to the center of the base of the tree (geographic center for multi-stemmed woodland species). Due north is represented by 360 degrees.
12. DIST Horizontal distance. The horizontal distance in feet from subplot center (microplot center for saplings) to the pith at the base of the tree (geographic center for multi-stemmed woodland species).
13. PREVCOND Previous condition number. Identifies the condition within the plot on which the tree occurred at the previous inventory.
14. PREVSUBC Previous subcycle number. Identifies the subcycle in which the tree was recorded at the previous inventory. (In some instances a plot may have been measured more than once during an inventory cycle. Subcycle is then needed to uniquely identify the previous condition.).

15. STATUSCD Present tree status code. Identifies whether the sample tree is live, cut, or dead. Includes dead and cut trees, which are required to estimate aboveground biomass and net annual volume for growth, mortality, and removals. Note: New and replacement plots use only codes 1 and 2. This code is not used when querying data for change estimates.

Code	Description
0	No status
1	Live tree
2	Dead tree
3	Removed - Cut and removed by direct human activity related to harvesting, silviculture or land clearing. This tree is assumed to be utilized.

16. SPCD Species code. An FIA tree species code. Refer to Appendix F for codes.

17. SPGRPCD Species group code. An FIA species group number, which is used to produce many of the standard presentation tables. The assignment of individual species (SPCD) to these groups is shown in Appendix F. Individual FIA programs may further break these species groups down for published tables, but this is a common list that all published standard presentation tables must match.

18. DIA Current diameter. The current diameter (in inches) of the sample tree at the point of diameter measurement. Check the DIAHTCD variable to determine the measurement point. DIA for live trees contains the measured value. DIA for cut and dead trees presents problems associated with uncertainty of when the tree was cut or died as well as structural deterioration of dead trees. Consult individual units for explanations of how DIA is collected for dead and cut trees.

19. DIAHTCD Length to diameter measurement code. The height above ground at which the diameter was obtained on the sample tree. Previously called Height of diameter measurement code in “The Forest Inventory and Analysis Database: Database description and Users Manual Version 1.7.”

Code	Description
1	Breast height (DBH)
2	Root collar (DRC)
3	Stump

20. HT Total length. The total length of a sample tree (in feet) from the ground to the tip of the apical meristem. The total length of a tree is not always its actual length. If the main stem is broken, the actual length is measured or estimated and the missing piece is added to the actual length to estimate total length. The amount added is determined by measuring the broken piece if it can be located on the ground; otherwise it is estimated

21. HTCD Length method code. A code to indicate how length was determined.
- | Code | Description |
|------|---|
| 1 | Field measured (total and actual length) |
| 2 | Total length visually estimated in the field, actual length measured. |
| 3 | Total and actual lengths are visually estimated |
22. ACTUALHT Actual length of tree. The length of the tree to the nearest foot from ground level to the highest remaining portion of the tree still present and attached to the bole. Recorded on trees with broken or missing tops.
23. TREECLCD Tree class code. The general quality of the tree. For cut, dead, and sound dead trees measured in a periodic inventory, tree class of the tree at the time it died or was cut is estimated. For dead and sound dead trees measured in an annual inventory, tree class is that of the tree at the time of current measurement and is used where current estimates are calculated.
- | Code | Description |
|------|--|
| 2 | Growing stock: All trees of commercial species that meet certain merchantability standards. Excludes rough or rotten cull trees. |
| 3 | Rough cull: Trees that do not now, or prospectively, have at least one solid 8-foot section, reasonably free of form defect, on the merchantable bole or have 67 percent or more of the merchantable volume cull; and more than half of this cull is due to sound dead wood cubic-foot loss or severe form defect volume loss. In California, Oregon, and Washington inventories 75 percent or more cull, rather than 67 percent or more cull, applies. This class also contains all trees of noncommercial species, or those species where SPGRPCD equals 23 (western woodland softwoods), 43 (eastern noncommercial hardwoods), or 48 (western woodland hardwoods). Refer to Appendix F for species that have these SPGRPCD codes. |
| 4 | Rotten cull: Trees with 67 percent or more of the merchantable volume cull, and more than half of this cull is due to rotten or missing cubic-foot volume loss. PNW uses a 75-percent cutoff. |
24. CR Compacted crown ratio. The percent of the tree bole supporting live, healthy foliage (the crown is ocularly compacted to fill in gaps) when compared to total length. Expressed as a percent of total tree length.
25. CCLCD Crown class code. Primarily indicates the amount of sunlight received as opposed to the conventional "crown position" found in forestry textbooks.

Code	Description
1	Open grown: Trees with crowns that have received full light from above and from all sides throughout all or most of their life, particularly during early development.
2	Dominant: Trees with crowns extending above the general level of the canopy and receiving full light from above and partly from the sides; larger than the average trees in the stand, and with crowns well developed, but possibly somewhat crowded on the sides.
3	Codominant: Trees with crowns forming part of the general level of the crown cover and receiving full light from above, but comparatively little from the side. Usually with medium crowns more or less crowded on the sides.
4	Intermediate: Trees shorter than those in the preceding two classes, with crowns either below or extending into the canopy formed by the dominant and codominant trees, receiving little direct light from above, and none from the sides; usually with small crowns very crowded on the sides.
5	Overtopped: Trees with crowns entirely below the general canopy level and receiving no direct light either from above or the sides.

26. TREEGRCD Tree grade code. **Specific to North Central, Northeastern, and Southern Research Stations.** All other Stations record null for this variable. Contact North Central, Northeastern, or Southern Research Station for more information, as procedures to grade trees are different for each program. This item is nonzero for all sawtimber-size trees regardless of status; however, it is not measured on all sawtimber-size trees on every plot. Sawtimber-size trees that are graded but do not contain a gradeable log are given a tree grade 5. Sawtimber-size trees that are not graded because of sampling design have no grade. Trees smaller than sawtimber receive a tree grade of zero.

Code	Description
0	Tree too small to grade
1	Tree grade 1
2	Tree grade 2
3	Tree grade 3
4	Graded and contains a gradeable log but does not meet grade 3 standards
5	Graded but does not contain a gradeable log (local use trees).

27. AGENTCD Cause of death (agent) code. Beginning in the year 1999 this variable will be collected on only dead and cut trees. Before 1999, this variable was collected on all trees (live, dead, and cut). Cause of damage was recorded for live trees if the presence of damage or pathogen activity was serious enough to reduce the quality or vigor of the tree. When a tree was damaged by more than one agent, the most severe damage was coded. When no damage was observed on a live tree, 00 was recorded. Damage recorded for dead trees was the cause of death. When the cause of death

could not be determined for a tree, 99 was recorded. Each FIA program records specific codes that may differ from one State to the next. These codes fall within the ranges listed below. For the specific codes used in a particular State, contact the FIA program responsible for that State.

Code	Description
00	No agent recorded (only allowed on live trees in data prior to 1999)
10	Insect
20	Disease
30	Fire
40	Animal
50	Weather
60	Vegetation (e.g., competition or vines)
70	Unknown/not sure/other – includes death from human activity not related to silvicultural or landclearing activity (accidental, random, etc). TREE NOTES required.
80	Silvicultural or landclearing activity (death caused by harvesting or other silvicultural activity, including girdling, chaining, etc., or to landclearing activity.)

28. CULL Rotten and missing cull. The percent of the cubic-foot volume in a live or dead tally tree that is rotten or missing.

29. DAMLOC1 Damage location 1. A code to indicate where damage (meeting or exceeding a severity threshold, as defined in the field guide) is present on the tree. New in annual inventory. (*Core* prior to field guide 1.7, *Core Optional* beginning with field guide 1.7)

Code	Description
0	No damage
1	Roots (exposed) and stump (up to 12 inches from ground level)
2	Roots, stump, and lower bole
3	Lower bole (lower half of bole between stump and base of live crown)
4	Lower and upper bole
5	Upper bole (upper half of bole between stump and base of live crown)
6	Crownstem (main stem within the live crown)
7	Branches (> 1 inch diameter at junction with main stem and within the live crown)
8	Buds and shoots of current year
9	Foliage

30. DAMTYP1 Damage type 1. A code to indicate the kind of damage (meeting or exceeding a severity threshold, as defined in the field guide) present. New in annual inventory. (*Core* prior to field guide 1.7, *Core Optional* beginning with field guide 1.7)

Code	Description
01	Canker, gall
02	Conk, fruiting body, or sign of advanced decay
03	Open wound
04	Resinosis or gumosis
05	Crack or seam
11	Broken bole or broken root within 3 feet of bole
12	Broom on root or bole
13	Broken or dead root further than 3 feet from bole
20	Vines in the crown
21	Loss of apical dominance, dead terminal
22	Broken or dead branches
23	Excessive branching or brooms within the live crown
24	Damaged shoots, buds, or foliage
25	Discoloration of foliage
31	Other

31. DAMSEV1 Damage severity 1. A code to indicate how much of the tree is affected. Valid severity codes vary by damage type and damage location and must exceed a threshold value, as defined in the field guide. New in annual inventory. (*Core* prior to field guide 1.7, *Core Optional* beginning with field guide 1.7).

Code	Description
0	01 to 09 % of location affected
1	10 to 19 % of location affected
2	20 to 29 % of location affected
3	30 to 39 % of location affected
4	40 to 49 % of location affected
5	50 to 59 % of location affected
6	60 to 69 % of location affected
7	70 to 79 % of location affected
8	80 to 89 % of location affected
9	90 to 99 % of location affected

32. DAMLOC2 Damage location 2. A code to indicate where secondary damage (meeting or exceeding a severity threshold, as defined in the field guide) is present. Use same codes as DAMLOC1. New in annual inventory. (*Core* prior to field guide 1.7, *Core Optional* beginning with field guide 1.7).
33. DAMTYP2 Damage type 2. A code to indicate the kind of secondary damage (meeting or exceeding a severity threshold, as defined in the field guide) present. Use same codes as DAMTYP1. New in annual inventory. (*Core* prior to field guide 1.7, *Core Optional* beginning with field guide 1.7).
34. DAMSEV2 Damage severity 2. A code to indicate how much of the tree is affected by the secondary damage. Valid severity codes vary by damage type and damage location and must exceed a threshold value, as defined in the field

guide. Use same codes as DAMSEV1. New in annual inventory. (*Core* prior to field guide 1.7, *Core Optional* beginning with field guide 1.7).

35. DECAECD Decay class code. A code to indicate the stage of decay in a standing dead tree. New in annual inventory.

Code Description

- 1 All limbs and branches are present; the top of the crown is still present; all bark remains; sapwood is intact, with minimal decay; heartwood is sound and hard.
- 2 There are few limbs and no fine branches; the top may be broken; a variable amount of bark remains; sapwood is sloughing with advanced decay; heartwood is sound at base but beginning to decay in the outer part of the upper bole.
- 3 Only limb stubs exist; the top is broken; a variable amount of bark remains; sapwood is sloughing; heartwood has advanced decay in upper bole and is beginning at the base.
- 4 Few or no limb stubs remain; the top is broken; a variable amount of bark remains; sapwood is sloughing; heartwood has advanced decay at the base and is sloughing in the upper bole.
- 5 No evidence of branches remains; the top is broken; less than 20% of the bark remains; sapwood is gone; heartwood is sloughing throughout.

36. STOCKING Tree stocking. The stocking value computed for each live tree. Stocking values are computed using several specific species equations that were developed from normal yield tables and stocking charts. Resultant values are a function of diameter. The stocking of individual trees is used to calculate GSSTK, GSSTKCD, ALSTK, and ALSTKCD on the COND table.

37. WDLDDSTEM Woodland tree species stem count. Used for tree species where diameter is measured at the root collar. For a stem to be counted, it must have a minimum stem size of 1 inch in diameter and 1 foot in length. Null if not a woodland species.

38. TPACURR Current trees per acre. Number of trees per acre that the tree represents for calculating current estimates of numbers of trees, volume, and biomass on forest land. For data processed using NIMS, this variable is adjusted by excluding outside-of-the-population, denied-access, and hazardous conditions from all plots in the stratum in which the plot is classified. For data processed using systems other than NIMS, this variable is adjusted by excluding outside-of-the-population, denied-access, and hazardous conditions from the plot itself. Population estimates of total volume or biomass are calculated by summing the product of TPACURR, per tree values (i.e., VOLCFNET, VOLCFGRS, VOLCSNET, VOLCSGRS,

VOLBFNET, VOLBFGRS, VOLCFSND, DRYBIOT, or DRYBIOM), and the appropriate area expander from the PLOT table.

39. TPAMORT Mortality trees per acre per year. Number of trees per acre per year that the tree represents for calculating mortality on forest land. For data processed using NIMS, this variable is adjusted by excluding outside-of-the-population, denied-access, and hazardous conditions from all plots in the stratum in which the plot is classified. For data processed using systems other than NIMS, this variable is adjusted by excluding outside-of-the-population, denied-access, and hazardous conditions from the plot itself. Mortality volume on timberland per acre per year is calculated by multiplying TPAMORT by MORTCFGS, MORTBFSL, or MORTCFAL for each tree. Mortality volume on forest land per acre per year is calculated by multiplying TPAMORT by FMORTCFGS, FMORTBFSL, or FMORTCFAL for each tree. Population estimates of total annual mortality volume are calculated by summing the product of mortality volume per acre per year and the appropriate area expander from the PLOT table.
40. TPAREMV Removals trees per acre per year. Number of trees per acre per year that the tree represents for calculating removals from forest land. For data processed using NIMS, this variable is adjusted by excluding outside-of-the-population, denied-access, and hazardous conditions from all plots in the stratum in which the plot is classified. For data processed using systems other than NIMS, this variable is adjusted by excluding outside-of-the-population, denied-access, and hazardous conditions from the plot itself. Removals volume on timberland per acre per year is calculated by multiplying TPAREMV by REMVCFGS, REMVBFSL, or REMVCFAL for each tree. Removals volume on forest land per acre per year is calculated by multiplying TPAREMV by FREMVCFGS, FREMVBFSL, or FREMVCFAL for each tree. Population estimates of total annual removals volume are calculated by summing the product of the removals volume per acre per year and the appropriate area expander from the PLOT table.
41. TPAGROW Growth trees per acre. Number of trees per acre that the tree represents for calculating growth on forest land. For data processed using NIMS, this variable is adjusted by excluding outside-of-the-population, denied-access, and hazardous conditions from all plots in the stratum in which the plot is classified. For data processed using systems other than NIMS, this variable is adjusted by excluding outside-of-the-population, denied-access, and hazardous conditions from the plot itself. Growth volume on timberland per acre per year is calculated by multiplying TPAGROW by GROWCFGS, GROWBFSL, or GROWCFAL for each tree. Growth volume on forest land per acre per year is calculated by multiplying TPAGROW by FGROWCFGS, FGROWBFSL, or FGROWCFAL for each tree. Population estimates of total annual growth volume are

calculated by summing the product of the growth volume per acre per year and the appropriate area expander from the PLOT table.

42. VOLCFNET Net cubic-foot volume. The net volume of wood in the central stem of a sample tree 5.0 inches diameter or larger, from a 1-foot stump to a minimum 4-inch top DOB, or to where the central stem breaks into limbs all of which are less than 4.0 inches DOB. This is a per tree value and must be multiplied by TPACURR to obtain per acre information. Trees with DIA less than 5.0 inches have null in this field. All trees measured after 1998 with DIA 5.0 inches or larger (including dead and cut trees) will have entries in this field. Does not include rotten, missing, and form cull (volume loss due to rotten, missing, and form cull defect has been deducted).
43. VOLCFGRS Gross cubic-foot volume. The total volume of wood in the central stem of sample tree 5.0 inches diameter or larger, from a 1-foot stump to a minimum 4-inch top DOB, or to where the central stem breaks into limbs all of which are less than 4.0 inches DOB. This is a per tree value and must be multiplied by TPACURR to obtain per acre information. Trees with DIA less than 5.0 inches have null in this field. All trees measured after 1998 with DIA 5.0 inches or larger (including dead and cut trees) have entries in this field. Includes rotten, missing and form cull (volume loss due to rotten, missing, and form cull defect has not been deducted).
44. VOLCSNET Net cubic-foot volume in the saw-log portion. The net volume of wood in the central stem of a sample commercial species tree of sawtimber size (9.0 inches DBH minimum for softwoods, 11.0 inches DBH minimum for hardwoods), from a 1-foot stump to a minimum top DOB, (7.0 inches for softwoods, 9.0 inches for hardwoods) or to where the central stem breaks into limbs, all of which are less than the minimum top DOB. This is a per tree value and must be multiplied by TPACURR to obtain per acre information. Trees with DIA less than 9.0 inches (11.0 inches for hardwoods) have null in this field. All larger trees have entries in this field if they are growing-stock trees (TREECLCD = 2 and STATUSCD = 1). All rough and rotten trees (TREECLCD = 3 or 4) and dead and cut trees (STATUSCD = 2 or 3) have null in this field.
45. VOLCSGRS Gross cubic-foot volume in the saw-log portion. This is the total volume of wood in the central stem of a sample commercial species tree of sawtimber size (9.0 inches DBH minimum for softwoods, 11.0 inches DBH minimum for hardwoods), from a 1-foot stump to a minimum top DOB (7.0 inches for softwoods, 9.0 inches for hardwoods), or to where the central stem breaks into limbs, all of which are less than the minimum top DOB. This is a per tree value and must be multiplied by TPACURR to obtain per acre information. Trees with DIA less than 9.0 inches (11.0 inches for hardwoods), have null in this field. All larger trees have entries in this field if they are growing-stock trees (TREECLCD = 2 and

STATUSCD = 1). All rough and rotten trees (TREECLCD = 3 or 4) and dead and cut trees (STATUSCD = 2 or 3) have null in this field.

46. VOLBFNET Net board-foot volume in the saw-log portion. This is the net volume of wood in the central stem of a sample commercial species tree of sawtimber size (9.0 inches DBH minimum for softwoods, 11.0 inches DBH minimum for hardwoods), from a 1-foot stump to a minimum top DOB (7.0 inches for softwoods, 9.0 inches for hardwoods), or to where the central stem breaks into limbs all of which are less than the minimum top DOB. Volume is based on International 1/4-inch rule. This is a per tree value and must be multiplied by TPACURR to obtain per unit area information. Trees with DIA less than 9.0 inches (11.0 inches for hardwoods) have zero in this field. All larger trees should have entries in this field if they are growing-stock trees (TREECLCD = 2 and STATUSCD = 1). All rough and rotten trees (TREECLCD = 3 or 4) and dead and cut trees (STATUSCD = 2 or 3) have null in this field.
47. VOLBFGRS Gross board-foot volume in the saw-log portion. This is the total volume of wood in the central stem of a sample commercial species tree of sawtimber size (9.0 inches DBH minimum for softwoods, 11.0 inches DBH minimum for hardwoods), from a 1-foot stump to a minimum top DOB (7.0 inches for softwoods, 9.0 inches for hardwoods), or to where the central stem breaks into limbs all of which are less than the minimum top DOB. Volume is based on International 1/4-inch rule. This is a per tree value and must be multiplied by TPACURR to obtain per unit area information. Trees with DIA less than 9.0 inches (11.0 inches for hardwoods) have zero in this field. All larger trees should have entries in this field if they are growing-stock trees (TREECLCD = 2 and STATUSCD = 1). All rough and rotten trees (TREECLCD = 3 or 4) and dead and cut trees (STATUSCD = 2 or 3) have null in this field.
48. VOLCFSND Sound cubic-foot volume. The volume of sound wood in the central stem of a sample tree 5.0 inches diameter or larger from a 1-foot stump to a minimum 4-inch top DOB or to where the central stem breaks into limbs all of which are less than 4.0 inches DOB. This is a per tree value and must be multiplied by TPACURR to obtain per acre information. Trees with DIA less than 5.0 inches have null in this field. All trees with DIA 5.0 inches or larger (including dead trees) have entries in this field. Does not include rotten and missing cull (volume loss due to rotten and missing cull defect has been deducted).
49. GROWCFGS Net annual merchantable cubic-foot growth of a growing-stock tree on timberland. This is the net change in cubic-foot volume per year of this tree (for remeasured plots, $(V_2 - V_1)/(t_2 - t_1)$; where t_1 and t_2 denote the past and current measurement, respectively, V is volume, and t indicates year of measurement). Because this value is net growth, it may be a negative number. Negative growth values are usually due to mortality ($V_2=0$) but can also occur on live trees that have a net loss in volume because of

damage, rot, or other causes. To expand to a per acre value, multiply by TPAGROW.

50. GROWBFSL Net annual merchantable board-foot (International 1/4-inch rule) growth of a sawtimber size tree on timberland. This is the net change in board-foot volume per year of this tree (for remeasured plots $(V_2 - V_1)/(t_2 - t_1)$). Because this value is net growth, it may be a negative number. Negative growth values are usually due to mortality ($V_2=0$) but can also occur on live trees that have a net loss in volume because of damage, rot, or other causes. To expand to a per acre value, multiply by TPAGROW.
51. GROWCFAL Net annual sound cubic-foot growth of a live tree on timberland. The net change in cubic-foot volume per year of this tree (for remeasured plots $(V_2 - V_1)/(t_2 - t_1)$). Because this value is net growth, it may be a negative number. Negative growth values are usually due to mortality ($V_2=0$) but can also occur on live trees that have a net loss in volume because of damage, rot, or other causes. To expand to a per acre value, multiply by TPAGROW. GROWCFAL differs from GROWCFGS by including all trees, regardless of tree class.
52. MORTCFGS Cubic-foot volume of a growing-stock tree on timberland for mortality purposes. Represents the cubic-foot volume of a growing-stock tree at time of death. To obtain estimates of annual per acre mortality, multiply by TPAMORT.
53. MORTBFSL Board-foot volume of a sawtimber size tree on timberland for mortality purposes. Represents the board-foot (International 1/4-inch rule) volume of a sawtimber tree at time of mortality. To obtain estimates of annual per acre mortality, multiply by TPAMORT.
54. MORTCFAL Sound cubic-foot volume of a tree on timberland for mortality purposes. Represents the cubic-foot volume of the tree at time of mortality. To obtain estimates of annual per acre mortality, multiply by TPAMORT. MORTCFAL differs from MORTCFGS by including all trees, regardless of tree class.
55. REMVCFGS Cubic-foot volume of a growing-stock tree on timberland for removal purposes. Represents the cubic-foot volume of the tree at time of removal. To obtain estimates of annual per acre removals, multiply by TPAREMV.
56. REMVBFSL Board-foot volume of a sawtimber size tree on timberland for removal purposes. Represents the board-foot (International 1/4-inch rule) volume of the tree at time of removal. To obtain estimates of annual per acre removals, multiply by TPAREMV.
57. REMVCFAL Sound cubic-foot volume of a tree on timberland for removal purposes. Represents the cubic-foot volume of the tree at time of removal. To obtain estimates of annual per acre removals, multiply by TPAREMV.

REMVCFAL differs from REMVCFGs by including all trees, regardless of tree class.

58. DRYBIOT Total gross biomass oven dry weight. The total aboveground biomass of a sample tree 1.0 inch diameter or larger, including all tops and limbs (but excluding foliage). This is a per tree value and must be multiplied by TPACURR to obtain per acre information. Calculated in oven dry pounds per tree. This field should have an entry if DIA is 1.0 inch or larger, regardless of STATUSCD or TREECLCD; zero otherwise. For dead or cut trees, this number represents the biomass at the time of death or last measurement.

59. DRYBIOM Merchantable stem biomass oven dry weight. The total gross biomass (including bark) of a tree 5.0 inches DBH or larger from a 1-foot stump to a minimum 4-inch top DOB of the central stem. This is a per tree value and must be multiplied by TPACURR to obtain per acre information. Calculated in oven dry pounds per tree. This field should have an entry if DIA is 5.0 inches or larger, regardless of STATUSCD or TREECLCD; zero otherwise. For dead or cut trees, this number represents the biomass at the time of death or last measurement.

60. DIACHECK Diameter check code. A code to indicate the reliability of the diameter measurement. New in annual inventory.

Code	Description
0	Diameter accurately measured .
1	Diameter estimated.
2	Diameter measured at different location than previous measurement (remeasurement trees only).
5	Diameter modeled in the office (used with periodic inventories)

Note: If both codes 1 and 2 apply, code 2 is used.

61. MORTYR Mortality year. The estimated year in which a remeasured tree died or was cut. New in annual inventory.

62. SALVCD Salvable dead code. A standing or down dead tree considered merchantable by regional standards. Contact the appropriate FIA program for information on how this code is assigned for a particular State.

Code	Description
0	Dead not salvable
1	Dead salvable

63. UNCRCD Uncompacted live crown ratio. Percentage determined by dividing the live crown length by the total live tree length. Expressed as a percentage of the total tree length. (*Core* on phase 3 plots, *Core Optional* on phase 2 plots)

64. CPOSCD Crown position code. The relative position of each tree in relation to the overstory canopy. (*Core* on phase 3 plots only)

Code	Description
1	Superstory
2	Overstory
3	Understory
4	Open canopy

65. CLIGHTCD Crown light exposure code. A code to indicate the amount of light being received by the tree crown. Collected for all live trees at least 5 inches DBH/DRC. (*Core* on phase 3 plots; *Core Optional* on phase 2 plots)

Code	Description
0	The tree receives no full light because it is shaded by vegetation
1	Receives full light from the top or 1 side
2	Receives full light from the top and 1 side (or 2 sides without the top)
3	Receives full light from the top and 2 sides (or 3 sides without the top)
4	Receives full light from the top and 3 sides
5	Receives full light from the top and 4 sides

66. CVIGORCD Crown vigor code. A code to indicate the vigor of sapling crowns. Collected for live trees between 1 and 4.9 inches DBH/DRC (*Core* on phase 3 plots; *Core Optional* on phase 2 plots).

Code	Description
1	Saplings must have an uncompact live crown ratio of 35 or higher, have less than 5 percent dieback (deer/rabbit browse is not considered as dieback but is considered missing foliage) and 80 percent or more of the foliage present is normal or at least 50 percent of each leaf is not damaged or missing. Twigs and branches that are dead because of normal shading are not included.
2	Saplings do not meet class 1 or 3 criteria. They may have any uncompact live crown ratio, may or may not have dieback and may have between 21 and 100 percent of the foliage classified as normal.
3	Saplings may have any uncompact live crown ratio and have 1 to 20 percent normal foliage or the percent of foliage missing combined with the percent of leaves that are over 50 percent damaged or missing should equal 80 percent or more of the live crown. Twigs and branches that are dead because of normal shading are not included. Code is also used for saplings that have no crown by definition

67. CDENCD Crown density code. A code to indicate how dense the tree crown is, estimated in percent classes. Collected for all live trees at least 5 inches

DBH/DRC. Crown density is the amount of crown branches, foliage and reproductive structures that blocks light visibility through the crown. (*Core* on phase 3 plots; *Core Optional* on phase 2 plots).

Code	Description
00	0%
05	1-5%
10	6-10%
15	11-15%
.	.
.	.
.	.
95	91-95%
99	96-100%

68. CDIEBKCD Crown dieback code. A code to indicate the amount of dead material in the crown, estimated in percent classes. Collected for all live trees at least 5 inches DBH/DRC. (*Core* on phase 3 plots; *Core Optional* on phase 2 plots).

Code	Description
00	0%
05	1-5%
10	6-10%
15	11-15%
.	.
.	.
.	.
95	91-95%
99	96-100%

69. TRANSCD Foliage transparency code. A code to indicate the amount of light penetrating the crown, estimated in percent classes. Collected for all live trees at least 5 inches DBH/DRC. (*Core* on phase 3 plots; *Core Optional* on phase 2 plots).

Code	Description
00	0%
05	1-5%
10	6-10%
15	11-15%
.	.
.	.
.	.
95	91-95%
99	96-100%

70. CN Sequence number. A unique sequence number used to identify a tree record.
71. PLT_CN Plot sequence number. Foreign key linking the tree record to the plot record.
72. TREEHISTCD Tree history code. **Specific to North Central, Northeastern, and Southern Research Stations.** All other Stations record null for this variable. Contact North Central, Northeastern, or Southern Research Station for more information. Identifies the tree with detailed information as to whether the tree is live, dead, cut, removed due to land use change, etc.
73. DIACALC Current diameter (calculated), in inches. **Specific to North Central and Southern Research Stations.** All other Stations record null for this variable. Contact North Central or Southern Research Station for more information. If the diameter is unmeasurable (i.e. the tree is cut or dead), the diameter is calculated and stored in this variable.
74. BHAGE Breast height age. **Specific to Pacific Northwest Research and Rocky Mountain Stations.** All other Stations record null for this variable. Contact Pacific Northwest or Rocky Mountain Research Station for more information. The tree's age at breast height.
75. TOTAGE Total age. **Specific to Pacific Northwest and Rocky Mountain Research Stations.** All other Stations record null for this variable. Contact Pacific Northwest or Rocky Mountain Research Station for more information. The tree's total age.
76. CULLDEAD Dead cull. **Specific to Rocky Mountain Research Station.** All other Stations record null for this variable. Contact Rocky Mountain Research Station for more information. The percent of the gross cubic-foot volume that is in dead cull.
77. CULLFORM Form cull. **Specific to Rocky Mountain Research Station.** All other Stations record null for this variable. Contact Rocky Mountain Research Station for more information. The percent of the gross cubic-foot volume that is in form defect cull.
78. CULLMSTOP Missing top cull. **Specific to Rocky Mountain Research Station.** All other Stations record null for this variable. Contact Rocky Mountain Research Station for more information. The percent of the gross cubic-foot volume that is in cull due to a missing top.
79. CULLBF Board-foot cull. **Specific to Northeastern Research Station.** All other Stations record null for this variable. Contact Northeastern Research Station for more information. The percent of the gross board-foot volume that is in cull due to rot or form.

80. CULLCF Cubic-foot cull. **Specific to Northeastern Research Station.** All other Stations record null for this variable. Contact Northeastern Research Station for more information. The percent of the gross cubic-foot volume that is in cull due to rot or form.
81. BFSND Board-foot-cull soundness. **Specific to Northeastern Research Station.** All other Stations record null for this variable. Contact Northeastern Research Station for more information. The percent of the board-foot cull that is sound (due to form).
82. CFSND Cubic-foot-cull soundness. **Specific to Northeastern Research Station.** All other Stations record null for this variable. Contact Northeastern Research Station for more information. The percent of the cubic-foot cull that is sound (due to form).
83. SAWHT Sawlog length. **Specific to Northeastern Research Station.** All other Stations record null for this variable. Contact Northeastern Research Station for more information. The length of a tree, recorded to a 7-inch top (9-inch for hardwoods), where at least one 8-foot log, merchantable or not, is present. On broken-off trees, sawlog length is recorded to the point of the break.
84. BOLEHT Bole length. **Specific to Northeastern Research Station.** All other Stations record null for this variable. Contact Northeastern Research Station for more information. The length of a tree, recorded to a 4-inch top, where at least one 4-foot section is present. On broken-off trees, bole length is recorded to the point of the break.
85. FORMCL Hardwood form class code. **Specific to Pacific Northwest Research Station.** All other Stations record null for this variable. Contact Pacific Northwest Research Station for more information. Recorded for all live hardwood trees tallied that are > 5.0 inch DBH/DRC This field is used in calculating tree volume.
- | Code | Description |
|------|--|
| 1 | First 8 feet above stump is straight. (A log is considered straight if a line drawn through the centers of both ends of the log does not pass outside the curve of the log.) |
| 2 | First 8 feet above stump is not straight but at least one straight log elsewhere in the tree exists. |
| 3 | No logs anywhere in the tree due to form. Includes various free form trees. |
86. HTCALC Calculated total length. **Specific to Southern Research Station.** All other Stations record null for this variable. Contact Southern Research Station for more information.

87. HRDWD_CLUMP_CD

Hardwood clump. **Specific to Pacific Northwest Research Station.** All other Stations record null for this variable. Contact Pacific Northwest Research Station for more information. A discount factor on hardwoods when determining stocking. A 1-digit code indicating if a hardwood is part of a clump. The clump is assigned a clump number, and the number is recorded for each hardwood tallied that is part of the clump. If a hardwood is not part of a clump, 0 is recorded for the tree. Clumps with tallied trees are numbered in consecutive order on a subplot starting with 1. Clump data are used in adjusting stocking estimates; trees growing in clumps contribute less stocking than those growing as individuals. Collected for all live hardwood trees ≥ 1.0 inches DBH/DRC., and for live hardwood seedlings. Values are 0 to 9.

88. SITREE

Calculated site index (in feet). **Specific to North Central Research Station.** All other Stations record null for this variable. Contact North Central Research Station for more information. Computed for every tree. The site index represents the average total length that dominant and co-dominant trees in fully-stocked, even-aged stands (of the same species as this tree) will obtain at key ages (usually 25 or 50 years).

89. CREATED_BY The user who created the record.

90. CREATED_DATE

The date the record was created. Date will be in the form DD-MON-YYYY.

91. CREATED_IN_INSTANCE

The database instance in which the record was created. This uniquely identifies which computer system was used to create the record.

92. MODIFIED_BY

The user who modified the record. This field will be null if the data have not been modified since initial creation.

93. MODIFIED_DATE

The date the record was last modified. This field will be null if the data have not been modified since initial creation. Date will be in the form DD-MON-YYYY.

94. MODIFIED_IN_INSTANCE

The database instance in which the record was modified. This field will be null if the data have not been modified since initial creation.

95. MORTCD Mortality code. Used for a tree that was alive within past five years, but has died. (*Core Optional*)
- | Code | Description |
|------|------------------------------------|
| 0 | Tree does not qualify as mortality |
| 1 | Tree does qualify as mortality |
96. HTDMP Height to diameter measurement point. For trees measured directly at 4.5 ft above ground, this item is blank. If the diameter is not measured at 4.5 ft, the actual length from the ground, to the nearest 0.1 foot, at which the diameter was measured for each tally tree, 1.0 inch DBH/DRC and larger. (*Core Optional*)
97. ROUGHCULL Rough cull. Percentage of sound dead cull, as a percent of the merchantable bole/portion of the tree. (*Core Optional*)
98. MIST_CL_CD Mistletoe class code. A rating of dwarf mistletoe infection. Recorded on all live conifer species except juniper. Using the Hawksworth six-class rating system, the live crown is divided into thirds, and each third is rated using the following scale: 0 is for no visible infection, 1 for less than 50% of branches infected, 2 for more than 50% of branches infected. The ratings for each third are summed together to yield the Hawksworth rating (*Core Optional*)
- | Code | Description |
|------|---|
| 0 | Hawksworth tree DMR rating of 0, no infection |
| 1 | Hawksworth tree DMR rating of 1, light infection |
| 2 | Hawksworth tree DMR rating of 2, light infection |
| 3 | Hawksworth tree DMR rating of 3, medium infection |
| 4 | Hawksworth tree DMR rating of 4, medium infection |
| 5 | Hawksworth tree DMR rating of 5, heavy infection |
| 6 | Hawksworth tree DMR rating of 6, heavy infection |
99. TPA Trees per acre (computed from plot size). Trees per acre set to a constant derived from the plot radius and the theoretical number of subplots. No adjustment is made for outside-of-the-population, denied-access, and hazardous conditions (these conditions are not excluded). If PLOT.DESIGNCD equals 1, the number of subplots equals 4; trees on the subplot have TPA equal to 6.018046; trees on the microplot have TPA equal to 74.965282; and trees on the macroplot have TPA equal to 0.999188. For other sample designs, TPA will vary. This attribute is used to compute classification variables such as forest type and stand-size class.
100. CULL_FLD Rotten/missing cull. The percent rotten or missing cubic-foot cull for all live tally trees ≥ 5.0 inches DBH/DRC (*Core*) and all standing dead tally trees ≥ 5.0 inches DBH/DRC (*Core Optional*). The percentage of rotten

and missing cubic-foot volume, to the nearest 1 percent. When estimating volume loss (tree cull), only consider the cull on the merchantable bole/portion of the tree, from a 1-foot stump to a 4-inch top. Do not include any cull estimate above actual length. For western woodland species, the merchantable portion is between the point of DRC measurement to a 1.5-inch DOB top.

101. RECONCILECD

Reconcile code. Recorded for remeasurement locations only. A code to indicate the reason a tree either enters or is no longer a part of the inventory.

Code	Description
1	Ingrowth – new tree not qualifying as through growth (includes reversions)
2	Through growth – new tally tree 5 inches DBH/DRC and larger, within the microplot
3	Missed live – a live tree missed at previous inventory and that is live, dead, or removed now
4	Missed dead – a dead tree missed at previous inventory and that is dead or removed now
5	Shrank – live tree that shrank below threshold diameter on microplot/subplot/annular plot
6	Missing – tree was tallied in previous inventory, but is now missing due to natural causes such as landslide, fire, etc.
7	Cruiser error – erroneously tallied at previous inventory
8	Procedural change – tree was tallied at the previous inventory, but is no longer tallied due to a definition or procedural change

102. PREVDIA Previous diameter. The previous diameter (in inches) of the sample tree at the point of diameter measurement where TREE.CYCLE=PLOT.LASTCYCLEMEAS and TREE.SUBCYCLE=PLOT.LASTSUBCYCLEMEAS.

103. FGROWCFGS Net annual merchantable cubic-foot growth of a growing-stock tree on forest land. This is the net change in cubic-foot volume per year of this tree (for remeasured plots, $(V_2 - V_1)/(t_2 - t_1)$; where t_1 and t_2 denote the past and current measurement, respectively, V is volume, and t indicates year of measurement). Because this value is net growth, it may be a negative number. Negative growth values are usually due to mortality ($V_2=0$) but can also occur on live trees that have a net loss in volume because of damage, rot, or other causes. To expand to a per acre value, multiply by TPAGROW.

104. FGROWBFSL Net annual merchantable board-foot (International 1/4 -inch rule) growth of a sawtimber tree on forest land. This is the net change in board-foot volume per year of this tree (for remeasured plots $(V_2 - V_1)/(t_2 - t_1)$).

Because this value is net growth, it may be a negative number. Negative growth values are usually due to mortality ($V_2=0$) but can also occur on live trees that have a net loss in volume because of damage, rot, or other causes. To expand to a per acre value, multiply by TPAGROW.

105. FGROWCFAL Net annual sound cubic-foot growth of a live tree on forest land. The net change in cubic-foot volume per year of this tree (for remeasured plots $(V_2-V_1)/(t_2-t_1)$). Because this value is net growth, it may be a negative number. Negative growth values are usually due to mortality ($V_2=0$) but can also occur on live trees that have a net loss in volume because of damage, rot, or other causes. To expand to a per acre value, multiply by TPAGROW. FGROWCFAL differs from FGROWCFGS by including all trees, regardless of tree class.
106. FMORTCFGS Cubic-foot volume of a growing-stock tree for mortality purposes on forest land. Represents the cubic-foot volume of a growing-stock tree at time of mortality. To obtain estimates of annual per acre mortality, multiply by TPAMORT.
107. FMORTBFSL Board-foot volume of a sawtimber tree for mortality purposes on forest land. Represents the board-foot (International 1/4-rule) volume of a sawtimber tree at time of mortality. To obtain estimates of annual per acre mortality, multiply by TPAMORT.
108. FMORTCFAL Sound cubic-foot volume of a tree for mortality purposes on forest land. Represents the cubic-foot volume of the tree at time of mortality. To obtain estimates of annual per acre mortality, multiply by TPAMORT. FMORTCFAL differs from FMORTCFGS by including all trees, regardless of tree class.
109. FREMVCFGS Cubic-foot volume of a growing-stock tree for removal purposes on forest land. Represents the cubic-foot volume of the tree at time of removal. To obtain estimates of annual per acre removals, multiply by TPAREMV.
110. FREMVBFSL Board-foot volume of a sawtimber size tree for removal purposes on forest land. Represents the board-foot (International 1/4-rule) volume of the tree at time of removal. To obtain estimates of annual per acre removals, multiply by TPAREMV.
111. FREMVCFAL Sound cubic-foot volume of the tree for removal purposes on forest land. Represents the cubic-foot volume of the tree at time of removal. To obtain estimates of annual per acre removals, multiply by TPAREMV. FREMVCFAL differs from FREMVCFGS by including all trees, regardless of tree class.

112. TPACURR_SAMP

Trees per acre (for the measured portion of the plot). Current number of trees per acre that the tree represents on a per plot basis. This variable is adjusted by excluding outside-of-the-population, denied access, and hazardous conditions from the plot, but is not adjusted over the stratum. This variable can be used for applications such as creating a spatial display (map) of plot-level per acre information. For example, to produce a map displaying oven-dry biomass per plot, plot-level biomass is calculated by summing the product of TPACURR_SAMP and DRYBIOT for all trees on the plot and/or condition. This variable will be populated for annual inventories and may be populated for periodic inventories.

113. TPAGROW_SAMP

Growth trees per acre (for the measured portion of the plot). Number of growth trees per acre that the tree represents on a per plot basis. This attribute is adjusted by excluding outside-of-the-population, denied access, and hazardous conditions from the plot, but is not adjusted over the stratum. This variable can be used for applications such as creating a spatial display (map) of plot-level per acre growth information. This variable will be populated for annual inventories and may be populated for periodic inventories.

114. TPAMORT_SAMP

Mortality trees per acre (for the measured portion of the plot). Number of mortality trees per acre that the tree represents on a per plot basis. This attribute is adjusted by excluding outside-of-the-population, denied access, and hazardous conditions from the plot, but is not adjusted over the stratum. This variable can be used for applications such as creating a spatial display (map) of plot-level per acre mortality information. This variable will be populated for annual inventories and may be populated for periodic inventories.

115. TPAREMV_SAMP

Removal trees per acre (for the measured portion of the plot). Number of removal trees per acre that the tree represents on a per plot basis. This attribute is adjusted by excluding outside-of-the-population, denied access, and hazardous conditions from the plot, but is not adjusted over the stratum. This variable can be used for applications such as creating a spatial display (map) of plot-level per acre removal information. This variable will be populated for annual inventories and may be populated for periodic inventories

116. P2A_GRM_FLG

Periodic to annual growth, removal, and mortality flag. Used to indicate if this tree is used in computing growth, removal, and mortality estimates from periodic inventories to annual inventories.

117. PREV_TRE_CN

Previous tree sequence number. Foreign key linking the tree to the previous inventory's tree record for this tree. Only populated on remeasured annual plots.

118. TREECLCD_NERS

Tree class code for NERS (**Specific to NERS [Northeastern Research Station]**)

1	Preferred
2	Acceptable
3	Rough cull
4	Rotten cull
5	Dead
6	Snag

119. TREECLCD_SRS

Tree class code for SRS (**Specific to SRS [Southern Research Station]**)

Code	Description
2	Growing stock
3	Rough cull
4	Rotten cull

120. TREECLCD_NCRS

Tree class code for NCRS (**Specific to NCRS [North Central Research Station]**) Tree class reflects tree suitability for timber products.

Code	Description
20	Growing stock
30	Rough cull, salvable, and salvable-down
31	Short log cull
40	Rotten cull

121. TREECLCD_RMRS

Tree class code for RMRS (**Specific to RMRS [Rocky Mountain Research Station]**)

1	Sound – live timber species
2	All live woodland species
3	Rough – live timber species
4	Rotten – live timber species
5	Hard dead
6	Soft dead

122. STANDING_DEAD_CD

Standing dead code. A code to indicate if a tree qualifies as standing dead. To qualify as a standing dead tally tree, the dead tree must be at least 5.0 inches in diameter, have a bole that has an unbroken actual length of at least 4.5 feet, and lean less than 45 degrees from vertical. New in field guide 2.0.

For western woodland species with multiple stems, a tree is considered down if more than 2/3 of the volume is no longer attached or upright; cut and removed volume is not considered. For western woodland species with single stems to qualify as a standing dead tally tree, dead trees must be at least 5.0 inches in diameter, be at least 1.0 foot in unbroken ACTUAL LENGTH, and lean less than 45 degrees from vertical.

Code	Description
0	No – tree does not qualify as standing dead
1	Yes – tree does qualify as standing dead

123. PREV_STATUS_CD

Previous tree status code. Tree status that was recorded at the previous inventory.

Code	Description
1	Live tree – live tree at the previous inventory
2	Dead tree – standing dead at the previous inventory

124. PREV_WDLDDSTEM

Previous woodland stem count. Woodland tree species stem count that was recorded at the previous inventory.

125. TPAMORT_UNADJ

Mortality trees per acre unadjusted. Mortality trees per acre per year that have not been adjusted for denied access, hazardous, and out-of-sample conditions. The unadjusted values are the raw values based on the sampling design and should be used for the estimation-on-the-fly procedures.

126. TPAREMV_UNADJ

Removal trees per acre unadjusted. Removal trees per acre per year that have not been adjusted for denied access, hazardous, and out-of-sample conditions. The unadjusted values are the raw values based on the sampling design and should be used for the estimation-on-the-fly procedures.

127. TPAGROW_UNADJ

Growth trees per acre unadjusted. Growth trees per acre that have not been adjusted for denied access, hazardous, and out-of-sample conditions. The unadjusted values are the raw values based on the sampling design and should be used for the estimation-on-the-fly procedures.

Seedling Table (Oracle table name is SEEDLING)

	Column Name	Oracle data type	Value or unit of measure	Key data item	Field Guide Item#
1	TABLENM	VARCHAR2 (8)	SEEDLING		
2	STATECD	NUMBER (4)	Coded	X	
3	CYCLE	NUMBER (2)	Number	X	
4	SUBCYCLE	NUMBER (2)	Number	X	
5	UNITCD	NUMBER (2)	Coded	X	
6	COUNTYCD	NUMBER (3)	Coded	X	
7	PLOT	NUMBER (5)	Number	X	
8	SUBP	NUMBER (3)	Number	X	6.1
9	CONDID	NUMBER (1)	Number	X	6.3
10	SPCD	NUMBER (3)	Coded	X	6.2
11	SPGRPCD	NUMBER (2)	Coded		
12	STOCKING	NUMBER (7,4)	Percent		
13	CN	VARCHAR2 (34)	Character	PK	
14	PLT_CN	VARCHAR2 (34)	Character	FK	
15	TREECOUNT	NUMBER (3)	Number		
16	TOTAGE (RMRS)	NUMBER (3)	Years		
17	TPACURR	NUMBER (12,6)	Trees/acre		
18	CREATED_BY	VARCHAR2 (30)	Character		
19	CREATED_DATE	DATE	DD-MON-YYYY		
20	CREATED_IN_INSTANCE	NUMBER (6)	Number		
21	MODIFIED_BY	VARCHAR2 (30)	Character		
22	MODIFIED_DATE	DATE	DD-MON-YYYY		
23	MODIFIED_IN_INSTANCE	NUMBER (6)	Number		
24	TPA	NUMBER (11,6)	Trees/acre		
25	TREECOUNT_CALC	NUMBER			

1. TABLENM Table name. Identifies the table to which the record belongs. Always equals 'SEEDLING.'
2. STATECD State code. Bureau of the Census Federal Information Processing Standards (FIPS) two-digit code for each State. Refer to table 1 at the end of the description of the SURVEY table.
3. CYCLE Inventory cycle number. Identifies the cycle number for the inventory data. For example, a 4 shows the data came from the fourth inventory of that State. A cycle number greater than 1 does not necessarily mean that information for previous cycles resides in the database.

4. SUBCYCLE Inventory subcycle number. For an annual inventory that takes n years to measure all plots, subcycle shows in which of the n years of the cycle the data were measured. Subcycle is 0 for a periodic inventory.
5. UNITCD Survey unit number. Forest Inventory and Analysis survey unit identification number. Survey units are usually groups of counties within each State. For periodic inventories, Survey units may be made up of lands of particular owners. Refer to Appendix C for codes.
6. COUNTYCD County code. The identification number for a county, parish, watershed, borough, or similar governmental unit in a State. FIPS codes from the Bureau of the Census, 1990, are used. Refer to Appendix C for codes.
7. PLOT Phase 2 plot number. An identifier for a plot. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.
8. SUBP Subplot number. Number of the subplot on which the seedling count was measured. Annual inventories have subplot number values of 1 through 4. Periodic inventories subplot numbers will vary. For more information, contact the appropriate FIA unit.
9. CONDIC Condition class number. Unique identifying number assigned to each condition on a plot. A condition is initially defined by condition class status. Differences in reserved status, owner group, forest type, stand-size class, regeneration status, and stand density further define condition for forest land. Mapped nonforest conditions are also assigned numbers. At the time of the plot establishment, the condition class at plot center (the center of subplot 1) is usually designated as condition class 1. Other condition classes are assigned numbers sequentially at the time each condition class is delineated. On a plot, each sampled condition class must have a unique number that can change at remeasurement to reflect new conditions on the plot.
10. SPCD Species code. A standard tree species code. Refer to Appendix F for codes.
11. SPGRPCD Species group code. An FIA species group number. This number is used to produce many of the standard presentation tables. Individual species and corresponding tree species group codes are shown in Appendix F. Individual FIA programs may further break these species groups down for published tables, but this is a common list that all published standard presentation tables must match.
12. STOCKING Tree stocking. The stocking value assigned to each count of seedlings, by species. Stocking is a relative term used to describe (in percent) the adequacy of a given stand density in meeting a specific management objective. Species or forest type stocking functions were used to assess the

stocking contribution of individual trees. These functions, which were developed using stocking guides, relate the area occupied by an individual tree to the area occupied by a tree of the same size growing in a fully stocked stand of like trees. The stocking of individual trees is used in the calculation of GSSTKCD and ALSTKCD on the condition record.

13. CN Sequence number. A unique index used to easily identify a seedling
14. PLT_CN Plot sequence number. Foreign key linking the seedling record to the plot record.
15. TREECOUNT Tree count. Seedling count. Indicates the number of seedlings (DIA < 1.0 inch) present on the microplot. Conifer seedlings are at least 6 inches tall and hardwood seedlings are at least 12 inches tall. Began in field guide 2.0. Optionally populated by some FIA stations prior to field guide 2.0.
16. TOTAGE Total age. **Specific to Rocky Mountain Research Station.** All other Stations record null for this variable. Contact Rocky Mountain Research Station for more information. Total age for a representative seedling, within each count, by species.
17. TPACURR Current trees per acre (adjusted at the stratum level). Number of trees per acre that the tree represents for calculating current estimates of numbers of trees on forest land. This variable is adjusted by excluding outside-of-the-population, denied-access, and hazardous conditions from all plots in the stratum in which the plot is classified. Populated when TREECOUNT is not null.
18. CREATED_BY The user who created the record.
19. CREATED_DATE
The date the record was created. Date will be in the form DD-MON-YYYY.
20. CREATED_IN_INSTANCE
The database instance in which the record was created. This uniquely identifies which computer system was used to create the record.
21. MODIFIED_BY
The user who modified the record. This field will be null if the data have not been modified since initial creation.

22. MODIFIED_DATE

The date the record was last modified. This field will be null if the data have not been modified since initial creation. Date will be in the form DD-MON-YYYY.

23. MODIFIED_IN_INSTANCE

The database instance in which the record was modified. This field will be null if the data have not been modified since initial creation.

24. TPA

Trees per acre (computed from plot size). Trees per acre set to a constant derived from the plot radius and the theoretical number of microplots. No adjustment is made for outside-of-the-population, denied-access, and hazardous conditions (these conditions are not excluded). Seedlings on the microplot have TPA equal to 74.965282 times TREECOUNT_CALC.

25. TREECOUNT_CALC

Tree count used in calculations. This attribute is set either to TREECOUNT or COUNTCD (converted to a number).

Site Tree Table (Oracle table name is SITETREE)

	Column Name	Oracle data type	Value or unit of measure	Key data item	Field Guide Item#
1	TABLENM	VARCHAR2 (8)	SITETREE		
2	STATECD	NUMBER (4)	Coded	X	
3	CYCLE	NUMBER (2)	Number	X	
4	SUBCYCLE	NUMBER (2)	Number	X	
5	UNITCD	NUMBER (2)	Coded	X	
6	COUNTYCD	NUMBER (3)	Coded	X	
7	PLOT	NUMBER (5)	Number	X	
8	CONDID	NUMBER (1)	Number	X	
9	TREE	NUMBER (4)	Number	X	
10	SPCD	NUMBER (3)	Coded		7.2.2
11	DIA	NUMBER (5,2)	Inches		7.2.3
12	HT	NUMBER (3)	Feet		7.2.4
13	AGEDIA	NUMBER (3)	Years		7.2.5
14	SPGRPCD	NUMBER (2)	Coded		
15	SITREE	NUMBER (3)	Feet		
16	SIBASE	NUMBER (3)	Years		
17	CN	VARCHAR2 (34)	Character	PK	
18	PLT_CN	VARCHAR2 (34)	Character	FK	
19	CREATED_BY	VARCHAR2 (30)	Character		
20	CREATED_DATE	DATE	DD-MON-YYYY		
21	CREATED_IN_INSTANCE	NUMBER (6)	Number		
22	MODIFIED_BY	VARCHAR2 (30)	Character		
23	MODIFIED_DATE	DATE	DD-MON-YYYY		
24	MODIFIED_IN_INSTANCE	NUMBER (6)	Number		
25	SUBP	NUMBER (3)	Number		7.2.7
26	AZIMUTH	NUMBER (3)	Degrees		7.2.8
27	DIST	NUMBER (4,1)	Feet		7.2.9
28	METHOD	NUMBER (2)	Number		
29	SITREE_EST	NUMBER (3)	Feet		
30	VALIDCD	NUMBER (1)	Number		
31	PREV_SIT_CN	VARCHAR2 (34)			

1. TABLENM Table name. Identifies the table to which the record belongs. Always equals 'SITETREE.'

2. STATECD State code. Bureau of the Census Federal Information Processing Standards (FIPS) two-digit code for each State. Refer to table 1 at the end of the description of the SURVEY table.
3. CYCLE Inventory cycle number. Identifies the cycle number for the inventory data. For example, a 4 shows the data came from the fourth inventory of that State. A cycle number greater than 1 does not necessarily mean that information for previous cycles resides in the database.
4. SUBCYCLE Inventory subcycle number. For an annual inventory that takes n years to measure all plots, subcycle shows in which of the n years of the cycle the data were measured. Subcycle is 0 for a periodic inventory.
5. UNITCD Survey unit code. Forest Inventory and Analysis survey unit identification number. Survey units are usually groups of counties within each State. For periodic inventories, Survey units may be made up of lands of particular owners. Refer to Appendix C for codes.
6. COUNTYCD County code. The identification number for a county, parish, watershed, borough, or similar governmental unit in a State. FIPS codes from the Bureau of the Census, 1990, are used. Refer to Appendix C for codes.
7. PLOT Phase 2 plot number. An identifier for a plot. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.
8. CONDIC Condition class number. Unique identifying number assigned to each condition on a plot. A condition is initially defined by condition class status. Differences in reserved status, owner group, forest type, stand-size class, regeneration status, and stand density further define condition for forest land. Mapped nonforest conditions are also assigned numbers. At the time of the plot establishment, the condition class at plot center (the center of subplot 1) is usually designated as condition class 1. Other condition classes are assigned numbers sequentially at the time each condition class is delineated. On a plot, each sampled condition class must have a unique number that can change at remeasurement to reflect new conditions on the plot.
9. TREE Tree number. A number used to uniquely identify a site tree on a condition.
10. SPCD Species code. A standard tree species code. Refer to Appendix F for codes.
11. DIA Diameter. The current diameter (in inches) of the tree at the point of diameter measurement (DBH/DRC).
12. HT Sitetree length. The total length of a sample tree (in feet) from the ground to the top of the main stem.

13. AGEDIA Tree age at diameter. Age (in years) of tree at the point of diameter measurement (DBH/DRC). Age is determined by an increment sample.
14. SPGRPCD Species group code. An FIA species group number, which is used to produce many of the standard presentation tables. The assignment of individual species (SPCD) to these groups is shown in Appendix F. Individual FIA programs may further break these species groups down for published tables, but this is a common list that all published standard presentation tables must match.
15. SITREE Site index. Site index (in feet) of the tree.
16. SIBASE Site index base age. The base age (in years) of the site index curves used to derive site index.
17. CN Sequence number. A unique sequence number used to identify a site tree record.
18. PLT_CN Plot sequence number. Foreign key linking the site tree record to the plot record.
19. CREATED_BY The user who created the record.
20. CREATED_DATE
The date the record was created. Date will be in the form DD-MON-YYYY.
21. CREATED_IN_INSTANCE
The database instance in which the record was created. This uniquely identifies which computer system was used to create the record.
22. MODIFIED_BY
The user who modified the record. This field will be null if the data have not been modified since initial creation.
23. MODIFIED_DATE
The date the record was last modified. This field will be null if the data have not been modified since initial creation. Date will be in the form DD-MON-YYYY.
24. MODIFIED_IN_INSTANCE
The database instance in which the record was modified. This field will be null if the data have not been modified since initial creation.

25. SUBP Subplot number. Number of the subplot on which the site tree was measured. Annual inventories have subplot number values of 1 through 4. Periodic inventories subplot numbers will vary. For more information, contact the appropriate FIA unit. (*Core Optional*)
26. AZIMUTH Azimuth. The direction, to the nearest degree, from subplot center to the center of the base of the tree (geographic center for multi-stemmed woodland species). Due north is represented by 360 degrees. (*Core Optional*)
27. DIST Horizontal distance. The horizontal distance in feet from subplot center (microplot center for saplings) to the pith at the base of the tree (geographic center for multi-stemmed woodland species). (*Core Optional*)
28. METHOD Site tree method code. The method for determining the site index.
- | Code | Description |
|------|--|
| 1 | Tree measurements (length, age, etc.) collected during this inventory. |
| 2 | Tree measurements (length, age, etc.) collected during a previous inventory. |
| 3 | Site index estimated either in the field or office. |
| 4 | Site index determined by the height intercept method during this inventory. |
29. SITREE_EST The estimated site index or the site index determined by the height intercept method.
30. VALIDCD Validity code. Indicator of validity of site index calculation for this tree. If the site calculation for this tree was successful, this variable is set to 1.
- | Code | Description |
|------|--|
| 0 | Tree failed in site index calculations |
| 1 | Tree was successful in site index calculations |
31. PREV_SIT_CN Previous site tree sequence number. Foreign key linking the site tree to the previous inventory's site tree record for this tree. Only populated on remeasured annual plots.

Boundary Table (Oracle table name is BOUNDARY)

Column Name	Oracle data type	Value or unit of measure	Key data item	Field Guide Item#
1 TABLENM	VARCHAR2 (8)	BOUNDARY		
2 STATECD	NUMBER (4)	Coded	X	
3 CYCLE	NUMBER (2)	Number	X	
4 SUBCYCLE	NUMBER (2)	Number	X	
5 UNITCD	NUMBER (2)	Coded	X	
6 COUNTYCD	NUMBER (3)	Coded	X	
7 PLOT	NUMBER (5)	Number	X	
8 SUBP	NUMBER (3)	Number	X	4.2.1
9 SUBPTYP	NUMBER (1)	Coded	X	4.2.2
10 BNDCHG	NUMBER (1)	Coded		4.2.3
11 CONTRAST	NUMBER (1)	Number		4.2.4
12 AZMLEFT	NUMBER (3)	Degrees	X	4.2.5
13 AZMCORN	NUMBER (3)	Degrees		4.2.6
14 DISTCORN	NUMBER (2)	Feet		4.2.7
15 AZMRIGHT	NUMBER (3)	Degrees	X	4.2.8
16 CN	VARCHAR2 (34)	Character	PK	
17 PLT_CN	VARCHAR2 (34)	Character	FK	
18 CREATED_BY	VARCHAR2 (30)	Character		
19 CREATED_DATE	DATE	DD-MON-YYYY		
20 CREATED_IN_INSTANCE	NUMBER (6)	Number		
21 MODIFIED_BY	VARCHAR2 (30)	Character		
22 MODIFIED_DATE	DATE	DD-MON-YYYY		
23 MODIFIED_IN_INSTANCE	NUMBER (6)	Number		
24 PREV_BND_CN	VARCHAR2(34)			

1. TABLENM Table name. Identifies the table to which the record belongs. Always equals 'BOUNDARY.'
2. STATECD State code. Bureau of the Census Federal Information Processing Standards (FIPS) two-digit code for each State. Refer to table 1 at the end of the description of the SURVEY table.
3. CYCLE Inventory cycle number. Identifies the cycle number for the inventory data. For example, a 4 shows the data came from the fourth inventory of

that State. A cycle number greater than 1 does not necessarily mean that information for previous cycles resides in the database.

4. SUBCYCLE Inventory subcycle number. For an annual inventory that takes n years to measure all plots, subcycle shows in which of the n years of the cycle the data were measured. Subcycle is 0 for a periodic inventory.
5. UNITCD Survey unit code. Forest Inventory and Analysis survey unit identification number. Survey units are usually groups of counties within each State. For periodic inventories, Survey units may be made up of lands of particular owners. Refer to Appendix C for codes.
6. COUNTYCD County code. The identification number for a county, parish, watershed, borough, or similar governmental unit in a State. FIPS codes from the Bureau of the Census, 1990, are used. Refer to Appendix C for codes.
7. PLOT Phase 2 plot number. An identifier for a plot. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.
8. SUBP Subplot number. Number of the subplot on which the boundary was measured. Annual inventories have subplot number values of 1 through 4. Periodic inventories subplot numbers will vary. For more information, contact the appropriate FIA unit.
9. SUBPTYP Plot type code. Specifies whether the boundary data are for a subplot, microplot, or macroplot.

Code	Description
1	Subplot boundary
2	Microplot boundary
3	Macroplot boundary
10. BNDCHG Boundary change code. A code to indicate the relationship between previously recorded and current boundary information. Set to null for new plots (KINDCD = 1 or 3 [see PLOT Table]).

Code	Description
0	No change – boundary is the same as indicated on plot map by previous crew.
1	New boundary, or boundary data have been changed to reflect an actual on-the-ground physical change resulting in a difference from the boundaries recorded.
2	Boundary has been changed to correct an error from a previous crew.
3	Boundary has been changed to reflect a change in variable definition.

11. CONTRAST Contrasting condition. The condition class number of the condition class that contrasts with the condition class located at the subplot center (for boundaries on the subplot or macroplot) or at the microplot center (for boundaries on the microplot), e.g., the condition class present on the other side of the boundary.
12. AZMLEFT Left azimuth. The azimuth, to the nearest degree, from the subplot, microplot, or macroplot plot center to the farthest left point (facing the contrasting condition class) where the boundary intersects the subplot, microplot, or macroplot plot circumference.
13. AZMCORN Corner azimuth. The azimuth, to the nearest degree, from the subplot, microplot, or macroplot plot center to a corner or curve in a boundary. If a boundary is best described by a straight line between the two circumference points, then 000 is recorded for AZMCORN.
14. DISTCORN Corner distance. The horizontal distance, to the nearest 1 foot, from the subplot, microplot, or macroplot plot center to the boundary corner point. Null when AZMCORN equals 000; populated when AZMCORN is greater than 000.
15. AZMRIGHT Right azimuth. The azimuth, to the nearest degree, from subplot, microplot, or macroplot plot center to the farthest right point (facing the contrasting condition) where the boundary intersects the subplot, microplot, or macroplot plot circumference.
16. CN Sequence number. A unique sequence number used to identify a boundary record.
17. PLT_CN Plot sequence number. Foreign key linking the boundary record to the plot record.
18. CREATED_BY The user who created the record.
19. CREATED_DATE The date the record was created. Date will be in the form DD-MON-YYYY.
20. CREATED_IN_INSTANCE The database instance in which the record was created. This uniquely identifies which computer system was used to create the record.
21. MODIFIED_BY The user who modified the record. This field will be null if the data have not been modified since initial creation.

22. MODIFIED_DATE

The date the record was last modified. This field will be null if the data have not been modified since initial creation. Date will be in the form DD-MON-YYYY.

23. MODIFIED_IN_INSTANCE

The database instance in which the record was modified. This field will be null if the data have not been modified since initial creation.

24. PREV_BND_CN

Previous boundary sequence number. Foreign key linking the record to the previous inventory's record for this boundary. May be populated on remeasured annual plots.

Estimation Unit Stratum Table (Oracle table name is
 ESTN_UNIT_STRATUM)

Column Name	Oracle data type	Value or unit of measure	Key data item
1 TABLENM	VARCHAR2 (8)	EUS	
2 RSCD	NUMBER (2)	Coded	X
3 EVALID	NUMBER (6)	Number	X
4 ESTUNIT	NUMBER (3)	Number	X
5 STRATUMCD	NUMBER	Coded	X
6 CN	VARCHAR2 (34)	Character	PK
7 EVALDESCR	VARCHAR2 (50)	Character	
8 EFFDATE_EVAL	DATE		
9 ENDDATE_EVAL	DATE		
10 ESTUNITDESCR	VARCHAR2 (50)	Character	
11 EFFDATE_EU	DATE		
12 ENDDATE_EU	DATE		
13 EFFDATE_STRATUM	DATE		
14 ENDDATE_STRATUM	DATE		
15 STRATUMMETHOD	VARCHAR2 (50)	Character	
16 AREALAND_EU	NUMBER (12,2)	Acres	
17 AREATOT_EU	NUMBER (12,2)	Acres	
18 PIPOINTCNT	NUMBER (12)	Count	
19 P2POINTCNT	NUMBER (12)	Count	
20 PIPOINTCNT_EU	NUMBER (12)	Count	
21 CREATED_BY	VARCHAR2 (30)	Character	
22 CREATED_DATE	DATE	DD-MON-YYYY	
23 CREATED_IN_INSTANCE	NUMBER (6)	Number	
24 MODIFIED_BY	VARCHAR2 (30)	Character	
25 MODIFIED_DATE	DATE	DD-MON-YYYY	
26 MODIFIED_IN_INSTANCE	NUMBER (6)	Number	
27 STRATUMDESCR	VARCHAR2 (50)	Character	
28 AREA_USED	NUMBER (12,2)	Acres	

1. TABLENM Table name. Identifies the table to which the record belongs. Always equals 'EUS.'
2. RSCD Region or Station Code. Identification number of the Forest Service Region or Station that provided the inventory data (see SURVEY table for

codes). Combined with EVALID (below), this provides a link to the PLOT table via the RSCD_EVAL_EXPxxxx variables to identify which stratification method was used to populate the multiple expansion factors on the PLOT table.

3. EVALID Evaluation identifier. Distinctly identifies (within a Station) the evaluation for a set of expansion factors. Note that an evaluation may be for more than one type of expansion factor (e.g. applicable to both EXPCURR and EXPVOL).
4. ESTUNIT Estimation unit. The particular geographic area for which this computation applies. Estimation units are determined by a combination of sampling intensity and geographical boundaries.
5. STRATUMCD Stratum code. The code used for a particular stratum. See STRATUMDESCR below for the meaning of the code. Stratum codes vary widely from region to region, so they are not listed here. For more information, contact the appropriate FIA unit.
6. CN Sequence number. A unique sequence number used to identify an estimation unit stratum record.
7. EVALDESCR Evaluation description. A description of the area being evaluated (often a state), the time period of the evaluation, the type of expansion factors computed (e.g. EXPMORT), the extent of the estimation units (e.g. county), and the kind of stratification.
8. EFFDATE_EVAL
Effective date for the evaluation.
9. ENDDATE_EVAL
End date for the evaluation. The last date for which the evaluation is valid.
10. ESTUNITDESCR
Estimation unit description. A description of the estimation unit (e.g. name of the county).
11. EFFDATE_EU Effective date for the estimation unit.
12. ENDDATE_EU End date for the estimation unit.
13. EFFDATE_STRATUM
Effective date for the stratum.

14. ENDDATE_STRATUM

End date for the stratum.

15. STRATUMMETHOD

Stratum method. The basis of the stratification, including such things as the source, type, and age of the imagery used.

16. AREALAND_EU

Land area within the estimation unit. The area of land in acres enclosed by the estimation unit. Census water is excluded.

17. AREATOT_EU

Total area within the estimation unit. This includes land and census water enclosed by the estimation unit.

18. P1POINTCNT Count of P1 points in stratum STRATUMCD within estimation unit ESTUNIT. The P1 (phase 1) points may be photo points or pixels. This is the number of pixels or photo points (phase 1) assigned to stratum STRATUMCD and located within the estimation unit ESTUNIT.

19. P2POINTCNT Count of phase 2 points in stratum STRATUMCD within estimation unit ESTUNIT. This is the number phase 2 plots assigned to stratum STRATUMCD and located within the estimation unit ESTUNIT.

20. P1POINTCNT_EU

Count of P1 points in all strata of the estimation unit. Can be derived by summing P1POINTCNT for all strata in estimation unit EST_UNIT.

21. CREATED_BY The user who created the record.

22. CREATED_DATE

The date the record was created. Date will be in the form DD-MON-YYYY.

23. CREATED_IN_INSTANCE

The database instance in which the record was created. This uniquely identifies which computer system was used to create the record.

24. MODIFIED_BY

The user who modified the record. This field will be null if the data have not been modified since initial creation.

25. MODIFIED_DATE

The date the record was last modified. This field will be null if the data have not been modified since initial creation. Date will be in the form DD-MON-YYYY.

26. MODIFIED_IN_INSTANCE

The database instance in which the record was modified. This field will be null if the data have not been modified since initial creation.

27. STRATUMDESCR

Stratum description. A description of the stratum (e.g. Forest).

28. AREA_USED Area used to calculate all expansion factors. Is equivalent to AREATOT_EU if a station estimates all area, including census water; and to AREALAND_EU if a station estimates land area only.

Plot Population Stratum Assignment Table (Oracle table name is PLOT_POP_STRATUM_ASSGN)

	Column name	Oracle data type	Value or unit of measure	Key data item
1	TABLENM	VARCHAR2 (8)	PPSA	
2	STATECD	NUMBER (4)	Coded	X
3	CYCLE	NUMBER (2)	Number	X
4	SUBCYCLE	NUMBER (2)	Number	X
5	UNITCD	NUMBER (2)	Coded	X
6	COUNTYCD	NUMBER (3)	Coded	X
7	PLOT	NUMBER (5)	Number	X
8	CN	VARCHAR2 (34)	Character	PK
9	EUS_CN	VARCHAR2 (34)	Character	FK
10	PLT_CN	VARCHAR2 (34)	Character	FK
11	EXPNS	NUMBER (13,4)	Acres	
12	RSCD	NUMBER (2)	Coded	X
13	EVALID	NUMBER (6)	Number	X
14	ESTUNIT	NUMBER (3)	Number	X
15	STRATUMCD	NUMBER	Coded	X
16	CREATED_BY	VARCHAR2 (30)	Character	
17	CREATED_DATE	DATE	DD-MON-YYYY	
18	CREATED_IN_INSTANCE	NUMBER (6)	Number	
19	MODIFIED_BY	VARCHAR2 (30)	Character	
20	MODIFIED_DATE	DATE	DD-MON-YYYY	
21	MODIFIED_IN_INSTANCE	NUMBER (6)	Number	

1. TABLENM Table name. Identifies the table to which the record belongs. Always equals 'PPSA.'
2. STATECD State code. Bureau of the Census Federal Information Processing Standards (FIPS) two-digit code for each State. Refer to table 1 at the end of the description of the SURVEY table.
3. CYCLE Inventory cycle number. Identifies the cycle number for the inventory data. For example, a 4 shows the data came from the fourth inventory of that State. A cycle number greater than 1 does not necessarily mean that information for previous cycles resides in the database.
4. SUBCYCLE Inventory subcycle number. For an annual inventory that takes n years to measure all plots, subcycle shows in which of the n years of the cycle the data were measured. Subcycle is 0 for a periodic inventory.

5. UNITCD Survey unit code. Forest Inventory and Analysis survey unit identification number. Survey units are usually groups of counties within each state. For periodic inventories, Survey units may be made up of lands of particular owners. Refer to Appendix C for codes.
6. COUNTYCD County code. The identification number for a county, parish, watershed, borough, or similar governmental unit in a State. FIPS codes from the Bureau of the Census, 1990, are used. Refer to Appendix C for codes.
7. PLOT Phase 2 plot number. An identifier for a plot. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.
8. CN Sequence number. A unique sequence number used to identify a plot population stratum assignment record.
9. EUS_CN Estimation unit sequence number. Foreign key linking the plot population stratum assignment record to the estimation unit stratum record.
10. PLT_CN Plot sequence number. Foreign key linking the plot population stratum assignment record to the plot record.
11. EXPNS Expansion factor computed for stratum STRATUMCD within estimation unit ESTUNIT. The number of acres each sample plot in stratum STRATUMCD within estimation unit ESTUNIT represents.
12. RSCD Region or Station Code. Identification number of the Forest Service Region or Station that provided the inventory data (see SURVEY table for codes).
13. EVALID Evaluation identifier. Distinctly identifies (within a Station) the evaluation for a set of expansion factors. Note that an evaluation may be for more than one type of expansion factor (e.g. applicable to both EXPCURR and EXPVOL).
14. ESTUNIT Estimation unit. The particular geographic area for which a particular computation applies. Estimation units are determined by a combination of sampling intensity and geographical boundaries.
15. STRATUMCD Stratum code. The code used for a particular stratum. See STRATUMDESCR in the ESTN_UNIT_STRATUM table for the meaning of the code. Stratum codes vary widely from region to region, so they are not listed here. For more information, contact the appropriate FIA unit.
16. CREATED_BY The user who created the record.

17. CREATED_DATE

The date the record was created. Date will be in the form DD-MON-YYYY.

18. CREATED_IN_INSTANCE

The database instance in which the record was created. This uniquely identifies which computer system was used to create the record.

19. MODIFIED_BY

The user who modified the record. This field will be null if the data have not been modified since initial creation.

20. MODIFIED_DATE

The date the record was last modified. This field will be null if the data have not been modified since initial creation. Date will be in the form DD-MON-YYYY.

21. MODIFIED_IN_INSTANCE

The database instance in which the record was modified. This field will be null if the data have not been modified since initial creation.

Subplot Condition Table (Oracle table name is SUBP_COND)

Column name	Oracle data type	Value or unit of measure	Key data item
1 TABLENM	VARCHAR2 (8)	SUBP_COND	
2 STATECD	NUMBER (4)	Coded	X
3 CYCLE	NUMBER (2)	Number	X
4 SUBCYCLE	NUMBER (2)	Number	X
5 UNITCD	NUMBER (2)	Coded	X
6 COUNTYCD	NUMBER (3)	Coded	X
7 PLOT	NUMBER (5)	Number	X
8 SUBP	NUMBER (3)	Number	X
9 CONDID	NUMBER (1)	Number	
10 CN	VARCHAR2 (34)	Character	PK
11 PLT_CN	VARCHAR2 (34)	Character	FK
12 CREATED_BY	VARCHAR2 (30)	Character	
13 CREATED_DATE	DATE	DD-MON-YYYY	
14 CREATED_IN_INSTANCE	NUMBER (6)	Number	
15 MODIFIED_BY	VARCHAR2 (30)	Character	
16 MODIFIED_DATE	DATE	DD-MON-YYYY	
17 MODIFIED_IN_INSTANCE	NUMBER (6)	Number	
18 SUBPCOND_PROP	NUMBER (5,4)	Proportion	
19 MICRCOND_PROP	NUMBER (5,4)	Proportion	
20 MACRCOND_PROP	NUMBER (5,4)	Proportion	

1. TABLENM Table name. Identifies the table to which the record belongs. Always equals 'SUBP_COND.'
2. STATECD State code. Bureau of the Census Federal Information Processing Standards (FIPS) two-digit code for each State. Refer to table 1 at the end of the description of the SURVEY table.
3. CYCLE Inventory cycle number. Identifies the cycle number for the inventory data. For example, a 4 shows the data came from the fourth inventory of that State. A cycle number greater than 1 does not necessarily mean that information for previous cycles resides in the database.
4. SUBCYCLE Inventory subcycle number. For an annual inventory that takes n years to measure all plots, subcycle shows in which of the n years of the cycle the data were measured. Subcycle is 0 for a periodic inventory.
5. UNITCD Survey unit code. Forest Inventory and Analysis survey unit identification number. Survey units are usually groups of counties within each State. For

periodic inventories, Survey units may be made up of lands of particular owners. Refer to Appendix C for codes.

6. COUNTYCD County code. The identification number for a county, parish, watershed, borough, or similar governmental unit in a State. FIPS codes from the Bureau of the Census, 1990, are used. Refer to Appendix C for codes.
7. PLOT Phase 2 plot number. An identifier for a plot. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.
8. SUBP Subplot number. Number of the subplot. Annual inventories have subplot number values of 1 through 4. Periodic inventories subplot numbers will vary. For more information, contact the appropriate FIA unit.
9. CONDID Condition class number. Unique identifying number assigned to each condition on a plot. A condition is initially defined by condition class status. Differences in reserved status, owner group, forest type, stand-size class, regeneration status, and stand density further define condition for forest land. Mapped nonforest conditions are also assigned numbers. At the time of the plot establishment, the condition class at plot center (the center of subplot 1) is usually designated as condition class 1. Other condition classes are assigned numbers sequentially at the time each condition class is delineated. On a plot, each sampled condition class must have a unique number that can change at remeasurement to reflect new conditions on the plot.
10. CN Sequence number. A unique sequence number used to identify a subplot condition record.
11. PLT_CN Plot sequence number. Foreign key linking the subplot condition record to the plot record.
12. CREATED_BY The user who created the record.
13. CREATED_DATE
The date the record was created. Date will be in the form DD-MON-YYYY.
14. CREATED_IN_INSTANCE
The database instance in which the record was created. This uniquely identifies which computer system was used to create the record.
15. MODIFIED_BY
The user who modified the record. This field will be null if the data have not been modified since initial creation.

16. MODIFIED_DATE

The date the record was last modified. This field will be null if the data have not been modified since initial creation. Date will be in the form DD-MON-YYYY.

17. MODIFIED_IN_INSTANCE

The database instance in which the record was modified. This field will be null if the data have not been modified since initial creation.

18. SUBPCOND_PROP Subplot-condition proportion. Proportion of this subplot in this condition.

19. MICRCOND_PROP Microplot-condition proportion. Proportion of this microplot in this condition.

20. MACRCOND_PROP Macroplot-condition proportion. Proportion of this macroplot in this condition.

Chapter 4 -- Algorithms for Summarizing Data

Data in the FIA Database were designed for easy use with most database management systems, statistical packages, and other data summary software. Data are typically provided as comma-delimited ASCII files. Database management systems that support hierarchical data structures, as well as those based on the relational model, can easily process FIADB files. Chapter 3 should give the user of almost any software package the information needed to input an FIADB file into a processing system. Those familiar with the relational data model and the standard Structured Query Language (SQL) database language available in many database management systems will find it easy to load FIADB files into one of these systems and to retrieve information from a loaded database. Forest Inventory and Analysis data are available in other formats although the FIADB format provides the most detail and is the most flexible. Other data formats for FIA data can be obtained by visiting the national FIA website (<http://www.fia.fs.fed.us/>) and clicking on the link to FIA Tools and Data."

To assist users of FIADB files and to provide them with a benchmark or checkpoint for comparison to their own data processing systems, the FIA units provide a set of tables with each FIADB State file. The tables are a set of the standard presentation tables produced directly from the FIADB file. These standard presentation tables may not match published core tables exactly. Differences will vary by FIA unit and relate to rounding error and the allocation of State-level estimates down to the county level. Users concerned about differences can request an explanation from the FIA unit. Appendix B contains the format of the standard presentation tables produced from an FIADB file.

Users may wish to duplicate the standard presentation tables on their hardware. In doing so, they may find minor differences due to rounding and word length differences between their machines and the machine used to produce the original tables. Users may also want to screen the input data file so that it includes plot and tree records for only a limited geographic area, such as a group of counties. Then they can produce standard presentation tables for only that area.

The procedures or algorithms used to compute various tree-level data and expand them to population-level estimates are provided in tables 2 through 10. Inventories completed before the introduction of the Forest Health Monitoring (FHM) plot design in 1997 were designed to provide estimates of timberland area and growing-stock volume. As a result, a number of forest land statistics will be unavailable until the completion of a State's first inventory using the FHM plot design. In addition, prior to 1995, tree-level data were not collected on reserved and unproductive forest land. Estimates of growth, removals, and mortality from reserved and unproductive forest land may not be available until the completion of a State's second inventory using the FHM plot design.

Because of these limitations, the algorithms have been divided into four groups:

- 1) Algorithms that will work on all inventories (tables 2 through 6)
- 2) Algorithms that will work on inventories completed after 1999 (e.g., volume of all live trees on forest land) (tables 7 through 9)
- 3) Algorithms that can be applied to the second inventory cycle completed after 1999 (e.g., growth, removals, and mortality of all live trees on forest land) (table 10)

- 4) Algorithms that will work for annual inventories using phase 1 and phase 2 data to generate population estimates without the use of stored area expansion factors.

All of these algorithms require the user to specify the inventory of interest. Inventories are conducted at the state-level. Population estimates may be available for several different points in time for a given State. The variable CYCLE is used to distinguish data collected during different inventories. In Michigan, for example, the value of CYCLE is 4 for data collected during the 1980 periodic inventory; the value of Cycle is 5 for data collected for the 1993 periodic inventory; and the value for of CYCLE is 6 for the annual inventory to be completed in 2004. When deriving a population estimate for Michigan the user must use the variables STATECD and CYCLE to limit the retrieval to one set of inventory data. This is accomplished in SQL by using a where clause such as “where p.statecd=26 and p.cycle=xx”. If the user wanted to obtain population estimates for the 1993 inventory of Michigan the “xx” should be replaced by the number 5 since the 5th inventory of Michigan contains the 1993 inventory data. The FIPS state code for Michigan is 26.

The where clause is also used to join plot records to condition and tree records. Example SQL scripts follow each of the tables.

Algorithms That Will Work On All Inventories

All the variables used in these algorithms are defined in Chapter 3. The variable prefixes “p.”, “c.”, “oc.”, and “t.” identify the database tables in which the variables reside. The variable prefix for the PLOT table is “p.”. The variable prefix for the COND table is “c.” for the current cycle and “oc.” for the previous cycle. The variable prefix for the TREE table is “t.”.

Table 2. Algorithms that expand condition-level items to population estimates. Each item is computed by summing the corresponding quantities over all conditions that meet the requirements.

Units	Type	Calculation	Requirements
Acres	Area of all land and noncensus water	p.expcurr * c.condprop_curr	c.landclcd in (1,2,3)
Acres	Area of forest land	p.expcurr * c.condprop_curr	c.landclcd=1
Acres	Area of timberland	p.expcurr * c.condprop_curr	c.landclcd=1 and c.reservcd=0 and c.siteclcd in (1,2,3,4,5,6)

Table 3. Algorithms that expand tree-level items to population estimates of number of trees 1 inch in diameter or larger on timberland from FIADB tables. Each item is computed by summing the corresponding quantities over all trees that meet the requirements.

Units	Type	Calculation	Requirements
Trees	Number of all live trees on timberland	p.expvol * t.tpacurr	c.landclcd=1 and c.reservcd=0 and c.siteclcd in (1,2,3,4,5,6) and t.statuscd=1 and t.dia>=1.0
Trees	Number of growing-stock trees on timberland	p.expvol * t.tpacurr	c.landclcd=1 and c.reservcd=0 and c.siteclcd in (1,2,3,4,5,6) and t.statuscd=1 and t.treecld=2 and t.dia>=1.0
Trees	Number of rough trees on timberland	p.expvol * t.tpacurr	c.landclcd=1 and c.reservcd=0 and c.siteclcd in (1,2,3,4,5,6) and t.statuscd=1 and t.treecld=3 and t.dia>=1.0
Trees	Number of rotten trees on timberland	p.expvol * t.tpacurr	c.landclcd=1 and c.reservcd=0 and c.siteclcd in (1,2,3,4,5,6) and t.statuscd=1 and t.treecld=4 and t.dia>=1.0

Table 4. Algorithms that expand tree-level items to population estimates of volume of trees on timberland. Each item is computed by summing the corresponding quantities over all trees that meet the requirements.

Units	Type	Calculation	Requirements
Cuft	Merchantable volume of all live trees on timberland	$p.expvol * t.tpacurr * t.volcfnet$	c.landclcd=1 and c.reserved=0 and c.siteclcd in (1,2,3,4,5,6) and t.statuscd=1
Cuft	Merchantable volume of growing-stock trees on timberland	$p.expvol * t.tpacurr * t.volcfnet$	c.landclcd=1 and c.reserved=0 and c.siteclcd in (1,2,3,4,5,6) and t.statuscd=1 and t.treecld=2
Cuft	Merchantable volume of rough trees on timberland	$p.expvol * t.tpacurr * t.volcfnet$	c.landclcd=1 and c.reserved=0 and c.siteclcd in (1,2,3,4,5,6) and t.statuscd=1 and t.treecld=3
Cuft	Merchantable volume of rotten trees on timberland	$p.expvol * t.tpacurr * t.volcfnet$	c.landclcd=1 and c.reserved=0 and c.siteclcd in (1,2,3,4,5,6) and t.statuscd=1 and t.treecld=4
Cuft	Merchantable volume in the saw-log portion of growing-stock trees on timberland	$p.expvol * t.tpacurr * t.volcsnet$	c.landclcd=1 and c.reserved=0 and c.siteclcd in (1,2,3,4,5,6) and t.statuscd=1
Bdft	Merchantable volume of sawtimber trees on timberland	$p.expvol * t.tpacurr * t.volbfnet$	c.landclcd=1 and c.reserved=0 and c.siteclcd in (1,2,3,4,5,6) and t.statuscd=1
Cuft	Merchantable volume of salvable dead trees on timberland	$p.expvol * t.tpacurr * t.volcsnet$	c.landclcd=1 and c.reserved=0 and c.siteclcd in (1,2,3,4,5,6) and t.salvcd=1
Bdft	Merchantable volume of salvable dead sawtimber trees on timberland	$p.expvol * t.tpacurr * t.volbfnet$	c.landclcd=1 and c.reserved=0 and c.siteclcd in (1,2,3,4,5,6) and t.salvcd=1

Table 5. Algorithms that expand tree-level items to population estimates of net annual growth, mortality, or removals on timberland. Each item is computed by summing the corresponding quantities over all trees that meet the requirements.

Units	Type	Calculation	Requirements
Cuft/year	Net annual merchantable growth of growing-stock trees on timberland	$p.exp\text{grow} * t.tp\text{agrow} * t.grow\text{cfgs}$	None
Cuft/year	Annual merchantable mortality of growing-stock trees on timberland	$p.exp\text{mort} * t.tp\text{amort} * t.mort\text{cfgs}$	None
Cuft/year	Annual merchantable removals of growing-stock trees on timberland.	$p.exp\text{remv} * t.tp\text{aremv} * t.remv\text{cfgs}$	None
Bdft/year	Net annual merchantable growth of sawtimber trees on timberland	$p.exp\text{grow} * t.tp\text{agrow} * t.grow\text{bfsl}$	None
Bdft/year	Annual merchantable mortality of sawtimber trees on timberland	$p.exp\text{mort} * t.tp\text{amort} * t.mort\text{bfsl}$	None
Bdft/year	Annual merchantable removals of sawtimber trees on timberland	$p.exp\text{remv} * t.tp\text{aremv} * t.remv\text{bfsl}$	None

Table 6. Algorithms that expand tree-level items to population estimates of biomass of trees on timberland. Each item is computed by summing the corresponding quantities over all trees that meet the requirements.

Units	Type	Calculation	Requirements
Ovendry lbs.	Gross biomass of all live trees on timberland	$p.exp\text{vol} * t.tp\text{acurr} * t.dry\text{biot}$	$c.land\text{clcd}=1$ and $c.reserv\text{cd}=0$ and $c.site\text{clcd}$ in (1,2,3,4,5,6) and $t.status\text{cd}=1$
Ovendry lbs.	Merchantable biomass of all live trees on timberland	$p.exp\text{vol} * t.tp\text{acurr} * t.dry\text{biom}$	$c.land\text{clcd}=1$ and $c.reserv\text{cd}=0$ and $c.site\text{clcd}$ in (1,2,3,4,5,6) and $t.status\text{cd}=1$

Examples of SQL Statements That Will Work On All Inventories

To calculate the area of all land and noncensus water for the State of Michigan for the fifth inventory cycle (completed in 1993):

```
SELECT SUM(p.expcurr*c.condprop_curr)
FROM   plot      p,
       cond      c
WHERE  p.statecd=26 AND
       p.cycle=5 AND
       p.cn=c.plt_cn AND
       (c.landclcd=1 OR c.landclcd=2 OR c.landclcd=3);
```

To calculate the area of forest land for the State of Michigan for the fifth inventory cycle (1993):

```
SELECT SUM(p.expcurr * c.condprop_curr)
FROM   plot      p,
       cond      c
WHERE  p.statecd=26 AND
       p.cycle=5 AND
       p.cn=c.plt_cn AND
       c.landclcd=1;
```

To calculate the area of timberland for the State of Michigan for the fifth inventory cycle (1993):

```
SELECT SUM(p.expcurr * c.condprop_curr)
FROM   plot      p,
       cond      c
WHERE  p.statecd=26 AND
       p.cycle=5 AND
       p.cn=c.plt_cn AND
       c.landclcd=1 AND
       c.reservcd=0 AND
       c.siteclcd in (1,2,3,4,5,6);
```

To calculate the number of all live white pine trees on timberland in the State of Michigan for the fifth inventory cycle (1993):

```
SELECT      SUM(p.expvol * t.tpacurr)
FROM        plot      p,
           cond      c,
           tree      t
WHERE       p.statecd=26 AND
           p.cycle=5 AND
           p.cn=c.plt_cn AND
           p.cn=t.plt_cn AND
           t.condid=c.condid AND
           c.landclcd=1 AND
           c.reservcd=0 AND
           c.siteclcd in (1,2,3,4,5,6) AND
           t.statuscd=1 AND
           t.dia>=1.0 AND
           t.spcd=129;
```

To calculate the merchantable volume of all live white pine trees on timberland in the State of Michigan for the fifth inventory cycle (1993):

```
SELECT      SUM(p.expvol * t.tpacurr * t.volcfnet)
FROM        plot      p,
           cond      c,
           tree      t
WHERE       p.statecd=26 AND
           p.cycle=5 AND
           p.cn=c.plt_cn AND
           p.cn=t.plt_cn AND
           t.condid=c.condid AND
           c.landclcd=1 AND
           c.reservcd=0 AND
           c.siteclcd in (1,2,3,4,5,6) AND
           t.statuscd=1 AND
           t.spcd=129;
```

To calculate the net annual merchantable growth of white pine growing-stock trees on timberland in the State of Michigan for the fifth inventory cycle (1980-1992):

```
SELECT SUM(p.expgrow * t.tpagrow * t.growcfigs)
FROM   plot      p,
       cond      c,
       tree      t
WHERE  p.statecd=26 AND
       p.cycle=5 AND
       p.cn=c.plt_cn AND
       p.cn=t.plt_cn AND
       c.condid=t.condid AND
       t.spcd=129;
```

To calculate the annual merchantable mortality of white pine growing-stock trees on timberland in the State of Michigan for the fifth inventory cycle (1980-1992):

```
SELECT SUM(p.expmort * t.tpamort * t.mortcfigs)
FROM   plot      p,
       cond      c,
       tree      t
WHERE  p.statecd=26 AND
       p.cycle=5 AND
       p.cn=c.plt_cn AND
       p.cn=t.plt_cn AND
       c.condid=t.condid AND
       t.spcd=129;
```

To calculate the annual merchantable removals of white pine growing-stock trees on timberland in the State of Michigan for the fifth inventory cycle (1980-1992):

```
SELECT SUM(p.expremv * t.tparemv * t.remvcfigs)
FROM   plot      p,
       cond      c,
       tree      t
WHERE  p.statecd=26 AND
       p.cycle=5 AND
       p.cn=c.plt_cn AND
       p.cn=t.plt_cn AND
       c.condid=t.condid AND
       t.spcd=129;
```

To calculate the total all live biomass of white pine trees on timberland in the State of Michigan for the fifth inventory cycle (1993):

```
SELECT SUM(p.expvol * t.tpacurr * t.drybiot)
FROM   plot      p,
       cond      c,
       tree      t
WHERE  p.statedcd=26 AND
       p.cycle=5 AND
       p.cn=c.plt_cn AND
       p.cn=t.plt_cn AND
       c.condid=t.condid AND
       c.landclcd=1 AND
       c.reserved=0 AND
       c.siteclcd in (1,2,3,4,5,6) AND
       t.statuscd=1 AND
       t.spcd=129;
```

Algorithms That Will Work On All Annual Inventories Begun After 1998

Table 7. Algorithms that expand tree level items to population estimates of number of trees 1 inch in diameter or larger on forest land. Each item is computed by summing the corresponding quantities over all trees that meet the requirements.

Units	Type	Calculation	Requirements
Trees	Number of all live trees on forest land	p.expvol * t.tpacurr	c.landclcd=1 and t.statuscd=1 and t.dia>=1.0
Trees	Number of growing stock trees on forest land	p.expvol * t.tpacurr	c.landclcd=1 and t.statuscd=1 and t.treecld=2 and t.dia>=1.0
Trees	Number of rough trees on forest land	p.expvol * t.tpacurr	c.landclcd=1 and t.statuscd=1 and t.treecld=3 and t.dia>=1.0
Trees	Number of rotten trees on forest land	p.expvol * t.tpacurr	c.landclcd=1 and t.statuscd=1 and t.treecld=4 and t.dia>=1.0
Trees	Number of standing dead trees over 5 inches in diameter on forest land	p.expvol * t.tpacurr	c.landclcd=1 and t.statuscd=2 and t.leancd in (0,1) and t.dia>=5.0

Table 8. Algorithms that expand tree-level items to population estimates of volume of trees on forest land. Each item is computed by summing the corresponding quantities over all trees that meet the requirements.

Units	Type	Calculation	Requirements
Cuft	Merchantable volume of all live trees on forest land	p.expvol * t.tpacurr * t.volcfnet	c.landclcd=1 and t.statuscd=1
Cuft	Merchantable volume of growing-stock trees on forest land	p.expvol * t.tpacurr * t.volcfnet	c.landclcd=1 and t.statuscd=1 and t.treecld=2
Cuft	Merchantable volume of all live rough trees on forest land	p.expvol * t.tpacurr * t.volcfnet	c.landclcd=1 and t.statuscd=1 and t.treecld=3
Cuft	Merchantable volume of all live rotten trees on forest land	p.expvol * t.tpacurr * t.volcfnet	c.landclcd=1 and t.statuscd=1 and t.treecld=4
Cuft	Merchantable volume of salvable dead trees on forest land	p.expvol * t.tpacurr * t.volcfnet	c.landclcd=1 and t.salvcd=1
Cuft	Merchantable volume in the saw-log portion of sawtimber trees on forest land	p.expvol * t.tpacurr * t.volcsnet	c.landclcd=1 and t.statuscd=1 and t.treecld=2
Bdft	Merchantable volume of sawtimber trees on forest land	p.expvol * t.tpacurr * t.volbfnet	c.landclcd=1 and t.statuscd=1 and t.treecld=2

Cuft	Sound volume of all live trees on timberland	$p.expvol * t.tpacurr * t.volcfsnd$	$c.landclcd=1$ and $c.reservcd=0$ and $c.siteclcd$ in (1,2,3,4,5,6) and $t.statuscd=1$
Cuft	Sound volume of all live trees on forest land	$p.expvol * t.tpacurr * t.volcfsnd$	$c.landclcd=1$ and $t.statuscd=1$
Cuft	Sound volume of all live rough trees on forest land	$p.expvol * t.tpacurr * t.volcfsnd$	$c.landclcd=1$ and $t.statuscd=1$ and $t.treeclcd=3$
Cuft	Sound volume of all live rotten trees on forest land	$p.expvol * t.tpacurr * t.volcfsnd$	$c.landclcd=1$ and $t.statuscd=1$ and $t.treeclcd=4$
Cuft	Gross volume of all live trees on timberland	$p.expvol * t.tpacurr * t.volcfsgrs$	$c.landclcd=1$ and $c.reservcd=0$ and $c.siteclcd$ in (1,2,3,4,5,6) and $t.statuscd=1$
Cuft	Gross volume of all live trees on forest land	$p.expvol * t.tpacurr * t.volcfsgrs$	$c.landclcd=1$ and $t.statuscd=1$
Cuft	Gross volume in the saw-log portion of sawtimber trees on forest land	$p.expvol * t.tpacurr * t.volcsnet$	$c.landclcd=1$ and $t.statuscd=1$ and $t.treeclcd=2$
Bdft	Gross volume of sawtimber trees on forest land	$p.expvol * t.tpacurr * t.volbfgrs$	$c.landclcd=1$ and $t.statuscd=1$

Table 9. Algorithms that expand tree level items to population estimates of biomass of trees on forest land. Each item is computed by summing the corresponding quantities over all trees that meet the requirements.

Units	Type	Calculation	Requirements
Ovendry lbs.	Gross biomass of all live trees on forest land	$p.expvol * t.tpacurr * t.drybiot$	$c.landclcd=1$ and $t.statuscd=1$
Ovendry lbs.	Merchantable biomass of all live trees on forest land	$p.expvol * t.tpacurr * t.drybiom$	$c.landclcd=1$ and $t.statuscd=1$

Examples of SQL Statements That Will Work On All Annual Inventories Begun After 1998

To calculate the total number of all live white pine trees on forest land in the State of Michigan for the sixth inventory cycle (estimated year of completion 2004):

```
SELECT SUM(p.expvol * t.tpacurr)
FROM   plot      p,
       cond      c,
       tree      t
WHERE  p.statecd=26 and
       p.cycle=6 AND
       p.cn=c.plt_cn AND
       p.cn=t.cn AND
       c.condid=t.condid AND
       c.landclcd=1 AND
       t.statuscd=1 AND
       t.dia>=1.0 AND
       t.spcd=129;
```

To calculate the merchantable volume of all live white pine trees on forest land in the State of Michigan for the sixth inventory cycle (estimated year of completion 2004):

```
SELECT SUM(p.expvol * t.tpacurr * t.volcfnet)
FROM   plot      p,
       cond      c,
       tree      t
WHERE  p.statecd=26 AND
       p.cycle=6 AND
       p.cn=c.plt_cn AND
       p.cn=t.plt_cn AND
       c.condid=t.condid AND
       c.landclcd=1 AND
       t.statuscd=1 AND
       t.spcd=129;
```

To calculate the gross biomass of all live white pine trees on forest land in the State of Michigan for the sixth inventory cycle (estimated year of completion 2004):

```
SELECT SUM(p.expvol * t.tpacurr * t.drybiot)
FROM   plot      p,
       cond      c,
       tree      t
WHERE  p.statecd=26 AND
       p.cycle=6 AND
       p.cn=c.plt_cn AND
       p.cn=t.plt_cn AND
       c.condid=t.condid AND
       c.landclcd=1 AND
       t.statuscd=1 AND
       t.spcd=129;
```

**Algorithms That Can Be Applied To The Second Annual Inventory Cycle Begun
 After 1998**

Table 10. Algorithms that expand tree-level items to population estimates of growth, mortality or removals of trees on forest land. Each item is computed by summing the corresponding quantities over all trees that meet the requirements.

Units	Type	Calculation	Requirements
Cuft/year	Net annual growth of all live trees on forest land	$p.exp_{grow} * t.tp_{grow} * t.f_{growcfal}$	None
Cuft/year	Annual mortality of all live trees on forest land	$p.exp_{mort} * t.tp_{mort} * t.f_{mortcfal}$	None
Cuft/year	Annual removals of all live trees on forest land	$p.exp_{remv} * t.tp_{remv} * t.f_{remvcfal}$	None
Cuft/year	Net annual growth of growing-stock trees on forest land	$p.exp_{grow} * t.tp_{grow} * t.f_{growcfgs}$	None
Cuft/year	Annual mortality of growing-stock trees on forest land	$p.exp_{mort} * t.tp_{mort} * t.f_{mortcfgs}$	None
Cuft/year	Annual removals of growing-stock trees on forest land	$p.exp_{remv} * t.tp_{remv} * t.f_{remvcfgs}$	None
Bdft/year	Net annual growth of sawtimber trees on forest land	$p.exp_{grow} * t.tp_{grow} * t.f_{growbfsl}$	None
Bdft/year	Annual mortality of sawtimber trees on forest land	$p.exp_{mort} * t.tp_{mort} * t.f_{mortbfsl}$	None
Bdft/year	Annual removals of sawtimber trees on forest land	$p.exp_{remv} * t.tp_{remv} * t.f_{remvbfsl}$	None

Examples of SQL Statements That Can Be Applied To The Second Annual Inventory Cycle Begun After 1998

To calculate the net annual growth of all live white pine trees on forest land in the State of Michigan for the seventh inventory cycle (estimated year of completion 2009):

```
SELECT SUM(p.expgrow * t.tpagrow * t.fgrowcfal)
FROM   plot      p,
       cond      c,
       tree      t
WHERE  p.statecd=26 AND
       p.cycle=7 AND
       p.cn=c.plt_cn AND
       p.cn=t.plt_cn AND
       c.condid=t.condid AND
       t.spcd=129;
```

To calculate the annual mortality of all live white pine trees on forest land in the State of Michigan for the seventh inventory cycle (estimated year of completion 2009):

```
SELECT SUM(p.expmort * t.tpamort * t.fmortcfal)
FROM   plot      p,
       cond      c,
       tree      t
WHERE  p.statecd=26 AND
       p.cycle=7 AND
       p.cn=c.plt_cn AND
       p.cn=t.plt_cn AND
       c.condid=t.condid AND
       t.spcd=129;
```

To calculate the annual removals of all live white pine trees on forest land in the State of Michigan for the seventh inventory cycle (estimated year of completion 2009):

```
SELECT SUM(p.expremv * t.tparemv * t.fremvcfal)
FROM   plot      p,
       cond      c,
       tree      t
WHERE  p.statecd=26 AND
       p.cycle=7 AND
       p.cn=c.plt_cn AND
       p.cn=t.plt_cn AND
       c.condid=t.condid AND
       t.spcd=129;
```

Calculating Population Estimates Using Phase 1 and Phase 2 Data

Methods for calculating population estimates and their associated sampling errors from two-phase sampling is described in detail in “The Enhanced Forest Inventory and Analysis Program-National Sampling Design and Estimation Procedures” (Bechtold and Patterson, in press). SQL example scripts for calculating area and volume estimates using phase 1 and phase 2 data are provided below.

The following SQL script calculates the area of timberland for Indiana by stand-size class, using summarized phase 1 data contained in the ESTN_UNIT_STRATUM table and phase 2 information contained in the PLOT_POP_STRATUM_ASSGN, PLOT, and COND tables.

```
SELECT stand_size, ROUND(SUM(acres_long_calc)) acres
FROM
(
  SELECT
    eus.rscd,
    eus.evalid,
    eus.estunit,
    eus.stratumcd,
    DECODE(stdszcd,1,'Saw',2,'Pole',3,'SeedSap','Nonstocked') stand_size,
    SUM(condprop*(eus.areatot_eu*eus.p1pointcnt/eus.p1pointcnt_eu)/eus.p2pointcnt)
      acres_long_calc
  FROM      plot_pop_stratum_assgn      ppsa,
            estn_unit_stratum          eus,
            plot                        p,
            cond                        c
  WHERE     eus.rscd=23 AND
            eus.evalid=34 AND
            ppsa.eus_cn=eus.cn AND
            ppsa.plt_cn=p.cn AND
            c.plt_cn=p.cn AND
            landclcd=1 AND
            siteclcd in (1,2,3,4,5,6) AND
            reservcd=0
  GROUP BY eus.rscd,
            eus.evalid,
            eus.estunit,
            eus.stratumcd,
            DECODE(stdszcd,1,'Saw',2,'Pole',3,'SeedSap','Nonstocked')
)
GROUP BY stand_size
```

The following SQL script calculates the growing-stock volume on timberland for Indiana by stand-size class, using summarized phase 1 data contained in the ESTN_UNIT_STRATUM table and phase 2 information contained in the PLOT_POP_STRATUM_ASSGN, PLOT, COND, and TREE tables.

```

SELECT stand_size,round(sum(volume)) Volume
FROM
(
SELECT
    ppsa.rscd,
    ppsa.evalid,
    ppsa.estunit,
    ppsa.stratumcd,
    DECODE(stdszcd,1,'Saw',2,'Pole',3,'SeedSap','Nonstocked') stand_size,
    SUM(tpacurr*volcfnet*ppsa.expns) volume
FROM      plot_pop_stratum_assgn      ppsa,
          plot                        p,
          cond                        c,
          tree                        t
WHERE     ppsa.rscd=23 AND
          ppsa.evalid=35 AND
          ppsa.plt_cn=p.cn AND
          c.plt_cn=p.cn AND
          t.plt_cn=p.cn AND
          t.condid=c.condid AND
          landclcd=1 AND
          siteclcd in (1,2,3,4,5,6) AND
          reservcd=0 AND
          t.statuscd=1 AND
          t.treeclcd=2
GROUP BY  ppsa.rscd,
          ppsa.evalid,
          ppsa.estunit,
          ppsa.stratumcd,
          DECODE(stdszcd,1,'Saw',2,'Pole',3,'SeedSap','Nonstocked')
)
GROUP BY stand_size
    
```

Literature Cited

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Appendix A -- Index of Column Names

The following table lists column names used in the database tables, their location within the table, and a short description of the variable.

Column name	Table name	Location in table	Description
ACTUALHT	TREE	22	Actual length of tree
ADFORCD	COND	15	Administered forest
AGEDIA	SITETREE	13	Tree age at diameter (DBH/DRC)
AGENTCD	TREE	27	Cause of death
ALSTK	COND	53	All live stocking
ALSTKCD	COND	32	All live stocking code
AREA_USED	EUS	28	Area used to calculate all expansion factors
AREALAND_EU	EUS	16	Land area within the estimation unit
AREATOT_EU	EUS	17	Total area within the estimation unit
ASPECT	SUBPLOT	12	Subplot aspect
ASPECT	COND	29	Aspect
AZIMUTH	TREE	11	Azimuth
AZIMUTH	SITETREE	26	Azimuth
AZMCORN	BOUNDARY	13	Corner azimuth
AZMLEFT	BOUNDARY	12	Left azimuth
AZMRIGHT	BOUNDARY	15	Right azimuth
BALIVE	COND	47	Basal area of all live trees, summed for the condition
BFSND (NERS)	TREE	81	Board-foot-cull soundness
BHAGE (PNWRS, RMRS)	TREE	74	Age of tree at breast height
BNDCHG	BOUNDARY	10	Boundary change
BOLEHT (NERS)	TREE	84	Bole length
CCLCD	TREE	25	Crown class
CDENCD	TREE	67	Crown density
CDIEBKCD	TREE	68	Crown dieback
CENSUSYR	SURVEY	9	Census year
CFSND (NERS)	TREE	82	Cubic-foot-cull soundness
CLIGHTCD	TREE	65	Crown light exposure
CN	SURVEY	14	Sequence number
CN	COUNTY	6	Sequence number
CN	PLOT	32	Sequence number
CN	SUBPLOT	14	Sequence number
CN	COND	50	Sequence number
CN	TREE	70	Sequence number
CN	SEEDLING	13	Sequence number
CN	SITETREE	17	Sequence number
CN	BOUNDARY	16	Sequence number
CN	EUS	6	Sequence number
CN	PPSA	8	Sequence number
CN	SUBP_COND	10	Sequence number
COND_NONSAMPLE_REASN_CD	COND	83	Condition nonsampled reason code
COND_STATUS_CD	COND	82	Condition status code
CONDID	COND	8	Condition number
CONDID	TREE	10	Condition number
CONDID	SEEDLING	9	Condition number
CONDID	SITETREE	8	Condition number
CONDID	SUBP_COND	9	Condition number
CONDLIST	SUBPLOT	24	Subplot/macroplot condition list

Column name	Table name	Location in table	Description
CONDPROP	COND	9	Condition proportion, unadjusted
CONDPROP_ALL	COND	70	Condition proportion for total area estimation
CONDPROP_CHNG	COND	71	Condition proportion for change estimation
CONDPROP_CURR	COND	72	Condition proportion for forest land and timberland estimation
CONDPROPUN (SRS)	COND	55	Unadjusted subplot condition proportion
CONGCD	PLOT	30	Congressional district
CONTRAST	BOUNDARY	11	Contrasting condition
COUNTYCD	COUNTY	4	County code
COUNTYCD	PLOT	6	County code
COUNTYCD	SUBPLOT	6	County code
COUNTYCD	COND	6	County code
COUNTYCD	TREE	6	County code
COUNTYCD	SEEDLING	6	County code
COUNTYCD	SITETREE	6	County code
COUNTYCD	BOUNDARY	6	County code
COUNTYCD	PPSA	6	County code
COUNTYCD	SUBP_COND	6	County code
COUNTYNM	COUNTY	5	County name
CPOSCD	TREE	64	Crown position
CR	TREE	24	Compacted crown ratio
CREATED_BY	SURVEY	18	User who created the record
CREATED_BY	COUNTY	7	User who created the record
CREATED_BY	PLOT	50	User who created the record
CREATED_BY	SUBPLOT	17	User who created the record
CREATED_BY	COND	61	User who created the record
CREATED_BY	TREE	89	User who created the record
CREATED_BY	SEEDLING	18	User who created the record
CREATED_BY	SITETREE	19	User who created the record
CREATED_BY	BOUNDARY	18	User who created the record
CREATED_BY	EUS	21	User who created the record
CREATED_BY	PPSA	16	User who created the record
CREATED_BY	SUBP_COND	12	User who created the record
CREATED_DATE	SURVEY	19	Date record created
CREATED_DATE	COUNTY	8	Date record created
CREATED_DATE	PLOT	51	Date record created
CREATED_DATE	SUBPLOT	18	Date record created
CREATED_DATE	COND	62	Date record created
CREATED_DATE	TREE	90	Date record created
CREATED_DATE	SEEDLING	19	Date record created
CREATED_DATE	SITETREE	20	Date record created
CREATED_DATE	BOUNDARY	19	Date record created
CREATED_DATE	EUS	22	Date record created
CREATED_DATE	PPSA	17	Date record created
CREATED_DATE	SUBP_COND	13	Date record created
CREATED_IN_INSTANCE	SURVEY	20	Instance record created in
CREATED_IN_INSTANCE	COUNTY	9	Instance record created in
CREATED_IN_INSTANCE	PLOT	52	Instance record created in
CREATED_IN_INSTANCE	SUBPLOT	19	Instance record created in
CREATED_IN_INSTANCE	COND	63	Instance record created in
CREATED_IN_INSTANCE	SEEDLING	20	Instance record created in

Column name	Table name	Location in table	Description
CREATED_IN_INSTANCE	TREE	91	Instance record created in
CREATED_IN_INSTANCE	SITETREE	21	Instance record created in
CREATED_IN_INSTANCE	BOUNDARY	20	Instance record created in
CREATED_IN_INSTANCE	EUS	23	Instance record created in
CREATED_IN_INSTANCE	PPSA	18	Instance record created in
CREATED_IN_INSTANCE	SUBP_COND	14	Instance record created in
CREW_TYPE	PLOT	48	Type of crew measuring plot
CTY_CN	PLOT	34	Foreign key to the COUNTY record
CULL	TREE	28	Rotten and missing cull
CULL_FLD	TREE	100	Rotten and missing cull (as recorded by field)
CULLBF (NERS)	TREE	79	Board-foot cull
CULLCF (NERS)	TREE	80	Cubic-foot cull
CULLDEAD (RMRS)	TREE	76	Dead cull
CULLFORM (RMRS)	TREE	77	Form cull
CULLMSTOP(RMRS)	TREE	78	Missing top cull
CVIGORCD	TREE	66	Sapling vigor class
CYCLE	SURVEY	3	Inventory cycle number
CYCLE	PLOT	3	Inventory cycle number
CYCLE	SUBPLOT	3	Inventory cycle number
CYCLE	COND	3	Inventory cycle number
CYCLE	TREE	3	Inventory cycle number
CYCLE	SEEDLING	3	Inventory cycle number
CYCLE	SITETREE	3	Inventory cycle number
CYCLE	BOUNDARY	3	Inventory cycle number
CYCLE	PPSA	3	Inventory cycle number
CYCLE	SUBP_COND	3	Inventory cycle number
CYCLELEN	SURVEY	16	Length of the cycle
DAMINDEX	COND	49	Damage index
DAMLOC1	TREE	29	Damage location 1
DAMLOC2	TREE	32	Damage location 2
DAMSEV1	TREE	31	Damage severity 1
DAMSEV2	TREE	34	Damage severity 2
DAMTYP1	TREE	30	Damage type 1
DAMTYP2	TREE	33	Damage type 2
DECAYCD	TREE	35	Decay class
DECLINATION	PLOT	57	Declination
DESIGNCD	PLOT	13	Plot design
DIA	TREE	18	Current diameter
DIA	SITETREE	11	Current diameter
DIACALC (NCRS,SRS)	TREE	73	Current diameter, calculated
DIACHECK	TREE	60	Diameter check
DIAHTCD	TREE	19	Height of diameter measurement
DIST	TREE	12	Horizontal distance
DIST	SITETREE	27	Horizontal distance
DISTCORN	BOUNDARY	14	Corner distance
DRYBIOM	TREE	59	Merchantable stem biomass oven-dry weight for live trees
DRYBIOT	TREE	58	Total gross biomass oven-dry weight for live trees
DSTRBCD1	COND	34	Disturbance 1
DSTRBCD2	COND	36	Disturbance 2
DSTRBCD3	COND	38	Disturbance 3
DSTRBYR1	COND	35	Year of disturbance 1

Column name	Table name	Location in table	Description
DSTRBYR2	COND	37	Year of disturbance 2
DSTRBYR3	COND	39	Year of disturbance 3
ECO_UNIT_PNW (PNW)	PLOT	63	Ecological unit in PNW
ECOSUBCD	PLOT	29	Ecological subsection
EFFDATE_EU	EUS	11	Effective date for the estimation unit
EFFDATE_EVAL	EUS	8	Effective date for the evaluation
EFFDATE_STRATUM	EUS	13	Effective date for the stratum
ELEV	PLOT	18	Elevation
EMAP_HEX	PLOT	61	EMAP hexagon
ENDDATE_EU	EUS	12	End date for the estimation unit
ENDDATE_EVAL	EUS	9	End date for the evaluation
ENDDATE_STRATUM	EUS	14	End date for the stratum
ESTUNIT	EUS	4	Estimation unit
ESTUNIT	PPSA	14	Estimation unit
ESTUNITDESCR	EUS	10	Estimation unit description
EUS_CN	PPSA	9	Foreign key to the EUS record
EVALDESCR	EUS	7	Evaluation description
EVALID	EUS	3	Evaluation identifier
EVALID	PPSA	13	Evaluation identifier
EXPALL	PLOT	43	Current area expansion factor (for all land estimates)
EXPCHNG	PLOT	26	Periodic change expansion factor
EXPCURR	PLOT	19	Current area expansion factor (for forest land and timberland estimates)
EXPGROW	PLOT	21	Growth expansion factor
EXPMORT	PLOT	23	Mortality expansion factor
EXPNS	PPSA	11	Expansion factor computed for the stratum/estimation unit
EXPREMV	PLOT	25	Removals expansion factor
EXPVOL	PLOT	20	Current volume expansion factor
FGROWBFSL	TREE	104	Net annual merchantable board-foot growth of sawtimber tree on forest land
FGROWCFAL	TREE	105	Net annual sound cubic-foot growth of live tree on forest land
FGROWCFGS	TREE	103	Net annual merchantable cubic-foot growth of growing-stock tree on forest land
FIELD_VISIT	PLOT	65	Field visit
FLDAGE	COND	52	Stand age, as assigned by field crew
FLDSZCD	COND	21	Stand-size class assigned by the field crew
FLDTYPCD	COND	17	Forest type of the condition assigned by the field crew
FMORTBFSL	TREE	107	Board-foot volume of a sawtimber tree for mortality purposes on forest land
FMORTCFAL	TREE	108	Sound cubic-foot volume of a tree for mortality purposes on forest land
FMORTCFGS	TREE	106	Cubic-foot volume of a growing-stock tree for mortality purposes on forest land
FORINDCD	COND	14	Private owner industrial status
FORMCL (PNWRS)	TREE	85	Hardwood form class

Column name	Table name	Location in table	Description
FORTYPCD	COND	16	Forest type of the condition derived by algorithm
FORTYPCDCALC	COND	56	Forest type derived by algorithm, no adjustment for field call
FREMVBFSL	TREE	110	Board-foot volume of a sawtimber tree for removal purposes on forest land
FREMVCFAL	TREE	111	Sound cubic-foot volume of the tree for removal purposes on forest land
FREMVCFGS	TREE	109	Cubic-foot volume of a growing-stock tree for removal purposes on forest land
GROUND_LAND_CLASS_PNW (PNW)	COND	89	Ground land class in PNW
GROWBFSL	TREE	50	Net annual merchantable board-foot growth of sawtimber tree
GROWCD	PLOT	22	Type of annual volume growth
GROWCFAL	TREE	51	Net annual sound cubic-foot growth of live tree
GROWCFGS	TREE	49	Net annual merchantable cubic-foot growth of growing-stock tree
GSSTK	COND	54	Growing-stock stocking
GSSTKCD	COND	31	Growing-stock stocking code
HABTYPCD1 (RMRS, PNW, NCRS)	COND	57	Primary condition habitat type 1
HABTYPCD1_DESCR_PUB_CD	COND	85	Habitat type code 1 description publication code
HABTYPCD1_PUB_CD	COND	84	Habitat type code 1 publication code
HABTYPCD2 (RMRS)	COND	58	Primary condition habitat type 2
HABTYPCD2_DESCR_PUB_CD	COND	87	Habitat typr code 2 description publication code
HABTYPCD2_PUB_CD	COND	86	Habitat type code 2 publication code
HRDWD_CLUMP_CD (PNWRS)	TREE	87	Hardwood clump
HT	TREE	20	Total length
HT	SITETREE	12	Sitetree length
HTCALC (SRS)	TREE	86	Calculated total length
HTCD	TREE	21	Length method
HTDMP	TREE	96	Height to diameter measurement point
INVYR	SURVEY	7	Inventory year
KINDCD	PLOT	12	Sample kind
KINDCD_NC (NCRS)	PLOT	46	Sample kind (NCRS)
LANDCLCD	COND	10	Condition class status code (formerly land class code)
LASTCYCLEMEAS	PLOT	45	Previous inventory cycle number
LASTSUBCYCLEMEAS	PLOT	44	Previous inventory subcycle number
LAT	PLOT	16	Latitude NAD 83 datum
LON	PLOT	17	Longitude NAD 83 datum
MACRCOND	SUBPLOT	16	Macroplot center condition
MACRCOND_PROP	SUBP_COND	20	Macroplot condition proportion
MACRPROP	COND	60	Macroplot condition proportion, unadjusted
MACRPROP_ALL	COND	73	Macroplot condition proportion (total area basis)
MACRPROP_CHNG	COND	74	Macroplot condition proportion (change estimation basis)

Column name	Table name	Location in table	Description
MACRPROP_CURR	COND	75	Macroplot condition proportion (current estimation basis)
MANUAL	PLOT	31	Field guide version number
MANUAL_DB	PLOT	49	Version of field guide to which database is updated
MAPDEN	COND	18	Tree density class
MEASDAY	PLOT	10	Measurement day
MEASMON	PLOT	9	Measurement month
MEASYEAR	PLOT	8	Measurement year
METHOD	SITETREE	28	Site tree method
MICRCOND	SUBPLOT	10	Microplot center condition
MICRCOND_PROP	SUBP_COND	19	Microplot condition proportion
MICROPLOT_LOC	PLOT	56	Microplot location
MICRPROP	COND	48	Microplot condition proportion, unadjusted
MICRPROP_ALL	COND	76	Microplot condition proportion (total area basis)
MICRPROP_CHNG	COND	77	Microplot condition proportion (change estimation basis)
MICRPROP_CURR	COND	78	Microplot condition proportion (current estimation basis)
MIST_CL_CD	TREE	98	Mistletoe class
MIXEDCONFCD (PNWRS)	COND	59	Mixed conifer code
MODDATE	SURVEY	8	Date the data were last modified for this State, cycle, and subcycle
MODIFIED_BY	SURVEY	21	User who last modified record
MODIFIED_BY	COUNTY	10	User who last modified record
MODIFIED_BY	PLOT	53	User who last modified record
MODIFIED_BY	SUBPLOT	20	User who last modified record
MODIFIED_BY	COND	64	User who last modified record
MODIFIED_BY	TREE	92	User who last modified record
MODIFIED_BY	SEEDLING	21	User who last modified record
MODIFIED_BY	SITETREE	22	User who last modified record
MODIFIED_BY	BOUNDARY	21	User who last modified record
MODIFIED_BY	EUS	24	User who last modified record
MODIFIED_BY	PPSA	19	User who last modified record
MODIFIED_BY	SUBP_COND	15	User who last modified record
MODIFIED_DATE	SURVEY	22	Date record was last modified
MODIFIED_DATE	COUNTY	11	Date record was last modified
MODIFIED_DATE	PLOT	54	Date record was last modified
MODIFIED_DATE	SUBPLOT	21	Date record was last modified
MODIFIED_DATE	COND	65	Date record was last modified
MODIFIED_DATE	TREE	93	Date record was last modified
MODIFIED_DATE	SEEDLING	22	Date record was last modified
MODIFIED_DATE	SITETREE	23	Date record was last modified
MODIFIED_DATE	BOUNDARY	22	Date record was last modified
MODIFIED_DATE	EUS	25	Date record was last modified
MODIFIED_DATE	PPSA	20	Date record was last modified
MODIFIED_DATE	SUBP_COND	16	Date record was last modified
MODIFIED_IN_INSTANCE	SURVEY	23	Instance record was modified in
MODIFIED_IN_INSTANCE	COUNTY	12	Instance record was modified in
MODIFIED_IN_INSTANCE	PLOT	55	Instance record was modified in
MODIFIED_IN_INSTANCE	SUBPLOT	22	Instance record was modified in
MODIFIED_IN_INSTANCE	COND	66	Instance record was modified in

Column name	Table name	Location in table	Description
MODIFIED_IN_INSTANCE	TREE	94	Instance record was modified in
MODIFIED_IN_INSTANCE	SEEDLING	23	Instance record was modified in
MODIFIED_IN_INSTANCE	SITETREE	24	Instance record was modified in
MODIFIED_IN_INSTANCE	BOUNDARY	23	Instance record was modified in
MODIFIED_IN_INSTANCE	EUS	26	Instance record was modified in
MODIFIED_IN_INSTANCE	PPSA	21	Instance record was modified in
MODIFIED_IN_INSTANCE	SUBP_COND	17	Instance record was modified in
MORTBFSL	TREE	53	Board-foot volume of a sawtimber tree for mortality purposes
MORTCD	PLOT	24	Type of annual mortality volume
MORTCD	TREE	95	Mortality code
MORTCFAL	TREE	54	Sound cubic-foot volume of a tree for mortality purposes
MORTCFGS	TREE	53	Cubic-foot volume of a growing-stock tree for mortality purposes
MORTYR	TREE	61	Mortality year
NFSYR	SURVEY	10	National Forest System Area Control Year
NOTES	SURVEY	13	An optional item where notes about the inventory may be stored
NUMPANEL	SURVEY	12	Number of panels
NUMSUBPANEL	SURVEY	17	Number of subpanels
OWNCD	COND	12	Owner class
OWNGRPCD	COND	13	Owner group
P1POINTCNT	EUS	18	Count of Phase 1 points in the stratum/estimation unit
P1POINTCNT_EU	EUS	20	Count of Phase 1 points in the estimation unit
P2A_GRM_FLG	SUBPLOT	25	Periodic to annual growth, removal, and mortality flag
P2A_GRM_FLG	TREE	116	Periodic to annual growth, removal, and mortality flag
P2HEX	PLOT	66	Phase 2 hex number
P2PANEL	PLOT	27	Phase 2 panel number
P2POINTCNT	EUS	19	Count of Phase 2 points in the stratum/estimation unit
P3_OZONE_IND	SURVEY	24	Phase 3 ozone indicator
P3PANEL	PLOT	28	Phase 3 panel number
PHYSCLCD	COND	30	Physiographic class
PLANT_STOCKABILITY_FACTOR_PNW	COND	90	Plant stockability factor in PNW
PLOT	PLOT	7	Plot number
PLOT	SUBPLOT	7	Plot number
PLOT	COND	7	Plot number
PLOT	TREE	7	Plot number
PLOT	SEEDLING	7	Plot number
PLOT	SITETREE	7	Plot number
PLOT	BOUNDARY	7	Plot number
PLOT	PPSA	7	Plot number
PLOT	SUBP_COND	7	Plot number
PLOT_NONSAMPLE_REASN_CD	PLOT	60	Plot nonsampled reason code
PLOT_STATUS_CD	PLOT	59	Plot status code
PLT_CN	SUBPLOT	15	Foreign key to the PLOT record
PLT_CN	COND	51	Foreign key to the PLOT record

Column name	Table name	Location in table	Description
PLT_CN	TREE	71	Foreign key to the PLOT record
PLT_CN	SEEDLING	14	Foreign key to the PLOT record
PLT_CN	SITETREE	18	Foreign key to the PLOT record
PLT_CN	BOUNDARY	17	Foreign key to the PLOT record
PLT_CN	PPSA	10	Foreign key to the PLOT record
PLT_CN	SUBP_COND	11	Foreign key to the PLOT record
POINT_NONSAMPLE_REASN_CD	SUBPLOT	27	Point nonsampled reason code
PRESNFCD	COND	46	Present nonforest land use
PREV_BND_CN	BOUNDARY	24	Previous boundary sequence number
PREV_PLT_CN	PLOT	58	Previous plot sequence number
PREV_SBP_CN	SUBPLOT	26	Previous subplot sequence number
PREV_SIT_CN	SITE TREE	31	Previous site tree sequence number
PREV_STATUS_CD	TREE	123	Previous tree status code
PREV_TRE_CN	TREE	117	Previous tree sequence number
PREV_WDLSTEM	TREE	124	Previous woodland stem count
PREVCOND	TREE	13	Previous condition number
PREVDIA	TREE	102	Previous diameter
PREVSUBC	TREE	14	Previous subcycle number
PROP_BASIS	COND	69	Proportion basis.
QA_STATUS	PLOT	47	Indicator of plot type
RDDISTCD	PLOT	14	Horizontal distance to improved road
RECONCILECD	TREE	101	New tree reconciliation
REMPER	PLOT	11	Remeasurement period
REMBFSL	TREE	56	Board-foot volume of a sawtimber tree for removal purposes
REMVCFAL	TREE	57	Sound cubic-foot volume of the tree for removal purposes
REMVCFGS	TREE	55	Cubic-foot volume of a growing-stock tree for removal purposes
REPLACED_PLOT_NBR	PLOT	62	Replaced plot number
RESERVCD	COND	11	Reserved status
ROUGHCUILL	TREE	97	Rough cull
RSCD	SURVEY	11	Region or Station ID
RSCD	EUS	2	Region or Station ID
RSCD	PPSA	12	Region or Station ID
RSCD_EVALID_EXPALL	PLOT	42	Link to the evaluation method in EUS to calculate EXPALL
RSCD_EVALID_EXPCHNG	PLOT	41	Link to the evaluation method in EUS to calculate EXPCHNG
RSCD_EVALID_EXPCURR	PLOT	36	Link to the evaluation method in EUS to calculate EXPCURR
RSCD_EVALID_EXPGROW	PLOT	38	Link to the evaluation method in EUS to calculate EXPGROW
RSCD_EVALID_EXPMORT	PLOT	39	Link to the evaluation method in EUS to calculate EXPMORT
RSCD_EVALID_EXPREMV	PLOT	40	Link to the evaluation method in EUS to calculate EXPREMV
RSCD_EVALID_EXPVOL	PLOT	37	Link to the evaluation method in EUS to calculate EXPVOL
SALVCD	TREE	63	Salvable dead code
SAWHT (NERS)	TREE	83	Sawlog length
SIBASE	COND	24	Site index base age
SIBASE	SITETREE	16	Site index base age

Column name	Table name	Location in table	Description
SICOND	COND	23	Site index
SISP	COND	25	Site index species
SITECL_METHOD	COND	81	Site class method
SITECLCD	COND	22	Site productivity class
SITECLCDEST	COND	79	Estimated site productivity code
SITETREE_TREE	COND	80	Site tree tree number
SITREE	SITETREE	15	Site index
SITREE (NCRS)	TREE	88	Calculate site index
SITREE_EST	SITETREE	29	Estimated site index
SLOPE	SUBPLOT	11	Subplot slope
SLOPE	COND	28	Slope
SPCD	TREE	16	Species code
SPCD	SEEDLING	10	Species code
SPCD	SITETREE	10	Species code
SPGRPCD	TREE	17	Species group
SPGRPCD	SEEDLING	11	Species group
SPGRPCD	SITETREE	14	Species group
SRV_CN	PLOT	33	Foreign key to SURVEY record
STANDING_DEAD_CD	TREE	125	Code describing whether or not the tree qualifies as standing dead
STATEAB	SURVEY	5	State abbreviation
STATECD	SURVEY	2	State code
STATECD	COUNTY	2	State code
STATECD	PLOT	2	State code
STATECD	SUBPLOT	2	State code
STATECD	COND	2	State code
STATECD	TREE	2	State code
STATECD	SEEDLING	2	State code
STATECD	SITETREE	2	State code
STATECD	BOUNDARY	2	State code
STATECD	PPSA	2	State code
STATECD	SUBP_COND	2	State code
STATENM	SURVEY	6	State name
STATUSCD	SUBPLOT	23	Subplot/macropot status
STATUSCD	TREE	15	Tree status
STDAGE	COND	19	Stand age
STDORGCD	COND	26	Regeneration status
STDORGSP	COND	27	Artificial regeneration status species
STDSZCD	COND	20	Stand-size class derived by algorithm
STOCKING	TREE	36	Tree stocking
STOCKING	SEEDLING	12	Tree stocking
STRATUMCD	EUS	5	Stratum
STRATUMCD	PPSA	15	Stratum
STRATUMDESCR	EUS	27	Stratum description
STRATUMMETHOD	EUS	15	Stratum method
SUBCYCLE	SURVEY	4	Inventory subcycle number
SUBCYCLE	PLOT	4	Inventory subcycle number
SUBCYCLE	SUBPLOT	4	Inventory subcycle number
SUBCYCLE	COND	4	Inventory subcycle number
SUBCYCLE	TREE	4	Inventory subcycle number
SUBCYCLE	SEEDLING	4	Inventory subcycle number
SUBCYCLE	SITETREE	4	Inventory subcycle number
SUBCYCLE	BOUNDARY	4	Inventory subcycle number

Column name	Table name	Location in table	Description
SUBCYCLE	PPSA	4	Inventory subcycle number
SUBCYCLE	SUBP_COND	4	Inventory subcycle number
SUBDIVCD	SURVEY	15	Subdivision
SUBP	SUBPLOT	8	Subplot number
SUBP	TREE	8	Subplot number
SUBP	SEEDLING	8	Subplot number
SUBP	SITETREE	25	Subplot number
SUBP	BOUNDARY	8	Subplot number
SUBP	SUBP_COND	8	Subplot number
SUBPANEL	PLOT	35	Subpanel assignment
SUBPCOND	SUBPLOT	9	Subplot center condition
SUBPCOND_PROP	SUBP_COND	18	Subplot condition proportion
SUBPPROP	COND	68	Subplot condition proportion, unadjusted
SUBPTYP	BOUNDARY	9	Plot type
TABLENM	SURVEY	1	Table name
TABLENM	COUNTY	1	Table name
TABLENM	PLOT	1	Table name
TABLENM	SUBPLOT	1	Table name
TABLENM	COND	1	Table name
TABLENM	TREE	1	Table name
TABLENM	SEEDLING	1	Table name
TABLENM	SITETREE	1	Table name
TABLENM	BOUNDARY	1	Table name
TABLENM	EUS	1	Table name
TABLENM	PPSA	1	Table name
TABLENM	SUBP_COND	1	Table name
TOPO_POSITION_PNW	PLOT	64	Topographic position in PNW
TOTAGE (PNWRS,RMRS)	TREE	75	Total age of tree
TOTAGE (RMRS)	SEEDLING	16	Total age of seedling
TPA	TREE	99	Trees per acre, unadjusted
TPA	SEEDLING	24	Trees per acre, unadjusted
TPACURR	TREE	38	Current trees per acre, adjusted at the stratum level
TPACURR	SEEDLING	17	Current trees per acre, adjusted at the stratum level
TPACURR_SAMP	TREE	112	Current trees per acre, adjusted at the plot level
TPAGROW	TREE	41	Growth trees per acre, adjusted at the stratum level
TPAGROW_UNADJ	TREE	127	Growth trees per acre unadjusted for denied access, hazardous, out of sample conditions
TPAGROW_SAMP	TREE	113	Mortality trees per acre per year, adjusted at the plot level
TPAMORT	TREE	39	Mortality trees per acre per year, adjusted at the stratum level
TPAMORT_SAMP	TREE	114	Removals trees per acre per year, adjusted at the plot level
TPAMORT_UNADJ	TREE	125	Mortality trees per acre per year unadjusted for denied access, hazardous, out of sample conditions
TPAREMV	TREE	40	Removals trees per acre per year, adjusted at the stratum level

Column name	Table name	Location in table	Description
TPAREMV_SAMP	TREE	115	Growth trees per acre, adjusted at the plot level
TPAREMV_UNDAJ	TREE	126	Removal trees per acre per year unadjusted for denied access, hazardous, out of sample conditions
TRANSCD	TREE	69	Foliage transparency
TREE	TREE	9	Tree number
TREE	SITETREE	9	Tree number
TREECLCD	TREE	23	Tree class
TREECLCD_NCRS	TREE	120	Tree class code for NCRS
TREECLCD_NERS	TREE	118	Tree class code for NERS
TREECLCD_RMRS	TREE	121	Tree class code for RMRS
TREECLCD_SRS	TREE	119	Tree class code for SRS
TREECOUNT (NCRS,PNWRS,RMRS)	SEEDLING	15	Tree count (actual)
TREECOUNT_CALC	SEEDLING	25	Tree count used in calculations
TREEGRCD (NCRS,NERS,SRS)	TREE	26	Tree grade
TREEHISTCD (NCRS,NERS,SRS)	TREE	72	Tree history
TRTCD1	COND	40	Stand treatment 1
TRTCD2	COND	42	Stand treatment 2
TRTCD3	COND	44	Stand treatment 3
TRTOPCD	COND	33	Treatment opportunity class
TRTYR1	COND	41	Treatment year 1
TRTYR2	COND	43	Treatment year 2
TRTYR3	COND	45	Treatment year 3
UNCRCD	TREE	63	Uncompacted live crown ratio
UNITCD	COUNTY	3	Survey unit number
UNITCD	PLOT	5	Survey unit number
UNITCD	SUBPLOT	5	Survey unit number
UNITCD	COND	5	Survey unit number
UNITCD	TREE	5	Survey unit number
UNITCD	SEEDLING	5	Survey unit number
UNITCD	SITETREE	5	Survey unit number
UNITCD	BOUNDARY	5	Survey unit number
UNITCD	PPSA	5	Survey unit number
UNITCD	SUBP_COND	5	Survey unit number
VALIDCD	SITETREE	30	Validity code for site index calculation
VOL_LOC_GRP	COND	67	Volume location group
VOLBFGRS	TREE	47	Gross board-foot volume in the saw-log portion
VOLBFNET	TREE	46	Net board-foot volume in the saw-log portion
VOLCFGRS	TREE	43	Gross cubic-foot volume
VOLCFNET	TREE	42	Net cubic-foot volume
VOLCFSND	TREE	48	Sound cubic-foot volume
VOLCSGRS	TREE	45	Gross cubic-foot volume in the saw-log portion
VOLCSNET	TREE	44	Net cubic-foot volume in the saw-log portion
WATERCD	PLOT	15	Water on plot
WATERDEP	SUBPLOT	13	Snow/water depth
WDLDSTEM	TREE	37	Woodland tree species stem count

Appendix B - FIADB Standard Presentation Tables

This appendix contains examples of the standard presentation tables that are included in all FIA inventory reports. Tables in reports may sometimes differ slightly from the basic format because of regional differences and local needs and problems. Classes that do not contain any data may not be reported. For example, in Iowa, there is no National Forest land, so a column headed “National Forest” will not appear in any table by ownership class. In some regions, more detailed data may be important, so a heading may be broken down into subheadings. For example, in the South, it is important to distinguish between natural and planted pines. The pine species and forest type headings for standard presentation tables in many Southern States will be broken down further to meet the need for more specific data. In some instances, data may not always be available at the county level, and county data may need to be combined under broader headings. Variations should not be drastic enough to compromise the standardization of the tables.

Table 1. -- Area of land by county
 and major land-use class, (reporting area), (date)
 (In thousand acres)

County	Total land area	Forest land				Other land
		Total forest	Timberland	Reserved forest land	Other forest land	
County 1	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
County 2	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
County 3	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
.
.
.
Total	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x

Table 2. -- Area of timberland by county
 and ownership class, (reporting area), (date)
 (In thousand acres)

County	All ownerships	National forest	Other federal	State	County and municipal	Indian	Forest industry	Individual	Corporate
County 1	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
County 2	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
County 3	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
.
.
.
Total	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x

Table 3. -- Area of timberland by county
 and forest type group, (reporting area), (date)
 (In thousand acres)

County	Forest type group							
	Total	White-red-jack pine	Spruce-fir	Oak-hickory	Elm-ash-cottonwood	Maple-beech-birch	Aspen-birch	Non-stocked
County 1	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
County 2	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
County 3	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
.
.
.
Total	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x

Table 4. -- Area of timberland by county
 and stand-size class, (reporting area), (date)
 (In thousand acres)

County	Stand-size class				
	All stands	Sawtimber	Poletimber	Sapling-seedling	Nonstocked
County 1	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
County 2	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
County 3	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
.
.
.
Total	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x

Table 5. -- Area of timberland by county
 and potential productivity class, (reporting area), (date)
 (In thousand acres)

County	Potential productivity class (cubic feet of growth per acre per year)					
	All classes	165+	120 - 164	85 - 119	50 - 84	20 - 49
County 1	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
County 2	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
County 3	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
.
.
.
Total	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x

Table 6. -- Area of timberland by county
 and stocking class of growing-stock trees, (reporting area), (date)
 (In thousand acres)

County	Stocking class of growing-stock trees					
	All classes	Nonstocked	Poorly stocked	Moderately stocked	Fully stocked	Over-stocked
County 1	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
County 2	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
County 3	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
.
.
.
Total	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x

Table 7. -- Area of timberland by forest type group
 and ownership class, (reporting area), (date)
 (In thousand acres)

Forest type group	Ownership class								
	All ownerships	National forest	Other federal	State	County and municipal	Indian	Forest industry	Individual	Corporate
White-red-jack pine	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Spruce-fir	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Oak-hickory	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Elm-ash-cottonwood	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Maple-beech-birch	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Aspen-birch	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Nonstocked	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Total	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x

Table 8. -- Area of timberland by ownership class and stocking class of growing-stock trees,
 (reporting area), (date)
 (In thousand acres)

Ownership class	Stocking class of growing-stock trees					
	All classes	Nonstocked	Poorly stocked	Moderately stocked	Fully stocked	Over- stocked
National forest	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Other federal	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
State	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
County and municipal	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Indian	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Forest industry	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Corporate	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Individual	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Total	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
All ownerships	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x

Table 9. -- Area of timberland by forest type group
 and stand-size class, (reporting area), (date)
 (In thousand acres)

Forest type group	All stands	Stand-size class			
		Sawtimber	Poletimber	Seedling-sapling	Nonstocked
White-red-jack pine	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Spruce-fir	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Oak-hickory	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Elm-ash-cottonwood	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Maple-beech-birch	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Aspen-birch	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Nonstocked	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x
Total	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x	x,xxx.x

Table 10. -- Number of all live trees on timberland by species group
 and diameter class, (reporting area), (date)
 (In thousand trees)

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 - 28.9	29.0+
Longleaf and slash pine	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Loblolly and shortleaf pine	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Other yellow pines	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Total	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx

Table 11. -- Number of growing-stock trees on timberland by species group
 and diameter class, (reporting area), (date)
 (In thousand trees)

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 - 28.9	29.0+
Longleaf and slash pine	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Loblolly and shortleaf pine	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Other yellow pines	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Total	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx

Table 12. -- Merchantable volume of growing-stock trees on timberland by species group
 and diameter class, (reporting area), (date)
 (In thousand cubic feet)

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 - 28.9	29.0+
Longleaf and slash pine	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Loblolly and shortleaf pine	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Other yellow pines	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Total	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx

Table 13. -- Merchantable volume in the saw-log portion of growing-stock trees on timberland by species group and diameter class, (reporting area), (date)

(In thousand cubic feet)

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 - 28.9	29.0+
Longleaf and slash pine	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Loblolly and shortleaf pine	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Other yellow pines	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Total	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx

Table 14. -- Merchantable volume of sawtimber trees on timberland by species group and diameter class, (reporting area), (date)

(In thousand board feet)

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 - 28.9	29.0+
Longleaf and slash pine	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Loblolly and shortleaf pine	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Other yellow pines	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Total	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx

Table 15. -- Merchantable volume of growing-stock trees and sawtimber trees on timberland by county and major species group, (reporting area), (date)

County	Growing stock (thousand cubic feet)					Sawtimber (thousand board feet)				
	All species	Major species group				All species	Major species group			
		Pine	softwoods	Soft hardwoods	Hard hardwoods		Pine	softwoods	Soft hardwoods	Hard hardwoods
County 1	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
County 2	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
County 3	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
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Total	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx

Table 16. -- Merchantable volume of all live and dead trees on timberland by class of timber and major species group, (reporting area), (date)
 (In thousand cubic feet)

Class of timber	All species	Major species group			
		Pine	Other softwoods	Soft hardwoods	Hard hardwoods
Live trees					
Growing-stock trees					
Sawtimber					
Saw-log portion	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Upper stem portion	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Total	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Poletimber	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
All growing-stock trees	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Cull trees					
Rough trees					
Sawtimber size	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Poletimber size	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Total	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Rotten trees					
Sawtimber size	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Poletimber size	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Total	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
All cull trees	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Salvable dead trees					
Sawtimber size	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Poletimber size	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
All salvable dead trees	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
All classes	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx

Table 17. – Merchantable volume of all live trees and growing-stock trees on timberland by ownership class and major species group, (reporting area), (date)
 (In thousand cubic feet)

Ownership class	All live trees					Growing-stock trees				
	All species	Major species group				All species	Major species group			
		Pine	Other softwoods	Soft hardwoods	Hard hardwoods		Pine	Other softwoods	Soft hardwoods	Hard hardwoods
National forest	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Other federal	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
State	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
County and municipal	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Indian	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Forest industry	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Corporate	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Individual	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Total	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx

Table 18. -- Merchantable volume of growing-stock trees on timberland by forest type group and major species group, (reporting area), (date)
 (In thousand cubic feet)

Forest type group	All species	Major species group			
		Pine	Other softwoods	Soft hardwoods	Hard hardwoods
White-red-jack pine	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Spruce-fir	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Oak-hickory	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Elm-ash-cottonwood	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Maple-beech-birch	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Aspen-birch	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Nonstocked	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Total	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx

Table 19. – Net annual merchantable growth of growing-stock trees and sawtimber trees on timberland by county and major species group, (reporting area), (date)

County	Growing stock (in thousand cubic feet)					Sawtimber (in thousand board feet)				
	All species	Species group				All species	Species group			
		Pine	Other softwoods	Soft hardwoods	Hard hardwoods		Pine	Other softwoods	Soft hardwoods	Hard hardwoods
County 1	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
County 2	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
County 3	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Total	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx

Table 20. – Annual merchantable removals of growing-stock trees and sawtimber trees on timberland by county and major species group, (reporting area), (date)

County	Growing stock (thousand cubic feet)					Sawtimber (thousand board feet)				
	All species	Major species group				All species	Major species group			
		Pine	Other softwoods	Soft hardwoods	Hard hardwoods		Pine	Other softwoods	Soft hardwoods	Hard hardwoods
County 1	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
County 2	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
County 3	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Total	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx

Table 21. – Net annual merchantable growth and annual merchantable removals of growing-stock trees and sawtimber trees on timberland by species group, (reporting area), (date)

Species group	Growing stock (thousand cubic feet)		Sawtimber (thousand board feet)	
	Average net annual growth	Average annual removals	Average net annual growth	Average annual removals
Longleaf and slash pine	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Loblolly and shortleaf pine	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Other yellow pines	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Total	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx

Table 22. -- Annual merchantable mortality of growing-stock trees
 and sawtimber trees on timberland
 by species group, (reporting area), (date)

Species group	Growing stock (Thousand cubic feet)	Sawtimber (Thousand board feet)
Longleaf and slash pine	xxx,xxx	xxx,xxx
Loblolly and shortleaf pine	xxx,xxx	xxx,xxx
Other yellow pines	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx
Total	xxx,xxx	xxx,xxx

Table 23. -- Net annual merchantable growth and annual merchantable removals
 of growing-stock trees on timberland
 by ownership class and major species group,
 (reporting area), (date)

Ownership class	Growth					Removals				
	All species	Major species group				All species	Major species group			
		Pine	softwoods	hardwoods	hardwoods		Pine	softwoods	hardwoods	hardwoods
National forest	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Other federal	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
State	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
County and municipal	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Indian	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Forest industry	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Individual	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Corporate	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
All ownerships	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx

Table 24. -- Net annual merchantable growth and annual merchantable removals
 of sawtimber trees on timberland
 by ownership class and major species group,
 (reporting area), (date)

Ownership class	Growth					Removals				
	All species	Major species group				All species	Major species group			
		Pine	softwoods	hardwoods	hardwoods		Pine	softwoods	hardwoods	hardwoods
National forest	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Other federal	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
State	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
County and municipal	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Indian	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Forest industry	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Individual	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Corporate	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
All ownerships	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx

Table 25. -- Total gross biomass oven-dry weight for live trees on timberland
by species group and diameter class, (reporting area), (date)
(In thousand pounds)

Species group	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 - 28.9	29.0+
Longleaf and slash pine	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Loblolly and shortleaf pine	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Other yellow pines	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
.	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx
Total	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx	xxx,xxx

Appendix C – State, Survey Unit, and County Codes

01	Alabama	009	Blount
01	Southwest-South	015	Calhoun
003	Baldwin	019	Cherokee
039	Covington	027	Clay
053	Escambia	029	Cleburne
097	Mobile	037	Coosa
129	Washington	043	Cullman
		055	Etowah
02	Southwest-North	073	Jefferson
023	Choctaw	111	Randolph
025	Clarke	115	St. Clair
035	Conecuh	117	Shelby
091	Marengo	121	Talladega
099	Monroe	127	Walker
119	Sumter	133	Winston
131	Wilcox		
		06	North
03	Southeast	033	Colbert
001	Autauga	049	DeKalb
005	Barbour	059	Franklin
011	Bullock	071	Jackson
013	Butler	077	Lauderdale
017	Chambers	079	Lawrence
021	Chilton	083	Limestone
031	Coffee	089	Madison
041	Crenshaw	095	Marshall
045	Dale	103	Morgan
047	Dallas		
051	Elmore	02	Alaska
061	Geneva	01	Alaska
067	Henry	013	Aleutians East Borough
069	Houston	016	Aleutians West Census Area
081	Lee	020	Anchorage Borough
085	Lowndes	050	Bethel Census Area
087	Macon	060	Bristol Bay Borough
101	Montgomery	068	Denali Borough
109	Pike	070	Dillingham Census Area
113	Russell	090	Fairbanks North Star Borough
123	Tallapoosa	100	Haines Borough
		110	Juneau Borough
04	West Central	122	Kenai Peninsula Borough
007	Bibb	130	Ketchikan Gateway Borough
057	Fayette	150	Kodiak Island Borough
063	Greene	164	Lake and Peninsula Borough
065	Hale	170	Matanuska-Susitna Borough
075	Lamar	180	Nome Census Area
093	Marion	185	North Slope Borough
105	Perry	188	Northwest Arctic Borough
107	Pickens	201	Prince of Wales-Outer Ketchikan Census Area
125	Tuscaloosa		
05	North Central	220	Sitka Borough
		232	Skagway-Hoonah-Angoon

	Census Area	003	Ashley
240	Southeast Fairbanks Census Area	011	Bradley
		013	Calhoun
261	Valdez-Cordova Census Area	019	Clark
270	Wade Hampton Census Area	025	Cleveland
280	Wrangell-Petersburg Census Area	027	Columbia
		039	Dallas
282	Yakutat Borough	043	Drew
290	Yukon-Koyukuk Census Area	053	Grant
		057	Hempstead
		059	Hot Spring
04	Arizona	061	Howard
01	Southern	073	Lafayette
003	Cochise	081	Little River
009	Graham	091	Miller
011	Greenlee	099	Nevada
012	La Paz	103	Ouachita
013	Maricopa	109	Pike
019	Pima	133	Sevier
021	Pinal	139	Union
023	Santa Cruz		
027	Yuma		
		04	Ouachita
02	Northern	051	Garland
001	Apache	083	Logan
005	Coconino	097	Montgomery
007	Gila	105	Perry
015	Mohave	113	Polk
017	Navajo	119	Pulaski
025	Yavapai	125	Saline
		127	Scott
05	Arkansas	131	Sebastian
01	South Delta	149	Yell
001	Arkansas		
017	Chicot	05	Ozark
041	Desha	005	Baxter
069	Jefferson	007	Benton
077	Lee	009	Boone
079	Lincoln	015	Carroll
085	Lonoke	023	Cleburne
095	Monroe	029	Conway
107	Phillips	033	Crawford
117	Prairie	045	Faulkner
		047	Franklin
02	North Delta	049	Fulton
021	Clay	063	Independence
031	Craighead	065	Izard
035	Crittenden	071	Johnson
037	Cross	087	Madison
055	Greene	089	Marion
067	Jackson	101	Newton
075	Lawrence	115	Pope
093	Mississippi	121	Randolph
111	Poinsett	129	Searcy
123	St. Francis	135	Sharp
147	Woodruff	137	Stone
		141	Van Buren
03	Southwest	143	Washington

145	White	047	Merced
06	California	051	Mono
01	North Coast	077	San Joaquin
015	Del Norte	099	Stanislaus
023	Humboldt	107	Tulare
045	Mendocino	109	Tuolumne
097	Sonoma	06	Southern
02	North Interior	025	Imperial
035	Lassen	027	Inyo
049	Modoc	037	Los Angeles
089	Shasta	059	Orange
093	Siskiyou	065	Riverside
105	Trinity	071	San Bernardino
		073	San Diego
03	Sacramento	08	Colorado
007	Butte	01	Northern Front Range
011	Colusa	013	Boulder
017	El Dorado	019	Clear Creek
021	Glenn	035	Douglas
033	Lake	039	Elbert
055	Napa	041	El Paso
057	Nevada	047	Gilpin
061	Placer	059	Jefferson
063	Plumas	065	Lake
067	Sacramento	069	Larimer
091	Sierra	093	Park
101	Sutter	119	Teller
103	Tehama	02	Southern Front Range
113	Yolo	015	Chaffee
115	Yuba	023	Costilla
04	Central Coast	027	Custer
001	Alameda	043	Fremont
013	Contra Costa	055	Huerfano
041	Marin	071	Las Animas
053	Monterey	101	Pueblo
069	San Benito	03	West Central
075	San Francisco	003	Alamosa
079	San Luis Obispo	021	Conejos
081	San Mateo	037	Eagle
083	Santa Barbara	049	Grand
085	Santa Clara	051	Gunnison
087	Santa Cruz	053	Hinsdale
095	Solano	057	Jackson
111	Ventura	079	Mineral
05	San Joaquin	097	Pitkin
003	Alpine	105	Rio Grande
005	Amador	107	Routt
009	Calaveras	109	Saguache
019	Fresno	111	San Juan
029	Kern	117	Summit
031	Kings	04	Western
039	Madera	007	Archuleta
043	Mariposa		

029 Delta
 033 Dolores
 045 Garfield
 067 La Plata
 077 Mesa
 081 Moffat
 083 Montezuma
 085 Montrose
 091 Ouray
 103 Rio Blanco
 113 San Miguel

05 Eastern

001 Adams
 005 Arapahoe
 009 Baca
 011 Bent
 017 Cheyenne
 025 Crowley
 031 Denver
 061 Kiowa
 063 Kit Carson
 073 Lincoln
 075 Logan
 087 Morgan
 089 Otero
 095 Phillips
 099 Prowers
 115 Sedgwick
 121 Washington
 123 Weld
 125 Yuma

09 Connecticut

01 State

001 Fairfield
 003 Hartford
 005 Litchfield
 007 Middlesex
 009 New Haven
 011 New London
 013 Tolland
 015 Windham

10 Delaware

01 State

001 Kent
 003 New Castle
 005 Sussex

11 District of Columbia

12 Florida

01 Northeastern

001 Alachua
 003 Baker
 007 Bradford

019 Clay
 023 Columbia
 029 Dixie
 031 Duval
 035 Flagler
 041 Gilchrist
 047 Hamilton
 067 Lafayette
 075 Levy
 079 Madison
 083 Marion
 089 Nassau
 107 Putnam
 109 St. Johns
 121 Suwannee
 123 Taylor
 125 Union
 127 Volusia

02 Northwestern

005 Bay
 013 Calhoun
 033 Escambia
 037 Franklin
 039 Gadsden
 045 Gulf
 059 Holmes
 063 Jackson
 065 Jefferson
 073 Leon
 077 Liberty
 091 Okaloosa
 113 Santa Rosa
 129 Wakulla
 131 Walton
 133 Washington

03 Central

009 Brevard
 017 Citrus
 027 DeSoto
 049 Hardee
 053 Hernando
 055 Highlands
 057 Hillsborough
 061 Indian River
 069 Lake
 081 Manatee
 093 Okeechobee
 095 Orange
 097 Osceola
 101 Pasco
 103 Pinellas
 105 Polk
 111 St. Lucie
 115 Sarasota
 117 Seminole

119	Sumter	071	Colquitt
04	Southern	075	Cook
011	Broward	081	Crisp
015	Charlotte	087	Decatur
021	Collier	093	Dooly
025	Dade	099	Early
043	Glades	131	Grady
051	Hendry	155	Irwin
071	Lee	173	Lanier
085	Martin	185	Lowndes
087	Monroe	201	Miller
099	Palm Beach	205	Mitchell
13	Georgia	253	Seminole
01	Southeastern	275	Thomas
001	Appling	277	Tift
003	Atkinson	287	Turner
005	Bacon	315	Wilcox
025	Brantley	321	Worth
029	Bryan	03	Central
031	Bulloch	009	Baldwin
039	Camden	021	Bibb
043	Candler	023	Bleckley
049	Charlton	033	Burke
051	Chatham	035	Butts
065	Clinch	037	Calhoun
069	Coffee	053	Chattahoochee
091	Dodge	061	Clay
101	Echols	073	Columbia
103	Effingham	079	Crawford
107	Emanuel	095	Dougherty
109	Evans	125	Glascok
127	Glynn	133	Greene
161	Jeff Davis	141	Hancock
165	Jenkins	145	Harris
167	Johnson	153	Houston
175	Laurens	159	Jasper
179	Liberty	163	Jefferson
183	Long	169	Jones
191	McIntosh	171	Lamar
209	Montgomery	177	Lee
229	Pierce	181	Lincoln
251	Screven	189	McDuffie
267	Tattall	193	Macon
271	Telfair	197	Marion
279	Toombs	207	Monroe
283	Treutlen	211	Morgan
299	Ware	215	Muscogee
305	Wayne	225	Peach
309	Wheeler	231	Pike
02	Southwestern	235	Pulaski
007	Baker	237	Putnam
017	Ben Hill	239	Quitman
019	Berrien	243	Randolph
027	Brooks	245	Richmond
		249	Schley
		259	Stewart

261	Sumter	129	Gordon
263	Talbot	137	Habersham
265	Taliaferro	187	Lumpkin
269	Taylor	213	Murray
273	Terrell	227	Pickens
289	Twiggs	241	Rabun
293	Upson	257	Stephens
301	Warren	281	Towns
303	Washington	291	Union
307	Webster	295	Walker
317	Wilkes	311	White
319	Wilkinson	313	Whitfield
04	North Central	15	Hawaii
011	Banks	001	Hawaii
013	Barrow	003	Honolulu
045	Carroll	005	Kalawao
059	Clarke	007	Kauai
063	Clayton	009	Maui
067	Cobb		
077	Coweta	16	Idaho
089	DeKalb	01	Northern
097	Douglas	009	Benewah
105	Elbert	017	Bonner
113	Fayette	021	Boundary
117	Forsyth	035	Clearwater
119	Franklin	049	Idaho
121	Fulton	055	Kootenai
135	Gwinnett	057	Latah
139	Hall	061	Lewis
143	Haralson	069	Nez Perce
147	Hart	079	Shoshone
149	Heard		
151	Henry	02	Southeastern
157	Jackson	001	Ada
195	Madison	003	Adams
199	Meriwether	015	Boise
217	Newton	027	Canyon
219	Oconee	039	Elmore
221	Oglethorpe	045	Gem
223	Paulding	073	Owyhee
233	Polk	075	Payette
247	Rockdale	085	Valley
255	Spalding	087	Washington
285	Troup		
297	Walton	03	Southwestern
05	Northern	005	Bannock
015	Bartow	007	Bear Lake
047	Catoosa	011	Bingham
055	Chattooga	013	Blaine
057	Cherokee	019	Bonneville
083	Dade	023	Butte
085	Dawson	025	Camas
111	Fannin	029	Caribou
115	Floyd	031	Cassia
123	Gilmer	033	Clark
		037	Custer

041	Franklin	173	Shelby
043	Fremont	185	Wabash
047	Gooding	189	Washington
051	Jefferson	191	Wayne
053	Jerome		
059	Lemhi	03	Prairie
063	Lincoln	001	Adams
065	Madison	007	Boone
067	Minidoka	009	Brown
071	Oneida	011	Bureau
077	Power	015	Carroll
081	Teton	017	Cass
083	Twin Falls	019	Champaign
089	Yellowstone National Park	021	Christian
		029	Coles
17	Illinois	031	Cook
01	Southern	037	DeKalb
003	Alexander	039	De Witt
055	Franklin	041	Douglas
059	Gallatin	043	DuPage
065	Hamilton	045	Edgar
069	Hardin	053	Ford
077	Jackson	057	Fulton
087	Johnson	063	Grundy
127	Massac	067	Hancock
145	Perry	071	Henderson
151	Pope	073	Henry
153	Pulaski	075	Iroquois
157	Randolph	085	Jo Daviess
165	Saline	089	Kane
181	Union	091	Kankakee
193	White	093	Kendall
199	Williamson	095	Knox
		097	Lake
02	Claypan	099	La Salle
005	Bond	103	Lee
013	Calhoun	105	Livingston
023	Clark	107	Logan
025	Clay	109	McDonough
027	Clinton	111	McHenry
033	Crawford	113	McLean
035	Cumberland	115	Macon
047	Edwards	123	Marshall
049	Effingham	125	Mason
051	Fayette	129	Menard
061	Greene	131	Mercer
079	Jasper	137	Morgan
081	Jefferson	139	Moultrie
083	Jersey	141	Ogle
101	Lawrence	143	Peoria
117	Macoupin	147	Piatt
119	Madison	149	Pike
121	Marion	155	Putnam
133	Monroe	161	Rock Island
135	Montgomery	167	Sangamon
159	Richland	169	Schuyler
163	St. Clair	171	Scott

175 Stark
 177 Stephenson
 179 Tazewell
 183 Vermilion
 187 Warren
 195 Whiteside
 197 Will
 201 Winnebago
 203 Woodford

18 Indiana

01 Lower Wabash

021 Clay
 027 Daviess
 051 Gibson
 055 Greene
 083 Knox
 101 Martin
 121 Parke
 125 Pike
 129 Posey
 133 Putnam
 153 Sullivan
 163 Vanderburgh
 165 Vermillion
 167 Vigo

02 Knobs

013 Brown
 019 Clark
 025 Crawford
 037 Dubois
 043 Floyd
 061 Harrison
 071 Jackson
 093 Lawrence
 105 Monroe
 109 Morgan
 117 Orange
 119 Owen
 123 Perry
 143 Scott
 147 Spencer
 173 Warrick
 175 Washington

03 Upland Flats

029 Dearborn
 041 Fayette
 047 Franklin
 077 Jefferson
 079 Jennings
 115 Ohio
 137 Ripley
 155 Switzerland
 161 Union

04 Northern

001 Adams
 003 Allen
 005 Bartholomew
 007 Benton
 009 Blackford
 011 Boone
 015 Carroll
 017 Cass
 023 Clinton
 031 Decatur
 033 De Kalb
 035 Delaware
 039 Elkhart
 045 Fountain
 049 Fulton
 053 Grant
 057 Hamilton
 059 Hancock
 063 Hendricks
 065 Henry
 067 Howard
 069 Huntington
 073 Jasper
 075 Jay
 081 Johnson
 085 Kosciusko
 087 Lagrange
 089 Lake
 091 La Porte
 095 Madison
 097 Marion
 099 Marshall
 103 Miami
 107 Montgomery
 111 Newton
 113 Noble
 127 Porter
 131 Pulaski
 135 Randolph
 139 Rush
 141 St. Joseph
 145 Shelby
 149 Starke
 151 Steuben
 157 Tippecanoe
 159 Tipton
 169 Wabash
 171 Warren
 177 Wayne
 179 Wells
 181 White
 183 Whitley

19 Iowa

01 Northeastern
 005 Allamakee

011	Benton	187	Webster
013	Black Hawk		
017	Bremer	03	Southwestern
019	Buchanan	001	Adair
023	Butler	003	Adams
031	Cedar	009	Audubon
037	Chickasaw	027	Carroll
043	Clayton	029	Cass
045	Clinton	047	Crawford
055	Delaware	071	Fremont
061	Dubuque	073	Greene
065	Fayette	085	Harrison
067	Floyd	129	Mills
075	Grundy	133	Monona
089	Howard	137	Montgomery
097	Jackson	145	Page
103	Johnson	155	Pottawattamie
105	Jones	159	Ringgold
113	Linn	165	Shelby
131	Mitchell	173	Taylor
163	Scott	175	Union
171	Tama	193	Woodbury
191	Winneshiek		
02	Southeastern	04	Northwestern
007	Appanoose	021	Buena Vista
015	Boone	025	Calhoun
039	Clarke	033	Cerro Gordo
049	Dallas	035	Cherokee
051	Davis	041	Clay
053	Decatur	059	Dickinson
057	Des Moines	063	Emmet
077	Guthrie	069	Franklin
079	Hamilton	081	Hancock
083	Hardin	091	Humboldt
087	Henry	093	Ida
095	Iowa	109	Kossuth
099	Jasper	119	Lyon
101	Jefferson	141	O'Brien
107	Keokuk	143	Osceola
111	Lee	147	Palo Alto
115	Louisa	149	Plymouth
117	Lucas	151	Pocahontas
121	Madison	161	Sac
123	Mahaska	167	Sioux
125	Marion	189	Winnebago
127	Marshall	195	Worth
135	Monroe	197	Wright
139	Muscatine	20	Kansas
153	Polk	01	Northeastern
157	Poweshiek	005	Atchison
169	Story	013	Brown
177	Van Buren	027	Clay
179	Wapello	041	Dickinson
181	Warren	043	Doniphan
183	Washington	045	Douglas
185	Wayne	059	Franklin

061	Geary	075	Hamilton
085	Jackson	077	Harper
087	Jefferson	079	Harvey
091	Johnson	081	Haskell
103	Leavenworth	083	Hodgeman
117	Marshall	089	Jewell
121	Miami	093	Kearny
131	Nemaha	095	Kingman
139	Osage	097	Kiowa
149	Pottawatomie	101	Lane
161	Riley	105	Lincoln
177	Shawnee	109	Logan
197	Wabaunsee	113	McPherson
201	Washington	119	Meade
209	Wyandotte	123	Mitchell
		129	Morton
		135	Ness
02	Southeastern	137	Norton
001	Allen	141	Osborne
003	Anderson	143	Ottawa
011	Bourbon	145	Pawnee
015	Butler	147	Phillips
017	Chase	151	Pratt
019	Chautauqua	153	Rawlins
021	Cherokee	155	Reno
031	Coffey	157	Republic
035	Cowley	159	Rice
037	Crawford	163	Rooks
049	Elk	165	Rush
073	Greenwood	167	Russell
099	Labette	169	Saline
107	Linn	171	Scott
111	Lyon	173	Sedgwick
115	Marion	175	Seward
125	Montgomery	179	Sheridan
127	Morris	181	Sherman
133	Neosho	183	Smith
205	Wilson	185	Stafford
207	Woodson	187	Stanton
		189	Stevens
03	Western	191	Sumner
007	Barber	193	Thomas
009	Barton	195	Trego
023	Cheyenne	199	Wallace
025	Clark	203	Wichita
029	Cloud		
033	Comanche		
039	Decatur	21	Kentucky
047	Edwards	01	Eastern
051	Ellis	071	Floyd
053	Ellsworth	095	Harlan
055	Finney	119	Knott
057	Ford	131	Leslie
063	Gove	133	Letcher
065	Graham	159	Martin
067	Grant	193	Perry
069	Gray	195	Pike
071	Greeley		

02 Northern Cumberland

019 Boyd
 043 Carter
 063 Elliott
 089 Greenup
 115 Johnson
 127 Lawrence
 135 Lewis
 153 Magoffin
 165 Menifee
 175 Morgan
 197 Powell
 205 Rowan
 237 Wolfe

03 Southern Cumberland

013 Bell
 025 Breathitt
 051 Clay
 065 Estill
 109 Jackson
 121 Knox
 125 Laurel
 129 Lee
 147 McCreary
 189 Owsley
 203 Rockcastle
 235 Whitley

04 Bluegrass

005 Anderson
 011 Bath
 015 Boone
 017 Bourbon
 021 Boyle
 023 Bracken
 037 Campbell
 041 Carroll
 049 Clark
 067 Fayette
 069 Fleming
 073 Franklin
 077 Gallatin
 079 Garrard
 081 Grant
 097 Harrison
 103 Henry
 111 Jefferson
 113 Jessamine
 117 Kenton
 137 Lincoln
 151 Madison
 161 Mason
 167 Mercer
 173 Montgomery
 181 Nicholas
 185 Oldham

187 Owen
 191 Pendleton
 201 Robertson
 209 Scott
 211 Shelby
 215 Spencer
 223 Trimble
 229 Washington
 239 Woodford

05 Pennyroyal

001 Adair
 027 Breckinridge
 029 Bullitt
 045 Casey
 053 Clinton
 057 Cumberland
 085 Grayson
 087 Green
 091 Hancock
 093 Hardin
 099 Hart
 123 Larue
 155 Marion
 163 Meade
 169 Metcalfe
 179 Nelson
 199 Pulaski
 207 Russell
 217 Taylor
 231 Wayne

06 Western Coalfield

003 Allen
 009 Barren
 031 Butler
 033 Caldwell
 047 Christian
 055 Crittenden
 059 Daviess
 061 Edmonson
 101 Henderson
 107 Hopkins
 141 Logan
 149 McLean
 171 Monroe
 177 Muhlenberg
 183 Ohio
 213 Simpson
 219 Todd
 225 Union
 227 Warren
 233 Webster

07 Western

007 Ballard
 035 Calloway

039	Carlisle	079	Rapides
075	Fulton	085	Sabine
083	Graves	115	Vernon
105	Hickman		
139	Livingston	04	Southeast
143	Lyon	033	East Baton Rouge
145	McCracken	037	East Feliciana
157	Marshall	063	Livingston
221	Trigg	091	St. Helena
		103	St. Tammany
		105	Tangipahoa
		117	Washington
22	Louisiana	05	Northwest
<hr/>			
01	North Delta	013	Bienville
025	Catahoula	015	Bossier
029	Concordia	017	Caddo
035	East Carroll	021	Caldwell
041	Franklin	027	Claiborne
065	Madison	031	De Soto
067	Morehouse	049	Jackson
083	Richland	061	Lincoln
107	Tensas	073	Ouachita
123	West Carroll	081	Red River
		111	Union
		119	Webster
		127	Winn
02	South Delta	23	Maine
001	Acadia	<hr/>	
005	Ascension	01	Washington
007	Assumption	029	Washington
009	Avoyelles		
023	Cameron	02	Aroostook
045	Iberia	003	Aroostook
047	Iberville		
051	Jefferson	03	Penobscot
055	Lafayette	019	Penobscot
057	Lafourche		
071	Orleans	04	Hancock
075	Plaquemines	009	Hancock
077	Pointe Coupee		
087	St. Bernard	05	Piscataquis
089	St. Charles	021	Piscataquis
093	St. James		
095	St. John the Baptist	06	Capitol Region
097	St. Landry	011	Kennebec
099	St. Martin	013	Knox
101	St. Mary	015	Lincoln
109	Terrebonne	027	Waldo
113	Vermilion		
121	West Baton Rouge	07	Somerset
125	West Feliciana	025	Somerset
03	Southwest	08	Casco Bay
003	Allen	001	Androscoggin
011	Beauregard	005	Cumberland
019	Calcasieu	023	Sagadahoc
039	Evangeline		
043	Grant		
053	Jefferson Davis		
059	La Salle		
069	Natchitoches		

031	York	01	Eastern Upper Peninsula
09	Western Maine	003	Alger
007	Franklin	033	Chippewa
017	Oxford	041	Delta
		095	Luce
24	Maryland	097	Mackinac
02	Central	109	Menominee
003	Anne Arundel	153	Schoolcraft
005	Baltimore	02	Western Upper Peninsula
011	Caroline	013	Baraga
013	Carroll	043	Dickinson
015	Cecil	053	Gogebic
021	Frederick	061	Houghton
025	Harford	071	Iron
027	Howard	083	Keweenaw
029	Kent	103	Marquette
031	Montgomery	131	Ontonagon
033	Prince George's	03	Northern Lower Peninsula
035	Queen Anne's	001	Alcona
041	Talbot	007	Alpena
043	Washington	009	Antrim
510	Baltimore city	011	Arenac
03	Southern	017	Bay
009	Calvert	019	Benzie
017	Charles	029	Charlevoix
037	St. Mary's	031	Cheboygan
04	Lower Eastern Shore	035	Clare
019	Dorchester	039	Crawford
039	Somerset	047	Emmet
045	Wicomico	051	Gladwin
047	Worcester	055	Grand Traverse
05	Western	069	Iosco
001	Allegany	073	Isabella
023	Garrett	079	Kalkaska
25	Massachusetts	085	Lake
01	State	089	Leelanau
001	Barnstable	101	Manistee
003	Berkshire	105	Mason
005	Bristol	107	Mecosta
007	Dukes	111	Midland
009	Essex	113	Missaukee
011	Franklin	119	Montmorency
013	Hampden	123	Newaygo
015	Hampshire	127	Oceana
017	Middlesex	129	Ogemaw
019	Nantucket	133	Osceola
021	Norfolk	135	Oscoda
023	Plymouth	137	Otsego
025	Suffolk	141	Presque Isle
027	Worcester	143	Roscommon
26	Michigan	165	Wexford
		04	Southern Lower Peninsula
		005	Allegan
		015	Barry

021	Berrien	003	Anoka
023	Branch	009	Benton
025	Calhoun	019	Carver
027	Cass	025	Chisago
037	Clinton	037	Dakota
045	Eaton	041	Douglas
049	Genesee	045	Fillmore
057	Gratiot	049	Goodhue
059	Hillsdale	053	Hennepin
063	Huron	055	Houston
065	Ingham	059	Isanti
067	Ionia	065	Kanabec
075	Jackson	079	Le Sueur
077	Kalamazoo	095	Mille Lacs
081	Kent	097	Morrison
087	Lapeer	109	Olmsted
091	Lenawee	111	Otter Tail
093	Livingston	115	Pine
099	Macomb	123	Ramsey
115	Monroe	131	Rice
117	Montcalm	139	Scott
121	Muskegon	141	Sherburne
125	Oakland	145	Stearns
139	Ottawa	153	Todd
145	Saginaw	157	Wabasha
147	St. Clair	163	Washington
149	St. Joseph	169	Winona
151	Sanilac	171	Wright
155	Shiawassee		
157	Tuscola	04	Prairie
159	Van Buren	011	Big Stone
161	Washtenaw	013	Blue Earth
163	Wayne	015	Brown
		023	Chippewa
27	Minnesota	027	Clay
01	Aspen-Birch	033	Cottonwood
017	Carlton	039	Dodge
031	Cook	043	Faribault
071	Koochiching	047	Freeborn
075	Lake	051	Grant
137	St. Louis	063	Jackson
		067	Kandiyohi
02	Northern Pine	069	Kittson
001	Aitkin	073	Lac qui Parle
005	Becker	081	Lincoln
007	Beltrami	083	Lyon
021	Cass	085	McLeod
029	Clearwater	089	Marshall
035	Crow Wing	091	Martin
057	Hubbard	093	Meeker
061	Itasca	099	Mower
077	Lake of the Woods	101	Murray
087	Mahnomen	103	Nicollet
135	Roseau	105	Nobles
159	Wadena	107	Norman
		113	Pennington
03	Central Hardwood	117	Pipestone

119	Polk	145	Union
121	Pope	155	Webster
125	Red Lake	161	Yalobusha
127	Redwood		
129	Renville	03	Central
133	Rock	007	Attala
143	Sibley	023	Clarke
147	Steele	061	Jasper
149	Stevens	069	Kemper
151	Swift	075	Lauderdale
155	Traverse	079	Leake
161	Waseca	099	Neshoba
165	Watonwan	101	Newton
167	Wilkin	103	Noxubee
173	Yellow Medicine	121	Rankin
		123	Scott
		127	Simpson
		129	Smith
		159	Winston
28	Mississippi		
01	Delta	04	South
011	Bolivar	031	Covington
027	Coahoma	035	Forrest
051	Holmes	039	George
053	Humphreys	041	Greene
055	Issaquena	045	Hancock
083	Leflore	047	Harrison
119	Quitman	059	Jackson
125	Sharkey	065	Jefferson Davis
133	Sunflower	067	Jones
135	Tallahatchie	073	Lamar
143	Tunica	077	Lawrence
149	Warren	091	Marion
151	Washington	109	Pearl River
163	Yazoo	111	Perry
		131	Stone
02	North	147	Walthall
003	Alcorn	153	Wayne
009	Benton		
013	Calhoun	05	Southwest
015	Carroll	001	Adams
017	Chickasaw	005	Amite
019	Choctaw	021	Claiborne
025	Clay	029	Copiah
033	DeSoto	037	Franklin
043	Grenada	049	Hinds
057	Itawamba	063	Jefferson
071	Lafayette	085	Lincoln
081	Lee	089	Madison
087	Lowndes	113	Pike
093	Marshall	157	Wilkinson
095	Monroe		
097	Montgomery	29	Missouri
105	Oktibbeha	01	Eastern Ozarks
107	Panola	017	Bollinger
115	Pontotoc	023	Butler
117	Prentiss	035	Carter
137	Tate		
139	Tippah		
141	Tishomingo		

055	Crawford	057	Dade
065	Dent	061	Daviess
093	Iron	063	DeKalb
123	Madison	075	Gentry
149	Oregon	077	Greene
179	Reynolds	079	Grundy
181	Ripley	081	Harrison
187	St. Francois	083	Henry
203	Shannon	087	Holt
221	Washington	095	Jackson
223	Wayne	097	Jasper
		101	Johnson
		103	Knox
02	Southwestern Ozarks	107	Lafayette
009	Barry	109	Lawrence
043	Christian	111	Lewis
067	Douglas	113	Lincoln
091	Howell	115	Linn
119	McDonald	117	Livingston
145	Newton	121	Macon
153	Ozark	127	Marion
209	Stone	129	Mercer
213	Taney	137	Monroe
215	Texas	147	Nodaway
225	Webster	159	Pettis
229	Wright	163	Pike
		165	Platte
03	Northwestern Ozarks	171	Putnam
015	Benton	173	Ralls
029	Camden	175	Randolph
039	Cedar	177	Ray
059	Dallas	195	Saline
085	Hickory	197	Schuyler
105	Laclede	199	Scotland
125	Maries	205	Shelby
131	Miller	211	Sullivan
141	Morgan	217	Vernon
161	Phelps	227	Worth
167	Polk		
169	Pulaski	05	Riverborder
185	St. Clair	019	Boone
		027	Callaway
04	Prairie	031	Cape Girardeau
001	Adair	051	Cole
003	Andrew	069	Dunklin
005	Atchison	071	Franklin
007	Audrain	073	Gasconade
011	Barton	089	Howard
013	Bates	099	Jefferson
021	Buchanan	133	Mississippi
025	Caldwell	135	Moniteau
033	Carroll	139	Montgomery
037	Cass	143	New Madrid
041	Chariton	151	Osage
045	Clark	155	Pemiscot
047	Clay	157	Perry
049	Clinton	183	St. Charles
053	Cooper		

186 Ste. Genevieve
 189 St. Louis
 201 Scott
 207 Stoddard
 219 Warren
 510 St. Louis city

30 Montana

01 Northwestern

029 Flathead
 047 Lake
 053 Lincoln
 089 Sanders

02 Eastern

003 Big Horn
 005 Blaine
 009 Carbon
 011 Carter
 015 Chouteau
 017 Custer
 019 Daniels
 021 Dawson
 025 Fallon
 027 Fergus
 033 Garfield
 035 Glacier
 037 Golden Valley
 041 Hill
 051 Liberty
 055 McCone
 065 Musselshell
 069 Petroleum
 071 Phillips
 073 Pondera
 075 Powder River
 079 Prairie
 083 Richland
 085 Roosevelt
 087 Rosebud
 091 Sheridan
 095 Stillwater
 097 Sweet Grass
 099 Teton
 101 Toole
 103 Treasure
 105 Valley
 109 Wibaux
 111 Yellowstone
 113 Yellowstone National Park

03 Western

039 Granite
 061 Mineral
 063 Missoula
 081 Ravalli

04 West Central

007 Broadwater
 013 Cascade
 043 Jefferson
 045 Judith Basin
 049 Lewis and Clark
 059 Meagher
 077 Powell
 107 Wheatland

05 Southwestern

001 Beaverhead
 023 Deer Lodge
 031 Gallatin
 057 Madison
 067 Park
 093 Silver Bow

31 Nebraska

01 Eastern

001 Adams
 011 Boone
 019 Buffalo
 021 Burt
 023 Butler
 025 Cass
 027 Cedar
 035 Clay
 037 Colfax
 039 Cuming
 041 Custer
 043 Dakota
 047 Dawson
 051 Dixon
 053 Dodge
 055 Douglas
 059 Fillmore
 061 Franklin
 063 Frontier
 065 Furnas
 067 Gage
 073 Gosper
 077 Greeley
 079 Hall
 081 Hamilton
 083 Harlan
 087 Hitchcock
 093 Howard
 095 Jefferson
 097 Johnson
 099 Kearney
 109 Lancaster
 119 Madison
 121 Merrick
 125 Nance
 127 Nemaha
 129 Nuckolls

131	Otoe	183	Wheeler
133	Pawnee		
137	Phelps	32	Nevada
139	Pierce	01	Nevada
141	Platte	001	Churchill
143	Polk	003	Clark
145	Red Willow	005	Douglas
147	Richardson	007	Elko
151	Saline	009	Esmeralda
153	Sarpy	011	Eureka
155	Saunders	013	Humboldt
159	Seward	015	Lander
163	Sherman	017	Lincoln
167	Stanton	019	Lyon
169	Thayer	021	Mineral
173	Thurston	023	Nye
175	Valley	027	Pershing
177	Washington	029	Storey
179	Wayne	031	Washoe
181	Webster	033	White Pine
185	York	510	Carson City
02	Western	33	New Hampshire
003	Antelope	02	Northern
005	Arthur	003	Carroll
007	Banner	007	Coos
009	Blaine	009	Grafton
013	Box Butte		
015	Boyd	03	Southern
017	Brown	001	Belknap
029	Chase	005	Cheshire
031	Cherry	011	Hillsborough
033	Cheyenne	013	Merrimack
045	Dawes	015	Rockingham
049	Deuel	017	Strafford
057	Dundy	019	Sullivan
069	Garden		
071	Garfield	34	New Jersey
075	Grant	01	State
085	Hayes	001	Atlantic
089	Holt	003	Bergen
091	Hooker	005	Burlington
101	Keith	007	Camden
103	Keya Paha	009	Cape May
105	Kimball	011	Cumberland
107	Knox	013	Essex
111	Lincoln	015	Gloucester
113	Logan	017	Hudson
115	Loup	019	Hunterdon
117	McPherson	021	Mercer
123	Morrill	023	Middlesex
135	Perkins	025	Monmouth
149	Rock	027	Morris
157	Scotts Bluff	029	Ocean
161	Sheridan	031	Passaic
165	Sioux	033	Salem
171	Thomas	035	Somerset

037	Sussex	051	Livingston
039	Union	053	Madison
041	Warren	055	Monroe
35	New Mexico	063	Niagara
01	Northwestern	067	Onondaga
001	Bernalillo	069	Ontario
006	Cibola	073	Orleans
028	Los Alamos	075	Oswego
031	McKinley	099	Seneca
039	Rio Arriba	117	Wayne
043	Sandoval	121	Wyoming
045	San Juan	123	Yates
049	Santa Fe	03	Western Adirondack
055	Taos	035	Fulton
061	Valencia	043	Herkimer
02	Northeastern	049	Lewis
007	Colfax	065	Oneida
019	Guadalupe	04	Eastern Adirondack
021	Harding	031	Essex
033	Mora	041	Hamilton
037	Quay	113	Warren
047	San Miguel	05	Southwest Highlands
057	Torrance	003	Allegany
059	Union	009	Cattaraugus
03	Southwestern	013	Chautauqua
003	Catron	101	Steuben
013	Dona Ana	06	South-Central Highlands
017	Grant	007	Broome
023	Hidalgo	015	Chemung
029	Luna	017	Chenango
051	Sierra	023	Cortland
053	Socorro	025	Delaware
04	Southeastern	077	Otsego
005	Chaves	097	Schuyler
009	Curry	107	Tioga
011	De Baca	109	Tompkins
015	Eddy	07	Capitol District
025	Lea	001	Albany
027	Lincoln	021	Columbia
035	Otero	057	Montgomery
041	Roosevelt	083	Rensselaer
36	New York	091	Saratoga
01	Adirondack	093	Schenectady
019	Clinton	115	Washington
033	Franklin	08	Catskill-Lower Hudson
045	Jefferson	005	Bronx
089	St. Lawrence	027	Dutchess
02	Lake Plain	039	Greene
011	Cayuga	047	Kings
029	Erie	059	Nassau
037	Genesee	061	New York

071	Orange	187	Washington
079	Putnam	195	Wilson
081	Queens		
085	Richmond	03	Piedmont
087	Rockland	001	Alamance
095	Schoharie	003	Alexander
103	Suffolk	007	Anson
105	Sullivan	025	Cabarrus
111	Ulster	033	Caswell
119	Westchester	035	Catawba
		037	Chatham
		045	Cleveland
37	North Carolina	057	Davidson
01	Southern Coastal Plain	059	Davie
017	Bladen	063	Durham
019	Brunswick	067	Forsyth
047	Columbus	069	Franklin
051	Cumberland	071	Gaston
061	Duplin	077	Granville
079	Greene	081	Guilford
085	Harnett	097	Iredell
093	Hoke	109	Lincoln
101	Johnston	119	Mecklenburg
103	Jones	123	Montgomery
105	Lee	135	Orange
107	Lenoir	145	Person
125	Moore	149	Polk
129	New Hanover	151	Randolph
133	Onslow	157	Rockingham
141	Pender	159	Rowan
153	Richmond	161	Rutherford
155	Robeson	167	Stanly
163	Sampson	169	Stokes
165	Scotland	171	Surry
191	Wayne	179	Union
		181	Vance
02	Northern Coastal Plain	183	Wake
013	Beaufort	185	Warren
015	Bertie	197	Yadkin
029	Camden		
031	Carteret	04	Mountains
041	Chowan	005	Alleghany
049	Craven	009	Ashe
053	Currituck	011	Avery
055	Dare	021	Buncombe
065	Edgecombe	023	Burke
073	Gates	027	Caldwell
083	Halifax	039	Cherokee
091	Hertford	043	Clay
095	Hyde	075	Graham
117	Martin	087	Haywood
127	Nash	089	Henderson
131	Northampton	099	Jackson
137	Pamlico	111	McDowell
139	Pasquotank	113	Macon
143	Perquimans	115	Madison
147	Pitt	121	Mitchell
177	Tyrrell		

173 Swain
 175 Transylvania
 189 Watauga
 193 Wilkes
 199 Yancey

38 North Dakota

01 Eastern

001 Adams
 003 Barnes
 005 Benson
 007 Billings
 009 Bottineau
 011 Bowman
 013 Burke
 015 Burleigh
 017 Cass
 019 Cavalier
 021 Dickey
 023 Divide
 025 Dunn
 027 Eddy
 029 Emmons
 031 Foster
 033 Golden Valley
 035 Grand Forks
 037 Grant
 039 Griggs
 041 Hettinger
 043 Kidder
 045 LaMoure
 047 Logan
 049 McHenry
 051 McIntosh
 053 McKenzie
 055 McLean
 057 Mercer
 059 Morton
 061 Mountrail
 063 Nelson
 065 Oliver
 067 Pembina
 069 Pierce
 071 Ramsey
 073 Ransom
 075 Renville
 077 Richland
 079 Rolette
 081 Sargent
 083 Sheridan
 085 Sioux
 087 Slope
 089 Stark
 091 Steele
 093 Stutsman
 095 Towner
 097 Traill

099 Walsh
 101 Ward
 103 Wells
 105 Williams

39 Ohio

01 South-Central

001 Adams
 015 Brown
 025 Clermont
 053 Gallia
 071 Highland
 079 Jackson
 087 Lawrence
 131 Pike
 141 Ross
 145 Scioto

02 Southeastern

009 Athens
 073 Hocking
 105 Meigs
 115 Morgan
 127 Perry
 163 Vinton
 167 Washington

03 East-Central

013 Belmont
 019 Carroll
 031 Coshocton
 059 Guernsey
 067 Harrison
 075 Holmes
 081 Jefferson
 111 Monroe
 119 Muskingum
 121 Noble
 157 Tuscarawas

04 Northeastern

005 Ashland
 007 Ashtabula
 029 Columbiana
 035 Cuyahoga
 043 Erie
 055 Geauga
 077 Huron
 085 Lake
 093 Lorain
 099 Mahoning
 103 Medina
 133 Portage
 139 Richland
 151 Stark
 153 Summit
 155 Trumbull

169	Wayne	079	Le Flore
05	Southwestern	089	McCurtain
017	Butler	121	Pittsburg
023	Clark	127	Pushmataha
027	Clinton	02	Northeast
037	Darke	001	Adair
045	Fairfield	021	Cherokee
047	Fayette	041	Delaware
049	Franklin	091	McIntosh
057	Greene	097	Mayer
061	Hamilton	101	Muskogee
089	Licking	115	Ottawa
097	Madison	135	Sequoyah
109	Miami	03	Other counties
113	Montgomery	003	Alfalfa
129	Pickaway	007	Beaver
135	Preble	009	Beckham
165	Warren	011	Blaine
06	Northwestern	015	Caddo
003	Allen	017	Canadian
011	Auglaize	019	Carter
021	Champaign	025	Cimarron
033	Crawford	027	Cleveland
039	Defiance	031	Comanche
041	Delaware	033	Cotton
051	Fulton	035	Craig
063	Hancock	037	Creek
065	Hardin	039	Custer
069	Henry	043	Dewey
083	Knox	045	Ellis
091	Logan	047	Garfield
095	Lucas	049	Garvin
101	Marion	051	Grady
107	Mercer	053	Grant
117	Morrow	055	Greer
123	Ottawa	057	Harmon
125	Paulding	059	Harper
137	Putnam	063	Hughes
143	Sandusky	065	Jackson
147	Seneca	067	Jefferson
149	Shelby	069	Johnston
159	Union	071	Kay
161	Van Wert	073	Kingfisher
171	Williams	075	Kiowa
173	Wood	081	Lincoln
175	Wyandot	083	Logan
40	Oklahoma	085	Love
01	Southeast	087	McClain
005	Atoka	093	Major
013	Bryan	095	Marshall
023	Choctaw	099	Murray
029	Coal	103	Noble
061	Haskell	105	Nowata
077	Latimer	107	Okfuskee
		109	Oklahoma

111	Okmulgee	001	Baker
113	Osage	023	Grant
117	Pawnee	025	Harney
119	Payne	045	Malheur
123	Pontotoc	049	Morrow
125	Pottawatomie	059	Umatilla
129	Roger Mills	061	Union
131	Rogers	063	Wallowa
133	Seminole		
137	Stephens	42	Pennsylvania
139	Texas	00	South Central
141	Tillman	043	Dauphin
143	Tulsa	055	Franklin
145	Wagoner	057	Fulton
147	Washington	061	Huntingdon
149	Washita	067	Juniata
151	Woods	087	Mifflin
153	Woodward	099	Perry
		109	Snyder
		119	Union
41	Oregon		
00	Northwest		
005	Clackamas	05	Western
007	Clatsop	003	Allegheny
009	Columbia	005	Armstrong
027	Hood River	007	Beaver
047	Marion	019	Butler
051	Multnomah	039	Crawford
053	Polk	049	Erie
057	Tillamook	059	Greene
067	Washington	063	Indiana
071	Yamhill	073	Lawrence
		085	Mercer
01	West Central	125	Washington
003	Benton	129	Westmoreland
039	Lane		
041	Lincoln	06	North Central/Allegheny
043	Linn	023	Cameron
		027	Centre
02	Southwest	031	Clarion
011	Coos	033	Clearfield
015	Curry	035	Clinton
019	Douglas	047	Elk
029	Jackson	053	Forest
033	Josephine	065	Jefferson
		081	Lycoming
03	Central	083	McKean
013	Crook	105	Potter
017	Deschutes	113	Sullivan
021	Gilliam	117	Tioga
031	Jefferson	121	Venango
035	Klamath	123	Warren
037	Lake		
055	Sherman	07	Southwestern
065	Wasco	009	Bedford
069	Wheeler	013	Blair
		021	Cambria
04	Blue Mountains	051	Fayette

111	Somerset	019	Charleston
08	Northeastern/Pocono	025	Chesterfield
015	Bradford	027	Clarendon
025	Carbon	031	Darlington
037	Columbia	033	Dillon
069	Lackawanna	041	Florence
079	Luzerne	043	Georgetown
089	Monroe	051	Horry
093	Montour	055	Kershaw
097	Northumberland	061	Lee
103	Pike	067	Marion
107	Schuylkill	069	Marlboro
115	Susquehanna	079	Richland
127	Wayne	085	Sumter
131	Wyoming	089	Williamsburg
09	Southeastern	03	Piedmont
001	Adams	001	Abbeville
011	Berks	007	Anderson
017	Bucks	021	Cherokee
029	Chester	023	Chester
041	Cumberland	037	Edgefield
045	Delaware	039	Fairfield
071	Lancaster	045	Greenville
075	Lebanon	047	Greenwood
077	Lehigh	057	Lancaster
091	Montgomery	059	Laurens
095	Northampton	065	McCormick
101	Philadelphia	071	Newberry
133	York	073	Oconee
44	Rhode Island	077	Pickens
01	State	081	Saluda
001	Bristol	083	Spartanburg
003	Kent	087	Union
005	Newport	091	York
007	Providence	46	South Dakota
009	Washington	01	Eastern
45	South Carolina	003	Aurora
01	Southern Coastal Plain	005	Beadle
003	Aiken	007	Bennett
005	Allendale	009	Bon Homme
009	Bamberg	011	Brookings
011	Barnwell	013	Brown
013	Beaufort	015	Brule
017	Calhoun	017	Buffalo
029	Colleton	021	Campbell
035	Dorchester	023	Charles Mix
049	Hampton	025	Clark
053	Jasper	027	Clay
063	Lexington	029	Codington
075	Orangeburg	031	Corson
02	Northern Coastal Plain	035	Davison
015	Berkeley	037	Day
		039	Deuel
		041	Dewey
		043	Douglas

045	Edmunds	053	Gibson
049	Faulk	069	Hardeman
051	Grant	075	Haywood
053	Gregory	077	Henderson
055	Haakon	079	Henry
057	Hamlin	095	Lake
059	Hand	097	Lauderdale
061	Hanson	109	McNairy
065	Hughes	113	Madison
067	Hutchinson	131	Obion
069	Hyde	157	Shelby
071	Jackson	167	Tipton
073	Jerauld	183	Weakley
075	Jones		
077	Kingsbury	02	West Central
079	Lake	005	Benton
083	Lincoln	039	Decatur
085	Lyman	071	Hardin
087	McCook	081	Hickman
089	McPherson	083	Houston
091	Marshall	085	Humphreys
095	Mellette	099	Lawrence
097	Miner	101	Lewis
099	Minnehaha	135	Perry
101	Moody	161	Stewart
105	Perkins	181	Wayne
107	Potter		
109	Roberts	03	Central
111	Sanborn	003	Bedford
115	Spink	015	Cannon
117	Stanley	021	Cheatham
119	Sully	027	Clay
121	Todd	031	Coffee
123	Tripp	037	Davidson
125	Turner	041	DeKalb
127	Union	043	Dickson
129	Walworth	055	Giles
135	Yankton	087	Jackson
137	Ziebach	103	Lincoln
		111	Macon
02	Western	117	Marshall
019	Butte	119	Maury
033	Custer	125	Montgomery
047	Fall River	127	Moore
063	Harding	147	Robertson
081	Lawrence	149	Rutherford
093	Meade	159	Smith
103	Pennington	165	Sumner
113	Shannon	169	Trousdale
		187	Williamson
47	Tennessee	189	Wilson
01	West		
017	Carroll	04	Plateau
023	Chester	007	Bledsoe
033	Crockett	013	Campbell
045	Dyer	035	Cumberland
047	Fayette	049	Fentress

051	Franklin	361	Orange
061	Grundy	373	Polk
115	Marion	403	Sabine
129	Morgan	405	San Augustine
133	Overton	407	San Jacinto
137	Pickett	455	Trinity
141	Putnam	457	Tyler
151	Scott	471	Walker
153	Sequatchie	473	Waller
175	Van Buren		
177	Warren	02	Northeast
185	White	001	Anderson
		037	Bowie
05	East	063	Camp
001	Anderson	067	Cass
009	Blount	073	Cherokee
011	Bradley	159	Franklin
019	Carter	183	Gregg
025	Claiborne	203	Harrison
029	Cocke	213	Henderson
057	Grainger	315	Marion
059	Greene	343	Morris
063	Hamblen	347	Nacogdoches
065	Hamilton	365	Panola
067	Hancock	387	Red River
073	Hawkins	401	Rusk
089	Jefferson	419	Shelby
091	Johnson	423	Smith
093	Knox	449	Titus
105	Loudon	459	Upshur
107	McMinn	467	Van Zandt
121	Meigs	499	Wood
123	Monroe		
139	Polk		Unsampled counties
143	Rhea	003	Andrews
145	Roane	007	Aransas
155	Sevier	009	Archer
163	Sullivan	011	Armstrong
171	Unicoi	013	Atascosa
173	Union	015	Austin
179	Washington	017	Bailey
		019	Bandera
48	Texas	021	Bastrop
01	Southeast	023	Baylor
005	Angelina	025	Bee
071	Chambers	027	Bell
185	Grimes	029	Bexar
199	Hardin	031	Blanco
201	Harris	033	Borden
225	Houston	035	Bosque
241	Jasper	039	Brazoria
245	Jefferson	041	Brazos
289	Leon	043	Brewster
291	Liberty	045	Briscoe
313	Madison	047	Brooks
339	Montgomery	049	Brown
351	Newton	051	Burleson

053	Burnet	177	Gonzales
055	Caldwell	179	Gray
057	Calhoun	181	Grayson
059	Callahan	187	Guadalupe
061	Cameron	189	Hale
065	Carson	191	Hall
069	Castro	193	Hamilton
075	Childress	195	Hansford
077	Clay	197	Hardeman
079	Cochran	205	Hartley
081	Coke	207	Haskell
083	Coleman	209	Hays
085	Collin	211	Hemphill
087	Collingsworth	215	Hidalgo
089	Colorado	217	Hill
091	Comal	219	Hockley
093	Comanche	221	Hood
095	Concho	223	Hopkins
097	Cooke	227	Howard
099	Coryell	229	Hudspeth
101	Cottle	231	Hunt
103	Crane	233	Hutchinson
105	Crockett	235	Irion
107	Crosby	237	Jack
109	Culberson	239	Jackson
111	Dallam	243	Jeff Davis
113	Dallas	247	Jim Hogg
115	Dawson	249	Jim Wells
117	Deaf Smith	251	Johnson
119	Delta	253	Jones
121	Denton	255	Karnes
123	DeWitt	257	Kaufman
125	Dickens	259	Kendall
127	Dimmit	261	Kenedy
129	Donley	263	Kent
131	Duval	265	Kerr
133	Eastland	267	Kimble
135	Ector	269	King
137	Edwards	271	Kinney
139	Ellis	273	Kleberg
141	El Paso	275	Knox
143	Erath	277	Lamar
145	Falls	279	Lamb
147	Fannin	281	Lampasas
149	Fayette	283	La Salle
151	Fisher	285	Lavaca
153	Floyd	287	Lee
155	Foard	293	Limestone
157	Fort Bend	295	Lipscomb
161	Freestone	297	Live Oak
163	Frio	299	Llano
165	Gaines	301	Loving
167	Galveston	303	Lubbock
169	Garza	305	Lynn
171	Gillespie	307	McCulloch
173	Glasscock	309	McLennan
175	Goliad	311	McMullen

317	Martin	469	Victoria
319	Mason	475	Ward
321	Matagorda	477	Washington
323	Maverick	479	Webb
325	Medina	481	Wharton
327	Menard	483	Wheeler
329	Midland	485	Wichita
331	Milam	487	Wilbarger
333	Mills	489	Willacy
335	Mitchell	491	Williamson
337	Montague	493	Wilson
341	Moore	495	Winkler
345	Motley	497	Wise
349	Navarro	501	Yoakum
353	Nolan	503	Young
355	Nueces	505	Zapata
357	Ochiltree	507	Zavala
359	Oldham		
363	Palo Pinto	49	Utah
367	Parker	01	Northern
369	Parmer	003	Box Elder
371	Pecos	005	Cache
375	Potter	011	Davis
377	Presidio	029	Morgan
379	Rains	033	Rich
381	Randall	035	Salt Lake
383	Reagan	043	Summit
385	Real	045	Tooele
389	Reeves	049	Utah
391	Refugio	051	Wasatch
393	Roberts	057	Weber
395	Robertson		
397	Rockwall	02	Uinta
399	Runnels	009	Daggett
409	San Patricio	013	Duchesne
411	San Saba	047	Uintah
413	Schleicher		
415	Scurry	03	Central
417	Shackelford	023	Juab
421	Sherman	027	Millard
425	Somervell	031	Piute
427	Starr	039	Sanpete
429	Stephens	041	Sevier
431	Sterling	055	Wayne
433	Stonewall		
435	Sutton	04	Eastern
437	Swisher	007	Carbon
439	Tarrant	015	Emery
441	Taylor	019	Grand
443	Terrell	037	San Juan
445	Terry		
447	Throckmorton	05	Southwestern
451	Tom Green	001	Beaver
453	Travis	017	Garfield
461	Upton	021	Iron
463	Uvalde	025	Kane
465	Val Verde	053	Washington

50	Vermont
02	Northern
005	Caledonia
009	Essex
011	Franklin
013	Grand Isle
015	Lamoille
017	Orange
019	Orleans
023	Washington
03	Southern
001	Addison
003	Bennington
007	Chittenden
021	Rutland
025	Windham
027	Windsor
51	Virginia
01	Coastal Plain
001	Accomack
025	Brunswick
033	Caroline
036	Charles City
041	Chesterfield
053	Dinwiddie
057	Essex
073	Gloucester
081	Greensville
085	Hanover
087	Henrico
093	Isle Of Wight
095	James City
097	King And Queen
099	King George
101	King William
103	Lancaster
115	Mathews
119	Middlesex
127	New Kent
131	Northampton
133	Northumberland
149	Prince George
159	Richmond
175	Southampton
181	Surry
183	Sussex
193	Westmoreland
199	York
550	Chesapeake city
650	Hampton city
700	Newport News city
800	Suffolk city
810	Virginia Beach city

02	Southern Piedmont
007	Amelia
011	Appomattox
019	Bedford
029	Buckingham
031	Campbell
037	Charlotte
049	Cumberland
067	Franklin
083	Halifax
089	Henry
111	Lunenburg
117	Mecklenburg
135	Nottoway
141	Patrick
143	Pittsylvania
145	Powhatan
147	Prince Edward

03	Northern Piedmont
003	Albemarle
009	Amherst
013	Arlington
047	Culpeper
059	Fairfax
061	Fauquier
065	Fluvanna
075	Goochland
079	Greene
107	Loudoun
109	Louisa
113	Madison
125	Nelson
137	Orange
153	Prince William
157	Rappahannock
177	Spotsylvania
179	Stafford

04	Northern Mountains
005	Alleghany
015	Augusta
017	Bath
023	Botetourt
043	Clarke
045	Craig
069	Frederick
091	Highland
139	Page
161	Roanoke
163	Rockbridge
165	Rockingham
171	Shenandoah
187	Warren

05	Southern Mountains
021	Bland

027	Buchanan	029	Island
035	Carroll	033	King
051	Dickenson	035	Kitsap
063	Floyd	053	Pierce
071	Giles	055	San Juan
077	Grayson	057	Skagit
105	Lee	061	Snohomish
121	Montgomery	073	Whatcom
155	Pulaski		
167	Russell	06	Olympic Peninsula
169	Scott	009	Clallam
173	Smyth	027	Grays Harbor
185	Tazewell	031	Jefferson
191	Washington	045	Mason
195	Wise	067	Thurston
197	Wythe		
	Unsampled cities	07	Southwest
510	Alexandria city	011	Clark
515	Bedford city	015	Cowlitz
520	Bristol city	041	Lewis
530	Buena Vista city	049	Pacific
540	Charlottesville city	059	Skamania
560	Clifton Forge city	069	Wahkiakum
570	Colonial Heights city		
580	Covington city	08	Central
590	Danville city	007	Chelan
595	Emporia city	017	Douglas
600	Fairfax city	037	Kittitas
610	Falls Church city	039	Klickitat
620	Franklin city	047	Okanogan
630	Fredericksburg city	077	Yakima
640	Galax city		
660	Harrisonburg city	09	Inland Empire
670	Hopewell city	001	Adams
678	Lexington city	003	Asotin
680	Lynchburg city	005	Benton
683	Manassas city	013	Columbia
685	Manassas Park city	019	Ferry
690	Martinsville city	021	Franklin
710	Norfolk city	023	Garfield
720	Norton city	025	Grant
730	Petersburg city	043	Lincoln
735	Poquoson city	051	Pend Oreille
740	Portsmouth city	063	Spokane
750	Radford city	065	Stevens
760	Richmond city	071	Walla Walla
770	Roanoke city	075	Whitman
775	Salem city		
780	South Boston city	54	West Virginia
790	Staunton city	02	Northeastern
820	Waynesboro city	001	Barbour
830	Williamsburg city	003	Berkeley
840	Winchester city	007	Braxton
		023	Grant
		027	Hampshire
53	Washington	031	Hardy
05	Puget Sound	033	Harrison

037	Jefferson	067	Langlade
041	Lewis	069	Lincoln
057	Mineral	075	Marinette
065	Morgan	078	Menominee
071	Pendleton	083	Oconto
075	Pocahontas	085	Oneida
077	Preston	115	Shawano
083	Randolph	125	Vilas
091	Taylor		
093	Tucker	02	Northwestern
097	Upshur	003	Ashland
101	Webster	005	Barron
		007	Bayfield
03	Southern	013	Burnett
005	Boone	031	Douglas
015	Clay	051	Iron
019	Fayette	095	Polk
025	Greenbrier	099	Price
039	Kanawha	107	Rusk
045	Logan	113	Sawyer
047	McDowell	119	Taylor
055	Mercer	129	Washburn
059	Mingo		
063	Monroe	03	Central
067	Nicholas	001	Adams
081	Raleigh	017	Chippewa
089	Summers	019	Clark
109	Wyoming	035	Eau Claire
		053	Jackson
04	Northwestern	057	Juneau
009	Brooke	073	Marathon
011	Cabell	077	Marquette
013	Calhoun	081	Monroe
017	Doddridge	097	Portage
021	Gilmer	135	Waupaca
029	Hancock	137	Waushara
035	Jackson	141	Wood
043	Lincoln		
049	Marion	04	Southwestern
051	Marshall	011	Buffalo
053	Mason	023	Crawford
061	Monongalia	033	Dunn
069	Ohio	043	Grant
073	Pleasant	049	Iowa
079	Putnam	063	La Crosse
085	Ritchie	065	Lafayette
087	Roane	091	Pepin
095	Tyler	093	Pierce
099	Wayne	103	Richland
103	Wetzel	109	St. Croix
105	Wirt	111	Sauk
107	Wood	121	Trempealeau
		123	Vernon
55	Wisconsin		
01	Northeastern	05	Southeastern
037	Florence	009	Brown
041	Forest	015	Calumet

021	Columbia	03	Northeastern
025	Dane	005	Campbell
027	Dodge	011	Crook
029	Door	045	Weston
039	Fond du Lac		
045	Green	72	Puerto Rico
047	Green Lake	083	Las Marias
055	Jefferson	085	Las Piedras
059	Kenosha	087	Loiza
061	Kewaunee	089	Luquillo
071	Manitowoc	091	Manati
079	Milwaukee	093	Maricao
087	Outagamie	095	Maunabo
089	Ozaukee	097	Mayaguez
101	Racine	099	Moca
105	Rock	101	Morovis
117	Sheboygan	103	Naguabo
127	Walworth	105	Naranjito
131	Washington	107	Orocovis
133	Waukesha	109	Patillas
139	Winnebago	111	Penuelas
		113	Ponce
56	Wyoming	115	Quebradillas
01	Western	117	Rincon
013	Fremont	119	Rio Grande
017	Hot Springs	121	Sabana Grande
023	Lincoln	123	Salinas
029	Park	125	San German
035	Sublette	127	San Juan
037	Sweetwater	129	San Lorenzo
039	Teton	131	San Sebastian
041	Uinta	133	Santa Isabel
		135	Toa Alta
02	Central and Southeastern	137	Toa Baja
001	Albany	139	Trujillo Alto
003	Big Horn	141	Utua
007	Carbon	143	Vega Alta
009	Converse	145	Vega Baja
015	Goshen	147	Vieques
019	Johnson	149	Villalba
021	Laramie	151	Yabucoa
025	Natrona	153	Yauco
027	Niobrara		
031	Platte	78	U.S. Virgin Islands
033	Sheridan	010	St. Croix Island
043	Washakie	020	St. John Island
		030	St. Thomas Island

Appendix D – Forest Type Codes And Names

Code	Forest type / type group	Fir / spruce / mountain hemlock group
	White / red / jack pine group	
101	Jack pine	261 White fir
102	Red pine	262 Red fir
103	Eastern white pine	263 Noble fir
104	Eastern white pine / eastern hemlock	264 Pacific silver fir
105	Eastern hemlock	265 Engelmann spruce
		266 Engelman spruce / subalpine fir
		267 Grand fir
		268 Subalpine fir
	Spruce / fir group	269 Blue spruce
121	Balsam fir	270 Mountain hemlock
122	White spruce	271 Alaska yellow-cedar
123	Red spruce	
124	Red spruce / balsam fir	
125	Black spruce	Lodgepole pine group
126	Tamarack	281 Lodgepole pine
127	Northern white-cedar	
		Hemlock / Sitka spruce group
	Longleaf / slash pine group	301 Western hemlock
141	Longleaf pine	304 Western redcedar
142	Slash pine	305 Sitka spruce
	Loblolly / shortleaf pine group	Western larch group
161	Loblolly pine	321 Western larch
162	Shortleaf pine	
163	Virginia pine	Redwood group
164	Sand pine	341 Redwood
165	Table Mountain pine	342 Giant sequoia
166	Pond pine	
167	Pitch pine	Other western softwoods group
168	Spruce pine	361 Knobcone pine
		362 Southwest white pine
	Pinyon / juniper group	363 Bishop pine
181	Eastern redcedar	364 Monterey pine
182	Rocky Mountain juniper	365 Foxtail pine / bristlecone pine
183	Western juniper	366 Limber pine
184	Juniper woodland	367 Whitebark pine
185	Pinyon / juniper woodland	368 Misc. western softwoods
	Douglas-fir group	California mixed conifer group
201	Douglas-fir	371 California mixed conifer
202	Port-Orford-cedar	
		Exotic softwoods group
	Ponderosa pine group	381 Scotch pine
221	Ponderosa pine	382 Australian pine
222	Incense-cedar	383 Other exotic softwoods
223	Jeffrey pine / Coulter pine / bigcone Douglas-fir	384 Norway spruce
224	Sugar pine	385 Introduced larch
	Western white pine group	Oak / pine group
241	Western white pine	401 Eastern white pine / northern red oak / white ash
		402 Eastern redcedar / hardwood

- 403 Longleaf pine / oak
- 404 Shortleaf pine / oak
- 405 Virginia pine / southern red oak
- 406 Loblolly pine / hardwood
- 407 Slash pine / hardwood
- 409 Other pine / hardwood

Oak / hickory group

- 501 Post oak / blackjack oak
- 502 Chestnut oak
- 503 White oak / red oak / hickory
- 504 White oak
- 505 Northern red oak
- 506 Yellow-poplar / white oak / northern red oak
- 507 Sassafras / persimmon
- 508 Sweetgum / yellow-poplar
- 509 Bur oak
- 510 Scarlet oak
- 511 Yellow-poplar
- 512 Black walnut
- 513 Black locust
- 514 Southern scrub oak
- 515 Chestnut oak / black oak / scarlet oak
- 519 Red maple / oak
- 520 Mixed upland hardwoods

Oak / gum / cypress group

- 601 Swamp chestnut oak / cherrybark oak
- 602 Sweetgum / Nuttall oak / willow oak
- 605 Overcup oak / water hickory
- 606 Atlantic white-cedar
- 607 Baldcypress / water tupelo
- 608 Sweetbay / swamp tupelo / red maple

Elm / ash / cottonwood group

- 701 Black ash / American elm / red maple
- 702 River birch / sycamore
- 703 Cottonwood
- 704 Willow
- 705 Sycamore / pecan / American elm
- 706 Sugarberry / hackberry / elm / green ash
- 707 Silver maple / American elm
- 708 Red maple / lowland
- 709 Cottonwood / willow
- 722 Oregon ash

Maple / beech / birch group

- 801 Sugar maple / beech / yellow birch
- 802 Black cherry

- 803 Cherry / ash / yellow-poplar
- 805 Hard maple / basswood
- 807 Elm / ash / locust
- 809 Red maple / upland

Aspen / birch group

- 901 Aspen
- 902 Paper birch
- 904 Balsam poplar

Alder / maple group

- 911 Red alder
- 912 Bigleaf maple

Western oak group

- 921 Gray pine
- 922 California black oak
- 923 Oregon white oak
- 924 Blue oak
- 925 Deciduous oak woodland
- 931 Coast live oak
- 932 Canyon live oak / interior live oak

Tanoak / laurel group

- 941 Tanoak
- 942 California laurel
- 943 Giant chinkapin

Other western hardwoods group

- 951 Pacific madrone
- 952 Mesquite woodland
- 953 Cercocarpus woodland
- 954 Intermountain maple woodland
- 955 Misc. western hardwoods woodland

Tropical hardwoods group

- 981 Sable palm
- 982 Mangrove
- 989 Other tropical

Exotic hardwoods group

- 991 Paulownia
- 992 Melaluca
- 993 Eucalyptus
- 995 Other exotic hardwoods

- 999 Nonstocked

Appendix E—National Forest Codes And Names

Region	Code	National Forest/Grassland/Area
Region 1	102	Beaverhead
	103	Bitterroot
	104	Idaho Panhandle
	105	Clearwater
	108	Custer
	109	Deerlodge
	110	Flathead
	111	Gallatin
	112	Helena
	114	Kootenai
	115	Lewis and Clark
	116	Lolo
	117	Nez Perce
	120	Cedar River NGL (National Grassland)
	121	Little Missouri NGL
	122	Shenenne NGL
124	Grand River NGL	
199	Other NFS Areas	
Region 2	202	Bighorn
	203	Black Hills
	204	Grand Mesa-Uncompahgre- Gunnison
	206	Medicine Bow
	207	Nebraska
	209	Rio Grande
	210	Arapaho-Roosevelt
	211	Routt
	212	Pike and San Isabel
	213	San Juan
	214	Shoshone
	215	White River
	217	Cimarron NGL
	218	Commanche NGL
	219	Pawnee NGL
	220	Oglala NGL
	221	Buffalo Gap NGL
222	Fort Pierre NGL	
223	Thunder Basin NGL	
299	Other NFS Areas	
Region 3	301	Apache-Sitgreaves
	302	Carson
	303	Cibola
	304	Coconino
	305	Coronado
	306	Gila
	307	Kaibab
	308	Lincoln
	309	Prescott
	310	Santa Fe
	312	Tonto
399	Other NFS Areas	

Region	Code	National Forest/Grassland/Area
Region 4	401	Ashley
	402	Boise
	403	Bridger-Teton
	405	Caribou
	406	Challis
	407	Dixie
	408	Fishlake
	409	Humboldt
	410	Manti-La Sal
	412	Payette
	413	Salmon
	414	Sawtooth
	415	Targhee
	417	Toiyabe
	418	Uinta
	419	Wasatch-Cache
420	Desert Range Experiment Station	
499	Other NFS Areas	
Region 5	501	Angeles
	502	Cleveland
	503	Eldorado
	504	Inyo
	505	Klamath
	506	Lassen
	507	Los Padres
	508	Mendocino
	509	Modoc
	510	Six Rivers
	511	Plumas
	512	San Bernadino
	513	Sequoia
	514	Shasta-Trinity
	515	Sierra
	516	Stanislaus
517	Tahoe	
519	Lake Tahoe Basin	
599	Other NFS Areas	
Region 6	601	Deschutes
	602	Fremont
	603	Gifford Pinchot
	604	Malheur
	605	Mt. Baker-Snoqualmie
	606	Mt. Hood
	607	Ochoco
	608	Okanogan
	609	Olympic
	610	Rogue River
	611	Siskiyou
	612	Siuslaw
	614	Umatilla
	615	Umpqua
	616	Wallowa-Whitman
	617	Wenatchee
618	Willamette	
620	Winema	
621	Colville	
699	Other NFS Areas	

Region	Code	National Forest/Grassland/Area
Region 8	801	NFS in Alabama
	802	Daniel Boone
	803	Cattahoochee-Oconee
	804	Cherokee
	805	NFS in Florida
	806	Kisatchie
	807	NFS in Mississippi
	808	George Washington
	809	Ouachita
	810	Ozark and St. Francis
	811	NFS in North Carolina
	812	Francis Marion-Sumter
	813	NFS in Texas
	814	Jefferson
816	Caribbean	
899	Other NFS areas	
Region 9	902	Chequamagon
	903	Chippewa
	904	Huron-Manistee
	905	Mark Twain
	906	Nicolet
	907	Ottawa
	908	Shawnee
	909	Superior
	910	Hiawatha
	911	Hoosier
	918	Wayne
	919	Allegheny
	920	Green Mountain
	921	Monongahela
922	White Mountain	
999	Other NFS areas	
Region 10	1004	Chugach
	1005	Tongass
	1099	Other NFS Areas

Appendix F – Tree Species Codes, Names, And Occurrences

Major groups (MAJGRP) are 1) pines, 2) other softwoods, 3) soft hardwoods, and 4) hard hardwoods. The 48 species groups (SPGRPCD) may be found in Appendix G.

SPCD	COMMON_NAME	SCIENTIFIC NAME	SPGRPCD	MAJGRP	NCRS	NERS	Occurrence by Research Station		
							PNWRS	RMRS	SRS
0010	fir spp.	<i>Abies</i>	6	2	X	X			X
0011	Pacific silver fir	<i>Abies amabilis</i>	12	2			X		
0012	Balsam fir	<i>Abies balsamea</i>	6	2	X	X			X
0014	Santa Lucia fir	<i>Abies bracteata</i>	12	2			X		
0015	white fir	<i>Abies concolor</i>	12	2	X		X	X	
0016	Fraser fir	<i>Abies fraseri</i>	9	2	X	X			X
0017	grand fir	<i>Abies grandis</i>	12	2			X	X	
0018	corkbark fir	<i>Abies lasiocarpa</i> var. <i>arizonica</i>	12	2				X	
0019	subalpine fir	<i>Abies lasiocarpa</i>	12	2			X	X	
0020	California red fir	<i>Abies magnifica</i>	12	2			X	X	
0021	Shasta red fir	<i>Abies shastensis</i>	12	2			X	X	
0022	noble fir	<i>Abies procera</i>	12	2			X	X	
0040	Cedar spp.	<i>Chamaecyparis</i> spp.							
0041	Port-Orford-cedar	<i>Chamaecyparis lawsoniana</i>	24	2			X		
0042	Alaska yellow-cedar	<i>Chamaecyparis nootkatensis</i>	24	2			X		
0043	Atlantic white-cedar	<i>Chamaecyparis thyoides</i>	9	2		X			X
0050	cypress	<i>Cupressus</i>	24	2			X		
0051	Arizona cypress	<i>Cupressus arizonica</i>	23	2			X	X	X
0052	Baker cypress	<i>Cupressus bakeri</i>	24	2					
0053	Tecate cypress	<i>Cupressus forbesii</i>	24	2					
0054	Monterey cypress	<i>Cupressus macrocarpa</i>	24	2					
0055	Sargent cypress	<i>Cupressus sargentii</i>	24	2					
0056	MacNab's cypress	<i>Cupressus macnabiana</i>							
0057	redcedar / juniper	<i>Juniperus</i>	9 E, 23 W	2	X	X			X
0058	Pinchot juniper	<i>Juniperus pinchotii</i>	23	2				X	
0059	redberry juniper	<i>Juniperus coahuilensis</i>	23	2				X	X
0061	Ashe juniper	<i>Juniperus ashei</i>	9	2					X
0062	California juniper	<i>Juniperus californica</i>	23	2			X	X	
0063	alligator juniper	<i>Juniperus deppeana</i>	23	2				X	X
0064	western juniper	<i>Juniperus occidentalis</i>	23	2			X	X	
0065	Utah juniper	<i>Juniperus osteosperma</i>	23	2			X	X	
0066	Rocky Mountain juniper	<i>Juniperus scopulorum</i>	9 E, 23 W	2	X		X	X	X
0067	southern redcedar	<i>Juniperus virginiana</i> var. <i>silicicola</i>	9	2					X
0068	eastern redcedar	<i>Juniperus virginiana</i>	9	2	X	X		X	X
0069	oneseed juniper	<i>Juniperus monosperma</i>	23	2				X	X
0070	larch spp.	<i>Larix</i> spp.	9	2	X	X			
0071	tamarack (native)	<i>Larix laricina</i>	9 E, 24 W	2	X	X			
0072	subalpine larch	<i>Larix lyallii</i>	24	2			X	X	
0073	Western larch	<i>Larix occidentalis</i>	19	2			X	X	
0081	Incense-cedar	<i>Calocedrus decurrens</i>	20	2			X	X	
0090	spruce spp.	<i>Picea</i>	6	2	X	X			X
0091	Norway spruce	<i>Picea abies</i>	9	2	X	X			X
0092	Brewer spruce	<i>Picea breweriana</i>	18	2			X		
0093	Engelmann spruce	<i>Picea engelmannii</i>	9 E, 18 W	2	X		X	X	
0094	white spruce	<i>Picea glauca</i>	6 E, 18 W	2	X	X	X	X	X
0095	black spruce	<i>Picea mariana</i>	6 E, 23 W	2	X	X	X		X
0096	blue spruce	<i>Picea pungens</i>	9 E, 18 W	2	X	X		X	X
0097	red spruce	<i>Picea rubens</i>	6	2		X			X
0098	Sitka spruce	<i>Picea sitchensis</i>	17	2			X		
0100	pine spp.	<i>Pinus</i> spp.							
0101	whitebark pine	<i>Pinus albicaulis</i>	24	1			X	X	
0102	Rocky Mountain bristlecone pine	<i>Pinus aristata</i>	24	1			X	X	
0103	knobcone pine	<i>Pinus attenuata</i>	24	1			X		

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SPCD	COMMON_NAME	SCIENTIFIC NAME	SPGRPCD	MAJGRP	NCRS	NERS	Occurrence by Research Station		
							PNWRS	RMRS	SRS
0104	foxtail pine	<i>Pinus balfouriana</i>	24	1			X	X	
0105	jack pine	<i>Pinus banksiana</i>	5	1	X	X			
0106	common pinyon	<i>Pinus edulis</i>	23	1			X	X	X
0107	sand pine	<i>Pinus clausa</i>	3	1					X
0108	lodgepole pine	<i>Pinus contorta</i>	21	1			X	X	
0109	Coulter pine	<i>Pinus coulteri</i>	24	1			X		
0110	shortleaf pine	<i>Pinus echinata</i>	2	1	X	X			X
0111	slash pine	<i>Pinus elliottii</i>	1	1					X
0112	Apache pine	<i>Pinus engelmannii</i>	24	1				X	
0113	limber pine	<i>Pinus flexilis</i>	24	1	X		X	X	X
0114	southwestern white pine	<i>Pinus strobiformis</i>	24	1				X	
0115	spruce pine	<i>Pinus glabra</i>	3	1					X
0116	Jeffrey pine	<i>Pinus jeffreyi</i>	11	1			X	X	
0117	sugar pine	<i>Pinus lambertiana</i>	14	1			X	X	
0118	Chihuahua pine	<i>Pinus leiophylla</i> var. <i>chihuahuana</i>	24	1				X	
0119	western white pine	<i>Pinus monticola</i>	15	1			X	X	
0120	bishop pine	<i>Pinus muricata</i>	24	1			X		
0121	longleaf pine	<i>Pinus palustris</i>	1	1					X
0122	ponderosa pine	<i>Pinus ponderosa</i>	9 E, 11 W	1	X		X	X	X
0123	Table Mountain pine	<i>Pinus pungens</i>	3	1		X			X
0124	Monterey pine	<i>Pinus radiata</i>	24	1			X		
0125	red pine	<i>Pinus resinosa</i>	4	1	X	X			X
0126	pitch pine	<i>Pinus rigida</i>	3	1		X			X
0127	gray pine	<i>Pinus sabiniana</i>	24	1			X		
0128	pond pine	<i>Pinus serotina</i>	3	1		X			X
0129	eastern white pine	<i>Pinus strobus</i>	4	1	X	X			X
0130	Scotch pine	<i>Pinus sylvestris</i>	3 E, 13 W	1	X	X	X	X	X
0131	loblolly pine	<i>Pinus taeda</i>	2	1	X	X			X
0132	Virginia pine	<i>Pinus virginiana</i>	3	1	X	X			X
0133	singleleaf pinyon	<i>Pinus monophylla</i>	23	1			X	X	
0134	border pinyon	<i>Pinus discolor</i>	23	1				X	
0135	Arizona pine	<i>Pinus arizonica</i>	11	1				X	
0136	Austrian pine	<i>Pinus nigra</i>	9	1	X	X		X	X
0137	Washoe pine	<i>Pinus washoensis</i>	24	1				X	
0138	four-leaf pine	<i>Pinus quadrifolia</i>	24	1					
0139	Torrey pine	<i>Pinus torreyana</i>	24	1					
0140	Mexican pinyon pine	<i>Pinus cembroides</i>	24	1				X	X
0142	Great Basin bristlecone pine	<i>Pinus longaeva</i>	24	1				X	
0143	Arizona pinyon pine	<i>Pinus monophylla</i> var. <i>fallax</i>	24	1				X	
0144	Carribean pine	<i>Pinus elliottii</i> var. <i>elliottii</i>							
0200	Douglas-fir spp.	<i>Pseudotsuga</i> spp.							
0201	bigcone Douglas-fir	<i>Pseudotsuga macrocarpa</i>	24	2			X		
0202	Douglas-fir	<i>Pseudotsuga menziesii</i>	9 E, 10 W	2	X	X	X	X	
0211	redwood	<i>Sequoia sempervirens</i>	16	2			X		
0212	giant sequoia	<i>Sequoiadendron giganteum</i>	24	2			X		
0220	cypress spp.	<i>Taxodium</i> spp.							
0221	baldcypress	<i>Taxodium distichum</i>	8	2	X	X			X
0222	pondcypress	<i>Taxodium ascendens</i>	8	2					X
0230	yew spp.	<i>Taxus</i> spp.							
0231	Pacific yew	<i>Taxus brevifolia</i>	23	2			X	X	
0232	Florida yew	<i>Taxus floridana</i>							
0240	Thuja spp.	<i>Thuja</i> spp.							
0241	northern white-cedar	<i>Thuja occidentalis</i>	9	2	X	X			X
0242	western redcedar	<i>Thuja plicata</i>	22	2			X	X	
0250	Torrey (nutmeg) spp.	<i>Torreya</i> spp.							
0251	California torrey (nutmeg)	<i>Torreya californica</i>	24	2			X		
0252	Florida torrey	<i>Torreya taxifolia</i>	9	2					X
0260	hemlock spp.	<i>Tsuga</i>	7	2	X				X
0261	eastern hemlock	<i>Tsuga canadensis</i>	7	2	X	X			X
0262	Carolina hemlock	<i>Tsuga caroliniana</i>	7	2					X

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SPCD	COMMON_NAME	SCIENTIFIC NAME	SPGRPCD	MAJGRP	NCRS	NERS	Occurrence by Research Station			SRS
							PNWRS	RMRS		
0263	western hemlock	<i>Tsuga heterophylla</i>	13	2			X	X		
0264	mountain hemlock	<i>Tsuga mertensiana</i>	24	2			X	X		
0299	Unknown dead conifer	<i>Unknown</i>	9 E, 24 W	2	X	X	X	X	X	
0300	acacia	<i>Acacia</i>	41 E, 48 W	3			X			
0303	sweet acacia	<i>Acacia farnesiana</i>								
0304	catclaw acacia	<i>Acacia greggii</i>								
0310	maple	<i>Acer</i>	31	4	X	X			X	
0311	Florida maple	<i>Acer barbatum</i>	31	4					X	
0312	bigleaf maple	<i>Acer macrophyllum</i>	47	3			X		X	
0313	boxelder	<i>Acer negundo</i>	41	3	X	X	X	X	X	
0314	black maple	<i>Acer nigrum</i>	31	4	X	X			X	
0315	striped maple	<i>Acer pensylvanicum</i>	43	3	X	X			X	
0316	red maple	<i>Acer rubrum</i>	32	3	X	X			X	
0317	silver maple	<i>Acer saccharinum</i>	32	3	X	X			X	
0318	sugar maple	<i>Acer saccharum</i>	31	4	X	X			X	
0319	mountain maple	<i>Acer spicatum</i>	43	4	X	X			X	
0320	Norway maple	<i>Acer platanoides</i>	31	4	X	X			X	
0321	Rocky Mountain maple	<i>Acer glabrum</i>	43 E, 48 W	4	X		X			
0322	bigtooth maple	<i>Acer grandidentatum</i>	48	4			X	X		
0323	chalk maple	<i>Acer leucoderme</i>	31	4					X	
0330	buckeye, horsechestnut	<i>Aesculus</i>	41 E, 47 W	3	X	X	X		X	
0331	Ohio buckeye	<i>Aesculus glabra</i>	41 E, 48 W	3	X	X			X	
0332	yellow buckeye	<i>Aesculus flava</i>	41	3		X			X	
0333	California buckeye	<i>Aesculus californica</i>	48	3			X			
0334	Texas buckeye	<i>Aesculus glabra var. arguta</i>	41	3	X				X	
0336	red buckeye	<i>Aesculus pavia</i>								
0337	painted buckeye	<i>Aesculus sylvatica</i>								
0341	ailanthus	<i>Ailanthus altissima</i>	43 E, 47 W	4	X	X			X	
0345	mimosa, silktree	<i>Albizia julibrissin</i>	43	3	X				X	
0350	alder spp.	<i>Alnus spp.</i>								
0351	red alder	<i>Alnus rubra</i>	45	3			X	X	X	
0352	white alder	<i>Alnus rhombifolia</i>	47	3			X	X		
0353	Arizona alder	<i>Alnus oblongifolia</i>								
0355	European alder	<i>Alnus glutinosa</i>	41 E, 47 W	3	X				X	
0356	serviceberry	<i>Amelanchier</i>	43	4	X	X			X	
0357	common serviceberry	<i>Amelanchier arborea</i>								
0358	roundleaf serviceberry	<i>Amelanchier sanguinea</i>								
0360	Madrone spp.	<i>Arbutus spp.</i>								
0361	Pacific madrone	<i>Arbutus menziesii</i>	47	4			X	X		
0362	Arizona madrone	<i>Arbutus arizonica</i>								
0367	pawpaw	<i>Asimina triloba</i>	43	3	X	X			X	
0370	birch spp.	<i>Betula</i>	41	4	X	X			X	
0371	yellow birch	<i>Betula alleghaniensis</i>	30	4	X	X			X	
0372	sweet birch	<i>Betula lenta</i>	42	4	X	X			X	
0373	river birch	<i>Betula nigra</i>	41	3	X	X			X	
0374	water birch	<i>Betula occidentalis</i>	41 E, 47 W	3	X		X		X	
0375	paper birch	<i>Betula papyrifera</i>	41 E, 47 W	3	X	X		X		
0377	Virginia roundleaf birch	<i>Betula uber</i>								
0378	northwestern paper birch	<i>Betula utahensis</i>	47	3			X			
0379	gray birch	<i>Betula populifolia</i>	41	3	X	X			X	
0381	chittamwood,gum bumelia	<i>Sideroxylon lanuginosum sub. lanuginosum</i>	43	4	X				X	
0391	American hornbeam,musclewood	<i>Carpinus caroliniana</i>	43	4	X	X			X	
0400	hickory spp.	<i>Carya</i>	29	4	X	X			X	
0401	water hickory	<i>Carya aquatica</i>	29	4	X	X			X	
0402	bitternut hickory	<i>Carya cordiformis</i>	29	4	X	X			X	
0403	pignut hickory	<i>Carya glabra</i>	29	4	X	X			X	
0404	pecan	<i>Carya illinoensis</i>	29	4	X	X		X	X	
0405	shellbark hickory	<i>Carya laciniata</i>	29	4	X	X			X	

SPCD	COMMON_NAME	SCIENTIFIC NAME	SPGRPCD	MAJGRP	NCRS	NERS	Occurrence by Research Station			SRS
							PNWRS	RMRS		
0406	nutmeg hickory	<i>Carya myristiciformis</i>	29	4						X
0407	shagbark hickory	<i>Carya ovata</i>	29	4	X	X				X
0408	black hickory	<i>Carya texana</i>	29	4	X					X
0409	mockernut hickory	<i>Carya alba</i>	29	4	X	X				X
0410	sand hickory	<i>Carya pallida</i>	29	4						X
0411	scrub hickory	<i>Carya floridana</i>								
0412	red hickory	<i>Carya ovalis</i>								
0413	southern shagbark hickory	<i>Carya caroliniae-septentrionalis</i>								
0420	chestnut spp.	<i>Castanea spp.</i>								
0421	American chestnut	<i>Castanea dentata</i>	43	3	X	X				X
0422	Allegheny chinkapin	<i>Castanea pumila</i>	41	3						X
0423	Ozark chinkapin	<i>Castanea pumila var. ozarkensis</i>	43	3	X					X
0424	Chinese chestnut	<i>Castanea mollissima</i>								
0431	giant chinkapin, golden chinkapin	<i>Chrysolepis chrysophylla var. chrysophylla</i>	47	3				X		
0450	catalpa spp.	<i>Catalpa</i>	42	4	X	X				X
0451	southern catalpa	<i>Catalpa bignonioides</i>	43	4						X
0452	northern catalpa	<i>Catalpa speciosa</i>	41	3	X	X				X
0460	hackberry spp.	<i>Celtis</i>	41	3	X	X				X
0461	sugarberry	<i>Celtis laevigata</i>	41	3	X	X				X
0462	hackberry	<i>Celtis occidentalis</i>	41	3	X	X				X
0463	netleaf hackberry	<i>Celtis laevigata var. reticulata</i>	41	3	X					X
0471	eastern redbud	<i>Cercis canadensis</i>	43	3	X	X				X
0475	curlleaf mountain-mahogany	<i>Cercocarpus ledifolius</i>	48	4				X	X	
0481	yellowwood	<i>Cladrastis kentukea</i>	43	4		X				X
0490	dogwood spp.	<i>Cornus spp.</i>								
0491	flowering dogwood	<i>Cornus florida</i>	42	4	X	X				X
0492	Pacific dogwood	<i>Cornus nuttallii</i>	47	4				X	X	
0500	hawthorn	<i>Crataegus</i>	43	4	X	X				X
0501	cockspur hawthorn	<i>Crataegus crus-galli</i>	43	4	X					X
0502	downy hawthorn	<i>Crataegus mollis</i>	43	4	X					X
0503	Brainerd hawthorn	<i>Crataegus brainerdii</i>								
0504	pear hawthorn	<i>Crataegus calpodendron</i>								
0505	Fireberry hawthorn	<i>Crataegus chrysocarpa</i>								
0506	broadleaf hawthorn	<i>Crataegus dilatata</i>								
0507	fanleaf hawthorn	<i>Crataegus flabellata</i>								
0508	Oneseed hawthorn	<i>Crataegus monogyna</i>								
0509	scarlet hawthorn	<i>Crataegus pedicellata</i>								
5091	Washington hawthorn	<i>Crataegus phaenopyrum</i>								
5092	fleshy hawthorn	<i>Crataegus succulenta</i>								
5093	dwarf hawthorn	<i>Crataegus uniflora</i>								
0510	eucalyptus spp.	<i>Eucalyptus spp.</i>								
0511	Tasmanian bluegum	<i>Eucalyptus globulus</i>								
0512	River redgum	<i>Eucalyptus camaldulensis</i>								
0513	grand eucalyptus	<i>Eucalyptus grandis</i>								
0514	swamp mahogany	<i>Eucalyptus robusta</i>								
0520	persimmon spp.	<i>Diospyros spp.</i>								
0521	common persimmon	<i>Diospyros virginiana</i>	42	4	X	X				X
0522	Texas persimmon	<i>Diospyros texana</i>								
0531	American beech	<i>Fagus grandifolia</i>	33	4	X	X				X
0540	ash spp.	<i>Fraxinus</i>	36	3	X	X				X
0541	white ash	<i>Fraxinus americana</i>	36	4	X	X				X
0542	Oregon ash	<i>Fraxinus latifolia</i>	47	4				X		
0543	black ash	<i>Fraxinus nigra</i>	36	3	X	X				X
0544	green ash	<i>Fraxinus pennsylvanica</i>	36	4	X	X			X	X
0545	pumpkin ash	<i>Fraxinus profunda</i>	36	3	X	X				X
0546	blue ash	<i>Fraxinus quadrangulata</i>	36	4	X	X				X
0547	velvet ash	<i>Fraxinus velutina</i>	47	4					X	X
0548	Carolina ash	<i>Fraxinus caroliniana</i>	36	4						X

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							PNWRS	RMRS	SRS
0549	Texas ash	<i>Fraxinus texensis</i>							
0551	waterlocust	<i>Gleditsia aquatica</i>	42	4	X				X
0552	honeylocust	<i>Gleditsia triacanthos</i>	42	4	X	X		X	X
0555	loblolly-bay	<i>Gordonia lasianthus</i>	41	3					X
0561	Ginkgo, maidenhair tree	<i>Ginkgo biloba</i>							
0571	Kentucky coffeetree	<i>Gymnocladus dioicus</i>	42	4	X	X			X
0580	silverbell	<i>Halesia</i>	41	3					X
0581	Carolina silverbell	<i>Halesia carolina</i>							
0582	two-wing silverbell	<i>Halesia diptera</i>							
0583	little silverbell	<i>Halesia parviflora</i>							
0591	American holly	<i>Ilex opaca</i>	42	4	X	X			X
0600	walnut	<i>Juglans</i>	41 E, 47 W	4	X	X	X	X	X
0601	butternut	<i>Juglans cinerea</i>	41	3	X	X			X
0602	black walnut	<i>Juglans nigra</i>	40	4	X	X		X	X
0603	California black walnut	<i>Juglans hindsii</i>	47	4					
0604	southern California black walnut	<i>Juglans californica</i>	47	4					
0605	Texas walnut	<i>Juglans microcarpa</i>	41 E, 47 W	4					X
0606	Arizona walnut	<i>Juglans major</i>							
0611	sweetgum	<i>Liquidambar styraciflua</i>	34	3	X	X			X
0621	yellow-poplar	<i>Liriodendron tulipifera</i>	39	3	X	X			X
0631	tanoak	<i>Lithocarpus densiflorus</i>	47	4			X		
0641	Osage-orange	<i>Maclura pomifera</i>	43	4	X	X			X
0650	magnolia spp.	<i>Magnolia</i>	41	3		X			X
0651	cucumbertree	<i>Magnolia acuminata</i>	41	3	X	X			X
0652	southern magnolia	<i>Magnolia grandiflora</i>	41	3					X
0653	sweetbay	<i>Magnolia virginiana</i>	41	3		X			X
0654	bigleaf magnolia	<i>Magnolia macrophylla</i>	43	4					X
0655	mountain magnolia	<i>Magnolia fraseri</i>	41	3		X			X
0657	pyramid magnolia	<i>Magnolia pyramidata</i>							
0658	umbrella magnolia	<i>Magnolia tripetala</i>							
0660	apple spp.	<i>Malus</i>	43 E, 47 W	4	X	X	X	X	X
0661	Oregon crab apple	<i>Malus fusca</i>	47	4					
0662	southern crabapple	<i>Malus angustifolia</i>							
0663	sweet crabapple	<i>Malus coronaria</i>							
0664	prairie crabapple	<i>Malus ioensis</i>							
0680	mulberry spp.	<i>Morus</i>	42	4	X	X		X	X
0681	white mulberry	<i>Morus alba</i>	42	4	X	X			X
0682	red mulberry	<i>Morus rubra</i>	42	4	X	X			X
0683	Texas mulberry	<i>Morus microphylla</i>							
0684	black mulberry	<i>Morus nigra</i>							
0690	tupelo spp.	<i>Nyssa spp.</i>							
0691	water tupelo	<i>Nyssa aquatica</i>	35	3	X				X
0692	Ogechee tupelo	<i>Nyssa ogeche</i>	43	4					X
0693	blackgum	<i>Nyssa sylvatica</i>	35	3	X	X			X
0694	swamp tupelo	<i>Nyssa biflora</i>	35	3	X	X			X
0701	eastern hophornbeam	<i>Ostrya virginiana</i>	43	4	X	X			X
0711	sourwood	<i>Oxydendrum arboreum</i>	43	4		X			X
0712	paulownia, empress-tree	<i>Paulownia tomentosa</i>	41	3	X	X			X
0720	bay spp.	<i>Persea spp.</i>							
0721	redbay	<i>Persea borbonia</i>	41	3					X
7211	avocado	<i>Persea americana</i>							
0722	water-elm, planertree	<i>Planera aquatica</i>	43	3					X
0729	Sycamore spp.	<i>Platanus spp.</i>							
0730	California sycamore	<i>Platanus racemosa</i>	47	3			X		
0731	sycamore	<i>Platanus occidentalis</i>	41	3	X	X		X	X
0732	Arizona sycamore	<i>Platanus wrightii</i>							
0740	cottonwood and poplar spp.	<i>Populus</i>	37 E, 44 W	3	X	X			X
0741	balsam poplar	<i>Populus balsamifera</i>	37 E, 44 W	3	X	X		X	X
0742	eastern cottonwood	<i>Populus deltoides</i>	37	3	X	X		X	X
0743	bigtooth aspen	<i>Populus grandidentata</i>	37	3	X	X			X

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							PNWRS	RMRS	SRS
0744	swamp cottonwood	<i>Populus heterophylla</i>	37	3	X	X			X
0745	plains cottonwood	<i>Populus deltoides sub. monilifera</i>	37 E, 44 W	3	X			X	
0746	quaking aspen	<i>Populus tremuloides</i>	37 E, 44 W	3	X	X	X	X	X
0747	black cottonwood	<i>Populus balsamifera sub. trichocarpa</i>	37 E, 44 W	4			X	X	
0748	Fremont cottonwood	<i>Populus fremontii</i>	37 E, 44 W	4			X	X	X
0749	narrowleaf cottonwood	<i>Populus angustifolia</i>	37 E, 44 W	3	X			X	X
0752	silver poplar	<i>Populus alba</i>	37	3	X				X
0753	Lombardy poplar	<i>Populus nigra</i>							
0755	mesquite	<i>Prosopis</i>	48	4					X
0756	honey mesquite	<i>Prosopis glandulosa var. torreyana</i>	48	4				X	X
0757	velvet mesquite	<i>Prosopis velutina</i>	48	4				X	X
0758	screwbean mesquite	<i>Prosopis pubescens</i>	48	4				X	X
0760	cherry and plum spp.	<i>Prunus</i>	43 E, 47 W	4	X	X	X		X
0761	pin cherry	<i>Prunus pensylvanica</i>	43	3	X	X			X
0762	black cherry	<i>Prunus serotina</i>	41	3	X	X			X
0763	chokecherry	<i>Prunus virginiana</i>	43	4	X	X			X
0764	peach	<i>Prunus persica</i>							
0765	Canada plum	<i>Prunus nigra</i>	43	4	X				
0766	American plum	<i>Prunus americana</i>	43	4	X				X
0768	bitter cherry	<i>Prunus emarginata</i>	47	4					
0769	Allegheny plum	<i>Prunus alleghaniensis</i>							
0770	Chickasaw plum	<i>Prunus angustifolia</i>							
0771	sweet cherry, domesticated	<i>Prunus avium</i>							
0772	sour cherry, domesticated	<i>Prunus cerasus</i>							
0773	European plum, domesticated	<i>Prunus domestica</i>							
0774	Mahaleb plum, domesticated	<i>Prunus mahaleb</i>							
0800	oak, deciduous	<i>Quercus</i>	42 E, 48 W	4	X	X			X
0801	coast live oak	<i>Quercus agrifolia</i>	48	4			X		
0802	white oak	<i>Quercus alba</i>	25	4	X	X			X
0803	Arizona white oak	<i>Quercus arizonica</i>	48	4				X	X
0804	swamp white oak	<i>Quercus bicolor</i>	25	4	X	X			X
0805	canyon live oak	<i>Quercus chrysolepis</i>	46	4			X		
0806	scarlet oak	<i>Quercus coccinea</i>	28	4	X	X			X
0807	blue oak	<i>Quercus douglasii</i>	46	4			X		
0808	Durand oak	<i>Quercus sinuata var. sinuata</i>	25	4					X
0809	northern pin oak	<i>Quercus ellipsoidalis</i>	28	4	X	X			X
0810	Emery oak	<i>Quercus emoryi</i>	48	4				X	X
0811	Engelmann oak	<i>Quercus engelmannii</i>	46	4			X		
0812	southern red oak	<i>Quercus falcata</i>	28	4	X	X			X
0813	cherrybark oak	<i>Quercus pagoda</i>	26	4	X	X			X
0814	Gambel oak	<i>Quercus gambelii</i>	48	4				X	X
0815	Oregon white oak	<i>Quercus garryana</i>	46	4			X		
0816	bear oak, scrub oak	<i>Quercus ilicifolia</i>	43	4		X			X
0817	shingle oak	<i>Quercus imbricaria</i>	28	4	X	X			X
0818	California black oak	<i>Quercus kelloggii</i>	46	4			X		
0819	turkey oak	<i>Quercus laevis</i>	43	4					X
0820	laurel oak	<i>Quercus laurifolia</i>	28	4		X			X
0821	California white oak	<i>Quercus lobata</i>	46	4			X		
0822	overcup oak	<i>Quercus lyrata</i>	27	4	X	X			X
0823	bur oak	<i>Quercus macrocarpa</i>	25	4	X	X		X	X
0824	blackjack oak	<i>Quercus marilandica</i>	28	4	X	X			X
0825	swamp chestnut oak	<i>Quercus michauxii</i>	25	4	X	X			X
0826	chinkapin oak	<i>Quercus muehlenbergii</i>	25 E, 48 W	4	X	X		X	X
0827	water oak	<i>Quercus nigra</i>	28	4		X			X
0828	Nuttall oak	<i>Quercus buckleyi</i>	28	4					X
0829	Mexican blue oak	<i>Quercus oblongifolia</i>	48	4				X	
0830	pin oak	<i>Quercus palustris</i>	28	4	X	X			X
0831	willow oak	<i>Quercus phellos</i>	28	4	X	X			X

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0832	chestnut oak	<i>Quercus prinus</i>	27	4	X	X			X
0833	northern red oak	<i>Quercus rubra</i>	26	4	X	X			X
0834	Shumard oak	<i>Quercus shumardii</i>	26	4	X	X			X
0835	post oak	<i>Quercus stellata</i>	27	4	X	X			X
0836	Delta post oak	<i>Quercus similis</i>	27	4					X
0837	black oak	<i>Quercus velutina</i>	28	4	X	X			X
0838	live oak	<i>Quercus virginiana</i>	27	4					X
0839	interior live oak	<i>Quercus wislizeni</i>	48	4			X		
0840	dwarf post oak	<i>Quercus margarettae</i>	27	4	X				X
0841	dwarf live oak	<i>Quercus minima</i>	27	4					X
0842	bluejack oak	<i>Quercus incana</i>	43	4					X
0843	silverleaf oak	<i>Quercus hypoleucoides</i>	48	4				X	X
0844	Oglethorpe oak	<i>Quercus oglethorpensis</i>	27	4					X
0845	Dwarf chinakapin oak	<i>Quercus prinoides</i>	43	4	X				X
0846	gray oak	<i>Quercus grisea</i>	48	4				X	X
0847	netleaf oak	<i>Quercus rugosa</i>							
0850	oak -- evergreen	<i>Quercus</i>	48	4				X	X
0852	torchwood	<i>Amyris elemifera</i>							
0853	pond apple	<i>Annona glabra</i>							
0854	gumbo limbo	<i>Bursera simaruba</i>							
0855	sheoak spp.	<i>Casuarina spp.</i>							
0856	gray sheoak	<i>Casuarina glauca</i>							
0857	Australian pine	<i>Casuarina lepidophloia</i>							
0858	camphor tree	<i>Cinnamomum camphora</i>							
0859	fiddlewood	<i>Citharexylum fruticosum</i>							
0860	citrus spp.	<i>Citrus spp.</i>							
0863	pigeon plum, tietongue	<i>Coccoloba diversifolia</i>							
0864	soldierwood	<i>Colubrina elliptica</i>							
0865	geiger tree	<i>Cordia sebestena</i>							
0866	carrotwood	<i>Cupaniopsis anacardioides</i>							
0873	red stopper	<i>Eugenia rhombea</i>							
0874	Inkwood, butterbough	<i>Exothea paniculata</i>							
0876	strangler fig	<i>Ficus aurea</i>							
0877	shortleaf fig, wild banyantree	<i>Ficus citrifolia</i>							
0882	Blolly, beeftree	<i>Guapira discolor</i>							
0883	manchineel	<i>Hippomane mancinella</i>							
0884	false tamarind	<i>Lysiloma latisiliquum</i>							
0885	mango	<i>Mangifera indica</i>							
0886	poisonwood	<i>Metopium toxiferum</i>							
0887	fishpoison tree	<i>Piscidia piscipula</i>							
0888	schefflera, octopus tree	<i>Schefflera actinophylla</i>							
0890	false mastic	<i>Sideroxylon foetidissimum</i>							
0891	white bully, willow bustic	<i>Sideroxylon salicifolium</i>							
0895	paradise tree	<i>Simarouba glauca</i>							
0896	Java plum	<i>Syzygium cumini</i>							
0897	tamarind	<i>Tamarindus indica</i>							
0901	black locust	<i>Robinia pseudoacacia</i>	42 E, 47 W	4	X	X	X		X
0902	New Mexico locust	<i>Robinia neomexicana</i>	48 E, 49 W	4			X	X	X
0906	paurotis palm	<i>Acoelorrhaphe wrightii</i>							
0907	silver palm	<i>Coccothrinax argentata</i>							
0908	coconut palm	<i>Cocos nucifera</i>							
0909	royal palm spp.	<i>Roystonea spp.</i>							
0912	cabbage palmetto	<i>Sabal palmetto</i>							
0913	key thatch palm	<i>Thrinax morrisii</i>							
0914	Florida thatch palm	<i>Thrinax radiata</i>							
0915	other palms	<i>not listed above</i>							
0919	western soapberry	<i>Sapindus saponaria var. drummondii</i>	43	4	X				X
0920	willow	<i>Salix</i>	43 E, 48 W	3	X	X	X		X
0921	peachleaf willow	<i>Salix amygdaloides</i>	43	3	X				X
0922	black willow	<i>Salix nigra</i>	41	3	X	X			X

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0923	Bebb willow	<i>Salix bebbiana</i>							
0924	red willow	<i>Salix bonplandiana</i>							
0925	coastal plain willow	<i>Salix caroliniana</i>							
0927	white willow	<i>Salix alba</i>	41	3	X				X
0928	Scouler's willow	<i>Salix scouleriana</i>							
0929	weeping willow	<i>Salix sepulcralis</i>							
0931	sassafras	<i>Sassafras albidum</i>	41	3	X	X			X
0934	mountain ash spp.	<i>Sorbus spp.</i>							
0935	American mountain-ash	<i>Sorbus americana</i>	43	4	X	X			X
0936	European mountain-ash	<i>Sorbus aucuparia</i>	43	4		X			X
0937	northern mountain ash	<i>Sorbus decora</i>							
0940	mahogany	<i>Swietenia mahagoni</i>							
0950	basswood spp.	<i>Tilia</i>	38	3	X	X			X
0951	American basswood	<i>Tilia americana</i>	38	3	X	X			X
0952	white basswood	<i>Tilia americana</i> var. <i>heterophylla</i>	38	3	X	X			X
0953	Carolina basswood	<i>Tilia americana</i> var. <i>caroliniana</i>	38	3					X
0970	elm spp.	<i>Ulmus</i>	41	3	X	X			X
0971	winged elm	<i>Ulmus alata</i>	41	4	X	X			X
0972	American elm	<i>Ulmus americana</i>	41	3	X	X		X	X
0973	cedar elm	<i>Ulmus crassifolia</i>	41	3					X
0974	Siberian elm	<i>Ulmus pumila</i>	41	3	X			X	X
0975	slippery elm	<i>Ulmus rubra</i>	41	3	X	X			X
0976	September elm	<i>Ulmus serotina</i>	41	3					X
0977	rock elm	<i>Ulmus thomasii</i>	42	4	X	X			X
0981	California-laurel	<i>Umbellularia californica</i>	42	4			X		
0982	Joshua tree	<i>Yucca brevifolia</i>							
0986	black mangrove	<i>Avicennia germinans</i>							
0987	buttonwood mangrove	<i>Conocarpus erectus</i>							
0988	white mangrove	<i>Laguncularia racemosa</i>							
0989	American mangrove	<i>Rhizophora mangle</i>	43	4					X
0990	desert ironwood	<i>Olneya tesota</i>	43 E, 48 W	4			X		
0991	saltcedar	<i>Tamarix</i>	41 E, 47 W	3					
0992	melaleuca	<i>Melaleuca quinquenervia</i>	41 E, 47 W	3					X
0993	chinaberry	<i>Melia azedarach</i>	43	4					X
0994	Chinese tallowtree	<i>Triadica sebifera</i>	43	4					X
0995	tung-oil-tree	<i>Vernicia fordii</i>	43	4					X
0996	smoketree	<i>Cotinus obovatus</i>	43	4	X				X
0997	Russian-olive	<i>Elaeagnus angustifolia</i>	43	3	X				X
0998	unknown hardwood	<i>Tree broadleaf</i>							
0999	Unknown dead hardwood	<i>Unknown</i>	43 E, 47 W	3	X	X	X		X

Appendix G—Tree Species Group Codes

<u>Species group name</u>	<u>Code</u>
Softwood species groups	
Eastern softwood species groups	
Longleaf and slash pines	1
Loblolly and shortleaf pines	2
Other yellow pines	3
Eastern white and red pines	4
Jack pine	5
Spruce and balsam fir	6
Eastern hemlock	7
Cypress	8
Other eastern softwoods	9
Western softwood species groups	
Douglas-fir	10
Ponderosa and Jeffrey pines	11
True fir	12
Western hemlock	13
Sugar pine	14
Western white pine	15
Redwood	16
Sitka spruce	17
Engelmann and other spruces	18
Western larch	19
Incense-cedar	20
Lodgepole pine	21
Western redcedar	22
Western woodland softwoods	23
Other western softwoods	24
Hardwood species groups	
Eastern hardwood species groups	
Select white oaks	25
Select red oaks	26
Other white oaks	27
Other red oaks	28
Hickory	29
Yellow birch	30
Hard maple	31
Soft maple	32
Beech	33
Sweetgum	34
Tupelo and blackgum	35
Ash	36
Cottonwood and aspen	37
Basswood	38
Yellow-poplar	39
Black walnut	40
Other eastern soft hardwoods	41
Other eastern hard hardwoods	42
Eastern noncommercial hardwoods	43
Western hardwood species groups	
Cottonwood and aspen	44
Red alder	45
Oak	46
Other western hardwoods	47
Western woodland hardwoods	48