

The Forest Inventory and Analysis Database: Database Description and Users Guide Version 1.7

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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).

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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 "second 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 1.0," 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.

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 (d.b.h.) or root collar (d.r.c.), 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 1.7," 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 – remeasured 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	50	Microplot
MACRPROP	63	Macroplot
SUBPPROP	71	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	73	Subplot or macroplot (see PROP_BASIS)
MICRPROP_ALL	79	Microplot
MACRPROP_ALL	76	Macroplot
SUBPPROP_ALL	90	Subplot

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	75	Subplot or macroplot (see PROP_BASIS)
MICRPROP_CURR	81	Microplot
MACRPROP_CURR	78	Macroplot
SUBPPROP_CURR	92	Subplot

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	74	Subplot or macroplot (see PROP_BASIS)
MICRPROP_CHNG	80	Microplot
MACRPROP_CHNG	77	Macroplot
SUBPPROP_CHNG	91	Subplot

The condition proportions below are adjusted at the plot level to exclude outside-of-the-population, denied-access, and hazardous conditions on the plot; used to evaluate the data at the plot level rather than at the population level (e.g. for making “per acre” maps).

Variable	Location in COND table	Plot type
CONDPROP_SAMP	86	Subplot or macroplot (see PROP_BASIS)
MICRPROP_SAMP	87	Microplot
MACRPROP_SAMP	88	Macroplot
SUBPPROP_SAMP	89	Subplot

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	503-808-3077
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)	Number	
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	

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 zero if subdivisioning 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. A subpanel is used for spatial 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.

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 (28)	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	TABLENM	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	1.6.1
9	MEASMON	NUMBER (2)	Month (MM)	A	1.6.2
10	MEASDAY	NUMBER (2)	Day (DD)	A	1.6.3
11	REMPER	NUMBER (3,1)	Years	A	
12	KINDCD	NUMBER (2)	Coded	A	1.4
13	DESIGNCD	NUMBER (4)	Coded	A	
14	RDCD	NUMBER (2)	Coded	F	1.8
15	RDDISTCD	NUMBER (2)	Coded	F	1.9
16	RDUSECD	NUMBER (2)	Coded	F	1.10
17	PUBUSECD	NUMBER (2)	Coded	F	1.11
18	REUSECD1	NUMBER (2)	Coded	F	1.12
19	REUSECD2	NUMBER (2)	Coded	F	1.13
20	REUSECD3	NUMBER (2)	Coded	F	1.14
21	WATERCD	NUMBER (2)	Coded	F	1.15
22	LAT	NUMBER (8,6)	Decimal degree	A	1.18.6
23	LON	NUMBER (9,6)	Decimal degree	A	1.18.7
24	ELEV	NUMBER (5)	Feet	F	1.18.14
25	EXPCURR	NUMBER (13,4)	Acres	A	
26	EXPVOL	NUMBER (13,4)	Acres	A	
27	EXPGROW	NUMBER (13,4)	Acres	A	
28	GROWCD	NUMBER (2)	Coded	A	
29	EXPMORT	NUMBER (13,4)	Acres	A	
30	MORTCD	NUMBER (2)	Coded	A	
31	EXPREMV	NUMBER (13,4)	Acres	A	
32	EXPCHNG	NUMBER (13,4)	Acres	A	
33	P2PANEL	NUMBER (2)	Number	A	
34	P3PANEL	NUMBER (2)	Number	A	

35	ECOSUBCD	VARCHAR2 (6)	Name		A	
36	CONGCD	NUMBER (4)	Number		A	
37	MANUAL	NUMBER (3,1)	Number		A	1.5
38	CN	VARCHAR2 (34)	Character	PK	A	
39	SRV_CN	VARCHAR2 (34)	Character	FK	A	
40	CTY_CN	VARCHAR2 (34)	Character	FK	A	
41	SUBPANEL	NUMBER (2)	Number		A	
42	RSCD_EVALID_EXPCURR	NUMBER (8)	Cross-reference number		A	
43	RSCD_EVALID_EXPVOL	NUMBER (8)	Cross-reference number		A	
44	RSCD_EVALID_EXPGROW	NUMBER (8)	Cross-reference number		A	
45	RSCD_EVALID_EXPMORT	NUMBER (8)	Cross-reference number		A	
46	RSCD_EVALID_EXPREMV	NUMBER (8)	Cross-reference number		A	
47	RSCD_EVALID_EXPCHNG	NUMBER (8)	Cross-reference number		A	
48	RSCD_EVALID_EXPALL	NUMBER (8)	Cross-reference number		A	
49	EXPALL	NUMBER (13,4)	Number		A	
50	LASTCYCLEMEAS	NUMBER (2)	Number		A	
51	LASTSUBCYCLEMEAS	NUMBER (2)	Number		A	
52	KINDCD_NC (NCRS)	NUMBER (2)	Code		A	
53	QA_STATUS	NUMBER (1)	Code	X	A	1.16
54	CREW_TYPE	NUMBER (1)	Code		A	1.17
55	MANUAL_DB	NUMBER (3,1)	Number		A	1.5
56	CREATED_BY	VARCHAR2 (30)	Character		A	
57	CREATED_DATE	DATE	DD-MON-YYYY		A	
58	CREATED_IN_INSTANCE	NUMBER (6)	Number		A	
59	MODIFIED_BY	VARCHAR2 (30)	Character		A	
60	MODIFIED_DATE	DATE	DD-MON-YYYY		A	
61	MODIFIED_IN_INSTANCE	NUMBER (6)	Number		A	
62	NOTES	VARCHAR2(2000)	Character		A	1.19
63	P3HEX	NUMBER (7)	Code		A	1.20
64	P3PLOT	NUMBER (1)	Number		A	1.21
65	MICROPLOT_LOC	VARCHAR2(12)	Description		A	
66	P2HEX	NUMBER (8)	Code		A	

¹ A = all plots

F = all forested plots (where at least one condition is COND.LANDCLCD = 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 location. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot. On the base grid of plots, a single phase 2 plot is associated with a phase 2 hex.
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. Remeasurement period is based on the number of growing seasons between measurements. 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. Indicates 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
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. Indicates 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)
Code	Description
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. RDCD Trails or roads code. The type of trail or road that is closest to the plot and within 1 mile of plot center. If two or more roads are the same distance away, the higher quality one is recorded. New in 1999.

Code	Description
0	None within 1 mile
1	Paved road or highway
2	Improved gravel road
3	Improved dirt road

- 4 Unimproved dirt or four-wheel drive road
- 5 Human access trail primarily for recreational use

15. 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 1999.

- | 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 |

16. RDUSECD Road access (road use restrictions) code. The kind of access restrictions placed on roads used to travel to the plot starting point. New in 1999.

- | Code | Description |
|------|--|
| 0 | None |
| 1 | Road blocked by locked gate or cable across road |
| 2 | Road blocked by a human-made obstruction across road (ditch, mound, etc.) |
| 3 | Road blocked by natural occurrences (trees blown over onto road, road or bridge washed out) |
| 4 | Posted no motorized vehicle signs; road present, but restricted area such as Wilderness or National Park where vehicles are not allowed. |
| 9 | Other – specified in plot-level notes. |

17. PUBUSECD Public use restrictions code. Restrictions posted near or on the plot that limits use of the area containing the plot. New in 1999.

- | Code | Description |
|------|--|
| 0 | None – no public use restrictions |
| 1 | Keep out / no trespassing |
| 2 | No hunting or fishing |
| 3 | No dumping |
| 9 | Other – specified in plot-level notes. |

18. REUSECD1 Recreation use code 1. Primary recreation use within the accessible forest land portion of any of the four subplots, based on evidence such as campfire rings, compacted areas (from tents), hiking trails, bullet or shotgun casings, and tree stands. Recreational use that has had the most

significant impact on the plot area is recorded. For example, in general, numerous four-wheel drive or ATV trails would be coded before camping, camping before hiking, and hiking before fishing. The coding system provided is in order of significance. Physical recreation evidence must be present to code 1-9. Dumping of trash is ignored when no evidence of recreation is present. New in 1999.

Code	Description
0	No evidence of recreation use
1	Motor vehicle (four wheel drive, ATV, motorcycle, snowmobile)
2	Horse riding, dog team trails, ski trails
3	Camping
4	Hiking
5	Hunting/shooting
6	Fishing
7	Boating – physical evidence such as launch sites or docks
9	Other – recreation use where evidence is present, such as human litter, but purpose is not clear or does not fit into above categories.

- 19. REUSECD2 Recreation use code 2. The second most significant recreational use. Same codes as REUSECD1 are used.
- 20. REUSECD3 Recreation use code 3. The third most significant recreational use. Same codes as REUSECD1 are used.
- 21. 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 1999.

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.

- 22. 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.

- 23. 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.
- 24. ELEV Elevation. The distance the plot is located above sea level, recorded in feet (NAD 83 datum). Negative values indicate distance below sea level.
- 25. EXPCURR Current area expansion factor. 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. This expansion factor is calculated with data found in the EUS table; the link to that table is through the variable RSCD_EVALID_EXPCURR. The sum of EXPCURR over all 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.
- 26. EXPVOL Current volume expansion factor. 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. This expansion factor is calculated with data found in the EUS table; the link to that table is through the variable RSCD_EVALID_EXPVOL. For example, growing-stock volume would be "expanded" over the appropriate acreage by multiplying EXPVOL times the product of VOLCFNET (in the TREE table) and the trees per acre item (TPACURR in the TREE table). See Chapter 4 for calculation algorithms.
- 27. EXPGROW Growth expansion factor. The number of acres the sample plot represents for estimating growth. This expansion factor is calculated with data found in the EUS table; the link to that table is through the variable RSCD_EVALID_EXPGROW. Growth will be "expanded" over the appropriate acreage by multiplying EXPGROW times the product of the growth item (GROWCFGS, GROWBFSL, or GROWCFAL in the TREE table) and the growth trees per acre item (TPAGROW 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.

28. GROWCD Type of annual volume growth code. Indicates 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

29. EXPMORT Mortality expansion factor. The number of acres the sample plot represents for estimating mortality. This expansion factor is calculated with data found in the EUS table; the link to that table is through the variable RSCD_EVALID_EXPMORT. Mortality will be "expanded" over the appropriate acreage by multiplying EXPMORT times the product of the mortality item (MORTCFGS, MORTBFSL, or MORTCFAL in the TREE table) and the mortality trees per acre item (TPAMORT 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.

30. MORTCD Type of annual mortality volume code. Indicates 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

31. EXPREMV Removals expansion factor. The number of acres the sample plot represents for estimating removals. This expansion factor is calculated with data found in the EUS table; the link to that table is through the variable RSCD_EVALID_EXPREMV. Removals will be "expanded" over the appropriate acreage by multiplying EXPREMV times the product of the removal item (REMVCFGS, REMVBFSL, or REMVCFAL in the TREE table) and the removal trees per acre item (TPAREMV 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.

- 32. EXPCHNG Periodic change expansion factor. The number of acres that the sample plot represents for estimating periodic area change.
- 33. 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.
- 34. P3PANEL Phase 3 panel number. Forest Health Monitoring 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. Forest Health Monitoring was designed to monitor, assess, and report on long-term status, changes, and trends in forest ecosystem health on a regional and national basis. Before 2000, FHM and FIA were distinct programs and the plots were not necessarily co-located. FIA and FHM field plots are co-located for inventories begun after 1999. The FHM suite of data are now collected on a subset of FIA plots and are referred to as phase 3 data. The value for P3PANEL ranges from 1 to 5 for those plots where phase 3 data were collected.
- 35. 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.
- 36. 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.

37. MANUAL Field guide (manual) version number. Version of the National Field Guide used to describe procedures for collecting data on the plot. New in 1999. 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.
38. CN Sequence number. A unique sequence number used to identify a plot record.
39. SRV_CN Survey sequence number. Foreign key linking the plot record to the survey record.
40. CTY_CN County sequence number. Foreign key linking the plot record to the county record.
41. SUBPANEL Subpanel assignment for plot for those regions using subpaneling. Null if subpaneling is not used.

42. 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.

43. 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.

44. 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.

45. 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.

46. 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.

47. 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.

48. 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.

49. EXPALL

Current area expansion factor. The number of acres the sample plot represents for making current estimates of area, where the sample excludes outside-of-the-population plots, but includes denied-access and hazardous 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.

50. LASTCYCLEMEAS

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

51. LASTSUBCYCLEMEAS

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

52. 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.

53. 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)

54. 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)

55. MANUAL_DB Version of the National Field Guide used to describe procedures for collecting data on the plot. New in 1999. The data in the database have been standardized to this version. The current version of the Field Guide is Version 1.7. See the Literature Cited Section for more details about this document.

56. CREATED_BY The user who created the record.

57. CREATED_DATE

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

58. CREATED_IN_INSTANCE

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

59. MODIFIED_BY

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

60. 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.

61. 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.

62. NOTES

Plot-level notes. An optional item where notes about the plot may be stored.

63. P3HEX P3 hexagon number. Unique number indicating the phase 3 hexagon to which this plot is assigned, if it is a phase 3 plot. A hexagonal grid was formed for the purpose of tessellating the FIA Phase 3 inventory sample. Each hexagon in the phase 3 base grid has an area of approximately 96,000 acres and contains one phase 3 inventory plot.
64. P3PLOT P3 plot number. The sequence number assigned to the phase 3 plot that is associated with the P3HEX. The sequence number is 1 for the initial phase 3 plot, but if that plot is replaced, the sequence number for the newly assigned phase 3 plot is incremented by 1.
65. 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 1.7 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.
66. P2HEX Phase 2 hexagon number. Unique number indicating the phase 2 hexagon to which this plot is assigned. A hexagonal grid was formed for the purpose of tessellating the FIA phase 2 inventory sample. Each hexagon in the phase 2 base grid has an area of approximately 5900 acres and contains one phase 2 inventory plot.

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	4.1
9	SUBPCOND	NUMBER (1)	Number		4.2
10	MICRCOND	NUMBER (1)	Number		4.3
11	SLOPE	NUMBER (3)	Percent		4.4
12	ASPECT	NUMBER (3)	Degrees		4.5
13	WATERDEP	NUMBER (2,1)	Feet		4.6
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		4.7
24	CONDLIST	NUMBER (4)	Number		4.8

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 location. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot. On the base grid of plots, a single phase 2 plot is associated with a phase 2 hex.
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 1999.
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 |
|------|---|
| 0 | No accessible forest land condition class sampled |
| 1 | At least one accessible forest land condition class sampled |
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.

Condition Table (Oracle table name is COND)

Column Name	Oracle data type	Value or unit of measure	Key Mapped data design item recorded on1	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 CONDID	NUMBER (1)	Number	X A	A	2.2.1
9 CONDPROP	NUMBER (5,4)	Proportion	A	A	
10 LANDCLCD	NUMBER (1)	Coded	A	A	2.2.2
11 RESERVCD	NUMBER (2)	Coded	F	F	2.4.1
12 OWNCD	NUMBER (2)	Coded	F	F	2.4.7
13 OWNGRPCD	NUMBER (2)	Coded	F	F	2.4.2
14 FORINDCD	NUMBER (2)	Coded	F	F	2.4.8
15 ADFORCD	NUMBER (4)	Coded	P	P	
16 FORTYPCD	NUMBER (3)	Coded	F	F	
17 FLDTYPCD	NUMBER (3)	Coded	F	F	2.4.3
18 MAPDEN	NUMBER (1)	Coded	F		2.4.6
19 STDAGE	NUMBER (4)	Years	F	O	2.4.10
20 STDSZCD	NUMBER (2)	Coded	F	T	
21 FLDSZCD	NUMBER (2)	Coded	F	T	2.4.4
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	2.4.5
27 STDORGSP	NUMBER (3)	Coded	F		2.4.9
28 SLOPE	NUMBER (3)	Percent	F	F	
29 ASPECT	NUMBER (3)	Degrees	F	F	
30 PHYSCLCD	NUMBER (2)	Coded	F		2.4.23
31 GSSTKCD	NUMBER (2)	Coded	F	T	
32 ALSTKCD	NUMBER (2)	Coded	F	O	
33 TRTOPCD	NUMBER (2)	Coded	N	N	
34 DSTRBCD1	NUMBER (2)	Coded	F		2.4.11
35 DSTRBYR1	NUMBER (4)	Year	F		2.4.12

36	DSTRBCD2	NUMBER (2)	Coded	F		2.4.13
37	DSTRBYR2	NUMBER (4)	Year	F		2.4.14
38	DSTRBCD3	NUMBER (2)	Coded	F		2.4.15
39	DSTRBYR3	NUMBER (4)	Year	F		2.4.16
40	TRTCD1	NUMBER (2)	Coded	F		2.4.17
41	TRTYR1	NUMBER (4)	Year	F		2.4.18
42	TRTCD2	NUMBER (2)	Coded	F		2.4.19
43	TRTYR2	NUMBER (4)	Year	F		2.4.20
44	TRTCD3	NUMBER (2)	Coded	F		2.4.21
45	TRTYR3	NUMBER (4)	Year	F		2.4.22
46	PASTNFCD	NUMBER (2)	Coded	F		2.4.24
47	PRESNFCD	NUMBER (2)	Coded	NF		2.4.25
48	NFYEAR	NUMBER (4)	Year	NF		2.4.26
49	BALIVE	NUMBER (9,4)	Square feet	F		
50	MICRPROP	NUMBER (5,4)	Proportion	A		
51	DAMINDEX	NUMBER (5,2)	Number	F		
52	CN	VARCHAR2 (34)	Character	PK A	A	A
53	PLT_CN	VARCHAR2 (34)	Character	FK A	A	A
54	FLDAGE	NUMBER (4)	Number	F		
55	ALSTK	NUMBER (7,4)	Percent	F		
56	GSSTK	NUMBER (7,4)	Percent	F		
57	PREVCOND	NUMBER (5)	Number	F		
58	CONDPROPUN (SRS)	NUMBER (5,4)	Proportion	A		
59	FORTYPCDCALC	VARCHAR2 (3)	Character	F		
60	HABTYPCD1 (RMRS)	NUMBER (7)	Character	F		
61	HABTYPCD2 (RMRS)	NUMBER (7)	Character	F		
62	MIXEDCONFCD (PNWRS)	VARCHAR2 (1)	Character	F		
63	MACRPROP	NUMBER (5,4)	Proportion	A		
64	CREATED_BY	VARCHAR2 (30)	Character	A	A	A
65	CREATED_DATE	DATE	DD-MON-YYYY	A	A	A
66	CREATED_IN_INSTANCE	NUMBER (6)	Number	A	A	A
67	MODIFIED_BY	VARCHAR2 (30)	Character	A	A	A
68	MODIFIED_DATE	DATE	DD-MON-YYYY	A	A	A
69	MODIFIED_IN_INSTANCE	NUMBER (6)	Number	A	A	A
70	VOL_LOC_GRP	VARCHAR2 (200)	Character	F		
71	SUBPPROP	NUMBER (5,4)	Proportion	A		
72	PROP_BASIS	VARCHAR2(12)	Character	A		
73	CONDPROP_ALL	NUMBER (5,4)	Proportion	P		
74	CONDPROP_CHNG	NUMBER (5,4)	Proportion	S		

75	CONDPROP_CURR	NUMBER (5,4)	Proportion	S	
76	MACRPROP_ALL	NUMBER (5,4)	Proportion	P	
77	MACRPROP_CHNG	NUMBER (5,4)	Proportion	S	
78	MACRPROP_CURR	NUMBER (5,4)	Proportion	S	
79	MICRPROP_ALL	NUMBER (5,4)	Proportion	P	
80	MICRPROP_CHNG	NUMBER (5,4)	Proportion	S	
81	MICRPROP_CURR	NUMBER (5,4)	Proportion	S	
82	SITECLCDEST	NUMBER (2)	Coded	F	
83	SITETREE_TREE	NUMBER (4)	Number	F	
84	SITECL_METHOD	NUMBER (2)	Number	F	
85	COND_STATUS_CD	NUMBER (1)	Number	A	2.2.2
86	CONDPROP_SAMP	NUMBER (5,4)	Proportion	S	
87	MICRPROP_SAMP	NUMBER (5,4)	Proportion	S	
88	MACRPROP_SAMP	NUMBER (5,4)	Proportion	S	
89	SUBPPROP_SAMP	NUMBER (5,4)	Proportion	S	
90	SUBPPROP_ALL	NUMBER (5,4)	Proportion	P	
91	SUBPPROP_CHNG	NUMBER (5,4)	Proportion	S	
92	SUBPPROP_CURR	NUMBER (5,4)	Proportion	S	

- 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 location. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot. On the base grid of plots, a single phase 2 plot is associated with a phase 2 hex.
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. 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 Condition class status code, formerly known as “land class code”. Indicates the basic land cover. See also COND_STATUS_CD. 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 1.7". 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 Denied access: Any area within the sampled area on a plot on which access is denied by the legal owner of the land the plot falls on, or by an owner of the only reasonable route to the plot. 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.
- 6 Hazardous: 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 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.
- 7 Not in the sample: Any area within the sampled area on a plot that is not within the boundaries of the sample population of interest.

Examples of areas out of the sample would be plots or portions of plots falling in Mexico or Canada. A condition outside the sample area remains in the potential population of interest and is re-examined at the next occasion to determine if it becomes part of the population of interest. There are no minimum size or width requirements for a condition class delineated as out of the sample.

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.

Code	Description
0	Not reserved
1	Reserved

12. OWNCD Owner class code. Indicates 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. Indicates 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 1999.

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 inventories begun in 1999, STDAGE is equal to the FLDAGE, which is based on the age of two or three dominant or codominant trees from the overstory. Each tree is weighted to give trees that best represent the stand more weight in the calculation of stand age. Refer to “Forest inventory and analysis national core field guide, volume 1: field data collection procedures for phase 2 plots, version 1.7”, which is cited in the Literature Cited Section. In periodic inventories, stand age is the average total age, to the nearest year, of the trees (plurality of all live trees not overtopped) in the predominant stand-size class of the condition, determined using local procedures. Any inventory dated 1999 or later will contain stand ages recorded 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. The value recorded is the midpoint of the age class. Age is difficult to measure and therefore stand age may have large measurement errors. Stand age for nonstocked stands is recorded as 000.

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

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 chaparral, or 2) for forest types where stocking standards are not available, less than 5 percent crown cover of trees of any size
- 1 >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
- 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 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
- 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 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
- 4 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
- 5 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
- 6 Cover trees (non-talled): 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 1999; 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 mile limit. Excludes swamps, sloughs, and bogs.
25	Broad Floodplains/Bottomlands - Floodplains and bottomlands less than 1/4 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 1/4 mile limit.

Excludes swamps, sloughs, and bogs with year-round water problems within the ¼ mile limit.

- 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. Indicates 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. Indicates 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. Indicates 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 new code set was introduced in version 1.5 of the Field Guide and continued through the current version. Data collected prior to V1.5 have been converted to the new codes. New in 1999.

Code	Description
00	No visible disturbance
10	Insect damage
20	Disease damage
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
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 Year in which Disturbance 1 is estimated to have occurred. New in 1999. If the disturbance occurs continuously over a period of time, the value 9999 is used.

36. DSTRBCD2 Disturbance 2 code. The second disturbance code, if the stand has experienced more than one disturbance. See DSTRBCD1 for more information.

37. DSTRBYR2 The year in which Disturbance 2 occurred. See DSTRBYR1 for more information.

38. DSTRBCD3 Disturbance 3 code. The third disturbance code, if the stand has experienced more than two disturbances. See DSTRBCD1 for more information.
39. DSTRBYR3 The year in which Disturbance 3 occurred. See DSTRBYR1 for more information.
40. TRTCD1 Stand Treatment 1 code. Indicates 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 1999.
- | 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 1999.
42. TRTCD2 Stand treatment 2. Indicates 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 1999.
43. TRTYR2 Treatment year 2. Year in which Stand Treatment 2 is estimated to have occurred. New in 1999.
44. TRTCD3 Stand Treatment 3 code. Indicates 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 1999.
45. TRTYR3 Treatment year 3. Year in which Stand Treatment 3 is estimated to have occurred. New in 1999.

46. PASTNFCD Past nonforest/inaccessible land use code. Used when conditions were classified as nonforest or inaccessible during the previous inventory but are classified as accessible forest land during current inventory. Indicates the kind of land use occurring at the previous inventory. New in 1999.

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. PRESNFCD Present nonforest land use code. Indicates the kind of land use occurring now for conditions that were previously classified as forest but are now classified as nonforest. Uses the same codes as PASTNFCD. New in 1999.

48. NFYEAR Nonforest year. An estimate of the year that a previously accessible forest land condition was converted to a nonforest condition. New in 1999.

49. BALIVE Basal area of all live trees, summed for the condition. Basal area in square-feet of all live trees over 1 inch DBH/DRC.

50. 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.

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

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

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

54. FLDAGE Stand age. The stand age as assigned by the field crew. Based on the age of two or three dominant or codominant trees from the overstory. Each tree is weighted to give trees that best represent the stand more weight in the calculation of stand age. Stand age for nonstocked stands is recorded as 000. Refer to “Forest inventory and analysis national core field guide, volume 1: field data collection procedures for phase 2 plots, version 1.7”, which is cited in the Literature Cited Section.
55. ALSTK All-live-tree stocking percent. The all-live-tree stocking percent on the condition, which is assigned a class code, found in ALSTKCD.
56. GSSTK Growing-stock stocking percent. The growing-stock stocking percent on the condition, which is assigned a class code, found in GSSTKCD.
57. PREVCOND Previous condition. Identifies the condition within the plot on which this condition occurred at the previous inventory.
58. 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.
59. FORTYPCDCALC
Forest type code (derived by algorithm). This variable is similar to FORTYPCD except that it always retains the calculated variable. Refer to Appendix D for a detailed list of forest type codes.
60. HABTYPCD1 Primary condition habitat type. **Specific to Rocky Mountain Research Station.** All other Stations record null for this variable. Contact Rocky Mountain Research Station for codes and more information. A 6 digit code that describes the predominant plant association of the site. The first 2 digits describe the climax overstory species, the species that is generally found in the reproduction, the third and fourth digits are the series, and the last two digits describe the understory vegetation.
61. HABTYPCD2 Secondary condition habitat type. See HABTYPCD1.
62. 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.

63. **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.
64. **CREATED_BY** The user who created the record.
65. **CREATED_DATE**
The date the record was created. Date will be in the form DD-MON-YYYY.
66. **CREATED_IN_INSTANCE**
The database instance in which the record was created. This uniquely identifies which computer system was used to create the record.
67. **MODIFIED_BY**
The user who modified the record. This field will be null if the data have not been modified since initial creation.
68. **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.

69. 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.

70. 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.

71. 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.

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

73. 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.

74. 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 CORRECTLY POPULATED AT THIS TIME.**

75. 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.

76. 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.

77. 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 CORRECTLY POPULATED AT THIS TIME.**

78. 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.

79. 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.

80. 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 CORRECTLY POPULATED AT THIS TIME.**

81. 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.

82. 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

83. SITETREE_TREE

Site tree tree number. Selected SITETREE tree number.

84. SITECL_METHOD

Site class method code. A code identifying the method for determining the site class code.

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 estimated either in the field or office.
4	Site index estimated by the height intercept method during this inventory.
5	Site index estimated using multiple site trees.

85. COND_STATUS_CD

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

86. CONDPROP_SAMP

Condition proportion for the measured portion of the plot. The proportion is calculated at the plot level by excluding any outside-of-the-population, denied-access, or hazardous conditions from the plot and adjusting the proportions to sum to 1.0 over all measured conditions on the plot. This variable accommodates customers who want to use the plot as a stand-alone entity, independent of the stratum in which the plot falls. A null indicates an outside-of-the-population, denied-access, or hazardous condition. The value in column PROP_BASIS determines if CONDPROP_SAMP is based on the subplot or the macroplot. **THIS VARIABLE IS NOT POPULATED AT THIS TIME.**

87. MICRPROP_SAMP

Condition proportion for the measured portion of the microplots. The proportion is calculated at the plot level by excluding any outside-of-the-population, denied-access, or hazardous conditions from the plot and adjusting the proportions to sum to 1.0 over all measured conditions on the microplots. This variable accommodates customers who want to use the plot as a stand-alone entity, independent of the stratum in which the plot falls. A null indicates an outside-of-the-population, denied-access, or hazardous condition. **THIS VARIABLE IS NOT CORRECTLY POPULATED AT THIS TIME.**

88. MACRPROP_SAMP

Condition proportion for the measured portion of the macroplots. The proportion is calculated at the plot level by excluding any outside-of-the-population, denied-access, or hazardous conditions from the plot and adjusting the proportions to sum to 1.0 over all measured conditions on the macroplots. This variable accommodates customers who want to use the plot as a stand-alone entity, independent of the stratum in which the plot falls. A null indicates an outside-of-the-population, denied-access, or hazardous condition. If PROP_BASIS equals "MACR", this will equal CONDPROP_SAMP. **THIS VARIABLE IS NOT POPULATED AT THIS TIME.**

89. SUBPPROP_SAMP

Condition proportion for the measured portion of the subplots. The proportion is calculated at the plot level by excluding any outside-of-the-population, denied-access, or hazardous conditions from the plot and adjusting the proportions to sum to 1.0 over all measured conditions on the subplots. This variable accommodates customers who want to use the plot as a stand-alone entity, independent of the stratum in which the plot falls. A null indicates a denied-access, hazardous, or outside-of-the-population condition. If PROP_BASIS equals "SUBP", this will equal CONDPROP_SAMP. **THIS VARIABLE IS NOT POPULATED AT THIS TIME.**

90. SUBPPROP_ALL

Subplot condition proportion (total area basis). The proportion, based on the subplot 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 value indicates an outside-of-the-population condition. If PROP_BASIS equals "SUBP", this will equal CONDPROP_ALL. **THIS VARIABLE IS NOT POPULATED AT THIS TIME.**

91. SUBPPROP_CHNG

Subplot 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 "SUBP", this will equal CONDPROP_CHNG. **THIS VARIABLE IS NOT POPULATED AT THIS TIME.**

92. SUBPPROP_CURR

Subplot condition proportion (current estimation basis). The proportion, based on the subplot 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 "SUBP", this will equal CONDPROP_CURR. **THIS VARIABLE IS NOT POPULATED AT THIS TIME.**

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	CONDID	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		5.6
16	LEANCD	NUMBER (2)	Coded		5.7
17	UTILCD	NUMBER (1)	Coded		5.22
18	SPCD	NUMBER (3)	Coded		5.8
19	SPGRPCD	NUMBER (2)	Coded		
20	DIA	NUMBER (5,2)	Inches		5.9.2, 5.9.4
21	DIAHTCD	NUMBER (1)	Coded		
22	HT	NUMBER (3)	Feet		5.12
23	HTCD	NUMBER (2)	Coded		5.14
24	ACTUALHT	NUMBER (3)	Feet		5.13
25	TREECLCD	NUMBER (2)	Coded		
26	CR	NUMBER (3)	Percent		5.17
27	CCLCD	NUMBER (2)	Coded		5.15
28	TREEGRCD (NCRS,NERS,SRS)	NUMBER (2)	Coded		
29	AGENTCD	NUMBER (2)	Coded		5.19
30	CULL	NUMBER (3)	Percent		5.11
31	DAMLOC1	NUMBER (2)	Coded		5.18.1
32	DAMTYP1	NUMBER (2)	Coded		5.18.2
33	DAMSEV1	NUMBER (2)	Coded		5.18.3
34	DAMLOC2	NUMBER (2)	Coded		5.18.4
35	DAMTYP2	NUMBER (2)	Coded		5.18.5

36	DAMSEV2	NUMBER (2)	Coded	5.18.6
37	DECAYCD	NUMBER (2)	Coded	5.21
38	STOCKING	NUMBER (7,4)	Percent	
39	WDLDSTEM	NUMBER (3)	Number	
40	TPACURR	NUMBER (11,6)	Trees/acre	
41	TPAMORT	NUMBER (11,6)	Trees/acre/yr.	
42	TPAREMV	NUMBER (11,6)	Trees/acre/yr.	
43	TPAGROW	NUMBER (11,6)	Trees/acre	
44	VOLCFNET	NUMBER (11,6)	Cu. ft./tree	
45	VOLCFGRS	NUMBER (11,6)	Cu. ft./tree	
46	VOLCSNET	NUMBER (11,6)	Cu. ft./tree	
47	VOLCSGRS	NUMBER (11,6)	Cu. ft./tree	
48	VOLBFNET	NUMBER (12,6)	Bd. ft./tree	
49	VOLBFGRS	NUMBER (12,6)	Bd. ft./tree	
50	VOLCFSND	NUMBER (11,6)	Cu. ft./tree	
51	GROWCFGS	NUMBER (11,6)	Cu. ft./year/tree	
52	GROWBFSL	NUMBER (11,6)	Bd. ft./year/tree	
53	GROWCFAL	NUMBER (11,6)	Cu. ft./year/tree	
54	MORTCFGS	NUMBER (11,6)	Cu. ft./tree	
55	MORTBFSL	NUMBER (11,6)	Bd. ft./tree	
56	MORTCFAL	NUMBER (11,6)	Cu. ft./tree	
57	REMVCFGS	NUMBER (11,6)	Cu. ft./tree	
58	REMVBFSL	NUMBER (11,6)	Bd. ft./tree	
59	REMVCFAL	NUMBER (11,6)	Cu. ft./tree	
60	DRYBIOT	NUMBER (13,6)	Ovendry lbs./tree	
61	DRYBIOM	NUMBER (13,6)	Ovendry lbs./tree	
62	DIACHECK	NUMBER (2)	Coded	5.10
63	MORTYR	NUMBER (4)	Year	5.20
64	SALVCD	NUMBER (2)	Coded	
65	UNCRCD	NUMBER (3)	Percent	5.16
66	CPOSCD	NUMBER (2)	Coded	
67	CLIGHTCD	NUMBER (2)	Coded	
68	CVIGORCD	NUMBER (2)	Coded	
69	CDENCD	NUMBER (3)	Coded	
70	CDIEBKCD	NUMBER (3)	Coded	
71	TRANSCD	NUMBER (3)	Coded	
72	CN	VARCHAR2 (34)	Character	PK
73	PLT_CN	VARCHAR2 (34)	Character	FK
74	TREEHISTCD (NCRS,NERS,SRS)	NUMBER (2)	Coded	

75	DIACALC (NCRS,SRS)	NUMBER (5,2)	Inches	
76	BHAGE (PNWRS,RMRS)	NUMBER (4)	Years	
77	TOTAGE (PNWRS,RMRS)	NUMBER (4)	Years	
78	CULLDEAD (RMRS)	NUMBER (3)	Percent	
79	CULLFORM (RMRS)	NUMBER (3)	Percent	
80	CULLMSTOP(RMRS)	NUMBER (3)	Percent	
81	CULLBF (NERS)	NUMBER (3)	Percent	
82	CULLCF (NERS)	NUMBER (3)	Percent	
83	BFSND (NERS)	NUMBER (3)	Percent	
84	CFSND (NERS)	NUMBER (3)	Percent	
85	SAWHT (NERS)	NUMBER (2)	Feet	
86	BOLEHT (NERS)	NUMBER (2)	Feet	
87	FORMCL (PNWRS)	NUMBER (1)	Coded	
88	HTCALC (SRS)	NUMBER (3)	Feet	
89	HRDWD_CLUMP_CD (PNWRS)	NUMBER (1)	Coded	
90	SITREE (NCRS)	NUMBER (3)	Feet	
91	CREATED_BY	VARCHAR2 (30)	Character	
92	CREATED_DATE	DATE	DD-MON-YYYY	
93	CREATED_IN_INSTANCE	NUMBER (6)	Number	
94	MODIFIED_BY	VARCHAR2 (30)	Character	
95	MODIFIED_DATE	DATE	DD-MON-YYYY	
96	MODIFIED_IN_INSTANCE	NUMBER (6)	Number	
97	NOTES	VARCHAR2 (2000)	Text	5.26
98	MORTCD	NUMBER (1)	Coded	5.6.2
99	HTDMP	NUMBER (3,1)	Feet	5.23
100	ROUGHCU	NUMBER (2)	Percent	5.24
101	MIST_CL_CD	NUMBER (1)	Coded	5.25
102	TPA	NUMBER (11,6)	Trees/acre	
103	CULL_FLD	NUMBER (2)	Percent	5.11
104	RECONCILECD	NUMBER (1)	Coded	5.6.1
105	PREVDIA	NUMBER (5,2)	Inches	5.9.1, 5.9.3
106	FGROWCFGS	NUMBER (11,6)	Cu. ft./year/tree	
107	FGROWBFSL	NUMBER (11,6)	Bd. ft./year/tree	
108	FGROWCFAL	NUMBER (11,6)	Cu. ft./year/tree	
109	FMORTCFGS	NUMBER (11,6)	Cu. ft./tree	
110	FMORTBFSL	NUMBER (11,6)	Bd. ft./tree	
111	FMORTCFAL	NUMBER (11,6)	Cu. ft./tree	
112	FREMVCFGS	NUMBER (11,6)	Cu. ft./tree	
113	FREMVBFSL	NUMBER (11,6)	Bd. ft./tree	

114	FREMVCFAL	NUMBER (11,6)	Cu. ft./tree
115	TPACURR_SAMP	NUMBER (11,6)	Trees/acre
116	TPAGROW_SAMP	NUMBER (11,6)	Trees/acre
117	TPAMORT_SAMP	NUMBER (11,6)	Trees/acre
118	TPAREMV_SAMP	NUMBER (11,6)	Trees/acre

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 location. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot. On the base grid of plots, a single phase 2 plot is associated with a phase 2 hex.
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 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	Removal - Cut or killed as a result of harvesting or land clearing
4	Missing - Tallied in previous inventory but now is missing due to natural causes

- 16. LEANCD Lean code. Describes whether a tree is standing or down. New in 1999.

Code	Description
0	Standing (< 45 degrees of lean)
1	Down (at least 45 degrees of lean)

17. UTILCD Utilization class code. Identifies trees that have been cut and removed from the site.
- | Code | Description |
|------|--------------|
| 0 | Not utilized |
| 1 | Utilized |
18. SPCD Species code. An FIA tree species code. Refer to Appendix F for codes.
19. 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.
20. 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.
21. DIAHTCD Height of diameter measurement code. The height above ground at which the diameter was obtained on the sample tree.
- | Code | Description |
|------|---------------------|
| 1 | Breast height (DBH) |
| 2 | Root collar (DRC) |
| 3 | Stump |
22. 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
23. HTCD Length method code. Indicates 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 |

24. 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.
25. 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.

26. 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.

27. 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.

28. 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).

29. 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
- 80 Human-caused (cultural, logging, accidental, etc.)
- 90 Physical (e.g., hit by falling tree)

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

31. DAMLOC1 Damage location 1 code. Indicates where on the tree damage (meeting or exceeding a severity threshold, as defined in the field guide) is present. New in 1999. (CORE prior to V1.7, CORE OPTIONAL in V1.7)

- | 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 |

32. DAMTYP1 Damage type 1 code. Indicates the kind of damage (meeting or exceeding a severity threshold, as defined in the field guide) present. New in 1999.

- | 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

33. DAMSEV1 Damage severity 1 code. Indicates how much of the tree is affected. Legal severity codes vary by damage type and damage location and must exceed a threshold value, as defined in the field guide. New in 1999.

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

34. DAMLOC2 Damage location 2 code. Indicates where on the tree secondary damage (meeting or exceeding a severity threshold, as defined in the field guide) is present. Use same codes as DAMLOC1. New in 1999.

35. DAMTYP2 Damage type 2 code. Indicates 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 1999.

36. DAMSEV2 Damage severity 2 code. Indicates how much of the tree is affected by the secondary damage. Legal 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 1999.

37. DECAYCD Decay class code. Indicates the stage of decay in a standing dead tree. New in 1999.

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.
38. STOCKING Tree stocking. The stocking value assigned to each live tree. 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 COND table.
39. WDLNSTEM 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.
40. 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, volume, and biomass 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. 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.
41. TPAMORT Mortality trees per acre per year (adjusted at the stratum level). Number of trees per acre per year that the tree represents for calculating mortality 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. 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.
42. TPAREMV Removals trees per acre per year (adjusted at the stratum level). Number of trees per acre per year that the tree represents for calculating removals

from 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. 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.

43. TPAGROW Growth trees per acre (adjusted as the stratum level). Number of trees per acre that the tree represents for calculating growth 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. 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.
44. 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).
45. 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).
46. 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.

47. 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.
48. 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.
49. 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.

50. 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).
51. 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 1 and 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.
52. GROWBFSL Net annual merchantable board-foot 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.
53. 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 tree volume free of rotten and missing cull, regardless of tree class.
54. 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 mortality. To obtain estimates of annual per acre mortality, multiply by TPAMORT.
55. MORTBFSL Board-foot volume of a sawtimber size tree on timberland for mortality purposes. 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.

- 56. 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 tree volume free of rotten and missing cull, regardless of tree class.

- 57. 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.

- 58. REMVBFSL Board-foot volume of a sawtimber size tree on timberland for removal purposes. 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.

- 59. 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 tree volume free of rotten and missing cull, regardless of tree class.

- 60. DRYBIOT Total gross biomass oven-dry weight for live trees. 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 for live trees if DIA is 1.0 inch or larger, regardless of TREECLCD; zero otherwise.

- 61. DRYBIOM Merchantable stem biomass oven-dry weight for live trees. 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 for live trees if DIA is 5.0 inches or larger, regardless of TREECLCD; zero otherwise.

- 62. DIACHECK Diameter check code. Indicates the reliability of the diameter measurement. New in 1999.

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.

63. MORTYR Mortality year. The estimated year in which a remeasured tree died or was cut. New in 1999.

64. 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

65. 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 OPTIONAL on phase 2 plots)

66. 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

67. CLIGHTCD Crown light exposure code. The field crew visually divides the crown vertically into four equal sides. In order for a side to qualify for tally, at least 1/3 of the tree length to the live crown top on that side must have live foliage exposed to direct sunlight. The field crew tries to divide the crown in such a way that as many sides as possible receive full light. The field crew counts the number of sides receiving direct light if the sun were directly above the tree. The field crew adds one if the tree receives any direct light from the top. (CORE on phase 3 plots only)

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

68. CVIGORCD Sapling vigor class code. Collected for trees between 1 and 4.9 inches DBH/DRC (CORE on phase 3 plots only)

Code	Description
1	Saplings must have an uncompact live crown ratio of 35 or higher, have less than 5 percent diesback (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.

69. CDENCD Crown density code. Estimates crown condition in relation to a typical tree for the site where it is found. Density also serves as an indicator of expected growth in the near future. Crown density is the amount of crown branches, foliage and reproductive structures that blocks light visibility through the crown. Each tree species has a normal crown that varies with the site, genetics, tree damage, etc. Class code is the percentage of the upper limits of the class. Collected for all live trees over 5 inches dbh. (CORE on phase 3 plots only)

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

70. CDIEBKCD Crown dieback code. Crown dieback estimates reflect the severity of recent stresses on a tree. Crown dieback is recent mortality of branches with fine twigs, which begins at the terminal portion of a branch and proceeds toward the trunk. Dieback should occur from the top of the crown down and from the outside in toward the main stem. Dieback is only considered when it occurs in the upper and outer portions of the tree. When whole branches are dead in the upper crown, without obvious signs

of damage such as breaks or animal injury, assume that the branches died from the terminal portion of the branch. Dead branches in the lower portion of the live crown are assumed to have died from competition and shading. Dead branches in the lower live crown are not considered as part of crown dieback, unless there is continuous dieback from the upper and outer crown down to those branches. Class code is the percentage of the upper limits of the class. Collected for all live trees over 5 inches dbh. (CORE on phase 3 plots only)

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

71. TRANSCD Foliage transparency code. Foliage transparency is the amount of skylight visible through the live, normally foliated portion (where you would expect to see foliage if the tree was not or had not been impacted by a stressing agent during the current evaluation year) of the crown. Different tree species have a normal range of foliage transparency, which may be more or less than that of other species. Class code is the percentage of the upper limits of the class. Collected for all live trees over 5 inches dbh. (CORE on phase 3 plots only)

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

72. CN Sequence number. A unique sequence number used to identify a tree record.

73. PLT_CN Plot sequence number. Foreign key linking the tree record to the plot record.

74. 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.
75. 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.
76. 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.
77. 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.
78. 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.
79. 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.
80. 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.
81. 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.
82. 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.

83. 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).
84. 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).
85. 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" top (9" 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.
86. 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" top, where at least one 4 foot section is present. On broken-off trees, bole length is recorded to the point of the break.
87. 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 in d.b.h/d.r.c. 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.

88. HTCALC Calculated total length. **Specific to Southern Research Station.** All other Stations record null for this variable. Contact Southern Research Station for more information.

89. 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 D.B.H./D.R.C., and for live hardwood seedlings. Values are 0 to 9.

90. 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).
91. CREATED_BY The user who created the record.
92. CREATED_DATE The date the record was created. Date will be in the form DD-MON-YYYY.
93. CREATED_IN_INSTANCE The database instance in which the record was created. This uniquely identifies which computer system was used to create the record.
94. MODIFIED_BY The user who modified the record. This field will be null if the data have not been modified since initial creation.
95. 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.
96. 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.
97. NOTES An optional item where notes about the tree may be stored.

98. 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

99. 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 in DBH/DRC and larger. (CORE OPTIONAL)

100. ROUGHCULL Rough cull. Percentage of sound dead cull, as a percent of the merchantable bole/portion of the tree. (CORE OPTIONAL)

101. MIST_CL_CD Mistletoe class code. A rating of dwarf mistletoe infection. Recorded on all live conifer species except juniper. Using the Hawksworth s-x-class rating system, the live crown is divided into thirds, and each third is rated using the following scale. (CORE OPTIONAL)

Code	Description
0	No visible infection
1	Light infection - <50 percent of the total branches infected.
2	Heavy infection - > 50 percent of the total branches infected.

The three individual ratings are summed to obtain and record a total mistletoe class of 0-6 for the tree. Those classes are:

Code	Description
0	None
1	Light (low)
2	Light (high)
3	Medium (low)
4	Medium (high)
5	Heavy (low)
6	Heavy (high)

102. 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.

103. CULL_FLD Rotten/missing cull. The percent rotten or missing cubic-foot cull for all live tally trees > 5.0 in DBH/DRC (CORE) and all standing dead tally trees > 5.0 in 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-ft 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.

104. RECONCILECD

New tree reconciliation code. Recorded for remeasurement locations only. A code to indicate the reason a new tree appeared in 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

105. 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.

106. 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.

107. FGROWBFSL Net annual merchantable board-foot 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.

108. 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 tree volume free of rotten and missing cull, regardless of tree class.
109. 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.
110. 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.
111. 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 tree volume free of rotten and missing cull, regardless of tree class.
112. 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.
113. 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.
114. 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 tree volume free of rotten and missing cull, regardless of tree class.
115. 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 IS NOT POPULATED AT THIS TIME.**

116. 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 IS NOT POPULATED AT THIS TIME.**

117. 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 IS NOT POPULATED AT THIS TIME.**

118. 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 IS NOT POPULATED AT THIS TIME.**

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	COUNTCD	VARCHAR2 (2)	Coded		6.4
13	STOCKING	NUMBER (7,4)	Percent		
14	CN	VARCHAR2 (34)	Character	PK	
15	PLT_CN	VARCHAR2 (34)	Character	FK	
16	TREECOUNT (NCRS,PNWRS,RMRS)	NUMBER (3)	Number		
17	TOTAGE (RMRS)	NUMBER (3)	Years		
18	TPACURR	NUMBER (12,6)	Trees/acre		
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	TPA	NUMBER (11,6)	Trees/acre		

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 location. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot. On the base grid of plots, a single phase 2 plot is associated with a phase 2 hex.
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. COUNTCD Seedling count code. Indicates the number of seedlings (DIA < 1.0 inches) present on the microplot. Conifer seedlings are at least 6 inches tall and hardwood seedlings are at least 12 inches tall. New in 1999.
- | Code | Description |
|------|---------------------|
| 1 | 1 seedling |
| 2 | 2 seedlings |
| 3 | 3 seedlings |
| 4 | 4 seedlings |
| 5 | 5 seedlings |
| 6+ | 6 or more seedlings |
13. 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.
14. CN Sequence number. A unique index used to easily identify a seedling
15. PLT_CN Plot sequence number. Foreign key linking the seedling record to the plot record.
16. TREECOUNT Tree count. **Specific to North Central, Pacific Northwest, and Rocky Mountain Research Stations.** All other Stations record null for this variable. Contact North Central, Pacific Northwest, or Rocky Mountain Research Station for more information. Actual count of seedlings of a species.
17. 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.
18. 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.
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. 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 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	NOTES	VARCHAR2 (2000)	Character		7.2.6
31	VALIDCD	NUMBER (1)	Number		

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 location. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot. On the base grid of plots, a single phase 2 plot is associated with a phase 2 hex.
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. NOTES Notes pertaining to an individual site tree.
31. 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 |

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	3.2.1
9	SUBPTYP	NUMBER (1)	Coded	X	3.2.2
10	BNDCHG	NUMBER (1)	Coded		3.2.3
11	CONTRAST	NUMBER (1)	Number		3.2.4
12	AZMLEFT	NUMBER (3)	Degrees	X	3.2.5
13	AZMCORN	NUMBER (3)	Degrees		3.2.6
14	DISTCORN	NUMBER (2)	Feet		3.2.7
15	AZMRIGHT	NUMBER (3)	Degrees	X	3.2.8
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		

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 location. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot. On the base grid of plots, a single phase 2 plot is associated with a phase 2 hex.
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. Indicates the relationship between previously recorded and current boundary information.
- | 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.

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 location. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot. On the base grid of plots, a single phase 2 plot is associated with a phase 2 hex.
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 location. Along with STATECD, CYCLE, SUBCYCLE, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot. On the base grid of plots, a single phase 2 plot is associated with a phase 2 hex.
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. 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. 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.

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 $t.treeclcd=2$
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 $t.treeclcd=3$
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 $t.treeclcd=4$
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	$p.expgrow * t.tpagrow * t.growcfgs$	None

Cuft/year	Annual merchantable mortality of growing-stock trees on timberland	$p.expmort * t.tpamort * t.mortcfs$	None
Cuft/year	Annual merchantable removals of growing-stock trees on timberland.	$p.expremv * t.tparemv * t.remvcfs$	None
Bdft/year	Net annual merchantable growth of sawtimber trees on timberland	$p.expgrow * t.tpagrow * t.growbfs$	None
Bdft/year	Annual merchantable mortality of sawtimber trees on timberland	$p.expmort * t.tpamort * t.mortbfs$	None
Bdft/year	Annual merchantable removals of sawtimber trees on timberland	$p.expremv * t.tparemv * t.remvbfs$	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	$p.expvol * t.tpacurr * t.drybiot$	$c.landclcd=1$ and $c.reservcd=0$ and $c.siteclcd$ in (1,2,3,4,5,6) and $t.statuscd=1$
Ovendry lbs.	Merchantable biomass of all live trees on timberland	$p.expvol * t.tpacurr * t.drybiom$	$c.landclcd=1$ and $c.reservcd=0$ and $c.siteclcd$ in (1,2,3,4,5,6) and $t.statuscd=1$

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 $t.dia \geq 1.0$
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 $t.dia \geq 1.0$
Trees	Number of rough trees on forest land	$p.expvol * t.tpacurr$	$c.landclcd=1$ and $t.statuscd=1$ and $t.treecld=3$ and $t.dia \geq 1.0$
Trees	Number of rotten trees on forest land	$p.expvol * t.tpacurr$	$c.landclcd=1$ and $t.statuscd=1$ and $t.treecld=4$ and $t.dia \geq 1.0$
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 $t.dia \geq 5.0$

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	$p.expvol * t.tpacurr * t.volcfgrs$	$c.landclcd=1$ 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	$p.expvol * t.tpacurr * t.volcfgrs$	$c.landclcd=1$ 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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- U.S. Department of Agriculture, Forest Service. 2003. Forest inventory and analysis national core field guide, volume 1: field data collection procedures for phase 2 plots, version 1.7. U.S. Department of Agriculture, Forest Service, Washington Office. Internal report. On file with: U.S. Department of Agriculture, Forest Service, Forest Inventory and Analysis, 201 14th St., Washington, D.C., 20250.

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	24	Actual length of tree
ADFORCD	COND	15	Administered forest
AGEDIA	SITETREE	13	Tree age at diameter (DBH/DRC)
AGENTCD	TREE	29	Cause of death
ALSTK	COND	55	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	49	Basal area of all live trees, summed for the condition
BFSND (NERS)	TREE	83	Board-foot-cull soundness
BHAGE (PNWRS, RMRS)	TREE	76	Age of tree at breast height
BNDCHG	BOUNDARY	10	Boundary change
BOLEHT (NERS)	TREE	86	Bole length
CCLCD	TREE	27	Crown class
CDENCD	TREE	69	Crown density
CDIEBKCD	TREE	70	Crown dieback
CENSUSYR	SURVEY	9	Census year
CFSND (NERS)	TREE	84	Cubic-foot-cull soundness
CLIGHTCD	TREE	67	Crown light exposure
CN	SURVEY	14	Sequence number
CN	COUNTY	6	Sequence number
CN	PLOT	38	Sequence number
CN	SUBPLOT	14	Sequence number
CN	COND	52	Sequence number
CN	TREE	72	Sequence number
CN	SEEDLING	14	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_STATUS_CD	COND	85	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	73	Condition proportion for total area estimation
CONDPROP_CHNG	COND	74	Condition proportion for change estimation
CONDPROP_CURR	COND	75	Condition proportion for forest land and timberland estimation
CONDPROP_SAMP	COND	86	Condition proportion for measured portion of the plot
CONDPROPUN (SRS)	COND	58	Unadjusted subplot condition proportion
CONGCD	PLOT	36	Congressional district
CONTRAST	BOUNDARY	11	Contrasting condition
COUNTCD	SEEDLING	12	Seedling count code
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	66	Crown position
CR	TREE	26	Compacted crown ratio
CREATED_BY	SURVEY	18	User who created the record
CREATED_BY	COUNTY	7	User who created the record
CREATED_BY	PLOT	56	User who created the record
CREATED_BY	SUBPLOT	17	User who created the record
CREATED_BY	COND	64	User who created the record
CREATED_BY	TREE	91	User who created the record
CREATED_BY	SEEDLING	19	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	57	Date record created
CREATED_DATE	SUBPLOT	18	Date record created
CREATED_DATE	COND	65	Date record created
CREATED_DATE	TREE	92	Date record created
CREATED_DATE	SEEDLING	20	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	58	Instance record created in
CREATED_IN_INSTANCE	SUBPLOT	19	Instance record created in
CREATED_IN_INSTANCE	COND	66	Instance record created in

Column name	Table name	Location in table	Description
CREATED_IN_INSTANCE	SEEDLING	21	Instance record created in
CREATED_IN_INSTANCE	TREE	93	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	54	Type of crew measuring plot
CTY_CN	PLOT	40	Foreign key to the COUNTY record
CULL	TREE	30	Rotten and missing cull
CULL_FLD	TREE	103	Rotten and missing cull (as recorded by field)
CULLBF (NERS)	TREE	81	Board-foot cull
CULLCF (NERS)	TREE	82	Cubic-foot cull
CULLDEAD (RMRS)	TREE	78	Dead cull
CULLFORM (RMRS)	TREE	79	Form cull
CULLMSTOP(RMRS)	TREE	80	Missing top cull
CVIGORCD	TREE	68	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	51	Damage index
DAMLOC1	TREE	31	Damage location 1
DAMLOC2	TREE	34	Damage location 2
DAMSEV1	TREE	33	Damage severity 1
DAMSEV2	TREE	36	Damage severity 2
DAMTYP1	TREE	32	Damage type 1
DAMTYP2	TREE	35	Damage type 2
DECAYCD	TREE	37	Decay class
DESIGNCD	PLOT	13	Plot design
DIA	TREE	20	Current diameter
DIA	SITETREE	11	Current diameter
DIACALC (NCRS,SRS)	TREE	75	Current diameter, calculated
DIACHECK	TREE	62	Diameter check
DIAHTCD	TREE	21	Height of diameter measurement
DIST	TREE	12	Horizontal distance
DIST	SITETREE	27	Horizontal distance
DISTCORN	BOUNDARY	14	Corner distance
DRYBIOM	TREE	61	Merchantable stem biomass oven-dry weight for live trees
DRYBIOT	TREE	60	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
DSTRBYR2	COND	37	Year of disturbance 2

Column name	Table name	Location in table	Description
DSTRBYR3	COND	39	Year of disturbance 3
ECOSUBCD	PLOT	35	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	24	Elevation
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	49	Current area expansion factor (for all land estimates)
EXPCHNG	PLOT	32	Periodic change expansion factor
EXPCURR	PLOT	25	Current area expansion factor (for forest land and timberland estimates)
EXPGROW	PLOT	27	Growth expansion factor
EXPMORT	PLOT	29	Mortality expansion factor
EXPNS	PPSA	11	Expansion factor computed for the stratum/estimation unit
EXPREMV	PLOT	31	Removals expansion factor
EXPVOL	PLOT	26	Current volume expansion factor
FGROWBFSL	TREE	107	Net annual merchantable board-foot growth of sawtimber tree on forest land
FGROWCFAL	TREE	108	Net annual sound cubic-foot growth of live tree on forest land
FGROWCFGS	TREE	106	Net annual merchantable cubic-foot growth of growing-stock tree on forest land
FLDAGE	COND	54	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	110	Board-foot volume of a sawtimber tree for mortality purposes on forest land
FMORTCFAL	TREE	111	Sound cubic-foot volume of a tree for mortality purposes on forest land
FMORTCFGS	TREE	109	Cubic-foot volume of a growing-stock tree for mortality purposes on forest land
FORINDCD	COND	14	Private owner industrial status
FORMCL (PNWRS)	TREE	87	Hardwood form class
FORTYPCD	COND	16	Forest type of the condition derived by algorithm
FORTYPCDCALC	COND	59	Forest type derived by algorithm, no adjustment for field call
FREMVBFSL	TREE	113	Board-foot volume of a sawtimber tree for removal purposes on forest land
FREMVCFAL	TREE	114	Sound cubic-foot volume of the tree for removal purposes on forest land

Column name	Table name	Location in table	Description
FREMVCFG	TREE	112	Cubic-foot volume of a growing-stock tree for removal purposes on forest land
GROWBFSL	TREE	52	Net annual merchantable board-foot growth of sawtimber tree
GROWCD	PLOT	28	Type of annual volume growth
GROWCFAL	TREE	53	Net annual sound cubic-foot growth of live tree
GROWCFG	TREE	51	Net annual merchantable cubic-foot growth of growing-stock tree
GSSTK	COND	56	Growing-stock stocking
GSSTKCD	COND	31	Growing-stock stocking code
HABTYPCD1 (RMRS)	COND	60	Primary condition habitat type 1
HABTYPCD2 (RMRS)	COND	61	Primary condition habitat type 2
HRDWD_CLUMP_CD (PNWRS)	TREE	89	Hardwood clump
HT	TREE	22	Total length
HT	SITETREE	12	Sitetree length
HTCALC (SRS)	TREE	88	Calculated total length
HTCD	TREE	23	Length method
HTDMP	TREE	99	Height to diameter measurement point
INVYR	SURVEY	7	Inventory year
KINDCD	PLOT	12	Sample kind
KINDCD_NC (NCRS)	PLOT	52	Sample kind (NCRS)
LANDCLCD	COND	10	Condition class status code (formerly land class code)
LASTCYCLEMEAS	PLOT	50	Previous inventory cycle number
LASTSUBCYCLEMEAS	PLOT	51	Previous inventory subcycle number
LAT	PLOT	22	Latitude NAD 83 datum
LEANCD	TREE	16	Lean code
LON	PLOT	23	Longitude NAD 83 datum
MACRCOND	SUBPLOT	16	Macroplot center condition
MACRCOND_PROP	SUBP_COND	20	Macroplot condition proportion
MACRPROP	COND	63	Macroplot condition proportion, unadjusted
MACRPROP_ALL	COND	76	Macroplot condition proportion (total area basis)
MACRPROP_CHNG	COND	77	Macroplot condition proportion (change estimation basis)
MACRPROP_CURR	COND	78	Macroplot condition proportion (current estimation basis)
MACRPROP_SAMP	COND	88	Condition proportion for measured portion of the macroplots
MANUAL	PLOT	37	Field guide version number
MANUAL_DB	PLOT	55	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	65	Microplot location
MICRPROP	COND	50	Microplot condition proportion, unadjusted
MICRPROP_ALL	COND	79	Microplot condition proportion (total area basis)

Column name	Table name	Location in table	Description
MICRPROP_CHNG	COND	80	Microplot condition proportion (change estimation basis)
MICRPROP_CURR	COND	81	Microplot condition proportion (current estimation basis)
MICRPROP_SAMP	COND	87	Condition proportion for measured portion of the microplots
MIST_CL_CD	TREE	101	Mistletoe class
MIXEDCONFCD (PNWRS)	COND	62	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	59	User who last modified record
MODIFIED_BY	SUBPLOT	20	User who last modified record
MODIFIED_BY	COND	67	User who last modified record
MODIFIED_BY	TREE	94	User who last modified record
MODIFIED_BY	SEEDLING	22	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	60	Date record was last modified
MODIFIED_DATE	SUBPLOT	21	Date record was last modified
MODIFIED_DATE	COND	68	Date record was last modified
MODIFIED_DATE	TREE	95	Date record was last modified
MODIFIED_DATE	SEEDLING	23	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	61	Instance record was modified in
MODIFIED_IN_INSTANCE	SUBPLOT	22	Instance record was modified in
MODIFIED_IN_INSTANCE	COND	69	Instance record was modified in
MODIFIED_IN_INSTANCE	TREE	96	Instance record was modified in
MODIFIED_IN_INSTANCE	SEEDLING	24	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	55	Board-foot volume of a sawtimber tree for mortality purposes
MORTCD	PLOT	30	Type of annual mortality volume
MORTCD	TREE	98	Mortality code
MORTCFAL	TREE	56	Sound cubic-foot volume of a tree for mortality purposes

Column name	Table name	Location in table	Description
MORTCFGS	TREE	54	Cubic-foot volume of a growing-stock tree for mortality purposes
MORTYR	TREE	63	Mortality year
NFSYR	SURVEY	10	National Forest System Area Control Year
NFYEAR	COND	48	Nonforest year
NOTES	SURVEY	13	An optional item where notes about the inventory may be stored
NOTES	PLOT	62	An optional item where notes about the plot may be stored
NOTES	TREE	97	An optional item where notes about the tree may be stored
NOTES	SITETREE	30	An optional item where notes about the sitetree 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
P2HEX	PLOT	66	Phase 2 hex number
P2PANEL	PLOT	33	Phase 2 panel number
P2POINTCNT	EUS	19	Count of Phase 2 points in the stratum/estimation unit
P3HEX	PLOT	63	Phase 3 hex number
P3PANEL	PLOT	34	Phase 3 panel number
P3PLOT	PLOT	64	Phase 3 plot number
PASTNFCD	COND	46	Past nonforest/inaccessible land use
PHYSCLCD	COND	30	Physiographic class
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
PLT_CN	SUBPLOT	15	Foreign key to the PLOT record
PLT_CN	COND	53	Foreign key to the PLOT record
PLT_CN	TREE	73	Foreign key to the PLOT record
PLT_CN	SEEDLING	15	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
PRESNFCD	COND	47	Present nonforest land use
PREVCOND	COND	57	Previous condition number
PREVCOND	TREE	13	Previous condition number
PREVDIA	TREE	105	Previous diameter
PREVSUBC	TREE	14	Previous subcycle number
PROP_BASIS	COND	72	Proportion basis.
PUBUSECD	PLOT	17	Public use restrictions

Column name	Table name	Location in table	Description
QA_STATUS	PLOT	53	Indicator of plot type
RDCD	PLOT	14	Trails or roads
RDDISTCD	PLOT	15	Horizontal distance to improved road
RDUSECD	PLOT	16	Road access
RECONCILECD	TREE	104	New tree reconciliation
REMPER	PLOT	11	Remeasurement period
REMVBFSL	TREE	58	Board-foot volume of a sawtimber tree for removal purposes
REMVCFAL	TREE	59	Sound cubic-foot volume of the tree for removal purposes
REMVCFGS	TREE	57	Cubic-foot volume of a growing-stock tree for removal purposes
RESERVCD	COND	11	Reserved status
REUSECD1	PLOT	18	Recreation use code 1
REUSECD2	PLOT	19	Recreation use code 2
REUSECD3	PLOT	20	Recreation use code 3
ROUGHCUILL	TREE	100	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	48	Link to the evaluation method in EUS to calculate EXPALL
RSCD_EVALID_EXPCHNG	PLOT	47	Link to the evaluation method in EUS to calculate EXPCHNG
RSCD_EVALID_EXPCURR	PLOT	42	Link to the evaluation method in EUS to calculate EXPCURR
RSCD_EVALID_EXPGROW	PLOT	44	Link to the evaluation method in EUS to calculate EXPGROW
RSCD_EVALID_EXPMORT	PLOT	45	Link to the evaluation method in EUS to calculate EXPMORT
RSCD_EVALID_EXPREMV	PLOT	46	Link to the evaluation method in EUS to calculate EXPREMV
RSCD_EVALID_EXPVOL	PLOT	43	Link to the evaluation method in EUS to calculate EXPVOL
SALVCD	TREE	64	Salvable dead code
SAWHT (NERS)	TREE	85	Sawlog length
SIBASE	COND	24	Site index base age
SIBASE	SITETREE	16	Site index base age
SICOND	COND	23	Site index
SISP	COND	25	Site index species
SITECL_METHOD	COND	84	Site class method
SITECLCD	COND	22	Site productivity class
SITECLCDEST	COND	82	Estimated site productivity code
SITETREE_TREE	COND	83	Site tree tree number
SITREE	SITETREE	15	Site index
SITREE (NCRS)	TREE	90	Calculate site index
SITREE_EST	SITETREE	29	Estimated site index
SLOPE	SUBPLOT	11	Subplot slope
SLOPE	COND	28	Slope
SPCD	TREE	18	Species code
SPCD	SEEDLING	10	Species code
SPCD	SITETREE	10	Species code
SPGRPCD	TREE	19	Species group

Column name	Table name	Location in table	Description
SPGRPCD	SEEDLING	11	Species group
SPGRPCD	SITETREE	14	Species group
SRV_CN	PLOT	39	Foreign key to SURVEY record
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/macroplot 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	38	Tree stocking
STOCKING	SEEDLING	13	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
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	41	Subpanel assignment
SUBPCOND	SUBPLOT	9	Subplot center condition
SUBPCOND_PROP	SUBP_COND	18	Subplot condition proportion
SUBPPROP	COND	71	Subplot condition proportion, unadjusted
SUBPPROP_ALL	COND	90	Subplot condition proportion (total area basis)
SUBPPROP_CHNG	COND	91	Subplot condition proportion (change estimation basis)

Column name	Table name	Location in table	Description
SUBPPROP_CURR	COND	92	Subplot condition proportion (current estimation basis)
SUBPPROP_SAMP	COND	89	Condition proportion for measured portion of the subplots
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
TOTAGE (PNWRS,RMRS)	TREE	77	Total age of tree
TOTAGE (RMRS)	SEEDLING	17	Total age of seedling
TPA	TREE	102	Trees per acre, unadjusted
TPA	SEEDLING	25	Trees per acre, unadjusted
TPACURR	TREE	40	Current trees per acre, adjusted at the stratum level
TPACURR	SEEDLING	18	Current trees per acre, adjusted at the stratum level
TPACURR_SAMP	TREE	115	Current trees per acre, adjusted at the plot level
TPAGROW	TREE	43	Growth trees per acre, adjusted at the stratum level
TPAGROW_SAMP	TREE	116	Mortality trees per acre per year, adjusted at the plot level
TPAMORT	TREE	41	Mortality trees per acre per year, adjusted at the stratum level
TPAMORT_SAMP	TREE	117	Removals trees per acre per year, adjusted at the plot level
TPAREMV	TREE	42	Removals trees per acre per year, adjusted at the stratum level
TPAREMV_SAMP	TREE	118	Growth trees per acre, adjusted at the plot level
TRANSCD	TREE	71	Foliage transparency
TREE	TREE	9	Tree number
TREE	SITETREE	9	Tree number
TREECLCD	TREE	25	Tree class
TREECOUNT (NCRS,PNWRS,RMRS)	SEEDLING	16	Tree count (actual)
TREEGRCD (NCRS,NERS,SRS)	TREE	28	Tree grade
TREEHISTCD (NCRS,NERS,SRS)	TREE	74	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

Column name	Table name	Location in table	Description
TRTYR3	COND	45	Treatment year 3
UNCRCD	TREE	65	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
UTILCD	TREE	17	Utilization class
VALIDCD	SITETREE	31	Validity code for site index calculation
VOL_LOC_GRP	COND	70	Volume location group
VOLBFGRS	TREE	49	Gross board-foot volume in the saw-log portion
VOLBFNET	TREE	48	Net board-foot volume in the saw-log portion
VOLCFGRS	TREE	45	Gross cubic-foot volume
VOLCFNET	TREE	44	Net cubic-foot volume
VOLCFSND	TREE	50	Sound cubic-foot volume
VOLCSGRS	TREE	47	Gross cubic-foot volume in the saw-log portion
VOLCSNET	TREE	46	Net cubic-foot volume in the saw-log portion
WATERCD	PLOT	21	Water on plot
WATERDEP	SUBPLOT	13	Snow/water depth
WDLDSTEM	TREE	39	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
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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
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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
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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
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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
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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
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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	hardwoods	hardwoods		Pine	softwoods	hardwoods	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
.
.
.
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	Sawtimber
	(Thousand cubic feet)	(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		
01	Southwest-South	009	Blount
003	Baldwin	015	Calhoun
039	Covington	019	Cherokee
053	Escambia	027	Clay
097	Mobile	029	Cleburne
129	Washington	037	Coosa
		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	070	Dillingham Census Area
109	Pike	090	Fairbanks North Star Borough
113	Russell	100	Haines Borough
123	Tallapoosa	110	Juneau Borough
		122	Kenai Peninsula Borough
04	West Central	130	Ketchikan Gateway Borough
007	Bibb	150	Kodiak Island Borough
057	Fayette	164	Lake and Peninsula Borough
063	Greene	170	Matanuska-Susitna Borough
065	Hale	180	Nome Census Area
075	Lamar	185	North Slope Borough
093	Marion	188	Northwest Arctic Borough
105	Perry	201	Prince of Wales-Outer Ketchikan Census Area
107	Pickens		
125	Tuscaloosa	220	Sitka Borough
		231	Skagway-Yakutat-Angoon Census Area
05	North Central		

240 Southeast Fairbanks Census Area
 261 Valdez-Cordova Census Area
 270 Wade Hampton Census Area
 280 Wrangell-Petersburg Census Area
 290 Yukon-Koyukuk Census Area

04 Arizona

01 Southern

003 Cochise
 009 Graham
 011 Greenlee
 012 La Paz
 013 Maricopa
 019 Pima
 021 Pinal
 023 Santa Cruz
 027 Yuma

02 Northern

001 Apache
 005 Coconino
 007 Gila
 015 Mohave
 017 Navajo
 025 Yavapai

05 Arkansas

01 South Delta

001 Arkansas
 017 Chicot
 041 Desha
 069 Jefferson
 077 Lee
 079 Lincoln
 085 Lonoke
 095 Monroe
 107 Phillips
 117 Prairie

02 North Delta

021 Clay
 031 Craighead
 035 Crittenden
 037 Cross
 055 Greene
 067 Jackson
 075 Lawrence
 093 Mississippi
 111 Poinsett
 123 St. Francis
 147 Woodruff

03 Southwest

003 Ashley
 011 Bradley

013 Calhoun
 019 Clark
 025 Cleveland
 027 Columbia
 039 Dallas
 043 Drew
 053 Grant
 057 Hempstead
 059 Hot Spring
 061 Howard
 073 Lafayette
 081 Little River
 091 Miller
 099 Nevada
 103 Ouachita
 109 Pike
 133 Sevier
 139 Union

04 Ouachita

051 Garland
 083 Logan
 097 Montgomery
 105 Perry
 113 Polk
 119 Pulaski
 125 Saline
 127 Scott
 131 Sebastian
 149 Yell

05 Ozark

005 Baxter
 007 Benton
 009 Boone
 015 Carroll
 023 Cleburne
 029 Conway
 033 Crawford
 045 Faulkner
 047 Franklin
 049 Fulton
 063 Independence
 065 IZard
 071 Johnson
 087 Madison
 089 Marion
 101 Newton
 115 Pope
 121 Randolph
 129 Searcy
 135 Sharp
 137 Stone
 141 Van Buren
 143 Washington
 145 White

06	California		
01	North Coast	077	San Joaquin
015	Del Norte	099	Stanislaus
023	Humboldt	107	Tulare
045	Mendocino	109	Tuolumne
097	Sonoma		
02	North Interior	06	Southern
035	Lassen	025	Imperial
049	Modoc	027	Inyo
089	Shasta	037	Los Angeles
093	Siskiyou	059	Orange
105	Trinity	065	Riverside
		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		
113	Yolo	02	Southern Front Range
115	Yuba	015	Chaffee
		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		
075	San Francisco	03	West Central
079	San Luis Obispo	003	Alamosa
081	San Mateo	021	Conejos
083	Santa Barbara	037	Eagle
085	Santa Clara	049	Grand
087	Santa Cruz	051	Gunnison
095	Solano	053	Hinsdale
111	Ventura	057	Jackson
		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		
039	Madera	04	Western
043	Mariposa	007	Archuleta
047	Merced	029	Delta
051	Mono	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

04	Southern	081	Crisp
011	Broward	087	Decatur
015	Charlotte	093	Dooly
021	Collier	099	Early
025	Dade	131	Grady
043	Glades	155	Irwin
051	Hendry	173	Lanier
071	Lee	185	Lowndes
085	Martin	201	Miller
087	Monroe	205	Mitchell
099	Palm Beach	253	Seminole
		275	Thomas
		277	Tift
13	Georgia	287	Turner
01	Southeastern	315	Wilcox
001	Appling	321	Worth
003	Atkinson		
005	Bacon	03	Central
025	Brantley	009	Baldwin
029	Bryan	021	Bibb
031	Bulloch	023	Bleckley
039	Camden	033	Burke
043	Candler	035	Butts
049	Charlton	037	Calhoun
051	Chatham	053	Chattahoochee
065	Clinch	061	Clay
069	Coffee	073	Columbia
091	Dodge	079	Crawford
101	Echols	095	Dougherty
103	Effingham	125	Glascok
107	Emanuel	133	Greene
109	Evans	141	Hancock
127	Glynn	145	Harris
161	Jeff Davis	153	Houston
165	Jenkins	159	Jasper
167	Johnson	163	Jefferson
175	Laurens	169	Jones
179	Liberty	171	Lamar
183	Long	177	Lee
191	McIntosh	181	Lincoln
209	Montgomery	189	McDuffie
229	Pierce	193	Macon
251	Screven	197	Marion
267	Tattnall	207	Monroe
271	Telfair	211	Morgan
279	Toombs	215	Muscogee
283	Treutlen	225	Peach
299	Ware	231	Pike
305	Wayne	235	Pulaski
309	Wheeler	237	Putnam
		239	Quitman
02	Southwestern	243	Randolph
007	Baker	245	Richmond
017	Ben Hill	249	Schley
019	Berrien	259	Stewart
027	Brooks	261	Sumter
071	Colquitt	263	Talbot
075	Cook		

265 Taliaferro
 269 Taylor
 273 Terrell
 289 Twiggs
 293 Upson
 301 Warren
 303 Washington
 307 Webster
 317 Wilkes
 319 Wilkinson

04 North Central

011 Banks
 013 Barrow
 045 Carroll
 059 Clarke
 063 Clayton
 067 Cobb
 077 Coweta
 089 DeKalb
 097 Douglas
 105 Elbert
 113 Fayette
 117 Forsyth
 119 Franklin
 121 Fulton
 135 Gwinnett
 139 Hall
 143 Haralson
 147 Hart
 149 Heard
 151 Henry
 157 Jackson
 195 Madison
 199 Meriwether
 217 Newton
 219 Oconee
 221 Oglethorpe
 223 Paulding
 233 Polk
 247 Rockdale
 255 Spalding
 285 Troup
 297 Walton

05 Northern

015 Bartow
 047 Catoosa
 055 Chattooga
 057 Cherokee
 083 Dade
 085 Dawson
 111 Fannin
 115 Floyd
 123 Gilmer
 129 Gordon
 137 Habersham

187 Lumpkin
 213 Murray
 227 Pickens
 241 Rabun
 257 Stephens
 281 Towns
 291 Union
 295 Walker
 311 White
 313 Whitfield

15 Hawaii

001 Hawaii
 003 Honolulu
 005 Kalawao
 007 Kauai
 009 Maui

16 Idaho

01 Northern
 009 Benewah
 017 Bonner
 021 Boundary
 035 Clearwater
 049 Idaho
 055 Kootenai
 057 Latah
 061 Lewis
 069 Nez Perce
 079 Shoshone

02 Southeastern

001 Ada
 003 Adams
 015 Boise
 027 Canyon
 039 Elmore
 045 Gem
 073 Owyhee
 075 Payette
 085 Valley
 087 Washington

03 Southwestern

005 Bannock
 007 Bear Lake
 011 Bingham
 013 Blaine
 019 Bonneville
 023 Butte
 025 Camas
 029 Caribou
 031 Cassia
 033 Clark
 037 Custer
 041 Franklin
 043 Fremont

047 Gooding
 051 Jefferson
 053 Jerome
 059 Lemhi
 063 Lincoln
 065 Madison
 067 Minidoka
 071 Oneida
 077 Power
 081 Teton
 083 Twin Falls
 089 Yellowstone National Park

17 Illinois

01 Southern
 003 Alexander
 055 Franklin
 059 Gallatin
 065 Hamilton
 069 Hardin
 077 Jackson
 087 Johnson
 127 Massac
 145 Perry
 151 Pope
 153 Pulaski
 157 Randolph
 165 Saline
 181 Union
 193 White
 199 Williamson

02 Claypan
 005 Bond
 013 Calhoun
 023 Clark
 025 Clay
 027 Clinton
 033 Crawford
 035 Cumberland
 047 Edwards
 049 Effingham
 051 Fayette
 061 Greene
 079 Jasper
 081 Jefferson
 083 Jersey
 101 Lawrence
 117 Macoupin
 119 Madison
 121 Marion
 133 Monroe
 135 Montgomery
 159 Richland
 163 St. Clair
 173 Shelby
 185 Wabash

189 Washington
 191 Wayne

03 Prairie

001 Adams
 007 Boone
 009 Brown
 011 Bureau
 015 Carroll
 017 Cass
 019 Champaign
 021 Christian
 029 Coles
 031 Cook
 037 DeKalb
 039 De Witt
 041 Douglas
 043 DuPage
 045 Edgar
 053 Ford
 057 Fulton
 063 Grundy
 067 Hancock
 071 Henderson
 073 Henry
 075 Iroquois
 085 Jo Daviess
 089 Kane
 091 Kankakee
 093 Kendall
 095 Knox
 097 Lake
 099 La Salle
 103 Lee
 105 Livingston
 107 Logan
 109 McDonough
 111 McHenry
 113 McLean
 115 Macon
 123 Marshall
 125 Mason
 129 Menard
 131 Mercer
 137 Morgan
 139 Moultrie
 141 Ogle
 143 Peoria
 147 Piatt
 149 Pike
 155 Putnam
 161 Rock Island
 167 Sangamon
 169 Schuyler
 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
013 Black Hawk
017 Bremer

019 Buchanan
 023 Butler
 031 Cedar
 037 Chickasaw
 043 Clayton
 045 Clinton
 055 Delaware
 061 Dubuque
 065 Fayette
 067 Floyd
 075 Grundy
 089 Howard
 097 Jackson
 103 Johnson
 105 Jones
 113 Linn
 131 Mitchell
 163 Scott
 171 Tama
 191 Winneshiek

02 Southeastern

007 Appanoose
 015 Boone
 039 Clarke
 049 Dallas
 051 Davis
 053 Decatur
 057 Des Moines
 077 Guthrie
 079 Hamilton
 083 Hardin
 087 Henry
 095 Iowa
 099 Jasper
 101 Jefferson
 107 Keokuk
 111 Lee
 115 Louisa
 117 Lucas
 121 Madison
 123 Mahaska
 125 Marion
 127 Marshall
 135 Monroe
 139 Muscatine
 153 Polk
 157 Poweshiek
 169 Story
 177 Van Buren
 179 Wapello
 181 Warren
 183 Washington
 185 Wayne
 187 Webster

03 Southwestern

001 Adair
 003 Adams
 009 Audubon
 027 Carroll
 029 Cass
 047 Crawford
 071 Fremont
 073 Greene
 085 Harrison
 129 Mills
 133 Monona
 137 Montgomery
 145 Page
 155 Pottawattamie
 159 Ringgold
 165 Shelby
 173 Taylor
 175 Union
 193 Woodbury

04 Northwestern

021 Buena Vista
 025 Calhoun
 033 Cerro Gordo
 035 Cherokee
 041 Clay
 059 Dickinson
 063 Emmet
 069 Franklin
 081 Hancock
 091 Humboldt
 093 Ida
 109 Kossuth
 119 Lyon
 141 O'Brien
 143 Osceola
 147 Palo Alto
 149 Plymouth
 151 Pocahontas
 161 Sac
 167 Sioux
 189 Winnebago
 195 Worth
 197 Wright

20 Kansas

01 Northeastern

005 Atchison
 013 Brown
 027 Clay
 041 Dickinson
 043 Doniphan
 045 Douglas
 059 Franklin
 061 Geary
 085 Jackson
 087 Jefferson

091 Johnson
 103 Leavenworth
 117 Marshall
 121 Miami
 131 Nemaha
 139 Osage
 149 Pottawatomie
 161 Riley
 177 Shawnee
 197 Wabaunsee
 201 Washington
 209 Wyandotte

02 Southeastern

001 Allen
 003 Anderson
 011 Bourbon
 015 Butler
 017 Chase
 019 Chautauqua
 021 Cherokee
 031 Coffey
 035 Cowley
 037 Crawford
 049 Elk
 073 Greenwood
 099 Labette
 107 Linn
 111 Lyon
 115 Marion
 125 Montgomery
 127 Morris
 133 Neosho
 205 Wilson
 207 Woodson

03 Western

007 Barber
 009 Barton
 023 Cheyenne
 025 Clark
 029 Cloud
 033 Comanche
 039 Decatur
 047 Edwards
 051 Ellis
 053 Ellsworth
 055 Finney
 057 Ford
 063 Gove
 065 Graham
 067 Grant
 069 Gray
 071 Greeley
 075 Hamilton
 077 Harper
 079 Harvey

081 Haskell
 083 Hodgeman
 089 Jewell
 093 Kearny
 095 Kingman
 097 Kiowa
 101 Lane
 105 Lincoln
 109 Logan
 113 McPherson
 119 Meade
 123 Mitchell
 129 Morton
 135 Ness
 137 Norton
 141 Osborne
 143 Ottawa
 145 Pawnee
 147 Phillips
 151 Pratt
 153 Rawlins
 155 Reno
 157 Republic
 159 Rice
 163 Rooks
 165 Rush
 167 Russell
 169 Saline
 171 Scott
 173 Sedgwick
 175 Seward
 179 Sheridan
 181 Sherman
 183 Smith
 185 Stafford
 187 Stanton
 189 Stevens
 191 Sumner
 193 Thomas
 195 Trego
 199 Wallace
 203 Wichita

21 Kentucky

01 Eastern

071 Floyd
 095 Harlan
 119 Knott
 131 Leslie
 133 Letcher
 159 Martin
 193 Perry
 195 Pike

02 Northern Cumberland

019 Boyd
 043 Carter

063	Elliott	209	Scott
089	Greenup	211	Shelby
115	Johnson	215	Spencer
127	Lawrence	223	Trimble
135	Lewis	229	Washington
153	Magoffin	239	Woodford
165	Menifee		
175	Morgan	05	Pennyroyal
197	Powell	001	Adair
205	Rowan	027	Breckinridge
237	Wolfe	029	Bullitt
		045	Casey
03	Southern Cumberland	053	Clinton
013	Bell	057	Cumberland
025	Breathitt	085	Grayson
051	Clay	087	Green
065	Estill	091	Hancock
109	Jackson	093	Hardin
121	Knox	099	Hart
125	Laurel	123	Larue
129	Lee	155	Marion
147	McCreary	163	Meade
189	Owsley	169	Metcalfe
203	Rockcastle	179	Nelson
235	Whitley	199	Pulaski
		207	Russell
04	Bluegrass	217	Taylor
005	Anderson	231	Wayne
011	Bath		
015	Boone	06	Western Coalfield
017	Bourbon	003	Allen
021	Boyle	009	Barren
023	Bracken	031	Butler
037	Campbell	033	Caldwell
041	Carroll	047	Christian
049	Clark	055	Crittenden
067	Fayette	059	Daviess
069	Fleming	061	Edmonson
073	Franklin	101	Henderson
077	Gallatin	107	Hopkins
079	Garrard	141	Logan
081	Grant	149	McLean
097	Harrison	171	Monroe
103	Henry	177	Muhlenberg
111	Jefferson	183	Ohio
113	Jessamine	213	Simpson
117	Kenton	219	Todd
137	Lincoln	225	Union
151	Madison	227	Warren
161	Mason	233	Webster
167	Mercer		
173	Montgomery	07	Western
181	Nicholas	007	Ballard
185	Oldham	035	Calloway
187	Owen	039	Carlisle
191	Pendleton	075	Fulton
201	Robertson	083	Graves

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		
01	North Delta	05	Northwest
025	Catahoula	013	Bienville
029	Concordia	015	Bossier
035	East Carroll	017	Caddo
041	Franklin	021	Caldwell
065	Madison	027	Claiborne
067	Morehouse	031	De Soto
083	Richland	049	Jackson
107	Tensas	061	Lincoln
123	West Carroll	073	Ouachita
		081	Red River
02	South Delta	111	Union
001	Acadia	119	Webster
005	Ascension	127	Winn
007	Assumption		
009	Avoyelles	23	Maine
023	Cameron	01	Washington
045	Iberia	029	Washington
047	Iberville		
051	Jefferson	02	Aroostook
055	Lafayette	003	Aroostook
057	Lafourche		
071	Orleans	03	Penobscot
075	Plaquemines	019	Penobscot
077	Pointe Coupee		
087	St. Bernard	04	Hancock
089	St. Charles	009	Hancock
093	St. James		
095	St. John the Baptist	05	Piscataquis
097	St. Landry	021	Piscataquis
099	St. Martin		
101	St. Mary	06	Capitol Region
109	Terrebonne	011	Kennebec
113	Vermilion	013	Knox
121	West Baton Rouge	015	Lincoln
125	West Feliciana	027	Waldo
03	Southwest	07	Somerset
003	Allen	025	Somerset
011	Beauregard		
019	Calcasieu	08	Casco Bay
039	Evangeline	001	Androscoggin
043	Grant	005	Cumberland
053	Jefferson Davis	023	Sagadahoc
059	La Salle	031	York
069	Natchitoches		
079	Rapides	09	Western Maine
085	Sabine		
115	Vernon		

007	Franklin	041	Delta
017	Oxford	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
01	Eastern Upper Peninsula	04	Southern Lower Peninsula
003	Alger	005	Allegan
033	Chippewa	015	Barry
		021	Berrien
		023	Branch
		025	Calhoun

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
003	Anoka	119	Polk
009	Benton	121	Pope
019	Carver	125	Red Lake

127 Redwood
 129 Renville
 133 Rock
 143 Sibley
 147 Steele
 149 Stevens
 151 Swift
 155 Traverse
 161 Waseca
 165 Watonwan
 167 Wilkin
 173 Yellow Medicine

28 Mississippi

01 Delta

011 Bolivar
 027 Coahoma
 051 Holmes
 053 Humphreys
 055 Issaquena
 083 Leflore
 119 Quitman
 125 Sharkey
 133 Sunflower
 135 Tallahatchie
 143 Tunica
 149 Warren
 151 Washington
 163 Yazoo

02 North

003 Alcorn
 009 Benton
 013 Calhoun
 015 Carroll
 017 Chickasaw
 019 Choctaw
 025 Clay
 033 DeSoto
 043 Grenada
 057 Itawamba
 071 Lafayette
 081 Lee
 087 Lowndes
 093 Marshall
 095 Monroe
 097 Montgomery
 105 Oktibbeha
 107 Panola
 115 Pontotoc
 117 Prentiss
 137 Tate
 139 Tippah
 141 Tishomingo
 145 Union
 155 Webster
 161 Yalobusha

03 Central

007 Attala
 023 Clarke
 061 Jasper
 069 Kemper
 075 Lauderdale
 079 Leake
 099 Neshoba
 101 Newton
 103 Noxubee
 121 Rankin
 123 Scott
 127 Simpson
 129 Smith
 159 Winston

04 South

031 Covington
 035 Forrest
 039 George
 041 Greene
 045 Hancock
 047 Harrison
 059 Jackson
 065 Jefferson Davis
 067 Jones
 073 Lamar
 077 Lawrence
 091 Marion
 109 Pearl River
 111 Perry
 131 Stone
 147 Walthall
 153 Wayne

05 Southwest

001 Adams
 005 Amite
 021 Claiborne
 029 Copiah
 037 Franklin
 049 Hinds
 063 Jefferson
 085 Lincoln
 089 Madison
 113 Pike
 157 Wilkinson

29 Missouri

01 Eastern Ozarks

017 Bollinger
 023 Butler
 035 Carter
 055 Crawford
 065 Dent
 093 Iron

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
02	Southwestern Ozarks	103	Knox
009	Barry	107	Lafayette
043	Christian	109	Lawrence
067	Douglas	111	Lewis
091	Howell	113	Lincoln
119	McDonald	115	Linn
145	Newton	117	Livingston
153	Ozark	121	Macon
209	Stone	127	Marion
213	Taney	129	Mercer
215	Texas	137	Monroe
225	Webster	147	Nodaway
229	Wright	159	Pettis
		163	Pike
03	Northwestern Ozarks	165	Platte
015	Benton	171	Putnam
029	Camden	173	Ralls
039	Cedar	175	Randolph
059	Dallas	177	Ray
085	Hickory	195	Saline
105	Laclede	197	Schuyler
125	Maries	199	Scotland
131	Miller	205	Shelby
141	Morgan	211	Sullivan
161	Phelps	217	Vernon
167	Polk	227	Worth
169	Pulaski		
185	St. Clair	05	Riverborder
		019	Boone
04	Prairie	027	Callaway
001	Adair	031	Cape Girardeau
003	Andrew	051	Cole
005	Atchison	069	Dunklin
007	Audrain	071	Franklin
011	Barton	073	Gasconade
013	Bates	089	Howard
021	Buchanan	099	Jefferson
025	Caldwell	133	Mississippi
033	Carroll	135	Moniteau
037	Cass	139	Montgomery
041	Chariton	143	New Madrid
045	Clark	151	Osage
047	Clay	155	Pemiscot
049	Clinton	157	Perry
053	Cooper	183	St. Charles
057	Dade	186	Ste. Genevieve
061	Daviess	189	St. Louis
063	DeKalb	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
133 Pawnee
137 Phelps

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
183	Wheeler	037	Sussex
		039	Union
32	Nevada	041	Warren

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
051	Livingston	071	Orange
053	Madison	079	Putnam
055	Monroe	081	Queens

085 Richmond
087 Rockland
095 Schoharie
103 Suffolk
105 Sullivan
111 Ulster
119 Westchester

37 North Carolina

01 Southern Coastal Plain

017 Bladen
019 Brunswick
047 Columbus
051 Cumberland
061 Duplin
079 Greene
085 Harnett
093 Hoke
101 Johnston
103 Jones
105 Lee
107 Lenoir
125 Moore
129 New Hanover
133 Onslow
141 Pender
153 Richmond
155 Robeson
163 Sampson
165 Scotland
191 Wayne

02 Northern Coastal Plain

013 Beaufort
015 Bertie
029 Camden
031 Carteret
041 Chowan
049 Craven
053 Currituck
055 Dare
065 Edgecombe
073 Gates
083 Halifax
091 Hertford
095 Hyde
117 Martin
127 Nash
131 Northampton
137 Pamlico
139 Pasquotank
143 Perquimans
147 Pitt
177 Tyrrell
187 Washington
195 Wilson

03 Piedmont

001 Alamance
003 Alexander
007 Anson
025 Cabarrus
033 Caswell
035 Catawba
037 Chatham
045 Cleveland
057 Davidson
059 Davie
063 Durham
067 Forsyth
069 Franklin
071 Gaston
077 Granville
081 Guilford
097 Iredell
109 Lincoln
119 Mecklenburg
123 Montgomery
135 Orange
145 Person
149 Polk
151 Randolph
157 Rockingham
159 Rowan
161 Rutherford
167 Stanly
169 Stokes
171 Surry
179 Union
181 Vance
183 Wake
185 Warren
197 Yadkin

04 Mountains

005 Alleghany
009 Ashe
011 Avery
021 Buncombe
023 Burke
027 Caldwell
039 Cherokee
043 Clay
075 Graham
087 Haywood
089 Henderson
099 Jackson
111 McDowell
113 Macon
115 Madison
121 Mitchell
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

05 Southwestern

017	Butler	127	Pushmataha
023	Clark		
027	Clinton	02	Northeast
037	Darke	001	Adair
045	Fairfield	021	Cherokee
047	Fayette	041	Delaware
049	Franklin	091	McIntosh
057	Greene	097	Mayes
061	Hamilton	101	Muskogee
089	Licking	115	Ottawa
097	Madison	135	Sequoyah
109	Miami		
113	Montgomery	41	Oregon
129	Pickaway	00	Northwest
135	Preble	005	Clackamas
165	Warren	007	Clatsop
		009	Columbia
06	Northwestern	027	Hood River
003	Allen	047	Marion
011	Auglaize	051	Multnomah
021	Champaign	053	Polk
033	Crawford	057	Tillamook
039	Defiance	067	Washington
041	Delaware	071	Yamhill
051	Fulton		
063	Hancock	01	West Central
065	Hardin	003	Benton
069	Henry	039	Lane
083	Knox	041	Lincoln
091	Logan	043	Linn
095	Lucas		
101	Marion	02	Southwest
107	Mercer	011	Coos
117	Morrow	015	Curry
123	Ottawa	019	Douglas
125	Paulding	029	Jackson
137	Putnam	033	Josephine
143	Sandusky		
147	Seneca	03	Central
149	Shelby	013	Crook
159	Union	017	Deschutes
161	Van Wert	021	Gilliam
171	Williams	031	Jefferson
173	Wood	035	Klamath
175	Wyandot	037	Lake
		055	Sherman
40	Oklahoma	065	Wasco
01	Southeast	069	Wheeler
005	Atoka		
013	Bryan	04	Blue Mountains
023	Choctaw	001	Baker
029	Coal	023	Grant
061	Haskell	025	Harney
077	Latimer	045	Malheur
079	Le Flore	049	Morrow
089	McCurtain	059	Umatilla
121	Pittsburg	061	Union

063 Wallowa

42 Pennsylvania

00 South Central

043 Dauphin
055 Franklin
057 Fulton
061 Huntingdon
067 Juniata
087 Mifflin
099 Perry
109 Snyder
119 Union

05 Western

003 Allegheny
005 Armstrong
007 Beaver
019 Butler
039 Crawford
049 Erie
059 Greene
063 Indiana
073 Lawrence
085 Mercer
125 Washington
129 Westmoreland

06 North Central/Allegheny

023 Cameron
027 Centre
031 Clarion
033 Clearfield
035 Clinton
047 Elk
053 Forest
065 Jefferson
081 Lycoming
083 McKean
105 Potter
113 Sullivan
117 Tioga
121 Venango
123 Warren

07 Southwestern

009 Bedford
013 Blair
021 Cambria
051 Fayette
111 Somerset

08 Northeastern/Pocono

015 Bradford
025 Carbon
037 Columbia
069 Lackawanna

079 Luzerne
089 Monroe
093 Montour
097 Northumberland
103 Pike
107 Schuylkill
115 Susquehanna
127 Wayne
131 Wyoming

09 Southeastern

001 Adams
011 Berks
017 Bucks
029 Chester
041 Cumberland
045 Delaware
071 Lancaster
075 Lebanon
077 Lehigh
091 Montgomery
095 Northampton
101 Philadelphia
133 York

44 Rhode Island

01 State
001 Bristol
003 Kent
005 Newport
007 Providence
009 Washington

45 South Carolina

01 Southern Coastal Plain

003 Aiken
005 Allendale
009 Bamberg
011 Barnwell
013 Beaufort
017 Calhoun
029 Colleton
035 Dorchester
049 Hampton
053 Jasper
063 Lexington
075 Orangeburg

02 Northern Coastal Plain

015 Berkeley
019 Charleston
025 Chesterfield
027 Clarendon
031 Darlington
033 Dillon
041 Florence
043 Georgetown

051 Horry
055 Kershaw
061 Lee
067 Marion
069 Marlboro
079 Richland
085 Sumter
089 Williamsburg

03 Piedmont

001 Abbeville
007 Anderson
021 Cherokee
023 Chester
037 Edgefield
039 Fairfield
045 Greenville
047 Greenwood
057 Lancaster
059 Laurens
065 McCormick
071 Newberry
073 Oconee
077 Pickens
081 Saluda
083 Spartanburg
087 Union
091 York

46 South Dakota

01 Eastern

003 Aurora
005 Beadle
007 Bennett
009 Bon Homme
011 Brookings
013 Brown
015 Brule
017 Buffalo
021 Campbell
023 Charles Mix
025 Clark
027 Clay
029 Codington
031 Corson
035 Davison
037 Day
039 Deuel
041 Dewey
043 Douglas
045 Edmunds
049 Faulk
051 Grant
053 Gregory
055 Haakon
057 Hamlin
059 Hand

061 Hanson
065 Hughes
067 Hutchinson
069 Hyde
071 Jackson
073 Jerauld
075 Jones
077 Kingsbury
079 Lake
083 Lincoln
085 Lyman
087 McCook
089 McPherson
091 Marshall
095 Mellette
097 Miner
099 Minnehaha
101 Moody
105 Perkins
107 Potter
109 Roberts
111 Sanborn
115 Spink
117 Stanley
119 Sully
121 Todd
123 Tripp
125 Turner
127 Union
129 Walworth
135 Yankton
137 Ziebach

02 Western

019 Butte
033 Custer
047 Fall River
063 Harding
081 Lawrence
093 Meade
103 Pennington
113 Shannon

47 Tennessee

01 West

017 Carroll
023 Chester
033 Crockett
045 Dyer
047 Fayette
053 Gibson
069 Hardeman
075 Haywood
077 Henderson
079 Henry
095 Lake
097 Lauderdale

109 McNairy
113 Madison
131 Obion
157 Shelby
167 Tipton
183 Weakley

02 West Central

005 Benton
039 Decatur
071 Hardin
081 Hickman
083 Houston
085 Humphreys
099 Lawrence
101 Lewis
135 Perry
161 Stewart
181 Wayne

03 Central

003 Bedford
015 Cannon
021 Cheatham
027 Clay
031 Coffee
037 Davidson
041 DeKalb
043 Dickson
055 Giles
087 Jackson
103 Lincoln
111 Macon
117 Marshall
119 Maury
125 Montgomery
127 Moore
147 Robertson
149 Rutherford
159 Smith
165 Sumner
169 Trousdale
187 Williamson
189 Wilson

04 Plateau

007 Bledsoe
013 Campbell
035 Cumberland
049 Fentress
051 Franklin
061 Grundy
115 Marion
129 Morgan
133 Overton
137 Pickett
141 Putnam

151 Scott
153 Sequatchie
175 Van Buren
177 Warren
185 White

05 East

001 Anderson
009 Blount
011 Bradley
019 Carter
025 Claiborne
029 Cocke
057 Grainger
059 Greene
063 Hamblen
065 Hamilton
067 Hancock
073 Hawkins
089 Jefferson
091 Johnson
093 Knox
105 Loudon
107 McMinn
121 Meigs
123 Monroe
139 Polk
143 Rhea
145 Roane
155 Sevier
163 Sullivan
171 Unicoi
173 Union
179 Washington

48 Texas

01 Southeast

005 Angelina
071 Chambers
185 Grimes
199 Hardin
201 Harris
225 Houston
241 Jasper
245 Jefferson
289 Leon
291 Liberty
313 Madison
339 Montgomery
351 Newton
361 Orange
373 Polk
403 Sabine
405 San Augustine
407 San Jacinto
455 Trinity
457 Tyler

471	Walker	075	Childress
473	Waller	077	Clay
02	Northeast	079	Cochran
001	Anderson	081	Coke
037	Bowie	083	Coleman
063	Camp	085	Collin
067	Cass	087	Collingsworth
073	Cherokee	089	Colorado
159	Franklin	091	Comal
183	Gregg	093	Comanche
203	Harrison	095	Concho
213	Henderson	097	Cooke
315	Marion	099	Coryell
343	Morris	101	Cottle
347	Nacogdoches	103	Crane
365	Panola	105	Crockett
387	Red River	107	Crosby
401	Rusk	109	Culberson
419	Shelby	111	Dallam
423	Smith	113	Dallas
449	Titus	115	Dawson
459	Upshur	117	Deaf Smith
467	Van Zandt	119	Delta
499	Wood	121	Denton
		123	DeWitt
		125	Dickens
	Unsampled counties	127	Dimmit
003	Andrews	129	Donley
007	Aransas	131	Duval
009	Archer	133	Eastland
011	Armstrong	135	Ector
013	Atascosa	137	Edwards
015	Austin	139	Ellis
017	Bailey	141	El Paso
019	Bandera	143	Erath
021	Bastrop	145	Falls
023	Baylor	147	Fannin
025	Bee	149	Fayette
027	Bell	151	Fisher
029	Bexar	153	Floyd
031	Blanco	155	Foard
033	Borden	157	Fort Bend
035	Bosque	161	Freestone
039	Brazoria	163	Frio
041	Brazos	165	Gaines
043	Brewster	167	Galveston
045	Briscoe	169	Garza
047	Brooks	171	Gillespie
049	Brown	173	Glasscock
051	Burleson	175	Goliad
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

195	Hansford	331	Milam
197	Hardeman	333	Mills
205	Hartley	335	Mitchell
207	Haskell	337	Montague
209	Hays	341	Moore
211	Hemphill	345	Motley
215	Hidalgo	349	Navarro
217	Hill	353	Nolan
219	Hockley	355	Nueces
221	Hood	357	Ochiltree
223	Hopkins	359	Oldham
227	Howard	363	Palo Pinto
229	Hudspeth	367	Parker
231	Hunt	369	Parmer
233	Hutchinson	371	Pecos
235	Irion	375	Potter
237	Jack	377	Presidio
239	Jackson	379	Rains
243	Jeff Davis	381	Randall
247	Jim Hogg	383	Reagan
249	Jim Wells	385	Real
251	Johnson	389	Reeves
253	Jones	391	Refugio
255	Karnes	393	Roberts
257	Kaufman	395	Robertson
259	Kendall	397	Rockwall
261	Kenedy	399	Runnels
263	Kent	409	San Patricio
265	Kerr	411	San Saba
267	Kimble	413	Schleicher
269	King	415	Scurry
271	Kinney	417	Shackelford
273	Kleberg	421	Sherman
275	Knox	425	Somervell
277	Lamar	427	Starr
279	Lamb	429	Stephens
281	Lampasas	431	Sterling
283	La Salle	433	Stonewall
285	Lavaca	435	Sutton
287	Lee	437	Swisher
293	Limestone	439	Tarrant
295	Lipscomb	441	Taylor
297	Live Oak	443	Terrell
299	Llano	445	Terry
301	Loving	447	Throckmorton
303	Lubbock	451	Tom Green
305	Lynn	453	Travis
307	McCulloch	461	Upton
309	McLennan	463	Uvalde
311	McMullen	465	Val Verde
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

487 Wilbarger
 489 Willacy
 491 Williamson
 493 Wilson
 495 Winkler
 497 Wise
 501 Yoakum
 503 Young
 505 Zapata
 507 Zavala

49 Utah

01 Northern

003 Box Elder
 005 Cache
 011 Davis
 029 Morgan
 033 Rich
 035 Salt Lake
 043 Summit
 045 Tooele
 049 Utah
 051 Wasatch
 057 Weber

02 Uinta

009 Daggett
 013 Duchesne
 047 Uintah

03 Central

023 Juab
 027 Millard
 031 Piute
 039 Sanpete
 041 Sevier
 055 Wayne

04 Eastern

007 Carbon
 015 Emery
 019 Grand
 037 San Juan

05 Southwestern

001 Beaver
 017 Garfield
 021 Iron
 025 Kane
 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	121	Montgomery
067	Franklin	155	Pulaski
083	Halifax	167	Russell
089	Henry	169	Scott
111	Lunenburg	173	Smyth
117	Mecklenburg	185	Tazewell
135	Nottoway	191	Washington
141	Patrick	195	Wise
143	Pittsylvania	197	Wythe
145	Powhatan		
147	Prince Edward		
03	Northern Piedmont		Unsamed cities
003	Albemarle	510	Alexandria city
009	Amherst	515	Bedford city
013	Arlington	520	Bristol city
047	Culpeper	530	Buena Vista city
059	Fairfax	540	Charlottesville city
061	Fauquier	560	Clifton Forge city
065	Fluvanna	570	Colonial Heights city
075	Goochland	580	Covington city
079	Greene	590	Danville city
107	Loudoun	595	Emporia city
109	Louisa	600	Fairfax city
113	Madison	610	Falls Church city
125	Nelson	620	Franklin city
137	Orange	630	Fredericksburg city
153	Prince William	640	Galax city
157	Rappahannock	660	Harrisonburg city
177	Spotsylvania	670	Hopewell city
179	Stafford	678	Lexington city
		680	Lynchburg city
		683	Manassas city
		685	Manassas Park city
		690	Martinsville city
		710	Norfolk city
		720	Norton city
		730	Petersburg city
		735	Poquoson city
		740	Portsmouth city
		750	Radford city
		760	Richmond city
		770	Roanoke city
		775	Salem city
		780	South Boston city
		790	Staunton city
		820	Waynesboro city
		830	Williamsburg city
		840	Winchester city
04	Northern Mountains	53	Washington
005	Alleghany	05	Puget Sound
015	Augusta	029	Island
017	Bath	033	King
023	Botetourt	035	Kitsap
043	Clarke	053	Pierce
045	Craig	055	San Juan
069	Frederick	057	Skagit
091	Highland	061	Snohomish
139	Page		
161	Roanoke		
163	Rockbridge		
165	Rockingham		
171	Shenandoah		
187	Warren		
05	Southern Mountains		
021	Bland		
027	Buchanan		
035	Carroll		
051	Dickenson		
063	Floyd		
071	Giles		
077	Grayson		
105	Lee		

073	Whatcom	083	Randolph
06	Olympic Peninsula	091	Taylor
009	Clallam	093	Tucker
027	Grays Harbor	097	Upshur
031	Jefferson	101	Webster
045	Mason	03	Southern
067	Thurston	005	Boone
07	Southwest	015	Clay
011	Clark	019	Fayette
015	Cowlitz	025	Greenbrier
041	Lewis	039	Kanawha
049	Pacific	045	Logan
059	Skamania	047	McDowell
069	Wahkiakum	055	Mercer
08	Central	059	Mingo
001	Adams	063	Monroe
003	Asotin	067	Nicholas
005	Benton	081	Raleigh
013	Columbia	089	Summers
019	Ferry	109	Wyoming
021	Franklin	04	Northwestern
023	Garfield	009	Brooke
025	Grant	011	Cabell
043	Lincoln	013	Calhoun
051	Pend Oreille	017	Doddridge
063	Spokane	021	Gilmer
065	Stevens	029	Hancock
071	Walla Walla	035	Jackson
075	Whitman	043	Lincoln
09	Inland Empire	049	Marion
007	Chelan	051	Marshall
017	Douglas	053	Mason
037	Kittitas	061	Monongalia
039	Klickitat	069	Ohio
047	Okanogan	073	Pleasant
077	Yakima	079	Putnam
54	West Virginia	085	Ritchie
02	Northeastern	087	Roane
001	Barbour	095	Tyler
003	Berkeley	099	Wayne
007	Braxton	103	Wetzel
023	Grant	105	Wirt
027	Hampshire	107	Wood
031	Hardy	55	Wisconsin
033	Harrison	01	Northeastern
037	Jefferson	037	Florence
041	Lewis	041	Forest
057	Mineral	067	Langlade
065	Morgan	069	Lincoln
071	Pendleton	075	Marinette
075	Pocahontas	078	Menominee
077	Preston	083	Oconto
		085	Oneida
		115	Shawano

125 Vilas
02 Northwestern
 003 Ashland
 005 Barron
 007 Bayfield
 013 Burnett
 031 Douglas
 051 Iron
 095 Polk
 099 Price
 107 Rusk
 113 Sawyer
 119 Taylor
 129 Washburn

03 Central
 001 Adams
 017 Chippewa
 019 Clark
 035 Eau Claire
 053 Jackson
 057 Juneau
 073 Marathon
 077 Marquette
 081 Monroe
 097 Portage
 135 Waupaca
 137 Waushara
 141 Wood

04 Southwestern
 011 Buffalo
 023 Crawford
 033 Dunn
 043 Grant
 049 Iowa
 063 La Crosse
 065 Lafayette
 091 Pepin
 093 Pierce
 103 Richland
 109 St. Croix
 111 Sauk
 121 Trempealeau
 123 Vernon

05 Southeastern
 009 Brown
 015 Calumet
 021 Columbia
 025 Dane
 027 Dodge
 029 Door
 039 Fond du Lac
 045 Green
 047 Green Lake

055 Jefferson
 059 Kenosha
 061 Kewaunee
 071 Manitowoc
 079 Milwaukee
 087 Outagamie
 089 Ozaukee
 101 Racine
 105 Rock
 117 Sheboygan
 127 Walworth
 131 Washington
 133 Waukesha
 139 Winnebago

56 Wyoming

01 Western
 013 Fremont
 017 Hot Springs
 023 Lincoln
 029 Park
 035 Sublette
 037 Sweetwater
 039 Teton
 041 Uinta

02 Central and Southeastern

001 Albany
 003 Big Horn
 007 Carbon
 009 Converse
 015 Goshen
 019 Johnson
 021 Laramie
 025 Natrona
 027 Niobrara
 031 Platte
 033 Sheridan
 043 Washakie

03 Northeastern

005 Campbell
 011 Crook
 045 Weston

72 Puerto Rico

083 Las Marias
 085 Las Piedras
 087 Loiza
 089 Luquillo
 091 Manati
 093 Maricao
 095 Maunabo
 097 Mayaguez
 099 Moca
 101 Morovis
 103 Naguabo

105	Naranjito	135	Toa Alta
107	Orocovis	137	Toa Baja
109	Patillas	139	Trujillo Alto
111	Penuelas	141	Utado
113	Ponce	143	Vega Alta
115	Quebradillas	145	Vega Baja
117	Rincon	147	Vieques
119	Rio Grande	149	Villalba
121	Sabana Grande	151	Yabucoa
123	Salinas	153	Yauco
125	San German		
127	San Juan	78	U.S. Virgin Islands
129	San Lorenzo	010	St. Croix Island
131	San Sebastian	020	St. John Island
133	Santa Isabel	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	
126	Tamarack	
127	Northern white-cedar	
		Lodgepole pine group
		281 Lodgepole pine
		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	
164	Sand pine	
165	Table Mountain pine	
166	Pond pine	
167	Pitch pine	
168	Spruce pine	
		Redwood group
	Pinyon / juniper group	341 Redwood
181	Eastern redcedar	342 Giant sequoia
182	Rocky Mountain juniper	
183	Western juniper	
184	Juniper woodland	
185	Pinyon / juniper woodland	
		Other western softwoods group
	Douglas-fir group	361 Knobcone pine
201	Douglas-fir	362 Southwest white pine
202	Port-Orford-cedar	363 Bishop pine
		364 Monterey pine
	Ponderosa pine group	365 Foxtail pine / bristlecone pine
221	Ponderosa pine	366 Limber pine
222	Incense-cedar	367 Whitebark pine
223	Jeffrey pine / Coulter pine / bigcone Douglas-fir	368 Misc. western softwoods
224	Sugar pine	
		California mixed conifer group
	Western white pine group	371 California mixed conifer
241	Western white pine	
		Exotic softwoods group
		381 Scotch pine
		382 Australian pine
		383 Other exotic softwoods
		384 Norway spruce
		385 Introduced larch
		Oak / pine group
		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 South 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

SPCD	COMMON_NAME	SCIENTIFIC NAME	SPGRPCD	NCRS	NERS	Occurrence by Research Station		
						PNWRS	RMRS	SRS
010	fir spp.	Abies	6	X	X			X
011	Pacific silver fir	Abies amabilis	12			X		
012	balsam fir	Abies balsamea	6	X	X			X
014	Santa Lucia fir	Abies bracteata	12			X		
015	white fir	Abies concolor	12	X		X	X	
016	Fraser fir	Abies fraseri	9	X	X			X
017	grand fir	Abies grandis	12			X	X	
018	corkbark fir	Abies lasiocarpa var. arizonica	12				X	
019	subalpine fir	Abies lasiocarpa	12			X	X	
020	California red fir	Abies magnifica	12			X	X	
021	Shasta red fir	Abies shastensis	12			X	X	
022	noble fir	Abies procera	12			X	X	
041	Port-Orford-cedar	Chamaecyparis lawsoniana	24			X		
042	Alaska yellow-cedar	Chamaecyparis nootkatensis	24			X		
043	Atlantic white-cedar	Chamaecyparis thyoides	9		X			X
050	cypress	Cupressus	24			X		
051	Arizona cypress	Cupressus arizonica	23			X	X	X
052	Baker cypress	Cupressus bakeri	24					
053	Tecate cypress	Cupressus forbesii	24					
054	Monterey cypress	Cupressus macrocarpa	24					
055	Sargent cypress	Cupressus sargentii	24					
057	redcedar / juniper	Juniperus	9 E, 23 W	X	X			X
058	Pinchot juniper	Juniperus pinchotii	23				X	
059	redberry juniper	Juniperus coahuilensis	23				X	X
061	Ashe juniper	Juniperus ashei	9					X
062	California juniper	Juniperus californica	23			X	X	
063	alligator juniper	Juniperus deppeana	23				X	X
064	western juniper	Juniperus occidentalis	23			X	X	
065	Utah juniper	Juniperus osteosperma	23			X	X	
066	Rocky Mountain juniper	Juniperus scopulorum	9 E, 23 W	X		X	X	X
067	southern redcedar	Juniperus virginiana var. silicicola	9					X
068	eastern redcedar	Juniperus virginiana	9	X	X		X	X
069	oneseed juniper	Juniperus monosperma	23				X	X
070	larch (introduced)	Larix	9	X	X			
071	tamarack (native)	Larix laricina	9 E, 24 W	X	X			
072	subalpine larch	Larix lyallii	24			X	X	
073	western larch	Larix occidentalis	19			X	X	
081	incense-cedar	Calocedrus decurrens	20			X	X	
090	spruce spp.	Picea	6	X	X			X
091	Norway spruce	Picea abies	9	X	X			X
092	Brewer spruce	Picea breweriana	18			X		
093	Engelmann spruce	Picea engelmannii	9 E, 18 W	X		X	X	
094	white spruce	Picea glauca	6 E, 18 W	X	X	X	X	X
095	black spruce	Picea mariana	6 E, 23 W	X	X	X		X
096	blue spruce	Picea pungens	9 E, 18 W	X	X		X	X
097	red spruce	Picea rubens	6		X			X
098	Sitka spruce	Picea sitchensis	17			X		
101	whitebark pine	Pinus albicaulis	24			X	X	
102	bristlecone pine	Pinus aristata	24			X	X	
103	knobcone pine	Pinus attenuata	24			X		
104	foxtail pine	Pinus balfouriana	24			X	X	
105	jack pine	Pinus banksiana	5	X	X			

SPCD	COMMON_NAME	SCIENTIFIC NAME	SPGRPCD	NCRS	NERS	Occurrence by Research Station		
						PNWRS	RMRS	SRS
106	common pinyon	Pinus edulis	23			X	X	X
107	sand pine	Pinus clausa	3					X
108	lodgepole pine	Pinus contorta	21			X	X	
109	Coulter pine	Pinus coulteri	24			X		
110	shortleaf pine	Pinus echinata	2	X	X			X
111	slash pine	Pinus elliotii	1					X
112	Apache pine	Pinus engelmannii	24				X	
113	limber pine	Pinus flexilis	24	X		X	X	X
114	southwestern white pine	Pinus strobiformis	24				X	
115	spruce pine	Pinus glabra	3					X
116	Jeffrey pine	Pinus jeffreyi	11			X	X	
117	sugar pine	Pinus lambertiana	14			X	X	
118	Chihuahua pine	Pinus leiophylla var. chihuahuana	24				X	
119	western white pine	Pinus monticola	15			X	X	
120	bishop pine	Pinus muricata	24			X		
121	longleaf pine	Pinus palustris	1					X
122	ponderosa pine	Pinus ponderosa	9 E, 11 W	X		X	X	X
123	Table Mountain pine	Pinus pungens	3		X			X
124	Monterey pine	Pinus radiata	24			X		
125	red pine	Pinus resinosa	4	X	X			X
126	pitch pine	Pinus rigida	3		X			X
127	gray pine	Pinus sabiniana	24			X		
128	pond pine	Pinus serotina	3		X			X
129	eastern white pine	Pinus strobus	4	X	X			X
130	Scotch pine	Pinus sylvestris	3 E, 13 W	X	X	X	X	X
131	loblolly pine	Pinus taeda	2	X	X			X
132	Virginia pine	Pinus virginiana	3	X	X			X
133	singleleaf pinyon	Pinus monophylla	23			X	X	
134	border pinyon	Pinus discolor	23				X	
135	Arizona pine	Pinus arizonica	11				X	
136	Austrian pine	Pinus nigra	9	X	X		X	X
137	Washoe pine	Pinus washoensis	24				X	
138	four-leaf pine	Pinus quadrifolia	24					
139	Torrey pine	Pinus torreyana	24					
140	Mexican pinyon pine	Pinus cembroides	24				X	X
142	Great Basin bristlecone pine	Pinus longaeva	24				X	
143	Arizona pinyon pine	Pinus monophylla var. fallax	24				X	
201	bigcone Douglas-fir	Pseudotsuga macrocarpa	24			X		
202	Douglas-fir	Pseudotsuga menziesii	9 E, 10 W	X	X	X	X	
211	redwood	Sequoia sempervirens	16			X		
212	giant sequoia	Sequoiadendron giganteum	24			X		
221	baldcypress	Taxodium distichum	8	X	X			X
222	pondcypress	Taxodium ascendens	8					X
231	Pacific yew	Taxus brevifolia	23			X	X	
241	northern white-cedar	Thuja occidentalis	9	X	X			X
242	western redcedar	Thuja plicata	22			X	X	
251	California torrey (nutmeg)	Torreya californica	24			X		
252	Florida torrey	Torreya taxifolia	9					X
260	hemlock spp.	Tsuga	7	X				X
261	eastern hemlock	Tsuga canadensis	7	X	X			X
262	Carolina hemlock	Tsuga caroliniana	7					X
263	western hemlock	Tsuga heterophylla	13			X	X	
264	mountain hemlock	Tsuga mertensiana	24			X	X	
270	Australian pine	Casuarina	9 E, 24 W					X
299	Unknown dead conifer	Unknown	9 E, 24 W	X	X	X	X	X

SPCD	COMMON_NAME	SCIENTIFIC NAME	SPGRPCD	NCRS	NERS	Occurrence by Research Station		
						PNWRS	RMRS	SRS
300	acacia	Acacia	41 E, 48 W			X		
312	bigleaf maple	Acer macrophyllum	47			X		X
313	boxelder	Acer negundo	41	X	X	X	X	X
314	black maple	Acer nigrum	31	X	X			X
315	striped maple	Acer pensylvanicum	43	X	X			X
316	red maple	Acer rubrum	32	X	X			X
317	silver maple	Acer saccharinum	32	X	X			X
318	sugar maple	Acer saccharum	31	X	X			X
319	mountain maple	Acer spicatum	43	X	X			X
320	Norway maple	Acer platanoides	31	X	X			X
321	Rocky Mountain maple	Acer glabrum	43 E, 48 W	X		X		
322	bigtooth maple	Acer grandidentatum	48			X	X	
323	chalk maple	Acer leucoderme	31					X
330	buckeye, horsechestnut	Aesculus	41 E, 47 W	X	X	X		X
331	Ohio buckeye	Aesculus glabra	41 E, 48 W	X	X			X
332	yellow buckeye	Aesculus flava	41		X			X
333	California buckeye	Aesculus californica	48			X		
334	Texas buckeye	Aesculus glabra var. arguta	41	X				X
341	ailanthus	Ailanthus altissima	43 E, 47 W	X	X			X
345	mimosa, silktree	Albizia julibrissin	43	X				X
351	red alder	Alnus rubra	45			X	X	X
352	white alder	Alnus rhombifolia	47			X	X	
355	European alder	Alnus glutinosa	41 E, 47 W	X				X
356	serviceberry	Amelanchier	43	X	X			X
361	Pacific madrone	Arbutus menziesii	47			X	X	
367	pawpaw	Asimina triloba	43	X	X			X
370	birch spp.	Betula	41	X	X			X
371	yellow birch	Betula alleghaniensis	30	X	X			X
372	sweet birch	Betula lenta	42	X	X			X
373	river birch	Betula nigra	41	X	X			X
374	water birch	Betula occidentalis	41 E, 47 W	X		X		X
375	paper birch	Betula papyrifera	41 E, 47 W	X	X		X	
378	northwestern paper birch	Betula utahensis	47			X		
379	gray birch	Betula populifolia	41	X	X			X
381	chittamwood,gum bumelia	Sideroxylon lanuginosum sub. lanuginosum	43	X				X
391	American hornbeam,musclewood	Carpinus caroliniana	43	X	X			X
400	hickory spp.	Carya	29	X	X			X
401	water hickory	Carya aquatica	29	X				X
402	bitternut hickory	Carya cordiformis	29	X	X			X
403	pignut hickory	Carya glabra	29	X	X			X
404	pecan	Carya illinoensis	29	X	X		X	X
405	shellbark hickory	Carya laciniata	29	X	X			X
406	nutmeg hickory	Carya myristiciformis	29					X
407	shagbark hickory	Carya ovata	29	X	X			X
408	black hickory	Carya texana	29	X				X
409	mockernut hickory	Carya alba	29	X	X			X
410	sand hickory	Carya pallida	29					X
421	American chestnut	Castanea dentata	43	X	X			X
422	Allegheny chinkapin	Castanea pumila	41					X
423	Ozark chinkapin	Castanea pumila var. ozarkensis	43	X				X
431	giant chinkapin,golden chinkapin	Chrysolepis chrysophylla var. chrysophylla	47			X		
450	catalpa spp.	Catalpa	42	X	X			X
451	southern catalpa	Catalpa bignonioides	43					X

SPCD	COMMON_NAME	SCIENTIFIC NAME	SPGRPCD	NCRS	NERS	Occurrence by Research Station		
						PNWRS	RMRS	SRS
452	northern catalpa	Catalpa speciosa	41	X	X			X
460	hackberry spp.	Celtis	41	X	X			X
461	sugarberry	Celtis laevigata	41	X	X			X
462	hackberry	Celtis occidentalis	41	X	X			X
463	netleaf hackberry	Celtis laevigata var. reticulata	41	X				X
471	eastern redbud	Cercis canadensis	43	X	X			X
475	curlleaf mountain-mahogany	Cercocarpus ledifolius	48			X	X	
481	yellowwood	Cladrastis kentukea	43		X			X
491	flowering dogwood	Cornus florida	42	X	X			X
492	Pacific dogwood	Cornus nuttallii	47			X	X	
500	hawthorn	Crataegus	43	X	X			X
501	cockspur hawthorn	Crataegus crus-galli	43	X				X
502	downy hawthorn	Crataegus mollis	43	X				X
510	eucalyptus	Eucalyptus	47			X	X	X
521	common persimmon	Diospyros virginiana	42	X	X			X
531	American beech	Fagus grandifolia	33	X	X			X
540	ash spp.	Fraxinus	36	X	X			X
541	white ash	Fraxinus americana	36	X	X			X
542	Oregon ash	Fraxinus latifolia	47			X		
543	black ash	Fraxinus nigra	36	X	X			X
544	green ash	Fraxinus pennsylvanica	36	X	X		X	X
545	pumpkin ash	Fraxinus profunda	36	X	X			X
546	blue ash	Fraxinus quadrangulata	36	X	X			X
547	velvet ash	Fraxinus velutina	47				X	X
548	Carolina ash	Fraxinus caroliniana	36					X
551	waterlocust	Gleditsia aquatica	42	X				X
552	honeylocust	Gleditsia triacanthos	42	X	X		X	X
555	loblolly-bay	Gordonia lasianthus	41					X
571	Kentucky coffeetree	Gymnocladus dioicus	42	X	X			X
580	silverbell	Halesia	41					X
591	American holly	Ilex opaca	42	X	X			X
600	walnut	Juglans	41 E, 47 W	X	X	X	X	X
601	butternut	Juglans cinerea	41	X	X			X
602	black walnut	Juglans nigra	40	X	X		X	X
603	California black walnut	Juglans hindsii	47					
604	southern California black walnut	Juglans californica	47					
605	Texas walnut	Juglans microcarpa	41 E, 47 W					X
611	sweetgum	Liquidambar styraciflua	34	X	X			X
621	yellow-poplar	Liriodendron tulipifera	39	X	X			X
631	tanoak	Lithocarpus densiflorus	47			X		
641	Osage-orange	Maclura pomifera	43	X	X			X
650	magnolia spp.	Magnolia	41		X			X
651	cucumbertree	Magnolia acuminata	41	X	X			X
652	southern magnolia	Magnolia grandiflora	41					X
653	sweetbay	Magnolia virginiana	41		X			X
654	bigleaf magnolia	Magnolia macrophylla	43					X
655	mountain magnolia	Magnolia fraseri	41		X			X
660	apple spp.	Malus	43 E, 47 W	X	X	X	X	X
661	Oregon crab apple	Malus fusca	47					
680	mulberry spp.	Morus	42	X	X		X	X
681	white mulberry	Morus alba	42	X	X			X
682	red mulberry	Morus rubra	42	X	X			X
691	water tupelo	Nyssa aquatica	35	X				X
692	Ogechee tupelo	Nyssa ogeche	43					X
693	blackgum	Nyssa sylvatica	35	X	X			X
694	swamp tupelo	Nyssa biflora	35	X	X			X

SPCD	COMMON_NAME	SCIENTIFIC_NAME	SPGRPCD	NCRS	NERS	Occurrence by Research Station		
						PNWRS	RMRS	SRS
701	eastern hophornbeam	Ostrya virginiana	43	X	X			X
711	sourwood	Oxydendrum arboreum	43		X			X
712	paulownia, empress-tree	Paulownia tomentosa	41	X	X			X
721	redbay	Persea borbonia	41					X
722	water-elm, planertree	Planera aquatica	43					X
730	California sycamore	Platanus racemosa	47			X		
731	sycamore	Platanus occidentalis	41		X		X	X
740	cottonwood and poplar spp.	Populus	37 E, 44 W	X	X			X
741	balsam poplar	Populus balsamifera	37 E, 44 W	X	X		X	X
742	eastern cottonwood	Populus deltoides	37	X	X		X	X
743	bigtooth aspen	Populus grandidentata	37	X	X			X
744	swamp cottonwood	Populus heterophylla	37	X	X			X
745	plains cottonwood	Populus deltoides sub. monilifera	37 E, 44 W	X			X	
746	quaking aspen	Populus tremuloides	37 E, 44 W	X	X	X	X	X
747	black cottonwood	Populus balsamifera sub. trichocarpa	37 E, 44 W			X	X	
748	Fremont cottonwood	Populus fremontii	37 E, 44 W			X	X	X
749	narrowleaf cottonwood	Populus angustifolia	37 E, 44 W	X			X	X
752	silver poplar	Populus alba	37	X				X
755	mesquite	Prosopis	48					X
756	western honey mesquite	Prosopis glandulosa var. torreyana	48				X	X
757	velvet mesquite	Prosopis velutina	48				X	X
758	screwbean mesquite	Prosopis pubescens	48				X	X
760	cherry and plum spp.	Prunus	43 E, 47 W	X	X	X		X
761	pin cherry	Prunus pensylvanica	43	X	X			X
762	black cherry	Prunus serotina	41	X	X			X
763	chokecherry	Prunus virginiana	43	X	X			X
765	Canada plum	Prunus nigra	43	X				
766	wild plum	Prunus americana	43	X				X
768	bitter cherry	Prunus emarginata	47					
800	oak, deciduous	Quercus	42 E, 48 W	X	X			X
801	coast live oak	Quercus agrifolia	48			X		
802	white oak	Quercus alba	25	X	X			X
803	Arizona white oak	Quercus arizonica	48				X	X
804	swamp white oak	Quercus bicolor	25	X	X			X
805	canyon live oak	Quercus chrysolepis	46			X		
806	scarlet oak	Quercus coccinea	28	X	X			X
807	blue oak	Quercus douglasii	46			X		
808	Durand oak	Quercus sinuata var. sinuata	25					X
809	northern pin oak	Quercus ellipsoidalis	28	X	X			X
810	Emery oak	Quercus emoryi	48				X	X
811	Engelmann oak	Quercus engelmannii	46			X		
812	southern red oak	Quercus falcata	28	X	X			X
813	cherrybark oak	Quercus pagoda	26	X	X			X
814	Gambel oak	Quercus gambelii	48				X	X
815	Oregon white oak	Quercus garryana	46			X		
816	bear oak, scrub oak	Quercus ilicifolia	43		X			X
817	shingle oak	Quercus imbricaria	28	X	X			X
818	California black oak	Quercus kelloggii	46			X		
819	turkey oak	Quercus laevis	43					X
820	laurel oak	Quercus laurifolia	28		X			X
821	California white oak	Quercus lobata	46			X		
822	overcup oak	Quercus lyrata	27	X	X			X
823	bur oak	Quercus macrocarpa	25	X	X		X	X
824	blackjack oak	Quercus marilandica	28	X	X			X

SPCD	COMMON_NAME	SCIENTIFIC NAME	SPGRPCD	NCRS	NERS	Occurrence by Research Station		
						PNWRS	RMRS	SRS
825	swamp chestnut oak	Quercus michauxii	25	X	X			X
826	chinkapin oak	Quercus muehlenbergii	25 E, 48 W	X	X		X	X
827	water oak	Quercus nigra	28		X			X
828	Nuttall oak	Quercus buckleyi	28					X
829	Mexican blue oak	Quercus oblongifolia	48				X	
830	pin oak	Quercus palustris	28	X	X			X
831	willow oak	Quercus phellos	28	X	X			X
832	chestnut oak	Quercus prinus	27	X	X			X
833	northern red oak	Quercus rubra	26	X	X			X
834	Shumard oak	Quercus shumardii	26	X	X			X
835	post oak	Quercus stellata	27	X	X			X
836	Delta post oak	Quercus similis	27					X
837	black oak	Quercus velutina	28	X	X			X
838	live oak	Quercus virginiana	27					X
839	interior live oak	Quercus wislizeni	48			X		
840	dwarf post oak	Quercus margaretiae	27	X				X
841	dwarf live oak	Quercus minima	22					X
842	bluejack oak	Quercus incana	43					X
843	silverleaf oak	Quercus hypoleucoides	48				X	X
844	Oglethorpe oak	Quercus oglethorpensis	27					X
845	Dwarf chinakapin oak	Quercus prinoides	43	X				X
846	gray oak	Quercus grisea	48				X	X
850	oak -- evergreen	Quercus	48				X	X
901	black locust	Robinia pseudoacacia	42 E, 47 W	X	X	X		X
902	New Mexico locust	Robinia neomexicana	48 E, 49 W			X	X	X
911	Palmetto spp.	Sabal	41 E, 47 W					X
919	western soapberry	Sapindus saponaria var. drummondii	43	X				X
920	willow	Salix	43 E, 48 W	X	X	X		X
921	peachleaf willow	Salix amygdaloides	43	X				X
922	black willow	Salix nigra	41	X	X			X
927	white willow	Salix alba	41	X				X
931	sassafras	Sassafras albidum	41	X	X			X
935	American mountain-ash	Sorbus americana	43	X	X			X
936	European mountain-ash	Sorbus aucuparia	43		X			X
950	basswood spp.	Tilia	38	X	X			X
951	American basswood	Tilia americana	38	X	X			X
952	white basswood	Tilia americana var. heterophylla	38	X	X			X
953	Carolina basswood	Tilia americana var. caroliniana	38					X
970	elm spp.	Ulmus	41	X	X			X
971	winged elm	Ulmus alata	41	X	X			X
972	American elm	Ulmus americana	41	X	X		X	X
973	cedar elm	Ulmus crassifolia	41					X
974	Siberian elm	Ulmus pumila	41	X			X	X
975	slippery elm	Ulmus rubra	41	X	X			X
976	September elm	Ulmus serotina	41					X
977	rock elm	Ulmus thomasii	42	X	X			X
981	California-laurel	Umbellularia californica	42			X		
989	mangrove	Rhizophora mangle	43					X
990	tesota, Arizona-ironwood	Olneya tesota	43 E, 48 W			X		
991	saltcedar	Tamarix	41 E, 47 W					
992	melaleuca	Melaleuca quinquenervia	41 E, 47 W					X
993	chinaberry	Melia azedarach	43					X
994	Chinese tallowtree	Triadica sebifera	43					X
995	tung-oil-tree	Vernicia fordii	43					X
996	smoketree	Cotinus obovatus	43	X				X
997	Russian-olive	Elaeagnus angustifolia	43	X				X
999	Unknown dead hardwood	Unknown	43 E, 47 W	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