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Forest Inventory and Analysis Database

FIADB User Guides

Volume Database Description (version 9.2)

Nationwide Forest Inventory

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Preface

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Abstract

This document is based on previous documentation of the nationally standardized Forest Inventory and Analysis database (Hansen and others 1992; Woudenberg and Farrenkopf 1995; Miles and others 2001; Woudenberg and others 2010). Documentation of the structure of the Forest Inventory and Analysis database (FIADB) as well as codes and definitions is provided. This database provides a consistent framework for storing forest inventory data across all ownerships for the entire United States, including many territories. These data are available to the public.

Keywords:

Forest Inventory and Analysis, inventory database, user manual, user guide, monitoring

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The URLs in this document may become invalid over time. We apologize if this causes any inconveniences.

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Background

The Forest Inventory and Analysis (FIA) research program has been in existence since mandated by Congress in 1928. FIA reports on status and trends in forest area and location; in the species, size, and health of trees; in total tree growth, mortality, and removals by harvest; in wood production and utilization rates by various products; and in forest land ownership. Before 1999, all inventories were conducted on a periodic basis. The passage of the 1998 Farm Bill requires FIA to collect data annually on plots 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 provides 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. A number of inventories conducted prior to the implementation of the annual inventory are available in the FIADB. However, various data attributes may be empty or the items may have been collected or computed differently. Annual inventories use a common plot design and common data collection procedures nationwide, resulting in greater consistency among FIA work units than earlier inventories. Data field definitions note inconsistencies caused by different sampling designs and processing methods.

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Updates

Database users should be aware that changes are made for each version of FIADB. Sometimes the changes are minimal, such as simply rewriting explanatory text for clarification or adding new codes to a particular attribute. Database tables and/or attributes may be added or removed.

Users who desire to have a hard-copy version can easily print only the sections that are of interest. For each chapter and appendix, the header information located in the top margin of each page details when the chapter or appendix was last modified. In addition, the page numbering for each chapter and appendix, located in the bottom margin of each page, is independent from other chapters and appendices. Therefore, for future versions, if a particular chapter or appendix has not been modified, it will not need to be printed again.

Note: The section/subsection numbering used in this document is specific to this guide; within the FIADB, attributes should be referenced by their actual column name or the column number, which is the last part of the section/subsection number. For example, 2.1.1 indicates chapter 2, section or table 1, and attribute 1.

In release 9.2, tables A, B, C, D, and E summarize major modifications in FIADB 9.0.2.

Table A: Database tables with attribute additions in FIADB 9.2

| Name of table affected | Column number | Name of column added |
|------------------------|---------------|-----------------------------|
| PLOT | 2.5.73 | GRND_LYR_SAMPLING_STATUS_CD |
| PLOT | 2.5.74 | GRND_LYR_SAMPLING_METHOD_CD |
| TREE | 3.1.202 | PREV_ACTUALHT_FLD |
| TREE | 3.1.203 | PREV_HT_FLD |
| PLOTSNAP | 10.2.92 | ADJ_EXPSOIL |
| REF_SPECIES | 11.5.8 | SCIENTIFIC_NAME |

Table B: Database tables with attribute deletions in FIADB 9.2

| Name of table affected | Column number | Name of column deleted |
|------------------------|---------------|-----------------------------|
| PLOT | 2.4.59 | COLOCATED_CD_RMRS |
| REF_POP_ATTRIBUTE | 11.1.1 | CN |
| REF_SPECIES | 11.5.1 | CN |
| REF_SPECIES | 11.5.19 | CORE |
| REF_SPECIES | 11.5.20 | EAST |
| REF_SPECIES | 11.5.21 | WEST |
| REF_SPECIES | 11.5.22 | CARIBBEAN |
| REF_SPECIES | 11.5.23 | PACIFIC |
| REF_SPECIES | 11.5.24 | EXISTS_IN_NCRS |
| REF_SPECIES | 11.5.25 | EXISTS_IN_NERS |
| REF_SPECIES | 11.5.26 | EXISTS_IN_PNWRS |
| REF_SPECIES | 11.5.27 | EXISTS_IN_RMRS |
| REF_SPECIES | 11.5.28 | EXISTS_IN_SRS |
| REF_SPECIES | 11.5.30 | ST_EXISTS_IN_NCRS |
| REF_SPECIES | 11.5.31 | ST_EXISTS_IN_NERS |
| REF_SPECIES | 11.5.32 | ST_EXISTS_IN_PNWRS |
| REF_SPECIES | 11.5.33 | ST_EXISTS_IN_RMRS |
| REF_SPECIES | 11.5.34 | ST_EXISTS_IN_SRS |
| REF_SEPCIES | 11.5.36 | JENKINS_TOTAL_B1 |
| REF_SPECIES | 11.5.37 | JENKINS_TOTAL_B2 |
| REF_SPECIES | 11.5.38 | JENKINS_STEM_WOOD_RATIO_B1 |
| REF_SPECIES | 11.5.39 | JENKINS_STEM_WOOD_RATIO_B2 |
| REF_SPECIES | 11.5.40 | JENKINS_STEM_BARK_RATIO_B1 |
| REF_SPECIES | 11.5.41 | JENKINS_STEM_BARK_RATIO_B2 |
| REF_SPECIES | 11.5.42 | JENKINS_FOLIAGE_RATIO_B1 |
| REF_SPECIES | 11.5.43 | JENKINS_FOLIAGE_RATIO_B2 |
| REF_SPECIES | 11.5.44 | JENKINS_ROOT_RATIO_B1 |
| REF_SPECIES | 11.5.45 | JENKINS_ROOT_RATIO_B2 |
| REF_SPECIES | 11.5.56 | WOOD_SPGR_MC12VOL_DRYWT |
| REF_SPECIES | 11.5.57 | WOOD_SPGR_MC12VOL_DRYWT_CIT |
| REF_SPECIES | 11.5.60 | RAILE_STUMP_DOB_B1 |
| REF_SPECIES | 11.5.61 | RAILE_STUMP_DIB_B1 |
| REF_SPECIES | 11.5.62 | RAILE_STUMP_DIB_B2 |
| REF_SPECIES | 11.5.69 | STANDING_DEAD_DECAY_RATIO1 |
| REF_SPECIES | 11.5.60 | STANDING_DEAD_DECAY_RATIO2 |
| REF_SPECIES | 11.5.71 | STANDING_DEAD_DECAY_RATIO3 |

| Name of table affected | Column number | Name of column deleted |
|------------------------|---------------|----------------------------|
| REF_SPECIES | 11.5.72 | STANDING_DEAD_DECAY_RATIO4 |
| REF_SPECIES | 11.5.73 | STANDING_DEAD_DECAY_RATIO5 |
| REF_SPECIES | 11.5.75 | MANUAL_START |
| REF_SPECIES | 11.5.76 | MANUAL_END |
| REF_SPECIES | 11.5.77 | CREATED_BY |
| REF_SPECIES | 11.5.79 | CREATED_IN_INSTANCE |
| REF_SPECIES | 11.5.80 | MODIFIED_BY |
| REF_SPECIES | 11.5.82 | MODIFIED_IN_INSTANCE |
| REF_SPECIES_GROUP | 11.7.1 | CN |
| REF_SPECIES_GROUP | 11.7.6 | CREATED_BY |
| REF_SPECIES_GROUP | 11.7.8 | CREATED_IN_INSTANCE |
| REF_SPECIES_GROUP | 11.7.9 | MODIFIED_BY |
| REF_SPECIES_GROUP | 11.7.11 | MODIFIED_IN_INSTANCE |

Table C: Database table attributes with updates to the descriptive name in FIADB 9.2

| Name of table affected | Column number | Name of attribute affected |
|----------------------------|---------------|----------------------------|
| REF_TREE_CARBON_RATIO_DEAD | 11.35.4 | CARBON_RATIO |

Table D: Database table attributes with updates to the Oracle data type in FIADB 9.2

| Name of table affected | Column number | Name of attribute affected |
|------------------------|---------------|----------------------------|
| REF_POP_ATTRIBUTE | 11.1.1 | ATTRIBUTE_NBR |
| REF_SPECIES | 11.5.1 | SPCD |
| REF_SPECIES | 11.5.4 | GENUS |
| REF_SPECIES | 11.5.5 | SPECIES |
| REF_SPECIES | 11.5.6 | VARIETY |
| REF_SPECIES | 11.5.7 | SUBSPECIES |
| REF_SPECIES | 11.5.9 | SPECIES_SYMBOL |
| REF_SPECIES | 11.5.10 | E_SPGRPCD |
| REF_SPECIES | 11.5.11 | W_SPGRPCD |
| REF_SPECIES | 11.5.12 | C_SPGRPCD |
| REF_SPECIES | 11.5.13 | P_SPGRPCD |
| REF_SPECIES | 11.5.14 | MAJOR_SPGRPCD |
| REF_SPECIES | 11.5.15 | STOCKING_SPGRPCD |
| REF_SPECIES | 11.5.16 | FOREST_TYPE_SPGRPCD |
| REF_SPECIES | 11.5.17 | JENKINS_SPGRPCD |

| Name of table affected | Column number | Name of attribute affected |
|-------------------------------|---------------|------------------------------|
| REF_SPECIES | 11.5.18 | JENKINS_SAPLING_ADJUSTMENT |
| REF_SPECIES | 11.5.22 | WOOD_SPGR_GREENVOL_DRYWT |
| REF_SPECIES | 11.5.23 | WOOD_SPGR_GREENVOL_DRYWT_CIT |
| REF_SPECIES | 11.5.24 | BARK_SPGR_GREENVOL_DRYWT |
| REF_SPECIES | 11.5.25 | BARK_SPGR_GREENVOL_DRYWT_CIT |
| REF_SPECIES | 11.5.26 | MC_PCT_GREEN_WOOD |
| REF_SPECIES | 11.5.27 | MC_PCT_GREEN_WOOD_CIT |
| REF_SPECIES | 11.5.28 | MC_PCT_GREEN_BARK |
| REF_SPECIES | 11.5.29 | MC_PCT_GREEN_BARK_CIT |
| REF_SPECIES | 11.5.30 | BARK_VOL_PCT |
| REF_SPECIES | 11.5.31 | BARK_VOL_PCT_CIT |
| REF_SPECIES | 11.5.32 | CWD_DECAY_RATIO1 |
| REF_SPECIES | 11.5.33 | CWD_DECAY_RATIO2 |
| REF_SPECIES | 11.5.34 | CWD_DECAY_RATIO3 |
| REF_SPECIES | 11.5.35 | CWD_DECAY_RATIO4 |
| REF_SPECIES | 11.5.36 | CWD_DECAY_RATIO5 |
| REF_SPECIES | 11.5.37 | DWM_CARBON_RATIO |
| REF_SPECIES | 11.5.39 | CARBON_RATIO_LIVE |
| REF_SPECIES_GROUP | 11.7.1 | SPGRPCD |
| REF_SPECIES_GROUP | 11.7.3 | REGION |
| REF_SPECIES_GROUP | 11.7.4 | CLASS |
| REF_TREE_CARBON_RATIO_DEAD | 11.35.1 | CN |
| REF_TREE_DECAY_PROP | 11.36.1 | CN |
| REF_TREE_STND_DEAD_CR_PROFILE | 11.37.1 | CN |
| REF_GRND_LYR | 11.38.1 | CN |

Table E: Database table attributes with updates to the attribute description text in FIADB 9.2

| Name of table affected | Column Number | Name of column with updated text |
|------------------------|---------------|----------------------------------|
| PLOT | 2.4.27 | ECOSUBCD |
| PLOT | 2.4.28 | CONGCD |
| PLOT | 2.4.40 | EMAP_HEX |
| TREE | 3.1.20 | HT |
| TREE | 3.1.82 | RECONCILECD |
| TREE | 3.1.199 | DRYBIO_BRANCH |

| Name of table affected | Column Number | Name of column with updated text |
|------------------------|---------------|----------------------------------|
| P2WEB_SUBPLOT_SPP | 4.2.13 | GROWTH_HABIT_CD |
| P2VEG_SUBP_STRUCTURE | 4.3.10 | GROWTH_HABIT_CD |
| PLOTGEOM | 10.1.9 | CONGCD |
| PLOTGEOM | 10.1.10 | ECOSUBCD |
| PLOTGEOM | 10.1.11 | HUC |
| PLOTGEOM | 10.1.12 | EMAP_HEX |
| PLOTGEOM | 10.1.14 | ROADLESSCD |

Other major changes in version 9.2 of the user guide are listed below.

- Replaced "Phase 2 (P2)" with "the Nationwide Forest Inventory (NFI)" in the document title.
- Added a new line "Section revision:" at the beginning of each chapter. This is to allow screen readers to read the revision date. The revision date that is in the header is not read by screen readers.
- Updated the outside links throughout the document.
- POP_EVAL_ATTRIBUTE - Deleted the foreign key PEA_PAE_FK.
- PLOTSNAP - Deleted the primary key (PLOTSNP_PK) and the two foreign keys (PLOTSNP_PEG_FK_I and PLOTSNP__PEG_FK_I2). Added a unique key PLOTSNP_UK.
- REF_POP_ATTRIBUTE - The attribute columns were rearranged, It is important for database users to confirm the column order of tables they use.
- REF_POP_ATTRIBUTE - Deleted the primary key (PAE_PK).
- The REF_SPECIES table contains reordered columns based on added and deleted attributes. It is important for database users to confirm the column order of tables they use.
- REF_SPECIES - Deleted the primary key (RS_PK), one unique key (RS_UK1), and the four foreign keys (RS_ESPGRP_FK; RS_WSPGRP_FK; RS_PSPGRP_FK).
- REF_SPECIES_GROUP - Deleted the primary key (RSG_PK).
- Updated the suggested document citation.
- Preface: Updated the list of Authors.
- Chapter 1 Overview. 1.1.1 Purpose of this guide. The first paragraph was revised to explain the new use of the term Nationwide Forest Inventory (NFI) and how this new title related to the historical use of Phase 1 (P1), Phase 2 (P2), and Phase 3 (P3).
- Chapter 1 Overview. 1.3.2 Keys Presented with the Tables. A note was added to the text following the last paragraph under "Primary Keys."
- Appendix F. Changed the text to reflect changes in the Master Species list (MSL) organization the users will see if they use the MSL file.
- Appendix H. Changed the name of the appendix from "Damage Codes and Thresholds" to "Damage Agent Codes and Thresholds".

Hard-copy printing:

To print sections from this PDF document, it will be necessary to specify the continuous page number range for the desired section to be printed. Table E outlines the start page and end page for each document section. This guide is intended to be printed on both sides of the paper.

Table F: Page range for individual document sections (for hard-copy printing).

| Document section | start page | end page |
|--|------------|----------|
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| Chapter 3: Database Tables - Tree Level | 157 | 316 |
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| Chapter 6: Database Tables - Northern Research Station (NRS) Tree Regeneration Indicator | 413 | 426 |
| Chapter 7: Database Tables - Ground Cover, Pacific Northwest Research Station (PNWRS) | 427 | 446 |
| Chapter 8: Database Tables - Soils | 447 | 464 |
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| Appendix F: Tree Species Codes, Names, and Occurrences | 955 | 956 |
| Appendix G: Forest Inventory and Analysis (FIA) Plot Design Codes and Definitions by FIA Work Unit | 957 | 964 |
| Appendix H: Damage Agent Codes and Thresholds | 965 | 1012 |
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Section revision: 04.2024

Chapter 1: Overview

Chapter Contents:

| Section | Heading |
|---------|--|
| 1.1 | <p>Introduction:</p> <ul style="list-style-type: none">• Purpose of This Guide• The FIA Program• The FIA Database |
| 1.2 | <p>FIA Sampling and Estimation Procedures:</p> <ul style="list-style-type: none">• Sampling and Stratification Methodology• Plot Location• Plot Design, Condition Delineation, and Types of Data Attributes• Types of Attributes• Expansion Factors• Accuracy Standards |
| 1.3 | <p>Database Structure:</p> <ul style="list-style-type: none">• Table Descriptions• Keys Presented with the Tables• Oracle Data Types |

1.1 Introduction

1.1.1 Purpose of This Guide

This guide describes the database tables and attributes (columns) contained within the Forest Inventory and Analysis database (FIADB). The data within the FIADB are for the "Nationwide Forest Inventory (NFI)" conducted by the Forest Inventory and Analysis (FIA) Program. The term "NFI" refers to what was historically called "Phase 2" (P2) under FIA's three-phase sampling scheme (see "[FIA Sampling and Estimation Procedures](#)" for details). NFI is a network of permanent plots, located in non-urban areas that are forested (or capable of being forested). NFI plots are measured every 5-10 years depending on location. Information on the site, land use, and trees is collected on all plots. Additionally, information about down woody material, soils, and understory vegetation is collected on a subset of plots. **Note:** The title for this user guide was revised to remove the "Phase 2" term. However, within this document, the use and meanings for FIA's three-phase sampling scheme terms "Phase 1" (P1), "Phase 2" (P2), and "Phase 3" (P3) remain the same. Although this user guide is used widely within the FIA program, a substantial part, if not the majority, of the intended audience includes those outside FIA who are interested in using FIA data for their own analyses. Awareness of the potential uses of FIA data by users outside the FIA community is growing, and the data become increasingly useful as additional attributes are collected. However, as is the case with any data source, it is incumbent upon the user to understand not only the data definitions and acquisition methods, but also the context in which the data were collected. This guide is intended to help current and potential users understand the necessary details of the FIADB.

This guide has eleven chapters. The remainder of chapter 1 includes general introductions to the FIA program and the FIA database, including brief histories of both. It provides a convenient overview for those who have an interest in using FIA data, but have not yet become familiar with the FIA program. Chapter 1 also provides descriptions of FIA sampling methods, including plot location and design, data measurement and computation, and general estimation procedures. Chapters 2 through 11 describe the tables that comprise the database, the attributes stored in each table, and the linkages between tables. Descriptions of the attributes, their data format, valid values, and other important details are given, but the appropriate field guides should be consulted for exact specifications regarding data collection methods. Users with a good understanding of the database tables (chapters 2 through 11) and fundamental database management skills should be able to conduct a wide range of analyses. The supplemental document [Forest Inventory and Analysis Database: Population Estimation User Guide](#) explains the standard methods used to compile population-level estimates from FIADB, and applies the estimation procedures documented by Bechtold and Patterson (2005). These procedures are based on adoption of the annual inventory system and the mapped plot design, and constitute a major change when compared to previous compilation procedures. However, the compilation procedures should allow more flexible analyses, especially as additional panels are completed under the annual inventory system.

There are several conventions used in this guide. The names of attributes (i.e., columns within tables) and table names appear in capital letters (e.g., PLOT table). Some attribute names appear in two or more tables. In most cases, such as the State code (STATECD), the attribute has the same definition in all tables. However, there are situations where attributes with the same name are defined differently in each table. One such example is the VALUE attribute in the REF_FOREST_TYPE table, which is used to identify the forest

type and refers to appendix D. However, the VALUE attribute in the REF_UNIT table is used to indicate the FIA survey unit identification number from appendix B. In most cases, such as in the table descriptions in chapters 2 through 11, the attribute name will be used alone and the affiliation with a particular table is implied by the context. In cases where an attribute name has a different meaning in two or more tables, a compound naming convention, using the table name followed by the attribute name, will be used. In the VALUE attribute example, the name REF_FOREST_TYPE.VALUE refers to the VALUE attribute in the REF_FOREST_TYPE table, while REF_UNIT.VALUE refers to the VALUE attribute in the REF_UNIT table.

1.1.2 The FIA Program

The mission of FIA is to determine the extent, condition, volume, growth, and use of trees on the Nation's forest land. FIA is the only program that collects, publishes, and analyzes data from all ownerships of forest land in the United States (Smith 2002). Throughout the long history of the program, inventories have been conducted by a number of geographically dispersed FIA work units. Currently, the national FIA program is implemented by four regionally distributed work units that are coordinated by a National Office in Washington, DC (see [figure 1-1](#)). The four FIA work units are named by the research station in which they reside. Station abbreviations are used within this document and they are defined as Pacific Northwest Research Station (PNWRS), Northern Research Station (NRS), Rocky Mountain Research Station (RMRS), and Southern Research Station (SRS). NRS was formed from the merger of North Central Research Station (NCRS) and Northeastern Research Station (NERS). Some data items still retain these designations.



Figure 1-1: Boundaries of the four regionally distributed FIA work units and locations of program offices.

Starting in 1929, FIA accomplished its mission by conducting periodic forest inventories on a State-by-State basis. With the completion of Arizona, New Mexico, and Nevada in 1962, all 48 coterminous States had at least one periodic inventory (Van Hooser and others 1993). Repeat intervals for inventorying individual States have varied widely. By the late 1990s, most States had been inventoried more than once under the periodic inventory system; however, not all periodic data are available in electronic form ([appendix J](#) lists all periodic data available in the FIADB and the year in which annual inventory began).

With the passage of the 1998 Farm Bill, the FIA program was required to move from a periodic inventory to an annualized system, with a portion of all plots within a State measured each year (Gillespie 1999). Starting in 1999, States were phased into the annual inventory system ([appendix J](#)). As an exception, Hawaii uses a 10-year remeasurement cycle, but the entire State is inventoried over a shorter time frame (e.g., 3-5 years) before it is inventoried again. Although the 1998 Farm Bill specified that 20 percent of the plots within each State would be visited annually, funding limitations have resulted in the actual portion of plots measured annually ranging between 10 and 20 percent, depending on the State.

Periodic and annual data are analyzed to produce reports at State, regional, and national levels. In addition to published reports, data are made available to the public for those who are interested in conducting their own analyses. Downloadable data, available online at [FIA Data and Tools](#) (<https://www.fs.usda.gov/research/products/dataandtools/tools/fia-datamart>), follow the

format described in this document. Also available at this site are tools to make population estimates. The web-based EVALIDator tool and the DATIM tool (Design and Analysis Toolkit for Inventory and Monitoring) provide interactive access to the FIADB.

1.1.3 The FIA Database

The Forest Inventory and Analysis Database (FIADB) was developed to provide users with data in a consistent format, spanning all States and inventories. The first version of FIADB replaced two FIA regional databases; the Eastern States (Eastwide database) documented by Hansen and others (1992), and Western States (Westwide database) documented by Woudenberg and Farrenkopf (1995). A new national plot design (see section 1.2) provided the impetus for replacing these two databases, and FIA work units adopted the new design in all State inventories initiated after 1998. The FIADB table structure is currently derived from the National Information Management System (NIMS), which was designed to process and store annual inventory data. A number of changes in the FIADB structure have been made to accommodate the data processing and storage requirements of NIMS. As a result, data from periodic inventories are stored in a format consistent with annual inventory data.

FIADB files are available for periodic inventory data collected as early as 1968 (see [appendix J](#)). A wide variety of plot designs and regionally defined attributes were used in periodic inventories, often differing by State. Because of this, some data attributes may not be populated or certain data may have been collected or computed differently. During some periodic inventories, ground plot data were collected on timberland only. FIA defines timberland as nonreserved forest land capable of producing at least 20 cubic feet of wood volume per acre per year (the definition of forest land is in the [COND_STATUS_CD](#) description in the COND table.) Thus, low productivity forest land, reserved (areas reserved from timber harvesting), and nonforested areas usually were not ground sampled. To account for the total area of a State, "place holder" plots were created to represent these nonsampled areas, which are identified by plot design code 999 in FIADB (PLOT.DESIGNCD = 999). For these plots, many attributes that are normally populated for forested plots will be blank (null). Users should be aware that while place holder plots account for the area of nonsampled forest land, they do not account for the corresponding forest attributes (such as volume, growth, or mortality) that may exist in those areas.

Annual inventories, initiated sometime after 1999 depending on the State, use a nationally standardized plot design and common data collection procedures resulting in greater consistency among FIA work units than earlier inventories. However, as part of a continuing effort to improve the inventory, some changes in methodology and attribute definitions have been implemented after the new design was put into practice. Beginning in 1998, FIA started using a National Field Guide referenced as Field Guide 1.0. The database contains an attribute labeled MANUAL that stores the version number of the field guide under which the data were collected. When both the plot design is coded as being the national design (PLOT.DESIGNCD = 1) and the field guide is coded with a number greater than or equal to 1, certain attributes are defined as being *core* while others are allowed to be *core optional*. *Core* attributes must be collected by every FIA work unit, using the same definition and set of codes. In contrast, collection of *core optional* attributes are decided upon by individual FIA work units, using the same national protocol, predefined definition, and set of codes. Many attributes, regardless of whether or not they are *core* or *core optional*, are only populated for forested conditions, and are blank (null) for other conditions (such as nonforest or water). Attributes described in chapters 2 through 9 are noted if they are *core optional*.

Users who wish to analyze data using aggregations of multiple State inventories or multiple inventories within States should become familiar with changes in methodology and attribute definitions (see sections [1.2](#) and [1.3](#)). For each attribute in the current version of FIADB, an effort has been made to provide the current definition of the attribute, as well as any variations in definition that may have been used among various FIA work units. In other words, although inventory data have been made available in a common data format, users should be aware of differences that might affect their analyses.

1.2 FIA Sampling and Estimation Procedures

To use the FIADB effectively, users should acquire a basic understanding of FIA sampling and estimation procedures. Generally described, FIA uses what may be characterized as a three-phase sampling scheme. Phase 1 (P1) is used for stratification, while Phase 2 (P2) consists of plots that are visited or photo-interpreted. A subset of Phase 2 plots were designated as Phase 3 (P3) plots (formerly known as Forest Health Monitoring [FHM] plots) where additional health indicator attributes were collected. Phase 3 was no longer being completed as a separate inventory as of 2012. The FIA program collects some forest health indicators (e.g., DWM, vegetation profile, invasives, soils, lichens) on a portion of the P2 plots. Damages and crown attributes are now collected on all P2 plots. Ozone damage is no longer collected.

1.2.1 Sampling and Stratification Methodology

Remote Sensing (P1)

The basic level of inventory in the FIA program is the State, which begins with the interpretation of a remotely sensed sample, referred to as Phase 1 (P1). The intent of P1 is to classify the land into various classes for the purpose of developing meaningful strata. A stratum is a group of plots that have the same or similar classifications based on remote-sensing imagery. Stratification is a statistical technique used by FIA to aggregate Phase 2 ground samples into groups to reduce variance when stratified estimation methods are used. The total area of the estimation unit is assumed to be known.

Each Phase 2 ground plot is assigned to a stratum and the weight of the stratum is based on the proportion of the stratum within the estimation unit. Estimates of population totals are then based on the sum of the product of the known total area, the stratum weight, and the mean of the plot-level attribute of interest for each stratum. The expansion factor for each stratum within the estimation unit is the product of the known total area and the stratum weight divided by the number of Phase 2 plots in the stratum.

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 are assigned to ground plots for a particular State should contact the appropriate FIA work unit ([table 1-1](#)).

Ground Sampling (P2)

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. Ground plots may be new plots that have never been measured, or re-measurement plots that were measured during one or more previous inventories. Recent inventories use a nationally standard, fixed-radius plot layout

for sample tree selection (see [figure 1-2](#)). Various arrangements of fixed-radius and variable-radius (prism) subplots were used to select sample trees in older inventories.

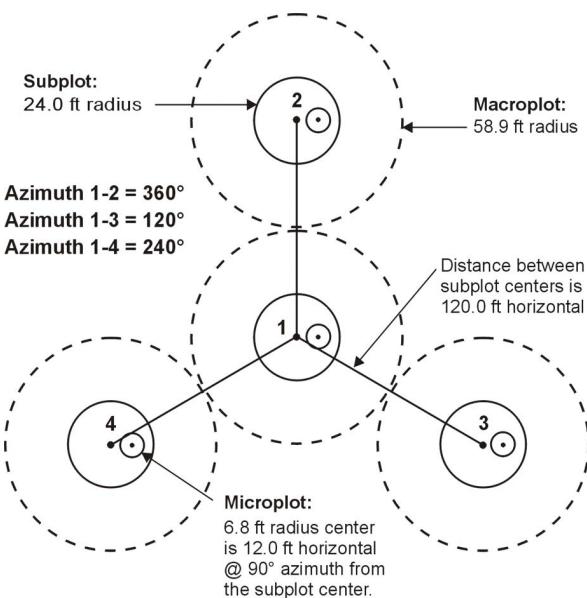


Figure 1-2: The FIA mapped plot design. Subplot 1 is the center of the cluster with subplots 2, 3, and 4 located 120 feet away at azimuths of 360°, 120°, and 240°, respectively.

1.2.2 Plot Location

The FIADB includes coordinates for every plot location in the database, whether it is forested or not, but these are not the precise locations of the plot centers. In an amendment to the Food Security Act of 1985 (reference 7 USC 2276 § 1770), Congress directed FIA to ensure the privacy of private landowners. Exact plot coordinates could be used in conjunction with other publicly available data to link plot data to specific landowners, in violation of requirements set by Congress. In addition to the issue of private landowner privacy, the FIA program had concerns about plot integrity and vandalism of plot locations on public lands. A revised policy has been implemented and methods for making approximate coordinates available for all plots have been developed. These methods are collectively known as "fuzzing and swapping" (Lister and others 2005).

In the past, FIA provided approximate coordinates for its periodic data in the FIADB. These coordinates were within 1.0 mile of the exact plot location (this is called fuzzing). However, because some private individuals own extensive amounts of land in certain counties, the data could still be linked to these owners. In order to maintain the privacy requirements specified in the amendments to the Food Security Act of 1985, up to 20 percent of the private plot coordinates are swapped with another similar private plot within the same county (this is called swapping). This method creates sufficient uncertainty at the scale of the individual landowner such that privacy requirements are met. It also ensures that county summaries and any breakdowns by categories, such as ownership class, will be the same as when using the true plot locations. This is because only the coordinates of the plot are swapped - all the other plot characteristics remain the

same. The only difference will occur when users want to subdivide a 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 work unit has chosen its own attributes for defining similarity).

For plot data collected under the current plot design, plot numbers are reassigned to sever the link to other coordinates stored in the FIADB prior to the change in the law. Private plots are also swapped using the method described above; remeasured plots are swapped independent of the periodic data. All plot coordinates are fuzzed, but less than before - within 0.5 mile for most plots and up to 1.0 mile 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.

For most user applications, such as woodbasket analyses and estimates of other large areas, fuzzed and swapped coordinates provide a sufficient level of accuracy. However, some FIA customers require more accurate of plot locations 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 provides [Spatial Data Services](#) that allow most of the desired analyses while meeting privacy requirements. The possibilities and limitations for these types of analyses are case-specific, so interested users should contact their local FIA work unit for more information.

1.2.3 Plot Design, Condition Delineation, and Types of Data Attributes

Plot Designs

The current national standard FIA plot design was originally developed for the Forest Health Monitoring program (Scott and others 1993). It was adopted by FIA in the mid-1990s and used for the last few periodic inventories and all annual inventories. The standard plot consists of four 24.0-foot radius subplots (approximately 0.0415 or 1/24 acre) (see [figure 1-2](#)), on which trees \geq 5.0 inches d.b.h./d.r.c. are measured. Within each of these subplots is nested a 6.8-foot radius microplot (approximately 1/300th acre) on which trees <5.0 inches d.b.h./d.r.c. are measured. A *core optional* variant of the standard design includes four "macroplots," each with a radius of 58.9 feet (approximately 1/4 acre) that originate at the centers of the 24.0-foot radius subplots. Breakpoint diameters between the 24-foot radius subplots and the macroplots vary and are specified in the macroplot breakpoint diameter attribute ([PLOT.MACRO_BREAKPOINT_DIA](#)).

Prior to adoption of the current plot design, a wide variety of plot designs were used. Periodic inventories might include a mixture of designs, based on forest type, ownership, or time of plot measurement. In addition, similar plot designs (e.g., 20 BAF variable-radius plots) might have been used with different minimum diameter specifications (e.g., 1-inch versus 5-inch). Details on these designs are included in [appendix G](#) (plot design codes).

Conditions

An important distinguishing feature between the current plot design and previous designs is that different conditions are "mapped" on the current design (see [figure 1-3](#)). In older plot designs, adjustments were made to the location of the plot center or the subplots were rearranged such that the entire plot sampled a single condition. In the new design, the plot location and orientation remains fixed, but boundaries between conditions are mapped and recorded. Conditions are defined by changes in land use or changes in

vegetation that occur along more-or-less distinct boundaries. Reserved status, owner group, forest type, stand-size class, regeneration status, and stand density are used to define forest conditions. For example, the subplots may cover forest and nonforest areas, or it may cover a single forested area that can be partitioned into two or more distinct stands. Although mapping is used to separate forest and nonforest conditions, different nonforest conditions occurring on a plot are not mapped during initial plot establishment. Each condition occurring on the plot is assigned a condition proportion, and all conditions on a plot add up to 1.0. For plot designs other than the mapped design, condition proportion is always equal to 1.0 in FIADB.

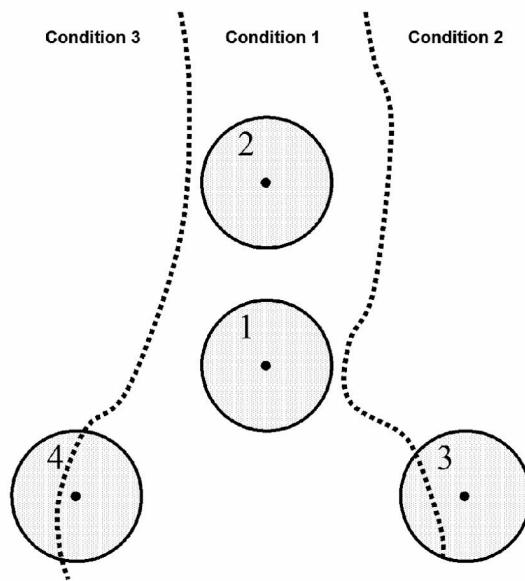


Figure 1-3: The FIA mapped plot design. Subplot 1 is the center of the cluster with subplots 2, 3, and 4 located 120 feet away at azimuths of 360°, 120°, and 240°, respectively. When a plot straddles two or more conditions, the plot area is divided by condition.

1.2.4 Types of Attributes

Measured, Assigned, and Computed Attributes

In addition to attributes that are collected in the field, FIADB includes attributes that are populated in the office. Examples of field attributes include tree diameter and height, and slope and aspect of the plot and subplot. Attributes that are populated in the office include assigned attributes, such as county and owner group codes, or computed attributes, such as tree and area expansion factors, and tree volumes.

For measured attributes, this document provides only basic information on the methodology used in the field. The authoritative source for methodology is the [Forest Inventory and Analysis National Core Field Guide](#) used during the inventory in which the data were collected. The MANUAL attribute in the PLOT table documents the version number where data collection protocols can be found.

Values of attributes that are assigned in the office are determined in several ways, depending on the attribute. For example, ownership may be determined using geographic

data or local government records. Other attributes, such as Congressional District and Ecological Subsection are assigned values based on data management needs.

Some computed attributes in the database are derived using other attributes in the database. Ordinarily, such attributes would not be included in a database table because they could be computed using the supplied attributes. However, some data compilation routines are complex or vary within or among FIA work units, so these computed attributes are populated for the convenience of database users.

One example of a computed attribute is site index, which is computed at the condition level. Site index is generally a function of height and age, although other attributes may be used in conjunction. In addition, several different site index equations may be available for a species within its range. Height and age data are included in the TREE table, but only certain trees (see [SITETREE table](#)) are included in the site index attribute that is reported for the condition. As a result, it would be time-consuming for users to replicate the process required to calculate site index at the condition level. For convenience, the condition (COND) table includes site index (SICOND), the species for which it is calculated (SISP), and the site index base age (SIBASE).

In most cases computed attributes should be sufficient for users' needs, because the equations and algorithms used to compute them have been determined by the FIA program to be the best available for the plot location. However, for most computed attributes the relevant tree- and plot-level attributes used to compute them are included in the database, so users may do their own calculations if desired.

Regional Attributes

A number of regionally specific attributes are available in FIADB. These regional attributes are identified by FIA work unit, both in the table structure description (e.g., the attribute is named with an extension such as NERS) and in the attribute description (e.g., the attribute description text contains the phrase "Only populated by ..."). For specific questions about the data from a particular FIA work unit, please contact the individuals listed in [table 1-1](#). More information on attribute types is included in chapters 2 through 9.

Table 1-1: Contacts at individual FIA work units.

| FIA Work Unit | RSCD | States | Database Contact | Phone | Analyst Contact | Phone |
|-----------------------|------|--|-------------------|--------------|-----------------|--------------------|
| Rocky Mountain (RMRS) | 22 | AZ, CO, ID, MT, NV, NM, UT, WY | Andrea DiTommaso | 801-625-5397 | Kristen Pelz | 303-859-0892 |
| North Central (NCRS)* | 23 | IL, IN, IA, KS, MI, MN, MO, NE, ND, SD, WI | Elizabeth Burrill | 603-868-7675 | Scott Pugh | 906-482-6303 x1317 |
| Northeastern (NERS)* | 24 | CT, DE, ME, MD, MA, NH, NJ, NY, OH, PA, RI, VT, WV | Elizabeth Burrill | 603-868-7675 | Randy Morin | 215-233-6562 |

| FIA Work Unit | RSCD | States | Database Contact | Phone | Analyst Contact | Phone |
|---------------------------|-------|--|------------------|--------------|-------------------|--------------|
| Pacific Northwest (PNWRS) | 26,27 | AK, CA, HI, OR, WA, AS, FM, GU, MH, MP, PW | Vicki Johnson | 907-743-9410 | Glenn Christensen | 503-808-2064 |
| Southern (SRS) | 33 | AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, VA, PR, VI | Chad Keyser | 865-862-2095 | Kerry Dooley | 865-862-2098 |

* The North Central Research Station (NCRS) and the Northeastern Research Station (NERS) have merged to become one research station, the Northern Research Station. The former regional designations are kept to accommodate the data.

1.2.5 Expansion Factors

Tree Expansion Factors

The expansion factor(s) used to scale each tree on a plot to a per-acre basis is dependent on the plot design. The examples here are for fixed-radius plots (see [appendix G](#) for all plot designs.) For fixed-plot designs, scaling is straightforward, with the number of trees per acre (TPA) represented by one tree equal to the inverse of the plot area in acres. The general formula is shown by equation [1]:

$$[1] \quad TPA = 1/(N \cdot A)$$

Where N is the number of subplots, and
A is the area of each subplot.

For example, the TPA expansion factor of each tree ≥ 5.0 inches d.b.h./d.r.c. occurring on the current plot design would be calculated using equation [2]:

TPA expansion factors for standard subplot, microplot and macroplot designs

$$[2] \quad \begin{aligned} & TPA \text{ per 24-foot fixed-radius subplot} \\ & \text{Radius of a subplot} = 24 \text{ feet} \\ & \text{Area of subplot} = \pi \cdot r^2 \\ & \text{Area of subplot} = 3.141592654 \cdot 24^2 \\ & \text{Area of subplot} = 1809.557368 \text{ square feet} \\ & \text{Acres in a subplot} = \text{area of subplot in square feet} / (43560 \text{ square feet / acre}) \\ & \text{Acres in a subplot} = 1809.557368 \text{ square feet} / (43560 \text{ square feet / acre}) \\ & \text{Acres in a subplot} = 0.04154172 \text{ acres per subplot} \\ & \text{Acres in a plot} = 4 \text{ subplots per plot} \\ & \text{Acres per plot} = 4 \cdot 0.04154172 \\ & \quad = 0.166166884 \text{ acres per plot} \\ & TPA = 1 / (0.166166884) = 6.018046 \end{aligned}$$

The TPA expansion factor of each sapling 1.0-4.9 inches d.b.h./d.r.c. occurring on the current microplot design would be calculated using equation [3]:

$$[3] \quad TPA \text{ per 6.8-foot fixed-radius microplot}$$

Radius of a microplot = 6.8 feet
Area of microplot = $\pi \times \text{radius}^2$
Area of microplot = 3.141592654×6.8^2
Area of microplot = 145.2672443 square feet
Acres in a microplot = area of microplot in square feet /
(43560 square feet /acre)
Acres in a microplot = 145.2672443 square feet / (43560 square feet /acre)
Acres in a microplot = 0.003334877 acres per subplot
Acres in a plot = 4 microplots per plot
Acres per plot = 4×0.003334877
= 0.013339508 acres per plot
TPA = 1 / (0.013339508) = 74.965282

The TPA expansion factor of each tree ≥ 5.0 inches d.b.h./d.r.c. occurring on the current macroplot design would be calculated using equation [4]:

- #### [4] TPA per 58.9-foot fixed-radius macroplot

Radius of a macroplot = 58.9 feet
Area of macroplot = $\pi \times \text{radius}^2$
Area of macroplot = $3.141592654 \times 58.9^2$
Area of macroplot = 10898.84465 square feet

Acres in a macroplot = area of macroplot in square feet / 43560 square feet / acre
Acres in a macroplot = 10898.84465 square feet / 43560 square feet / acre
Acres in a macroplot = 0.250203045 acres per plot
Acres in a plot = 4 macroplots per plot
Acres per plot = 4×0.250203045
= 1.000812181 acres per plot

$$TPA = 1 / (1.000812181) = 0.999188$$

This expansion factor can be found in the TPA_UNADJ attribute in the [TREE table](#) (see chapter 3) for plots measured with the annual plot design.

In variable-radius plot designs, the per-acre expansion factor is determined by the diameter of the tree, the basal area factor (BAF), and the number of points used in the plot design. The general formula is shown by equation [5]:

- $$[5] \quad TPA = (BAF / 0.005454 * DIA^2) / N$$

Where BAF is the variable-radius basal area factor in square feet, DIA is diameter of the tally tree in inches, and N is the number of points in the plot design.

For example, if an 11.5-inch tree is tallied using a 10 BAF prism on a variable-radius design plot that uses five points, the calculation is:

$$[6] \quad TPA = (10 / 0.005454 * 11.5^2) / 5 = 2.773$$

A 5.2-inch tree will have a greater expansion factor:

$$[7] \quad TPA = (10 / 0.005454 * 5.2^2) / 5 = 13.562$$

Although it is not necessary to calculate expansion factors for different plot designs because they are stored in TPA_UNADJ, information on plot design can be found by using the code from the DESIGNCD attribute in the PLOT table to look up the plot design specifications in [appendix G](#).

Plot Area Expansion Factors

Some previous versions of FIADB have included area expansion factors in the PLOT table that were used to scale plot-level data to population-level estimates (see EXPCURR and related attributes in Miles and others 2001). In this version of FIADB, area expansion factors have been removed from the PLOT table. Instead, there is one area expansion factor (EXPNS) stored in the POP_STRATUM table. This change is needed because of the way annual inventory data are compiled. Under the annual inventory system, new plots are added each year. Adjustment factors that are used to compensate for denied access, inaccessible, and other reasons for not sampling may differ each time new data replaces older data. Both the number of acres each plot represents and the adjustments for the proportion of plots not sampled may change each year. In order to allow users to obtain population estimates for any grouping of data, an adjustment factor has been calculated and stored for each set of data being compiled. There is a separate adjustment factor for each fixed plot size: microplot, subplot, and macroplot. These attributes are also stored in the POP_STRATUM table. Each time the data are stratified differently, the adjustments and expansion factor may change. Therefore, FIA provides a different expansion factor every time the data are restratified.

FIA has chosen the term 'evaluation' to describe this process of storing different stratifications of data either for an individual set of data or for the changing sets of data through time. Each aggregation of data is given an evaluation identifier (EVALID). The user can select population estimates for the most current set of data or for previous sets of data. In addition to being able to calculate population estimates, users can now calculate sampling error information because FIA is storing all of the Phase 1 information used for the stratification. That information is stored for each estimation unit, which is usually a geographic subset of the State (see the [POP_ESTN_UNIT table](#)). For more information about evaluations and calculation of area expansion factors, see [The Forest Inventory and Analysis Database: Population Estimation User Guide](#).

1.2.6 Accuracy Standards

Forest inventory plans are designed to meet sampling error standards for area, volume, growth, and removals provided in the Forest Service directive (FSH 4809.11) known as the Forest Survey Handbook (U.S. Department of Agriculture 2008). 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 Survey Handbook mandates that the sampling error for area cannot exceed 3 percent error per 1 million acres of timberland. A 5 percent (Eastern United States) or 10 percent (Western United States) error per 1 billion cubic feet of growing-stock trees 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 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.

- A State with 5 million acres of timberland would have a maximum allowable sampling error of 1.3 percent ($3\% \times (1,000,000)^{0.5} / (5,000,000)^{0.5}$).
- A geographic unit within that State with 1 million acres of timberland would have a 3.0 percent maximum allowable sampling error ($3\% \times (1,000,000)^{0.5} / (1,000,000)^{0.5}$).
- A county within that State with 100 thousand acres would have a 9.5 percent maximum allowable sampling error ($3\% \times (1,000,000)^{0.5} / (100,000)^{0.5}$) at the 67 percent confidence level.

The greater allowance for sampling error in smaller areas reflects the decrease in sample size as estimation area decreases.

Estimation procedures and the calculation of confidence intervals for typical FIA tables are discussed in [The Forest Inventory and Analysis Database: Population Estimation User Guide](#). Additional information on estimation and confidence intervals can be found in Bechtold and Patterson (2005).

1.3 Database Structure

This section provides information about the database tables, including detailed descriptions of all attributes within the tables. Each column or attribute in a table is listed with its unabbreviated name, followed by a description of the attribute. Attributes that are coded include a list of the codes and their meanings. The "[Index of Column Names](#)" contains an alphabetized list of all of the column names (attributes) in the database tables included within this user guide. Some overview information is presented below, followed by a section with complete information about all tables and attributes.

1.3.1 Table Descriptions

The list of the FIADB data and reference tables has been moved to a separate index section named [Index of Tables](#).

Figure 1-4 helps to illustrate how the Phase 1 and other population estimation tables relate to one another and to the PLOT table.

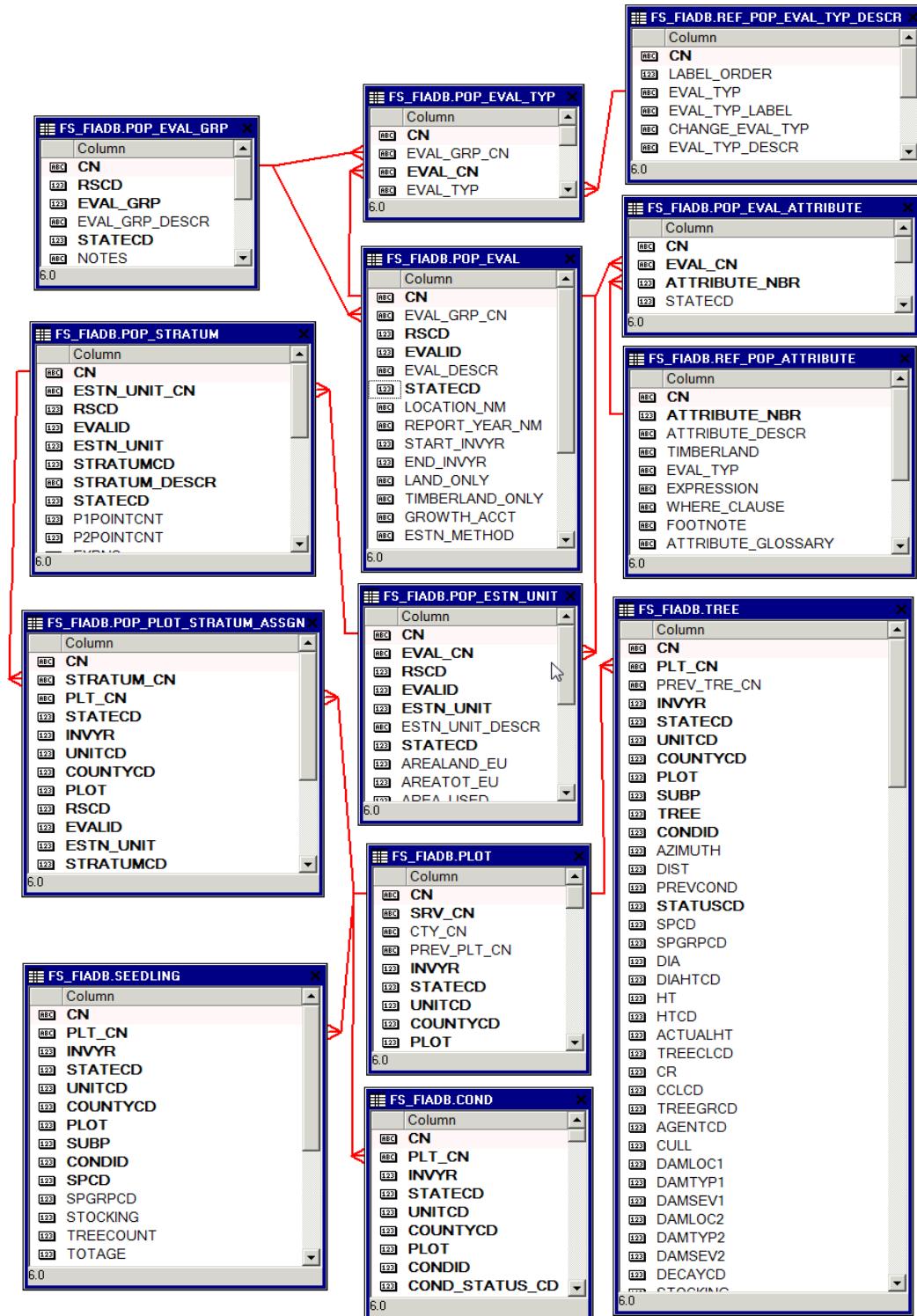


Figure 1-4: Relationships among Phase 1 and population estimation tables to the Phase 2 plot and other frequently used tables.

1.3.2 Keys Presented with the Tables

Each summarized table in chapters 2 through 9 has a list of keys just below the bottom of the table. These keys are used to join data from different tables. The following provides a general definition of each kind of key.

Primary key

A single column in a table whose values uniquely identify each row in an Oracle table. The primary key in each FIADB table is the CN column.

The name of the primary key for each table is listed in the table description. It follows the nomenclature of 'TABLEABBREVIATION'_PK. The table abbreviations are as follows:

Note: The following list of entities includes a combination of Oracle tables, views, and synonyms. However, for this user guide, all of these entities are simply referred to as database "tables."

| Table name | Table abbreviation |
|-------------------------|--------------------|
| SURVEY | SRV |
| PROJECT | PRJ |
| COUNTY | CTY |
| PLOT | PLT |
| COND | CND |
| SUBPLOT | SBP |
| SUBP_COND | SCD |
| SUBP_COND_CHNG_MTRX | CMX |
| TREE | TRE |
| TREE_WOODLAND_STEMS | WOODS |
| TREE_GRM_COMPONENT | TRE_GRM_CMP |
| TREE_GRM_THRESHOLD | TRE_GRM_THRSHLD |
| TREE_GRM_MIDPT | TRE_GRM_MIDPT |
| TREE_GRM_BEGIN | TRE_GRM_BGN |
| TREE_GRM_ESTN | TGE |
| BEGINEND | BE |
| SEEDLING | SDL |
| SITETREE | SIT |
| INVASIVE_SUBPLOT_SPP | ISS |
| P2VEG_SUBPLOT_SPP | P2VSSP |
| P2VEG_SUBP_STRUCTURE | P2VSS |
| DWM_VISIT | DVT |
| DWM_COARSE_WOODY_DEBRIS | DCW |
| DWM_DUFF_LITTER_FUEL | DDL |
| DWM_FINE_WOODY_DEBRIS | DFW |

| Table name | Table abbreviation |
|------------------------|--------------------|
| DWM_MICROPLOT_FUEL | DMF |
| DWM_RESIDUALPILE | DRP |
| DWM_TRANSECT_SEGMENT | DTS |
| COND_DWM_CALC | CDC |
| PLOT_REGEN | PLTREGEN |
| SUBPLOT_REGEN | SBPREGEN |
| SEEDLING_REGEN | SDLREGEN |
| GRND_CVR | GRND_CVR |
| GRND_LYR_FNCTL_GRP | FGLFGP |
| GRND_LYR_MICROQUAD | FGLMP |
| SUBP_SOIL_SAMPLE_LOC | SSSL |
| SUBP_SOIL_SAMPLE_LAYER | SSSLYR |
| POP_ESTN_UNIT | PEU |
| POP_EVAL | PEV |
| POP_EVAL_ATTRIBUTE | PEA |
| POP_EVAL_GRP | PEG |
| POP_EVAL_TYP | PET |
| POP_PLOT_STRATUM_ASSGN | PPSA |
| POP_STRATUM | PSM |
| PLOTGEOM | PLOTGEOM |
| PLOTSNAP | PLOTSNP |
| REF_POP_ATTRIBUTE | PAE |
| REF_POP_EVAL_TYP_DESCR | PED |
| REF_FOREST_TYPE | RFT |
| REF_FOREST_TYPE_GROUP | FTGP |
| REF_SPECIES | RS |
| REF_PLANT_DICTIONARY | RPD |
| REF_SPECIES_GROUP | RSG |
| REF_INVASIVE_SPECIES | RIS |
| REF_HABTYP_DESCRIPTION | RHN |
| REF_HABTYP_PUBLICATION | RPN |
| REF_CITATION | CIT |
| REF_FIADB_VERSION | RFN |
| REF_STATE_ELEV | RSE |
| REF_UNIT | UNT |
| REF_RESEARCH_STATION | RES |
| REF_NVCS_LEVEL_1_CODES | RNVCSHS1 |

| Table name | Table abbreviation |
|------------------------------|--------------------|
| REF_NVCS_LEVEL_2_CODES | RNVCSHS2 |
| REF_NVCS_LEVEL_3_CODES | RNVCSHS3 |
| REF_NVCS_LEVEL_4_CODES | RNVCSHS4 |
| REF_NVCS_LEVEL_5_CODES | RNVCSHS5 |
| REF_NVCS_LEVEL_6_CODES | RNVCSHS6 |
| REF_NVCS_LEVEL_7_CODES | RNVCSHS7 |
| REF_NVCS_LEVEL_8_CODES | RNVCSHS8 |
| REF_DAMAGE_AGENT | DA |
| REF_DAMAGE_AGENT_GROUP | DAG |
| REF_FVS_VAR_NAME | RFVN |
| REF_FVS_LOC_NAME | RFLN |
| REF_OWNGRPCD | REF_OWNGRPCD |
| REF_DIFFERENCE_TEST_PER_ACRE | RDTPA |
| REF_DIFFERENCE_TEST_TOTALS | RDTT |
| REF_SIEQN | REF_SIEQN |
| REF_GRM_TYPE | RGT |
| REF_INTL_TO_DOYLE_FACTOR | RIDF |
| REF_TREE_CARBON_RATIO_DEAD | REFTCRD |
| REF_TREE_DECAY_PROP | REFTDP |
| REF_TREE_STND_DEAD_CR_PROP | REFTSDCP |
| REF_GRND_LYR | REFGLYR |

Unique key

Multiple columns in a table whose values uniquely identify each row in an Oracle table. There can be one and only one row for each unique key value.

The unique key varies for each FIADB table. The unique key for the PLOT table is STATECD, INVYR, UNITCD, COUNTYCD, and PLOT. The unique key for the COND table is PLT_CN and CONDID.

The name of the unique key for each table is listed in the table description. It follows the nomenclature of 'TABLEABBREVIATION'_UK.

Natural key

A type of unique key made from existing attributes in the table. It is stored as an index in this database.

Not all FIADB tables have a natural key. For example, there is no natural key in the PLOT table, rather the natural key and the unique key are the same. The natural key for the COND table is STATECD, INVYR, UNITCD, COUNTYCD, PLOT, and CONDID.

The name of the natural key for each table is listed in the table description. It follows the nomenclature of 'TABLEABBREVIATION'_NAT_I.

Foreign key

A column in a table that is used as a link to a matching column in another Oracle table.

A foreign key connects a record in one table to one and only one record in another table. Foreign keys are used both to link records between data tables and as a check (or constraint) to prevent "unrepresented data." For example, if there are rows of data in the TREE table for a specific plot, there needs to be a corresponding data row for that same plot in the PLOT table. The foreign key in the TREE table is the attribute PLT_CN, which links specific rows in the TREE table to one record in the PLOT table using the plot attribute CN.

The foreign key for the COND table is PLT_CN. There is always a match of the PLT_CN value to the CN value in the PLOT table.

The name of the foreign key for each table is listed in the table description. It follows the nomenclature of 'SOURCETABLEABBREVIATION'_'MATCHINGTABLEABBREVIATION'_FK, where the source table is the table containing the foreign key and the matching table is the table the foreign key matches. The foreign key usually matches the CN column of the matching table. Most tables in FIADB have only one foreign key, but tables can have multiple foreign keys.

1.3.3 Oracle Data Types

| Oracle data type | Definition |
|------------------|--|
| DATE | A data type that stores the date. |
| NUMBER | A data type that contains only numbers, positive or negative, with a floating-decimal point. |
| NUMBER(SIZE, D) | <p>A data type that contains only numbers up to a specified maximum size. The maximum size (<i>and optional fixed-decimal point</i>) is specified by the value(s) listed in the parentheses.</p> <p>For example, an attribute with a data type specified as "NUMBER(2)" indicates that the attribute may contain a maximum of 2 digits (<i>for example, "11" or "5"</i>), however, none of the digits are decimals. An attribute with a data type specified as "NUMBER(3,1)" may contain a maximum of 3 digits, however, the last digit is a fixed decimal (<i>for example, "4.0" or "12.7"</i>). Likewise, "NUMBER(6,4)" would indicate that an attribute may contain a maximum of 6 digits, however, the last 4 digits are part of a fixed decimal (<i>for example, "18.7200"</i>). Note: When needed, digits to the right of a fixed-decimal point are filled in with zero(s).</p> |
| VARCHAR2(SIZE) | <p>A data type that contains alphanumeric data (numbers and/or characters) up to a specified maximum size.</p> <p>For example, an attribute with a data type specified as "VARCHAR2(8)" indicates that the attribute may contain a maximum of eight alphanumeric characters.</p> |

Section revision: 04.2024

Chapter 2: Database Tables - Location Level

Chapter Contents:

| Section | Database table | Oracle table name |
|---------|---------------------------------|---------------------|
| 2.1 | Survey Table | SURVEY |
| 2.2 | Project Table | PROJECT |
| 2.3 | County Table | COUNTY |
| 2.4 | Plot Table | PLOT |
| 2.5 | Condition Table | COND |
| 2.6 | Subplot Table | SUBPLOT |
| 2.7 | Subplot Condition Table | SUBP_COND |
| 2.8 | Boundary Table | BOUNDARY |
| 2.9 | Subplot Condition Change Matrix | SUBP_COND_CHNG_MTRX |

Definitions for database tables:

For further detail and examples, refer to the Overview (chapter 1).

Keys Presented with the Tables

| Key type | Definition |
|----------|--|
| Primary | A single column in a table whose values uniquely identify each row in an Oracle table. |
| Unique | Multiple columns in a table whose values uniquely identify each row in an Oracle table. There can be one and only one row for each unique key value. |
| Natural | A type of unique key made from existing attributes in the table. It is stored as an index in this database. |
| Foreign | A column in a table that is used as a link to a matching column in another Oracle table. |

Oracle Data Types

| Oracle data type | Definition |
|------------------|---|
| DATE | A data type that stores the date. |
| NUMBER | A data type that contains only numbers, positive or negative, with a floating-decimal point. |
| NUMBER(SIZE, D) | A data type that contains only numbers up to a specified maximum size. The maximum size (<i>and optional fixed-decimal point</i>) is specified by the value(s) listed in the parentheses. |
| VARCHAR2(SIZE) | A data type that contains alphanumeric data (numbers and/or characters) up to a specified maximum size. |

2.1 Survey Table

(Oracle table name: SURVEY)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---------------------------|------------------|
| 2.1.1 | CN | Sequence number | VARCHAR2(34) |
| 2.1.2 | INVYR | Inventory year | NUMBER(4) |
| 2.1.3 | P3_OZONE_IND | Phase 3 ozone indicator | VARCHAR2(1) |
| 2.1.4 | STATECD | State code | NUMBER(4) |
| 2.1.5 | STATEAB | State abbreviation | VARCHAR2(2) |
| 2.1.6 | STATENM | State name | VARCHAR2(40) |
| 2.1.7 | RSCD | Region or station code | NUMBER(2) |
| 2.1.8 | ANN_INVENTORY | Annual inventory | VARCHAR2(1) |
| 2.1.9 | NOTES | Notes | VARCHAR2(2000) |
| 2.1.10 | CREATED_BY | Created by | VARCHAR2(30) |
| 2.1.11 | CREATED_DATE | Created date | DATE |
| 2.1.12 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 2.1.13 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 2.1.14 | MODIFIED_DATE | Modified date | DATE |
| 2.1.15 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 2.1.16 | CYCLE | Inventory cycle number | NUMBER(2) |
| 2.1.17 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |
| 2.1.18 | PRJ_CN | Project sequence number | VARCHAR2(34) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--|-------------------|----------------------|
| Primary | CN | N/A | SRV_PK |
| Unique | PRJ_CN, STATECD, INVYR, P3_OZONE_IND, CYCLE, SUBCYCLE | N/A | SRV_UK |
| Foreign | PRJ_CN | SURVEY to PROJECT | SRV_PRJ_FK |

2.1.1 CN

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

2.1.2 INVYR

Inventory year. The year that best represents when the inventory data were collected. Under the annual inventory system, a group of plots is selected each year for sampling. The selection is based on a panel system. INVYR is the year in which the majority of plots in that group were collected (plots in the group have the same panel and, if applicable, subpanel). Under periodic inventory, a reporting inventory year was selected, usually based on the year in which the majority of the plots were collected or the mid-point of the

years over which the inventory spanned. For either annual or periodic inventory, INVYR is not necessarily the same as MEASYEAR.

Exceptions:

INVYR = 9999. INVYR is set to 9999 to distinguish Phase 3 plots taken by the western FIA work units that are "off subpanel." This is due to differences in measurement intervals between Phase 3 (measurement interval = 5 years) and Phase 2 (measurement interval = 10 years) plots. Only users interested in performing certain Phase 3 data analyses should access plots with this anomalous value in INVYR.

2.1.3 P3_OZONE_IND

Phase 3 ozone indicator. A code indicating whether or not the survey is for a P3 ozone inventory.

Note: P3_OZONE_IND is part of the unique key because ozone data are stored as a separate inventory (survey); therefore, combinations of STATECD and INVYR may occur more than one time.

Codes: P3_OZONE_IND

| Code | Description |
|------|---|
| Y | Yes, the survey is for a P3 ozone inventory. |
| N | No, the survey is not for a P3 ozone inventory. |

2.1.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

2.1.5 STATEAB

State abbreviation. The 2-character State abbreviation. Refer to [appendix B](#).

2.1.6 STATEGNM

State name. Refer to [appendix B](#).

2.1.7 RSCD

Region or Station code. Identification number of the Forest Service National Forest System Region or Station (FIA work unit) that provided the inventory data (see [appendix B](#) for more information).

Codes: RSCD

| Code | Description |
|------|--|
| 22 | Rocky Mountain Research Station (RMRS). |
| 23 | North Central Research Station (NCRS). |
| 24 | Northeastern Research Station (NERS). |
| 26 | Pacific Northwest Research Station (PNWRS). |
| 27 | Pacific Northwest Research Station (PNWRS-AK). |
| 33 | Southern Research Station (SRS). |

2.1.8 ANN_INVENTORY

Annual inventory. A code indicating whether a particular inventory was collected as an annual inventory or as a periodic inventory.

Codes: ANN_INVENTORY

| Code | Description |
|------|----------------------------------|
| Y | Yes, the inventory is annual. |
| N | No, the inventory is not annual. |

2.1.9 NOTES

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

2.1.10 CREATED_BY

Created by. The employee who created the record. This attribute is intentionally left blank (null) in download files.

2.1.11 CREATED_DATE

Created date. The date the record was created.

2.1.12 CREATED_IN_INSTANCE

Created in instance. The database instance in which the record was created. Each computer system has a unique database instance code and this attribute stores that information to determine on which computer the record was created.

2.1.13 MODIFIED_BY

Modified by. The employee who modified the record. This field will be blank (null) if the data have not been modified since initial creation. This attribute is intentionally left blank in download files.

2.1.14 MODIFIED_DATE

Modified date. The date the record was last modified. This field will be blank (null) if the data have not been modified since initial creation.

2.1.15 MODIFIED_IN_INSTANCE

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

2.1.16 CYCLE

Inventory cycle number. A number assigned to a set of plots, measured over a particular period of time from which a State estimate using all possible plots is obtained. A cycle number >1 does not necessarily mean that information for previous cycles resides in the database. A cycle is relevant for periodic and annual inventories.

2.1.17 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. Subcycle 99 may be used for plots that are not included in the estimation process.

2.1.18 PRJ_CN

Project sequence number. Foreign key linking the survey record to the project record.

2.2 Project Table

(Oracle table name: PROJECT)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|------------------------|------------------|
| 2.2.1 | CN | Sequence number | VARCHAR2(34) |
| 2.2.2 | RSCD | Region or Station code | NUMBER(2) |
| 2.2.3 | NAME | Project name | VARCHAR2(200) |
| 2.2.4 | CREATED_BY | Created by | VARCHAR2(30) |
| 2.2.5 | CREATED_DATE | Created date | DATE |
| 2.2.6 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 2.2.7 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 2.2.8 | MODIFIED_DATE | Modified date | DATE |
| 2.2.9 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | CN | N/A | PRJ_PK |
| Unique | RSCD, NAME | N/A | PRJ_UK |

2.2.1 CN

Sequence number. A unique sequence number used to identify a project record.

2.2.2 RSCD

Region or Station code. See SURVEY.RSCD description for definition.

2.2.3 NAME

Project name. The name of the project.

2.2.4 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

2.2.5 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

2.2.6 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

2.2.7 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

2.2.8 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

2.2.9 **MODIFIED_IN_INSTANCE**

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

2.3 County Table

(Oracle table name: COUNTY)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------|------------------|
| 2.3.1 | STATECD | State code | NUMBER(4) |
| 2.3.2 | UNITCD | Survey unit code | NUMBER(2) |
| 2.3.3 | COUNTYCD | County code | NUMBER(3) |
| 2.3.4 | COUNTYNM | County name | VARCHAR2(50) |
| 2.3.5 | CN | Sequence number | VARCHAR2(34) |
| 2.3.6 | CREATED_BY | Created by | VARCHAR2(30) |
| 2.3.7 | CREATED_DATE | Created date | DATE |
| 2.3.8 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 2.3.9 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 2.3.10 | MODIFIED_DATE | Modified date | DATE |
| 2.3.11 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|---------------------------|----------------|----------------------|
| Primary | CN | N/A | CTY_PK |
| Unique | STATECD, UNITCD, COUNTYCD | N/A | CTY_UK |

2.3.1 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

2.3.2 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 B](#) for codes.

2.3.3 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

2.3.4 COUNTYNM

County name. County name as recorded by the Bureau of the Census for individual counties, or the name given to a similar governmental unit by the FIA program. Only the first 50 characters of the name are used. Refer to [appendix B](#) for names.

2.3.5 CN

Sequence number. A unique sequence number used to identify a county record.

2.3.6 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

2.3.7 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

2.3.8 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

2.3.9 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

2.3.10 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

2.3.11 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

2.4 Plot Table

(Oracle table name: PLOT)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 2.4.1 | CN | Sequence number | VARCHAR2(34) |
| 2.4.2 | SRV_CN | Survey sequence number | VARCHAR2(34) |
| 2.4.3 | CTY_CN | County sequence number | VARCHAR2(34) |
| 2.4.4 | PREV_PLT_CN | Previous plot sequence number | VARCHAR2(34) |
| 2.4.5 | INVYR | Inventory year | NUMBER(4) |
| 2.4.6 | STATECD | State code | NUMBER(4) |
| 2.4.7 | UNITCD | Survey unit code | NUMBER(2) |
| 2.4.8 | COUNTYCD | County code | NUMBER(3) |
| 2.4.9 | PLOT | Plot number | NUMBER(5) |
| 2.4.10 | PLOT_STATUS_CD | Plot status code | NUMBER(1) |
| 2.4.11 | PLOT_NONSAMPLE_REASN_CD | Plot nonsampled reason code | NUMBER(2) |
| 2.4.12 | MEASYEAR | Measurement year | NUMBER(4) |
| 2.4.13 | MEASMON | Measurement month | NUMBER(2) |
| 2.4.14 | MEASDAY | Measurement day | NUMBER(2) |
| 2.4.15 | REMPER | Remeasurement period | NUMBER(3,1) |
| 2.4.16 | KINDCD | Sample kind code | NUMBER(2) |
| 2.4.17 | DESIGNCD | Design code | NUMBER(4) |
| 2.4.18 | RDDISTCD | Horizontal distance to improved road code | NUMBER(2) |
| 2.4.19 | WATERCD | Water on plot code | NUMBER(2) |
| 2.4.20 | LAT | Latitude | NUMBER(8,6) |
| 2.4.21 | LON | Longitude | NUMBER(9,6) |
| 2.4.22 | ELEV | Elevation | NUMBER(5) |
| 2.4.23 | GROW_TYP_CD | Type of annual volume growth code | NUMBER(2) |
| 2.4.24 | MORT_TYP_CD | Type of annual mortality volume code | NUMBER(2) |
| 2.4.25 | P2PANEL | Phase 2 panel number | NUMBER(2) |
| 2.4.26 | P3PANEL | Phase 3 panel number | NUMBER(2) |
| 2.4.27 | ECOSUBCD | Ecological subsection code | VARCHAR2(7) |
| 2.4.28 | CONGCD | Congressional district code | NUMBER(4) |
| 2.4.29 | MANUAL | Manual (field guide) version number | NUMBER(3,1) |
| 2.4.30 | KINDCD_NC | Sample kind code, North Central | NUMBER(2) |
| 2.4.31 | QA_STATUS | Quality assurance status | NUMBER(1) |
| 2.4.32 | CREATED_BY | Created by | VARCHAR2(30) |
| 2.4.33 | CREATED_DATE | Created date | DATE |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|--------------------------------|--|------------------|
| 2.4.34 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 2.4.35 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 2.4.36 | MODIFIED_DATE | Modified date | DATE |
| 2.4.37 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 2.4.38 | MICROPLOT_LOC | Microplot location | VARCHAR2(12) |
| 2.4.39 | DECLINATION | Declination | NUMBER(4,1) |
| 2.4.40 | EMAP_HEX | EMAP hexagon | NUMBER(7) |
| 2.4.41 | SAMP_METHOD_CD | Sample method code | NUMBER(1) |
| 2.4.42 | SUBP_EXAMINE_CD | Subplots examined code | NUMBER(1) |
| 2.4.43 | MACRO_BREAKPOINT_DIA | Macroplot breakpoint diameter | NUMBER(2) |
| 2.4.44 | INTENSITY | Intensity | VARCHAR2(3) |
| 2.4.45 | CYCLE | Inventory cycle number | NUMBER(2) |
| 2.4.46 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |
| 2.4.47 | ECO_UNIT_PNW | Ecological unit, Pacific Northwest Research Station | VARCHAR2(10) |
| 2.4.48 | TOPO_POSITION_PNW | Topographic position, Pacific Northwest Research Station | VARCHAR2(2) |
| 2.4.49 | NF_SAMPLING_STATUS_CD | Nonforest sampling status code | NUMBER(1) |
| 2.4.50 | NF_PLOT_STATUS_CD | Nonforest plot status code | NUMBER(1) |
| 2.4.51 | NF_PLOT_NONSAMPLE_REASN_CD | Nonforest plot nonsampled reason code | NUMBER(2) |
| 2.4.52 | P2VEG_SAMPLING_STATUS_CD | P2 vegetation sampling status code | NUMBER(1) |
| 2.4.53 | P2VEG_SAMPLING_LEVEL_DETAIL_CD | P2 vegetation sampling level detail code | NUMBER(1) |
| 2.4.54 | INVASIVE_SAMPLING_STATUS_CD | Invasive sampling status code | NUMBER(1) |
| 2.4.55 | INVASIVE_SPECIMEN_RULE_CD | Invasive specimen rule code | NUMBER(1) |
| 2.4.56 | DESIGNCD_P2A | Design code periodic to annual | NUMBER(4) |
| 2.4.57 | MANUAL_DB | Manual version of the data | NUMBER(3,1) |
| 2.4.58 | SUBPANEL | Subpanel | NUMBER(2) |
| 2.4.59 | | | |
| 2.4.60 | CONDCHNGCD_RMRS | Condition class change code, Rocky Mountain Research Station | NUMBER(1) |
| 2.4.61 | FUTFORCD_RMRS | Future forest potential code, Rocky Mountain Research Station | NUMBER(1) |
| 2.4.62 | MANUAL_NCRS | Manual (field guide) version number, North Central Research Station | NUMBER(4,2) |
| 2.4.63 | MANUAL_NERS | Manual (field guide) version number, Northeastern Research Station | NUMBER(4,2) |
| 2.4.64 | MANUAL_RMRS | Manual (field guide) version number, Rocky Mountain Research Station | NUMBER(4,2) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-----------------------------|---|------------------|
| 2.4.65 | PAC_ISLAND_PNWRS | Pacific Island name (Pacific Islands), Pacific Northwest Research Station | VARCHAR2(20) |
| 2.4.66 | PLOT_SEASON_NERS | Plot accessible season, Northeastern Research Station | NUMBER(1) |
| 2.4.67 | PRECIPITATION | Precipitation | NUMBER |
| 2.4.68 | PREV_MICROPLOT_LOC_RMRS | Previous microplot location, Rocky Mountain Research Station | VARCHAR2(12) |
| 2.4.69 | PREV_PLOT_STATUS_CD_RMRS | Previous plot status code, Rocky Mountain Research Station | NUMBER(1) |
| 2.4.70 | REUSECD1 | Recreation use code 1 (Pacific Islands) | NUMBER(2) |
| 2.4.71 | REUSECD2 | Recreation use code 2 (Pacific Islands) | NUMBER(2) |
| 2.4.72 | REUSECD3 | Recreation use code 3 (Pacific Islands) | NUMBER(2) |
| 2.4.73 | GRND_LYR_SAMPLING_STATUS_CD | Ground layer sampling status code | NUMBER(1) |
| 2.4.74 | GRND_LYR_SAMPLING_METHOD_CD | Ground layer sampling method code | NUMBER(1) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--|----------------|----------------------|
| Primary | CN | N/A | PLT_PK |
| Unique | STATECD, INVYR, UNITCD, COUNTYCD, PLOT | N/A | PLT_UK |
| Foreign | CTY_CN | PLOT to COUNTY | PLT_CTY_FK |
| Foreign | SRV_CN | PLOT to SURVEY | PLT_SRV_FK |

Prior to October 2006, there were two separate research stations in the North, the Northeastern Research Station (NERS) and the North Central Research Station (NCRS).

The NERS region included the following States: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Ohio, Rhode Island, Vermont, and West Virginia.

The NCNS region included the following States: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, and Wisconsin.

In October 2006, these two research stations were combined into one, the Northern Research Station (NRS). Following the database structure created prior to the merger, regional data collected by the NRS are currently split into NCNS and NERS columns determined by the State of data collection.

Since the merger starting at MANUAL = 3.1, there has been only one regional field guide for all NRS States, the regional [NRS field guide](#). In the database, however, there are

attributes named MANUAL_NERS and MANUAL_NCRS. Only one of these attributes is populated; the other is blank (NULL), depending on the State of data collection.

2.4.1 CN

Sequence number. A unique sequence number used to identify a plot record.

2.4.2 SRV_CN

Survey sequence number. Foreign key linking the plot record to the survey record.

2.4.3 CTY_CN

County sequence number. Foreign key linking the plot record to the county record.

2.4.4 PREV_PLT_CN

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

Note: If the previous plot was classified as periodic, PREV_PLT_CN will not link to the periodic record.

2.4.5 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

2.4.6 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

2.4.7 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 B](#) for codes.

2.4.8 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

2.4.9 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.

2.4.10 PLOT_STATUS_CD

Plot status code. A code that describes the sampling status of the plot. May not be populated for some FIA work units when MANUAL <1.0.

Codes: PLOT_STATUS_CD

| Code | Description |
|-------------|--|
| 1 | Sampled - at least one accessible forest land condition present on plot. |
| 2 | Sampled - no accessible forest land condition present on plot. |
| 3 | Nonsampled. |

2.4.11 PLOT_NONSAMPLE_REASON_CD

Plot nonsampled reason code. A code indicating the reason an entire plot was not sampled.

Codes: PLOT_NONSAMPLE_REASON_CD

| Code | Description |
|-------------|--|
| 01 | Outside U.S. boundary - Entire plot is outside of the U.S. border. |
| 02 | Denied access area - Access to the entire plot is denied by the legal owner, or by the owner of the only reasonable route to the plot. |
| 03 | Hazardous - Entire plot cannot be accessed because of a hazard or danger, for example cliffs, quarries, strip mines, illegal substance plantations, high water, etc. |
| 05 | Lost data - Plot data file was discovered to be corrupt after a panel was completed and submitted for processing. |
| 06 | Lost plot - Entire plot cannot be found. |
| 07 | Wrong location - Previous plot can be found, but its placement is beyond the tolerance limits for plot location. |
| 08 | Skipped visit - Entire plot skipped. Used for plots that are not completed prior to the time a panel is finished and submitted for processing. This code is for office use only. |
| 09 | Dropped intensified plot - Intensified plot dropped due to a change in grid density. This code used only by units engaged in intensification. This code is for office use only. |
| 10 | Other - Entire plot not sampled due to a reason other than one of the specific reasons already listed. |
| 11 | Ocean - Plot falls in ocean water below mean high tide line. |

2.4.12 MEASYEAR

Measurement year. The year in which the plot was completed. MEASYEAR may differ from INVYR. May be blank (null) for periodic inventory or when PLOT_STATUS_CD = 3.

2.4.13 MEASMON

Measurement month. The month in which the plot was completed. May be blank (null) for periodic inventory or when PLOT_STATUS_CD = 3.

Codes: MEASMON

| Code | Description |
|-------------|--------------------|
| 1 | January. |
| 2 | February. |
| 3 | March. |
| 4 | April. |

| Code | Description |
|-------------|--------------------|
| 5 | May. |
| 6 | June. |
| 7 | July. |
| 8 | August. |
| 9 | September. |
| 10 | October. |
| 11 | November. |
| 12 | December. |

2.4.14 MEASDAY

Measurement day. The day of the month in which the plot was completed. May be blank (null) for periodic inventory or when PLOT_STATUS_CD = 3.

2.4.15 REMPER

Remeasurement period. The number of years between measurements for remeasured plots to the nearest 0.1 year. This attribute is blank (null) for new plots or remeasured plots that are not used for growth, removals, or mortality estimates.

2.4.16 KINCD_CD

Sample kind code. A code indicating the type of plot installation. Database users may also want to examine DESIGNCD to obtain additional information about the kind of plot being selected. Revisited plots with KINCD_CD = 1, 3 are not used for remeasurement estimates.

Codes: KINCD_CD

| Code | Description |
|-------------|---|
| 0 | Periodic inventory plot. |
| 1 | Initial installation of a national design plot or resampling of a national design plot that was coded as nonsampled (PLOT_STATUS_CD = 3) at the previous visit. |
| 2 | Remeasurement of previously installed national design plot. |
| 3 | Replacement of previously installed national design plot. |
| 4 | Modeled periodic inventory plot (Northeastern and North Central only). |

2.4.17 DESIGNCD

Design code. A code indicating the type of plot design used to collect the data. Refer to [appendix G](#) for a list of codes and descriptions.

2.4.18 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. May not be populated for some FIA work units when MANUAL <1.0.

Codes: RDDISTCD

| 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. |

2.4.19 WATERCD

Water on plot code. Water body <1 acre in size or a stream <30 feet wide that has the greatest impact on the area within the sampled portions of any of the four subplots. The coding hierarchy is listed in order from large permanent water to temporary water. May not be populated for some FIA work units.

Codes: WATERCD

| Code | Description |
|-------------|---|
| 0 | None - no water sources within the sampled condition class(es). |
| 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 acre 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. |

2.4.20 LAT

Latitude. The approximate latitude of the plot in decimal degrees using NAD 83 datum (these [Pacific Islands](#) plots use WSG84 datum - SURVEY.RSCD = 26 and SURVEY.STATECD = 60, 64, 66, 68, 69, or 70). Actual plot coordinates cannot be released because of a Privacy provision enacted by Congress in the Food Security Act of 1985. Therefore, this attribute is approximately +/- 1 mile and, for annual inventory data, most plots are within +/- 1/2 mile. Annual data have additional uncertainty for private plots caused by swapping plot coordinates for up to 20 percent of the plots. In some cases, the county centroid is used when the actual coordinate is not available.

2.4.21 LON

Longitude. The approximate longitude of the plot in decimal degrees using NAD 83 datum (these [Pacific Islands](#) plots use WSG84 datum - SURVEY.RSCD = 26 and SURVEY.STATECD = 60, 64, 66, 68, 69, or 70). Actual plot coordinates cannot be released because of a

Privacy provision enacted by Congress in the Food Security Act of 1985. Therefore, this attribute is approximately +/- 1 mile and, for annual inventory data, most plots are within +/- ½ mile. Annual data have additional uncertainty for private plots caused by swapping plot coordinates for up to 20 percent of the plots. In some cases, the county centroid is used when the actual coordinate is not available.

2.4.22 ELEV

Elevation. The distance the plot is located above sea level. ELEV is based on approximate plot coordinates (see LAT and LON). For certain FIA work units (SURVEY.RSCD = 22, 23, 24, 33), the ELEV value is rounded to the nearest 10 feet. For other FIA work units (SURVEY.RSCD = 26, 27), the ELEV value is based on 200-foot groupings, and then a mid-point value is returned starting at 100 feet. Negative values indicate distance below sea level.

2.4.23 GROW_TYP_CD

Type of annual volume growth code. A code indicating how volume growth is estimated. Current annual growth is an estimate of the amount of volume that was added to a tree in the year before the tree was sampled, and is based on the measured diameter increment recorded when the tree was sampled or on a modeled diameter for the previous year. Periodic annual growth is an estimate of the average annual change in volume occurring between two measurements, usually the current inventory and the previous inventory, where the same plot is evaluated twice. Periodic annual growth is the increase in volume between inventories divided by the number of years between each inventory. This attribute is blank (null) if the plot does not contribute to the growth estimate.

Codes: GROW_TYP_CD

| Code | Description |
|------|------------------|
| 1 | Current annual. |
| 2 | Periodic annual. |

2.4.24 MORT_TYP_CD

Type of annual mortality volume code. A code indicating how mortality volume is estimated. Current annual mortality is an estimate of the volume of trees dying in the year before the plot was measured, and is based on the year of death or on a modeled estimate. Periodic annual mortality is an estimate of the average annual volume of trees dying between two measurements, usually the current inventory and previous inventory, where the same plot is evaluated twice. Periodic annual mortality is the loss of volume between inventories divided by the number of years between each inventory. Periodic average annual mortality is the most common type of annual mortality estimated. This attribute is blank (null) if the plot does not contribute to the mortality estimate.

Codes: MORT_TYP_CD

| Code | Description |
|------|------------------|
| 1 | Current annual. |
| 2 | Periodic annual. |

2.4.25 P2PANEL

Phase 2 panel number. The value for P2PANEL ranges from 1 to 5 for annual inventories and is blank (null) for periodic inventories. A panel is a sample in which the same elements are measured on two or more occasions. FIA divides the plots in each State into 5 panels that can be used to independently sample the population.

2.4.26 P3PANEL

Phase 3 panel number. A panel is a sample in which the same elements are measured on two or more occasions. FIA divides the plots in each State into 5 panels that can be used to independently sample the population. The value for P3PANEL ranges from 1 to 5 for those plots where Phase 3 data were collected. If the plot is not a Phase 3 plot, then this attribute is left blank (null).

2.4.27 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 for the coterminous United States were developed as part of the "[Ecological Subregions: Sections and Subsections for the Conterminous United States](#) (Cleland and others 2007) (<https://www.fs.usda.gov/research/treesearch/48672>).

For Alaska, the ecological section codes are equivalent to the ecoregions designated by Nowacki and others in Ecoregions of Alaska: 2001. U.S. Geological Survey Open-File Report 02-297.

A full description of Alaska ecoregions can be found in Spencer and others (2002) "[Home is where the habitat is: An ecosystem foundation for wildlife distribution and behavior](#)" (https://www.nsf.gov/pubs/2003/nsf03021/nsf03021_2.pdf). In: Arctic Research of the United States. 2002. Volume 16:6-17. This attribute is coded for the coterminous United States, southeast and south coastal Alaska, and is left blank (null) in all other instances. This assignment is derived using a spatial intersection of LAT and LON.

2.4.28 CONGCD

Congressional district code. A territorial division of a State from which a member of the U.S. House of Representatives is elected. The congressional district code assigned to a plot (regardless of when it was measured) is for the current Congress. CONGCD is a 4-digit code. The first 2 digits are the State FIPS code and the last 2 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 will be for the nearest congressional district in the correct State. This attribute is coded for the coterminous States and Alaska, and is left blank (null) in all other instances. For more information about the coverage used to assign this attribute, see National Atlas of the United States (2007). This assignment is derived using a spatial intersection of LAT and LON.

2.4.29 MANUAL

Manual (field guide) version number. Version number of the Field Guide used to describe procedures for collecting data on the plot. The National FIA Field Guide began with version 1.0; therefore, data taken using the National Field procedures will have MANUAL

≥ 1.0 . Data taken according to field instructions prior to the use of the National Field Guide have MANUAL <1.0.

2.4.30 KINDCD_NC

Sample kind code, North Central. This attribute is populated through 2005 for the former North Central work unit (SURVEY.RSCD = 23) and is blank (null) for all other FIA work units.

Codes: KINDCD_NC

| Code | Description |
|------|----------------------------------|
| 0 | New/lost. |
| 6 | Remeasured. |
| 8 | Old location but not remeasured. |
| 20 | Skipped. |
| 33 | Replacement of lost plot. |

2.4.31 QA_STATUS

Quality assurance status. A code indicating the type of plot data collected. Production plots have QA_STATUS = 1 or 7. May not be populated for some FIA work units when MANUAL <1.0.

Codes: QA_STATUS

| 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). |

2.4.32 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

2.4.33 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

2.4.34 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

2.4.35 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

2.4.36 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

2.4.37 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

2.4.38 MICROPLOT_LOC

Microplot location. A code indicating the location of the microplot center on the subplot. The offset microplot center is located 12 feet due east (90 degrees) of subplot center. The current standard 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. May not be populated for some FIA work units when MANUAL <1.0.

Codes: MICROPLOT_LOC

| Code | Description |
|--------|---|
| OFFSET | The microplot center is offset from the subplot center. |
| CENTER | The microplot center is at the subplot center. |

2.4.39 DECLINATION

Declination. (*core optional*) The azimuth correction used to adjust magnetic north to true north, and is defined as follows:

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

This field is only used in cases where FIA work units are adjusting azimuths to correspond to true north. This field includes a decimal place because the USGS corrections are provided to the nearest half degree. DECLINATION is set to a value of 0.0 for plots that are sampled using magnetic azimuths. Only populated by certain FIA work units (SURVEY.RSCD = 26, 27).

2.4.40 EMAP_HEX

EMAP hexagon. The identifier for the approximately 160,000 acre Environmental Monitoring and Assessment Program (EMAP) hexagon in which the plot is located. [EMAP hexagons](#) are available to the public, cover the coterminous United States, and have been used in summarizing and aggregating data about numerous natural resources. This assignment is derived using a spatial intersection of LAT and LON.

2.4.41 SAMP_METHOD_CD

Sample method code. A code indicating if the plot was observed in the field or remotely sensed in the office.

Codes: SAMP_METHOD_CD

| Code | Description |
|------|---|
| 1 | Field visited, meaning a field crew physically examined the plot and recorded information at least about subplot 1 center condition (see SUBP_EXAMINE_CD below). |
| 2 | Remotely sensed, meaning a determination was made using some type of imagery that a field visit was not necessary. When the plot is sampled remotely, the number of subplots examined (SUBP_EXAMINE_CD) usually equals 1. |

2.4.42 SUBP_EXAMINE_CD

Subplots examined code. A code indicating the number of subplots examined. By default, PLOT_STATUS_CD = 1 plots have all 4 subplots examined.

Codes: SUBP_EXAMINE_CD

| Code | Description |
|------|--|
| 1 | Only subplot 1 center condition examined and all other subplots assumed (inferred) to be the same. |
| 4 | All four subplots fully described (no assumptions/inferences). |

2.4.43 MACRO_BREAKPOINT_DIA

Macroplot breakpoint diameter. (*core optional*) A macroplot breakpoint diameter is the diameter (either d.b.h. or d.r.c.) above which trees are measured on the plot extending from 0.01 to 58.9 feet horizontal distance from the center of each subplot. Examples of different breakpoint diameters used by western FIA work units are 24 inches or 30 inches (Pacific Northwest), or 21 inches (Rocky Mountain). Installation of macroplots is *core optional* and is used to have a larger plot size in order to more adequately sample large trees. If macroplots are not being installed, this item will be left blank (null).

2.4.44 INTENSITY

Intensity. A code used to identify FIA base grid annual inventory plots and plots that have been added to intensify a particular sample. Under the FIA base grid, one plot is collected in each theoretical hexagonal polygon, which is approximately 6,000 acres in size. INTENSITY values of 1-200 are tied to the FIA base grid. INTENSITY = 1 approximates 1 plot per 6,000 acres. INTENSITY values = 2-200 indicate further intensification tied to the FIA base grid in a specific repeatable geometric pattern. INTENSITY values greater than 1 may not have any relation to the amount of intensification applied (e.g., INTENSITY = 2 does NOT necessarily mean 2x spatial intensification). For certain FIA work units (SURVEY.RSCD = 26, 27), INTENSITY values greater than 201 are tied to the older Continuous Vegetation Survey (CVS) plot grid (used by FS Region 6, Oregon Department of Forestry, and BLM) or other special studies. Populated when MANUAL ≥1.0.

2.4.45 CYCLE

Inventory cycle number. See SURVEY.CYCLE description for definition.

2.4.46 SUBCYCLE

Inventory subcycle number. See SURVEY.SUBCYCLE description for definition.

2.4.47 ECO_UNIT_PNW

Ecological unit, Pacific Northwest Research Station. Plots taken by PNWRS FIA are assigned to the ecological unit in which they are located. Certain units have stocking adjustments made to the plots that occur on very low productivity lands, which thereby reduces the estimated potential productivity of the plot. More information can be found in MacLean (1973). Only populated by certain FIA work units (SURVEY.RSCD = 26, 27).

2.4.48 TOPO_POSITION_PNW

Topographic position, Pacific Northwest Research Station. The topographic position that describes the plot area. Illustrations available in Plot section of the PNWRS field guide located at the web page for [PNWRS FIA Field Manuals](#) (<https://fs.usda.gov/pnw/page/pnw-fia-field-manuals-0>). Adapted from information found in Wilson (1900). Only populated by certain FIA work units (SURVEY.RSCD = 26).

Codes: TOPO_POSITION_PNW

| Code | Topographic Position | Common shape of slope |
|-------------|---|------------------------------|
| 1 | Ridge top or mountain peak over 130 feet. | Flat. |
| 2 | Narrow ridge top or mountain peak over 130 feet wide. | Convex. |
| 3 | Side hill - upper 1/3. | Convex. |
| 4 | Side hill - middle 1/3. | No rounding. |
| 5 | Side hill - lower 1/3. | Concave. |
| 6 | Canyon bottom less than 660 feet wide. | Concave. |
| 7 | Bench, terrace or dry flat. | Flat. |
| 8 | Broad alluvial flat over 660 feet wide. | Flat. |
| 9 | Swamp or wet flat. | Flat. |

2.4.49 NF_SAMPLING_STATUS_CD

Nonforest sampling status code. A code indicating whether or not the plot is part of a nonforest inventory. If NF_SAMPLING_STATUS_CD = 1, then a subset of attributes that are measured on accessible forest lands were measured on accessible nonforest lands.

Codes: NF_SAMPLING_STATUS_CD

| Code | Description |
|-------------|---|
| 0 | Nonforest plots / conditions are not inventoried. |
| 1 | Nonforest plots / conditions are inventoried. |

2.4.50 NF_PLOT_STATUS_CD

Nonforest plot status code. A code describing the sampling status of the nonforest plot.

Codes: NF_PLOT_STATUS_CD

| Code | Description |
|-------------|---|
| 1 | Sampled - at least one accessible nonforest land condition present on the plot. |
| 2 | Sampled - no nonforest land condition present on plot (i.e., plot is either census and/or noncensus water). |
| 3 | Nonsampled nonforest. |

2.4.51 NF_PLOT_NONSAMPLE_REASON_CD

Nonforest plot nonsampled reason code. A code indicating the reason the nonforest plot was not sampled.

Codes: NF_PLOT_NONSAMPLE_REASN_CD

| Code | Description |
|-------------|---|
| 02 | Denied access - Access to the entire plot is denied by the legal owner, or by the owner of the only reasonable route to the plot. Because a denied-access plot 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. |
| 03 | Hazardous - Entire plot cannot be accessed because of a hazard or danger, for example cliffs, quarries, strip mines, illegal substance plantations, high water, etc. Although most hazards will not change over time, a hazardous plot remains in the sample and is re-examined at the next occasion to determine if the hazard is still present. |
| 08 | Skipped visit - Entire plot skipped. Used for plots that are not completed prior to the time a panel is finished and submitted for processing. This code is for office use only. |
| 09 | Dropped intensified plot - Intensified plot dropped due to a change in grid density. This code used only by units engaged in intensification. This code is for office use only. |
| 10 | Other - Entire plot not sampled due to a reason other than one of the specific reasons already listed. |

2.4.52 P2VEG_SAMPLING_STATUS_CD

P2 vegetation sampling status code. A code indicating whether the plot is part of the P2 (Phase 2) vegetation sample included in the inventory.

Note: For certain FIA work units (SURVEY.RSCD = 22, 26, 27), to obtain a list of all plots in the sample, include codes 1 and 2 (to limit conditions to only accessible forest land, specify COND.COND_STATUS_CD = 1). Code 1 is used for plot locations that are only eligible for accessible forest land condition sampling. Code 2 is used for a subset of plot locations that are eligible for either forest or nonforest land condition sampling (e.g., National Forest System lands in specified regions).

Codes: P2VEG_SAMPLING_STATUS_CD

| Code | Description |
|-------------|---|
| 0 | Plot is not part of the P2 vegetation sample. |
| 1 | P2 vegetation data are sampled only on accessible forest land conditions. |
| 2 | P2 vegetation data are sampled on all accessible land conditions. |

2.4.53 P2VEG_SAMPLING_LEVEL_DETAIL_CD

P2 vegetation sampling level detail code. Level of detail (LOD). A code indicating whether data were collected for vegetation structure growth habits only, or for individual species (that qualify as most abundant) as well. If LOD = 3, then a tree species could be recorded twice, but it would have two different species growth habits.

Codes: P2VEG_SAMPLING_LEVEL_DETAIL_CD

| Code | Description |
|-------------|--|
| 1 | Data collected for vegetation structure only; total aerial canopy cover and canopy cover by layer for tally tree species (all sizes), non-tally tree species (all sizes), shrubs/subshrubs/woody vines, forbs, and graminoids. |
| 2 | Vegetation structure data (LOD = 1) plus understory species composition data collected including up to four most abundant species per GROWTH_HABIT_CD per subplot of: seedlings and saplings of any tree species (tally or non-tally) <5 inches d.b.h. (d.r.c for woodland species), shrubs/subshrubs/woody vines, forbs, and graminoids. |
| 3 | Vegetation structure data, understory species composition data (LOD = 2), plus up to four most abundant tree species (tally or non-tally) ≥5 inches d.b.h. (d.r.c for woodland species) per GROWTH_HABIT_CD per subplot. |

2.4.54 INVASIVE_SAMPLING_STATUS_CD

Invasive sampling status code. A code indicating whether the plot is part of the invasive plant sample included in the inventory.

Note: For certain FIA work units (SURVEY.RSCD = 22, 26, 27), to obtain a list of all plots in the sample, include codes 1 and 2 (to limit conditions to only accessible forest land, specify COND.COND_STATUS_CD = 1). Code 1 is used for plot locations that are only eligible for accessible forest land condition sampling. Code 2 is used for a subset of plot locations that are eligible for either forest or nonforest land condition sampling (e.g., National Forest System lands in specified regions).

Codes: INVASIVE_SAMPLING_STATUS_CDINVASIVE_SPECIMEN_RULE_CD

| Code | Description |
|-------------|--|
| 0 | Plot is not part of invasive plant sample. |
| 1 | Invasive plant data are sampled only on accessible forest land conditions. |
| 2 | Invasive plant data are sampled on all accessible land conditions. |

2.4.55 INVASIVE_SPECIMEN_RULE_CD

Invasive specimen rule code. A code indicating if specimen collection was required.

Codes: INVASIVE_SPECIMEN_RULE_CD

| Code | Description |
|-------------|---|
| 0 | FIA work unit does not require specimen collection for invasive plants. |
| 1 | FIA work unit requires specimen collection for invasive plants. |

2.4.56 DESIGNCD_P2A

Design code periodic to annual. The plot design for the periodic plots that were remeasured in the annual inventory (DESIGNCD = 1). Refer to [appendix G](#) for a list of codes and descriptions.

2.4.57 MANUAL_DB

Version of the database. A number identifying the version of the FIADB to which the data have been standardized. When older data are standardized, they are updated, where appropriate, to adhere to the standards set by the newer version. For example, if an

improved growth equation is developed, older data are re-processed and then re-loaded to the database.

2.4.58 SUBPANEL

Subpanel. Annual inventory subpanel assignment for the plot for FIA work units using subpaneling. FIA uses a 5-panel system (see P2PANEL), but may further subdivide the 5 panels into subpanels. The following FIA work units subdivide each P2PANEL into 2 subpanels (SUBPANEL = 1 or 2), for a total of 10 subpanels. For these FIA work units, 1 subpanel is usually scheduled for measurement each year: RMRS (SURVEY.RSCD = 22); PNWRS (SURVEY.RSCD = 26, 27); SRS (SURVEY.RSCD = 33, only for Oklahoma where UNITCD ≥ 3). Populated for all plots using the National Field Guide protocols (MANUAL ≥ 1.0).

Codes: SUBPANEL

| Code | Description |
|------|-----------------------|
| 0 | Subpaneling not used. |
| 1 | Subpanel1. |
| 2 | Subpanel2. |

2.4.59 CONDCHNGCD_RMRS

Condition class change code, Rocky Mountain Research Station. A code indicating if there has been any change in the condition class since the previous inventory. Only populated by certain FIA work units (SURVEY.RSCD = 22).

Codes: CONDCHNGCD_RMRS

| Code | Description |
|------|--|
| 0 | There have been no condition class changes from the previous inventory. Copy condition class defining (mapping) variables from computer-generated printouts included in the plot packet. |
| 1 | True change has taken place since the last inventory. At least one condition class defining (mapping) variable has changed on any condition. Include changes in the condition status (COND_STATUS_CD) such as: previous COND_STATUS_CD was accessible forest land, now some portion or all of the condition is not accessible forest land (condition is now nonforest land, noncensus water, census water, denied access, area too hazardous to visit, area that is not in the sample, or not sampled/out of time), or vice versa. |
| 2 | There are no true condition changes. The previous crew mapped or failed to map a condition(s) in obvious error. |
| 3 | There are no true condition changes. Change is due to procedural or definition changes. |

2.4.60 FUTFORCD_RMRS

Future forest potential code, Rocky Mountain Research Station. A code indicating if the location requires a prefield examination at the time of the next inventory (10-20 years). Only populated by certain FIA work units (SURVEY.RSCD = 22).

Codes: FUTFORCD_RMRS

| Code | Description |
|-------------|---|
| 0 | No, there is no chance this plot will meet the forest definition at the next cycle. It meets one or more of the following criteria: <ul style="list-style-type: none"> Located more than ½ mile from the nearest forest land, and there are no trees present on or near the location. No disturbance evident (e.g., large fires, clearcut, etc.). Located in a large reservoir. Located in a developed urban area (on a house, building, parking lot), but the plot does not fall in a park, undeveloped yard, etc. that may revert to natural forest. Located on barren rock, sand dunes, etc. |
| 1 | Yes, there is some chance that this plot could become forested in the next cycle; there are trees present, or forest land is present within ½ mile. |
| 2 | There are no forest tree species (tree species codes) on the site, but other woody species not currently defined as forest species occupy the site (such as salt cedar, palo verde, ironwood, big sage). |

2.4.61 MANUAL_NCRS

Manual (field guide) version number, North Central Research Station. The version number of the NCRS Field Guide used to describe procedures for collecting data on the plot. Only populated by certain FIA work units (SURVEY.RSCD = 23).

2.4.62 MANUAL_NERS

Manual (field guide) version number, Northeastern Research Station. The version number of the NERS Field Guide used to describe procedures for collecting data on the plot. Only populated by certain FIA work units (SURVEY.RSCD = 24).

2.4.63 MANUAL_RMRS

Manual (field guide) version, Rocky Mountain Research Station. The version number of the RMRS Field Guide used to describe procedures for collecting data on the plot. Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.4.64 PAC_ISLAND_PNWRS

Pacific Island name ([Pacific Islands](#)), Pacific Northwest Research Station. The name of the Pacific Island where the plot is located. Only populated by certain FIA work units (SURVEY.RSCD = 26).

2.4.65 PLOT_SEASON_NERS

Plot accessible season, Northeastern Research Station. A code indicating the best time of year to access a plot. Populated for States in the NERS region (SURVEY.RSCD = 24) where MANUAL ≥ 4.0.

Codes: PLOT_SEASON_NERS

| Code | Description |
|-------------|--------------------|
| 1 | Winter. |
| 2 | Summer. |
| 3 | Anytime. |

2.4.66 PRECIPITATION

Precipitation. The annual precipitation, in inches, for the location. This attribute may not be populated for all FIA units and/or regions.

2.4.67 PREV_MICROPLOT_LOC_RMRS

Previous microplot location, Rocky Mountain Research Station. A code indicating the sampling location of the microplot in the previous inventory. Only populated by certain FIA work units (SURVEY.RSCD = 22).

Codes: PREV_MICROPLOT_LOC_RMRS

| Code | Description |
|--------|--|
| CENTER | Microplot center located at subplot center. |
| OFFSET | Microplot center offset from subplot center. For example, microplot center located 12 feet horizontal at 90 degrees from subplot center. |

2.4.68 PREV_PLOT_STATUS_CD_RMRS

Previous plot status code, Rocky Mountain Research Station. A code indicating the plot sampling status at the previous inventory visit. Blank (null) values may be present for periodic inventories. Only populated by certain FIA work units (SURVEY.RSCD = 22).

Codes: PREV_PLOT_STATUS_CD_RMRS

| Code | Description |
|------|--|
| 1 | Sampled - at least one accessible forest land condition present on plot. |
| 2 | Sampled - no accessible forest land condition present on plot. |
| 3 | Nonsampled. |

2.4.69 REUSECD1

Recreation use code 1 (Pacific Islands). A code indicating signs of recreation use encountered 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, tree stands. Up to three different recreation uses per plot can be recorded (REUSECD1, REUSECD2, and REUSECD3). Only populated by certain FIA work units (SURVEY.RSCD = 26), only in the [Pacific Islands](#).

Codes: REUSECD1

| Code | Description |
|------|--|
| 0 | No evidence of recreation use. |
| 1 | Motor vehicle (four wheel drive, ATV, motorcycle). |
| 2 | Horse riding. |
| 3 | Camping. |
| 4 | Hiking. |
| 5 | Hunting/shooting. |
| 6 | Fishing. |

| Code | Description |
|------|---|
| 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. |

2.4.70 REUSECD2

Recreation use code 2 (Pacific Islands). The second recreation use code, if the plot has more than one recreation use. See [REUSECD1](#) for more information.

2.4.71 REUSECD3

Recreation use code 3 (Pacific Islands). The third recreation use code, if the plot has more than two recreation uses. See [REUSECD1](#) for more information.

2.4.72 GRND_LYR_SAMPLING_STATUS_CD

Ground layer sampling status code. A code indicating whether the plot is part of the ground layer sample included in the inventory. Only populated by certain FIA work units (SURVEY.RSCD = 27).

Codes: GRND_LYR_SAMPLING_STATUS_CD

| Code | Description |
|------|--|
| 0 | Plot is not part of the ground layer sample. |
| 1 | Ground layer data are sampled only on accessible forest land conditions. |
| 2 | Ground layer data are sampled on all accessible land conditions. |

2.4.73 GRND_LYR_SAMPLING_METHOD_CD

Ground layer sampling method code. A code indicating the method used for ground layer sampling. Only populated by certain FIA work units (SURVEY.RSCD = 27).

Codes: GRND_LYR_SAMPLING_METHOD_CD

| Code | Description |
|------|---|
| 1 | Ground layer microquadrats sampled at 4 locations per transect. |
| 2 | Ground layer microquadrats sampled at 2 locations per transect. |

2.5 Condition Table

(Oracle table name: COND)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|--------------------------|--------------------------------------|------------------|
| 2.5.1 | CN | Sequence number | VARCHAR2(34) |
| 2.5.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 2.5.3 | INVYR | Inventory year | NUMBER(4) |
| 2.5.4 | STATECD | State code | NUMBER(4) |
| 2.5.5 | UNITCD | Survey unit code | NUMBER(2) |
| 2.5.6 | COUNTYCD | County code | NUMBER(3) |
| 2.5.7 | PLOT | Plot number | NUMBER(5) |
| 2.5.8 | CONDID | Condition class number | NUMBER(1) |
| 2.5.9 | COND_STATUS_CD | Condition status code | NUMBER(1) |
| 2.5.10 | COND_NONSAMPLE_REASON_CD | Condition nonsampled reason code | NUMBER(2) |
| 2.5.11 | RESERVCD | Reserved status code | NUMBER(2) |
| 2.5.12 | OWNCD | Owner class code | NUMBER(2) |
| 2.5.13 | OWNGRPCD | Owner group code | NUMBER(2) |
| 2.5.14 | FORINCD | Private owner industrial status code | NUMBER(2) |
| 2.5.15 | ADFORCD | Administrative forest code | NUMBER(4) |
| 2.5.16 | FORTYPCD | Forest type code | NUMBER(3) |
| 2.5.17 | FLDTYPCD | Field forest type code | NUMBER(3) |
| 2.5.18 | MAPDEN | Mapping density | NUMBER(1) |
| 2.5.19 | STDAGE | Stand age | NUMBER(4) |
| 2.5.20 | STDSZCD | Stand-size class code | NUMBER(2) |
| 2.5.21 | FLDSZCD | Field stand-size class code | NUMBER(2) |
| 2.5.22 | SITECLCD | Site productivity class code | NUMBER(2) |
| 2.5.23 | SICOND | Site index for the condition | NUMBER(3) |
| 2.5.24 | SIBASE | Site index base age | NUMBER(3) |
| 2.5.25 | SISP | Site index species code | NUMBER(4) |
| 2.5.26 | STDORGCD | Stand origin code | NUMBER(2) |
| 2.5.27 | STDORGSP | Stand origin species code | NUMBER |
| 2.5.28 | PROP_BASIS | Proportion basis | VARCHAR2(12) |
| 2.5.29 | CONDPROP_UNADJ | Condition proportion unadjusted | NUMBER |
| 2.5.30 | MICRPROP_UNADJ | Microplot proportion unadjusted | NUMBER |
| 2.5.31 | SUBPPROP_UNADJ | Subplot proportion unadjusted | NUMBER |
| 2.5.32 | MACRPROP_UNADJ | Macroplot proportion unadjusted | NUMBER |
| 2.5.33 | SLOPE | Condition percent slope | NUMBER(3) |
| 2.5.34 | ASPECT | Condition aspect | NUMBER(3) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 2.5.35 | PHYSCLCD | Physiographic class code | NUMBER(2) |
| 2.5.36 | GSSTKCD | Growing-stock stocking code | NUMBER(2) |
| 2.5.37 | ALSTKCD | All live stocking code | NUMBER(2) |
| 2.5.38 | DSTRBCD1 | Disturbance code 1 | NUMBER(2) |
| 2.5.39 | DSTRBYR1 | Disturbance year 1 | NUMBER(4) |
| 2.5.40 | DSTRBCD2 | Disturbance code 2 | NUMBER(2) |
| 2.5.41 | DSTRBYR2 | Disturbance year 2 | NUMBER(4) |
| 2.5.42 | DSTRBCD3 | Disturbance code 3 | NUMBER(2) |
| 2.5.43 | DSTRBYR3 | Disturbance year 3 | NUMBER(4) |
| 2.5.44 | TRTCD1 | Treatment code 1 | NUMBER(2) |
| 2.5.45 | TRTYR1 | Treatment year 1 | NUMBER(4) |
| 2.5.46 | TRTCD2 | Treatment code 2 | NUMBER(2) |
| 2.5.47 | TRTYR2 | Treatment year 2 | NUMBER(4) |
| 2.5.48 | TRTCD3 | Treatment code 3 | NUMBER(2) |
| 2.5.49 | TRTYR3 | Treatment year 3 | NUMBER(4) |
| 2.5.50 | PRESNFCD | Present nonforest code | NUMBER(2) |
| 2.5.51 | BALIVE | Basal area per acre of live trees | NUMBER(9,4) |
| 2.5.52 | FLDAGE | Field-recorded stand age | NUMBER(4) |
| 2.5.53 | ALSTK | All-live-tree stocking percent | NUMBER(7,4) |
| 2.5.54 | GSSTK | Growing-stock stocking percent | NUMBER(7,4) |
| 2.5.55 | FORTYPCDCALC | Forest type code calculated | NUMBER(3) |
| 2.5.56 | HABTPCD1 | Habitat type code 1 | VARCHAR2(10) |
| 2.5.57 | HABTPCD1_PUB_CD | Habitat type code 1 publication code | VARCHAR2(10) |
| 2.5.58 | HABTPCD1_DESCR_PUB_CD | Habitat type code 1 description publication code | VARCHAR2(10) |
| 2.5.59 | HABTPCD2 | Habitat type code 2 | VARCHAR2(10) |
| 2.5.60 | HABTPCD2_PUB_CD | Habitat type code 2 publication code | VARCHAR2(10) |
| 2.5.61 | HABTPCD2_DESCR_PUB_CD | Habitat type code 2 description publication code | VARCHAR2(10) |
| 2.5.62 | MIXEDCONFCD | Mixed conifer code | VARCHAR2(1) |
| 2.5.63 | VOL_LOC_GRP | Volume location group | VARCHAR2(200) |
| 2.5.64 | SITECLCDEST | Site productivity class code estimated | NUMBER(2) |
| 2.5.65 | SITETREE_TREE | Site tree tree number | NUMBER(4) |
| 2.5.66 | SITECL_METHOD | Site class method | NUMBER(2) |
| 2.5.67 | CARBON_DOWN_DEAD | Carbon in down dead | NUMBER(13,6) |
| 2.5.68 | CARBON_LITTER | Carbon in litter | NUMBER(13,6) |
| 2.5.69 | CARBON_SOIL_ORG | Carbon in soil organic material | NUMBER(13,6) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------------|---|------------------|
| 2.5.70 | CARBON_UNDERSTORY_AG | Carbon in understory aboveground | NUMBER(13,6) |
| 2.5.71 | CARBON_UNDERSTORY_BG | Carbon in understory belowground | NUMBER(13,6) |
| 2.5.72 | CREATED_BY | Created by | VARCHAR2(30) |
| 2.5.73 | CREATED_DATE | Created date | DATE |
| 2.5.74 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 2.5.75 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 2.5.76 | MODIFIED_DATE | Modified date | DATE |
| 2.5.77 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 2.5.78 | CYCLE | Inventory cycle number | NUMBER(2) |
| 2.5.79 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |
| 2.5.80 | SOIL_ROOTING_DEPTH_PNW | Soil rooting depth, Pacific Northwest Research Station | VARCHAR2(1) |
| 2.5.81 | GROUND_LAND_CLASS_PNW | Present ground land class, Pacific Northwest Research Station | VARCHAR2(3) |
| 2.5.82 | PLANT_STOCKABILITY_FACTOR_PNW | Plant stockability factor, Pacific Northwest Research Station | NUMBER |
| 2.5.83 | STND_COND_CD_PNWRS | Stand condition code, Pacific Northwest Research Station | NUMBER(1) |
| 2.5.84 | STND_STRUC_CD_PNWRS | Stand structure code, Pacific Northwest Research Station | NUMBER(1) |
| 2.5.85 | STUMP_CD_PNWRS | Stump code, Pacific Northwest Research Station | VARCHAR2(1) |
| 2.5.86 | FIRE_SRS | Fire, Southern Research Station | NUMBER(1) |
| 2.5.87 | GRAZING_SRS | Grazing, Southern Research Station | NUMBER(1) |
| 2.5.88 | HARVEST_TYPE1_SRS | Harvest type code 1, Southern Research Station | NUMBER(2) |
| 2.5.89 | HARVEST_TYPE2_SRS | Harvest type code 2, Southern Research Station | NUMBER(2) |
| 2.5.90 | HARVEST_TYPE3_SRS | Harvest type code 3, Southern Research Station | NUMBER(2) |
| 2.5.91 | LAND_USE_SRS | Land use, Southern Research Station | NUMBER(2) |
| 2.5.92 | OPERABILITY_SRS | Operability, Southern Research Station | NUMBER(2) |
| 2.5.93 | STAND_STRUCTURE_SRS | Stand structure, Southern Research Station | NUMBER(2) |
| 2.5.94 | NF_COND_STATUS_CD | Nonforest condition status code | NUMBER(1) |
| 2.5.95 | NF_COND_NONSAMPLE_REASON_CD | Nonforest condition nonsampled reason code | NUMBER(2) |
| 2.5.96 | CANOPY_CVR_SAMPLE_METHOD_CD | Canopy cover sample method code | NUMBER(2) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-----------------------------|---|------------------|
| 2.5.97 | LIVE_CANOPY_CVR_PCT | Live canopy cover percent | NUMBER(3) |
| 2.5.98 | LIVE_MISSING_CANOPY_CVR_PCT | Live plus missing canopy cover percent | NUMBER(3) |
| 2.5.99 | NBR_LIVE_STEMS | Number of live stems | NUMBER(5) |
| 2.5.100 | OWNSUBCD | Owner subclass code | NUMBER(1) |
| 2.5.101 | INDUSTRIALCD_FIADB | Industrial code in FIADB | NUMBER(1) |
| 2.5.102 | RESERVCD_5 | Reserved status code field, versions 1.0-5.0 | NUMBER(1) |
| 2.5.103 | ADMIN_WITHDRAWN_CD | Administratively withdrawn code | NUMBER(1) |
| 2.5.104 | CHAINING_CD | Chaining code | NUMBER(1) |
| 2.5.105 | LAND_COVER_CLASS_CD_RET | Land cover class, retired | NUMBER(2) |
| 2.5.106 | AFFORESTATION_CD | Current afforestation code | NUMBER(1) |
| 2.5.107 | PREV_AFFORESTATION_CD | Previous afforestation code | NUMBER(1) |
| 2.5.108 | DWM_FUELBED_TYP_CD | DWM condition fuelbed type code | VARCHAR2(3) |
| 2.5.109 | NVCS_PRIMARY_CLASS | Primary class of the National Vegetation Classification Standard (NVCS) | VARCHAR2(8) |
| 2.5.110 | NVCS_LEVEL_1_CD | Level 1 code of the NVCS | VARCHAR2(25) |
| 2.5.111 | NVCS_LEVEL_2_CD | Level 2 code of the NVCS | VARCHAR2(25) |
| 2.5.112 | NVCS_LEVEL_3_CD | Level 3 code of the NVCS | VARCHAR2(25) |
| 2.5.113 | NVCS_LEVEL_4_CD | Level 4 code of the NVCS | VARCHAR2(25) |
| 2.5.114 | NVCS_LEVEL_5_CD | Level 5 code of the NVCS | VARCHAR2(25) |
| 2.5.115 | NVCS_LEVEL_6_CD | Level 6 code of the NVCS | VARCHAR2(25) |
| 2.5.116 | NVCS_LEVEL_7_CD | Level 7 code of the NVCS | VARCHAR2(25) |
| 2.5.117 | NVCS_LEVEL_8_CD | Level 8 code of the NVCS | VARCHAR2(25) |
| 2.5.118 | AGE_BASIS_CD_PNWRS | Age basis code, Pacific Northwest Research Station | NUMBER(2) |
| 2.5.119 | COND_STATUS_CHNG_CD_RMRS | Condition class status change code, Rocky Mountain Research Station | NUMBER(1) |
| 2.5.120 | CRCOV_PCT_RMRS | Live crown cover percent, Rocky Mountain Research Station | NUMBER(3) |
| 2.5.121 | DOMINANT_SPECIES1_PNWRS | Dominant tree species 1 (Pacific Islands), Pacific Northwest Research Station | NUMBER(4) |
| 2.5.122 | DOMINANT_SPECIES2_PNWRS | Dominant tree species 2 (Pacific Islands), Pacific Northwest Research Station | NUMBER(4) |
| 2.5.123 | DOMINANT_SPECIES3_PNWRS | Dominant tree species 3 (Pacific Islands), Pacific Northwest Research Station | NUMBER(4) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 2.5.124 | DSTRBCD1_P2A | Disturbance code 1, periodic to annual | NUMBER(2) |
| 2.5.125 | DSTRBCD2_P2A | Disturbance code 2, periodic to annual | NUMBER(2) |
| 2.5.126 | DSTRBCD3_P2A | Disturbance code 3, periodic to annual | NUMBER(2) |
| 2.5.127 | DSTRBYR1_P2A | Disturbance year 1, periodic to annual | NUMBER(4) |
| 2.5.128 | DSTRBYR2_P2A | Disturbance year 2, periodic to annual | NUMBER(4) |
| 2.5.129 | DSTRBYR3_P2A | Disturbance year 3, periodic to annual | NUMBER(4) |
| 2.5.130 | FLDTYPCD_30 | Field forest type code, version 3.0 | NUMBER(3) |
| 2.5.131 | FOREST_COMMUNITY_PNWRS | Forest type (Pacific Islands), Pacific Northwest Research Station | NUMBER(3) |
| 2.5.132 | LAND_USECD_RMRS | Land use code, Rocky Mountain Research Station | NUMBER(1) |
| 2.5.133 | MAICF | Mean annual increment cubic feet | NUMBER(5,2) |
| 2.5.134 | PCTBARE_RMRS | Percent bare ground, Rocky Mountain Research Station | NUMBER(3) |
| 2.5.135 | QMD_RMRS | Quadratic mean diameter, Rocky Mountain Research Station | NUMBER(5,1) |
| 2.5.136 | RANGETYPCD_RMRS | Range type code (existing vegetation classification), Rocky Mountain Research Station | NUMBER(3) |
| 2.5.137 | SDIMAX_RMRS | Stand density index maximum, Rocky Mountain Research Station | NUMBER(4) |
| 2.5.138 | SDIPCT_RMRS | Stand density index percent, Rocky Mountain Research Station | NUMBER(4,1) |
| 2.5.139 | SDI_RMRS | Stand density index for the condition, Rocky Mountain Research Station | NUMBER(8,4) |
| 2.5.140 | STAND_STRUCTURE_ME_NERS | Stand structure (Maine), Northeastern Research Station | NUMBER(1) |
| 2.5.141 | TREES_PRESENT_NCRS | Trees present on nonforest, North Central Research Station | NUMBER(1) |
| 2.5.142 | TREES_PRESENT_NERS | Trees present on nonforest, Northeastern Research Station | NUMBER(1) |
| 2.5.143 | TRTCD1_P2A | Treatment code 1, periodic to annual | NUMBER(2) |
| 2.5.144 | TRTCD2_P2A | Treatment code 2, periodic to annual | NUMBER(2) |
| 2.5.145 | TRTCD3_P2A | Treatment code 3, periodic to annual | NUMBER(2) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|------------------------------|--|------------------|
| 2.5.146 | TRTOPCD | Treatment opportunity | NUMBER(2) |
| 2.5.147 | TRYR1_P2A | Treatment year 1, periodic to annual | NUMBER(4) |
| 2.5.148 | TRYR2_P2A | Treatment year 2, periodic to annual | NUMBER(4) |
| 2.5.149 | TRYR3_P2A | Treatment year 3, periodic to annual | NUMBER(4) |
| 2.5.150 | LAND_COVER_CLASS_CD | Land cover class code | NUMBER(2) |
| 2.5.151 | SIEQN_REF_CD | Site index equation reference code | VARCHAR2(10) |
| 2.5.152 | SICOND_FVS | Site index for the condition, used by the Forest Vegetation Simulator | NUMBER(3) |
| 2.5.153 | SIBASE_FVS | Site index base age used by the Forest Vegetation Simulator | NUMBER(3) |
| 2.5.154 | SISP_FVS | Site index species code used by the Forest Vegetation Simulator | NUMBER(4) |
| 2.5.155 | SIEQN_REF_CD_FVS | Site index equation reference code used by the Forest Vegetation Simulator | VARCHAR2(10) |
| 2.5.156 | MQUADPROP_UNADJ | Microquadrat proportion unadjusted | NUMBER(11,10) |
| 2.5.157 | SOILPROP_UNADJ | Soil proportion unadjusted | NUMBER(11,10) |
| 2.5.158 | FOREST_COND_STATUS_CHANGE_CD | Forest land condition status change code | NUMBER(1) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--|-------------------|----------------------|
| Primary | CN | N/A | CND_PK |
| Unique | PLT_CN, CONDID | N/A | CND_UK |
| Natural | STATECD, INVYR, UNITCD, COUNTYCD, PLOT, CONDID | N/A | CND_NAT_I |
| Foreign | PLT_CN | CONDITION to PLOT | CND_PLT_FK |

2.5.1 CN

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

2.5.2 PLT_CN

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

2.5.3 INVYR

Inventory year. See SURVEY.INVYR description for definition.

2.5.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to appendix B.

2.5.5 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 B](#) for codes.

2.5.6 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

2.5.7 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combination of variables, PLOT may be used to uniquely identify a plot.

2.5.8 CONDID

Condition class number. Unique identifying number assigned to each condition on a plot. A condition is initially defined by condition class status. Differences in reserved status, owner group, forest type, stand-size class, regeneration status, and stand density further define condition for forest land. Mapped nonforest conditions are also assigned numbers. At the time of the plot establishment, the condition class at plot center (the center of subplot 1) is usually designated as condition class 1. Other condition classes are assigned numbers sequentially at the time each condition class is delineated. On a plot, each sampled condition class must have a unique number that can change at remeasurement to reflect new conditions on the plot.

2.5.9 COND_STATUS_CD

Condition status code. A code indicating the basic land classification.

Note: Starting with PLOT.MANUAL ≥6.0, codes 1 and 2 have been modified to match FIA's new definition for accessible forest land and nonforest land. The current wording of "at least 10 percent canopy cover" replaces older wording of "at least 10 percent stocked" as the qualifying criterion in classification. This criterion applies to any tally tree species, including woodland tree species.

Codes: COND_STATUS_CD

| Code | Description |
|------|---|
| 1 | Accessible forest land - Land within the population of interest that can be occupied safely and has at least 10 percent canopy cover by live tally trees of any size or has had at least 10 percent canopy cover of live tally species in the past, based on the presence of stumps, snags, or other evidence. To qualify, the area must be at least 1.0 acre in size and 120.0 feet wide. Forest land includes transition zones, such as areas between forest and nonforest lands that meet the minimal tree canopy cover and forest areas adjacent to urban and built-up lands. Roadside, streamside, and shelterbelt strips of trees must have a width of at least 120 feet and continuous length of at least 363 feet to qualify as forest land. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if they are less than 120 feet wide or less than an acre in size. Tree-covered areas in agricultural production settings, such as fruit orchards, or tree-covered areas in urban settings, such as city parks, are not considered forest land. |
| 2 | Nonforest land - Land that has less than 10 percent canopy cover of tally tree species of any size and, in the case of afforested land, fewer than 150 established trees per acre; or land that has sufficient canopy cover or stems, but is classified as nonforest land use (see criteria under PRESNFCD). Nonforest includes areas that have sufficient cover or live stems to meet the forest land definition, but do not meet the dimensional requirements. Note: Nonforest land includes "other wooded land" that has at least 5 percent, but less than 10 percent, canopy cover of live tally tree species of any size or has had at least 5 percent, but less than 10 percent, canopy cover of tally species in the recent past, based on the presence of stumps, snags, or other evidence. Other wooded land is recognized as a subset of nonforest land, and therefore is not currently considered a separate condition class. Other wooded land is not subject to nonforest use(s) that prevent normal tree regeneration and succession, such as regular mowing, intensive grazing, or recreation activities. In addition, other wooded land is classified according to the same nonforest land use rules as forest land (e.g., 6 percent cover in an urban setting is not considered other wooded land). Other wooded land is therefore defined as having >5 percent and <10 percent canopy cover at present, or evidence of such in the past, and PRESNFCD = 20, 40, 42, 43 or 45. |
| 3 | Nonsensus water - Lakes, reservoirs, ponds, and similar bodies of water 1.0 acre to 4.5 acre in size. Rivers, streams, canals, etc., 30.0 feet to 200 feet wide. This definition was used in the 1990 census and applied when the data became available. Earlier inventories defined nonsensus water differently. |
| 4 | Census water - Lakes, reservoirs, ponds, and similar bodies of water 4.5 acre in size and larger; and rivers, streams, canals, etc., more than 200 feet wide. |
| 5 | Nonsampled, possibility of forest land - Any portion of a plot within accessible forest land that cannot be sampled is delineated as a separate condition. There is no minimum size requirement. The reason the condition was not sampled is provided in COND_NONSAMPLE_REASON_CD. |

2.5.10 COND_NONSAMPLE_REASON_CD

Condition nonsampled reason code. A code indicating the reason a condition class was not sampled.

Codes: COND_NONSAMPLE_REASN_CD

| Code | Description |
|-------------|--|
| 01 | Outside U.S. boundary - Condition class is outside the U.S. border. |
| 02 | Denied access area - Access to the condition class is denied by the legal owner, or by the owner of the only reasonable route to the condition class. |
| 03 | Hazardous situation - Condition class cannot be accessed because of a hazard or danger, for example cliffs, quarries, strip mines, illegal substance plantations, temporary high water, etc. |
| 05 | Lost data - The data file was discovered to be corrupt after a panel was completed and submitted for processing. Used for the single condition that is required for this plot. This code is for office use only. |
| 06 | Lost plot - Entire plot cannot be found. Used for the single condition that is required for this plot. |
| 07 | Wrong location - Previous plot can be found, but its placement is beyond the tolerance limits for plot location. Used for the single condition that is required for this plot. |
| 08 | Skipped visit - Entire plot skipped. Used for plots that are not completed prior to the time a panel is finished and submitted for processing. Used for the single condition that is required for this plot. This code is for office use only. |
| 09 | Dropped intensified plot - Intensified plot dropped due to a change in grid density. Used for the single condition that is required for this plot. This code used only by units engaged in intensification. This code is for office use only. |
| 10 | Other - Condition class not sampled due to a reason other than one of the specific reasons listed. |
| 11 | Ocean - Condition falls in ocean water below mean high tide line. |

2.5.11 RESERVCD

Reserved status code. (*core for accessible forest land; core optional for other sampled land*) A code indicating the reserved status of the condition on publicly owned land.

Starting with PLOT.MANUAL ≥ 6.0 , the description has been modified to match FIA's new application of the definition for reserved land. Reserved land is permanently prohibited from being managed for the production of wood products through statute or agency mandate; the prohibition cannot be changed through decision of the land manager. Logging may occur to meet protected area objectives. Examples include designated Federal wilderness areas, national parks and monuments, and most State parks. Private land cannot be reserved. RESERVCD differs from RESERVCD_5, which stores reserved status based on the previous definition. See [appendix L](#) for applications of RESERVCD by FIA region and State.

Codes: RESERVCD

| Code | Description |
|-------------|--------------------|
| 0 | Not reserved. |
| 1 | Reserved. |

2.5.12 OWNC

Owner class code. (*core for all accessible forest land; core optional for other sampled land*) A code indicating the ownership category of the land for the condition. When PLOT.DESIGNCD = 999, OWNC may be blank (null).

Codes: OWNC

| Code | Description |
|------|---|
| 11 | National Forest. |
| 12 | National Grassland and/or Prairie. |
| 13 | Other Forest Service land. |
| 21 | National Park Service. |
| 22 | Bureau of Land Management. |
| 23 | Fish and Wildlife Service. |
| 24 | Departments of Defense/Energy. |
| 25 | Other Federal. |
| 31 | State including State public universities. |
| 32 | Local (County, Municipality, etc.) including water authorities. |
| 33 | Other non-Federal public. |
| 46 | Undifferentiated private and Native American. |

The following detailed private owner land codes are not available in this database because of the FIA data confidentiality policy. Users needing this type of information should contact the [FIA Spatial Data Services \(SDS\)](#) group by following the instructions provided at: <https://www.fs.usda.gov/reseaarch/programs/fia/sds>.

Codes: OWNC

| Code | Description |
|------|--|
| 41 | Corporate, including Native Corporations in Alaska and private universities. |
| 42 | Non-governmental conservation/natural resources organization. |
| 43 | Unincorporated local partnership/association/club. |
| 44 | Native American. |
| 45 | Individual and family, including trusts, estates, and family partnerships. |

2.5.13 OWNGRPCD

Owner group code. (*core for all accessible forest land; core optional for other sampled land*) A code indicating the ownership group of the land for the condition. When PLOT.DESIGNCD = 999, OWNGRPCD may be blank (null).

Note: OWNGRPCD = 40 includes Native American lands.

Codes: OWNGRPCD

| Code | Description |
|------|--|
| 10 | Forest Service (OWNC = 11, 12, 13). |
| 20 | Other Federal (OWNC 21, 22, 23, 24, 25). |

| Code | Description |
|------|--|
| 30 | State and local government (OWNCD = 31, 32, 33). |
| 40 | Private (OWNCD = 41, 42, 43, 44, 45, 46). |

2.5.14 FORINDCD

Private owner industrial status code. (*core for all accessible forest land where owner group is private; core optional for other sampled land where owner group is private*)

A code indicating 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.

This attribute is retained in this database for informational purposes but is intentionally left blank (null) because of the FIA data confidentiality policy. Users needing this type of information should contact the [FIA Spatial Data Services \(SDS\)](#) group by following the instructions provided at: <https://www.fs.usda.gov/research/progrms/fia/sds>.

Codes: FORINDCD

| 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. |

2.5.15 ADFORCD

Administrative forest code. A code indicating the administrative unit (Forest Service Region and National Forest) in which the condition is located. The first 2 digits of the 4-digit code are for the region number and the last 2 digits are for the Administrative National Forest number. Refer to [appendix C](#) for codes. Populated for U.S. Forest Service lands OWNGRPCD = 10 and blank (null) for all other owners, except in a few cases where an administrative forest manages land owned by another Federal agency; in this case OWNGRPCD = 20 and ADFORCD >0.

2.5.16 FORTYPCD

Forest type code. This is the forest type used for reporting purposes. It is primarily derived using a computer algorithm, except when less than 25 percent of the plot samples a particular forest condition or in a few cases where the derived FORTYPCDCALC does not accurately reflect the actual condition.

Nonstocked forest land is land that currently has less than 10 percent stocking but formerly met the definition of forest land. Forest conditions meeting this definition have few, if any, trees sampled. In these instances, the algorithm cannot assign a specific forest type and the resulting forest type code is 999, meaning nonstocked. See [ALSTKCD](#) for information on estimates of nonstocked areas.

Refer to [appendix D](#) for the complete list of forest type codes and names.

2.5.17 FLDTYPCD

Field forest type code. A code indicating the forest type, assigned by the field crew, based on the tree species or species groups forming a plurality of all live stocking. The field crew assesses the forest type based on the acre of forest land around the plot, in

addition to the species sampled on the condition. Refer to [appendix D](#) for a detailed list of forest type codes and names. Nonstocked forest land is land that currently has less than 10 percent stocking but formerly met the definition of forest land. When PLOT.MANUAL <2.0, forest conditions that do not meet this stocking level were coded FLDTYPCD = 999. Starting with PLOT.MANUAL = 2.0, the crew no longer recorded nonstocked as 999. Instead, they recorded FLDSZCD = 0 to identify nonstocked conditions and entered an estimated forest type for the condition. The crew determined the estimated forest type by either recording the previous forest type on remeasured plots or, on all other plots, the most appropriate forest type to the condition based on the seedlings present or the forest type of the adjacent forest stands. Periodic inventories will differ in the way FLDTYPCD was recorded - it is best to check with individual FIA work units ([table 1-1](#)) for details. In general, when FLDTYPCD is used for analysis, it is necessary to examine the values of both FLDTYPCD and FLDSZCD to identify nonstocked forest land.

2.5.18 MAPDEN

Mapping density. A code indicating the relative tree density of the condition. Codes other than 1 are used as an indication that a significant difference in tree density is the only factor causing another condition to be recognized and mapped on the plot. May be blank (null) for periodic inventories.

Codes: MAPDEN

| 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. |

2.5.19 STDAGE

Stand age. For annual inventories (PLOT.MANUAL \geq 1.0), stand age is equal to the field-recorded stand age (FLDAGE) with some exceptions:

- When FLDAGE = 999, tree cores are first sent to the office for the counting of rings. Stand age is then estimated based upon the average total age of live trees that fall within the calculated stand-size assignment.
- When FLDAGE = 998, STDAGE may be blank (null) because no trees were cored in the field.
- If no tree ages are available, then RMRS (SURVEY.RSCD = 22) sets this attribute equal to FLDAGE.

For annual inventories, nonstocked stands have STDAGE set to 0. When FLDSZCD = 0 (nonstocked) but STDSZCD <5 (not nonstocked), STDAGE may be set to 0 because FLDAGE = 0. Annual inventory data will contain stand ages assigned to the nearest year. For periodic data, stand age was calculated using various methods. Contact the appropriate FIA work unit ([table 1-1](#)) for details.

2.5.20 STDSZCD

Stand-size class code. A classification of the predominant (based on stocking) diameter class of live trees within the condition assigned using an algorithm. 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 and smaller than large diameter trees. Small diameter trees are <5.0 inches diameter. When <25 percent of the plot samples the forested condition (CONDPROP_UNADJ <0.25), this attribute is set to the equivalent field-recorded stand-size class (FLDSZCD). Populated for forest conditions. This attribute is blank (null) for periodic plots that are used only for growth, mortality and removal estimates, and modeling of reserved and unproductive conditions.

Codes: STDSZCD

| Code | Description |
|------|--|
| 1 | Large diameter - Stands with an all live stocking value 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 value 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. |
| 5 | Nonstocked - Forest land with all live stocking value <10. |

2.5.21 FLDSZCD

Field stand-size class code. A code indicating the field-assigned classification of the predominant (based on stocking) diameter class of live trees within the condition. May not be populated for some FIA work units when PLOT.MANUAL <1.0.

Codes: FLDSZCD

| Code | Description |
|------|--|
| 0 | Nonstocked - Meeting the definition of accessible land and one of the following applies (1) <10 percent stocked by trees, seedlings, and saplings and not classified as cover trees, or 10 percent canopy cover if stocking standards are not available, or (2) for several woodland species where stocking standards are not available, <10 percent canopy cover of trees, seedlings, and saplings. |
| 1 | \leq 4.9 inches (seedlings/saplings). At least 10 percent stocking (or 10 percent canopy cover if stocking standards are not available) in trees, seedlings, and saplings, and at least 2/3 of the canopy cover is in trees <5.0 inches d.b.h./d.r.c. |
| 2 | 5.0-8.9 inches (softwoods and woodland trees)/ 5.0-10.9 inches (hardwoods). At least 10 percent stocking (or 10 percent canopy cover if stocking standards are not available) in trees, seedlings, and saplings; and at least one-third of the canopy cover is in trees >5.0 inches d.b.h./d.r.c. and the plurality of the canopy cover is in softwoods 5.0-8.9 inches diameter and/or hardwoods 5.0-10.9 inches d.b.h., and/or woodland trees 5.0-8.9 inches d.r.c. |
| 3 | 9.0-19.9 inches (softwoods and woodland trees)/ 11.0-19.9 inches (hardwoods). At least 10 percent stocking (or 10 percent canopy cover if stocking standards are not available) in trees, seedlings, and sapling; and at least one-third of the canopy cover is in trees >5.0 inches d.b.h./d.r.c. and the plurality of the canopy cover is in softwoods 9.0-19.9 inches diameter and/or hardwoods between 11.0-19.9 inches d.b.h., and/or woodland trees 9.0-19.9 inches d.r.c. |

| Code | Description |
|------|---|
| 4 | 20.0-39.9 inches. At least 10 percent stocking (or 10 percent canopy cover if stocking standards are not available) in trees, seedlings, and saplings; and at least one-third of the canopy cover is in trees >5.0 inches d.b.h./d.r.c. and the plurality of the canopy cover is in trees 20.0-39.9 inches d.b.h. |
| 5 | 40.0+ inches. At least 10 percent stocking (or 10 percent canopy cover if stocking standards are not available) in trees, seedlings, and saplings; and at least one-third of the canopy cover is in trees >5.0 inches d.b.h./d.r.c. and the plurality of the canopy cover is in trees ≥40.0 inches d.b.h. |

2.5.22 SITECLCD

Site productivity class code. A code indicating the 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. This attribute may be assigned based on the site trees available for the plot, or, if no valid site trees are available, this attribute 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 attribute SITECL_METHOD is set to 6.

Codes: SITECLCD

| 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. |

2.5.23 SICOND

Site index for the condition. This represents the average total length in feet that dominant and co-dominant trees are expected to attain in well-stocked, even-aged stands at the specified base age (SIBASE). Site index is estimated for the condition by either using an individual tree or by averaging site index values that have been calculated for individual site trees (see SITETREE.SITREE) of the same species (SISP). As a result, it may be possible to find additional site index values that are not used in the calculation of SICOND in the SITETREE tables when site index has been calculated for more than one species in a condition. Site index values in SICOND are often used to calculate productivity class and other condition-level attributes. This attribute is blank (null) when no site index data are available.

2.5.24 SIBASE

Site index base age. The base age (sometimes called reference age), in years, of the site index curve used to derive site index. Base age may be breast height age or total age, depending on the specifications of the site index curves being used. This attribute is blank (null) when no site tree data are available.

2.5.25 SISP

Site index species code. The species upon which the site index is based. In most cases, the site index species will be one of the species that define the forest type of the condition (FORTYPCD). In cases where there are no suitable site trees of the type species, other suitable species may be used. This attribute is blank (null) when no site tree data are available.

2.5.26 STDORGCD

Stand origin code. A code indicating the method of stand regeneration for the trees in the condition. An artificially regenerated stand is established by planting or artificial seeding. Populated for forest conditions.

Codes: STDORGCD

| Code | Description |
|------|--|
| 0 | Natural stands. |
| 1 | Clear evidence of artificial regeneration. |

2.5.27 STDORGSP

Stand origin species code. The species code for the predominant artificially regenerated species (only populated when STDORGCD = 1). See [appendix F](#). May not be populated for some FIA work units when PLOT.MANUAL <1.0.

2.5.28 PROP_BASIS

Proportion basis. A value indicating what type of fixed-size subplots were installed when this plot was sampled. This information is needed to use the proper adjustment factor for the stratum in which the plot occurs (see POP_STRATUM.ADJ_FACTOR_SUBP and POP_STRATUM.ADJ_FACTOR_MACR).

Note: This attribute may not be populated for periodic inventories.

Codes: PROP_BASIS

| Code | Description |
|------|--|
| SUBP | Subplots (24.0-foot radius per subplot). |
| MACR | Macroplots (58.9-foot radius per subplot). |

2.5.29 CONDPROP_UNADJ

Condition proportion unadjusted. The unadjusted proportion of the plot that is in the condition. This attribute is retained for ease of area calculations. It is equal to either SUBPPROP_UNADJ or MACRPROP_UNADJ, depending on the value of PROP_BASIS. The sum of all condition proportions for a plot equals 1. When generating population area estimates, this proportion is adjusted by either the POP_STRATUM.ADJ_FACTOR_MACR or the POP_STRATUM.ADJ_FACTOR_SUBP to account for partially nonsampled plots (access denied or hazardous portions).

2.5.30 MICRPROP_UNADJ

Microplot proportion unadjusted. The unadjusted proportion of the microplots that are in the condition. The sum of all microplot condition proportions for a plot equals 1.

2.5.31 SUBPPROP_UNADJ

Subplot proportion unadjusted. The unadjusted proportion of the subplots that are in the condition. The sum of all subplot condition proportions for a plot equals 1.

2.5.32 MACRPROP_UNADJ

Macroplot proportion unadjusted. The unadjusted proportion of the macroplots that are in the condition. When macroplots are installed, the sum of all macroplot condition proportions for a plot equals 1; otherwise this attribute is left blank (null).

2.5.33 SLOPE

Condition percent slope. The predominant or average angle of the slope across the condition to the nearest 1 percent. Valid values are 0 through 155 for data collected when PLOT.MANUAL ≥ 1.0 , and 0 through 200 on data collected when PLOT.MANUAL < 1.0 .

When PLOT.MANUAL < 1.0 , the field crew measured slope at a condition level by sighting along the average incline or decline of the condition. When PLOT.MANUAL ≥ 1.0 , slope is collected at a subplot level (see SUBPLOT.SLOPE), and then the slope from the subplot representing the greatest proportion of the condition is assigned as a surrogate. In the event that two or more subplots represent the same area in the condition, the slope from the lower numbered subplot is used.

Note: When PLOT.MANUAL < 1.0 , this attribute is populated for all forest periodic plots and all NCRS periodic plots that were measured as "nonforest with trees" (e.g., wooded pasture, windbreaks).

2.5.34 ASPECT

Condition aspect. The aspect across the condition to the nearest 1 degree. North is recorded as 360. When slope is < 5 percent, there is no aspect and this item is set to 0.

When PLOT.MANUAL < 1.0 , the field crew measured aspect at the condition level. When PLOT.MANUAL ≥ 1.0 , aspect is collected at a subplot level (see SUBPLOT.ASPECT), and then the aspect from the subplot representing the greatest proportion of the condition is assigned as a surrogate. In the event that two or more subplots represent the same area in the condition, the slope from the lower numbered subplot is used.

Note: When PLOT.MANUAL < 1.0 , this attribute is populated for all forest periodic plots and all NCRS periodic plots that were measured as "nonforest with trees" (e.g. wooded pasture, windbreaks).

2.5.35 PHYSCLCD

Physiographic class code. A code indicating the general effect of land form, topographical position, and soil on moisture available to trees.

Note: When PLOT.MANUAL < 1.0 , this attribute is populated for all forest periodic plots and all NCRS periodic plots that were measured as "nonforest with trees" (e.g., wooded pasture, windbreaks).

Codes: PHYSCLCD

| 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. |

| Code | Description |
|-------------|--|
| 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 floodplains. 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 floodplains. |
| 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 floodplains/Bottomlands - Floodplains and bottomlands less than 1/4 mile in width along rivers and streams. These sites are normally well drained but are subjected to occasional flooding during periods of heavy or extended precipitation. Includes associated levees, benches, and terraces within a 1/4 mile limit. Excludes swamps, sloughs, and bogs. |
| 25 | Broad Floodplains/Bottomlands - Floodplains and bottomlands 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. Excludes swamps, sloughs, and bogs with year-round water problems. |
| 29 | Other Mesic - All moderately moist physiographic sites not described above. |
| - | Hydric sites (normally abundant or overabundant moisture all year) |
| 31 | Swamps/Bogs - Low, wet, flat, forested areas usually quite extensive that are flooded for long periods except during periods of extreme drought. Excludes cypress ponds and small drains. |
| 32 | Small Drains - Narrow, stream-like, wet strands of forest land often without a well-defined stream channel. These areas are poorly drained or flooded throughout most of the year and drain the adjacent higher ground. |
| 33 | Bays and wet pocosins - Low, wet, boggy sites characterized by peaty or organic soils. May be somewhat dry during periods of extended drought. Examples include sites in the Carolina bays in the Southeast United States. |
| 34 | Beaver ponds. |
| 35 | Cypress ponds. |
| 36 | Forest or Nonforest over Permafrost - Low-lying, sometimes wet, flat areas, often characterized by a thick moss layered ground surface, sometimes comprised of tussocks that tend to form a waterlogged soils layer as the active layer thaws seasonally. Permafrost may be visible or detected with a soil probe. At later periods in the season when permafrost cannot be detected, waterlogged soils layered on top of deeper permafrost are possible |
| 39 | Other hydric - All other hydric physiographic sites. |

2.5.36 GSSTKCD

Growing-stock stocking code. A code indicating the stocking of the condition by growing-stock trees and seedlings. Growing-stock trees are those where tree class (TREE.TREECLCD) equals 2. The following species groups (TREE.SPGRPCD) are not included: 23 (woodland softwoods), 43 (eastern noncommercial hardwoods), and 48 (woodland hardwoods). Populated for forest conditions.

Estimates (e.g., forest land area, tree volume) associated with nonstocked areas identified with stocking code (GSSTKCD and ALSTKCD), stand-size class (STDSZCD and FLDSZCD), and forest type (FORTYPCDCALC, FORTYPCD, and FLDTYPCD) can differ. Stand-size class (STDSZCD) and forest type (FORTYPCD) use a field-crew recorded stand-size class (FLDSZCD) and forest type (FLDTYPCD) when a condition is less than 25 percent of the plot area ($\text{CONDPROP_UNADJ} < 0.25$); otherwise, stand-size class and forest type are assigned with an algorithm using trees tallied on the plot (for historical documentation, see "[National Algorithms for Determining Stocking Class, Stand Size Class, and Forest Type for Forest Inventory and Analysis Plots](#)" (Arner and others 2001) at <https://www.fia.fs.usda.gov/library/sampling/index.php> or contact the appropriate FIA work unit in [table 1-1](#)). Stocking code and forest type code calculated (FORTYPCDCALC) also use the algorithm to assign stocking to every condition on the plot, regardless of condition size. When estimates include conditions less than 25 percent of the plot area, small differences among estimates can result when summarizing by stocking code or forest type code calculated versus stand-size class or forest type. Differences are expected between field crew and algorithm assignments; the field crew assigns stand-size class and forest type considering trees on and adjacent to the plot, while the algorithm only uses trees tallied on the plot.

Codes: GSSTKCD

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

Note: When PLOT.MANUAL <1.0, this attribute is also populated for all forest plots, and all NCFS periodic plots that were measured as "nonforest with trees" (e.g., wooded pasture, windbreaks). It is blank (null) for periodic plots that are used only for growth, mortality, and removal estimates, and modeling of reserved and unproductive conditions. Some periodic survey data are in the form of an absolute stocking value (0-167). More detailed information on how stocking values were determined from plot data in a particular State can be obtained directly from the FIA work units ([table 1-1](#)).

Codes: GSSTKCD (Absolute stocking value - used for some periodic inventory data)

| Code | Description |
|------|-------------------------------|
| 1 | Overstocked (130+%). |
| 2 | Fully stocked (100 - 129.9%). |
| 3 | Medium stocked (60 - 99.9%). |

| Code | Description |
|------|--------------------------------|
| 4 | Poorly stocked (16.7 - 59.9%). |
| 5 | Nonstocked (<16.7%). |

2.5.37 ALSTKCD

All live stocking code. A code indicating the stocking of the condition by live trees, including seedlings. Data are in classes as listed for GSSTKCD above. Populated for forest conditions. May not be populated for some FIA work units when PLOT.MANUAL <1.0.

Estimates (e.g., forest land area, tree volume) associated with nonstocked areas identified with stocking code (GSSTKCD and ALSTKCD), stand-size class (STDSZCD and FLDSZCD), and forest type (FORTYPCDCALC, FORTYPCD, and FLDTYPED) can differ. Stand-size class (STDSZCD) and forest type (FORTYPCD) use a field-crew recorded stand-size class (FLDSZCD) and forest type (FLDTYPED) when a condition is less than 25 percent of the plot area (CONDPROP_UNADJ <0.25); otherwise, stand-size class and forest type are assigned with an algorithm using trees tallied on the plot (for historical documentation, see "[National Algorithms for Determining Stocking Class, Stand Size Class, and Forest Type for Forest Inventory and Analysis Plots](#)" (Arner and others 2001) at <https://www.fs.usda.gov/fmsc/ftp/fvs/docs/gtr/Arner2001.pdf> or contact the appropriate FIA work unit in [table 1-1](#)). Stocking code and forest type code calculated (FORTYPCDCALC) also use the algorithm to assign stocking to every condition on the plot, regardless of condition size. When estimates include conditions less than 25 percent of the plot area, small differences among estimates can result when summarizing by stocking code or forest type code calculated versus stand-size class or forest type. Differences are expected between field crew and algorithm assignments; the field crew assigns stand-size class and forest type considering trees on and adjacent to the plot, while the algorithm only uses trees tallied on the plot.

Note: Some periodic survey data are in the form of an absolute stocking value (0-167). More detailed information on how stocking values were determined from plot data in a particular State can be obtained directly from the FIA work units ([table 1-1](#)).

2.5.38 DSTRBCD1

Disturbance code 1. A code indicating 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. Up to three different disturbances per condition can be recorded, from most important to least important (DSTRBCD1, DSTRBCD2, and DSTRBCD1). May not be populated for some FIA work units when PLOT.MANUAL <1.0. Codes 11, 12, 21, and 22 are valid where PLOT.MANUAL ≥2.0.

Codes: DSTRBCD1

| Code | Description |
|------|---|
| 0 | No visible disturbance. |
| 10 | Insect damage. |
| 11 | Insect damage to understory vegetation. |
| 12 | Insect damage to trees, including seedlings and saplings. |
| 20 | Disease damage. |

| Code | Description |
|-------------|---|
| 21 | Disease damage to understory vegetation. |
| 22 | Disease damage to trees, including seedlings and saplings. |
| 30 | Fire damage (from crown and ground fire, either prescribed or natural). |
| 31 | Ground fire damage. |
| 32 | Crown fire damage. |
| 40 | Animal damage. |
| 41 | Beaver (includes flooding caused by beaver). |
| 42 | Porcupine. |
| 43 | Deer/ungulate. |
| 44 | Bear (<i>core optional</i>). |
| 45 | Rabbit (<i>core optional</i>). |
| 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. |
| 80 | Human-induced damage - any significant threshold of human-caused damage not described in the DISTURBANCE codes or in the TREATMENT codes. |
| 90 | Geologic disturbances. |
| 91 | Landslide. |
| 92 | Avalanche track. |
| 93 | Volcanic blast zone. |
| 94 | Other geologic event. |
| 95 | Earth movement / avalanches. |

2.5.39 DSTRBYR1

Disturbance year 1. The year in which disturbance 1 (DSTRBCD1) is estimated to have occurred. If the disturbance occurs continuously over a period of time, the value 9999 is used. If DSTRBCD1 = 0, then DSTRBYR1 = blank (null) or 0. May not be populated for some FIA work units when PLOT.MANUAL<1.0.

2.5.40 DSTRBCD2

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

2.5.41 DSTRBYR2

Disturbance year 2. The year in which disturbance 2 (DSTRBCD2) occurred. See DSTRBYR1 for more information.

2.5.42 DSTRBCD3

Disturbance code 3. The third disturbance code, if the stand has experienced more than two disturbances. See DSTRBCD1 for more information.

2.5.43 DSTRBYR3

Disturbance year 3. The year in which disturbance 3 (DSTRBCD3) occurred. See DSTRBYR1 for more information.

2.5.44 TRTCD1

Treatment code 1. A code indicating 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. Populated for all forested conditions using the National Field Guide protocols (PLOT.MANUAL ≥ 1.0) and populated by some FIA work units where PLOT.MANUAL < 1.0 . When PLOT.MANUAL < 1.0 , inventories may record treatments occurring within the last 20 years for new plots. Up to three different treatments per condition can be recorded, from most important to least important (TRTCD1, TRTCD2, and TRTCD3).

Codes: TRTCD1

| 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, diskng, bedding, or other practices clearly intended to prepare a site for either natural or artificial regeneration. |
| 30 | Artificial regeneration - Following a disturbance or treatment (usually cutting), a new stand where at least 50 percent of the live trees present resulted from planting or direct seeding. |
| 40 | Natural regeneration - Following a disturbance or treatment (usually cutting), a new stand where at least 50 percent of the live trees present (of any size) were established through the growth of existing trees and/or natural seeding or sprouting. |
| 50 | Other silvicultural treatment - The use of fertilizers, herbicides, girdling, pruning, or other activities (not covered by codes 10-40) designed to improve the commercial value of the residual stand; or chaining, which is a practice used on woodlands to encourage wildlife forage. |

2.5.45 TRTYR1

Treatment year 1. The year in which treatment 1 (TRTCD1) is estimated to have occurred. Populated for all forested conditions that have some treatment using the National Field Guide protocols (PLOT.MANUAL ≥ 1.0) and populated by some FIA work units where PLOT.MANUAL < 1.0 . If TRTCD1 = 00 then TRTYR1 = blank (null) or 0.

2.5.46 TRTCD2

Treatment code 2. The second treatment code, if the stand has experienced more than one treatment since the last measurement or within the last 5 years for new plots. See [TRTCD1](#) for more information.

2.5.47 TRTYR2

Treatment year 2. The year in which treatment 2 (TRTCD2) is estimated to have occurred. See [TRTYR1](#) for more information.

2.5.48 TRTCD3

Treatment code 3. The third treatment code, if the stand has experienced more than two treatments since the last measurement or within the last 5 years for new plots. See [TRTCD1](#) for more information.

2.5.49 TRTYR3

Treatment year 3. The year in which treatment 3 (TRTCD3) is estimated to have occurred. See [TRTYR1](#) for more information.

2.5.50 PRESNFCD

Present nonforest code. A code indicating the current land use for a nonforest condition, which meets the minimum area and width requirements (except those cases where the condition has been solely defined due to developed land uses, such as roads and rights-of-way). PRESNFCD is recorded for the following: (1) conditions that were previously classified as forest but are now classified as nonforest, and (2) sampled nonforest conditions, regardless of the previous condition.

Note: This attribute is *core* starting with FIADB version 6.0 (PLOT.MANUAL \geq 6.0), but for all prior annual inventories, it was *core* for remeasured conditions that were forest before and are now nonforest, and *core optional* for all conditions where current condition class status is nonforest, regardless of the previous condition.

Codes: PRESNFCD

| Code | Description |
|------|---|
| 10 | Agricultural land. |
| 11 | Cropland. |
| 12 | Pasture (improved through cultural practices). |
| 13 | Idle farmland. |
| 16 | Maintained wildlife opening. |
| 17 | Windbreak/Shelterbelt. |
| 20 | Rangeland. |
| 30 | Developed. |
| 31 | Cultural (business, residential, other intense human activity). |
| 32 | Rights-of-way (improved road, railway, power line). |
| 40 | Other (undeveloped beach, marsh, bog, snow, ice). |
| 41 | Nonvegetated. |
| 42 | Wetland. |
| 43 | Beach. |
| 45 | Nonforest-Chaparral. |

The following detailed current nonforest land use codes are not available in this database because of the FIA data confidentiality policy. Users needing this type of information

should contact the [FIA Spatial Data Services \(SDS\)](#) group by following the instructions provided at <https://www.fs.usda.gov/research/programs/fia/sds>.

Note: Codes 14 and 15 are included in code 10. Codes 33 and 34 are included in code 30.

Codes: PRESNFCD

| Code | Description |
|------|--|
| 14 | Orchard. |
| 15 | Christmas tree plantation. |
| 33 | Recreation (park, golf course, ski run). |
| 34 | Mining. |

2.5.51 BALIVE

Basal area per acre of live trees. Basal area in square feet per acre of all live trees ≥ 1.0 inch d.b.h./d.r.c. sampled in the condition. Populated for forest conditions.

2.5.52 FLDAGE

Field-recorded stand age. The stand age as assigned by the field crew. Based on the average total age, to the nearest year, of the trees in the field-recorded stand-size class of the condition, determined using local procedures. For nonstocked stands, a value of 0 is stored. If all of the trees in a condition class are of a species that by regional standards cannot be cored for age (e.g., mountain mahogany, tupelo), 998 is recorded. If tree cores are not counted in the field, but are collected and sent to the office for the counting of rings, 999 is recorded.

2.5.53 ALSTK

All-live-tree stocking percent. The sum of stocking percent values of all live trees, including seedlings, on the condition. The percent is then assigned to a stocking class, which is found in [ALSTKCD](#). Populated for forest conditions. May not be populated for some FIA work units when PLOT.MANUAL <1.0.

Note: Some periodic survey data are in the form of an absolute stocking value (0-167). More detailed information on how stocking values were determined from plot data in a particular State can be obtained directly from the FIA work units ([table 1-1](#)).

2.5.54 GSSTK

Growing-stock stocking percent. The sum of stocking percent values of all growing-stock trees and seedlings on the condition. The percent is then assigned to a stocking class, which is found in [GSSTKCD](#). Growing-stock trees are those where tree class (TREE.TREECLCD) equals 2. The following species groups (TREE.SPGRPCD) are not included: 23 (woodland softwoods), 43 (eastern noncommercial hardwoods), and 48 (woodland hardwoods). Populated for forest conditions. May not be populated for some FIA work units when PLOT.MANUAL <1.0.

Note: Some periodic survey data are in the form of an absolute stocking value (0-167). More detailed information on how stocking values were determined from plot data in a particular State can be obtained directly from the FIA work units ([table 1-1](#)).

2.5.55 FORTYPCDCALC

Forest type code calculated. Forest type is calculated based on the tree species sampled on the condition. The forest typing algorithm is a hierarchical procedure applied to the tree species sampled on the condition. 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 type groups, selecting the group with the largest aggregate stocking value. The comparison proceeds in most cases until a plurality of a forest type is identified.

In instances where the condition is more than 10 percent stocked, but the algorithm cannot identify a forest type, FORTYPCDCALC is blank (null). Nonstocked forest land is land that currently has less than 10 percent stocking but formerly met the definition of forest land. Forest conditions meeting this definition have few, if any, trees sampled. In these instances, the algorithm cannot assign a specific forest type and the resulting forest type code is 999, meaning nonstocked.

FORTYPCDCALC is only used for computational purposes. It is a direct output from the algorithm, and is used to populate FORTYPCD when the condition is at least 25 percent of the plot area ($\text{CONDPROP_UNADJ} \geq .25$). See also FORTYPCD and FLDTYPCD. Refer to appendix D for a complete list of forest type codes and names.

2.5.56 HABTYPED1

Habitat type code 1. A code indicating the primary habitat type (or community type) for this condition. Unique codes are determined by combining both habitat type code and publication code (HABTYPED1 and HABTYPED1_PUB_CD). Habitat type captures information about both the overstory and understory vegetation and usually describes the vegetation that is predicted to become established after all successional stages of the ecosystem are completed without any disturbance. This code can be translated using the publication in which it was named and described (see [HABTYPED1_PUB_CD](#) and [HABTYPED1_DESCR_PUB_CD](#)). Only populated by certain FIA work units (SURVEY.RSCD = 22, 23, 26).

Note: For [Caribbean Islands](#), life zone codes are populated in this column (see [VOL_LOC_GRP](#) for definitions). Only populated by certain FIA work units (SURVEY.RSCD = 33, STATECD = 72, 78).

2.5.57 HABTYPED1_PUB_CD

Habitat type code 1 publication code. A code indicating the publication that lists the name for habitat type code 1 (HABTYPED1). Publication information is documented in the REF_HABTYP_PUBLICATION table. Only used by certain FIA work units (SURVEY.RSCD = 22, 23, 26).

2.5.58 HABTYPED1_DESCR_PUB_CD

Habitat type code 1 description publication code. A code indicating the publication that gives a description for habitat type code 1 (HABTYPED1). This publication may or may not be the same publication that lists the name of the habitat type (HABTYPED1_PUB_CD). Publication information is documented in REF_HABTYP_PUBLICATION table. Only used by certain FIA work units (SURVEY.RSCD = 22, 23, 26).

2.5.59 HABTYPED2

Habitat type code 2. A code indicating the secondary habitat type (or community type) for this condition. See [HABTYPED1](#) for description.

2.5.60 HABTYP_CD2_PUB_CD

Habitat type code 2 publication code. A code indicating the publication that lists the name for habitat type code 2 (HABTYP_CD2). See [HABTYP_CD1_PUB_CD](#) for description.

2.5.61 HABTYP_CD2_DESCR_PUB_CD

Habitat type code 2 description publication code. A code indicating the publication that gives a description for habitat type code 2 (HABTYP_CD2). See [HABTYP_CD1_DESCR_PUB_CD](#) for description.

2.5.62 MIXEDCONF_CD

Mixed conifer code. An indicator to show that the forest condition is a mixed conifer site in California. These sites are a complex association of ponderosa pine, sugar pine, Douglas-fir, white fir, red fir, and/or incense-cedar. Mixed conifer sites use a specific site index equation. This is a yes/no attribute. This attribute is left blank (null) for all other States. Only populated by certain FIA work units (SURVEY.RSCD = 26).

Codes: MIXEDCONF_CD

| Code | Description |
|------|--|
| Y | Yes, the condition is a mixed conifer site in California. |
| N | No, the condition is not a mixed conifer site in California. |

2.5.63 VOL_LOC_GRP

Volume location group. An identifier indicating what equations are used for volume, biomass, site index, etc. A volume group is usually designated for a geographic area, such as a State, multiple States, a group of counties, or an ecoregion.

Codes: VOL_LOC_GRP

| Code | Description |
|----------|---------------------------------------|
| S22LAZN | Northern Arizona Ecosystems. |
| S22LAZS | Southern Arizona Ecosystems. |
| S22LCOE | Eastern Colorado Ecosystems. |
| S22LCOW | Western Colorado Ecosystems. |
| S22LID | Idaho Ecosystems. |
| S22LMTE | Eastern Montana Ecosystems. |
| S22LMTW | Western Montana Ecosystems. |
| S22LNMN | Northern New Mexico Ecosystems. |
| S22LNMS | Southern New Mexico Ecosystems. |
| S22LNV | Nevada Ecosystems. |
| S22LUTNE | Northern and Eastern Utah Ecosystems. |
| S22LUTSW | Southern and Western Utah Ecosystems. |
| S22LWYE | Eastern Wyoming Ecosystems. |
| S22LWYW | Western Wyoming Ecosystems. |
| S23LCS | Central States (IL, IN, IA, MO). |
| S23LLS | Lake States (MI, MN, WI). |
| S23LPS | Plains States (KS, NE, ND, SD). |

| Code | Description |
|---------------|--|
| S24 | Northeastern States (CT, DE, ME, MD, MA, NH, NJ, NY, OH, PA, RI, VT, WV). |
| S26LCA | California other than mixed conifer forest type. |
| S26LCAMIX | California mixed conifer forest type. |
| S26LEOR | Eastern Oregon. |
| S26LEWA | Eastern Washington. |
| S26LORJJ | Oregon, Jackson and Josephine Counties. |
| S26LPI | Pacific Islands . |
| S26LWACF | Washington Silver Fir Zone. |
| S26LWOR | Western Oregon. |
| S26LWWA | Western Washington. |
| S27LAK | Alaska - coastal and interior. |
| S27LAK1AB | Coastal Alaska Southeast and Central. |
| S27LAK1C | Coastal Alaska Kodiak and Afognak Islands. |
| S33 | Southern States - excluding Puerto Rico and the Virgin Islands (AL, AR, FL, GA, LA, KY, MS, OK, NC, SC, TN, TX, VA). |
| S33CARIBDRY | Caribbean Islands - Subtropical dry forest life zones. |
| S33CARIBLMWR | Caribbean Islands - Lower montane wet and rain forest life zones. |
| S33CARIBMOIST | Caribbean Islands - Subtropical moist forest life zones. |
| S33CARIBWET | Caribbean Islands - Subtropical wet and rain forest life zones. |

2.5.64 SITECLCDEST

Site productivity class code estimated. This is a field-recorded code that is an estimated or predicted indicator of site productivity. It is used as the value for SITECLCD if no valid site tree is available. When SITECLCDEST is used as SITECLCD, SITECL_METHOD is set to 6. May not be populated for some FIA work units when PLOT.MANUAL < 1.0. Only populated by certain FIA work units (SURVEY.RSCD = 23, 24, 26, 27, 33).

Codes: SITECLCDEST

| 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. |

2.5.65 SITETREE_TREE

Site tree tree number. If an individual site index tree is used to calculate SICOND, this is the tree number of the site tree (SITETREE.TREE column) used. Only populated by certain FIA work units (SURVEY.RSCD = 23, 33).

2.5.66 SITECL_METHOD

Site class method. A code identifying the method for determining site index or estimated site productivity class. May not be populated for some FIA work units when PLOT.MANUAL <1.0.

Codes: SITECL_METHOD

| Code | Description |
|------|---|
| 1 | Tree measurement (length, age, etc.) collected during this inventory. |
| 2 | Tree measurement (length, age, etc.) collected during a previous inventory. |
| 3 | Site index or site productivity class estimated either in the field or office. |
| 4 | Site index or site productivity class estimated by the height-intercept method during this inventory. |
| 5 | Site index or site productivity class estimated using multiple site trees. |
| 6 | Site index or site productivity class estimated using default values. |

2.5.67 CARBON_DOWN_DEAD

Carbon in down dead. Carbon, in tons per acre, of woody material >3 inches in diameter on the ground, and stumps and their roots >3 inches in diameter. Estimated from models based on geographic area, forest type, and live tree carbon density (Smith and Heath 2008). This modeled attribute is not a direct sum of Phase 2 or Phase 3 measurements. This is a per acre estimate and must be multiplied by CONDPROP_UNADJ and the appropriate expansion and adjustment factor located in the POP_STRATUM table.

2.5.68 CARBON_LITTER

Carbon in litter. Carbon, in tons per acre, of organic material on the floor of the forest, including fine woody debris, humus, and fine roots in the organic forest floor layer above mineral soil. Estimated from a model based on litter carbon measurements from a subset of FIA plots, geographic area, elevation, forest type group, aboveground live tree carbon, and climate variables (Domke and others 2016). This modeled attribute, while based on litter carbon observations on FIA plots, is not a direct sum of Phase 2 or Phase 3 measurements. This is a per acre estimate and must be multiplied by CONDPROP_UNADJ and the appropriate expansion and adjustment factor located in the POP_STRATUM table. Not populated for the Caribbean Islands, Pacific Islands, and Interior Alaska.

2.5.69 CARBON_SOIL_ORG

Carbon in soil organic material. Carbon, in tons per acre, in fine organic material below the soil surface to a depth of 1 meter. Does not include roots. Estimated from a model based on soil organic carbon measurements from a subset of FIA plots, geographic area, elevation, forest type group, climate variables, soil order, and surficial geology (Domke and others 2017). This modeled attribute, while based on soil organic carbon observations on FIA plots, is not a direct sum of Phase 2 or Phase 3 measurements. This is a per acre estimate and must be multiplied by CONDPROP_UNADJ and the appropriate expansion and adjustment factor located in the POP_STRATUM table. Not populated for the Caribbean Islands, Pacific Islands, and Interior Alaska.

2.5.70 CARBON_UNDERSTORY_AG

Carbon in understory aboveground. Carbon, in tons per acre, in the aboveground portions of seedlings and woody shrubs. Estimated from models based on geographic

area, forest type, and (except for nonstocked and pinyon-juniper stands) live tree carbon density (Smith and Health 2008). This modeled attribute is a component of the EPA's Greenhouse Gas Inventory and is not a direct sum of Phase 2 or Phase 3 measurements. This is a per acre estimate and must be multiplied by CONDPROP_UNADJ and the appropriate expansion and adjustment factor located in the POP_STRATUM table.

2.5.71 CARBON_UNDERSTORY_BG

Carbon in understory belowground. Carbon, in tons per acre, in the belowground portions of seedlings and woody shrubs. Estimated from models based on geographic area, forest type, and (except for nonstocked and pinyon-juniper stands) live tree carbon density (Smith and Heath 2008). This modeled attribute is a component of the EPA's Greenhouse Gas Inventory and is not a direct sum of Phase 2 or Phase 3 measurements. This is a per acre estimate and must be multiplied by CONDPROP_UNADJ and the appropriate expansion and adjustment factor located in the POP_STRATUM table.

2.5.72 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

2.5.73 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

2.5.74 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

2.5.75 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

2.5.76 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

2.5.77 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

2.5.78 CYCLE

Inventory cycle number. See SURVEY.CYCLE description for definition.

2.5.79 SUBCYCLE

Inventory subcycle number. See SURVEY.SUBCYCLE description for definition.

2.5.80 SOIL_ROOTING_DEPTH_PNW

Soil rooting depth, Pacific Northwest Research Station. A code indicating the soil depth (the depth to which tree roots can penetrate) within each forest land condition class. Required for all forest condition classes. This attribute is coded 1 when more than half of area in the condition class is estimated to be ≤20 inches deep. Ground pumice, decomposed granite, and sand all qualify as types of soil. Only populated by certain FIA work units (SURVEY.RSCD = 26).

Codes: SOIL_ROOTING_DEPTH_PNW

| Code | Description |
|-------------|--------------------|
| 1 | ≤20 inches. |
| 2 | >20 inches. |

2.5.81 GROUND_LAND_CLASS_PNW

Present ground land class, Pacific Northwest Research Station. A code indicating a ground land class (GLC) category, which is used to further refine the forest land classification for the condition. Only populated by certain FIA work units (SURVEY.RSCD = 26).

Codes: GROUND_LAND_CLASS_PNW

| Code | Description |
|-------------|--|
| 120 | Timberland - Forest land that is potentially capable of producing at least 20 cubic feet/acre/year at culmination in fully stocked, natural stands of continuous crops of trees to industrial roundwood size and quality. Industrial roundwood requires species that grow to size and quality adequate to produce lumber and other manufactured products (exclude fence posts and fuel wood that are not considered manufactured). Timberland is characterized by no severe limitations on artificial or natural restocking with species capable of producing industrial roundwood. |
| 141 | Other forest rocky - Other forest land that can produce tree species of industrial roundwood size and quality, but that is unmanageable because the site is steep, hazardous, and rocky, or is predominantly nonstockable rock or bedrock, with trees growing in cracks and pockets. Other forest-rocky sites may be incapable of growing continuous crops due to inability to obtain adequate regeneration success. |
| 142 | Other forest unsuitable site (wetland, subalpine, or coastal conifer scrub; California only) - Other forest land that is unsuited for growing industrial roundwood because of one of the following environment factors: willow bogs, spruce bogs, sites with high water tables or even standing water for a portion of the year, and harsh sites due to extreme climatic and soil conditions. Trees present are often extremely slow growing and deformed. Examples: whitebark pine, lodgepole, or mountain hemlock stands at timberline; shore pine along the Pacific Ocean (Monterey, Bishop, and Douglas-fir); willow wetlands with occasional cottonwoods present; Sitka spruce-shrub communities bordering tidal flats and channels along the coast. Includes aspen stands in high-desert areas or areas where juniper/mountain mahogany are the predominant species. |
| 143 | Other forest pinyon-juniper - Areas currently capable of 10 percent or more tree stocking with forest trees, with juniper species predominating. These areas are not now, and show no evidence of ever having been 10 percent or more stocked with trees of industrial roundwood form and quality. Stocking capabilities indicated by live juniper trees or juniper stumps and juniper snags less than 25 years dead or cut. Ten percent juniper stocking means 10 percent canopy cover at stand maturity. For woodland juniper species, ten percent stocking means 5 percent canopy cover at stand maturity. |
| 144 | Other forest-oak (formally oak woodland) - Areas currently 10 percent or more stocked with forest trees, with low quality forest trees of oak, gray pine, madrone, or other hardwood species predominating, and that are not now, and show no evidence of ever having been 10 percent or more stocked with trees of industrial roundwood form and quality. Trees on these sites are usually short, slow growing, gnarled, poorly formed, and generally suitable only for fuel wood. The following types are included: blue oak, white oak, live oak, oak-gray pine. |

| Code | Description |
|------|---|
| 146 | Other forest unsuitable site (Oregon and Washington only) - Other forest land that is unsuited for growing industrial roundwood because of one of the following environment factors: willow bogs, spruce bogs, sites with high water tables or even standing water for a portion of the year, and harsh sites due to climatic conditions. Trees present are often extremely slow growing and deformed. Examples: whitebark pine or mountain hemlock stands at timberline, shore pine along the Pacific Ocean, willow wetlands with occasional cottonwoods present, and Sitka spruce-shrub communities bordering tidal flats and channels along the coast. Aspen stands in high-desert areas or areas where juniper/mountain mahogany are the predominant species are considered other forest-unsuitable site. |
| 148 | Other forest-Cypress (California only) - Forest land with forest trees with cypress predominating. Shows no evidence of having had 10 percent or more cover of trees of industrial roundwood quality and species. |
| 149 | Other forest-low productivity (this code is calculated in the office) - Forest land capable of growing crops of trees to industrial roundwood quality, but not able to grow wood at the rate of 20 cubic feet/acre/year. Included are areas of low stocking potential and/or very low site index. |
| 150 | Other forest curlleaf mountain mahogany - Areas currently capable of 10 percent or more tree stocking with forest trees, with curlleaf mountain mahogany species predominating. These areas are not now, and show no evidence of ever having been 10 percent or more stocked with trees of industrial roundwood form and quality; 10 percent mahogany stocking means 5 percent canopy cover at stand maturity. |

2.5.82 PLANT_STOCKABILITY_FACTOR_PNW

Plant stockability factor, Pacific Northwest Research Station. Some plots in PNWRS have forest land condition classes that are low productivity sites, and are incapable of attaining normal yield table levels of stocking. For such classes, potential productivity (mean annual increment at culmination) must be discounted. Most forested conditions have a default value of 1 assigned; those conditions that meet the low site criteria have a value between 0.1 and 1. Key plant indicators and plant communities are used to assign discount factors, using procedures outlined in MacLean and Bolsinger (1974) and Hanson and others (2002). Only populated by certain FIA work units (SURVEY.RSCD = 26).

2.5.83 STND_COND_CD_PNWRS

Stand condition code, Pacific Northwest Research Station. A code that best describes the condition of the stand within forest condition classes. Stand condition is defined here as "the size, density, and species composition of a plant community following disturbance and at various time intervals after disturbance." Information on stand condition is used in describing wildlife habitat. Only populated by certain FIA work units (SURVEY.RSCD = 26).

Codes: STND_COND_CD_PNWRS

| Code | Stand Condition | Description |
|------|-----------------|--|
| 0 | Not applicable. | Condition class is juniper, chaparral, or curlleaf mountain mahogany forest type. |
| 1 | Grass-forb. | Shrubs <40 percent canopy cover and <5 feet tall; plot may range from being largely devoid of vegetation to dominance by herbaceous species (grasses and forbs); tree regeneration generally <5 feet tall and <40 percent cover. |

| Code | Stand Condition | Description |
|-------------|-------------------------------------|---|
| 2 | Shrub. | Shrubs 40 percent canopy cover or greater, of any height; trees <40 percent canopy cover and <1.0 inch d.b.h./d.r.c. When average stand diameter exceeds 1.0 inch d.b.h./d.r.c., plot is "open sapling" or "closed sapling." |
| 3 | Open sapling, poletimber. | Average stand diameter 1.0-8.9 inches d.b.h./d.r.c., and canopy cover <60 percent. |
| 4 | Closed sapling, pole, sawtimber. | Average stand diameter is 1.0-21.0 inches d.b.h./d.r.c. and canopy cover is 60 percent or greater. |
| 5 | Open sawtimber. | Average stand diameter is 9.0-21.0 inches d.b.h./d.r.c., and canopy cover is <60 percent. |
| 6 | Large sawtimber. | Average stand diameter exceeds 21.0 inches d.b.h./d.r.c.; canopy cover may be <100 percent; decay and decadence required for old-growth characteristics is generally lacking, successional trees required by old-growth may be lacking, and dead and down material required by old-growth is lacking. |
| 7 | Old-growth. | Average stand diameter exceeds 21.0 inches d.b.h./d.r.c. Stands over 200 years old with at least two tree layers (overstory and understory), decay in living trees, snags, and down woody material. Some of the overstory layer may be composed of long-lived successional species (e.g., Douglas-fir, western redcedar). |

2.5.84 STND_STRUC_CD_PNWRS

Stand structure code, Pacific Northwest Research Station. A code indicating the overall structure of the stand. Only populated by certain FIA work units (SURVEY.RSCD = 26).

Codes: STND_STRUC_CD_PNWRS

| Code | Stand Condition | Description |
|-------------|------------------------------|---|
| 1 | Even-aged single-storied. | A single even canopy characterizes the stand. The greatest numbers of trees are in a height class represented by the average height of the stand; there are substantially fewer trees in height classes above and below this mean. The smaller trees are usually tall spindly members that have fallen behind their associates. The ages of trees usually do not differ by more than 20 years. |
| 2 | Even-aged two-storied. | Stands composed of two distinct canopy layers, such as, an overstory with an understory sapling layer possibly from seed tree and shelterwood operations. This may also be true in older plantations, where shade-tolerant trees may become established. Two relatively even canopy levels can be recognized in the stand. Understory or overtopped trees are common. Neither canopy level is necessarily continuous or closed, but both canopy levels tend to be uniformly distributed across the stand. The average age of each level differs significantly from the other. |

| Code | Stand Condition | Description |
|-------------|------------------------|---|
| 3 | Uneven-aged. | Theoretically, these stands contain trees of every age on a continuum from seedlings to mature canopy trees. In practice, uneven-aged stands are characterized by a broken or uneven canopy layer. Usually the largest number of trees is in the smaller diameter classes. As trees increase in diameter, their numbers diminish throughout the stand. Many times, instead of producing a negative exponential distribution of diminishing larger diameters, uneven-aged stands behave irregularly with waves of reproduction and mortality. Consider any stand with three or more structural layers as uneven-aged. Logging disturbances (examples are selection, diameter limit, and salvage cutting) will give a stand an uneven-aged structure. |
| 4 | Mosaic. | At least two distinct size classes are represented and these are not uniformly distributed but are grouped in small repeating aggregations, or occur as stringers <120 feet wide, throughout the stand. Each size class aggregation is too small to be recognized and mapped as an individual stand. The aggregations may or may not be even-aged. |

2.5.85 STUMP_CD_PNWRS

Stump code, Pacific Northwest Research Station. A code indicating whether or not stumps are present on a condition. Only populated by certain FIA work units (SURVEY.RSCD = 26).

Codes: STUMP_CD_PNWRS

| Code | Description |
|-------------|--|
| Y | Yes, evidence of cutting or management exists; stumps are present. |
| N | No, evidence of cutting was not observed; stumps are not present. |

2.5.86 FIRE_SRS

Fire, Southern Research Station. A code indicating the presence or absence of fire on the condition since the last survey or within the last 5 years on new/replacement plots. Evidence of fire must occur within the subplot. Only populated by certain FIA work units (SURVEY.RSCD = 33).

Codes: FIRE_SRS

| Code | Description |
|-------------|--|
| 0 | No evidence of fire since last survey. |
| 1 | Evidence of burning (either prescribed or wildfire). |

2.5.87 GRAZING_SRS

Grazing, Southern Research Station. A code indicating the presence or absence of domestic animal grazing on the condition since the last survey or within the last 5 years on new/replacement plots. Evidence of grazing must occur within the subplot. Only populated by certain FIA work units (SURVEY.RSCD = 33).

Codes: GRAZING_SRS

| Code | Description |
|-------------|---|
| 0 | No evidence of livestock use (by domestic animals). |
| 1 | Evidence of grazing (including dung, tracks, trails, etc.). |

2.5.88 HARVEST_TYPE1_SRS

Harvest type code 1, Southern Research Station. A code indicating the harvest type. This attribute is populated when the corresponding attribute TRTCD = 10. Only populated by certain FIA work units (SURVEY.RSCD = 33). Not populated for the [Caribbean Islands](#).

Codes: HARVEST_TYPE1_SRS

| Code | Description |
|-------------|---|
| 11 | Clearcut harvest - The removal of the majority of the merchantable trees in a stand; residual stand stocking is under 50 percent. |
| 12 | Partial harvest - Removal primarily consisting of highest quality trees. Residual consists of lower quality trees because of high grading or selection harvest. (e.g., uneven aged, group selection, high grading, species selection). |
| 13 | Seed-tree/shelterwood harvest - Crop trees are harvested leaving seed source trees either in a shelterwood or seed tree. Also includes the final harvest of the seed trees. |
| 14 | Commercial thinning - The removal of trees (usually poletimber sized) from poletimber-sized stands leaving sufficient stocking of growing-stock trees to feature in future stand development. Also included are thinning in sawtimber-sized stands where poletimber-sized (or log-sized) trees have been removed to improve quality of those trees featured in a final harvest. |
| 15 | Timber stand improvement (cut trees only) - The cleaning, release or other stand improvement involving non-commercial cutting applied to an immature stand that leaves sufficient stocking. |
| 16 | Salvage cutting - The harvesting of dead or damaged trees or of trees in danger of being killed by insects, disease, flooding, or other factors in order to save their economic value. |

2.5.89 HARVEST_TYPE2_SRS

Harvest type code 2, Southern Research Station. See [HARVEST_TYPE1_SRS](#).

2.5.90 HARVEST_TYPE3_SRS

Harvest type code 3, Southern Research Station. See [HARVEST_TYPE1_SRS](#).

2.5.91 LAND_USE_SRS

Land use, Southern Research Station. A classification indicating the present land use of the condition. Collected on all condition records where SURVEY.RSCD = 33 and PLOT.DESIGNCD = 1, 230, 231, 232, or 233. It may not be populated for other SRS plot designs. Only populated by certain FIA work units (SURVEY.RSCD = 33).

Codes: LAND_USE_SRS

| Code | Description |
|-------------|---|
| 01 | Timberland (SITECLCD = 1, 2, 3, 4, 5, or 6). |
| 02 | Other forest land (SITECLCD = 7). |
| 10 | Agricultural land - Land managed for crops, pasture, or other agricultural use and is not better described by one of the following detailed codes. The area must be at least 1.0 acre in size and 120.0 feet wide. Note: Codes 14, 15 and 16 are collected only where PLOT.MANUAL ≥ 1 . If PLOT.MANUAL <1, then codes 14 and 15 were coded 11. There was no single rule for coding maintained wildlife openings where PLOT.MANUAL <1, so code 16 may have been coded 10, 11 or 12. |
| 11 | Cropland. |
| 12 | Pasture (improved through cultural practices). |
| 13 | Idle farmland. |
| 14 | Orchard. |
| 15 | Christmas tree plantation. |
| 16 | Maintained wildlife openings. |
| 17 | Windbreak/Shelterbelt - Windbreaks or shelterbelts are plantings of single or multiple rows of trees or shrubs that are established for environmental purposes. Windbreaks or shelterbelts are generally established to protect or shelter nearby leeward areas from troublesome winds. SRS Note: If the dimensions of the windbreak or shelterbelt meet the minimum dimensions of forest land (1.0 acre in size and 120.0 feet wide), then the area is considered accessible forest land (COND_STATUS_CD = 1). |
| 20 | Rangeland - Land primarily composed of grasses, forbs, or shrubs. This includes lands vegetated naturally or artificially to provide a plant cover managed like native vegetation and does not meet the definition of pasture. The area must be at least 1.0 acre in size and 120.0 feet wide. |
| 30 | Developed - Land used primarily by humans for purposes other than forestry or agriculture and is not better described by one of the following detailed codes. Note: Code 30 is used to describe all developed land where PLOT.MANUAL <1. The following detailed codes only apply to PLOT.MANUAL ≥ 1 . |
| 31 | Cultural - business, residential, and other places of intense human activity. |
| 32 | Rights-of-way - improved roads, railway, power lines, maintained canal. |
| 33 | Recreation - parks, skiing, golf courses. |
| 34 | Mining. |
| 40 | Other - Land parcels greater than 1.0 acre in size and greater than 120.0 feet wide that do not fall into one of the uses described above or below. |
| 41 | Nonvegetated. |
| 42 | Wetland. |
| 43 | Beach. |
| 45 | Nonforest - Chaparral. |
| 91 | Census Water - Lakes, reservoirs, ponds, and similar bodies of water 4.5 acres in size and larger; and rivers, streams, canals, etc., 30 to 200 feet wide. |
| 92 | Noncensus water - Lakes, reservoirs, ponds, and similar bodies of water 1.0 acre to 4.5 acres in size. Rivers, streams, canals, etc., more than 200 feet wide. |
| 99 | Nonsampled - Condition not sampled (see COND_NONSAMPLE_REASON_CD for exact reason). |

2.5.92 OPERABILITY_SRS

Operability, Southern Research Station. A code indicating the viability of operating logging equipment in the vicinity of the condition. The code represents the most limiting class code that occurs on each forest condition. Only populated by certain FIA work units (SURVEY.RSCD = 33).

Codes: OPERABILITY_SRS

| Code | Description |
|------|---|
| 0 | No problems. |
| 1 | Seasonal access due to water conditions in wet weather. |
| 2 | Mixed wet and dry areas typical of multi-channelled streams punctuated with dry islands. |
| 3 | Broken terrain, cliffs, gullies, outcroppings, etc. that would severely limit equipment, access or use. |
| 4 | Year-round water problems (includes islands). |
| 5 | Slopes 20-40 percent. |
| 6 | Slope greater than 40 percent. |

2.5.93 STAND_STRUCTURE_SRS

Stand structure, Southern Research Station. A code indicating the description of the predominant canopy structure for the condition. Only the vertical position of the dominant and codominant trees in the stand are considered. Only populated by certain FIA work units (SURVEY.RSCD = 33).

Codes: STAND_STRUCTURE_SRS

| Code | Description |
|------|---|
| 0 | Nonstocked - The condition is less than 10 percent stocked. |
| 1 | Single-storied - Most of the dominant/codominant tree crowns form a single canopy (i.e., most of the trees are approximately the same height). |
| 2 | Two-storied - The dominant/codominant tree crowns form two distinct canopy layers or stories. |
| 3 | Multi-storied - More than two recognizable levels characterize the crown canopy. Dominant/codominant trees of many sizes (diameters and heights) for a multilevel canopy. |

2.5.94 NF_COND_STATUS_CD

Nonforest condition status code. A code indicating the sampling status of the condition class.

Codes: NF_COND_STATUS_CD

| Code | Description |
|------|----------------------------|
| 2 | Accessible nonforest land. |
| 5 | Nonsampled nonforest. |

2.5.95 NF_COND_NONSAMPLE_REASN_CD

Nonforest condition nonsampled reason code. A code indicating the reason a nonforest portion of a plot was not sampled.

Codes: NF_COND_NONSAMPLE_REASN_CD

| Code | Description |
|------|---|
| 02 | Denied access - Any area within the sampled area of a plot to which access is denied by the legal owner, or to which an owner of the only reasonable route to the plot denies access. There are no minimum area or width requirements for a condition class delineated by denied access. Because a denied-access condition can become accessible in the future, it remains in the sample and is re-examined at the next occasion to determine if access is available. |
| 03 | Hazardous situation - Any area within the sampled area on plot that cannot be accessed because of a hazard or danger, for example cliffs, quarries, strip mines, illegal substance plantations, temporary high water, etc. Although the hazard is not likely to change over time, a hazardous condition remains in the sample and is re-examined at the next occasion to determine if the hazard is still present. There are no minimum size or width requirements for a condition class delineated by a hazardous condition. |
| 10 | Other - This code is used whenever a condition class is not sampled due to a reason other than one of the specific reasons listed. |

2.5.96 CANOPY_CVR_SAMPLE_METHOD_CD

Canopy cover sample method code. A code indicating the canopy cover sample method used to determine LIVE_CANOPY_CVR_PCT, LIVE_MISSING_CANOPY_CVR_PCT, and NBR_LIVE_STEMS. Codes 1-4 are used for field-measured canopy cover, and codes 11-14 are generated from imagery.

Codes: CANOPY_CVR_SAMPLE_METHOD_CD

| Code | Method Name | Description |
|------|-----------------|---|
| 1 | Ocular method. | Visual inspection of what is on the ground along with various types of aerial imagery to help determine LIVE_CANOPY_CVR_PCT and LIVE_MISSING_CANOPY_CVR_PCT. Used only in areas that are obviously 0 percent LIVE_MISSING_CANOPY_CVR_PCT or obviously greater than 10 percent LIVE_MISSING_CANOPY_CVR_PCT. |
| 2 | Subplot method. | Used when the ocular method is not appropriate and in cases where the terrain, vegetation, and dimensions of a condition or the size of the field crew DO NOT allow a safe or practical sample using the acre method. The crew measures the crowns of all live trees, seedlings, and saplings on each of the four 1/24 acre subplots. |
| 3 | Acre method. | Used when the ocular method is not appropriate and when it is safe and practical to sample on the entire acre. To determine if minimum 10 percent LIVE_MISSING_CANOPY_CVR_PCT is reached, the crew samples all live, dead, and missing tree canopies on the one-acre sample plot as described above in LIVE_MISSING_CANOPY_CVR_PCT. |

| Code | Method Name | Description |
|------|------------------------------------|--|
| 4 | Sub-acre method. | Used only when the ocular method is not appropriate and only when the acre or subplot methods cannot be established due to the condition's shape, dimensions or accessibility. The crew samples all live, dead, and missing tree canopies on the canopy cover sample plot as described above in LIVE_MISSING_CANOPY_CVR_PCT. The 10 percent threshold is dependent on the sample plot size and respective area in square feet. |
| 11 | Dot grid method. | The preferred method for estimating LIVE_CANOPY_CVR_PCT. Under this method, 109 dots are systematically arranged within the 144 foot radius prefield plot and LIVE_CANOPY_CVR_PCT is calculated based on the proportion of dots that fall on a tree crown. |
| 12 | Ocular image-based assessment. | Only used for plots that fall in the ocean or when the dot grid method is not possible. |
| 13 | Other image-based assessment. | Used when the codes 11 and 12 do not apply. |
| 14 | No canopy cover estimate possible. | Used when an estimate of canopy cover was not made because of lacking or poor-quality imagery. |

2.5.97 **LIVE_CANOPY_CVR_PCT**

Live canopy cover percent. The percentage of live canopy cover for the condition. Included are live tally trees, saplings, and seedlings that cover the sample area.

2.5.98 **LIVE_MISSING_CANOPY_CVR_PCT**

Live plus missing canopy cover percent. The percentage of live and missing canopy cover for the condition. This percentage for the condition is determined in the field by adding LIVE_CANOPY_CVR_PCT to the estimated missing canopy cover. Included are all dead, harvested, and removed trees, saplings, and seedlings as well as dead portions of live trees. Missing canopy that has been replaced by the current live canopy or missing canopy that existed before the most recent conversion of a forested condition to a nonforest condition is not included. The estimate is based on field observations, aerial photos, historical aerial imagery, and similar evidence in adjacent stands that do not have dead, harvested, or removed trees. The total LIVE_MISSING_CANOPY_CVR_PCT cannot exceed 100 percent.

2.5.99 **NBR_LIVE_STEMS**

Number of live stems. The estimated number of live stems per acre on the condition. The estimate in the field is based on actual stem count of tally tree species within the canopy cover for sample area.

2.5.100 **OWNSUBCD**

Owner subclass code. (*core optional for accessible forest land*) A code that further subdivides the owner class into detailed subcategories. Currently, only populated for the "State" owner class subcategories (OWNCD = 31).

Codes: OWNSUBCD

| Code | Description |
|-------------|------------------------|
| 1 | State forestry agency. |
| 2 | State wildlife agency. |
| 3 | State park agency. |
| 4 | Other State lands. |

2.5.101 INDUSTRIALCD_FIADB

Industrial code in FIADB. A code indicating the status of the owner with regard to their objectives towards commercial timber production. This attribute is new starting with FIADB version 6.0 (PLOT.MANUAL \geq 6.0). Industrial lands are of sufficient size to produce a continual flow of timber, and are owned by companies, organizations, and individuals who engage in commercially oriented forest management activities, such as harvesting, thinning, and planting.

Codes: INDUSTRIALCD_FIADB

| Code | Description |
|-------------|--------------------|
| 0 | Non-industrial. |
| 1 | Industrial. |

2.5.102 RESERVCD_5

Reserved status code field, versions 1.0-5.0. A code indicating the reserved designation for the condition at the time of the field survey. This attribute is new starting with FIADB version 6.0 (PLOT.MANUAL \geq 6.0), and is used to account for a change in the application of the definition of RESERVCD. In PLOT.MANUAL < 6.0, publicly owned land was considered reserved only if it was withdrawn by law(s) prohibiting the management of land for the production of wood products. Conditions measured prior to PLOT.MANUAL = 6.0 may have different values in RESERVCD and RESERVCD_5 due to changes in the application of the RESERVCD definition. RESERVCD_5 holds the reserved status associated with the previous definition of RESERVCD. Only populated for PLOT.MANUAL \geq 1.0 and PLOT.MANUAL < 6.0.

Codes: RESERVCD_5

| Code | Description |
|-------------|--------------------|
| 0 | Not reserved. |
| 1 | Reserved. |

2.5.103 ADMIN_WITHDRAWN_CD

Administratively withdrawn code. (*core optional*) A code indicating whether or not a condition has an administratively withdrawn designation. Administratively withdrawn land is public land withdrawn by management plans or government regulations prohibiting the management of land for the production of wood products (not merely controlling or prohibiting wood-harvesting methods). Such plans and regulations are formally adopted by land managers and the prohibition against management for wood products cannot be changed through decision of the land manager except by a formal modification of management plans or regulations.

Codes: ADMIN_WITHDRAWN_CD

| Code | Description |
|------|---------------------------------|
| 0 | Not administratively withdrawn. |
| 1 | Administratively withdrawn. |

2.5.104 CHAINING_CD

Chaining code. A code indicating that a condition has been chained, shear bladed, roller chopped, etc., for the purpose of increased forage production. These treatments contrast with silvicultural removals in that little or none of the woody material is removed from the site and there are few residual live trees.

Codes: CHAINING_CD

| Code | Description |
|------|-------------|
| 0 | No. |
| 1 | Yes. |

2.5.105 LAND_COVER_CLASS_CD_RET

Land cover class, retired. A code indicating the type of land cover for a condition that meets the minimum area and width requirements (except those cases where the condition has been solely defined due to developed land uses, such as roads and rights-of-way). If the condition was less than 1 acre, a land cover classification key was used to assign a land cover class.

This attribute is retired when PLOT.MANUAL ≥ 8.0 and replaced by a newer version by the previous name ([LAND_COVER_CLASS_CD](#)). Many of the codes are the same between the retired and the current code sets. The cover classification used by crews has been modified to remove all aspects of land use and focus on land cover. There is no national crosswalk to translate the retired codes into the new codes (see [LAND_COVER_CLASS_CD](#) for the new code list).

Codes: LAND_COVER_CLASS_CD_RET (codes that are $\geq 10\%$ vegetative cover)

| Code | Description |
|------|--|
| 01 | Treeland: Areas on which trees provide 10% or greater canopy cover and are part of the dominant (uppermost) vegetation layer, including areas that have been planted to produce woody crops. Only tree species that can be tallied in the region are considered. Example areas include forests, forest plantations, reverting fields with $\geq 10\%$ tree canopy cover, clearcuts with $\geq 10\%$ tree canopy cover. This category includes cypress swamps and mangroves. |
| 02 | Shrubland: Areas on which shrubs or subshrubs provide 10% or greater cover and are part of the dominant (uppermost) vegetation layer, provided these areas do not qualify as Treeland. Shrub/Subshrub - a woody plant that generally has several erect, spreading, or prostrate stems which give it a bushy appearance. This includes dwarf shrubs, and low or short woody vines (NVCS 2008) and excludes any species on FIA's tree list. Examples include cranberry bogs and other shrub-dominated wetlands, chaparral, and sagebrush. |

| Code | Description |
|------|---|
| 03 | Grassland: Areas on which herbaceous vegetation provide 10% or greater cover and are part of the dominant (uppermost) vegetation layer, provided these areas do not qualify as Treeland or Shrubland. This includes herbs, forbs, and graminoid species. Examples include meadows and prairies. Grazed land is also included, but not if the pasture is improved to such an extent that it meets the requirements for Agricultural Vegetation. This category also includes emergent wetland vegetation like seasonally flooded grasslands, cattail marshes, etc. |
| 04 | Non-vascular Vegetation: Areas on which non-vascular vegetation provide 10% or greater cover and are part of the dominant vegetation layer, provided these areas do not qualify as Treeland, Shrubland, or Grassland. Examples include mosses, sphagnum moss bogs, liverworts, hornworts, lichens, and algae. |
| 05 | Mixed Vegetation: Areas with 10% or greater vegetative cover but no one life form has 10% or more cover. That is, these areas do not qualify as Treeland, Shrubland, Grassland, or Non-vascular Vegetation, and thus are a mixture of plant life forms. Examples can include early stages of reverting fields and high deserts. |
| 06 | Agricultural Vegetation: Areas that are dominated by vegetation grown for the production of crops (food, non-woody fiber and/or ornamental horticulture), including land in any stage of annual crop production, and land being regularly cultivated for production of crops from perennial plants. Agricultural vegetation shows a) rapid turnover in structure, typically at least on an annual basis, either through harvesting and/or planting, or by continual removal of above ground structure (e.g., cutting, haying, or intensive grazing), or b) showing strong linear (planted) features. The herbaceous layer may be bare at various times of the year (NVCS 2008). Examples include row crops and closely sown crops; sod farms, hay and silage crops; orchards (tree fruits and nuts, Christmas trees, nurseries of trees and shrubs), small fruits, and berries; vegetables and melons; unharvested crops; cultivated or improved pasture; idle cropland (can include land in cover and soil-improvement crops and cropland on which no crops were planted) (NRI Field guide). When idle or fallow land ceases to be predominantly covered with manipulated vegetation, then it is no longer Agricultural Vegetation. |
| 07 | Developed, Vegetated: Areas predominantly covered by vegetation with highly manipulated growth forms (usually by mechanical pruning, mowing, clipping, etc.), but are not Agricultural. This vegetation type typically contains an almost continuous herbaceous (typically grass) layer, with a closely cropped physiognomy, typically through continual removal of above ground structure (e.g., cutting, mowing), and where tree cover is highly variable, or other highly manipulated planted gardens (NVCS 2008). Examples can include lawns, maintained utility rights-of-way, office parks, and cemeteries. |

Codes: LAND_COVER_CLASS_CD_RET (codes that are <10% vegetative cover)

| Code | Description |
|------|--|
| 08 | Barren: Natural areas of limited plant life (<10%). Areas generally characterized by bare rock, gravel, sand, silt, clay, or other earthen material, with little or no "green" vegetation present regardless of its inherent ability to support life. Examples include naturally barren areas such as lava fields, gravel bars and sand dunes, as well as areas where land clearance has removed the vegetative cover. Can include the natural material portions of quarries, mines, gravel pits, and cut or burned land <10% vegetation. |

| Code | Description |
|------|--|
| 09 | Developed: Areas predominantly covered with constructed materials with limited plant life (<10%). Examples include completely paved surfaces like roads, parking lots and densely developed urban areas. |
| 10 | Water: Areas persistently covered and predominated by water and have <10% emergent vegetative cover. Examples include census and noncensus water and permanent snow and ice. For example, only the open water portion of a bog is to be included. |

2.5.106 AFFORESTATION_CD

Current afforestation code. A code indicating a condition that has no evidence of prior forest, but does have evidence suggesting deliberate afforestation attempts (planted or prepared to promote tree establishment) to convert to forest in the current inventory cycle or since the last measurement.

Codes: AFFORESTATION_CD

| Code | Description |
|------|-------------|
| 0 | No. |
| 1 | Yes. |

2.5.107 PREV_AFFORESTATION_CD

Previous afforestation code. A code indicating a condition that has no evidence of prior forest, but does have evidence suggesting deliberate afforestation attempts (planted or prepared to promote tree establishment) to convert to forest in the prior inventory cycle or prior to the last measurement.

Codes: PREV_AFFORESTATION_CD

| Code | Description |
|------|-------------|
| 0 | No. |
| 1 | Yes. |

2.5.108 DWM_FUELBED_TYP_CD

DWM condition fuelbed type code. A code indicating the fuels available for consumption by fire. Codes are from Scott and Burgan (2005).

Codes: DWM_FUELBED_TYP_CD

| Code | Description |
|------|---|
| GR1 | Short, sparse dry climate grass. |
| GR2 | Low load, dry climate grass. |
| GR3 | Low load, very coarse, humid climate grass. |
| GR4 | Moderate load, dry climate grass. |
| GR5 | Low load, humid climate grass. |
| GR6 | Moderate load, humid climate grass. |
| GR7 | High load, dry climate grass. |

| Code | Description |
|-------------|--|
| GR8 | High load, very coarse, humid climate grass. |
| GR9 | Very high load, humid climate grass. |
| GS1 | Low load, dry climate grass-shrub. |
| GS2 | Moderate load, dry climate grass-shrub. |
| GS3 | Moderate load, humid climate grass-shrub. |
| GS4 | High load, humid climate grass-shrub. |
| SB1 | Slash-blowdown: low load activity fuel. |
| SB2 | Moderate load activity fuel or low load blowdown. |
| SB3 | High load activity fuel or moderate load blowdown. |
| SB4 | High load blowdown. |
| SH1 | Low load dry climate shrub. |
| SH2 | Moderate load dry climate shrub. |
| SH3 | Moderate load, humid climate shrub. |
| SH4 | Low load, humid climate timber-shrub. |
| SH5 | High load, dry climate shrub. |
| SH6 | Low load, humid climate shrub. |
| SH7 | Very high load, dry climate shrub. |
| SH8 | High load, humid climate shrub. |
| SH9 | Very high load, humid climate shrub. |
| TL1 | Low load compact conifer litter. |
| TL2 | Low load broadleaf litter. |
| TL3 | Moderate load conifer litter. |
| TL4 | Small downed logs. |
| TL5 | High load conifer litter. |
| TL6 | Moderate load broadleaf litter. |
| TL7 | Large downed logs. |
| TL8 | Long-needle litter. |
| TL9 | Very high load broadleaf litter. |
| TU1 | Low load dry climate timber-grass-shrub. |
| TU2 | Moderate load, humid climate timber-shrub. |
| TU3 | Moderate load, humid climate timber-grass-shrub. |
| TU4 | Dwarf conifer with understory. |
| TU5 | Very high load, dry climate timber-shrub. |
| NB1 | Nonburnable urban/developed. |
| NB2 | Nonburnable snow/ice. |
| NB3 | Nonburnable agricultural. |
| NB8 | Nonburnable open water. |
| NB9 | Nonburnable bare ground. |

2.5.109 NVCS_PRIMARY_CLASS

Primary class. The primary classification determined by the NVCS classification algorithm. 'NATURAL' or 'CULTURAL' are the valid values. As of August 2017, the classification algorithm has only been developed for the eastern continental United States excluding the western edges of the Plains States, Oklahoma, and Texas. This column will only be populated for forested conditions in the supported area.

Note: For more information on the 'NATURAL' and 'CULTURAL' vegetation classifications, refer to the [Data Standard](#) web page on the USNVC website (available at web address: <https://www.usnvc.org>).

2.5.110 NVCS_LEVEL_1_CD

Level 1 code of the NVCS. The NVCS code describing the vegetative community of the condition at the first level of the NVCS hierarchy. It is populated for both the 'NATURAL' and 'CULTURAL' primary classifications. Code definitions can be found in the NVCS_LEVEL_1_CODES table. Joins to this table must use both the NVCS_PRIMARY_CLASS and NVCS_LEVEL_1_CD values as shown in the following example.

```
SELECT c.cn AS cnd_cn,
       c.nvcs_primary_class,
       c.nvcs_level_1_cd,
       r.meaning
  FROM cond c, ref_nvcs_level_1_codes r
 WHERE c.nvcs_primary_class = r.primary_class
   AND c.nvcs_level_1_cd = r.nvcs_code;
```

2.5.111 NVCS_LEVEL_2_CD

Level 2 code of the NVCS. The NVCS code describing the vegetative community of the condition at the second level of the NVCS hierarchy. It is populated for both the 'NATURAL' and 'CULTURAL' primary classifications. Code definitions can be found in the NVCS_LEVEL_2_CODES table. Joins to this table must use both the NVCS_PRIMARY_CLASS and NVCS_LEVEL_2_CD values as shown in the following example.

```
SELECT c.cn AS cnd_cn,
       c.nvcs_primary_class,
       c.nvcs_level_2_cd,
       r.meaning
  FROM cond c, ref_nvcs_level_2_codes r
 WHERE c.nvcs_primary_class = r.primary_class
   AND c.nvcs_level_2_cd = r.nvcs_code;
```

2.5.112 NVCS_LEVEL_3_CD

Level 3 code of the NVCS. The NVCS code describing the vegetative community of the condition at the third level of the NVCS hierarchy. It is populated for both the 'NATURAL' and 'CULTURAL' primary classifications. Code definitions can be found in the NVCS_LEVEL_3_CODES table. Joins to this table must use both the NVCS_PRIMARY_CLASS and NVCS_LEVEL_3_CD values as shown in the following example.

```

SELECT c.cn AS cnd_cn,
       c.nvcs_primary_class,
       c.nvcs_level_3_cd,
       r.meaning
  FROM cond c, ref_nvcs_level_3_codes r
 WHERE c.nvcs_primary_class = r.primary_class
   AND c.nvcs_level_3_cd = r.nvcs_code;

```

2.5.113 NVCS_LEVEL_4_CD

Level 4 code of the NVCS. The NVCS code describing the vegetative community of the condition at the fourth level of the NVCS hierarchy. It is populated for both the 'NATURAL' and 'CULTURAL' primary classifications. Code definitions can be found in the NVCS_LEVEL_4_CODES table. Joins to this table must use both the NVCS_PRIMARY_CLASS and NVCS_LEVEL_4_CD values as shown in the following example.

```

SELECT c.cn AS cnd_cn,
       c.nvcs_primary_class,
       c.nvcs_level_4_cd,
       r.meaning
  FROM cond c, ref_nvcs_level_4_codes r
 WHERE c.nvcs_primary_class = r.primary_class
   AND c.nvcs_level_4_cd = r.nvcs_code;

```

2.5.114 NVCS_LEVEL_5_CD

Level 5 code of the NVCS. The NVCS code describing the vegetative community of the condition at the fifth level of the NVCS hierarchy. It is populated for both the 'NATURAL' and 'CULTURAL' primary classifications. Code definitions can be found in the NVCS_LEVEL_5_CODES table. Joins to this table must use both the NVCS_PRIMARY_CLASS and NVCS_LEVEL_5_CD values as shown in the following example.

```

SELECT c.cn AS cnd_cn,
       c.nvcs_primary_class,
       c.nvcs_level_5_cd,
       r.meaning
  FROM cond c, ref_nvcs_level_5_codes r
 WHERE c.nvcs_primary_class = r.primary_class
   AND c.nvcs_level_5_cd = r.nvcs_code;

```

2.5.115 NVCS_LEVEL_6_CD

Level 6 code of the NVCS. The NVCS code describing the vegetative community of the condition at the sixth level of the NVCS hierarchy. It is populated for the 'CULTURAL' primary classification. Code definitions can be found in the NVCS_LEVEL_6_CODES table. Joins to this table must use both the NVCS_PRIMARY_CLASS and NVCS_LEVEL_6_CD values as shown in the following example.

```

SELECT c.cn AS cnd_cn,
       c.nvcs_primary_class,
       c.nvcs_level_6_cd,

```

```

        r.meaning
    FROM cond c, ref_nvcs_level_6_codes r
    WHERE c.nvcs_primary_class = r.primary_class
        AND c.nvcs_level_6_cd = r.nvcs_code;

```

2.5.116 NVCS_LEVEL_7_CD

Level 7 code of the NVCS. The NVCS code describing the vegetative community of the condition at the seventh level of the NVCS hierarchy. It is populated for the 'CULTURAL' primary classification. Code definitions can be found in the NVCS_LEVEL_7_CODES table. Joins to this table must use both the NVCS_PRIMARY_CLASS and NVCS_LEVEL_7_CD values as shown in the following example.

```

SELECT c.cn AS cnd_cn,
       c.nvcs_primary_class,
       c.nvcs_level_7_cd,
       r.meaning
    FROM cond c, ref_nvcs_level_7_codes r
    WHERE c.nvcs_primary_class = r.primary_class
        AND c.nvcs_level_7_cd = r.nvcs_code;

```

2.5.117 NVCS_LEVEL_8_CD

Level 8 code of the NVCS. The NVCS code describing the vegetative community of the condition at the eighth level of the NVCS hierarchy. It is populated for the 'CULTURAL' primary classification. Code definitions can be found in the NVCS_LEVEL_8_CODES table. Joins to this table must use both the NVCS_PRIMARY_CLASS and NVCS_LEVEL_8_CD values as shown in the following example.

```

SELECT c.cn AS cnd_cn,
       c.nvcs_primary_class,
       c.nvcs_level_8_cd,
       r.meaning
    FROM cond c, ref_nvcs_level_8_codes r
    WHERE c.nvcs_primary_class = r.primary_class
        AND c.nvcs_level_8_cd = r.nvcs_code;

```

2.5.118 AGE_BASIS_CD_PNWRS

Age basis code, Pacific Northwest Research Station. A code that indicates the method used to determine stand age. Only populated by certain FIA work units (SURVEY.RSCD = 26, 27). Not populated for the [Pacific Islands](#).

Codes: AGE_BASIS_CD_PNWRS

| Code | Description |
|------|---|
| 00 | Stand is nonstocked. |
| 10 | Weighted average of trees bored for age (on macroplot). |
| 11 | Weighted average of trees bored for age (off macroplot). |
| 20 | Whorl counted only (on or off macroplot). |
| 30 | Mixed method of whorl-count and/or bored age (on or off macroplot). |
| 40 | Time since last inventory - years added to previously recorded stand age. |

| Code | Description |
|-------------|--|
| 50 | Age based on documentary evidence or landowner discussion. |
| 51 | Age based on crew call considering site and tree diameters. |
| 60 | All trees in the condition are of a species which cannot be bored. |
| 70 | Tree cores not counted in the field, but taken to field office to count. |
| 80 | Stand age >997 years. |

2.5.119 COND_STATUS_CHNG_CD_RMRS

Condition class status change code, Rocky Mountain Research Station. A code that describes the type of change that has occurred for the condition class since the previous inventory. Only populated by certain FIA work units (SURVEY.RSCD = 22).

Note: For condition classes that have changed, the past condition class number (CONDID) remains with the condition that is most similar to the previous classification.

Codes: COND_STATUS_CHNG_CD_RMRS

| Code | Present | Past |
|-------------|---|--|
| 1 | Accessible forest land (COND_STATUS_CD = 1). | Previously all accessible forest land (COND_STATUS_CD = 1). |
| 2 | Not accessible forest land (COND_STATUS_CD = 2, 3, 4, 5). | Previously all not accessible forest land (COND_STATUS_CD = 2, 3, 4, 5). |
| 3 | Accessible forest land (COND_STATUS_CD = 1). | Some portion of this condition was not accessible forest land (COND_STATUS_CD = 2, 3, 4, 5). |
| 4 | Not accessible forest land (COND_STATUS_CD = 2, 3, 4, 5). | Some portion of this condition was accessible forest land (COND_STATUS_CD = 1). |

2.5.120 CRCOVPCT_RMRS

Live crown cover percent, Rocky Mountain Research Station. The percentage of live crown cover, to the nearest 1 percent, of all established tally seedlings, saplings, and trees. Crown cover is the percentage of ground surface area covered by a vertical projection of the live crowns. Only populated by certain FIA work units (SURVEY.RSCD = 22).

Note: The CRCOVPCT_RMRS and LIVE_CANOPY_CVR_PCT attributes both list the percentage of live crown cover; however, they differ in the methods that are used. For CRCOVPCT_RMRS, a line transect method is used for determining cover. For LIVE_CANOPY_CVR_PCT, individual crown widths within the sample area are measured, and then an "ellipse formula" is used to calculate canopy area.

2.5.121 DOMINANT_SPECIES1_PNWRS

Dominant tree species 1 (Pacific Islands), Pacific Northwest Research Station. A code corresponding to the tree species with the plurality of cover for all live trees in the condition class that are not overtapped. Recorded for all accessible forest land condition classes. Only populated by certain FIA work units (SURVEY.RSCD = 26).

Refer to [appendix F](#) for codes.

2.5.122 DOMINANT_SPECIES2_PNWRS

Dominant tree species 2 (Pacific Islands), Pacific Northwest Research Station. A code for the second most abundant tree species in each condition class. See [DOMINANT_SPECIES1_PNWRS](#) for further detail. If a second species does not exist, a code of 0000 is recorded. Only populated by certain FIA work units (SURVEY.RSCD = 26).

2.5.123 DOMINANT_SPECIES3_PNWRS

Dominant tree species 3 (Pacific Islands), Pacific Northwest Research Station. A code for the third most abundant tree species in each condition class. See [DOMINANT_SPECIES1_PNWRS](#) for further detail. If a third species does not exist, a code of 0000 is recorded. Only populated by certain FIA work units (SURVEY.RSCD = 26).

2.5.124 DSTRBCD1_P2A

Disturbance code 1, periodic to annual. A code indicating the kind of disturbance occurring since the last measurement. 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. Up to three different disturbances per condition can be recorded, from most important to least important (DSTRBCD1_P2A, DSTRBCD2_P2A, and DSTRBCD3_P2A). Populated for forested conditions at locations with periodic to annual remeasurement. Not populated for all States.

Periodic to annual (P2A) remeasurement includes plots where the newly established annual plot is located at the same center point as the previously established periodic plot.

Note: For RMRS, both the periodic and the annual plot have DESIGNCD = 1.

Codes: DSTRBCD1_P2A

| Code | Description |
|------|---|
| 0 | No visible disturbance. |
| 10 | Insect damage. |
| 11 | Insect damage to understory vegetation. |
| 12 | Insect damage to trees, including seedlings and saplings. |
| 20 | Disease damage. |
| 21 | Disease damage to understory vegetation. |
| 22 | Disease damage to trees, including seedlings and saplings. |
| 30 | Fire damage (from crown and ground fire, either prescribed or natural). |
| 31 | Ground fire damage. |
| 32 | Crown fire damage. |
| 40 | Animal damage. |
| 41 | Beaver (includes flooding caused by beaver). |
| 42 | Porcupine. |
| 43 | Deer/ungulate. |
| 44 | Bear (<i>core optional</i>). |
| 45 | Rabbit (<i>core optional</i>). |
| 46 | Domestic animal/livestock (includes grazing). |
| 50 | Weather damage. |

| Code | Description |
|-------------|--|
| 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-induced damage - any significant threshold of human-caused damage not described in the disturbance codes or in the treatment codes listed. |
| 90 | Geologic disturbances. |
| 91 | Landslide. |
| 92 | Avalanche track. |
| 93 | Volcanic blast zone. |
| 94 | Other geologic event. |
| 95 | Earth movement / avalanches. |

2.5.125 DSTRBCD2_P2A

Disturbance code 2, periodic to annual. The second disturbance code, if the stand has experienced more than one disturbance. Populated for forested conditions at locations with periodic to annual remeasurement. Not populated for all States. See [DSTRBCD1_P2A](#) for more information.

2.5.126 DSTRBCD3_P2A

Disturbance code 3, periodic to annual. The third disturbance code, if the stand has experienced more than two disturbances. Populated for forested conditions at locations with periodic to annual remeasurement. Not populated for all States. See [DSTRBCD1_P2A](#) for more information.

2.5.127 DSTRBYR1_P2A

Disturbance year 1, periodic to annual. The year in which disturbance 1 (DSTRBCD1_P2A) is estimated to have occurred. If the disturbance occurs continuously over a period of time, the value '9999' is used. Populated for forested conditions at locations with periodic to annual remeasurement. Not populated for all States.

Periodic to annual (P2A) remeasurement includes plots where the newly established annual plot is located at the same center point as the previously established periodic plot.

Note: For RMRS, both the periodic and the annual plot have DESIGNCD = 1.

2.5.128 DSTRBYR2_P2A

Disturbance year 2, periodic to annual. The year in which disturbance 2 (DSTRBCD2_P2A) is estimated to have occurred. Populated for forested conditions at locations with periodic to annual remeasurement. Not populated for all States. See [DSTRBYR1_P2A](#) for more information.

2.5.129 DSTRBYR3_P2A

Disturbance year 3, periodic to annual. The year in which disturbance 3 (DSTRBCD3_P2A) is estimated to have occurred. Populated for forested conditions at locations with periodic to annual remeasurement. Not populated for all States. See [DSTRBYR1_P2A](#) for more information.

2.5.130 FLDTYPCD_30

Field forest type code, version 3.0. Forest type codes when PLOT.MANUAL <4.0, assigned by the field crew, based on the tree species or species groups forming a plurality of all live stocking. The field crew assesses the forest type based on the acre of forest land around the plot, in addition to the species sampled on the condition.

Nonstocked forest land is land that currently has less than 10 percent stocking but formerly met the definition of forest land. For nonstocked forest land, the crew determined the forest type by either recording the previous forest type on remeasured plots or, on all other plots, the most appropriate forest type to the condition based on the seedlings present or the forest type of the adjacent forest stands. When PLOT.MANUAL <2.0, forest conditions that did not meet the 10 percent stocking level were coded FLDTYPCD = 999. Starting with PLOT.MANUAL = 2.0, the crew no longer recorded nonstocked as 999. Instead, they recorded FLDSZCD = 0 to identify nonstocked conditions and entered a forest type for the condition. In general, when FLDTYPCD is used for analysis, it is necessary to examine the values of both FLDTYPCD and FLDSZCD to identify nonstocked forest land.

Changes to forest type codes from PLOT.MANUAL = 3.0 to 4.0 are listed below. For a current list of forest type codes and names, refer to [appendix D](#).

Retired codes:

| Forest type group or forest type | Code | Description |
|---|-------------|---|
| Forest type group | 950 | Other western hardwoods. |
| Forest type | 181 | Eastern redcedar. |
| Forest type | 183 | Western juniper. |
| Forest type | 223 | Jeffrey-Coulter-bigcone Douglas-fir. |
| Forest type | 382 | Australian pine. Note: Australian pine now aggregated with "other exotic hardwoods" (code 995). |
| Forest type | 803 | Cherry-ash-yellow poplar. |
| Forest type | 807 | Elm-ash-locust. |
| Forest type | 925 | Deciduous oak woodland. |
| Forest type | 926 | Evergreen oak woodland. |
| | 932 | Canyon-interior live oak. |
| Forest type | 951 | Pacific madrone. |
| Forest type | 952 | Mesquite woodland. |
| Forest type | 953 | Mountain brush woodland. |
| Forest type | 954 | Intermountain maple woodland. |

| Forest type group or forest type | Code | Description |
|---|-------------|---|
| Forest type | 955 | Miscellaneous western hardwoods Note: When reclassified, timber species trees were recoded as 962 (other hardwoods) and woodland species tree were recoded as 976 (miscellaneous woodland hardwoods). |
| Forest type | 981 | Sable palm. Note: Sable palm no longer tallied as a tree; any 981 recoded to either 983 (palms) or 962 (other hardwoods). |

Code changes or additions:

| Forest type group or forest type | Old code | New code | Description |
|---|-----------------|-----------------|---|
| Forest type group | - | 150 | Tropical softwoods. |
| Forest type group | - | 170 | Other eastern softwoods. |
| Forest type group | - | 390 | Other softwoods. |
| Forest type group | - | 960 | Other hardwoods. |
| Forest type group | 950 | 970 | Woodland hardwoods. Note: Forest type groups recoded from code 950 to 970, with the exception of Pacific madrone (Pacific madrone moved to the "other hardwoods" forest type group - code 960). |
| Forest type | - | 128 | Fraser fir. |
| Forest type | - | 129 | Red spruce / Fraser fir. |
| Forest type | - | 151 | Tropical pines. |
| Forest type | 181 | 171 | Eastern redcedar. |
| Forest type | - | 172 | Florida softwoods. |
| Forest type | 223 | 203 | Bigcone Douglas-Fir. |
| Forest type | 223 | 225 | Jeffrey pine. |
| Forest type | 223 | 226 | Coulter pine. |
| Forest type | 183 | 369 | Western juniper. |
| Forest type | - | 384 | Norway spruce. |
| Forest type | - | 385 | Introduced larch. |
| Forest type | - | 391 | Other softwoods. |
| Forest type | 803 | 516 | Cherry / white ash / yellow-poplar. |
| Forest type | 807 | 517 | Elm / ash / black locust. |
| Forest type | - | 609 | Baldcypress / pondcypress. |
| Forest type | - | 903 | Gray birch. |
| Forest type | - | 905 | Pin cherry. |
| Forest type | 932 | 933 | Canyon live oak. |
| Forest type | 932 | 934 | Interior live oak. |
| Forest type | - | 935 | California white oak (valley oak). |
| Forest type | 951 | 961 | Pacific madrone. |

| Forest type group or forest type | Old code | New code | Description |
|---|-----------------|-----------------|---|
| Forest type | 955 | 962 | Other hardwoods. |
| Forest type | 925 | 971 | Deciduous oak woodland. Note: Gambel oak included within this type. |
| Forest type | 926 | 972 | Evergreen oak woodland. |
| Forest type | 952 | 973 | Mesquite woodland. |
| Forest type | 953 | 974 | Cercocarpus (mountain brush) woodland. |
| Forest type | 954 | 975 | Intermountain maple woodland. |
| Forest type | 955 | 976 | Miscellaneous woodland hardwoods. |
| Forest type | - | 983 | Palms. |
| Forest type | - | 989 | Other tropical hardwoods. |

2.5.131 FOREST_COMMUNITY_PNWRS

Forest type ([Pacific Islands](#)), **Pacific Northwest Research Station**. A code indicating the forest type that best describes the species with the plurality of crown cover for all live trees in the condition class that are not overtopped. Recorded for all accessible forest land condition classes in the [Pacific Islands](#). Only populated by certain FIA work units (SURVEY.RSCD = 26).

Note: Pacific Island forest types are taken from Mueller-Dombois and Fosberg (1998).

Codes: FOREST_COMMUNITY_PNWRS.

| Code | Description |
|-------------|---|
| 1 | Strand or halophytic vegetation - vegetation near the shore containing species adapted to high rates of evaporation by wind and to high salt concentrations from windblown ocean spray or inundation by salt water. |
| 2 | Mangrove swamps - trees with high salt tolerance growing on tidally inundated shores and in landlocked depressions. Many species have pneumatophores, adaptive structures for aeration of waterlogged root systems. |
| 3 | Lowland tropical rainforest - multistoried forest with many canopy-dwelling epiphytes, open ground, and shrub layers. This forest community can extend up the lower slopes with windward rainy exposures. |
| 4 | Montane rainforest -the predominant type on moist hilltops and mountain slopes in many tropical islands. Forests of low stature that are rich in shrubs and epiphytes. |
| 5 | Cloud forest - These forests are covered with clouds or fog much of the time. The trees have low canopies and are often dripping with moisture. The trees are typically small-leaved and covered with masses of epiphytic mosses and liverworts, which also form a deep ground cover. |
| 6 | Mesophytic or moist forest - seasonally dry evergreen forests on leeward, drier slopes. |
| 7 | Xerophytic - forests found on truly dry, rain-shadow, leeward mountain slopes and lowlands. |

| Code | Description |
|------|---|
| 8 | Agroforestry - tree species are included in crop or animal production agricultural ecosystems. |
| 9 | Plantations - an area planted with tree species for the purpose of timber production. Species planted are mainly eucalypt, mahogany, and pine species that replace indigenous forests and savannas. |

2.5.132 **LAND_USECD_RMRS**

Land use code, Rocky Mountain Research Station. A code indicating the current land use for an accessible forest land or nonforest land condition class. Only populated by certain FIA work units (SURVEY.RSCD = 22).

Codes: **LAND_USECD_RMRS**

| Code | Description |
|------|--|
| 1 | Condition is not being manipulated by human activities such as regular mowing, intensive grazing, or recreation activities. |
| 2 | Condition is being manipulated by human activities that prevent normal regeneration and succession such as regular mowing, intensive grazing, or recreation activities. |
| 3 | Condition has been chained in the past. |
| 4 | An inclusion that would generally be recognized as a separate condition, except that it is not large enough to qualify (<1 acre or <120 feet wide), regardless of live plus missing crown cover percent. |

2.5.133 **MAICF**

Mean annual increment cubic feet. A measure of the productivity of forest land for the condition expressed as the average increase in cubic feet of (growing stock) wood volume per acre per year occurring in the year that mean annual increment (MAI) culminates (peaks), in fully stocked natural stands. This attribute is calculated using site index for the condition, entered into a yield equation, and calculates MAI at culmination. Only populated by certain FIA work units (SURVEY.RSCD = 22, 26, 27).

Notes:

- For RMRS (SURVEY.RSCD = 22), MAICF is assigned a default value of 10 for conditions with a woodland forest type (FORTYPCD).
- For PNWRS (SURVEY.RSCD = 26, 27), MAICF is not calculated for conditions with a woodland forest type (FORTYPCD).

2.5.134 **PCTBARE_RMRS**

Percent bare ground, Rocky Mountain Research Station. A value indicating the amount of bare ground on the subplot by forested condition, to the nearest percent.

Bare ground is exposed soil and rock fragments smaller than ¾ inch (longest dimension). Rocks protruding through the soil or cryptobiotic crusts are not included in bare ground estimates. In addition, areas that are part of a nonforested condition are also not included in bare ground estimates; only forested conditions are examined (e.g., if a subplot is half forested and 25 percent of the forested portion is bare ground, then the percent bare ground is recorded as 25 percent). Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.5.135 QMD_RMRS

Quadratic mean diameter, Rocky Mountain Research Station. The quadratic mean diameter, or the diameter of the tree of average basal area, on the condition. Based on live trees ≥ 1.0 inch d.b.h./d.r.c. Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.5.136 RANGETPCD_RMRS

Range type code (existing vegetation classification), Rocky Mountain Research Station. For each nonforest condition, a code indicating the predominant existing vegetation type that is most representative of the condition. Data only collected for plots that have a sampled nonforest condition(s) (PLOT.NF_PLOT_STATUS_CD = 1). Only populated by certain FIA work units (SURVEY.RSCD = 22).

A code of 999 is recorded when the type is undefined or there is not enough vegetation to classify a type. The existing vegetation classification is not necessarily the same as habitat type.

Codes: RANGETPCD_RMRS

| Code | Range type (existing vegetation classification) |
|------|---|
| 101 | Bluebunch wheatgrass. |
| 102 | Idaho fescue. |
| 103 | Green fescue. |
| 104 | Antelope bitterbrush / bluebunch wheatgrass. |
| 105 | Antelope bitterbrush / Idaho fescue. |
| 106 | Bluegrass scabland. |
| 107 | Western juniper / big sagebrush / bluebunch wheatgrass. |
| 108 | Alpine Idaho fescue. |
| 301 | Bluebunch wheatgrass / blue grama. |
| 302 | Bluebunch wheatgrass / Sandberg bluegrass. |
| 303 | Bluebunch wheatgrass / western wheatgrass. |
| 304 | Idaho fescue / bluebunch wheatgrass. |
| 305 | Idaho fescue / Richardson needlegrass. |
| 306 | Idaho fescue / slender wheatgrass. |
| 307 | Idaho fescue / threadleaf sedge. |
| 308 | Idaho fescue / tufted hairgrass. |
| 309 | Idaho fescue / western wheatgrass. |
| 310 | Needle-and-thread / blue grama. |
| 311 | Rough fescue / bluebunch wheatgrass. |
| 312 | Rough fescue / Idaho fescue. |
| 313 | Tufted hairgrass / sedge. |
| 314 | Big sagebrush / bluebunch wheatgrass. |
| 315 | Big sagebrush / Idaho fescue. |
| 316 | Big sagebrush / rough fescue. |
| 317 | Bitterbrush / bluebunch wheatgrass. |
| 318 | Bitterbrush / Idaho fescue. |

| Code | Range type (existing vegetation classification) |
|-------------|--|
| 319 | Bitterbrush / rough fescue. |
| 320 | Black sagebrush / bluebunch wheatgrass. |
| 321 | Black sagebrush / Idaho fescue. |
| 322 | Curlleaf mountain-mahogany / bluebunch wheatgrass. |
| 323 | Shrubby cinquefoil / rough fescue. |
| 324 | Threetip sagebrush / Idaho fescue. |
| 401 | Basin big sagebrush. |
| 402 | Mountain big sagebrush. |
| 403 | Wyoming big sagebrush. |
| 404 | Threetip sagebrush. |
| 405 | Black sagebrush. |
| 406 | Low sagebrush. |
| 407 | Stiff sagebrush. |
| 408 | Other sagebrush types. |
| 409 | Tall forb. |
| 410 | Alpine rangeland. |
| 413 | Gambel oak. |
| 414 | Salt desert shrub. |
| 415 | Curlleaf mountain-mahogany. |
| 416 | True mountain-mahogany. |
| 417 | Littleleaf mountain-mahogany. |
| 418 | Bigtooth maple. |
| 419 | Bittercherry. |
| 420 | Snowbrush. |
| 421 | Chokecherry / serviceberry / rose. |
| 601 | Bluestem prarie. |
| 602 | Bluestem / prarie sandreed. |
| 603 | Pralie sandreed / needlegrass. |
| 604 | Bluestem / grama prarie. |
| 605 | Sandsage prarie. |
| 606 | Wheatgrass / bluestem / needlegrass. |
| 607 | Wheatgrass / needlegrass. |
| 608 | Wheatgrass / grama / needlegrass. |
| 609 | Wheatgrass / grama. |
| 610 | Wheatgrass. |
| 611 | Blue grama / buffalograss. |
| 612 | Sagebrush / grass. |
| 613 | Fescue grassland. |
| 614 | Crested wheatgrass. |

| Code | Range type (existing vegetation classification) |
|------|---|
| 615 | Wheatgrass / saltgrass / grama. |
| 999 | Undefined. |

2.5.137 SDIMAX_RMRS

Stand density index maximum, Rocky Mountain Research Station. The maximum value for the stand density index (SDI) for a particular forest type and region, at the condition level. If the condition is nonstocked, the field-recorded forest type (FLDTYP_CD) is used in place of a calculated forest type (FORTYP_CD). Refer to SDI_RMRS for further detail. Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.5.138 SDIPCT_RMRS

Stand density index percent, Rocky Mountain Research Station. A relative measure of stand density for live trees (≥ 1.0 inch d.b.h./d.r.c.) on the condition, expressed as a percentage of the maximum stand density index (SDI).

SDIPCT_RMRS is computed as follows:

$$\text{SDIPCT_RMRS} = (\text{SDI_RMRS}/\text{SDIMAX_RMRS}) * 100$$

Refer to [SDI_RMRS](#) and [SDIMAX_RMRS](#) for more information. Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.5.139 SDI_RMRS

Stand density index for the condition, Rocky Mountain Research Station. An index that expresses the stand density for live trees (≥ 1.0 inch d.b.h./d.r.c.) on the condition.

SDI_RMRS is based on a quadratic mean diameter of the stand and the number of live trees per acre (TPA_UNADJ) at the condition level. It is computed for timber and woodland species (≥ 1.0 inch d.b.h./d.r.c.), and is equal to the sum of stand density index (SDI) values for individual trees on the condition. SDI is a widely used measure developed by Reineke (1933). Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.5.140 STAND_STRUCTURE_ME_NERS

Stand structure (Maine), Northeastern Research Station. A code indicating the basic stand structure of the trees in the condition. This attribute is ancillary, that is, contrasting conditions are never delineated based on variation in this attribute.

Only populated by certain FIA work units (SURVEY.RSCD = 24) and only in Maine.

Codes: STAND_STRUCTURE_ME_NERS

| Code | Description |
|-------------|--|
| 1 | Single-storied - Stands characterized by an even canopy of uniform height with close competition between trees. The smaller trees are usually members of the stand that were stressed or overtapped and have fallen behind their associates. Regeneration and/or tall relics from a previous stand may be present. Most of the trees in the condition are within the height class of the average stand height. |
| 2 | Two-storied - Stands composed of two relatively even but distinct canopy layers, such as a mature overstory with an understory sapling layer, possibly from seed tree and shelterwood operations, or an overstory of tall conifers with an understory of low hardwoods. Neither canopy is necessarily continuous or closed, but both canopy levels tend to be uniformly distributed across the stand. Each canopy level must cover at least 25 percent of the condition. |
| 3 | Multi-storied - Stands generally containing trees from every size group on a continuum from seedlings to mature trees and are characterized by a broken or uneven canopy layer. Usually the largest number of trees is in the smaller diameter classes. Includes any stand with three or more structural layers if each of the three or more layers covers at least 25 percent of the condition. |
| 4 | Mosaic - Stands contain at least two distinct size classes each of which covers at least 25 percent of the condition; however, these classes are not uniformly distributed but are grouped in small repeating aggregations, or occur in stringers less than 120.0 ft. (36.6 m.) wide, throughout the stand. Each size class aggregation is too small to be recognized and mapped as an individual stand; the aggregations may or may not be single-storied. |
| 5 | Nonstocked - Less than 10-percent tree stocking present. |

2.5.141 TREES_PRESENT_NCNS

Trees present on nonforest, North Central Research Station. A code indicating the presence or absence of live trees ≥ 5.0 inches d.b.h. that are within the nonforest condition represented in the "plot triangle" (the triangle formed by the 3 outer subplots, representing 0.84 acres that is used for office photo interpretation to determine whether or not a plot is sent to the field for measurement).

Only populated by certain FIA work units (SURVEY.RSCD = 23). Data collected in all States when PLOT.MANUAL = 1.0-5.1 (INVYR = 1999-2013), and continued for Indiana when PLOT.MANUAL = 6.0 (INVYR >2013).

Codes: TREES_PRESENT_NCNS

| Code | Description |
|-------------|--|
| 1 | Nonforest land without live trees ≥ 5.0 inches d.b.h. |
| 2 | Nonforest land with live trees ≥ 5.0 inches d.b.h. |

2.5.142 TREES_PRESENT_NERS

Trees present on nonforest, Northeastern Research Station. A code indicating the presence or absence of live trees ≥ 5.0 inches d.b.h. that are within the nonforest condition represented in the "plot triangle" (the triangle formed by the 3 outer subplots, representing 0.84 acres that is used for office photo interpretation to determine whether or not a plot is sent to the field for measurement).

Data back-populated for all States in certain FIA work units (SURVEY.RSCD = 24) for COND_STATUS_CD = 4 (census water) for INVYR = 1999-2006. Data collected and back-populated for all nonforest conditions (SURVEY.RSCD = 24) for INVYR = 2007-2013.

Codes: TREES_PRESENT_NERS

| Code | Description |
|------|--|
| 1 | Nonforest land without live trees \geq 5.0 inches d.b.h. |
| 2 | Nonforest land with live trees \geq 5.0 inches d.b.h. |

2.5.143 TRTCD1_P2A

Treatment code 1, periodic to annual. A code indicating the type of stand treatment that has occurred since the last periodic measurement. The area affected by the treatment must be at least 1 acre in size. Up to three different treatments per condition can be recorded, from most important to least important (TRTCD1_P2A, TRTCD2_P2A, and TRTCD3_P2A). Populated for forested conditions at locations with periodic to annual remeasurement. Not populated for all States.

Periodic to annual (P2A) remeasurement includes plots where the newly established annual plot is located at the same center point as the previously established periodic plot.

Note: For RMRS (SURVEY.RSCD = 22), both the periodic and the annual plot have DESIGNCD = 1.

Codes: TRTCD1_P2A

| 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, diskng, bedding, or other practices clearly intended to prepare a site for either natural or artificial regeneration. |
| 30 | Artificial regeneration - Following a disturbance or treatment (usually cutting), a new stand where at least 50 percent of the live trees present resulted from planting or direct seeding. |
| 40 | Natural regeneration - Following a disturbance or treatment (usually cutting), a new stand where at least 50 percent of the live trees present (of any size) were established through the growth of existing trees and/or natural seeding or sprouting. |
| 50 | Other silvicultural treatment - The use of fertilizers, herbicides, girdling, pruning, or other activities (not covered by codes 10-40) designed to improve the commercial value of the residual stand, or chaining, which is a practice used on woodlands to encourage wildlife forage. |

2.5.144 TRTCD2_P2A

Treatment code 2, periodic to annual. The second treatment code, if the stand has experienced more than one treatment since the last periodic measurement. Populated for forested conditions at locations with periodic to annual remeasurement. Not populated for all States. See [TRTCD1_P2A](#) for more information.

2.5.145 TRTCD3_P2A

Treatment code 3, periodic to annual. The third treatment code, if the stand has experienced more than two treatments since the last periodic measurement. Populated for forested conditions at locations with periodic to annual remeasurement. Not populated for all States. See [TRTCD1_P2A](#) for more information.

2.5.146 TRTOPCD

Treatment opportunity code. A code indicating the best possible silvicultural treatment recommended for a forest condition, based on stand size, forest type, site productivity, and other factors. Only calculated for certain FIA work units (SURVEY.RSCD = 23).

Codes: TRTOPCD

| Code | Description |
|------|--------------------------|
| 1 | Regen without site prep. |
| 2 | Regen with site prep. |
| 3 | Stand conversion. |
| 4 | Thin seed/sap. |
| 5 | Thin pole. |
| 6 | Other stocking control. |
| 7 | Other intermediate. |
| 8 | Clearcut. |
| 9 | Partial harvest. |
| 10 | Salvage harvest. |
| 11 | None. |

2.5.147 TRTYR1_P2A

Treatment year 1, periodic to annual. The year in which treatment 1 (TRTCD1_P2A) is estimated to have occurred. Populated for forested conditions at locations with periodic to annual remeasurement. Not populated for all States.

Periodic to annual (P2A) remeasurement includes plots where the newly established annual plot is located at the same center point as the previously established periodic plot.

Note: For RMRS, both the periodic and the annual plot have DESIGNCD = 1.

2.5.148 TRTYR2_P2A

Treatment year 2, periodic to annual. The year in which treatment 2 (TRTCD2_P2A) is estimated to have occurred. Populated for forested conditions at locations with periodic to annual remeasurement. Not populated for all States. See [TRTYR1_P2A](#) for more information.

2.5.149 TRTYR3_P2A

Treatment year 3, periodic to annual. The year in which treatment 3 (TRTCD3_P2A) is estimated to have occurred. Populated for forested conditions at locations with periodic to annual remeasurement. Not populated for all States. See [TRTYR1_P2A](#) for more information.

2.5.150 LAND_COVER_CLASS_CD

Land cover class code. A code indicating the type of cover for a condition that meets the minimum area and width requirements, except those with cases where the condition has been defined due to one of the exceptions to the size and width requirements. If the condition was less than 1 acre, a cover classification key was used to assign a cover class.

This is the revised cover class attribute implemented in PLOT.MANUAL = 8.0. Many of the codes are the same between the retired and the current code sets. The cover classification key used by crews has been modified to remove all aspects of land use and focus on land cover. There is no national crosswalk to translate the retired codes into the new codes (see [LAND_COVER_CLASS_CD_RET](#) for the old code list).

Codes: LAND_COVER_CLASS_CD (codes that are $\geq 10\%$ live vegetative cover)

| Code | Description |
|------|--|
| 01 | Tree Cover: Areas on which live trees provide 10% or greater canopy cover and are part of the dominant (uppermost) vegetation layer, including areas that have been planted to produce woody crops, Christmas trees, orchards, etc. Only include tree species that are listed on the FIA Master Tree Species List (refer to Public Box folder available at web address: https://usfs-public.box.com/v/FIA-TreeSpeciesList) after taking into account the three exclusion zones. Varieties and subspecies are tallied at the species level and hybrids are based on the dominant external characteristics. Species not included on the FIA Master Tree Species List are considered shrub cover. Example areas include forests, forest plantations, reverting fields with $\geq 10\%$ tree canopy cover, clearcuts with $\geq 10\%$ tree canopy cover. This category includes cypress swamps and mangroves (not to be confused with aquatic vegetation). |
| 02 | Shrub Cover: Areas on which live shrubs or subshrubs provide 10% or greater cover and are part of the dominant (uppermost) vegetation layer, provided these areas do not qualify as Tree Cover. Shrub/Subshrub - a woody plant that generally has several erect, spreading, or prostrate stems, which give it a bushy appearance. This includes dwarf shrubs, and low or short woody vines (Federal Geographic Data Committee Vegetation Subcommittee 2008) and excludes any species on FIA's tree list. Examples include cranberry bogs, berry crops, and other shrub-dominated wetlands, chaparral, and sagebrush. |
| 03 | Herbaceous Cover: Areas on which live herbaceous vegetation (including seasonally senescent cover) provides 10% or greater cover and are part of the dominant (uppermost) vegetation layer, provided these areas do not qualify as Tree Cover or Shrub Cover. This includes herbs, forbs, and graminoid species. Examples include meadows, prairies, croplands (while crops are present), and improved pasture. This category also includes emergent wetland vegetation like seasonally flooded grasslands, cattail marshes, etc. |
| 04 | Non-vascular Vegetation Cover: Areas on which non-vascular vegetation provides 10% or greater cover and are part of the dominant vegetation layer, provided these areas do not qualify as Tree Cover, Shrub Cover, or Herbaceous Cover. Examples include mosses, sphagnum moss bogs, liverworts, hornworts, lichens, and algae. |
| 05 | Mixed Vegetation Cover: Areas with 10% or greater live vegetative cover but no one life form has 10% or more cover. That is, these areas do not qualify as Tree Cover, Shrub Cover, Herbaceous Cover or Non-vascular Vegetation Cover, and thus are a mixture of plant life forms. Examples can include early stages of reverting fields and high deserts. |

Codes: LAND_COVER_CLASS_CD (codes that are <10% live vegetative cover)

| Code | Description |
|-------------|--|
| 08 | Barren: Areas predominately covered by bare rock, gravel, sand, silt, clay, or other earthen material, which contains <10% vegetation cover regardless of its inherent ability to support life. Examples include naturally barren areas such as lava fields, gravel bars, sand dunes, salt flats, deserts, playas, and rock outcroppings, as well as areas of bare soil exposed by land clearing (including plowed, harvested, or planted but not yet emerged cropland), wildfire, and other forms of disturbance. Also includes minerals and other geologic materials exposed by surface mining and roads made of dirt and gravel. |
| 09 | Impervious: Areas predominantly covered with constructed materials that contain <10% vegetation cover. Examples include paved roads, parking lots, driveways, sidewalks, rooftops, and other man-made structures. |
| 10 | Water: Areas persistently covered and predominated by water and have <10% emergent vegetative cover. Examples include census and noncensus water and permanent snow and ice as well as glaciers. For example, only the open water portion of a bog is to be included. |
| 12 | Unknown: No classification was possible. |

2.5.151 SIEQN_REF_CD

Site index equation reference code. This is the internal reference code for site index equations in the FIA equation library. There are more equations in the library than are currently in use by FIA. Site index equations have not been developed for all species, so the equation reference for a given species in a given geographic range may refer to an equation developed for a different species. See REF_SIEQN.[SIEQN_REF_NOTES](#) for additional information associated with each SIEQN_REF_CD (e.g., notes, primary reference).

2.5.152 SICOND_FVS

Site index for the condition, used by the Forest Vegetation Simulator. This is similar to SICOND, but is computed using the equation required by, and species allowed by, the Forest Vegetation Simulator (FVS). Site index values in SICOND_FVS are not used for other computations in the FIA processing system, and are primarily used when exporting FIA data for use in FVS. This attribute is blank (null) when no site index data are available.

2.5.153 SIBASE_FVS

Site index base age used by the Forest Vegetation Simulator. The base age (sometimes called reference age), in years, of the site index curves used to derive site index. Base age is specific to a given family of site index curves, and is usually set close to the common rotation age or the age of culmination of mean annual increment for a species. The most commonly used base ages are 25, 50, 80, and 100 years. It is possible for a given species to have different sets of site index curves in different geographic regions, and each set of curves may use a different base age.

Note: For a given geographic location, FVS variants may require the use of site index equations that were developed using a different base age than used by the site index equations used in standard FIA compilation procedures. Because of the historical development of FIA procedures and FVS growth models, the two systems have differences in the base ages that are used.

2.5.154 SISP_FVS

Site index species code used by the Forest Vegetation Simulator. Site index species code used by the Forest Vegetation Simulator. The species upon which the site index is based for use in the vegetation simulator. In most cases the site index species will be one of the species that define the forest type of the condition (FORTYP_CD). However, the list of species allowed for computation of site index for use in FVS can differ from species allowed by other FIA computational processes. It is possible for SISP to be blank and SISP_FVS to be populated. This attribute is blank (null) when no site tree data are available.

2.5.155 SIEQN_REF_CD_FVS

Site index equation reference code used by the Forest Vegetation Simulator. This is the internal reference code for site index equations in the FIA equation library that is used to calculate site index. There are more equations in the library than are currently in use by FIA. Site index equations have not been developed for all species, so the equation reference for a given species in a given geographic range may refer to an equation developed for a different species. See [REF_SIEQN.SIEQN_REF_NOTES](#) for additional information associated with each SIEQN_REF_CD (e.g., notes, primary reference).

2.5.156 MQUADPROP_UNADJ

Microquadrat proportion unadjusted. The unadjusted proportion of the microquadrats that are in the condition. Microquadrats are used to collect data for ground layer functional groups (see GRND_LYR_FNCTL_GRP.[FUNCTIONAL_GROUP_CD](#)). The sum of all microquadrat proportions on a plot equals 1.

2.5.157 SOILPROP_UNADJ

Soil proportion unadjusted. The unadjusted proportion of the soils sample that is in the condition. The sum of all soil proportions in a plot equals 1.

2.5.158 FOREST_COND_STATUS_CHANGE_CD

Forest land condition status change code. A code indicating the reason why the forest land condition status changed since the last inventory. If the status did not change, FOREST_COND_STATUS_CHANGE_CD = 0 is recorded.

Codes: FOREST_COND_STATUS_CHANGE_CD

| Code | Description |
|------|--|
| 0 | No change - the condition is not a new forested condition (not originating from a previous forested condition) nor is it a new condition that is the result of a previously forested condition no longer qualifying as such or the condition was previously not field visited or was previously classified as non-sampled. |
| 1 | Physical changes - condition status changed due to actual on-the-ground physical change either natural or human-caused. |
| 2 | Crew error - condition status changed due to a previous crew's error. |
| 3 | Procedural changes – condition status changed due to a change in variable definition or procedures. |

2.6 Subplot Table

(Oracle table name: SUBPLOT)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|----------------------------|---|------------------|
| 2.6.1 | CN | Sequence number | VARCHAR2(34) |
| 2.6.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 2.6.3 | PREV_SBP_CN | Previous subplot sequence number | VARCHAR2(34) |
| 2.6.4 | INVYR | Inventory year | NUMBER(4) |
| 2.6.5 | STATECD | State code | NUMBER(4) |
| 2.6.6 | UNITCD | Survey unit code | NUMBER(2) |
| 2.6.7 | COUNTYCD | County code | NUMBER(3) |
| 2.6.8 | PLOT | Plot number | NUMBER(5) |
| 2.6.9 | SUBP | Subplot number | NUMBER(3) |
| 2.6.10 | SUBP_STATUS_CD | Subplot/macroplot status code | NUMBER(1) |
| 2.6.11 | POINT_NONSAMPLE_REASN_CD | Point nonsampled reason code | NUMBER(2) |
| 2.6.12 | MICRCOND | Microplot center condition | NUMBER(1) |
| 2.6.13 | SUBPCOND | Subplot center condition | NUMBER(1) |
| 2.6.14 | MACRCOND | Macroplot center condition | NUMBER(1) |
| 2.6.15 | CONDLIST | Subplot/macroplot condition list | NUMBER(4) |
| 2.6.16 | SLOPE | Subplot percent slope | NUMBER(3) |
| 2.6.17 | ASPECT | Subplot aspect | NUMBER(3) |
| 2.6.18 | WATERDEP | Snow/water depth | NUMBER(2,1) |
| 2.6.19 | P2A_GRM_FLG | Periodic to annual growth, removal, and mortality flag | VARCHAR2(1) |
| 2.6.20 | CREATED_BY | Created by | VARCHAR2(30) |
| 2.6.21 | CREATED_DATE | Created date | DATE |
| 2.6.22 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 2.6.23 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 2.6.24 | MODIFIED_DATE | Modified date | DATE |
| 2.6.25 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 2.6.26 | CYCLE | Inventory cycle number | NUMBER(2) |
| 2.6.27 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |
| 2.6.28 | ROOT_DIS_SEV_CD_PNWRS | Root disease severity rating code, Pacific Northwest Research Station | NUMBER(1) |
| 2.6.29 | NF_SUBP_STATUS_CD | Nonforest subplot/macroplot status code | NUMBER(1) |
| 2.6.30 | NF_SUBP_NONSAMPLE_REASN_CD | Nonforest subplot/macroplot nonsampled reason code | NUMBER(2) |
| 2.6.31 | P2VEG_SUBP_STATUS_CD | P2 vegetation subplot status code | NUMBER(1) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------------|--|------------------|
| 2.6.32 | P2VEG_SUBP_NONSAMPLE_REASN_CD | P2 vegetation subplot nonsampled reason code | NUMBER(2) |
| 2.6.33 | INVASIVE_SUBP_STATUS_CD | Invasive subplot status code | NUMBER(1) |
| 2.6.34 | INVASIVE_NONSAMPLE_REASN_CD | Invasive nonsampled reason code | NUMBER(2) |
| 2.6.35 | CROWN_CLOSURE_ME_NERS | Crown closure (Maine), Northeastern Research Station | NUMBER(1) |
| 2.6.36 | GROUND_TRAN PTS_BARE_RMRS | Ground surface cover transect points - bare ground, Rocky Mountain Research Station | NUMBER(3) |
| 2.6.37 | GROUND_TRAN PTS_CRYP_RMRS | Ground surface cover transect points - cryptogamic crust, Rocky Mountain Research Station | NUMBER(3) |
| 2.6.38 | GROUND_TRAN PTS_DEV_RMRS | Ground surface cover transect points - developed land, Rocky Mountain Research Station | NUMBER(3) |
| 2.6.39 | GROUND_TRAN PTS_LICHEN_RMRS | Ground surface cover transect points - lichen, Rocky Mountain Research Station | NUMBER(3) |
| 2.6.40 | GROUND_TRAN PTS_LITTER_RMRS | Ground surface cover transect points - litter, Rocky Mountain Research Station | NUMBER(3) |
| 2.6.41 | GROUND_TRAN PTS_MOSS_RMRS | Ground surface cover transect points - moss, Rocky Mountain Research Station | NUMBER(3) |
| 2.6.42 | GROUND_TRAN PTS_NOTSAMP_RMRS | Ground surface cover transect points - not sampled, Rocky Mountain Research Station | NUMBER(3) |
| 2.6.43 | GROUND_TRAN PTS_OTHER_RMRS | Ground surface cover transect points - other cover, Rocky Mountain Research Station | NUMBER(3) |
| 2.6.44 | GROUND_TRAN PTS_PEIS_RMRS | Ground surface cover transect points - permanent ice and snow, Rocky Mountain Research Station | NUMBER(3) |
| 2.6.45 | GROUND_TRAN PTS_ROAD_RMRS | Ground surface cover transect points - road, Rocky Mountain Research Station | NUMBER(3) |
| 2.6.46 | GROUND_TRAN PTS_ROCK_RMRS | Ground surface cover transect points - rock, Rocky Mountain Research Station | NUMBER(3) |
| 2.6.47 | GROUND_TRAN PTS_TRIS_RMRS | Ground surface cover transect points - transient ice and snow, Rocky Mountain Research Station | NUMBER(3) |
| 2.6.48 | GROUND_TRAN PTS_VEG_RMRS | Ground surface cover transect points - basal vegetation, Rocky Mountain Research Station | NUMBER(3) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-----------------------------|---|------------------|
| 2.6.49 | GROUND_TRAN PTS_WATER_RMR S | Ground surface cover transect points - water, Rocky Mountain Research Station | NUMBER(3) |
| 2.6.50 | GROUND_TRAN PTS_WOOD_RMR S | Ground surface cover transect points - wood, Rocky Mountain Research Station | NUMBER(3) |
| 2.6.51 | PREV_STATUSCD_RMRS | Previous subplot status code, Rocky Mountain Research Station | NUMBER(1) |
| 2.6.52 | ROOTSEVCD_RMRS | Root disease severity rating code, Rocky Mountain Research Station | NUMBER(1) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--|-----------------|----------------------|
| Primary | CN | N/A | SBP_PK |
| Unique | PLT_CN, SUBP | N/A | SBP_UK |
| Natural | STATECD, INVYR, UNITCD, COUNTYCD, PLOT, SUBP | N/A | SBP_NAT_I |
| Foreign | PLT_CN, SUBPCOND | SUBPLOT to COND | SBP_CND_FK |
| Foreign | PLT_CN, MICRCOND | SUBPLOT to COND | SBP_CND_FK2 |
| Foreign | PLT_CN, MACRCOND | SUBPLOT to COND | SBP_CND_FK3 |
| Foreign | PLT_CN | SUBPLOT to PLOT | SBP_PLT_FK |

Note: The SUBPLOT record may not exist for some periodic inventory data.

2.6.1 CN

Sequence number. A unique sequence number used to identify a subplot record.

2.6.2 PLT_CN

Plot sequence number. Foreign key linking the subplot record to the plot record.

2.6.3 PREV_SBP_CN

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

2.6.4 INVYR

Inventory year. See SURVEY.INVYR description for definition.

2.6.5 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

2.6.6 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 B](#) for codes.

2.6.7 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

2.6.8 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.

2.6.9 SUBP

Subplot number. The number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4. Other plot designs have various subplot number values. See PLOT.DESIGNCD and [appendix G](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

2.6.10 SUBP_STATUS_CD

Subplot/macroplot status code. A code indicating whether or not forest land was sampled on the subplot/macroplot. May be blank (null) in periodic inventories and where SUBP >4.

Codes: SUBP_STATUS_CD

| Code | Description |
|------|---|
| 1 | Sampled - at least one accessible forest land condition present on subplot. |
| 2 | Sampled - no accessible forest land condition present on subplot. |
| 3 | Nonsampled - possibility of forest land. |

2.6.11 POINT_NONSAMPLE_REASN_CD

Point nonsampled reason code. A code indicating the reason an entire subplot (or macroplot) was not sampled.

Codes: POINT_NONSAMPLE_REASN_CD

| Code | Description |
|------|--|
| 01 | Outside U.S. boundary - Entire subplot (or macroplot) is outside of the U.S. border. |
| 02 | Denied access area - Access to the entire subplot (or macroplot) is denied by the legal owner, or by the owner of the only reasonable route to the subplot (or macroplot). |

| Code | Description |
|-------------|--|
| 03 | Hazardous situation - Entire subplot (or macroplot) cannot be accessed because of a hazard or danger, for example cliffs, quarries, strip mines, illegal substance plantations, high water, etc. |
| 04 | Time limitation - Entire subplot (or macroplot) cannot be sampled due to a time restriction. This code is reserved for areas with limited access, and in situations where it is imperative for the crew to leave before the plot can be completed (e.g., scheduled helicopter rendezvous). |
| 05 | Lost data - The plot data file was discovered to be corrupt after a panel was completed and submitted for processing. This code is assigned to entire plots or full subplots that could not be processed. |
| 06 | Lost plot - Entire plot cannot be found. Used for the four subplots that are required for this plot. |
| 07 | Wrong location - Previous plot can be found, but its placement is beyond the tolerance limits for plot location. Used for the four subplots that are required for this plot. |
| 08 | Skipped visit - Entire plot skipped. Used for plots that are not completed prior to the time a panel is finished and submitted for processing. Used for the four subplots that are required for this plot. This code is for office use only. |
| 09 | Dropped intensified plot - Intensified plot dropped due to a change in grid density. Used for the four subplots that are required for this plot. This code used only by units engaged in intensification. This code is for office use only. |
| 10 | Other - Entire subplot (or macroplot) not sampled due to a reason other than one of the specific reasons already listed. |
| 11 | Ocean - Subplot/macroplot falls in ocean water below mean high tide line. |

2.6.12 MICRCOND

Microplot center condition. Condition number for the condition at the center of the microplot.

2.6.13 SUBPCOND

Subplot center condition. Condition number for the condition at the center of the subplot.

2.6.14 MACRCOND

Macroplot center condition. Condition number for the condition at the center of the macroplot. Blank (null) if macroplot is not measured.

2.6.15 CONDLIST

Subplot/macroplot condition list. (*core optional*) This is a listing of all condition classes located within the 24.0/58.9-foot radius around the subplot/macroplot center. A maximum of four conditions is permitted on any individual subplot/macroplot. For example, a value of 2300 indicates that conditions 2 and 3 are on the subplot/macroplot.

2.6.16 SLOPE

Subplot percent slope. The predominant or average angle of the slope across the subplot, to the nearest 1 percent. Valid values are 0 through 155.

2.6.17 ASPECT

Subplot aspect. The aspect across the subplot, to the nearest 1 degree. Aspect is measured by sighting along the direction used to determine slope. North is recorded as 360. When slope is <5 percent, there is no aspect and it is recorded as 0.

2.6.18 WATERDEP

Snow/water depth. The approximate depth in feet of water or snow covering the subplot. Not collected for certain FIA work units in 1999 (SURVEY.RSCD = 23, 24). May not be populated for some FIA work units when PLOT.MANUAL <1.0.

2.6.19 P2A_GRM_FLG

Periodic to annual growth, removal, and mortality flag. A code indicating if this subplot is part of a periodic inventory that is only included for the purposes of computing growth, removals and/or mortality estimates, referred to as GRM throughout this document. The flag is set to 'Y' for those subplots that are needed for change estimation and otherwise is left blank (null).

2.6.20 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

2.6.21 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

2.6.22 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

2.6.23 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

2.6.24 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

2.6.25 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

2.6.26 CYCLE

Inventory cycle number. See SURVEY.CYCLE description for definition.

2.6.27 SUBCYCLE

Inventory subcycle number. See SURVEY.SUBCYCLE description for definition.

2.6.28 ROOT_DIS_SEV_CD_PNWRS

Root disease severity rating code, Pacific Northwest Research Station. The root disease severity rating that describes the degree of root disease present. Only populated by certain FIA work units (SURVEY.RSCD = 26).

Codes: ROOT_DIS_SEV_CD_PNWRS

| Code | Description |
|-------------|--|
| 0 | No evidence of root disease visible within 50 feet of the 58.9 foot macroplot. |
| 1 | Root disease present within 50 feet of the macroplot, but no evidence of disease on the macroplot. |
| 2 | Minor evidence of root disease on the macroplot, such as suppressed tree killed by root disease, or a minor part of the overstory showing symptoms of infection. Little or no detectable reduction in canopy closure or volume. |
| 3 | Canopy reduction evident, up to 20 percent; usually as a result of death of 1 codominant tree on an otherwise fully stocked site. In absence of mortality, numerous trees showing symptoms of root disease infection. |
| 4 | Canopy reduction at least 20 percent; up to 30 percent as a result of root disease mortality. Snags and downed trees removed from canopy by disease as well as live trees with advance symptoms of disease contribute to impact. |
| 5 | Canopy reduction 30-50 percent as a result of root disease. At least half of the ground area of macroplot considered infested with evidence of root disease-killed trees. Macroplots representing mature stands with half of their volume in root disease-tolerant species usually do not go much above severity 5 because of the ameliorating effect of the disease-tolerant trees. |
| 6 | 50-75 percent reduction in canopy with most of the ground area considered infested as evidenced by symptomatic trees. Much of the canopy variation in this category is generally a result of root disease-tolerant species occupying infested ground. |
| 7 | At least 75 percent canopy reduction. Macroplots that reach this severity level usually are occupied by only the most susceptible species. There are very few of the original overstory trees remaining although infested ground is often densely stocked with regeneration of susceptible species. |
| 8 | The entire macroplot falls within a definite root disease pocket with only one or very few susceptible overstory trees present. |
| 9 | The entire macroplot falls within a definite root disease pocket with no overstory trees of the susceptible species present. |

2.6.29 NF_SUBP_STATUS_CD

Nonforest subplot/macropot status code. A code describing the sampling status of the other-than-forest subplot/macropot.

Codes: NF_SUBP_STATUS_CD

| Code | Description |
|-------------|---|
| 1 | Sampled - at least one accessible nonforest land condition present on the subplot/macropot. |
| 2 | Sampled - no nonforest land condition present on subplot/macropot (i.e., subplot/macropot is either census and/or noncensus water). |
| 3 | Nonsampled nonforest. |

2.6.30 NF_SUBP_NONSAMPLE_REASON_CD

Nonforest subplot/macropot nonsampled reason code. A code indicating the reason an entire nonforest subplot (or macropot) was not sampled.

Codes: NF_SUBP_NONSAMPLE_REASN_CD

| Code | Description |
|-------------|---|
| 02 | Denied access - A subplot/macroplot to which access is denied by the legal owner, or to which an owner of the only reasonable route to the plot denies access. Because a denied-access subplot/macroplot 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. |
| 03 | Hazardous situation - A subplot/macroplot that cannot be accessed because of a hazard or danger, for example cliffs, quarries, strip mines, illegal substance plantations, temporary high water, etc. Although the hazard is not likely to change over time, a hazardous condition remains in the sample and is re-examined at the next occasion to determine if the hazard is still present. |
| 04 | Time limitation - This code applies to a full subplot/macroplot that cannot be sampled due to a time restriction. This code is reserved for areas with limited access, and in situations where it is imperative for the crew to leave before the plot can be completed (e.g., scheduled helicopter rendezvous). |
| 10 | Other - This code is used whenever a subplot/macroplot is not sampled due to a reason other than one of the specific reasons already listed. |

2.6.31 P2VEG_SUBP_STATUS_CD

P2 vegetation subplot status code. A code indicating if the subplot was sampled for P2 vegetation.

Codes: P2VEG_SUBP_STATUS_CD

| Code | Description |
|-------------|--|
| 1 | Subplot sampled for P2 vegetation. |
| 2 | Subplot not sampled for P2 vegetation. |

2.6.32 P2VEG_SUBP_NONSAMPLE_REASN_CD

P2 vegetation subplot nonsampled reason code. A code indicating why vegetation on a subplot could not be sampled.

Codes: P2VEG_SUBP_NONSAMPLE_REASN_CD

| Code | Description |
|-------------|--|
| 04 | Time limitation. |
| 05 | Lost Data (for office use only). |
| 10 | Other (for example, snow or water covering vegetation that is supposed to be sampled). |

2.6.33 INVASIVE_SUBP_STATUS_CD

Invasive subplot status code. A code indicating if the subplot was sampled for invasive plants.

Codes: INVASIVE_SUBP_STATUS_CD

| Code | Description |
|-------------|---|
| 1 | Subplot sampled, invasive plants present. |

| Code | Description |
|------|--|
| 2 | Subplot sampled, no invasive plants present. |
| 3 | Subplot not sampled for invasive plants. |

2.6.34 INVASIVE_NONSAMPLE_REASN_CD

Invasive nonsampled reason code. A code indicating why a subplot could not be sampled for invasive plants.

Codes: INVASIVE_NONSAMPLE_REASN_CD

| Code | Description |
|------|--|
| 04 | Time limitation. |
| 05 | Lost Data (for office use only). |
| 10 | Other (for example, snow or water covering vegetation that is supposed to be sampled). |

2.6.35 CROWN_CLOSURE_ME_NERS

Crown closure (Maine), Northeastern Research Station. A code indicating the percent of the subplot that is covered by live trees directly overhead. Only populated by certain FIA work units (SURVEY.RSCD = 24).

Codes: CROWN_CLOSURE_ME_NERS

| Code | Description |
|------|-------------|
| 0 | 0-25% |
| 1 | 26-50% |
| 2 | 51-75% |
| 3 | >75% |

2.6.36 GROUND_TRAN PTS_BARE_RMRS

Ground surface cover transect points - bare ground, Rocky Mountain Research Station. A value indicating the percent of the subplot area covered by bare ground. This value is an estimate based on the number of sampling points on the subplot area that were classified as bare ground using a ground surface cover transect sampling method. Bare ground is defined as exposed soil and rock fragments smaller than ¾ inch in diameter. Larger rocks protruding through the soil are not classified as bare ground.

Data only collected for subplots that have a sampled nonforest condition at subplot center (NF_SUBP_STATUS_CD = 1). Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.6.37 GROUND_TRAN PTS_CRYP_RMRS

Ground surface cover transect points - cryptogamic crust, Rocky Mountain Research Station. A value indicating the percent of the subplot area covered by cryptogamic crust. This value is an estimate based on the number of sampling points on the subplot area that were classified as cryptogamic crust using a ground surface cover transect sampling method.

Cryptogamic crust is defined as thin, biotically dominated ground or surface crusts on soil in dry rangeland conditions (such as algae, lichen, mosses, or cyanobacteria, which are growing on bare soil).

Data only collected for subplots that have a sampled nonforest condition at subplot center (NF_SUBP_STATUS_CD = 1). Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.6.38 GROUND_TRAN_PTS_DEV_RMRS

Ground surface cover transect points - developed land, Rocky Mountain Research Station.

A value indicating the percent of the subplot area covered by developed land. This value is an estimate based on the number of sampling points on the subplot area that were classified as developed land using a ground surface cover transect sampling method. Developed land is defined as surface area covered by the following: (1) any man-made structure other than a road, such as a building, dam, parking lot, or electronic site/structure, (2) maintained residential yards, or (3) agricultural crops (not rangeland).

Data only collected for subplots that have a sampled nonforest condition at subplot center (NF_SUBP_STATUS_CD = 1). Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.6.39 GROUND_TRAN_PTS_LICHEN_RMRS

Ground surface cover transect points - lichen, Rocky Mountain Research Station.

A value indicating the percent of the subplot area covered by lichens. This value is an estimate based on the number of sampling points on the subplot area that were classified as lichen using a ground surface cover transect sampling method. A lichen is defined as an organism generally recognized as a single plant that consists of a fungus and an alga or cyanobacterium living in a symbiotic association. This category does not apply to lichens growing on bare soils in dry rangeland conditions. For rangeland conditions, see [GROUND_TRAN_PTS_CRYP_RMRS](#) (cryptogamic crusts).

Data only collected for subplots that have a sampled nonforest condition at subplot center (NF_SUBP_STATUS_CD = 1). Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.6.40 GROUND_TRAN_PTS_LITTER_RMRS

Ground surface cover transect points - litter, Rocky Mountain Research Station.

A value indicating the percent of the subplot area covered by litter. This value is an estimate based on the number of sampling points on the subplot area that were classified as litter using a ground surface cover transect sampling method. Litter is defined as organic debris, freshly fallen or slightly decomposed; it includes dead vegetation, animal feces, etc.

Data only collected for subplots that have a sampled nonforest condition at subplot center (NF_SUBP_STATUS_CD = 1). Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.6.41 GROUND_TRAN_PTS_MOSS_RMRS

Ground surface cover transect points - moss, Rocky Mountain Research Station.

A value indicating the percent of the subplot area covered by moss. This value is an estimate based on the number of sampling points on the subplot area that were classified as moss using a ground surface cover transect sampling method. Moss is defined as

nonvascular, terrestrial green plants including mosses, hornworts and liverworts - always herbaceous. This category does not apply to moss growing on bare soils in dry rangeland conditions. For rangeland conditions, see [GROUND_TRAN PTS_CRYP_RMRS](#) (cryptogamic crusts).

Data only collected for subplots that have a sampled nonforest condition at subplot center (NF_SUBP_STATUS_CD = 1). Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.6.42 GROUND_TRAN PTS_NOTSAMP_RMRS

Ground surface cover transect points - not sampled, Rocky Mountain Research Station. A value indicating the percent of the subplot area that was not sampled. This value is based on the number of sampling points on the subplot area that were classified as not sampled using a ground surface cover transect sampling method. When this category is used, the reason for not sampling any points along the transect should be described in the subplot notes.

Data only collected for subplots that have a sampled nonforest condition at subplot center (NF_SUBP_STATUS_CD = 1). Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.6.43 GROUND_TRAN PTS_OTHER_RMRS

Ground surface cover transect points - other cover, Rocky Mountain Research Station. A value indicating the percent of the subplot area classified as other cover. This value is an estimate based on the number of sampling points on the subplot area that were classified as other cover using a ground surface cover transect sampling method. This category includes covers that are not defined elsewhere by one of the other ground cover transect categories (e.g., trash). When this category is used, the other cover should be described in the subplot notes.

Data only collected for subplots that have a sampled nonforest condition at subplot center (NF_SUBP_STATUS_CD = 1). Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.6.44 GROUND_TRAN PTS_PEIS_RMRS

Ground surface cover transect points - permanent ice and snow, Rocky Mountain Research Station. A value indicating the percent of the subplot area covered by permanent ice and snow. This value is an estimate based on the number of sampling points on the subplot area that were classified as permanent ice and snow using a ground surface cover transect sampling method. This category is defined as surface area covered with ice and snow at the time of plot measurement, which is considered to be permanent.

Data only collected for subplots that have a sampled nonforest condition at subplot center (NF_SUBP_STATUS_CD = 1). Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.6.45 GROUND_TRAN PTS_ROAD_RMRS

Ground surface cover transect points - road, Rocky Mountain Research Station. A value indicating the percent of the subplot area covered by road. This value is an estimate based on the number of sampling points on the subplot area that were classified as road using a ground surface cover transect sampling method. This category is defined as improved roads, paved roads, gravel roads, improved dirt roads, and off-road vehicle trails, which

are regularly maintained or in long-term continuing use. These roads are generally constructed using machinery. Cutbanks and fills are included.

Data only collected for subplots that have a sampled nonforest condition at subplot center (NF_SUBP_STATUS_CD = 1). Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.6.46 GROUND_TRAN_PTS_ROCK_RMRS

Ground surface cover transect points - rock, Rocky Mountain Research Station. A value indicating the percent of the subplot area covered by rock. This value is an estimate based on the number of sampling points on the subplot area that were classified as rock using a ground surface cover transect sampling method. This category includes rocks and rock fragments that are greater than ¾ inch in diameter.

Data only collected for subplots that have a sampled nonforest condition at subplot center (NF_SUBP_STATUS_CD = 1). Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.6.47 GROUND_TRAN_PTS_TRIS_RMRS

Ground surface cover transect points - transient ice and snow, Rocky Mountain Research Station. A value indicating the percent of the subplot area covered by transient ice and snow. This value is an estimate based on the number of sampling points on the subplot area that were classified as transient ice and snow using a ground surface cover transect sampling method. This category is defined as surface area covered with ice and snow at the time of plot measurement, which is considered to be transient.

Data only collected for subplots that have a sampled nonforest condition at subplot center (NF_SUBP_STATUS_CD = 1). Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.6.48 GROUND_TRAN_PTS_VEG_RMRS

Ground surface cover transect points - basal vegetation, Rocky Mountain Research Station. A value indicating the percent of the subplot area covered by basal vegetation. This value is an estimate based on the number of sampling points on the subplot area that were classified as basal vegetation using a ground surface cover transect sampling method. Basal vegetation is defined as the area outline of a plant near the ground surface. For grass, this consists of the shoot system at ground level. For trees and shrubs, this consists of the stem area.

Data only collected for subplots that have a sampled nonforest condition at subplot center (NF_SUBP_STATUS_CD = 1). Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.6.49 GROUND_TRAN_PTS_WATER_RMRS

Ground surface cover transect points - water, Rocky Mountain Research Station. A value indicating the percent of the subplot area covered by water. This value is an estimate based on the number of sampling points on the subplot area that were classified as water using a ground surface cover transect sampling method. This category is defined as water remaining above the ground surface during the growing season, such as streams, bogs, swamps, marshes and ponds.

Data only collected for subplots that have a sampled nonforest condition at subplot center (NF_SUBP_STATUS_CD = 1). Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.6.50 GROUND_TRAN PTS_WOOD_RMRS

Ground surface cover transect points - wood, Rocky Mountain Research Station. A value indicating the percent of the subplot area covered by wood. This value is an estimate based on the number of sampling points on the subplot area that were classified as wood using a ground surface cover transect sampling method. This category is defined as woody material, including slash and small and large woody debris, regardless of depth. Litter and non-continuous litter are not included.

Data only collected for subplots that have a sampled nonforest condition at subplot center (NF_SUBP_STATUS_CD = 1). Only populated by certain FIA work units (SURVEY.RSCD = 22).

2.6.51 PREV_STATUSCD_RMRS

Previous subplot status code, Rocky Mountain Research Station. A code indicating the subplot sampling at the previous inventory visit. Blank (null) values may be present for periodic inventories. Only populated by certain FIA work units (SURVEY.RSCD = 22).

Codes: PREV_STATUSCD_RMRS

| Code | Description |
|------|---|
| 1 | Sampled - at least one accessible forest land condition present on subplot. |
| 2 | Sampled - no accessible forest land condition present on subplot. |
| 3 | Nonsampled - possibility of forest land. |

2.6.52 ROOTSEVCD_RMRS

Root disease severity rating code, Rocky Mountain Research Station. A code indicating the severity of root disease on the subplot area. Data only collected for plots sampled by RMRS in Region 1 (MT, ID, ND, SD) when SUBP_STATUS_CD = 1 or NF_SUBP_STATUS_CD = 1. Only populated by certain FIA work units (SURVEY.RSCD = 22).

Codes: ROOTSEVCD_RMRS

| Code | Description |
|------|---|
| 0 | No evidence of root disease visible within 50 feet of the subplot perimeter. |
| 1 | Root disease present within 50 feet of the subplot perimeter, but no evidence of root disease on subplot. |
| 2 | Minor evidence of root disease evident on the subplot - suppressed tree killed by root disease, or minor part of overstory showing symptoms of infection. Little or no reduction in canopy closure or volume. |
| 3 | Up to 20 percent canopy reduction evident - as a result of the death of one codominant tree on an otherwise fully stocked site. In the absence of mortality, numerous trees showing symptoms of root disease infection. |
| 4 | 20 to 30 percent canopy reduction - as a result of root disease-caused mortality. The presence of snags and downed dead trees as a result of disease, leaving gaps in the tree canopy, as well as live trees with advanced symptoms of disease. |

| Code | Description |
|-------------|--|
| 5 | 30 to 50 percent canopy reduction - as a result of root disease. Almost half of ground area of subplot considered infested with evidence of root disease-killed trees. Note: Subplots representing mature stands with half of their volume in root disease-tolerant species usually don't go much above severity 5 because of the ameliorating effect of the disease tolerant trees. |
| 6 | 50 to 75 percent canopy reduction → most of the ground area considered infested as evidenced by symptomatic trees. Much of the canopy variation in this category results from disease-tolerant species occupying infested ground. |
| 7 | 75 percent or more canopy reduction - subplots with this severity level usually were occupied by only the most susceptible species. Very few of the original overstory trees remain, although the infested ground area is often densely stocked with regeneration of the susceptible species. |
| 8 | Entire subplot falls within a definite root disease patch with only one or very few susceptible overstory trees present (standing/live) within the canopy. |
| 9 | Entire subplot falls within a definite root disease patch with no overstory trees of the susceptible species present within the canopy. |

2.7 Subplot Condition Table

(Oracle table name: SUBP_COND)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 2.7.1 | CN | Sequence number | VARCHAR2(34) |
| 2.7.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 2.7.3 | INVYR | Inventory year | NUMBER(4) |
| 2.7.4 | STATECD | State code | NUMBER(4) |
| 2.7.5 | UNITCD | Survey unit code | NUMBER(2) |
| 2.7.6 | COUNTYCD | County code | NUMBER(3) |
| 2.7.7 | PLOT | Plot number | NUMBER(5) |
| 2.7.8 | SUBP | Subplot number | NUMBER(3) |
| 2.7.9 | CONDID | Condition class number | NUMBER(1) |
| 2.7.10 | CREATED_BY | Created by | VARCHAR2(30) |
| 2.7.11 | CREATED_DATE | Created date | DATE |
| 2.7.12 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 2.7.13 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 2.7.14 | MODIFIED_DATE | Modified date | DATE |
| 2.7.15 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 2.7.16 | MICRCOND_PROP | Microplot-condition proportion | NUMBER |
| 2.7.17 | SUBPCOND_PROP | Subplot-condition proportion | NUMBER |
| 2.7.18 | MACRCOND_PROP | Macroplot-condition proportion | NUMBER |
| 2.7.19 | NONFR_INCL_PCT_SUBP | Nonforest inclusions percentage of subplot | NUMBER(3) |
| 2.7.20 | NONFR_INCL_PCT_MACRO | Nonforest inclusions percentage of macroplot | NUMBER(3) |
| 2.7.21 | CYCLE | Inventory cycle number | NUMBER(2) |
| 2.7.22 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|---|----------------------|----------------------|
| Primary | CN | N/A | SCD_PK |
| Unique | PLT_CN, SUBP, CON DID | N/A | SCD_UK |
| Natural | STATECD, INVYR, UNITCD, COUNTYCD, PLOT, SUBP, CON DID | N/A | SCD_NAT_I |
| Foreign | PLT_CN, CON DID | SUBP_COND to COND | SCD_CND_FK |
| Foreign | PLT_CN | SUBP_COND to PLOT | SCD_PLT_FK |
| Foreign | PLT_CN, SUBP | SUBP_COND to SUBPLOT | SCD_SBP_FK |

Note: The SUBP_COND record may not exist for some periodic inventory data.

2.7.1 **CN**

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

2.7.2 **PLT_CN**

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

2.7.3 **INVYR**

Inventory year. See SURVEY.[INVYR](#) description for definition.

2.7.4 **STATECD**

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

2.7.5 **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 B](#) for codes.

2.7.6 **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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

2.7.7 **PLOT**

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combination of variables, PLOT may be used to uniquely identify a plot.

2.7.8 **SUBP**

Subplot number. The number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4. Other plot designs have various subplot number values. See PLOT.[DESIGNCD](#) and [appendix G](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

2.7.9 **CONDID**

Condition class number. The unique identifying number assigned to a condition that exists on the subplot, and is defined in the COND table. See COND.[CONDID](#) for details on the attributes which delineate a condition.

2.7.10 **CREATED_BY**

Created by. See SURVEY.[CREATED_BY](#) description for definition.

2.7.11 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

2.7.12 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

2.7.13 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

2.7.14 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

2.7.15 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

2.7.16 MICRCOND_PROP

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

2.7.17 SUBPCOND_PROP

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

2.7.18 MACRCOND_PROP

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

2.7.19 NONFR_INCL_PCT_SUBP

Nonforest inclusions percentage of subplot. Nonforest area estimate, expressed as a percentage, of the 24.0-foot radius subplot present within a mapped, accessible forest land condition class in Oregon, Washington, and California. Only populated by certain FIA work units (SURVEY.RSCD = 26).

2.7.20 NONFR_INCL_PCT_MACRO

Nonforest inclusions percentage of macroplot. Nonforest area estimate, expressed as a percentage, of the 58.9-foot radius macroplot present within a mapped, accessible forest land condition class in Oregon, Washington, and California. Only populated by certain FIA work units (SURVEY.RSCD = 26).

2.7.21 CYCLE

Inventory cycle number. See SURVEY.CYCLE description for definition.

2.7.22 SUBCYCLE

Inventory subcycle number. See SURVEY.SUBCYCLE description for definition.

2.8 Boundary Table

(Oracle table name: BOUNDARY)

This table now available from the [FIA Spatial Data Services \(SDS\)](#) group by following the instructions provided at <https://www.fs.usda.gov/research/programs/fia/sds>.

2.9 Subplot Condition Change Matrix

(Oracle table name: SUBP_COND_CHNG_MTRX)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---------------------------------|------------------|
| 2.9.1 | CN | Sequence number | VARCHAR2(34) |
| 2.9.2 | STATECD | State code | NUMBER(4) |
| 2.9.3 | SUBP | Subplot number | NUMBER(1) |
| 2.9.4 | SUBPTYP | Plot type code | NUMBER(1) |
| 2.9.5 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 2.9.6 | CONDID | Condition class number | NUMBER(1) |
| 2.9.7 | PREV_PLT_CN | Previous plot sequence number | VARCHAR2(34) |
| 2.9.8 | PREVCOND | Previous condition class number | NUMBER(1) |
| 2.9.9 | SUBPTYP_PROP_CHNG | Plot type proportion change | NUMBER(5,4) |
| 2.9.10 | CREATED_BY | Created by | VARCHAR2(30) |
| 2.9.11 | CREATED_DATE | Created date | DATE |
| 2.9.12 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 2.9.13 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 2.9.14 | MODIFIED_DATE | Modified date | DATE |
| 2.9.15 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--|-----------------------------|----------------------|
| Primary | CN | N/A | CMX_PK |
| Unique | PLT_CN, PREV_PLT_CN, SUBP, SUBPTYP, CONDID, PREVCOND | N/A | CMX_UK |
| Foreign | PREV_PLT_CN | SUBP_COND_CHNG_MTRX to PLOT | CMX_PLT_FK |
| Foreign | PLT_CN | SUBP_COND_CHNG_MTRX to PLOT | CMX_PLT_FK2 |

This table contains information about the mix of current and previous conditions that occupy the same area on the subplot. Figure 2-1 provides an illustration of how the information in this table is derived using data from two points in time that are stored in the BOUNDARY and COND tables.

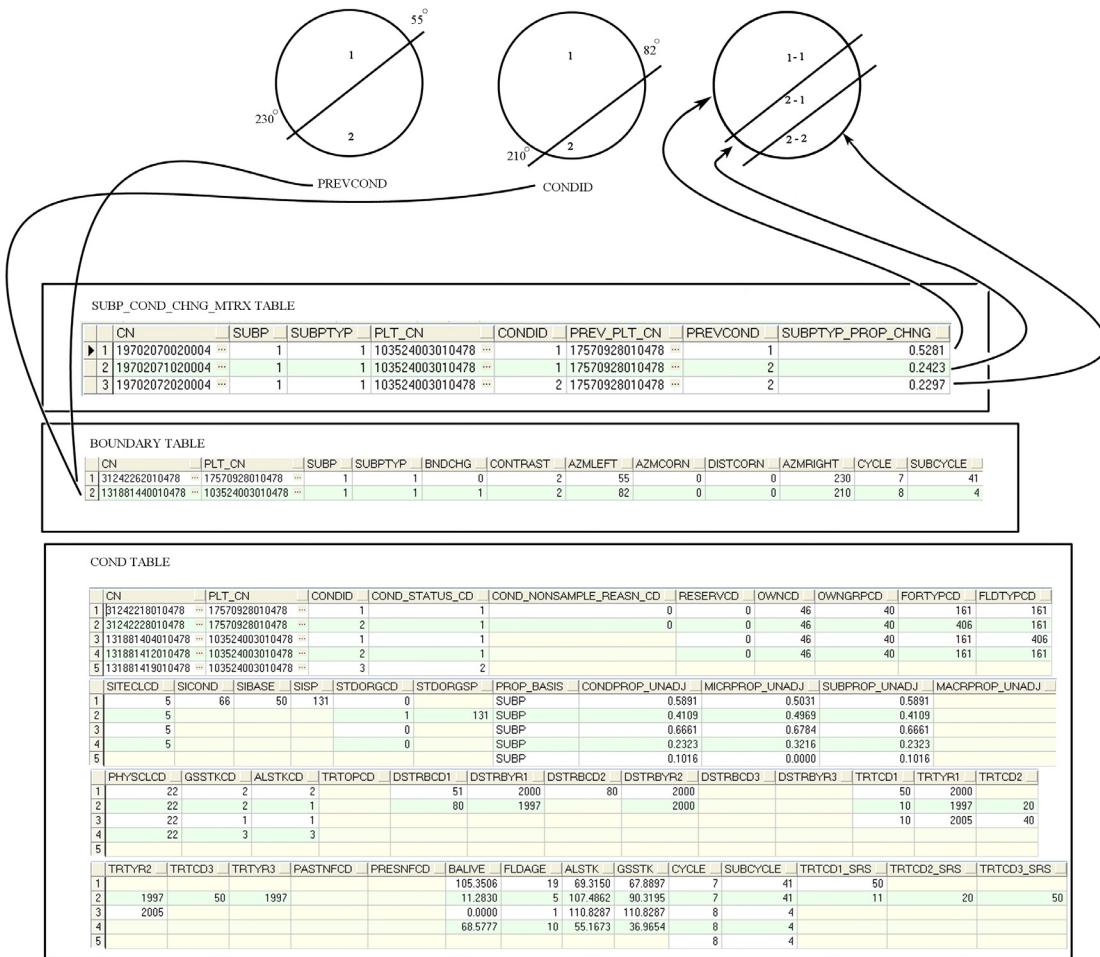


Figure 2-1: Illustration of the SUBP_COND_CHNG_MTRX table function.

2.9.1 CN

Sequence number. A unique sequence number used to identify a subplot condition change matrix record.

2.9.2 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

2.9.3 SUBP

Subplot number. The number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4. Other plot designs have various subplot number values.

2.9.4 SUBPTYP

Plot type code. A code indicating whether the record is for a subplot, microplot, or macroplot.

Codes: SUBPTYP

| Code | Description |
|------|-------------|
| 1 | Subplot. |
| 2 | Microplot. |
| 3 | Macroplot. |

2.9.5 PLT_CN

Plot sequence number. The foreign key linking the subplot condition change matrix record to the plot record for the current inventory.

2.9.6 CONDID

Condition class number. The unique identifying number assigned to a condition that exists on the subplot, and is defined in the COND table. See COND.[CONDID](#) for details on the attributes which delineate a condition.

2.9.7 PREV_PLT_CN

Previous plot sequence number. The foreign key linking the subplot condition change matrix record to the plot record from the previous inventory.

Note: If the previous plot was classified as periodic, PREV_PLT_CN will not link to the periodic record.

2.9.8 PREVCOND

Previous condition class number. Identifies the condition class number from the previous inventory.

2.9.9 SUBPTYP_PROP_CHNG

Plot type proportion change. The unadjusted proportion of the subplot that is in the same geographic area condition for both the previous and current inventory. For details, see chapter 7.7 in [The Forest Inventory and Analysis Database: Population Estimation User Guide](#)

2.9.10 CREATED_BY

Created by. See SURVEY.[CREATED_BY](#) description for definition.

2.9.11 CREATED_DATE

Created date. See SURVEY.[CREATED_DATE](#) description for definition.

2.9.12 CREATED_IN_INSTANCE

Created in instance. See SURVEY.[CREATED_IN_INSTANCE](#) description for definition.

2.9.13 MODIFIED_BY

Modified by. See SURVEY.[MODIFIED_BY](#) description for definition.

2.9.14 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

2.9.15 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

Section revision: 04.2024

Chapter 3: Database Tables - Tree Level

Chapter Contents:

| Section | Database table | Oracle table name |
|---------|--|---------------------|
| 3.1 | Tree Table | TREE |
| 3.2 | Tree Woodland Stems Table | TREE_WOODLAND_STEMS |
| 3.3 | Tree Growth, Removal, and Mortality Component Table | TREE_GRM_COMPONENT |
| 3.4 | Tree Growth, Removal, and Mortality Threshold Table | TREE_GRM_THRESHOLD |
| 3.5 | Tree Growth, Removal, and Mortality Midpoint Table | TREE_GRM_MIDPT |
| 3.6 | Tree Growth, Removal, and Mortality Begin Table | TREE_GRM_BEGIN |
| 3.7 | Tree Growth, Removal, and Mortality Estimation Table | TREE_GRM_ESTN |
| 3.8 | Begin and End Table | BEGINEND |
| 3.9 | Seedling Table | SEEDLING |
| 3.10 | Site Tree Table | SITETREE |

Definitions for database tables:

For further detail and examples, refer to the Overview (chapter 1).

Keys Presented with the Tables

| Key type | Definition |
|----------|--|
| Primary | A single column in a table whose values uniquely identify each row in an Oracle table. |
| Unique | Multiple columns in a table whose values uniquely identify each row in an Oracle table. There can be one and only one row for each unique key value. |
| Natural | A type of unique key made from existing attributes in the table. It is stored as an index in this database. |
| Foreign | A column in a table that is used as a link to a matching column in another Oracle table. |

Oracle Data Types

| Oracle data type | Definition |
|------------------|---|
| DATE | A data type that stores the date. |
| NUMBER | A data type that contains only numbers, positive or negative, with a floating-decimal point. |
| NUMBER(SIZE, D) | A data type that contains only numbers up to a specified maximum size. The maximum size (<i>and optional fixed-decimal point</i>) is specified by the value(s) listed in the parentheses. |
| VARCHAR2(SIZE) | A data type that contains alphanumeric data (numbers and/or characters) up to a specified maximum size. |

3.1 Tree Table

(Oracle table name: TREE)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---------------------------------|------------------|
| 3.1.1 | CN | Sequence number | VARCHAR2(34) |
| 3.1.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 3.1.3 | PREV_TRE_CN | Previous tree sequence number | VARCHAR2(34) |
| 3.1.4 | INVYR | Inventory year | NUMBER(4) |
| 3.1.5 | STATECD | State code | NUMBER(4) |
| 3.1.6 | UNITCD | Survey unit code | NUMBER(2) |
| 3.1.7 | COUNTYCD | County code | NUMBER(3) |
| 3.1.8 | PLOT | Plot number | NUMBER(5) |
| 3.1.9 | SUBP | Subplot number | NUMBER(3) |
| 3.1.10 | TREE | Tree number | NUMBER(9) |
| 3.1.11 | CONDID | Condition class number | NUMBER(1) |
| 3.1.12 | AZIMUTH | Azimuth | NUMBER(3) |
| 3.1.13 | DIST | Horizontal distance | NUMBER(4,1) |
| 3.1.14 | PREVCOND | Previous condition class number | NUMBER(1) |
| 3.1.15 | STATUSCD | Status code | NUMBER(1) |
| 3.1.16 | SPCD | Species code | NUMBER |
| 3.1.17 | SPGRPCD | Species group code | NUMBER(2) |
| 3.1.18 | DIA | Current diameter | NUMBER(5,2) |
| 3.1.19 | DIAHTCD | Diameter height code | NUMBER(1) |
| 3.1.20 | HT | Total height | NUMBER(3) |
| 3.1.21 | HTCD | Height method code | NUMBER(2) |
| 3.1.22 | ACTUALHT | Actual height | NUMBER(3) |
| 3.1.23 | TREECLCD | Tree class code | NUMBER(2) |
| 3.1.24 | CR | Compacted crown ratio | NUMBER(3) |
| 3.1.25 | CCLCD | Crown class code | NUMBER(2) |
| 3.1.26 | TREEGRCD | Tree grade code | NUMBER(2) |
| 3.1.27 | AGENTCD | Cause of death (agent) code | NUMBER(2) |
| 3.1.28 | CULL | Rotten and missing cull | NUMBER(3) |
| 3.1.29 | DAMLOC1 | Damage location 1 | NUMBER(2) |
| 3.1.30 | DAMTYP1 | Damage type 1 | NUMBER(2) |
| 3.1.31 | DAMSEV1 | Damage severity 1 | NUMBER(1) |
| 3.1.32 | DAMLOC2 | Damage location 2 | NUMBER(2) |
| 3.1.33 | DAMTYP2 | Damage type 2 | NUMBER(2) |
| 3.1.34 | DAMSEV2 | Damage severity 2 | NUMBER(1) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 3.1.35 | DECAYCD | Decay class code | NUMBER(2) |
| 3.1.36 | STOCKING | Tree stocking | NUMBER(7,4) |
| 3.1.37 | WDLDSTEM | Woodland tree species stem count | NUMBER(3) |
| 3.1.38 | VOLCFNET | Net cubic-foot stem wood volume | NUMBER(11,6) |
| 3.1.39 | VOLCFGRS | Gross cubic-foot stem wood volume | NUMBER(11,6) |
| 3.1.40 | VOLCSNET | Net cubic-foot wood volume in the sawlog portion of a sawtimber tree | NUMBER(11,6) |
| 3.1.41 | VOLCSGRS | Gross cubic-foot wood volume in the sawlog portion of a sawtimber tree | NUMBER(11,6) |
| 3.1.42 | VOLBFNET | Net board-foot wood volume in the sawlog portion of a sawtimber tree | NUMBER(11,6) |
| 3.1.43 | VOLBFGRS | Gross board-foot wood volume in the sawlog portion of a sawtimber tree | NUMBER(11,6) |
| 3.1.44 | VOLCFSND | Sound cubic-foot stem wood volume | NUMBER(11,6) |
| 3.1.45 | DIACHECK | Diameter check code | NUMBER(2) |
| 3.1.46 | MORTYR | Mortality year | NUMBER(4) |
| 3.1.47 | SALVCD | Salvable dead code | NUMBER(2) |
| 3.1.48 | UNCRCRD | Uncompacted live crown ratio | NUMBER(3) |
| 3.1.49 | CPOS_CD | Crown position code | NUMBER(2) |
| 3.1.50 | CLIGHTCD | Crown light exposure code | NUMBER(2) |
| 3.1.51 | CVIGORCD | Crown vigor code (sapling) | NUMBER(2) |
| 3.1.52 | CDENCD | Crown density code | NUMBER(3) |
| 3.1.53 | CDIEBKCD | Crown dieback code | NUMBER(3) |
| 3.1.54 | TRANSCD | Foliage transparency code | NUMBER(3) |
| 3.1.55 | TREEHISTCD | Tree history code | NUMBER(3) |
| 3.1.56 | BHAGE | Breast height age | NUMBER(4) |
| 3.1.57 | TOTAGE | Total age | NUMBER(4) |
| 3.1.58 | CULLDEAD | Dead cull | NUMBER(3) |
| 3.1.59 | CULLFORM | Form cull | NUMBER(3) |
| 3.1.60 | CULLMSTOP | Missing top cull | NUMBER(3) |
| 3.1.61 | CULLBF | Board-foot cull | NUMBER(3) |
| 3.1.62 | CULLCF | Cubic-foot cull | NUMBER(3) |
| 3.1.63 | BFSND | Board-foot-cull soundness | NUMBER(3) |
| 3.1.64 | CFSND | Cubic-foot-cull soundness | NUMBER(3) |
| 3.1.65 | SAWHT | Sawlog height | NUMBER(2) |
| 3.1.66 | BOLEHT | Bole height | NUMBER(3) |
| 3.1.67 | FORMCL | Form class | NUMBER(1) |
| 3.1.68 | HTCALC | Current height calculated | NUMBER(3) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 3.1.69 | HRDWD_CLUMP_CD | Hardwood clump code | NUMBER(1) |
| 3.1.70 | SITREE | Calculated site index | NUMBER(3) |
| 3.1.71 | CREATED_BY | Created by | VARCHAR2(30) |
| 3.1.72 | CREATED_DATE | Created date | DATE |
| 3.1.73 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 3.1.74 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 3.1.75 | MODIFIED_DATE | Modified date | DATE |
| 3.1.76 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 3.1.77 | MORTCD | Mortality code | NUMBER(1) |
| 3.1.78 | HTDMP | Height to diameter measurement point | NUMBER(3,1) |
| 3.1.79 | ROUGHCULL | Rough cull | NUMBER(2) |
| 3.1.80 | MIST_CL_CD | Mistletoe class code | NUMBER(1) |
| 3.1.81 | CULL_FLD | Rotten/missing cull, field recorded | NUMBER(2) |
| 3.1.82 | RECONCILECD | Reconcile code | NUMBER(1) |
| 3.1.83 | PREVDIA | Previous diameter | NUMBER(5,2) |
| 3.1.84 | P2A_GRM_FLG | Periodic to annual growth, removal, and mortality flag | VARCHAR2(1) |
| 3.1.85 | TREECLCD_NERS | Tree class code, Northeastern Research Station | NUMBER(2) |
| 3.1.86 | TREECLCD_SRS | Tree class code, Southern Research Station | NUMBER(2) |
| 3.1.87 | TREECLCD_NCNS | Tree class code, North Central Research Station | NUMBER(2) |
| 3.1.88 | TREECLCD_RMRS | Tree class code, Rocky Mountain Research Station | NUMBER(2) |
| 3.1.89 | STANDING_DEAD_CD | Standing dead code | NUMBER(2) |
| 3.1.90 | PREV_STATUS_CD | Previous tree status code | NUMBER(1) |
| 3.1.91 | PREV_WLDLSTEM | Previous woodland stem count | NUMBER(3) |
| 3.1.92 | TPA_UNADJ | Trees per acre unadjusted | NUMBER(11,6) |
| 3.1.93 | DRYBIO_BOLE | Dry biomass of wood in the merchantable bole | NUMBER(13,6) |
| 3.1.94 | DRYBIO_STUMP | Dry biomass of wood in the stump | NUMBER(13,6) |
| 3.1.95 | DRYBIO_BG | Belowground dry biomass | NUMBER(13,6) |
| 3.1.96 | CARBON_AG | Aboveground carbon of wood and bark | NUMBER(13,6) |
| 3.1.97 | CARBON_BG | Belowground carbon | NUMBER(13,6) |
| 3.1.98 | CYCLE | Inventory cycle number | NUMBER(2) |
| 3.1.99 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 3.1.100 | BORED_CD_PNWRS | Tree bored code, Pacific Northwest Research Station | NUMBER(1) |
| 3.1.101 | DAMLOC1_PNWRS | Damage location 1, Pacific Northwest Research Station | NUMBER(2) |
| 3.1.102 | DAMLOC2_PNWRS | Damage location 2, Pacific Northwest Research Station | NUMBER(2) |
| 3.1.103 | DIACHECK_PNWRS | Diameter check, Pacific Northwest Research Station | NUMBER(1) |
| 3.1.104 | DMG_AGENT1_CD_PNWRS | Damage agent 1, Pacific Northwest Research Station | NUMBER(2) |
| 3.1.105 | DMG_AGENT2_CD_PNWRS | Damage agent 2, Pacific Northwest Research Station | NUMBER(2) |
| 3.1.106 | DMG_AGENT3_CD_PNWRS | Damage agent 3, Pacific Northwest Research Station | NUMBER(2) |
| 3.1.107 | MIST_CL_CD_PNWRS | Leafy mistletoe class code, Pacific Northwest Research Station | NUMBER(1) |
| 3.1.108 | SEVERITY1_CD_PNWRS | Damage severity 1, Pacific Northwest Research Station | NUMBER(1) |
| 3.1.109 | SEVERITY1A_CD_PNWRS | Damage severity 1A, Pacific Northwest Research Station | NUMBER(2) |
| 3.1.110 | SEVERITY1B_CD_PNWRS | Damage severity 1B, Pacific Northwest Research Station | NUMBER(1) |
| 3.1.111 | SEVERITY2_CD_PNWRS | Damage severity 2, Pacific Northwest Research Station | NUMBER(1) |
| 3.1.112 | SEVERITY2A_CD_PNWRS | Damage severity 2A, Pacific Northwest Research Station | NUMBER(2) |
| 3.1.113 | SEVERITY2B_CD_PNWRS | Damage severity 2B, Pacific Northwest Research Station | NUMBER(1) |
| 3.1.114 | SEVERITY3_CD_PNWRS | Damage severity 3, Pacific Northwest Research Station | NUMBER(1) |
| 3.1.115 | UNKNOWN_DAMTYP1_PNWRS | Unknown damage type 1, Pacific Northwest Research Station | NUMBER(1) |
| 3.1.116 | UNKNOWN_DAMTYP2_PNWRS | Unknown damage type 2, Pacific Northwest Research Station | NUMBER(1) |
| 3.1.117 | PREV_PNTN_SRS | Previous periodic prism point, tree number, Southern Research Station | NUMBER(4) |
| 3.1.118 | DISEASE_SRS | Disease, Southern Research Station | NUMBER(1) |
| 3.1.119 | DIEBACK_SEVERITY_SRS | Dieback severity, Southern Research Station | NUMBER(2) |
| 3.1.120 | DAMAGE_AGENT_CD1 | Damage agent code 1 | NUMBER(5) |
| 3.1.121 | DAMAGE_AGENT_CD2 | Damage agent code 2 | NUMBER(5) |
| 3.1.122 | DAMAGE_AGENT_CD3 | Damage agent code 3 | NUMBER(5) |
| 3.1.123 | CENTROID_DIA | Centroid diameter (Pacific Islands) | NUMBER(4,1) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 3.1.124 | CENTROID_DIA_HT | Calculated centroid diameter height (Pacific Islands) | NUMBER(4,1) |
| 3.1.125 | CENTROID_DIA_HT_ACTUAL | Actual centroid diameter height (Pacific Islands) | NUMBER(4,1) |
| 3.1.126 | UPPER_DIA | Upper stem diameter (Pacific Islands) | NUMBER(4,1) |
| 3.1.127 | UPPER_DIA_HT | Upper stem diameter height (Pacific Islands) | NUMBER(4,1) |
| 3.1.128 | VOLCSSND | Sound cubic-foot wood volume in the sawlog portion of a sawtimber tree | NUMBER(11,6) |
| 3.1.129 | DRYBIO_SAWLOG | Dry biomass of wood in the sawlog portion of a sawtimber tree | NUMBER(13,6) |
| 3.1.130 | DAMAGE_AGENT_CD1_SRS | Damage agent code 1 (Caribbean Islands), Southern Research Station | NUMBER(5) |
| 3.1.131 | DAMAGE_AGENT_CD2_SRS | Damage agent code 2 (Caribbean Islands), Southern Research Station | NUMBER(5) |
| 3.1.132 | DAMAGE_AGENT_CD3_SRS | Damage agent code 3 (Caribbean Islands), Southern Research Station | NUMBER(5) |
| 3.1.133 | DRYBIO_AG | Aboveground dry biomass of wood and bark | NUMBER(13,6) |
| 3.1.134 | ACTUALHT_CALC | Actual height, calculated | NUMBER(3) |
| 3.1.135 | ACTUALHT_CALC_CD | Actual height, calculated, code | NUMBER(1) |
| 3.1.136 | CULL_BF_ROTTEN | Rotten/missing board-foot cull of the sawlog | NUMBER(12,9) |
| 3.1.137 | CULL_BF_ROTTEN_CD | Rotten/missing board-foot cull of the sawlog code | NUMBER(2) |
| 3.1.138 | CULL_BF_ROUGH | Rough board-foot cull of the sawlog | NUMBER(12,9) |
| 3.1.139 | CULL_BF_ROUGH_CD | Rough board-foot cull of the sawlog code | NUMBER(2) |
| 3.1.140 | PREVDIA_FLD | Previous diameter, field | NUMBER |
| 3.1.141 | TREECLCD_31_NCRS | Tree class code (version 3.1), North Central Research Station | NUMBER(1) |
| 3.1.142 | TREE_GRADE_NCRS | Tree grade, North Central Research Station | NUMBER(3) |
| 3.1.143 | BOUGHS_AVAILABLE_NCRS | Balsam fir boughs available, North Central Research Station | NUMBER(1) |
| 3.1.144 | BOUGHS_HRVST_NCRS | Balsam fir boughs harvested, North Central Research Station | NUMBER(1) |
| 3.1.145 | TREECLCD_31_NERS | Tree class code (version 3.1), Northeastern Research Station | NUMBER(1) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 3.1.146 | AGENTCD_NERS | General damage / cause of death (agent) code, Northeastern Research Station | NUMBER(2) |
| 3.1.147 | BFSNDCD_NERS | Board-foot soundness code, Northeastern Research Station | NUMBER(1) |
| 3.1.148 | AGECHKCD_RMRS | Radial growth and tree age check code, Rocky Mountain Research Station | NUMBER(1) |
| 3.1.149 | PREV_ACTUALHT_RMRS | Previous actual height, Rocky Mountain Research Station | NUMBER(3) |
| 3.1.150 | PREV_AGECHKCD_RMRS | Previous radial growth and tree age check code, Rocky Mountain Research Station | NUMBER(1) |
| 3.1.151 | PREV_BHAGE_RMRS | Previous breast height age, Rocky Mountain Research Station | NUMBER(4) |
| 3.1.152 | PREV_HT_RMRS | Previous total length, Rocky Mountain Research Station | NUMBER(3) |
| 3.1.153 | PREV_TOTAGE_RMRS | Previous total age, Rocky Mountain Research Station | NUMBER(4) |
| 3.1.154 | PREV_TREECLCD_RMRS | Previous tree class code, Rocky Mountain Research Station | NUMBER(2) |
| 3.1.155 | RADAGECD_RMRS | Radial growth / age code, Rocky Mountain Research Station | NUMBER(1) |
| 3.1.156 | RADGRW_RMRS | Radial growth, Rocky Mountain Research Station | NUMBER(2) |
| 3.1.157 | VOLBSGRS | Gross board-foot wood volume in the sawlog portion of a sawtimber tree (Scribner Rule) | NUMBER(11,6) |
| 3.1.158 | VOLBSNET | Net board-foot wood volume in the sawlog portion of a sawtimber tree (Scribner Rule) | NUMBER(11,6) |
| 3.1.159 | SAPLING_FUSIFORM_SRS | Sapling fusiform, Southern Research Station | NUMBER(1) |
| 3.1.160 | EPIPHYTE_PNWRS | Epiphyte loading (Pacific Islands), Pacific Northwest Research Station | NUMBER(1) |
| 3.1.161 | ROOT_HT_PNWRS | Rooting height (Pacific Islands), Pacific Northwest Research Station | NUMBER(2) |
| 3.1.162 | CAVITY_USE_PNWRS | Cavity presence, Pacific Northwest Research Station | VARCHAR2(1) |
| 3.1.163 | CORE_LENGTH_PNWRS | Length of measured core, Pacific Northwest Research Station | NUMBER(4,1) |
| 3.1.164 | CULTURALLY_KILLED_PNWRS | Culturally killed code, Pacific Northwest Research Station | NUMBER(1) |
| 3.1.165 | DIA_EST_PNWRS | Standing dead estimated diameter, Pacific Northwest Research Station | NUMBER(4,1) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|---------------------------------|--|------------------|
| 3.1.166 | GST_PNWRS | Growth sample tree, Pacific Northwest Research Station | VARCHAR2(1) |
| 3.1.167 | INC10YR_PNWRS | 10-year increment, Pacific Northwest Research Station | NUMBER(3) |
| 3.1.168 | INC5YRHT_PNWRS | 5-year height growth, Pacific Northwest Research Station | NUMBER(3,1) |
| 3.1.169 | INC5YR_PNWRS | 5-year increment, Pacific Northwest Research Station | NUMBER(3) |
| 3.1.170 | RING_COUNT_INNER_2INCHES_PN WRS | Number of rings in inner 2 inches, Pacific Northwest Research Station | NUMBER(3) |
| 3.1.171 | RING_COUNT_PNWRS | Number of rings, Pacific Northwest Research Station | NUMBER(3) |
| 3.1.172 | SNAG_DIS_CD_PNWRS | Snag reason for disappearance code, Pacific Northwest Research Station | NUMBER(1) |
| 3.1.173 | CONEPRESCD1 | Cone presence code 1 | NUMBER(1) |
| 3.1.174 | CONEPRESCD2 | Cone presence code 2 | NUMBER(1) |
| 3.1.175 | CONEPRESCD3 | Cone presence code 3 | NUMBER(1) |
| 3.1.176 | MASTCD | Mast code | NUMBER(1) |
| 3.1.177 | VOLTSGRS | Gross cubic-foot total-stem wood volume | NUMBER(13,6) |
| 3.1.178 | VOLTSGRS_BARK | Gross cubic-foot total-stem bark volume | NUMBER(13,6) |
| 3.1.179 | VOLTSSND | Sound cubic-foot total-stem wood volume | NUMBER(13,6) |
| 3.1.180 | VOLTSSND_BARK | Sound cubic-foot total-stem bark volume | NUMBER(13,6) |
| 3.1.181 | VOLCFGGRS_STUMP | Gross cubic-foot stump wood volume | NUMBER(13,6) |
| 3.1.182 | VOLCFGGRS_STUMP_BARK | Gross cubic-foot stump bark volume | NUMBER(13,6) |
| 3.1.183 | VOLCF SND_STUMP | Sound cubic-foot stump wood volume | NUMBER(13,6) |
| 3.1.184 | VOLCF SND_STUMP_BARK | Sound cubic-foot stump bark volume | NUMBER(13,6) |
| 3.1.185 | VOLCFGGRS_BARK | Gross cubic-foot stem bark volume | NUMBER(13,6) |
| 3.1.186 | VOLCFGGRS_TOP | Gross cubic-foot stem-top wood volume | NUMBER(13,6) |
| 3.1.187 | VOLCFGGRS_TOP_BARK | Gross cubic-foot stem-top bark volume | NUMBER(13,6) |
| 3.1.188 | VOLCF SND_BARK | Sound cubic-foot stem bark volume | NUMBER(13,6) |
| 3.1.189 | VOLCF SND_TOP | Sound cubic-foot stem-top wood volume | NUMBER(13,6) |
| 3.1.190 | VOLCF SND_TOP_BARK | Sound cubic-foot stem-top bark volume | NUMBER(13,6) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 3.1.191 | VOLCFNET_BARK | Net cubic-foot stem bark volume | NUMBER(13,6) |
| 3.1.192 | VOLCSGRS_BARK | Gross cubic-foot bark volume in the sawlog portion of a sawtimber tree | NUMBER(13,6) |
| 3.1.193 | VOLCSSND_BARK | Sound cubic-foot bark volume in the sawlog portion of a sawtimber tree | NUMBER(13,6) |
| 3.1.194 | VOLCSNET_BARK | Net cubic-foot bark volume in the sawlog portion of a sawtimber tree | NUMBER(13,6) |
| 3.1.195 | DRYBIO_STEM | Dry biomass of wood in the total stem | NUMBER(13,6) |
| 3.1.196 | DRYBIO_STEM_BARK | Dry biomass of bark in the total stem | NUMBER(13,6) |
| 3.1.197 | DRYBIO_STUMP_BARK | Dry biomass of bark in the stump | NUMBER(13,6) |
| 3.1.198 | DRYBIO_BOLE_BARK | Dry biomass of bark in the merchantable bole | NUMBER(13,6) |
| 3.1.199 | DRYBIO_BRANCH | Dry biomass of branches | NUMBER(13,6) |
| 3.1.200 | DRYBIO_FOLIAGE | Dry biomass of foliage | NUMBER(13,6) |
| 3.1.201 | DRYBIO_SAWLOG_BARK | Dry biomass of bark in the sawlog portion of a sawtimber tree | NUMBER(13,6) |
| 3.1.202 | PREV_ACTUALHT_FLD | Previous actual height | NUMBER(3) |
| 3.1.203 | PREV_HT_FLD | Previous total height | NUMBER(3) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--|----------------|----------------------|
| Primary | CN | N/A | TRE_PK |
| Unique | PLT_CN, SUBP, TREE | N/A | TRE_UK |
| Natural | STATECD, INVYR, UNITCD, COUNTYCD, PLOT, SUBP, TREE | N/A | TRE_NAT_I |
| Foreign | PLT_CN | TREE to PLOT | TRE_PLT_FK |

Prior to October 2006, there were two separate research stations in the North, the Northeastern Research Station (NERS) and the North Central Research Station (NCRS).

The NERS region included the following States: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Ohio, Rhode Island, Vermont, and West Virginia.

The NCRS region included the following States: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, and Wisconsin.

In October 2006, these two research stations were combined into one, the Northern Research Station (NRS). Following the database structure created prior to the merger, regional data collected by the NRS are currently split into NCRS and NERS columns determined by the State of data collection.

Since the merger starting at PLOT.MANUAL = 3.1, there has been only one regional field guide for all NRS States, the regional [NRS field guide](#). In the database, however, there are

attributes named MANUAL_NERS and MANUAL_NCRS. Only one of these attributes is populated; the other is blank (NULL), depending on the State of data collection.

3.1.1 CN

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

3.1.2 PLT_CN

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

3.1.3 PREV_TRE_CN

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

3.1.4 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

3.1.5 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

3.1.6 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 B](#) for codes.

3.1.7 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

3.1.8 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.

3.1.9 SUBP

Subplot number. The number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4. Other plot designs have various subplot number values. See PLOT.[DESIGNCD](#) and [appendix G](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

3.1.10 TREE

Tree number. A number used to uniquely identify a tree on a subplot. Tree numbers can be used to track trees when PLOT.[DESIGNCD](#) is the same between inventories.

3.1.11 CONDID

Condition class number. The unique identifying number assigned to a condition on which the tree is located, and is defined in the COND table. See COND.CONDID for details on the attributes which delineate a condition.

3.1.12 AZIMUTH

Azimuth. This attribute now available from the [FIA Spatial Data Services \(SDS\)](#) group by following the instructions provided at the following web address:
<https://www.fs.usda.gov/research/programs/fia/sds>.

3.1.13 DIST

Horizontal distance. This attribute now available from the [FIA Spatial Data Services \(SDS\)](#) group by following the instructions provided at the following web address:
<https://www.fs.usd.gov/research/programs/fia/sds>.

3.1.14 PREVCOND

Previous condition class number. This Identifies the condition within the plot on which the tree occurred at the previous inventory.

3.1.15 STATUSCD

Status code. A code indicating whether the sample tree is live, cut, or dead at the time of measurement. Includes dead and cut trees, which are required to estimate aboveground biomass and net annual volume for growth, mortality, and removals. This code is not used when querying data for change estimates.

Note: New and replacement plots use only codes 1 and 2.

Codes: STATUSCD

| Code | Description |
|------|---|
| 0 | No status - Tree is not presently in the sample (remeasurement plots only). Tree was incorrectly tallied at the previous inventory, currently not tallied due to definition or procedural change, or is not tallied because it is located on a nonsampled condition (e.g., hazardous or denied). RECONCILECD = 5-9 required for remeasured annual inventory data but not for periodic inventory data. |
| 1 | Live tree. |
| 2 | Dead tree. |
| 3 | Removed - Cut and removed by direct human activity related to harvesting, silviculture or land clearing. This tree is assumed to be utilized. |

3.1.16 SPCD

Species code. An FIA tree species code. Refer to [appendix F](#) for codes.

3.1.17 SPGRPCD

Species group code. A code assigned to each tree species to group them for reporting purposes. Codes and their associated names (see REF_SPECIES_GROUP.NAME) are shown in [appendix E](#). Refer to [appendix F](#) for individual tree species and corresponding species group codes.

3.1.18 DIA

Current diameter. The current diameter, in inches, of the sample tree at the point of diameter measurement. For timber species, diameter is measured at breast height (d.b.h.), which is usually measured at 4.5 feet above the ground line on the uphill side of the tree. For woodland species, which are often multi-stemmed, diameter is measured at the ground line or at the stem root collar (d.r.c.), whichever is higher. DIA for woodland species (DRC) is computed using the following formula:

$$\text{DRC} = \text{SQRT} [\text{SUM} (\text{stem diameter}^2)]$$

For additional information about where the tree diameter is measured, see [DIAHTCD](#) or [HTDMP](#). 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 FIA work units ([table 1-1](#)) for explanations of how DIA is collected for dead and cut trees.

3.1.19 DIAHTCD

Diameter height code. A code indicating the location at which diameter was measured. For trees with code 1 (d.b.h.), the actual measurement point may be found in [HTDMP](#).

Codes: DIAHTCD

| Code | Description |
|------|-------------------------|
| 1 | Breast height (d.b.h.). |
| 2 | Root collar (d.r.c.). |

3.1.20 HT

Total height. (*All live and standing dead tally trees ≥ 1.0 inch d.b.h./d.r.c.*) The total length (height) of a tree, in feet, from the ground to the tip of the apical meristem beginning in PLOT.[MANUAL](#) = 1.1. 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. The minimum height for timber species is 5 feet and for woodland species is 1 foot.

Starting with PLOT.[MANUAL](#) = 7.0, the core minimum diameter to qualify for a standing dead tree was changed from 5.0 inches to 1.0 inch. For multi-stemmed woodland species, this attribute is based on the length of the longest stem present.

Note: Prior to PLOT.[MANUAL](#) = 7.0, this attribute was tallied as follows:

- *Core Phase 2:* ≥ 5.0 -inch d.b.h./d.r.c. live trees.
- *Core optional Phase 2:* 1.0-4.9-inch d.b.h./d.r.c. live trees and ≥ 5.0 -inch d.b.h./d.r.c. standing dead trees.
- *Core Phase 3:* ≥ 1.0 -inch d.b.h./d.r.c. live trees.
- *Core optional Phase 3:* ≥ 5.0 -inch d.b.h./d.r.c. standing dead trees.

3.1.21 HTCD

Height method code. (*All live and standing dead tally trees ≥ 1.0 inch d.b.h./d.r.c.*) A code indicating how length (height) was determined beginning in PLOT.[MANUAL](#) = 1.1. Starting

with PLOT.[MANUAL](#) = 7.0, the *core* minimum diameter to qualify for a standing dead tree was changed from 5.0 inches to 1.0 inch.

Note: Prior to PLOT.[MANUAL](#) = 7.0, this attribute was tallied as follows:

- *Core* Phase 2: ≥ 5.0 -inch d.b.h./d.r.c. live trees.
- *Core optional* Phase 2: 1.0-4.9-inch d.b.h./d.r.c. live trees and ≥ 5.0 -inch d.b.h./d.r.c. standing dead trees.
- *Core* Phase 3: ≥ 1.0 -inch d.b.h./d.r.c. live trees.
- *Core optional* Phase 3: ≥ 5.0 -inch d.b.h./d.r.c. standing dead trees.

Codes: HTCD

| 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. |
| 4 | Estimated with a model. |

3.1.22 ACTUALHT

Actual height. (*All live and standing dead tally trees ≥ 1.0 inch d.b.h./d.r.c.*) The length (height) 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. If ACTUALHT = HT, then the tree does not have a broken top. If ACTUALHT < HT, then the tree does have a broken or missing top. The minimum height for timber species is 5 feet and for woodland species is 1 foot. Starting with PLOT.[MANUAL](#) = 7.0, the *core* minimum diameter to qualify for a standing dead tree was changed from 5.0 inches to 1.0 inch.

Note: Prior to PLOT.[MANUAL](#) = 7.0, this attribute was tallied as follows:

- *Core* Phase 2: live and standing dead trees with broken tops, ≥ 5.0 inches d.b.h./d.r.c.
- *Core optional* Phase 2: live trees 1.0-4.9 inches d.b.h./d.r.c. with broken or missing tops.
- *Core* Phase 3: live trees ≥ 1.0 inch d.b.h./d.r.c. (with broken or missing tops) and standing dead trees ≥ 5.0 inches d.b.h./d.r.c. (with broken or missing tops).

3.1.23 TREECLCD

Tree class code. A code indicating the general quality of the tree. In annual inventory, this is the tree class for both live and dead trees at the time of current measurement. In periodic inventory, for cut and dead trees, this is the tree class of the tree at the time it died or was cut. Therefore, cut and dead trees collected in periodic inventory can be coded as growing-stock trees.

Codes: TREECLCD

| Code | Description |
|-------------|---|
| 2 | Growing stock - All live trees of commercial species that meet minimum merchantability standards. In general, these trees have at least one solid 8-foot section, are reasonably free of form defect on the merchantable bole, and at least 34 percent or more of the volume is merchantable. For the California, Oregon, Washington, and Alaska inventories, a 26 percent or more merchantable volume standard is applied, rather than 34 percent or more. Excludes rough or rotten cull trees. |
| 3 | Rough cull - All live 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. For the California, Oregon, Washington, and Alaska 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 (woodland softwoods), 43 (eastern noncommercial hardwoods), or 48 (woodland hardwoods). Refer to appendix F to find the species that have these SPGRPCD codes. For dead trees, this code indicates that the tree is salvable (sound). |
| 4 | Rotten cull - All live 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. California, Oregon, Washington, and Alaska inventories use a 75 percent cutoff. For dead trees, this code indicates that the tree is nonsalvable (not sound). |

3.1.24 CR

Compacted crown ratio. The percent of the tree bole supporting live, healthy foliage (the crown is ocularly compacted to fill in gaps) when compared to actual length (ACTUALHT). When PLOT.MANUAL <1.0 the variable may have been a code, which was converted to the midpoint of the ranges represented by the codes, and is stored as a percentage. May not be populated for periodic inventories.

3.1.25 CCLCD

Crown class code. A code indicating the amount of sunlight received and the crown position within the canopy.

Codes: CCLCD

| 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 canopy 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. |

3.1.26 TREEGRCD

Tree grade code. A code indicating the quality of sawtimber trees. This attribute is populated for live, growing-stock, sawtimber trees on subplots 1-4 where PLOT.MANUAL ≥ 1.0 for plots that are in a forest condition class. This attribute may be populated for other tree records that do not meet the above criteria. For example, it may be populated with the previous tree grade on dead and cut trees. Standards for tree grading are specific to species and differ slightly by research station. Only populated by certain FIA work units (SURVEY.RSCD = 23, 24, 33). Tree grade codes along with explanations of the codes and when they are used can be found in the [Northern regional field guide](#) (SURVEY.RSCD = 23, 24) and [Southern regional field guide](#) (SURVEY.RSCD = 33).

3.1.27 AGENTCD

Cause of death (agent) code. (*core: all remeasured plots when the tree was alive at the previous visit and at revisit is dead or removed OR the tree is standing dead in the current inventory and the tree is ingrowth, through growth, or a missed live tree; core optional: all initial plot visits when tree qualifies as a mortality tree*) When PLOT.MANUAL ≥ 1.0 , this attribute was collected on only dead and cut trees. When PLOT.MANUAL < 1.0 , this attribute 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. 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 work unit responsible for that State ([table 1-1](#)).

Codes: AGENTCD

| 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., suppression, competition, vines/kudzu). |
| 70 | Unknown / not sure / other - includes death from human activity not related to silvicultural or landclearing activity (accidental, random, etc.). |
| 80 | Silvicultural or landclearing activity (death caused by harvesting or other silvicultural activity, including girdling, chaining, etc., or other landclearing activity). |

3.1.28 CULL

Rotten and missing cull. The percent of the cubic-foot volume in a live or dead tally tree that is rotten or missing. This is a calculated value that is derived from the field-recorded cull estimate (see [CULL_FLD](#)) or a modeled cull estimate.

3.1.29 DAMLOC1

Damage location 1. (*core where PLOT.MANUAL = 1.0 through 1.6; core optional beginning with PLOT.MANUAL = 1.7*) A code indicating where damage (meeting or exceeding a severity threshold, as defined in the field guide) is present on the tree.

Codes: DAMLOC1

| 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. |

3.1.30 DAMTYP1

Damage type 1. (*core where PLOT.MANUAL = 1.0 through 1.6; core optional beginning with PLOT.MANUAL = 1.7*) A code indicating the kind of damage (meeting or exceeding a severity threshold, as defined in the field guide) present. If DAMLOC1 = 0, then DAMTYP1 = blank (null).

Codes: DAMTYP1

| 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. |

3.1.31 DAMSEV1

Damage severity 1. (*core where PLOT.MANUAL = 1.0 through 1.6; core optional beginning with PLOT.MANUAL = 1.7*) A code indicating how much of the tree is affected. Valid severity codes vary by damage type and damage location and must exceed a threshold value, as defined in the field guide. If DAMLOC1 = 0, then DAMSEV1 = blank (null).

Codes: DAMSEV1

| 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. |

3.1.32 DAMLOC2

Damage location 2. (*core where PLOT.MANUAL = 1.0 through 1.6; core optional beginning with PLOT.MANUAL = 1.7*) A code indicating where secondary damage (meeting or exceeding a severity threshold, as defined in the field guide) is present. Uses same codes as DAMLOC1. If DAMLOC1 = 0, then DAMLOC2 = blank (null) or 0.

3.1.33 DAMTYP2

Damage type 2. (*core where PLOT.MANUAL = 1.0 through 1.6; core optional beginning with PLOT.MANUAL = 1.7*) A code indicating the kind of secondary damage (meeting or exceeding a severity threshold, as defined in the field guide) present. Uses same codes as DAMTYP1. If DAMLOC1 = 0, then DAMTYP2 = blank (null).

3.1.34 DAMSEV2

Damage severity 2. (*core where PLOT.MANUAL = 1.0 through 1.6; core optional beginning with PLOT.MANUAL = 1.7*) A code indicating how much of the tree is affected by the secondary damage. Valid severity codes vary by damage type and damage location and must exceed a threshold value, as defined in the field guide. Uses same codes as DAMSEV1. If DAMLOC1 = 0, then DAMSEV2 = blank (null).

3.1.35 DECAYCD

Decay class code. A code indicating the stage of decay in a standing dead tree ([STANDING_DEAD_CD = 1](#)). Not populated for standing dead saplings (1.0-4.9 inches d.b.h./d.r.c.) when PLOT.MANUAL <7.0.

Codes: DECAYCD

| 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; <20 percent of the bark remains; sapwood is gone; heartwood is sloughing throughout. |

3.1.36 STOCKING

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

3.1.37 WDLDSTEM

Woodland tree species stem count. The number of live and dead stems used to calculate diameter on a woodland tree. Woodland species are identified by REF_SPECIES.WOODLAND = 'Y' in the REF_SPECIES table. SFTWD_HRDWD These tree species have diameter 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.

3.1.38 VOLCFNET

Net cubic-foot stem wood volume. The net cubic-foot volume of wood in the central stem of timber species (trees where diameter is measured at breast height [d.b.h.] \geq 5.0 inches d.b.h., from a 1-foot stump to a minimum 4-inch top diameter, or to where the central stem breaks into limbs all of which are <4.0 inches in diameter. Calculated for live and standing dead trees. Does not include rotten, missing, and form cull (volume loss due to rotten, missing, and form cull defect has been deducted). This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for timber species with DIA <5.0 inches and for woodland species. Refer to appendix K for more information on FIA volume, biomass, and carbon estimation.

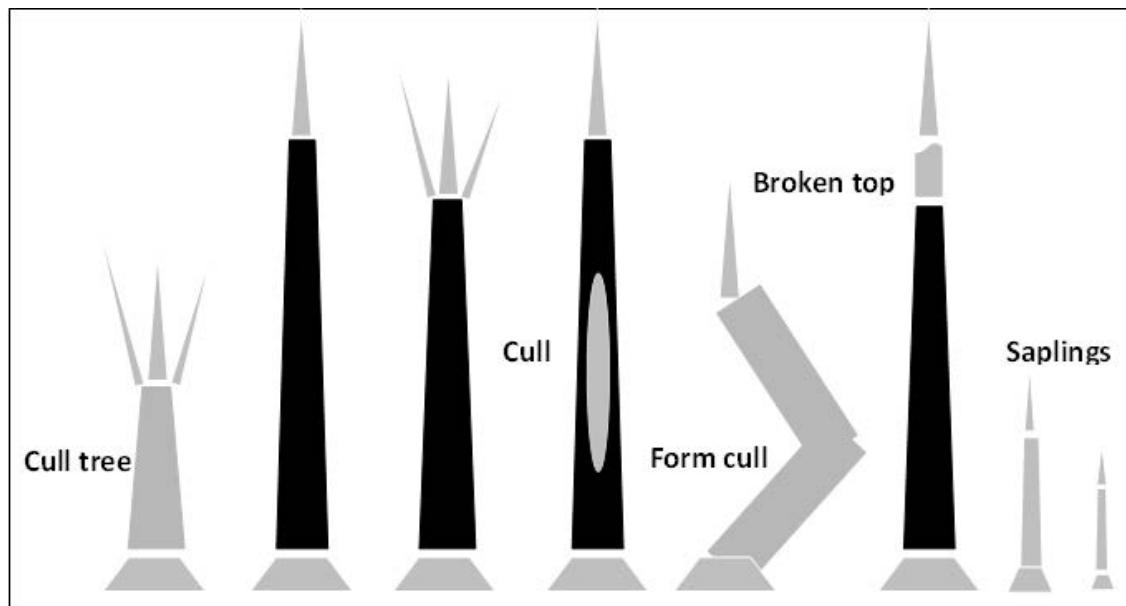


Figure 3-1: Illustration of timber species net cubic-foot stem wood volume (VOLCFNET) in black. Gray trees and gray parts are excluded. See VOLCFNET for a full description of this attribute.

3.1.39 VOLCFGRS

Gross cubic-foot stem wood volume. The total cubic-foot volume of wood in the central stem of timber species (trees where diameter is measured at breast height [d.b.h.]) ≥ 5.0 inches d.b.h., from a 1-foot stump to a minimum 4-inch top diameter, or to where the central stem breaks into limbs all of which are < 4.0 inches in diameter. Calculated for live and standing dead trees. Includes rotten, missing, and form cull (volume loss due to rotten, missing, and form cull defect has not been deducted). This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for timber species with DIA < 5.0 inches and for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

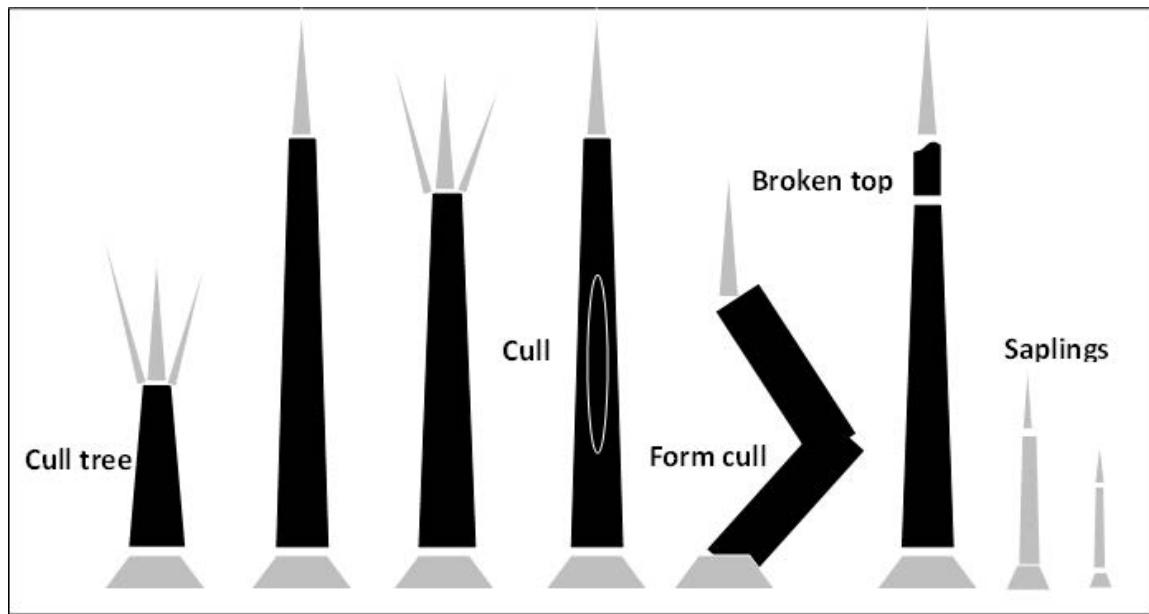


Figure 3-2: Illustration of timber species gross cubic-foot wood volume (VOLCFGRS) in black. Gray trees and gray parts are excluded. See VOLCFGRS for a full description of this attribute.

3.1.40 VOLCSNET

Net cubic-foot wood volume in the sawlog portion of a sawtimber tree. The net cubic-foot volume of wood in the central stem of a timber species tree of sawtimber size (9.0 inches d.b.h. minimum for softwoods, 11.0 inches d.b.h. minimum for hardwoods), from a 1-foot stump to a minimum top diameter, (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 diameter. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for softwood trees with DIA <9.0 inches (<11.0 inches for hardwoods). All sawtimber-size 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) are blank (null) in this field. Form cull and rotten/missing cull are excluded. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.41 VOLCSGRS

Gross cubic-foot wood volume in the sawlog portion of a sawtimber tree. The total cubic-foot volume of wood in the central stem of a timber species tree of sawtimber size (9.0 inches d.b.h. minimum for softwoods, 11.0 inches d.b.h. minimum for hardwoods), from a 1-foot stump to a minimum top diameter (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 diameter. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for softwood trees with DIA <9.0 inches (<11.0 inches for hardwoods). All sawtimber-size 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) are blank (null)

in this field. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.42 VOLBFNET

Net board-foot wood volume in the sawlog portion of a sawtimber tree. The net board-foot (International 1/4-inch Rule) volume of wood in the central stem of a timber species tree of sawtimber size (9.0 inches d.b.h. minimum for softwoods, 11.0 inches d.b.h. minimum for hardwoods), from a 1-foot stump to a minimum top diameter (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 diameter. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per unit area information. This attribute is blank (null) for softwood trees with DIA <9.0 inches (<11.0 inches for hardwoods). All sawtimber-size 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) are blank (null) in this field. Form cull and rotten/missing cull are excluded.

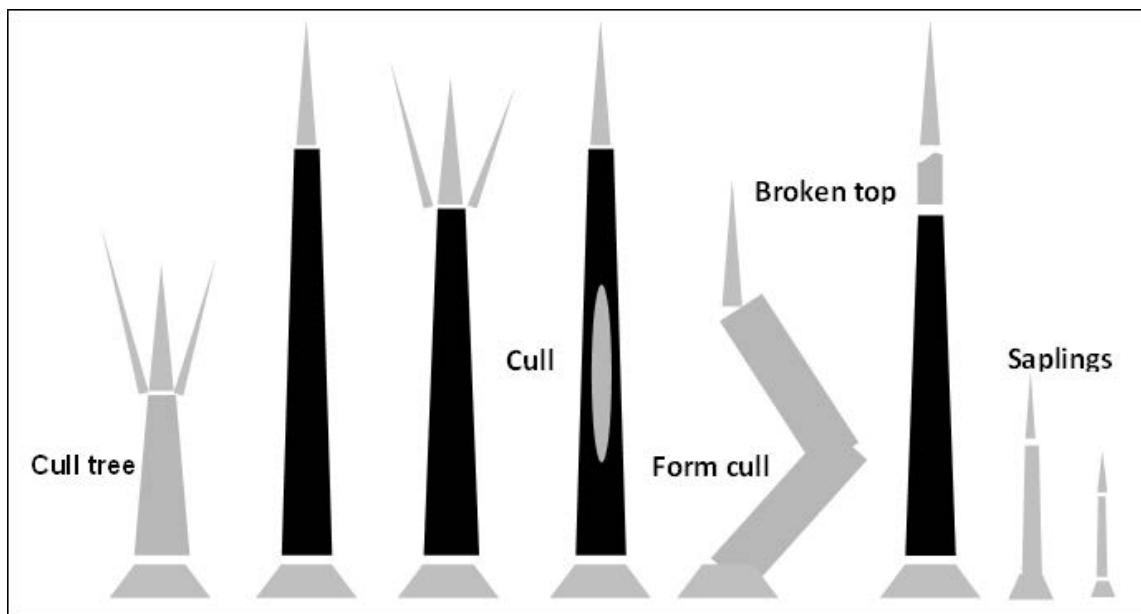


Figure 3-3: Illustration of timber species net board-foot wood volume in the sawlog portion of a sawtimber tree (VOLBFNET) in black. Gray trees and gray parts are excluded. See VOLBFNET for a full description of this attribute.

3.1.43 VOLBFGRS

Gross board-foot wood volume in the sawlog portion of a sawtimber tree. The total board-foot (International 1/4-inch Rule) volume of wood in the central stem of a timber species tree of sawtimber size (9.0 inches d.b.h. minimum for softwoods, 11.0 inches d.b.h. minimum for hardwoods), from a 1-foot stump to a minimum top diameter (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 diameter. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per unit area information. This attribute is blank (null) for softwood trees with DIA <9.0 inches (<11.0 inches for hardwoods). All sawtimber-size 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) are blank (null) in this field.

3.1.44 VOLCFSND

Sound cubic-foot stem wood volume. The sound cubic-foot volume of wood in the central stem of timber species (trees where diameter is measured at breast height [d.b.h.]) ≥ 5.0 inches d.b.h., from a 1-foot stump to a minimum 4-inch top diameter, or to where the central stem breaks into limbs all of which are < 4.0 inches in diameter. Calculated for live and standing dead trees. Does not include rotten and missing cull (volume loss due to rotten and missing cull defect has been deducted). This is a per tree value and must be multiplied by **TPA_UNADJ** to obtain per acre information. This attribute is blank (null) for timber species with DIA < 5.0 inches and for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.45 DIACHECK

Diameter check code. A code indicating the reliability of the diameter measurement.

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

Codes: DIACHECK

| 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). |

3.1.46 MORTYR

Mortality year. (*core optional*) The estimated year in which a remeasured tree died or was cut. Populated where **PLOT.MANUAL** ≥ 1.0 and populated by some FIA work units where **PLOT.MANUAL** < 1.0 .

3.1.47 SALVCD

Salvable dead code. A code indicating whether or not a standing or down dead tree is salvable based on regional standards. Contact the appropriate FIA work unit for information on how this code is assigned for a particular State ([table 1-1](#)).

Codes: SALVCD

| Code | Description |
|------|--------------------|
| 0 | Dead not salvable. |
| 1 | Dead salvable. |

3.1.48 UNCRCD

Uncompacted live crown ratio. (*core optional Phase 2: ≥ 5.0 -inch live trees; core Phase 3: ≥ 1.0 -inch live trees*) Percentage determined by dividing the live crown length by the actual tree length. When **PLOT.MANUAL** < 3.0 the variable was a code, which was converted to the midpoint of the ranges represented by the codes, and is stored as a percentage.

3.1.49 CPOSCD

Crown position code. (*core on Phase 3 plots only*) The relative position of each tree in relation to the overstory canopy.

Codes: CPOSCD

| Code | Description |
|------|--------------|
| 1 | Superstory. |
| 2 | Overstory. |
| 3 | Understory. |
| 4 | Open canopy. |

3.1.50 CLIGHTCD

Crown light exposure code. (*core optional on Phase 2 plots; core on Phase 3 plots only*) A code indicating the amount of light being received by the tree crown. Collected for all live trees at least 5 inches d.b.h./d.r.c. Trees with UNCRCD <35 have a maximum CLIGHTCD of 1.

Codes: CLIGHTCD

| Code | Description |
|------|--|
| 0 | The tree receives no direct sunlight because it is shaded by adjacent trees or other 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. |

3.1.51 CVIGORCD

Crown vigor code (sapling). (*core optional on Phase 2 plots; core on Phase 3 plots only*) A code indicating the vigor of sapling crowns. Collected for live trees 1.0-4.9 inches d.b.h./d.r.c.

Codes: CVIGORCD

| Code | Description |
|------|---|
| 1 | Saplings must have an uncompacted live crown ratio of 35 or higher, have <5 percent dieback (deer/rabbit browse is not considered as dieback but is considered missing foliage) and 80 percent or more of the foliage present is normal or at least 50 percent of each leaf is not damaged or missing. Twigs and branches that are dead because of normal shading are not included. |

| Code | Description |
|------|---|
| 2 | Saplings do not meet class 1 or 3 criteria. They may have any uncompacted 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 uncompacted live crown ratio and have 1 to 20 percent normal foliage or the percent of foliage missing combined with the percent of leaves that are over 50 percent damaged or missing should equal 80 percent or more of the live crown. Twigs and branches that are dead because of normal shading are not included. Code is also used for saplings that have no crown by definition. |

3.1.52 CDENCD

Crown density code. (*core optional on Phase 2 plots; core on Phase 3 plots only*) A code indicating how dense the tree crown is, estimated in percent classes. Collected for all live trees ≥5.0 inches d.b.h./d.r.c. Crown density is the amount of crown branches, foliage, and reproductive structures that blocks light visibility through the crown.

Codes: CDENCD

| Code | Description |
|------|-------------|
| 00 | 0% |
| 05 | 1-5% |
| 10 | 6-10% |
| 15 | 11-15% |
| 20 | 16-20% |
| 25 | 21-25% |
| 30 | 26-30% |
| 35 | 31-35% |
| 40 | 36-40% |
| 45 | 41-45% |
| 50 | 46-50% |
| 55 | 51-55% |
| 60 | 56-60% |
| 65 | 61-65% |
| 70 | 66-70% |
| 75 | 71-75% |
| 80 | 76-80% |
| 85 | 81-85% |
| 90 | 86-90% |
| 95 | 91-95% |
| 99 | 96-100% |

3.1.53 CDIEBKCD

Crown dieback code. (*core optional on Phase 2 plots; core on Phase 3 plots only*) A code indicating the amount of recent dead material in the upper and outer portion of the

crown, estimated in percent classes. Collected for all live trees ≥ 5.0 inches d.b.h./d.r.c. See [CDENCD](#) for codes.

3.1.54 TRANSCD

Foliage transparency code. (*core optional on Phase 2 plots; core on Phase 3 plots only*) A code indicating the amount of light penetrating the foliated portion of the crown, estimated in percent classes. Collected for all live trees ≥ 5.0 inches d.b.h./d.r.c. See [CDENCD](#) for codes.

3.1.55 TREEHISTCD

Tree history code. Identifies the tree with detailed information as to whether the tree is live, dead, cut, removed due to land use change, etc. Contact the appropriate FIA work unit for the definitions ([table 1-1](#)). Only populated by certain FIA work units (SURVEY.RSCD = 23, 24, 33).

3.1.56 BHAGE

Breast height age. The age of a live tree derived from counting tree rings from an increment core sample extracted at a height of 4.5 feet above ground. Breast height age is collected for a subset of trees and only for trees when the diameter is measured at breast height (d.b.h.). This data item is used to calculate classification attributes such as stand age. For PNWRS, one tree is sampled for BHAGE for each species, within each crown class, and for each condition class present on a plot. Age of saplings (<5.0 inches d.b.h.) may be aged by counting branch whorls above 4.5 feet. No timber hardwood species other than red alder are bored for age. For RMRS, one tree is sampled for each species and broad diameter class present on a plot. Only populated by certain FIA work units (SURVEY.RSCD = 22, 26) and is left blank (null) when it is not collected.

3.1.57 TOTAGE

Total age. The age of a live tree derived either from counting tree rings from an increment core sample extracted at the base of a tree where diameter is measured at root collar (d.r.c.), or for small saplings (1.0-2.9 inches d.b.h.) by counting all branch whorls, or by adding a species-dependent number of years to breast height age. Total age is collected for a subset of trees and is used to calculate classification attributes such as stand age. Only populated by certain FIA work units (SURVEY.RSCD = 22, 26) and is left blank (null) when it is not collected.

3.1.58 CULLDEAD

Dead cull. The percentage of cubic-foot volume in the merchantable bole that is cull due to sound dead material. Recorded for trees ≥ 5.0 inches d.b.h./d.r.c. The merchantable bole is from a 1-foot stump to a 4-inch top diameter outside bark (DOB). For woodland species (REF_SPECIES.WOODLAND = 'Y'), the merchantable portion is between the point of d.r.c. measurement to a 1.5-inch top DOB. For trees with broken tops, cull above the actual height (ACTUALHT) is not included. Only populated by certain FIA work units (SURVEY.RSCD = 22).

3.1.59 CULLFORM

Form cull. The percentage of cubic-foot volume in the sawlog portion that is cull due to form defect. Recorded for live timber species of sawtimber size (9.0 inches d.b.h. minimum for softwoods, 11.0 inches d.b.h. minimum for hardwoods). The sawlog portion is from a 1-foot stump to a 7.0-inch top diameter outside bark (DOB) for softwoods and a

9.0-inch top DOB for hardwoods. For trees with broken tops, cull above the actual height (ACTUALHT) is not included. This attribute is blank (null) for dead trees and woodland species (REF_SPECIES.WOODLAND = 'Y'). Only populated by certain FIA work units (SURVEY.RSCD = 22).

3.1.60 CULLMSTOP

Missing top cull. The percentage of cubic-foot volume that is cull due to a missing (broken) merchantable top. Recorded for trees ≥ 5.0 inches d.b.h./d.r.c. This estimate does not include any portion of the missing top that is < 4.0 inches diameter outside bark (DOB). Some broken-top trees have 0 percent missing top cull because no merchantable volume was lost. For woodland species (REF_SPECIES.WOODLAND = 'Y') with multiple stems, CULLMSTOP = 0 is recorded. Only populated by certain FIA work units (SURVEY.RSCD = 22).

3.1.61 CULLBF

Board-foot cull. The percent of the gross board-foot volume that is cull due to rot or form. Only populated by certain FIA work units (SURVEY.RSCD = 24).

3.1.62 CULLCF

Cubic-foot cull. The percent of the gross cubic-foot volume that is cull due to rot or form. Only populated by certain FIA work units (SURVEY.RSCD = 24).

3.1.63 BFSND

Board-foot-cull soundness. The percent of the board-foot cull that is sound (due to form). Only populated by certain FIA work units (SURVEY.RSCD = 24).

3.1.64 CFSND

Cubic-foot-cull soundness. The percent of the cubic-foot cull that is sound (due to form). Only populated by certain FIA work units (SURVEY.RSCD = 24).

3.1.65 SAWHT

Sawlog height. The length (height) of a tree, recorded to a 7-inch top (9-inch for hardwoods), where at least one 8-foot log, merchantable or not, is present. On broken topped trees, sawlog length is recorded to the point of the break. Only populated by certain FIA work units (SURVEY.RSCD = 24).

3.1.66 BOLEHT

Bole height. The length between the 1-foot stump and the 4.0-inch top diameter of outside bark (DOB), where at least one 4-foot section is present. In periodic inventories, this attribute was measured in the field. For annual inventories, this attribute is a calculated, modeled value. Only populated by certain FIA work units (SURVEY.RSCD = 24).

3.1.67 FORMCL

Form class. A code used in calculating merchantable bole net volume. Recorded for all live hardwood trees tallied that are ≥ 5.0 inch d.b.h./d.r.c. Also recorded for conifers ≥ 5.0 inch d.b.h. in Region 5 National Forests (only collected when INVYR = 2001-2009). Only populated by certain FIA work units (SURVEY.RSCD = 26).

Codes: FORMCL

| Code | Description |
|-------------|--|
| 1 | First 8 feet above stump is straight. |
| 2 | First 8 feet above stump is NOT straight or forked; but there is at least one straight 8-foot log elsewhere in the tree. |
| 3 | No 8-foot logs anywhere in the tree now or in the future due to form. |

3.1.68 HTCALC

Current height calculated. If the height is unmeasurable (e.g., the tree is cut or dead), the height is calculated, in feet, and stored in this attribute. Only populated by certain FIA work units (SURVEY.RSCD = 33).

3.1.69 HRDWD_CLUMP_CD

Hardwood clump code. A code sequentially assigned to each hardwood clump within each species as they are found on a subplot. Up to 9 hardwood clumps can be identified and coded within each species on each subplot. A clump is defined as having 3 or more live stems originating from a common point on the root system. Woodland hardwood species are not evaluated for clump code. Clump code data are used to adjust stocking estimates since trees growing in clumps contribute less to stocking than do individual trees. Only populated by certain FIA work units (SURVEY.RSCD = 26).

3.1.70 SITREE

Calculated site index. Computed for every tree. The site index represents the average total length, in feet, 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). Only computed by certain FIA work units (SURVEY.RSCD = 23).

3.1.71 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

3.1.72 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

3.1.73 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

3.1.74 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

3.1.75 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

3.1.76 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

3.1.77 MORTCD

Mortality code. (*core optional*) Used for a tree that was alive within past 5 years, but has died. Not populated for standing dead trees <5.0 inches d.b.h./d.r.c. when PLOT.[MANUAL](#) <7.0.

Codes: MORTCD

| Code | Description |
|------|-------------------------------------|
| 0 | Tree does not qualify as mortality. |
| 1 | Tree does qualify as mortality. |

3.1.78 HTDMP

Height to diameter measurement point. This value is equal to the actual length, to the nearest 0.1 foot, from ground to the point of diameter measurement. This attribute is populated for trees ≥ 1.0 inch d.b.h., which were not measured for diameter directly at breast height (due to an abnormal swelling, branches, damage, or other at 4.5 feet above ground). This item is blank (null) for trees ≥ 1.0 inch d.b.h., where diameter was measured directly at breast height (4.5 feet above ground) and for woodland species where diameter was measured at root collar. *Core optional* when PLOT.[MANUAL](#) <8.0; *core* when PLOT.[MANUAL](#) ≥ 8.0 .

3.1.79 ROUGHCULL

Rough cull. (*core optional*) The percentage of cubic-foot volume in the merchantable bole that is cull due to sound dead material or tree form. Recorded for live trees ≥ 5.0 inches d.b.h./d.r.c. The merchantable bole is from a 1-foot stump to a 4-inch top diameter outside bark (DOB). For woodland species (REF_SPECIES.WOODLAND = 'Y'), the merchantable portion is between the point of d.r.c. measurement to a 1.5-inch top DOB, and ROUGHCULL only includes sound dead material.

Note:

- For PLOT.MANUAL <2.0, ROUGHCULL only included sound dead material (i.e., it did not include cull due to tree form).
- When SURVEY.RSCD = 26,27, only populated for live conifers, red alder, and bigleaf maple.

3.1.80 MIST_CL_CD

Mistletoe class code. (*core optional*) A rating of dwarf mistletoe infection. Recorded on all live conifer species except juniper. Using the Hawksworth (1979) six-class rating system, the live crown is divided into thirds, and each third is rated using the following scale: 0 is for no visible infection, 1 for <50 percent of branches infected, 2 for >50 percent of branches infected. The ratings for each third are summed together to yield the Hawksworth rating.

Codes: MIST_CL_CD

| Code | Description |
|------|---|
| 0 | Hawksworth tree DMR rating of 0, no infection. |
| 1 | Hawksworth tree DMR rating of 1, light infection. |
| 2 | Hawksworth tree DMR rating of 2, light infection. |

| Code | Description |
|------|--|
| 3 | Hawksworth tree DMR rating of 3, medium infection. |
| 4 | Hawksworth tree DMR rating of 4, medium infection. |
| 5 | Hawksworth tree DMR rating of 5, heavy infection. |
| 6 | Hawksworth tree DMR rating of 6, heavy infection. |

3.1.81 CULL_FLD

Rotten/missing cull, field recorded. (*core: ≥5.0-inch live trees; core optional: ≥5.0-inch standing dead trees*) The percentage rotten or missing cubic-foot cull volume, estimated to the nearest 1 percent. This estimate does not include any cull estimate above actual length; therefore volume lost from a broken top is not included (see [CULL](#) for percent cull including cull from broken top). When field crews estimate volume loss (tree cull), they only consider the cull on the merchantable bole of the tree, from a 1-foot stump to a 4-inch top diameter outside bark (DOB). For woodland species, the merchantable portion is between the point of d.r.c. measurement to a 1.5-inch top DOB.

3.1.82 RECONCILECD

Reconcile code. A code indicating the reason a tree either enters or is no longer a part of the inventory. Only recorded for remeasurement locations.

Notes:

- Starting with PLOT.[MANUAL](#) = 9.0, codes 1-2 are only valid for new trees (STATUSCD = 1, 2) on the plot and exclude trees associated with a change in procedures/definitions or previous cruiser error, as such trees are accounted for with RECONCILECD = 7 or 8. Codes 6-9 are valid for both new tally trees and remeasured trees that no longer qualify as tally.
- When PLOT.[MANUAL](#) = 7.0 through 8.0, standing dead saplings that were not included in the previous inventory were assigned RECONCILECD = 4.

Codes: RECONCILECD

| Code | Description |
|------|--|
| 1 | Ingrowth - Either (a) a new tally tree not qualifying as through growth, or (b) a new tree on land that was formerly nonforest and now qualifies as forest land unrelated to cruiser error or procedural/definition change. |
| 2 | Through growth - New tally tree 5 inches d.b.h./d.r.c. and larger, within the microplot, which was not missed at the previous inventory (i.e., grew from seedling to at least 5.0 inches d.b.h. between plot inventory cycles - such trees were never tallied on a microplot). |
| 3 | Retired code - Starting with PLOT. MANUAL = 9.0, this code is no longer used; it is still valid for PLOT. MANUAL <9.0. <i>Missed live - a live tree missed at previous inventory and that is live or dead now. Includes currently tallied trees on previously nonsampled conditions.</i> |
| 4 | Retired code - Starting with PLOT. MANUAL = 9.0, this code is no longer used; it is still valid for PLOT. MANUAL <9.0. <i>Missed dead - a dead tree missed at previous inventory and that is dead now. Includes currently tallied trees on previously nonsampled conditions.</i> |
| 5 | Shrank - Live tree that shrunk below threshold diameter on microplot/subplot/macroplot. Must currently be alive. Only valid for remeasured trees that no longer qualify as tally (STATUSCD = 0). |

| Code | Description |
|------|---|
| 6 | Physical movement - Either (a) tree was correctly tallied in previous inventory, but has now moved beyond the radius of the plot due to natural causes (e.g., small earth movement, hurricane), or (b) tree was outside the radius of the plot previously, but has now moved within the plot due to natural causes. Tree must be either live before and still alive now or dead before and dead now. If tree was live before and now dead, this is a mortality tree and should have STATUSCD = 2 (not 0). |
| 7 | Cruiser error - Either (a) tree was erroneously tallied (added tree), or (b) tree was erroneously not tallied (missed tree) at the previous inventory. |
| 8 | Procedural change - Either (a) tree was tallied at the previous inventory, but is no longer tallied due to a definition or procedural change, or (b) tree was not tallied at the previous inventory, but is now tallied due to a definition or procedural change, regardless of d.b.h/d.r.c. at the time of the previous inventory. |
| 9 | Nonsampled area - Either (a) tree was located in a sampled condition at the previous inventory, but now is in a nonsampled condition, or (b) the area where the tree is located was previously not sampled, but now is sampled. All trees located in a nonsampled area (either now or previously) have RECONCILECD = 9. |

3.1.83 PREVDIA

Previous diameter. The previous diameter, in inches, of the sample tree at the point of diameter measurement. Populated for remeasured trees.

3.1.84 P2A_GRM_FLG

Periodic to annual growth, removal, and mortality flag. A code indicating if this tree is part of a periodic inventory that is only included for the purposes of computing growth, removals and/or mortality estimates. The flag is set to 'Y' for those trees that are needed for estimation and otherwise is left blank (null).

3.1.85 TREECLCD_NERS

Tree class code, Northeastern Research Station. In annual inventory, this code represents a classification of the overall quality of a tree that is ≥ 5.0 inches d.b.h. It classifies the quality of a sawtimber tree based on the present condition, or it classifies the quality of a poletimber tree as a prospective determination (i.e., a forecast of potential quality when and if the tree becomes sawtimber size). For more detailed description, see the regional field guide located at the [NRS Data Collection](#) web page (<https://www.nrs.fs.usda.gov/fia/data-collection/>). Only populated by certain FIA work units (SURVEY.RSCD = 24).

Codes: TREECLCD_NERS

| Code | Description |
|-------------|--|
| 1 | Preferred - Live tree that would be favored in cultural operations. Mature tree, that is older than the rest of the stand; has less than 20 percent total board-foot cull; is expected to live for 5 more years; and is a low risk tree. In general, the tree has the following qualifications: <ul style="list-style-type: none"> • must be free from "general" damage (i.e., damages that would now or prospectively cause a reduction of tree class, significantly deter growth, or prevent it from producing marketable products in the next 5 years). • should have no more than 10 percent board-foot cull due to form defect. • should have good vigor, usually indicated by a crown ratio of 30 percent or more and dominant or co-dominant. • usually has a grade 1 butt log. |
| 2 | Acceptable - This class includes: <ul style="list-style-type: none"> • live sawtimber tree that does not qualify as a preferred tree, but is not a cull tree (see Rough and Rotten Cull). • live poletimber tree that prospectively will not qualify as a preferred tree, but is not now or prospectively a cull tree (see Rough and Rotten Cull). |
| 3 | Rough Cull - This class includes: <ul style="list-style-type: none"> • live sawtimber tree that currently has 67 percent or more predominantly sound board-foot cull; or does not contain one merchantable 12-foot sawlog or two non-contiguous merchantable 8-foot sawlogs. • live poletimber tree that currently has 67 percent or more predominantly sound cubic-foot cull; or prospectively will have 67 percent or more predominantly sound board-foot cull; or will not contain one merchantable 12-foot sawlog or two noncontiguous merchantable 8-foot sawlogs. |
| 4 | Rotten Cull - This class includes: <ul style="list-style-type: none"> • live sawtimber tree that currently has 67 percent or more predominantly unsound board-foot cull. • live poletimber tree that currently has 67 percent or more predominantly unsound cubic-foot cull; or prospectively will have 67 percent or more predominantly unsound board-foot cull. |
| 5 | Dead - Tree that has recently died (within the last several years); but still retains many branches (including some small branches and possibly some fine twigs); and has bark that is generally tight and hard to remove from the tree. |
| 6 | Snag - Dead tree, or what remains of a dead tree, that is at least 4.5 feet tall and is missing most of its bark. This category includes a tree covered with bark that is very loose. This bark can usually be removed, often times in big strips, with very little effort. A snag is not a recently dead tree. Most often, it has been dead for several years - sometimes, for more than a decade. |

3.1.86 TREECLCD_SRS

Tree class code, Southern Research Station. A code indicating the general quality of the tree. Prior to the merger of the Southern and Southeastern Research Stations (INVYR \leq 1997), a growing-stock classification (code 2) was only assigned to species that were considered to have commercial value. Since the merger (INVYR >1997), code 2 has been applied to all tree species meeting the growing-stock form, grade, size and soundness requirements, regardless of commercial value. Only populated by certain FIA work units (SURVEY.RSCD = 33).

Codes: TREECLCD_SRS

| Code | Description |
|-------------|---|
| 2 | Growing-stock - All trees that have at least one 12-foot log or two 8-foot logs that meet grade and size requirements and at least 1/3 of the total board foot volume is merchantable. Poletimber-sized trees are evaluated based on their potential. |
| 3 | Rough cull - Trees that do not contain at least one 12-foot log or two 8-foot logs, or more than 1/3 of the total board foot volume is not merchantable, primarily due to roughness or poor form. |
| 4 | Rotten cull: Trees that do not contain at least one 12-foot log or two 8-foot logs, or more than 1/3 of the total board foot volume is not merchantable, primarily due to rotten, unsound wood. |

3.1.87 TREECLCD_NCRS

Tree class code, North Central Research Station. In annual inventory, a code indicating tree suitability for timber products, or the extent of decay in the butt section of down-dead trees. It is recorded on live standing, standing-dead, and down dead trees that are ≥ 1.0 inch d.b.h. Tree class is basically a check for the straightness and soundness of the sawlog portion on a sawtimber tree or the potential sawlog portion on a poletimber tree or sapling. "Sawlog portion" is defined as the length between the 1-foot stump and the 9.0-inch top diameter of outside bark, DOB, for hardwoods, or the 7.0-inch top DOB for softwoods. For more detailed description, see the regional field guide located at the [NRS Data Collection](#) web page (<https://www.nrs.fs.usda.gov/fia/data-collection/>). Only populated by certain FIA work units (SURVEY.RSCD = 23).

Codes: TREECLCD_NCRS

| Code | Description |
|-------------|--|
| 20 | Growing stock - Any live tree of commercial species that is sawtimber size and has at least one merchantable 12-foot sawlog or two merchantable 8-foot sawlogs meeting minimum log-grade requirements. At least one-third of the gross board-foot volume of the sawlog portion must be merchantable material. A merchantable sawlog must be at least 50 percent sound at any point. Any pole timber size tree that has the potential to meet the above specifications. |
| 30 | Rough Cull, Salvable, and Salvable-down - Includes any tree of noncommercial species, or any tree that is sawtimber size and has no merchantable sawlog. Over one-half of the volume in the sawlog portion does not meet minimum log-grade specifications due to roughness, excessive sweep or crook, splits, cracks, limbs, or forks. Rough cull pole-size trees do not have the potential to meet the specifications for growing-stock because of forks, limb stoppers, or excessive sweep or crook. A down-dead tree ≥ 5.0 -inch d.b.h. that meets these standards is given a tree/decay code of 30. |

| Code | Description |
|------|---|
| 31 | Short-log Cull - Any live sawtimber-size tree of commercial species that has at least one 8-foot sawlog, but < a 12-foot sawlog, meeting minimum log-grade specifications. Any live sawtimber-size tree of commercial species that has less than one-third of the volume of the sawlog portion in merchantable logs, but has at least one 8-foot or longer sawlog meeting minimum log-grade specifications. A short sawlog must be 50 percent sound at any point. Pole-size trees never receive a tree class code 31. |
| 40 | Rotten Cull - Any live tree of commercial species that is sawtimber size and has no merchantable sawlog. Over one-half of the volume in the sawlog portion does not meet minimum log-grade specifications primarily because of rot, missing sections, or deadwood. Classify any pole-size tree that does not have the potential to meet the specifications for growing-stock because of rot as rotten cull. Assume that all live trees will eventually attain sawlog size at d.b.h. Predicted death, tree vigor, and plot site index are not considered in determining tree class. A standing-dead tree without an 8-foot or longer section that is at least 50 percent sound has a tree class of 40. On remeasurement of a sapling, if it has died and is still standing it is given a tree class of 40. |

3.1.88 TREECLCD_RMRS

Tree class code, Rocky Mountain Research Station. A code indicating the general quality of the tree. Only populated by certain FIA work units (SURVEY.RSCD = 22).

Codes: TREECLCD_RMRS

| Code | Description |
|------|--|
| 1 | Sound-live timber species - All live timber trees (species with diameter measured at breast height) that meet minimum merchantability standards. In general, these trees have at least one solid 8-foot section, are reasonably free of form defect on the merchantable bole, and at least 34 percent or more of the volume is merchantable. Excludes rough or rotten cull timber trees. |
| 2 | All live woodland species - All live woodland trees (woodland species can be identified by REF_SPECIES.WOODLAND = 'Y'). All trees assigned to species groups 23 and 48 belong in this category (see appendix E). |
| 3 | Rough-live timber species - All live 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. |
| 4 | Rotten-live timber species - All live 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. |
| 5 | Hard (salvable) dead - dead trees that have less than 67 percent of the volume cull due to rotten or missing cubic-foot volume loss. |
| 6 | Soft (nonsalvable) dead - dead trees that have 67 percent or more of the volume cull due to rotten or missing cubic-foot volume loss. |

3.1.89 STANDING_DEAD_CD

Standing dead code. A code indicating if a tree qualifies as standing dead. To qualify as a standing dead tally tree, the dead tree must be ≥ 1.0 inch d.b.h., have a bole that has an unbroken actual length (ACTUALHT) ≥ 4.5 feet, and lean < 45 degrees from vertical as measured from the base of the tree to 4.5 feet. For woodland species with multiple stems,

a tree is considered down if more than 2/3 of the volume is no longer attached or upright; cut and removed volume is not considered. For woodland species with single stems to qualify as a standing dead tally tree, dead trees must be ≥ 1.0 inch d.r.c., be ≥ 1.0 foot in unbroken actual length ([ACTUALHT](#)), and lean <45 degrees from vertical.

Populated where PLOT.[MANUAL](#) ≥ 2.0 ; may be populated using information collected on dead trees in earlier inventories for dead trees.

Note: Starting with PLOT.[MANUAL](#) = 7.0, the *core* minimum diameter to qualify for a standing dead tree was changed from 5.0 inches to 1.0 inch.

Codes: STANDING_DEAD_CD

| Code | Description |
|------|--|
| 0 | No - tree does not qualify as standing dead. |
| 1 | Yes - tree does qualify as standing dead. |

3.1.90 PREV_STATUS_CD

Previous tree status code. Tree status that was recorded at the previous inventory on all tally trees ≥ 1.0 inch d.b.h./d.r.c. Includes all new standing dead trees ([STATUSCD](#) = 2, [STANDING_DEAD_CD](#) = 1, [RECONCILECD](#) >0).

Codes: PREV_STATUS_CD

| Code | Description |
|------|--|
| 1 | Live tree - live tree at the previous inventory. |
| 2 | Dead tree - standing dead at the previous inventory. |

3.1.91 PREV_WDLDSTEM

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

3.1.92 TPA_UNADJ

Trees per acre unadjusted. The number of trees per acre that the sample tree theoretically represents based on the sample design. For fixed-radius plots taken with the mapped plot design (PLOT.[DESIGNCD](#) = 1), TPA_UNADJ is set to a constant derived from the plot size and equals 6.018046 for trees sampled on subplots, 74.965282 for trees sampled on microplots, and 0.999188 for trees sampled on macroplots. Variable-radius plots were often used in earlier inventories, so the value in TPA_UNADJ decreases as the tree diameter increases. Based on the procedures described in Bechtold and Patterson (2005), this attribute must be adjusted using factors stored in the POP_STRATUM table to derive population estimates. Examples of estimating population totals are shown in [The Forest Inventory and Analysis Database: Population Estimation User Guide](#).

3.1.93 DRYBIO_BOLE

Dry biomass of wood in the merchantable bole. The oven-dry biomass, in pounds, of wood in the merchantable bole of timber species (trees where diameter is measured at breast height [d.b.h.]) ≥ 5.0 inches d.b.h., from a 1-foot stump to a minimum 4-inch top diameter. Calculated for live and standing dead trees. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for

timber species with DIA <5.0 inches and for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

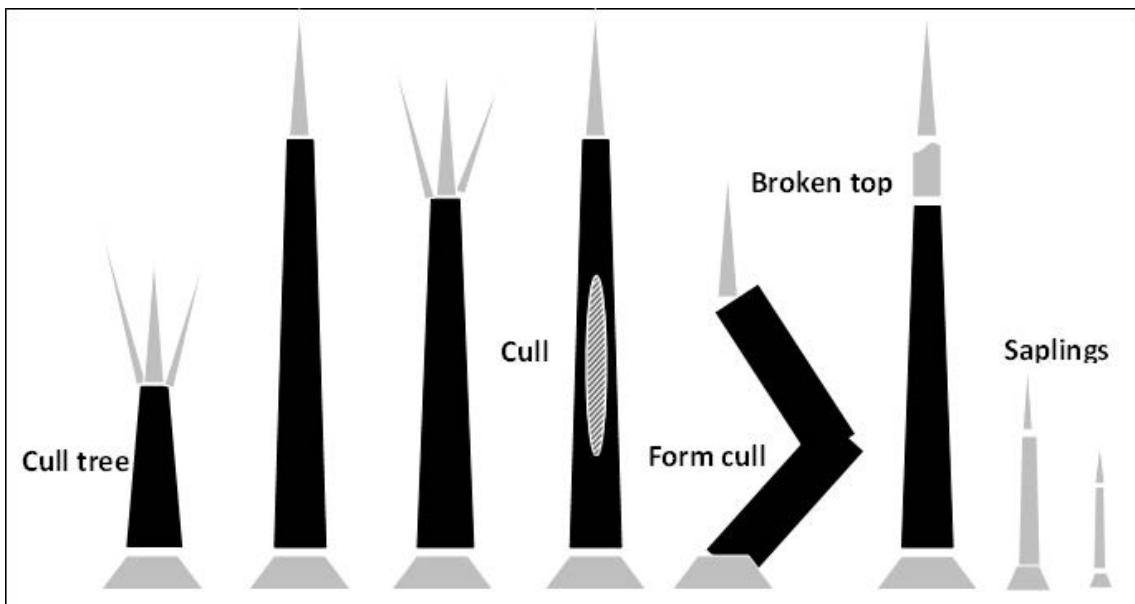


Figure 3-4: Illustration of timber species dry biomass of wood in the merchantable bole biomass (DRYBIO_BOLE) in black. Gray trees and gray parts are excluded. wood biomass is proportionally reduced to account for cull; the cull wood, represented by the cross-hatched area in the figure, has lost some of its structural integrity and therefore its mass. See DRYBIO_BOLE for a full description of this attribute.

3.1.94 DRYBIO_STUMP

Dry biomass of wood in the stump. The oven-dry biomass, in pounds, of wood in the stump of timber species (trees where diameter is measured at breast height [d.b.h.]) ≥ 5.0 inches d.b.h. The stump is that portion of the tree from the ground line to the bottom of the merchantable bole (i.e., below 1 foot). Calculated for live and standing dead trees. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for timber species with DIA <5.0 inches and for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.95 DRYBIO_BG

Belowground dry biomass. The oven-dry biomass, in pounds, of the belowground portion of a tree, including coarse roots with a root diameter ≥ 0.1 inch. This is a modeled estimate, calculated for live and standing dead trees ≥ 1.0 inch d.b.h./d.r.c. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

Note: Not populated for standing dead saplings (1.0-4.9 inches d.b.h./d.r.c.) when PLOT.[MANUAL](#) <7.0.

3.1.96 CARBON_AG

Aboveground carbon of wood and bark. The carbon, in pounds, of wood and bark in the aboveground portion, excluding foliage, of live and standing dead trees ≥ 1.0 inch

d.b.h./d.r.c. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. The amount of carbon is calculated based on applying species-specific carbon fractions to the aboveground biomass:

$$\text{CARBON_AG} = \text{REF_SPECIES.CARBON_RATIO_LIVE} * \text{DRYBIO_AG}$$

This attribute is populated for all tree species tallied in the continental U.S. as well as both the Caribbean and Pacific Islands, including Hawaii (refer to the FIA Master Tree Species List, available at the following web address:

<https://www.fia.fs.usda.gov/library/field-guides-methods-proc/>). Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

Note: Not populated for standing dead saplings (1.0-4.9 inches d.b.h./d.r.c.) when PLOT.[MANUAL](#) <7.0.

3.1.97 CARBON_BG

Belowground carbon. The carbon, in pounds, of the belowground portion of a tree, including coarse roots with a root diameter ≥ 0.1 inch. Calculated for live and standing dead trees ≥ 1.0 inch d.b.h./d.r.c. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. The amount of carbon is calculated based on applying species-specific carbon fractions to the belowground biomass:

$$\text{CARBON_BG} = \text{REF_SPECIES.CARBON_RATIO_LIVE} * \text{DRYBIO_BG}$$

Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

Note: Not populated for standing dead saplings (1.0-4.9 inches d.b.h./d.r.c.) when PLOT.[MANUAL](#) <7.0.

3.1.98 CYCLE

Inventory cycle number. See SURVEY.[CYCLE](#) description for definition.

3.1.99 SUBCYCLE

Inventory subcycle number. See SURVEY.[SUBCYCLE](#) description for definition.

3.1.100 BORED_CD_PNWRS

Tree bored code, Pacific Northwest Research Station. Used in conjunction with tree age (BHAGE and TOTAGE). Only populated by certain FIA work units (SURVEY.[RSCD](#) = 26).

Codes: BORED_CD_PNWRS

| Code | Description |
|------|--|
| 1 | Trees bored or 'whorl counted' at the current inventory. |
| 2 | Tree age derived from a previous inventory. |
| 3 | Tree age was extrapolated. |

3.1.101 DAMLOC1_PNWRS

Damage location 1, Pacific Northwest Research Station. The location on the tree where Damage Agent 1 is found. Only populated by certain FIA work units (SURVEY.[RSCD](#) = 26).

Codes: DAMLOC1_PNWRS

| Code | Location | Definition |
|-------------|-----------------|---|
| 0 | - | No damage found. |
| 1 | Roots | Above ground up to 12 inches on bole. |
| 2 | Bole | Main stem(s) starting at 12 inches above the ground, including forks up to a 4 inch top. (A fork is at least equal to 1/3 diameter of the bole, and occurs at an angle <45 degrees in relation to the bole.) This is not a valid location code for woodland species; use only locations 1, 3, and 4. For saplings, bole includes the main stem starting at ground level and extends to the top of the leader. |
| 3 | Branch | All other woody material. Primary branch(es) occur at an angle ≥45 degrees in relation to the bole. For saplings, a branch is all branches (not any part of the bole). |
| 4 | Foliage | All leaves, buds, and shoots. |

3.1.102 DAMLOC2_PNWRS

Damage location 2, Pacific Northwest Research Station. See [DAMLOC1_PNWRS](#). Only populated by certain FIA work units (SURVEY.RSCD = 26).

3.1.103 DIACHECK_PNWRS

Diameter check, Pacific Northwest Research Station. A separate estimate of the diameter without the obstruction if the diameter was estimated because of moss/vine/obstruction, etc. Only populated by certain FIA work units (SURVEY.RSCD = 26).

Codes: DIACHECK_PNWRS

| Code | Description |
|-------------|--|
| 5 | Diameter estimated because of moss. |
| 6 | Diameter estimated because of vines. |
| 7 | Diameter estimated (double nail diameter). |

3.1.104 DMG_AGENT1_CD_PNWRS

Damage agent 1, Pacific Northwest Research Station. Primary damage agent code in PNWRS. Up to three damaging agents can be coded in PNWRS as DMG_AGENT1_CD_PNWRS, DMG_AGENT2_CD_PNWRS, and DMG_AGENT3_CD_PNWRS. A 2-digit code (with values from 01 to 99) indicating the tree damaging agent that is considered to be of greatest importance to predict tree growth, survival, and forest composition and structure. Additionally, there are two classes of damaging agents. Class I damage agents are considered more important than class II agents and are thus coded as a primary agent before the class II agents. For more information, see [appendix I](#). Only populated by certain FIA work units (SURVEY.RSCD = 26).

3.1.105 DMG_AGENT2_CD_PNWRS

Damage agent 2, Pacific Northwest Research Station. See [DMG_AGENT1_CD_PNWRS](#). Only populated by certain FIA work units (SURVEY.RSCD = 26).

3.1.106 DMG_AGENT3_CD_PNWRS

Damage agent 3, Pacific Northwest Research Station. See [DMG_AGENT1_CD_PNWRS](#). Only populated by certain FIA work units (SURVEY.RSCD = 26).

3.1.107 MIST_CL_CD_PNWRS

Leafy mistletoe class code, Pacific Northwest Research Station. All juniper species, incense cedars, white fir (CA only) and oak trees are rated for leafy mistletoe infection. This item is used to describe the extent and severity of leafy mistletoe infection (see [MIST_CL_CD](#) for dwarf mistletoe information). Only populated by certain FIA work units (SURVEY.RSCD = 26).

Codes: MIST_CL_CD_PNWRS

| Code | Description |
|------|--|
| 0 | None. |
| 7 | <50 percent of crown infected. |
| 8 | ≥50 percent of crown infected or any occurrence on the bole. |

3.1.108 SEVERITY1_CD_PNWRS

Damage severity 1, Pacific Northwest Research Station. Damage severity depends on the damage agent coded (see [appendix I](#) for codes). This is a 2-digit code that indicates either percent of location damaged (01-99), or the appropriate class of damage (values vary from 0-9 depending on the specific Damage Agent). Only populated by certain FIA work units (SURVEY.RSCD = 26).

3.1.109 SEVERITY1A_CD_PNWRS

Damage severity 1A, Pacific Northwest Research Station. Damage severity depends on the damage agent coded (see [appendix I](#) for codes). This is a 2-digit code indicating either percent of location damaged (01-99), or the appropriate class of damage (values vary from 0-4 depending on the specific Damage Agent). Only populated by certain FIA work units (SURVEY.RSCD = 26).

3.1.110 SEVERITY1B_CD_PNWRS

Damage severity 1B, Pacific Northwest Research Station. Damage severity B is only coded when the Damage Agent is white pine blister rust (36). Only populated by certain FIA work units (SURVEY.RSCD= 26).

Codes: SEVERITY1B_CD_PNWRS

| Code | Description |
|------|---|
| 1 | Branch infections located more than 2.0 feet from tree bole. |
| 2 | Branch infections located 0.5 to 2.0 feet from tree bole. |
| 3 | Branch infection located within 0.5 feet of tree bole OR tree bole infection present. |

3.1.111 SEVERITY2_CD_PNWRS

Damage severity 2, Pacific Northwest Research Station. Damage severity depends on the damage agent coded (see [appendix I](#) for codes). This is a 2-digit code indicating either percent of location damaged (01-99), or the appropriate class of damage (values vary

from 0-9 depending on the specific Damage Agent). Only populated by certain FIA work units (SURVEY.RSCD = 26).

3.1.112 SEVERITY2A_CD_PNWRS

Damage severity 2A, Pacific Northwest Research Station. See [SEVERITY1A_CD_PNWRS](#). Only populated by certain FIA work units (SURVEY.RSCD = 26).

3.1.113 SEVERITY2B_CD_PNWRS

Damage severity 2B, Pacific Northwest Research Station. See [SEVERITY1B_CD_PNWRS](#). Only populated by certain FIA work units (SURVEY.RSCD = 26).

3.1.114 SEVERITY3_CD_PNWRS

Damage severity 3, Pacific Northwest Research Station. Damage severity depends on the damage agent coded (see [appendix I](#) for codes). This is a 2-digit code indicating either percent of location damaged (01-99), or the appropriate class of damage (values vary from 0-9 depending on the specific Damage Agent). Only populated by certain FIA work units (SURVEY.RSCD = 26).

3.1.115 UNKNOWN_DAMTYP1_PNWRS

Unknown damage type 1, Pacific Northwest Research Station. A code indicating the sign or symptom recorded when UNKNOWN damage code 90 is used. Only populated by certain FIA work units (SURVEY.RSCD = 26).

Codes: UNKNOWN_DAMTYP1_PNWRS

| Code | Description |
|------|--------------------------------|
| 1 | Canker/gall. |
| 2 | Open wound. |
| 3 | Resinosis. |
| 4 | Broken. |
| 5 | Damaged or discolored foliage. |
| 6 | Other. |

3.1.116 UNKNOWN_DAMTYP2_PNWRS

Unknown damage type 2, Pacific Northwest Research Station. See [UNKNOWN_DAMTYP1_PNWRS](#). Only populated by certain FIA work units (SURVEY.RSCD = 26).

3.1.117 PREV_PNTN_SRS

Previous periodic prism point, tree number, Southern Research Station. In some older Southeast Experiment Station States, the prism point, tree number (PNTN) of the current cycle did not match the previous cycle's prism point, tree number. PREV_PNTN_SRS is used to join the current and the previous prism plot trees. Not populated for the [Caribbean Islands](#).

3.1.118 DISEASE_SRS

Disease, Southern Research Station. A code indicating the incidence of fusiform, comandra rust or dieback. Dieback is only recorded for live hardwood trees where DIA ≥ 5.0 inches with at least 10 percent dieback. Fusiform and comandra rust are only

recorded for live pine trees ≥ 5.0 inches d.b.h. with the following species codes: 110, 111, 121, 126, 128, or 131. Populated for all forested plots using the National Field Guide protocols (PLOT.MANUAL = 1.6-5.1). Only populated by certain FIA work units (SURVEY.RSCD = 33).

Codes: DISEASE_SRS

| Code | Description |
|------|---|
| 0 | None. |
| 1 | Fusiform/Comandra rust on species codes 110, 111, 121, 126, 128, and 131, based on any incidence of cankers within 12 inches of the stem. |
| 2 | Hardwood dieback of 10% or more of the crown area. Not recorded on overtopped trees. |

3.1.119 DIEBACK_SEVERITY_SRS

Dieback severity, Southern Research Station. A code indicating the severity of hardwood crown dieback. Populated when DISEASE_SRS = 2. Populated for all forested plots using the National Field Guide protocols (PLOT.MANUAL = 1.6-5.1). Only populated by certain FIA work units (SURVEY.RSCD = 33).

Codes: DIEBACK_SEVERITY_SRS

| Code | Description |
|------|---------------------------|
| 1 | 10-19% of crown affected. |
| 2 | 20-29% of crown affected. |
| 3 | 30-39% of crown affected. |
| 4 | 40-49% of crown affected. |
| 5 | 50-59% of crown affected. |
| 6 | 60-69% of crown affected. |
| 7 | 70-79% of crown affected. |
| 8 | 80-89% of crown affected. |
| 9 | 90-99% of crown affected. |

3.1.120 DAMAGE_AGENT_CD1

Damage agent code 1. (*core: all live tally trees ≥ 5.0 inches d.b.h./d.r.c; core optional: all live tally trees ≥ 1.0 inch d.b.h./d.r.c.*) A code indicating the first damage agent recorded by the field crew when inspecting the tree from bottom to top (roots, bole, branches, foliage). Up to three damage agents can be recorded per tree (DAMAGE_AGENT_CD1, DAMAGE_AGENT_CD2, and DAMAGE_AGENT_CD3). Damage agents are not necessarily recorded in order of severity. The codes used for damage agents come from the January 2012 Pest Trend Impact Plot System (PTIPS) list from the Forest Health Assessment and Applied Sciences Team (FHAAT) that has been modified to meet FIA's needs. The list is modified by each region to meet the specific needs of that region. The general agent codes are listed here. See [appendix H](#) for the complete list of codes.

Codes: DAMAGE_AGENT_CD1

| Code | General Agent | Damage Threshold* | Descriptions |
|-------------|---|--|---|
| 0 | - | No damage. | - |
| 10000 | General insects. | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | Insect damage that cannot be placed in any of the following insect categories. |
| 11000 | Bark beetles. | Any evidence of a successful attack (successful attacks generally exhibit boring dust, many pitch tubes and/or fading crowns). | Bark beetles (<i>Dendroctonus</i> , <i>Ips</i> , and other genera) are phloem-feeding insects that bore through the bark and create extensive galleries between the bark and the wood. Symptoms of beetle damage include fading or discolored tree crown (yellow or red), pitch tubes or pitch streaks on the bark, extensive egg galleries in the phloem, boring dust in the bark crevices or at the base of the tree. Bark chipping by woodpeckers may be conspicuous. They inflict damage or destroy all parts of trees at all stages of growth by boring in the bark, inner bark, and phloem. Visible signs of attack include pitch tubes or large pitch masses on the tree, dust and frass on the bark and ground, and resin streaming. Internal tunneling has various patterns. Most have tunnels of uniform width with smaller galleries of variable width radiating from them. Galleries may or may not be packed with fine boring dust. |
| 12000 | Defoliators. | Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | These are foliage-feeding insects that may reduce growth and weaken the tree causing it to be more susceptible to other damaging agents. General symptoms of defoliation damage include large amounts of missing foliage, browning foliage, extensive branch mortality, or dead tree tops. |
| 13000 | Chewing insects. Note: This is only collected by RMRS and SRS. | Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | Insects, like grasshoppers and cicadas that chew on trees (those insects not covered by defoliators in code 12000). |

| Code | General Agent | Damage Threshold* | Descriptions |
|-------------|----------------------|--|---|
| 14000 | Sucking insects. | Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | Adelgids, scales and aphids feed on all parts of the tree. Often they cause galling on branches and trunks. Some appear benign but enable fungi to invade where they otherwise could not (e.g., beech bark disease). The most important ones become conspicuous because of the mass of white, cottony wax that conceals eggs and young nymphs. |
| 15000 | Boring insects. | Any damage to the terminal leader; damage $\geq 20\%$ of the roots, stems, or branches. | Most wood boring insects attack only severely declining and dead trees. Certain wood boring insects cause significant damage to trees, especially the exotic Asian longhorn beetle, emerald ash borer, and Sirex wood wasp. Bark beetles have both larval and adult galleries in the phloem and adjacent surface of the wood. Wood borers have galleries caused only by larval feeding. Some, such as the genus <i>Agrilus</i> (including the emerald ash borer) have galleries only in the phloem and surface of the wood. Other wood borers, such as Asian longhorn beetle bore directly into the phloem and wood. Sirex adults oviposit their eggs through the bark, and developing larvae bore directly into the wood of pines. |
| 19000 | General diseases. | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | Diseases that cannot be placed in any of the following disease categories. |

| Code | General Agent | Damage Threshold* | Descriptions |
|-------------|----------------------|--------------------------|--|
| 21000 | Root/butt diseases. | Any occurrence. | <p>Root disease kills all or a portion of a tree's roots. Quite often, the pathogenic fungus girdles the tree at the root collar. Tree damage includes mortality (often occurring in groups or "centers"), reduced tree growth, and increased susceptibility to other agents (especially bark beetles). General symptoms include resin at the root collar, thin, chlorotic (faded) foliage, and decay of roots. A rot is a wood decay caused by fungi. Rots are characterized by a progression of symptoms in the affected wood. First, the wood stains and discolors, then it begins to lose its structural strength, and finally the wood starts to break down, forming cavities in the stem. Even early stages of wood decay can cause cull due to losses in wood strength and staining of the wood. Rot can lead to mortality, cull, an increased susceptibility to other agents (such as insects), wind throw, and stem breakage.</p> |

| Code | General Agent | Damage Threshold* | Descriptions |
|-------|-----------------------------------|--|--|
| 22000 | Cankers (non-rust). | Any occurrence. | <p>A canker -- a sunken lesion on the stem caused by the death of cambium -- may cause tree breakage or kill the portion of the tree above the canker. Cankers may be caused by various agents but are most often caused by fungi. A necrotic lesion begins in the bark of branches, trunk or roots, and progresses inward killing the cambium and underlying cells. The causal agent may or may not penetrate the wood. This results in areas of dead tissue that become deeper and wider.</p> <p>There are two types of cankers, annual and perennial. Annual cankers enlarge only once and do so within an interval briefer than the growth cycle of the tree, usually less than one year. Little or no callus is associated with annual cankers, and they may be difficult to distinguish from mechanical injuries. Perennial cankers are usually the more serious of the two, and grow from year to year with callus forming each year on the canker margin, often resulting in a target shape. The most serious non-rust cankers occur on hardwoods, although branch mortality often occurs on conifers.</p> |
| 22500 | Stem decays. | Any visual evidence (conks; fruiting bodies; rotten wood). | Rot occurring in the bole/stems of trees above the roots and stump. |
| 23000 | Parasitic / Epiphytic plants. | Dwarf mistletoes with Hawksworth rating of ≥ 3 ; true mistletoes and vines covering $\geq 50\%$ of crown. | Parasitic and epiphytic plants can cause damage to trees in a variety of ways. The most serious ones are dwarf mistletoes, which reduce growth and can cause severe deformities. Vines may damage trees by strangulation, shading, or physical damage. Benign epiphytes, such as lichens or mosses, are not considered damaging agents. |
| 24000 | Decline Complexes/ Dieback/Wilts. | Damage $\geq 20\%$ dieback of crown area. | Tree disease which results not from a single causal agent but from an interacting set of factors. Terms that denote the symptom syndrome, such as dieback and wilt, are commonly used to identify these diseases. |
| 25000 | Foliage diseases. | Damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | Foliage diseases are caused by fungi and result in needle shed, growth loss, and, potentially, tree mortality. This category includes needle casts, blights, and needle rusts. |

| Code | General Agent | Damage Threshold* | Descriptions |
|-------------|----------------------|--|---|
| 26000 | Stem rusts. | Any occurrence on the bole or stems (on multi-stemmed woodland species), or on branches \leq 1 foot from boles or stems; damage to \geq 20% of branches. | A stem rust is a disease caused by fungi that kill or deform all or a portion of the stem or branches of a tree. Stem rusts are obligate parasites and host specialization is very common. They infect and develop on fast-growing tissues and cause accelerated growth of infected tissues resulting in galls or cankers. Heavy resinosis is usually associated with infections. Sometimes yellow or reddish-orange spores are present giving a "rusty" appearance. Damage occurs when the disease attacks the cambium of the host, girdling and eventually killing the stem above the attack. Symptoms of rusts include galls (an abnormal and pronounced swelling or deformation of plant tissue that forms on branches or stems) and cankers (a sunken lesion on the stem caused by death of the cambium which often results in the death of tree tops and branches). |
| 27000 | Broom rusts. | \geq 50% of crown area affected. | Broom rust is a disease caused by fungi that kill or deform all or a portion of the branches of a tree. Broom rusts are obligate parasites and host specialization is very common. They infect and develop on fast-growing tissues and cause accelerated growth of infected tissues resulting in galls. Symptoms of rusts include galls, an abnormal and pronounced swelling or deformation of plant tissue that forms on branches or stems. |
| 30000 | Fire. | Damage \geq 20% of bole circumference; $>$ 20% of stems on multi-stemmed woodland species affected; \geq 20% of crown affected. | Fire damage may be temporary, such as scorched foliage, or may be permanent, such as in cases where cambium is killed around some portion of the bole. The location and amount of fire damage will determine how the damage may affect the growth and survival of the tree. Fire often causes physiological stress, which may predispose the tree to attack by insects of other damaging agents. |

| Code | General Agent | Damage Threshold* | Descriptions |
|-------------|----------------------|--|--|
| 41000 | Wild animals. | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | Wild animals from birds to large mammals cause open wounds. Some common types of damage include: sapsucker bird peck, deer rub, bear clawing, porcupine feeding, and beaver gnawing. |
| 42000 | Domestic animals. | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | Open wounds caused by cattle and horses occur on the roots and lower trunk. Soil compaction from the long term presence of these animals in a woodlot can also cause indirect damage. |
| 50000 | Abiotic. | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | Abiotic damages are those that are not caused by other organisms. In some cases, the type and severity of damage may be similar for different types of agents (e.g., broken branches from wind, snow, or ice). |
| 60000 | Competition. | Overtopped shade-intolerant trees that are not expected to survive for 5 years or saplings not expected to reach tree size (5.0 inches d.b.h./d.r.c.). | Suppression of overtapped shade-intolerant species. Trees that are not expected to survive for 5 years or saplings not expected to reach tree size (5.0 inches d.b.h./d.r.c.). |
| 70000 | Human activities. | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | People can injure trees in a variety of ways, from poor pruning, to vandalism, to logging injury. Signs include open wounds or foreign embedded objects. |

| Code | General Agent | Damage Threshold* | Descriptions |
|-------------|----------------------|--|--|
| 71000 | Harvest. | Removal of $\geq 10\%$ of cubic volume. | Only recorded for woodland species trees that have partial cutting. |
| 90000 | Other damage. | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | - |
| 99000 | Unknown damage. | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | Use this code only when observed damage cannot be attributed to a general or specific agent. |

* Some Regional specific damage agents within a category may have differing damage thresholds.

3.1.121 DAMAGE_AGENT_CD2

Damage agent code 2. (*core: all live tally trees ≥ 5.0 inches d.b.h./d.r.c; core optional: all live tally trees ≥ 1.0 inch d.b.h./d.r.c.*) See [DAMAGE_AGENT_CD1](#).

3.1.122 DAMAGE_AGENT_CD3

Damage agent code 3. (*core: all live tally trees ≥ 5.0 inches d.b.h./d.r.c; core optional: all live tally trees ≥ 1.0 inch d.b.h./d.r.c.*) See [DAMAGE_AGENT_CD1](#).

3.1.123 CENTROID_DIA

Centroid diameter (Pacific Islands). The outside bark diameter, in inches, measured at CENTROID_DIA_HT_ACTUAL. For tree ferns, diameter is measured where the fronds emerge from the trunk. Only populated by certain FIA work units (SURVEY.RSCD = 26) for the [Pacific Islands](#). This diameter is part of the upper stem diameter protocol that began with remeasurement, except for Hawaii, where the protocol was implemented in the first measurement.

3.1.124 CENTROID_DIA_HT

Calculated centroid diameter height (Pacific Islands). The height, in feet, to stem centroid. The stem centroid is located at 30 percent of the total length (HT) of the stem. Only populated by certain FIA work units (SURVEY.RSCD = 26) for the [Pacific Islands](#). This height is part of the upper stem diameter protocol that began with the first remeasurement, except for Hawaii, where the protocol was implemented in the first measurement.

3.1.125 CENTROID_DIA_HT_ACTUAL

Actual centroid diameter height (Pacific Islands). The height, in feet, to where stem centroid diameter was actually measured. It may differ from CENTROID_DIA_HT if abnormalities in the stem prevented a normal diameter measurement. Only populated by certain FIA work units (SURVEY.RSCD = 26) for the [Pacific Islands](#). This height is part of the upper stem diameter protocol that began with the first remeasurement, except for Hawaii, where the protocol was implemented in the first measurement.

3.1.126 UPPER_DIA

Upper stem diameter (Pacific Islands). The outside bark upper stem diameter, in inches, measured at least 3 feet above the point where DIA was taken. For larger trees, UPPER_DIA was recorded at the point where the main stem was at least 4.0 inches in diameter. This diameter is used in the calculation of stem taper, needed to improve the estimation of stem volume. Only populated by certain FIA work units (SURVEY.RSCD = 26) for the [Pacific Islands](#). This is the legacy upper stem diameter protocol and will not be collected after the first remeasurement.

3.1.127 UPPER_DIA_HT

Upper stem diameter height (Pacific Islands). The height, in feet, to where upper stem diameter (UPPER_DIA) was measured. Only populated by certain FIA work units (SURVEY.RSCD= 26) for the [Pacific Islands](#). This is the legacy upper stem diameter protocol and will not be collected after the first remeasurement.

3.1.128 VOLCSSND

Sound cubic-foot wood volume in the sawlog portion of a sawtimber tree. The sound cubic-foot volume of wood in the central stem of a timber species tree of sawtimber size (9.0 inches d.b.h. minimum for softwoods, 11.0 inches minimum d.b.h. for hardwoods), from a 1-foot stump to a minimum top diameter (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 diameter. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for softwood trees with DIA <9.0 inches (<11.0 inches for hardwoods). All sawtimber-size 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) are blank (null) in this field. Does not include rotten and missing cull (volume loss due to rotten and missing cull defect has been deducted). Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.129 DRYBIO_SAWLOG

Dry biomass of wood in the sawlog portion of a sawtimber tree. The oven-dry biomass, in pounds, of wood in the sawlog portion of timber species trees of sawtimber size (9.0 inches d.b.h. minimum for softwoods, 11.0 inches minimum d.b.h. for hardwoods), from a 1-foot stump to a minimum top diameter (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 diameter. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for softwood trees with DIA <9.0 inches (<11.0 inches for hardwoods) and standing dead trees. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.130 DAMAGE_AGENT_CD1_SRS

Damage agent code 1 (Caribbean Islands), Southern Research Station. A code indicating the first damage agent observed when inspecting the tree from bottom to top (roots, bole, branches, foliage). Up to three damage agents can be recorded (DAMAGE_AGENT_CD1_SRS, DAMAGE_AGENT_CD2_SRS, DAMAGE_AGENT_CD3_SRS). If more than one agent is observed, the most threatening one is listed first where agents threatening survival are listed first and agents threatening wood quality second. The codes used for damage agents come from the January 2012 Pest Trend Impact Plot System (PTIPS) list from the Forest Health Assessment and Applied Sciences Team (FHAAT) that has been modified to meet FIA's needs. See [appendix H](#) for the complete list of codes. Only populated by certain FIA work units (SURVEY.RSCD = 33) for the Caribbean Islands.

3.1.131 DAMAGE_AGENT_CD2_SRS

Damage agent code 2 (Caribbean Islands), Southern Research Station. See [DAMAGE_AGENT_CD1_SRS](#).

3.1.132 DAMAGE_AGENT_CD3_SRS

Damage agent code 3 (Caribbean Islands), Southern Research Station. See [DAMAGE_AGENT_CD1_SRS](#).

3.1.133 DRYBIO_AG

Aboveground dry biomass of wood and bark. The oven-dry biomass, in pounds, of wood and bark in the aboveground portion, excluding foliage, of live and standing dead trees ≥ 1.0 inch d.b.h./d.r.c. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. Refer to [appendix K](#) on FIA volume, biomass, and carbon estimation.

Note: Not populated for standing dead saplings (1.0-4.9 inches d.b.h./d.r.c.) when PLOT.[MANUAL](#) <7.0.

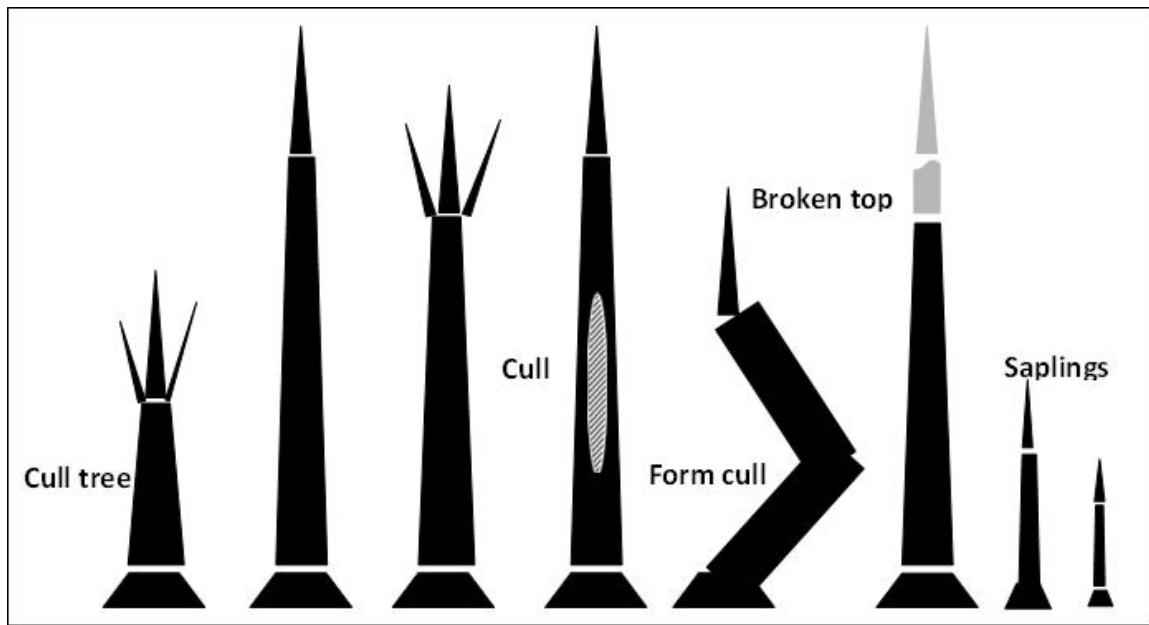


Figure 3-5: Illustration of aboveground dry biomass (DRYBIO_AG) in black. Roots, foliage, and missing wood are excluded. Wood biomass is proportionally reduced to amount for cull. See DRYBIO_AG for a full description of this attribute.

3.1.134 ACTUALHT_CALC

Actual height, calculated. The calculated length (height) 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. The calculations are made using regional methods.

3.1.135 ACTUALHT_CALC_CD

Actual height, calculated, code. A code identifying the method used to calculate the ACTUALHT_CALC value. Only populated by certain FIA work units (SURVEY.RSCD = 24). For more information about regional methods, contact the appropriate FIA work unit ([table 1-1](#)).

Codes: ACTUALHT_CALC_CD

| Code | Meaning | Description |
|------|--------------|--|
| 1 | NERS method. | Value calculated for NERS States using regional methods. |

3.1.136 CULL_BF_ROTEN

Rotten/missing board-foot cull of the sawlog. The percent of volume within the recorded sawlog length (SAWHT) that cannot be used to produce boards, because of rot or missing sections of the bole. Does not include cull due to sweep, crook, excessive branches (e.g., whorls), large limbs and other defects. Only populated by certain FIA work units (SURVEY.RSCD= 24). Not collected for all years or States.

3.1.137 CULL_BF_ROTEN_CD

Rotten/missing board-foot cull of the sawlog code. A code indicating if the CULL_BF_ROTEN attribute is not null. Only populated by certain FIA work units (SURVEY.RSCD = 24). Not collected for all years or States.

Codes: CULL_BF_ROTEN_CD

| Code | Description |
|------|---|
| 1 | Rotten board-foot cull (CULL_BF_ROTEN) of the sawlog is not null. |

3.1.138 CULL_BF_ROUGH

Rough board-foot cull of the sawlog. The percent of volume within the recorded sawlog length (SAWHT) that cannot be used to produce boards, because of sweep, crook, excessive branches (e.g., whorls), large limbs and other defects. Does not include cull due to rot. Only populated by certain FIA work units (SURVEY.RSCD = 24). Not collected for all years or States.

3.1.139 CULL_BF_ROUGH_CD

Rough board-foot cull of the sawlog code. A code indicating if the CULL_BF_ROUGH attribute is not null. Only populated by certain FIA work units (SURVEY.RSCD = 24). Not collected for all years or States.

Codes: CULL_BF_ROUGH_CD

| Code | Description |
|------|--|
| 1 | Rough board-foot cull (CULL_BF_ROUGH) of the sawlog is not null. |

3.1.140 PREVDIA_FLD

Previous diameter, field. The previous diameter, in inches, of the sample tree at the point of diameter measurement, if the value was updated by the current field crew.

Note: PREVDIA differs from PREVDIA_FLD when the field crew updates the downloaded value in the data collection program.

- PREVDIA - This value is the downloaded diameter from the previous inventory record.
- PREVDIA_FLD - This value is the editable field.

3.1.141 TREECLCD_31_NCRS

Tree class code (version 3.1), North Central Research Station. A classification of the general quality of a tree that is ≥ 5.0 inches d.b.h. It classifies the quality of a live sawtimber tree based on the present condition. It also forecasts the potential quality of a live poletimber tree when it becomes sawtimber size. For standing dead trees, it identifies those trees that could be salvaged for wood fiber (e.g., chips) if a salvage operation was imminent.

Collected on all live and dead trees ≥ 5.0 inches d.b.h. for States in the NCRS region (SURVEY.RSCD = 23) for PLOT.MANUAL_NCRS ≥ 3.0 .

Codes: TREECLCD_31_NCRS

| Code | Description |
|-------------|---|
| 2 | Growing Stock - A live sawtimber-size tree with one-third or more of the gross board-foot volume in the entire sawlog length meeting grade, soundness, and size requirements; or the potential to do so for poletimber-size trees. It must contain one merchantable 12-foot log or two non-contiguous merchantable 8-foot logs, now (sawtimber) or prospectively (poletimber). |
| 3 | Rough Cull - A live tree that does not contain at least one 12-foot sawlog or two noncontiguous 8-foot logs now (sawtimber) or prospectively (poletimber), primarily because of roughness or poor form within the sawlog length. Or sawtimber and prospectively poletimber with two-thirds or more of its gross board-foot volume that does not meet size, soundness, and grade requirements; and 50% or more of the assigned total board-foot cull within the sawlog length is rough cull. |
| 4 | Rotten Cull - A live tree that does not contain at least one 12-foot sawlog or two noncontiguous 8-foot logs now (sawtimber) or prospectively (poletimber) and/or do not meet grade specifications for percent sound primarily because of rot within the sawlog length. Or sawtimber and prospectively poletimber with two-thirds or more of its gross board-foot volume that does not meet size, soundness, and grade requirements; and 50% or more of the assigned total board-foot cull within the sawlog length is rotten cull. |
| 5 | Salvable Dead - A standing dead tree with at least one-third merchantable sound volume. ROTTEN/MISSING CUBIC-FOOT CULL does not exceed 67%. Note: ROUGH CUBIC-FOOT CULL is not a criterion for determining salvable dead. |
| 6 | Nonsalvable Dead - A standing dead tree that does not qualify as salvable. |

3.1.142 TREE_GRADE_NCRS

Tree grade, North Central Research Station. A 3-digit code indicating the quality of sawtimber-sized trees that have a TREECLCD_NCRS of 20 or 31. The first digit indicates the grade and the second and third digits represent the limiting factor for hardwood grades.

Minimum sawlog length for tree grades is 12 feet and for log grades is 8 feet. Sawlog lengths do not extend above large forks, have excessive limbs or other defects, or have a section of the tree bole that does not meet minimum log grade specification. Limitations or "stoppers" for all softwoods and for hardwood grades 1, 2 and 3 include: any limb (live or dead) having a collar diameter exceeding the stem DOB at that point; or any group of 2.0-inch collar diameter or larger limbs (live or dead), within a 1-foot span, having a combined sum of diameters greater than the stem DOB of that section. Limitations for grade 4 hardwoods include: any limb or group of limbs, within a 1 foot span, with a collar diameter or sum of collar diameters greater than 1/3 of the stem DOB of that section.

Data collected for States in the NCRS region (SURVEY.RSCD = 23) in inventory years 1999-2009, PLOT.MANUAL_NCRS = 1.0-4.0. Refer to PLOT.MANUAL_NCRS for additional information (such as tables on tree grades and standard specifications for logs).

First digit:

- For a **hardwood** sawtimber tree (TREECLCD_NCRS = 20), the grade of the sawlog portion of the tree is based on "Hardwood Tree Grades for Factory Lumber" (Hanks 1976).

- For a **softwood** sawtimber tree (TREECLCD_NCRS = 20), the grade is based on the portion of the log that gives the best grade. For a softwood, where TREECLCD_NCRS = 31, the grade is based on the log that is present.

Codes: TREE_GRADE_NCRS (1st digit)

| Grade | Valid species |
|-------|--------------------------------|
| 1 | Hardwoods and softwoods. |
| 2 | Hardwoods and softwoods. |
| 3 | Hardwoods and softwoods. |
| 4 | Hardwoods only and white pine. |
| 5 | Hardwoods only. |

Second and third digits:

- For **hardwoods** with a grade 2, 3, 4, or 5, the second and third digit indicate the limiting quality factor that is keeping the log from moving into a better quality grade. For hardwood logs with a grade 5, the second digit is a 2 or 7 when an 8-foot log is present. If a 12-foot upper log is present, the second digit is 6.
- For **softwoods**, the second and third digits are always '00'.

Codes: TREE_GRADE_NCRS (2nd and 3rd digits)

| Code | Limiting factor |
|------|---|
| 00 | Not applicable, already a grade 1, all softwoods. |
| 10 | Diameter. |
| 20 | Length. |
| 30 | Clear cuttings. |
| 40 | Sweep and crook. |
| 50 | Cull. |
| 60 | Position in tree. |
| 70 | Multiple factors. |
| 80 | Diameter and clear cutting. |

Codes: TREE_GRADE_NCRS (Possible code combinations)

| Code | Tree type |
|------|----------------------|
| 000 | Hardwoods/softwoods. |
| 100 | Hardwoods/softwoods. |
| 200 | Softwoods. |
| 210 | Hardwoods. |
| 230 | Hardwoods. |
| 240 | Hardwoods. |
| 250 | Hardwoods. |
| 270 | Hardwoods. |

| Code | Tree type |
|------|------------------------------|
| 280 | Hardwoods. |
| 300 | Softwoods. |
| 310 | Hardwoods. |
| 330 | Hardwoods. |
| 340 | Hardwoods. |
| 350 | Hardwoods. |
| 370 | Hardwoods. |
| 380 | Hardwoods. |
| 400 | Softwoods - white pine only. |
| 430 | Hardwoods. |
| 520 | Hardwoods. |
| 560 | Hardwoods. |
| 570 | Hardwoods. |

3.1.143 BOUGHS_AVAILABLE_NCNS

Balsam fir boughs available, North Central Research Station. A code indicating if harvestable balsam fir boughs are present on trees ≥ 1.0 inch d.b.h. Boughs are harvestable if they occur in the bottom 7.5 feet of the tree and there is at least one branch no larger in diameter than a pencil where clipped and they are at least 18 inches in length with live needles.

Data populated for States in the NCNS region (SURVEY.RSCD = 23) for PLOT.MANUAL_NCNS = 2.0-3.0 (INVYR = 2004-2006). Only populated in Minnesota for PLOT.MANUAL_NCNS = 3.1-4.0 (INVYR in 2007, 2008).

Codes: BOUGHS_AVAILABLE_NCNS

| Code | Description |
|------|----------------------|
| 0 | No boughs available. |
| 1 | Boughs available. |

3.1.144 BOUGHS_HRVST_NCNS

Balsam fir boughs harvested, North Central Research Station. A code indicating whether or not balsam fir boughs were harvested on trees ≥ 1.0 inch d.b.h.

Data populated for States in the NCNS region (SURVEY.RSCD = 24) for PLOT.MANUAL_NCNS = 2.0-3.0 (INVYR = 2004-2006). Only populated in Minnesota for PLOT.MANUAL_NERS = 3.1-4.0 (INVYR in 2007, 2008).

Codes: BOUGHS_HRVST_NCNS

| Code | Description |
|------|---------------------------------|
| 0 | Boughs have not been harvested. |
| 1 | Boughs have been harvested. |

3.1.145 TREECLCD_31_NERS

Tree class code (version 3.1), Northeastern Research Station. A classification of the general quality of a tree that is ≥ 5.0 inches d.b.h. It classifies the quality of a live sawtimber tree based on the present condition. It also forecasts the potential quality of a live poletimber tree when it becomes sawtimber size. For standing dead trees, it identifies trees that could be salvaged for wood fiber (e.g., chips) if a salvage operation was imminent. Implemented beginning with PLOT.[MANUAL_NERS](#) = 3.1 (inventory year 2007) of the field guide.

Data collected as follows (SURVEY.[RSCD](#) = 24):

- All trees ≥ 5.0 inches d.b.h./d.r.c. when [STATUSCD](#) = 1 or 2 and [STANDING_DEAD_CD_NERS](#) = 1.
- Annual data inventory years 2007 to present.

Codes: TREECLCD_31_NERS

| Code | Description |
|------|---|
| 2 | Growing Stock - A live sawtimber-size tree with one-third or more of the gross board-foot volume in the entire sawlog length meeting grade, soundness, and size requirements; or the potential to do so for poletimber-size trees. It must contain one merchantable 12-foot log or two non-contiguous merchantable 8-foot logs, now (sawtimber) or prospectively (poletimber). |
| 3 | Rough Cull - A live tree that does not contain at least one 12-foot sawlog or two noncontiguous 8-foot logs now (sawtimber) or prospectively (poletimber), primarily because of roughness or poor form within the sawlog length. Or sawtimber and prospectively poletimber with two-thirds or more of its gross board-foot volume that does not meet size, soundness, and grade requirements; and 50% or more of the assigned total board-foot cull within the sawlog length is rough cull. |
| 4 | Rotten Cull - A live tree that does not contain at least one 12-foot sawlog or two noncontiguous 8-foot logs now (sawtimber) or prospectively (poletimber) and/or do not meet grade specifications for percent sound primarily because of rot within the sawlog length. Or sawtimber and prospectively poletimber with two-thirds or more of its gross board-foot volume that does not meet size, soundness, and grade requirements; and 50% or more of the assigned total board-foot cull within the sawlog length is rotten cull. |
| 5 | Salvable Dead - A standing dead tree with at least one-third merchantable sound volume. Rotten/missing cubic-foot cull does not exceed 67%. Note: Rough cubic-foot cull is not a criterion for determining salvable dead. |
| 6 | Nonsalvable Dead - A standing dead tree that does not qualify as salvable. |

3.1.146 AGENTCD_NERS

General damage / cause of death (agent) code, Northeastern Research Station. The cause of death for all trees since the previous survey. Also used as a damage indicator for periodic surveys until 2000.

Data collected as follows (SURVEY.[RSCD](#) = 24):

- Annual data through inventory year 2006, except Ohio (39).
- Last periodic for CT, DE, MD, MA, NH, NJ, NY, RI, VT and WV:
1993: New York (36)
1997: New Hampshire (33), Vermont (50)

- 1998: Connecticut (9), Massachusetts (25), Rhode Island (44)
 1999: Delaware (10), Maryland (24), New Jersey (34)
 2000: West Virginia (54)

Codes: AGENTCD_NERS (periodic inventories in CT, DE, MD, MA, NH, NJ, RI, VT, WV)

| Code | Description |
|-------------|--------------------|
| 0 | None. |
| 1 | Insect. |
| 2 | Disease. |
| 3 | Fire. |
| 4 | Animal. |
| 5 | Weather. |
| 6 | Suppression. |
| 7 | Unknown and other. |
| 8 | Harvest-related. |

Codes: AGENTCD_NERS (periodic inventory in NY, 1993)

| Code | Description |
|-------------|-------------------------|
| 00 | None. |
| 10 | Insect. |
| 20 | Disease. |
| 30 | Fire. |
| 40 | Animal. |
| 41 | Animal browse: 1-10%. |
| 42 | Animal browse: 11-40%. |
| 43 | Animal browse: 41-100%. |
| 50 | Weather. |
| 60 | Suppression. |
| 70 | Harvest-related. |
| 80 | Other human. |
| 90 | Unknown or not listed. |
| 99 | Dead sapling. |

Codes: AGENTCD_NERS (annual data: 2000-2003)

| Code | Description |
|-------------|--------------------|
| 10 | Insect damage. |
| 20 | Disease damage. |
| 30 | Fire damage. |
| 40 | Animal damage. |
| 50 | Weather damage. |

| Code | Description |
|-------------|---|
| 60 | Vegetation (suppression, competition, vines/kudzu). |
| 70 | Unknown / not sure / other (include notes). |
| 80 | Human-caused damage (cultural, logging, accidental damage, etc.). |
| 90 | Physical (hit by a falling tree). |

Codes: AGENTCD_NERS (annual data: 2004-2006)

| Code | Description |
|-------------|---|
| 10 | Insect. |
| 20 | Disease. |
| 30 | Fire. |
| 40 | Animal. |
| 50 | Weather. |
| 60 | Vegetation (suppression, competition, vines/kudzu). |
| 70 | Unknown / not sure / other - includes death from human activity not related to silvicultural or land clearing activity (accidental, random, etc.). |
| 80 | Silvicultural or land clearing activity (death caused by harvesting or other silvicultural activity, including girdling, chaining, etc., or to land clearing activity). |

3.1.147 BFSND_CD_NERS

Board-foot soundness code, Northeastern Research Station. A code based on percentage of board-foot cull that is sound cull. Sound cull is caused by form defects: sweep, crook, limbs and forks.

Data collected as follows (SURVEY.RSCD = 24):

- Live and dead trees, ≥ 9.0 inches d.b.h. if softwood, and ≥ 11.0 inches d.b.h. if hardwood.
- Annual data through inventory year 2006, except Ohio (39).
- Last periodic for CT, DE, MD, MA, NH, NJ, NY, RI, VT and WV:
1993: New York (36)
1997: New Hampshire (33), Vermont (50)
1998: Connecticut (9), Massachusetts (25), Rhode Island (44)
1999: Delaware (10), Maryland (24), New Jersey (34)
2000: West Virginia (54)

Codes: BFSNDCC_NERS

| Code | Description |
|-------------|--------------------|
| 0 | 00-09% |
| 1 | 10-19% |
| 2 | 20-29% |
| 3 | 30-39% |
| 4 | 40-49% |
| 5 | 50-59% |
| 6 | 60-69% |
| 7 | 70-79% |
| 8 | 80-89% |
| 9 | 90-100% |

3.1.148 AGECHKCD_RMRS

Radial growth and tree age check code, Rocky Mountain Research Station. A code indicating the method used to obtain radial growth and tree age. Only populated by certain FIA work units (SURVEY.RSCD = 22).

Note: Code 3 was added starting with PLOT.MANUAL = 6.0

Codes: AGECHKCD_RMRS

| Code | Description |
|-------------|--|
| 0 | <ul style="list-style-type: none"> Age/radial growth measured directly from core. Age/radial growth calculated from remeasurement data (same tree). |
| 1 | <ul style="list-style-type: none"> Age/radial growth was estimated due to rot. Age/radial growth was estimated because rings were difficult to count (old suppressed trees). Age was estimated because the increment bore could not reach to tree center. |
| 2 | <ul style="list-style-type: none"> Age/radial growth was calculated from a similar remeasure tree (same species and diameter class). Age/radial growth was based on a similar tree off the subplot. |
| 3 | <ul style="list-style-type: none"> Age measured from a collected tree core (for cores collected and sent into the office for aging). |

3.1.149 PREV_ACTUALHT_RMRS

Previous actual height, Rocky Mountain Research Station. The actual length (height) of a tree, in feet, assigned at the previous inventory (from annual or periodic data). This attribute is downloaded from the previous inventory and is editable by the current field crew. If the previous actual length is obviously wrong (e.g., length recorded as 031 instead of 013), an updated PREV_ACTUALHT_RMRS is estimated.

For RMRS (SURVEY.RSCD = 22), actual length is collected for all tally trees \geq 1.0 inch d.b.h./d.r.c. with missing tops (top on live trees is completely detached; top on dead trees is greater than 50 percent detached from the tree). If the top is intact, this item may be

omitted. The actual length of the tree is recorded to the nearest 1.0 foot, from ground level to the break.

3.1.150 PREV_AGECHKCD_RMRS

Previous radial growth and tree age check code, Rocky Mountain Research Station. A code indicating the method used to obtain radial growth and tree age assigned at the previous inventory (from annual or periodic data). Populated for PLOT.[MANUAL](#) ≥4.0. Only populated by certain FIA work units (SURVEY.[RSCD](#) = 22).

Codes: PREV_AGECHKCD_RMRS

| Code | Description |
|------|--|
| 0 | <ul style="list-style-type: none"> Age/radial growth measured directly from core. Age/radial growth calculated from remeasurement data (same tree). |
| 1 | <ul style="list-style-type: none"> Age/radial growth was estimated due to rot. Age/radial growth was estimated because rings were difficult to count (old suppressed trees). Age was estimated because the increment bore could not reach to tree center. |
| 2 | <ul style="list-style-type: none"> Age/radial growth was calculated from a similar remeasure tree (same species and diameter class). Age/radial growth was based on a similar tree off the subplot. |
| 3 | <ul style="list-style-type: none"> Age measured from a collected tree core (for cores collected and sent into the office for aging). |

Note: Code 3 was added starting with PLOT.[MANUAL](#) = 6.0.

3.1.151 PREV_BHAGE_RMRS

Previous breast height age, Rocky Mountain Research Station. The breast height age (BHAGE) assigned to a tree at the previous inventory (from annual or periodic data). Populated for PLOT.[MANUAL](#) ≥4.0.

BHAGE is the age of a live tree derived from counting tree rings from an increment core sample extracted at a height of 4.5 feet above ground. Breast height age is collected for a subset of trees and only for trees where the diameter is measured at breast height (d.b.h.). This data item is used to calculate classification attributes such as stand age. It is left blank (null) when it is not collected.

For RMRS (SURVEY.[RSCD](#) = 22), one tree is sampled for each species and broad diameter class present on a plot.

3.1.152 PREV_HT_RMRS

Previous total length, Rocky Mountain Research Station. The total length (height) of a tree, in feet, assigned at the previous inventory (from annual or periodic data). This attribute is downloaded from the previous inventory and is editable by the current field crew. If the previous total length is obviously wrong (e.g., length recorded as 031 instead of 013), an updated PREV_HT_RMRS is estimated.

For RMRS (SURVEY.[RSCD](#) = 22), total length is collected for all tally trees ≥1.0 inch d.b.h./d.r.c. and is recorded to the nearest 1.0 foot. The total length of a sample tree is 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. The minimum height for timber species is 5.0 feet and for woodland species is 1.0 foot.

3.1.153 PREV_TOTAGE_RMRS

Previous total age, Rocky Mountain Research Station. The total age assigned to a tree at the previous inventory (from annual or periodic data). Populated for PLOT.MANUAL ≥4.0. The age for live trees is derived by counting tree rings from an increment core sample extracted at the base of a tree where diameter is measured at root collar (d.r.c.), or for small saplings (1.0-2.9 inches d.b.h.) by counting all branch whorls, or by adding a species-dependent number of years to breast height age. Total age is collected for a subset of trees and is used to calculate classification attributes such as stand age. It is left blank (null) when it is not collected. Only populated by certain FIA work units (SURVEY.RSCD = 22).

3.1.154 PREV_TREECLCD_RMRS

Previous tree class code, Rocky Mountain Research Station. The tree class (TREECLCD_RMRS) assigned at the previous inventory (from annual or periodic data). This attribute is downloaded from the previous inventory and is editable by the current field crew. If the past tree class is obviously wrong (e.g., the previous code was recorded as 6 [soft dead] and the tree is still alive), an updated PREV_TREECLCD_RMRS is recorded. This attribute is also recorded for new mortality trees. Only populated by certain FIA work units (SURVEY.RSCD = 22).

3.1.155 RADAGECD_RMRS

Radial growth / age code, Rocky Mountain Research Station. A code indicating if growth and/or age information is required for the tree.

Tree age and radial growth information are collected for specified tally trees and timber species site trees. In addition, age information is collected for timber species seedling counts. General guidelines for radial growth and age tree selection are as follows:

Radial growth and age tree selection guidelines:

- **Timber species -**
 - Radial growth information is required for a minimum of two trees in each diameter class (starting with the 4-inch class) for each species.
 - Age information is required for a minimum of one tree in each diameter class and species, and for one timber species seedling count per species (i.e., one count for each species group for the entire plot, not condition class).
 - For both radial growth and age, if rough or rotten trees are bored, select additional sound trees if tallied.
- **Woodland species -**
 - For each woodland genus group tallied across the subplots, select one representative live tally tree within each stand-size class tallied. Core the largest stem near the base to obtain the age and radial.

Codes: RADAGECD_RMRS

| Code | Description |
|-------------|---|
| 0 | No. Do NOT collect radial growth or age information. This is not a site tree nor an age and/or growth tree. |
| 1 | Yes. Collect only radial growth; this is a timber species growth tree only. |
| 2 | Yes. Collect both radial growth and age information; this tree is either a site tree or an age/growth tree. Also use this code for 2-inch class saplings that get age only. |
| 3 | Yes. Collect radial growth, age will be determined from the core. Use this code where it is required to collect tree cores (cannot be used for site trees). |
| 4 | Yes. Use Past/Current Diameters for growth (replaces just radial). |
| 5 | Yes. Collect age information. Use Past/Current Diameters for growth (replace radial). |

Diameter size-class ranges for timber species are as follows:

| Stand-Size Class | Softwoods | Hardwoods |
|-------------------------|--|----------------------------------|
| - | Size-class range (d.b.h.) | Size-class range (d.b.h.) |
| 1 | 0-0.9 inches (count whorls/scars): age only. | 0-0.9 inches. |
| 1 | 1.0-2.9 inches (age at base): age only. | 1.0-2.9 inches. |
| 1 | 3.0-4.9 inches (age at BH): age and radial. | 3.0-4.9 inches. |
| 2 | 5.0-8.9 inches. | 5.0-8.9 inches. |
| 2 | - | 9.0-10.9 inches. |
| 3 | 9.0-12.9 inches. | 11.0-12.9 inches. |
| 3 | 13.0-16.9 inches. | 13.0-16.9 inches. |
| 3 | 17.0-20.9 inches. | 17.0-20.9 inches. |
| 3 | etc. | etc. |

3.1.156 RADGRW_RMRS

Radial growth, Rocky Mountain Research Station. A 2-digit number indicating the length of a 10-year radial increment for trees that require radial growth information to be collected (see [RADAGECD_RMRS](#) for radial growth and age tree selection guidelines).

Radial growth measurement is taken to the nearest 1/20th inch for the last 10 years of radial growth from an increment core taken immediately below the point of diameter measurement and at a right angle to the bole. Using a ruler with a 1/20th-inch scale, the length on the core is measured from the inner edge of the last (most recent) complete summer wood ring to the inner edge of the summer wood ring 10 years previous (for example, 6/20 inches is recorded as 06 and 23/20 inches is recorded as 23). Only populated by certain FIA work units (SURVEY.RSCD = 22).

3.1.157 VOLBSGRS

Gross board-foot wood volume in the sawlog portion of a sawtimber tree (Scribner Rule). The total board-foot (Scribner Rule) volume of wood in the central stem of a timber species tree of sawtimber size (9.0 inches d.b.h. minimum for softwoods, 11.0 inches d.b.h. minimum for hardwoods), from a 1-foot stump to a minimum top diameter (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 diameter. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per unit area information. This attribute is blank (null) for softwood trees with DIA <9.0 inches (<11.0 inches for hardwoods). All sawtimber-size 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) are blank (null) in this field. Only populated by certain FIA work units (SURVEY.RSCD = 22, 26, 27).

3.1.158 VOLBSNET

Net board-foot wood volume in the sawlog portion of a sawtimber tree (Scribner Rule). The net board-foot (Scribner Rule) volume of wood in the central stem of a timber species tree of sawtimber size (9.0 inches d.b.h. minimum for softwoods, 11.0 inches d.b.h. minimum for hardwoods), from a 1-foot stump to a minimum top diameter (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 diameter. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per unit area information. This attribute is blank (null) for softwood trees with DIA <9.0 inches (<11.0 inches for hardwoods). All sawtimber-size 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) are blank (null) in this field. Form cull and rotten/missing cull are excluded. Only populated by certain FIA work units (SURVEY.RSCD = 22, 26, 27).

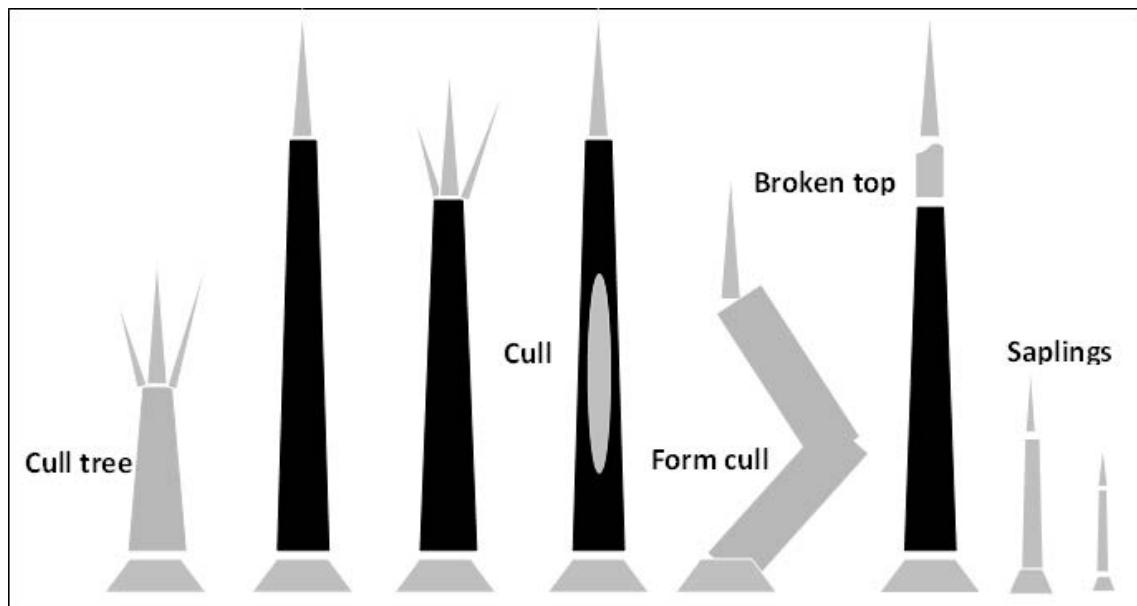


Figure 3-6: Illustration of timber species net board-foot wood volume in the sawlog portion of a sawtimber tree (VOLBSNET) in black. Gray trees and gray parts are excluded. See VOLBSNET for a full description of this attribute.

3.1.159 SAPLING_FUSIFORM_SRS

Sapling fusiform, Southern Research Station. A code indicating the incidence of fusiform occurring on the main stem or on a live branch within 12 inches of the main stem of longleaf, slash, and loblolly pine saplings (STATUSCD = 1 and SPCD = 11, 121, or 131 and

$1 \leq \text{DIA} < 5$). Only populated by certain FIA work units (SURVEY.RSCD = 33). Not populated for the [Caribbean Islands](#).

Codes: SAPLING_FUSIFORM_SRS

| Code | Description |
|------|-------------------|
| 0 | None. |
| 1 | Fusiform present. |

3.1.160 EPIPHYTE_PNWRS

Epiphyte loading (Pacific Islands), Pacific Northwest Research Station. A rating indicating the extent of epiphyte loading. Epiphytes are defined as plants that use the tree for support, however, they do not draw nourishment from it. The rating is based on the Hawksworth (1979) six-class rating system. Using this rating system, the live crown is divided into thirds, and each third is rated using the following scale: 0 is for no visible epiphytes, 1 for <50 percent of the branches or bole loaded with epiphytes, 2 for >50 percent of the branches or bole loaded with epiphytes. The ratings for each third are summed together to yield the Hawksworth rating. This rating is collected for all live trees ≥ 1.0 inch d.b.h. Only populated by certain FIA work units (SURVEY.RSCD = 26).

Codes: EPIPHYTE_PNWRS

| Code | Description |
|------|---|
| 0 | Hawksworth tree rating of 0, none. |
| 1 | Hawksworth tree rating of 1, light epiphyte loading. |
| 2 | Hawksworth tree rating of 2, light epiphyte loading. |
| 3 | Hawksworth tree rating of 3, medium epiphyte loading. |
| 4 | Hawksworth tree rating of 4, medium epiphyte loading. |
| 5 | Hawksworth tree rating of 5, heavy epiphyte loading. |
| 6 | Hawksworth tree rating of 6, heavy epiphyte loading. |

3.1.161 ROOTHT_PNWRS

Rooting height (Pacific Islands), Pacific Northwest Research Station. The height of the stilted or buttressed root system from the ground level to the highest point where the stilts or buttresses protrude from the bole of the tree. Measured to the nearest foot. Only populated by certain FIA work units (SURVEY.RSCD = 26).

3.1.162 CAVITY_USE_PNWRS

Cavity presence, Pacific Northwest Research Station. A code indicating the largest cavity present in a live tree that is utilized by wildlife. Only populated by certain FIA work units (SURVEY.RSCD = 26). Not populated for the [Pacific Islands](#).

Codes: CAVITY_USE_PNWRS

| Code | Description |
|------|---|
| 0 | No cavity or den present. |
| 1 | Cavity or den present <6.0 inches wide. |
| 2 | Cavity or den present ≥ 6.0 inches wide. |

3.1.163 CORE_LENGTH_PNWRS

Length of measured core, Pacific Northwest Research Station. The total length, in inches, of the extracted core used when the tree age is extrapolated. Only populated by certain FIA work units (SURVEY.RSCD = 26). Not populated for the [Pacific Islands](#).

3.1.164 CULTURALLY_KILLED_PNWRS

Culturally killed code, Pacific Northwest Research Station. A code indicating if a cut tree was killed by direct human intervention, but not utilized (removed from plot). Only populated by certain FIA work units (SURVEY.RSCD = 26, 27). Not populated for the [Pacific Islands](#).

Codes: CULTURALLY_KILLED_PNWRS

| Code | Description |
|------|---|
| 0 | Any tree that does not meet the criteria listed in code 1. |
| 1 | Any tree that was killed by direct human cause (girdled, cut, knocked over, sprayed with herbicide, etc.), which has not been removed from plot (a treatment must be recorded). |

3.1.165 DIA_EST_PNWRS

Standing dead estimated diameter, Pacific Northwest Research Station. An estimate of the diameter at breast height for a standing dead tree when it was alive. Only populated by certain FIA work units (SURVEY.RSCD = 26, 27). Not populated for the [Pacific Islands](#).

3.1.166 GST_PNWRS

Growth sample tree, Pacific Northwest Research Station. A code indicating whether or not a tree is to be measured for total length and actual length and used as a growth sample tree. Only populated by certain FIA work units (SURVEY.RSCD = 26, 27). Not populated for the [Pacific Islands](#).

Codes: GST_PNWRS

| Code | Description |
|------|-----------------------------------|
| N | Tree is not a growth sample tree. |
| Y | Tree is a growth sample tree. |

3.1.167 INC10YR_PNWRS

10-year increment, Pacific Northwest Research Station. The radial increment for the most recent ten years of full growth for all conifers and red alder. This measurement is taken to the nearest 1/20th inch using an increment borer at the current inventory. Only populated by certain FIA work units (SURVEY.RSCD = 26, 27). Not populated for the [Pacific Islands](#).

3.1.168 INC5YRHT_PNWRS

5-year height growth, Pacific Northwest Research Station. The height to the nearest 1.0 foot, for the most recent five years of growth for pine, spruce, Douglas-fir, and true firs. Only populated by certain FIA work units (SURVEY.RSCD = 26). Not populated for the [Pacific Islands](#).

Note: This measurement is only populated for USFS Region 5 and Region 6 administered lands; it is used for growth and yield models.

3.1.169 INC5YR_PNWRS

5-year increment, Pacific Northwest Research Station. The radial increment for the most recent five years of full growth for all conifers and red alder. This measurement is taken to the nearest 1/20th inch using an increment borer at the current inventory. Only populated by certain FIA work units (SURVEY.RSCD = 26). Not populated for the [Pacific Islands](#).

3.1.170 RING_COUNT_INNER_2INCHES_PNWRS

Number of rings in inner 2 inches, Pacific Northwest Research Station. The number of tree rings in the inner two inches of the core closest to the center of the tree. Only populated by certain FIA work units (SURVEY.RSCD = 26). Not populated for the [Pacific Islands](#).

3.1.171 RING_COUNT_PNWRS

Number of rings, Pacific Northwest Research Station. The total number of tree rings counted when the tree age is extrapolated. Only populated by certain FIA work units (SURVEY.RSCD = 26). Not populated for the [Pacific Islands](#).

3.1.172 SNAG_DIS_CD_PNWRS

Snag reason for disappearance code, Pacific Northwest Research Station. A code indicating the reason why a standing dead tree recorded during a previous inventory visit is no longer tallied. Only populated by certain FIA work units (SURVEY.RSCD = 26, 27). Not populated for the [Pacific Islands](#).

Codes: SNAG_DIS_CD_PNWRS

| Code | Description |
|------|---|
| 2 | Fell over "naturally" (wind, decay, etc.) or no longer self-supported; still present. |
| 3 | Fell over "naturally"; removed from the site, or not discernible by crew. |
| 4 | Cut down or pushed over; still present. |
| 5 | Cut down or pushed over; removed from the site, or not discernible by crew. |
| 6 | Diameter (d.b.h./d.r.c.) and/or height no longer meet minimum for tally (snag "shrank" to <5.0 inches d.b.h./d.r.c. or <4.5 feet tall). |

3.1.173 CONEPRESCD1

Cone presence code 1. A code indicating the type of cone presence on a live pinyon pine species ≥ 5.0 inches d.r.c. Up to three codes may be recorded per tree (CONEPRES1, CONEPRES2, CONEPRES3) if more than one code describes cone presence. When multiple codes apply, the cone type that describes the most abundant presence is recorded for CONEPRES1. The cone type describing the second most abundant presence is recorded for CONEPRES2. The cone type describing the third most abundant presence is recorded for CONEPRES3. Code 0 is recorded for CONEPRES1 to indicate that there are no cones present. Code 0 is recorded for CONEPRES2 or CONEPRES3 to indicate that there are no additional codes describing cone presence for the tree. Only populated by certain FIA work units (SURVEY.RSCD = 22).

Codes: CONEPRESCD1

| Code | Description |
|-------------|--|
| 0 | No cones present on tree. |
| 1 | Non-viable cone - Small (≤ 1 inch d.r.c), closed brown conelets with no yellow/green coloration. |
| 2 | Last year's old cones - Open, empty (dark brown or gray) cone(s) (≥ 2 inches d.r.c.) with no sap or seeds present (previous years' cones). |
| 3 | Current year viable cones - Small (≤ 1 inch d.r.c) and/or large (≥ 2 inches d.r.c.) green cone(s) with sap and/or seeds present (this year's cones). |

3.1.174 CONEPRESCD2

Cone presence code 2. See CONEPRESCD1 description for definition.

3.1.175 CONEPRESCD3

Cone presence code 3. See CONEPRESCD1 description for definition.

3.1.176 MASTCD

Mast code. A rating indicating the amount of masting for a live pinyon pine species ≥ 5.0 inches d.r.c. Mast refers to the production of a seed (in this case, cone) crop. Using a rating system, the live crown of a tree is divided into thirds horizontally, and each third is evaluated for the current-year cone production using the following scale: 0 indicates no cones present, 1 indicates that the section has <50 percent of its branches producing cones, and 2 indicates that the section has ≥ 50 percent of its branches producing cones. The ratings for each third are summed together to obtain a MASTCD rating (0-6) for the tree. Only populated by certain FIA work units (SURVEY.RSCD = 22).

Codes: MASTCD

| Code | Description |
|-------------|---|
| 0 | Mast rating of 0, none. |
| 1 | Mast rating of 1, low level of branches producing cones. |
| 2 | Mast rating of 2, low level of branches producing cones. |
| 3 | Mast rating of 3, medium level of branches producing cones. |
| 4 | Mast rating of 4, medium level of branches producing cones. |
| 5 | Mast rating of 5, high level of branches producing cones. |
| 6 | Mast rating of 6, high level of branches producing cones. |

3.1.177 VOLTSGRS

Gross cubic-foot total-stem wood volume. For timber species (trees where the diameter is measured at breast height [d.b.h.] ≥ 1.0 inch d.b.h., this is the total cubic-foot volume of wood in the central stem from ground line to the tree tip. For woodland species (trees where the diameter is measured at root collar [d.r.c.]; identified by REF_SPECIES.WOODLAND = 'Y') ≥ 1.5 inches d.r.c., this is the total cubic-foot volume of wood and bark from the d.r.c. measurement point(s) to a 1.5-inch top diameter, including branches that are at least 1.5 inches in diameter along the length of the branch. Calculated for live and standing dead trees. Includes rotten, missing, and form cull (volume loss due to rotten, missing, and form cull defect has not been deducted). This is

a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for woodland species with DIA <1.5 inches d.r.c. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

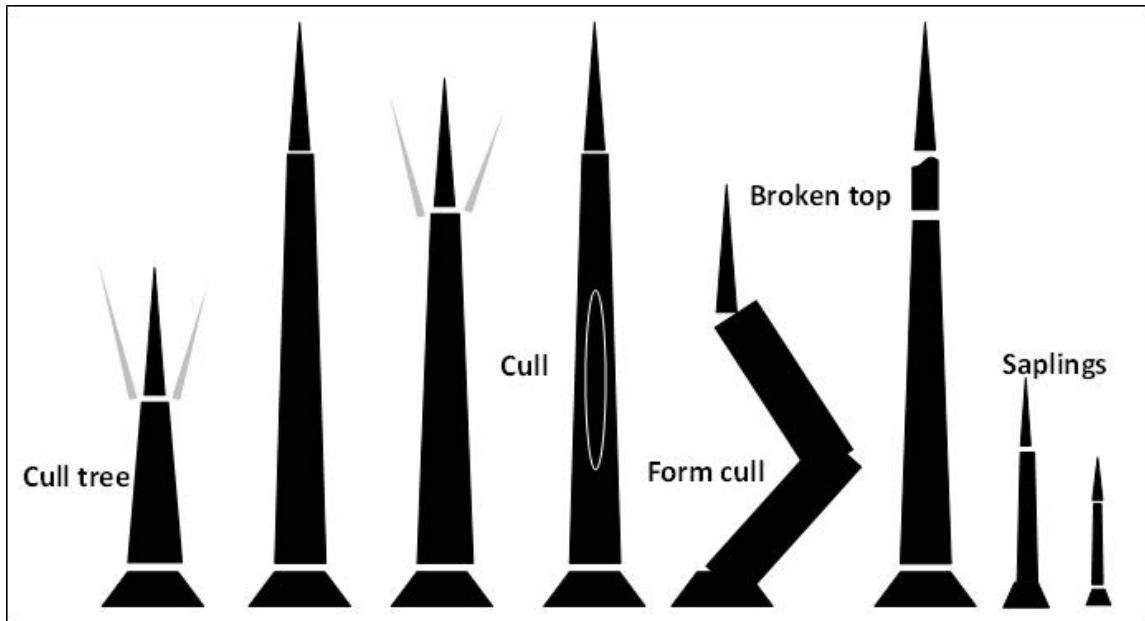


Figure 3-7: Illustration of timber species gross cubic-foot total-stem wood volume (VOLTSGRS) in black. Gray tree parts are excluded. See VOLTSGRS for a full description of this attribute.

3.1.178 VOLTSGRS_BARK

Gross cubic-foot total-stem bark volume. The total cubic-foot volume of bark in the central stem of timber species (trees where diameter is measured at breast height [d.b.h.] ≥ 1.0 inch d.b.h., from ground line to the tree tip. Calculated for live and standing dead trees. Includes rotten, missing, and form cull (volume loss due to rotten, missing, and form cull defect has not been deducted). This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.179 VOLTSSND

Sound cubic-foot total-stem wood volume. For timber species (trees where the diameter is measured at breast height [d.b.h.] ≥ 1.0 inch d.b.h., this is the total sound cubic-foot volume of wood in the central stem from ground line to the tree tip. For woodland species (trees where the diameter is measured at root collar [d.r.c.]; identified by REF_SPECIES.WOODLAND = 'Y') ≥ 1.5 inches d.r.c., this is the total sound cubic-foot volume of wood and bark from the d.r.c. measurement point(s) to a 1.5-inch top diameter, including branches that are at least 1.5 inches in diameter along the length of the branch. Calculated for live and standing dead trees. Does not include rotten and missing cull (volume loss due to rotten and missing cull defect has been deducted). This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute

is blank (null) for woodland species with DIA <1.5 inches d.r.c. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.180 **VOLTSSND_BARK**

Sound cubic-foot total-stem bark volume. The total sound cubic-foot volume of bark in the central stem of timber species (trees where diameter is measured at breast height [d.b.h.] \geq 1.0 inch d.b.h., from ground line to the tree tip. Calculated for live and standing dead trees. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.181 **VOLCFGRS_STUMP**

Gross cubic-foot stump wood volume. The total cubic-foot volume of wood in the stump of timber species (trees where diameter is measured at breast height [d.b.h.] \geq 5.0 inches d.b.h. The stump is that portion of the tree from the ground line to the bottom of the merchantable bole (i.e., below 1 foot). Calculated for live and standing dead trees. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for timber species with DIA <5.0 inches and for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.182 **VOLCFGRS_STUMP_BARK**

Gross cubic-foot stump bark volume. The total cubic-foot volume of bark in the stump of timber species (trees where diameter is measured at breast height [d.b.h.] \geq 5.0 inches d.b.h. The stump is that portion of the tree from the ground line to the bottom of the merchantable bole (i.e., below 1 foot). Calculated for live and standing dead trees. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for timber species with DIA <5.0 inches and for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.183 **VOLCF SND_STUMP**

Sound cubic-foot stump wood volume. The sound cubic-foot volume of wood in the stump of timber species (trees where diameter is measured at breast height [d.b.h.] \geq 5.0 inches d.b.h. The stump is that portion of the tree from the ground line to the bottom of the merchantable bole (i.e., below 1 foot). Calculated for live and standing dead trees. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for timber species with DIA <5.0 inches and for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.184 **VOLCF SND_STUMP_BARK**

Sound cubic-foot stump bark volume. The sound cubic-foot volume of bark in the stump of timber species (trees where diameter is measured at breast height [d.b.h.] \geq 5.0 inches d.b.h. The stump is that portion of the tree from the ground line to the bottom of the merchantable bole (i.e., below 1 foot). Calculated for live and standing dead trees. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for timber species with DIA <5.0 inches and for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.185 VOLCFGRS_BARK

Gross cubic-foot stem bark volume. The total cubic-foot volume of bark in the central stem of timber species (trees where diameter is measured at breast height [d.b.h.] \geq 5.0 inches d.b.h., from a 1-foot stump to a minimum 4-inch top diameter, or to where the central stem breaks into limbs all of which are $<$ 4.0 inches in diameter. Calculated for live and standing dead trees. Includes rotten, missing, and form cull (volume loss due to rotten, missing, and form cull defect has not been deducted). This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for timber species with DIA $<$ 5.0 inches and for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.186 VOLCFGRS_TOP

Gross cubic-foot stem-top wood volume. The total cubic-foot volume of wood in the non-merchantable top of timber species (trees where diameter is measured at breast height [d.b.h.] \geq 5.0 inches d.b.h. The top is the portion of the stem above the merchantable bole (i.e., above the 4-inch top diameter). Calculated for live and standing dead trees. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for timber species with DIA $<$ 5.0 inches and for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.187 VOLCFGRS_TOP_BARK

Gross cubic-foot stem-top bark volume. The total cubic-foot volume of bark in the non-merchantable top of timber species (trees where diameter is measured at breast height [d.b.h.] \geq 5.0 inches d.b.h. The top is the portion of the stem above the merchantable bole (i.e., above the 4-inch top diameter). Calculated for live and standing dead trees. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for timber species with DIA $<$ 5.0 inches and for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.188 VOLCFSND_BARK

Sound cubic-foot stem bark volume. The sound cubic-foot volume of bark in the central stem of timber species (trees where diameter is measured at breast height [d.b.h.] \geq 5.0 inches d.b.h., from a 1-foot stump to a minimum 4-inch top diameter, or to where the central stem breaks into limbs all of which are $<$ 4.0 inches in diameter. Calculated for live and standing dead trees. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for timber species with DIA $<$ 5.0 inches and for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.189 VOLCFSND_TOP

Sound cubic-foot stem-top wood volume. The sound cubic-foot volume of wood in the non-merchantable top of timber species (trees where diameter is measured at breast height [d.b.h.] \geq 5.0 inches d.b.h. The top is the portion of the stem above the merchantable bole (i.e., above the 4-inch top diameter). Calculated for live and standing dead trees. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for timber species with DIA $<$ 5.0 inches and for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.190 VOLCFSND_TOP_BARK

Sound cubic-foot stem-top bark volume. The sound cubic-foot volume of bark in the non-merchantable top of timber species (trees where diameter is measured at breast height [d.b.h.]) ≥ 5.0 inches d.b.h. The top is the portion of the stem above the merchantable bole (i.e., above the 4-inch top diameter). Calculated for live and standing dead trees. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for timber species with DIA < 5.0 inches and for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.191 VOLCFNET_BARK

Net cubic-foot stem bark volume. The net cubic-foot volume of bark in the central stem of timber species (trees where diameter is measured at breast height [d.b.h.]) ≥ 5.0 inches d.b.h., from a 1-foot stump to a minimum 4-inch top diameter, or to where the central stem breaks into limbs all of which are < 4.0 inches in diameter. Calculated for live and standing dead trees. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for timber species with DIA < 5.0 inches and for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.192 VOLCSGRS_BARK

Gross cubic-foot bark volume in the sawlog portion of a sawtimber tree. The total cubic-foot volume of bark in the central stem of a timber species tree of sawtimber size (9.0 inches d.b.h. minimum for softwoods, 11.0 inches d.b.h. minimum for hardwoods), from a 1-foot stump to a minimum top diameter (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 diameter. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for softwood trees with DIA < 9.0 inches (< 11.0 inches for hardwoods). All sawtimber-size 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) are blank (null) in this field. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.193 VOLCSSND_BARK

Sound cubic-foot bark volume in the sawlog portion of a sawtimber tree. The sound cubic-foot volume of bark in the central stem of a timber species tree of sawtimber size (9.0 inches d.b.h. minimum for softwoods, 11.0 inches d.b.h. minimum for hardwoods), from a 1-foot stump to a minimum top diameter (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 diameter. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for softwood trees with DIA < 9.0 inches (< 11.0 inches for hardwoods). All sawtimber-size 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) are blank (null) in this field. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.194 VOLCSNET_BARK

Net cubic-foot bark volume in the sawlog portion of a sawtimber tree. The net cubic-foot volume of bark in the central stem of a timber species tree of sawtimber size (9.0 inches d.b.h. minimum for softwoods, 11.0 inches d.b.h. minimum for hardwoods), from a 1-foot stump to a minimum top diameter (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 diameter. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for softwood trees with DIA <9.0 inches (<11.0 inches for hardwoods). All sawtimber-size 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) are blank (null) in this field. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.195 DRYBIO_STEM

Dry biomass of wood in the total stem. The oven-dry biomass, in pounds, of wood in the total stem of timber species (trees where diameter is measured at breast height [d.b.h.] \geq 1.0 inch d.b.h., from ground line to the tree tip. Calculated for live and standing dead trees. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.196 DRYBIO_STEM_BARK

Dry biomass of bark in the total stem. The oven-dry biomass, in pounds, of bark in the total stem of timber species (trees where diameter is measured at breast height [d.b.h.] \geq 1.0 inch d.b.h., from ground line to the tree tip. Calculated for live and standing dead trees. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.197 DRYBIO_STUMP_BARK

Dry biomass of bark in the stump. The oven-dry biomass, in pounds, of bark in the stump of timber species (trees where diameter is measured at breast height [d.b.h.] \geq 5.0 inches d.b.h. The stump is that portion of the tree from the ground line to the bottom of the merchantable bole (i.e., below 1 foot). Calculated for live and standing dead trees. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for timber species with DIA <5.0 inches and for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.198 DRYBIO_BOLE_BARK

Dry biomass of bark in the merchantable bole. The oven-dry biomass, in pounds, of bark in the merchantable bole of timber species (trees where diameter is measured at breast height [d.b.h.] \geq 5.0 inches d.b.h., from a 1-foot stump to a minimum 4-inch top diameter. Calculated for live and standing dead trees. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for timber species with DIA <5.0 inches and for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.199 DRYBIO_BRANCH

Dry biomass of branches. The oven-dry biomass, in pounds, of wood and bark in the branches/limbs of timber species (trees where diameter is measured at breast height [d.b.h.] ≥ 1.0 inch d.b.h.) DRYBIO_BRANCH is only branches; it does not include any portion of the total stem. Calculated for live and standing dead trees. For live trees, this value is reduced for broken tops. For standing dead trees, this value is reduced for broken tops as well as DECAYCD. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for woodland species. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.200 DRYBIO_FOLIAGE

Dry biomass of foliage. The oven-dry biomass, in pounds, of foliage for live trees ≥ 1.0 inch d.b.h./d.r.c. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.201 DRYBIO_SAWLOG_BARK

Dry biomass of bark in the sawlog portion of a sawtimber tree. The oven-dry biomass, in pounds, of bark in the sawlog portion of timber species trees of sawtimber size (9.0 inches d.b.h. minimum for softwoods, 11.0 inches minimum d.b.h. for hardwoods), from a 1-foot stump to a minimum top diameter (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 diameter. This is a per tree value and must be multiplied by TPA_UNADJ to obtain per acre information. This attribute is blank (null) for softwood trees with DIA < 9.0 inches (< 11.0 inches for hardwoods) and standing dead trees. Refer to [appendix K](#) for information on FIA volume, biomass, and carbon estimation.

3.1.202 PREV_ACTUALHT_FLD

Previous actual height. (*All live and standing dead tally trees ≥ 1.0 inch d.b.h./d.r.c.*) The actual height measured in the field from the previous inventory. See [ACTUALHT](#) for details.

3.1.203 PREV_HT_FLD

Previous total height. (*All live and standing dead tally trees ≥ 1.0 inch d.b.h./d.r.c.*) The total height from the previous inventory (HTCD = 1, 2, or 3). See [HT](#) for details.

3.2 Tree Woodland Stems Table

(Oracle table name: TREE_WOODLAND_STEMS)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---------------------------|------------------|
| 3.2.1 | CN | Sequence number | VARCHAR2(34) |
| 3.2.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 3.2.3 | INVYR | Inventory year | NUMBER(4) |
| 3.2.4 | STATECD | State code | NUMBER(4) |
| 3.2.5 | UNITCD | Survey unit code | NUMBER(2) |
| 3.2.6 | COUNTYCD | County code | NUMBER(3) |
| 3.2.7 | PLOT | Plot number | NUMBER |
| 3.2.8 | SUBP | Subplot number | NUMBER |
| 3.2.9 | TREE | Woodland tree number | NUMBER(9) |
| 3.2.10 | TRE_CN | Tree sequence number | VARCHAR2(34) |
| 3.2.11 | DIA | Woodland stem diameter | NUMBER(5,2) |
| 3.2.12 | STATUSCD | Woodland stem status code | NUMBER(1) |
| 3.2.13 | STEM_NBR | Woodland stem number | NUMBER(3) |
| 3.2.14 | CYCLE | Inventory cycle number | NUMBER(2) |
| 3.2.15 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |
| 3.2.16 | CREATED_BY | Created by | VARCHAR2(30) |
| 3.2.17 | CREATED_DATE | Created date | DATE |
| 3.2.18 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 3.2.19 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 3.2.20 | MODIFIED_DATE | Modified date | DATE |
| 3.2.21 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|------------------------------|-----------------------------|----------------------|
| Primary | CN | N/A | WOODS_PK |
| Unique | TRE_CN, STEM_NBR | N/A | WOODS_UK |
| Unique | PLT_CN, SUBP, TREE, STEM_NBR | N/A | WOODS_UK2 |
| Foreign | PLT_CN | TREE_WOODLAND_STEMS to PLOT | WOODS_PLT_FK |
| Foreign | TRE_CN | TREE_WOODLAND_STEMS to TREE | WOODS_TRE_FK |

3.2.1 CN

Sequence number. A unique sequence number used to identify a tree woodland stems record.

3.2.2 PLT_CN

Plot sequence number. Foreign key linking the tree woodland stems record to the plot record.

3.2.3 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

3.2.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

3.2.5 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 B](#) for codes.

3.2.6 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

3.2.7 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.

3.2.8 SUBP

Subplot number. The number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4. Other plot designs have various subplot number values. See PLOT.[DESIGNCD](#) and [appendix G](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

3.2.9 TREE

Woodland tree number. A number that uniquely identifies the woodland tree on the subplot to which the individual qualifying stem belongs.

Woodland species are often multi-stemmed. Individual stems (live or dead) must be at least 1 foot in length and at least 1.0 inch in diameter 1 foot up from the stem diameter measurement point to qualify for measurement.

3.2.10 TRE_CN

Tree sequence number. Foreign key linking the tree woodland stem record to the tree record.

3.2.11 DIA

Woodland stem diameter. The current diameter, in inches, at the point of diameter measurement for the individual qualifying stem on the woodland tree. Individual stems (live or dead) must be at least 1 foot in length and at least 1.0 inch in diameter 1 foot up from the stem diameter measurement point to qualify for measurement.

For woodland species, which are often multi-stemmed, diameter is measured at the ground line or at the stem root collar (d.r.c.), whichever is higher. The overall diameter for woodland species tree (DRC) is computed using the following formula:

$$\text{DRC} = \text{SQRT} [\text{SUM} (\text{stem diameter}^2)]$$

The computed DRC value for the woodland tree is stored in the TREE.[DIA](#) column.

3.2.12 STATUSCD

Woodland stem status code. A code indicating whether the individual qualifying stem on the woodland tree is live or dead.

Woodland species are often multi-stemmed. Individual stems (live or dead) must be at least 1 foot in length and at least 1.0 inch in diameter 1 foot up from the stem diameter measurement point to qualify for measurement.

Codes: STATUSCD

| Code | Description |
|------|-------------|
| 1 | Live stem. |
| 2 | Dead stem. |

3.2.13 STEM_NBR

Woodland stem number. A number that uniquely identifies the individual qualifying stem on the woodland tree, which was used to measure the tree diameter.

Woodland species are often multi-stemmed. Individual stems (live or dead) must be at least 1 foot in length and at least 1.0 inch in diameter 1 foot up from the stem diameter measurement point to qualify for measurement.

The total number of live and dead stems used to calculate the diameter (TREE.[DIA](#)) on a woodland tree is stored in the tree table (TREE.[WLDSTEM](#)).

3.2.14 CYCLE

Inventory cycle number. See SURVEY.[CYCLE](#) description for definition.

3.2.15 SUBCYCLE

Inventory subcycle number. See SURVEY.[SUBCYCLE](#) description for definition.

3.2.16 CREATED_BY

Created by. See SURVEY.[CREATED_BY](#) description for definition.

3.2.17 CREATED_DATE

Created date. See SURVEY.[CREATED_DATE](#) description for definition.

3.2.18 CREATED_IN_INSTANCE

Created in instance. See SURVEY.[CREATED_IN_INSTANCE](#) description for definition.

3.2.19 MODIFIED_BY

Modified by. See SURVEY.[MODIFIED_BY](#) description for definition.

3.2.20 MODIFIED_DATE

Modified date. See SURVEY.[MODIFIED_DATE](#) description for definition.

3.2.21 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

3.3 Tree Growth, Removal, and Mortality Component Table

(Oracle table name: TREE_GRM_COMPONENT)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|------------------------------|---|------------------|
| 3.3.1 | TRE_CN | Tree sequence number | VARCHAR2(34) |
| 3.3.2 | PREV_TRE_CN | Previous tree sequence number | VARCHAR2(34) |
| 3.3.3 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 3.3.4 | STATECD | State code | NUMBER |
| 3.3.5 | DIA_BEGIN | Beginning diameter | NUMBER(5,2) |
| 3.3.6 | DIA_MIDPT | Midpoint diameter | NUMBER(5,2) |
| 3.3.7 | DIA_END | Ending diameter | NUMBER(5,2) |
| 3.3.8 | ANN_DIA_GROWTH | Computed annual diameter growth | NUMBER(5,2) |
| 3.3.9 | ANN_HT_GROWTH | Computed annual height growth | NUMBER(5,2) |
| 3.3.10 | SUBPTYP_BEGIN | Beginning plot type code | NUMBER(1) |
| 3.3.11 | SUBPTYP_MIDPT | Midpoint plot type code | NUMBER(1) |
| 3.3.12 | SUBPTYP_END | Ending plot type code | NUMBER(1) |
| 3.3.13 | MICR_COMPONENT_AL_FOREST | Trees with DIA ≥ 1.0 inch - growth component for the all live estimation type on forest land | VARCHAR2(15) |
| 3.3.14 | MICR_SUBTYP_GRM_AL_FOREST | Trees with DIA ≥ 1.0 inch - plot type for GRM for the all live estimation type on forest land | NUMBER(1) |
| 3.3.15 | MICR_TPAGROW_UNADJ_AL_FOREST | Trees with DIA ≥ 1.0 inch - unadjusted trees per acre for growth for the all live estimation type on forest land | NUMBER(11,6) |
| 3.3.16 | MICR_TPAREMV_UNADJ_AL_FOREST | Trees with DIA ≥ 1.0 inch - unadjusted trees per acre per year for removals for the all live estimation type on forest land | NUMBER(11,6) |
| 3.3.17 | MICR_TPAMORT_UNADJ_AL_FOREST | Trees with DIA ≥ 1.0 inch - unadjusted trees per acre per year for mortality for the all live estimation type on forest land | NUMBER(11,6) |
| 3.3.18 | SUBP_COMPONENT_AL_FOREST | Trees with DIA ≥ 5.0 inches - growth component for the all live estimation type on forest land | VARCHAR2(15) |
| 3.3.19 | SUBP_SUBTYP_GRM_AL_FOREST | Trees with DIA ≥ 5.0 inches - plot type for GRM for the all live estimation type on forest land | NUMBER(1) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|------------------------------|--|------------------|
| 3.3.20 | SUBP_TPAGROW_UNADJ_AL_FOREST | Trees with DIA \geq 5.0 inches - unadjusted trees per acre for growth for the all live estimation type on forest land | NUMBER(11,6) |
| 3.3.21 | SUBP_TPAREMV_UNADJ_AL_FOREST | Trees with DIA \geq 5.0 inches - unadjusted trees per acre per year for removals for the all live estimation type on forest land | NUMBER(11,6) |
| 3.3.22 | SUBP_TPAMORT_UNADJ_AL_FOREST | Trees with DIA \geq 5.0 inches - unadjusted trees per acre per year for mortality for the all live estimation type on forest land | NUMBER(11,6) |
| 3.3.23 | SUBP_COMPONENT_GS_FOREST | Trees with DIA \geq 5.0 inches - growth component for the growing-stock estimation type on forest land | VARCHAR2(15) |
| 3.3.24 | SUBP_SUBPTYP_GRM_GS_FOREST | Trees with DIA \geq 5.0 inches - plot type for GRM for the growing-stock estimation type on forest land | NUMBER(1) |
| 3.3.25 | SUBP_TPAGROW_UNADJ_GS_FOREST | Trees with DIA \geq 5.0 inches - unadjusted trees per acre for growth for the growing-stock estimation type on forest land | NUMBER(11,6) |
| 3.3.26 | SUBP_TPAREMV_UNADJ_GS_FOREST | Trees with DIA \geq 5.0 inches - unadjusted trees per acre per year for removals for the growing-stock estimation type on forest land | NUMBER(11,6) |
| 3.3.27 | SUBP_TPAMORT_UNADJ_GS_FOREST | Trees with DIA \geq 5.0 inches - unadjusted trees per acre per year for mortality for the growing-stock estimation type on forest land | NUMBER(11,6) |
| 3.3.28 | SUBP_COMPONENT_SL_FOREST | Trees with DIA \geq 5.0 inches - growth component for the sawtimber estimation type on forest land | VARCHAR2(15) |
| 3.3.29 | SUBP_SUBPTYP_GRM_SL_FOREST | Trees with DIA \geq 5.0 inches - plot type for GRM for the sawtimber estimation type on forest land | NUMBER(1) |
| 3.3.30 | SUBP_TPAGROW_UNADJ_SL_FOREST | Trees with DIA \geq 5.0 inches - unadjusted trees per acre for growth for the sawtimber estimation type on forest land | NUMBER(11,6) |
| 3.3.31 | SUBP_TPAREMV_UNADJ_SL_FOREST | Trees with DIA \geq 5.0 inches - unadjusted trees per acre per year for removals for the sawtimber estimation type on forest land | NUMBER(11,6) |
| 3.3.32 | SUBP_TPAMORT_UNADJ_SL_FOREST | Trees with DIA \geq 5.0 inches - unadjusted trees per acre per year for mortality for the sawtimber estimation type on forest land | NUMBER(11,6) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|------------------------------|--|------------------|
| 3.3.33 | MICR_COMPONENT_AL_TIMBER | Trees with DIA ≥ 1.0 inch - growth component for the all live estimation type on timberland | VARCHAR2(15) |
| 3.3.34 | MICR_SUBPTYP_GRM_AL_TIMBER | Trees with DIA ≥ 1.0 inch - plot type for GRM for the all live estimation type on timberland | NUMBER(1) |
| 3.3.35 | MICR_TPAGROW_UNADJ_AL_TIMER | Trees with DIA ≥ 1.0 inch - unadjusted trees per acre for growth for the all live estimation type on timberland | NUMBER(11,6) |
| 3.3.36 | MICR_TPAREMV_UNADJ_AL_TIMBER | Trees with DIA ≥ 1.0 inch - unadjusted trees per acre per year for removals for the all live estimation type on timberland | NUMBER(11,6) |
| 3.3.37 | MICR_TPAMORT_UNADJ_AL_TIMER | Trees with DIA ≥ 1.0 inch - unadjusted trees per acre per year for mortality for the all live estimation type on timberland | NUMBER(11,6) |
| 3.3.38 | SUBP_COMPONENT_AL_TIMBER | Trees with DIA ≥ 5.0 inches - growth component for the all live estimation type on timberland | VARCHAR2(15) |
| 3.3.39 | SUBP_SUBPTYP_GRM_AL_TIMBER | Trees with DIA ≥ 5.0 inches - plot type for GRM for the all live estimation type on timberland | NUMBER(1) |
| 3.3.40 | SUBP_TPAGROW_UNADJ_AL_TIMER | Trees with DIA ≥ 5.0 inches - unadjusted trees per acre for growth for the all live estimation type on timberland | NUMBER(11,6) |
| 3.3.41 | SUBP_TPAREMV_UNADJ_AL_TIMER | Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for removals for the all live estimation type on timberland | NUMBER(11,6) |
| 3.3.42 | SUBP_TPAMORT_UNADJ_AL_TIMER | Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for mortality for the all live estimation type on timberland | NUMBER(11,6) |
| 3.3.43 | SUBP_COMPONENT_GS_TIMBER | Trees with DIA ≥ 5.0 inches - growth component for the growing-stock estimation type on timberland | VARCHAR2(15) |
| 3.3.44 | SUBP_SUBPTYP_GRM_GS_TIMBER | Trees with DIA ≥ 5.0 inches - plot type for GRM for the growing-stock estimation type on timberland | NUMBER(1) |
| 3.3.45 | SUBP_TPAGROW_UNADJ_GS_TIMER | Trees with DIA ≥ 5.0 inches - unadjusted trees per acre for growth for the growing-stock estimation type on timberland | NUMBER(11,6) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|------------------------------|---|------------------|
| 3.3.46 | SUBP_TPAREMV_UNADJ_GS_TIMBER | Trees with DIA \geq 5.0 inches - unadjusted trees per acre per year for removals for the growing-stock estimation type on timberland | NUMBER(11,6) |
| 3.3.47 | SUBP_TPAMORT_UNADJ_GS_TIMBER | Trees with DIA \geq 5.0 inches - unadjusted trees per acre per year for mortality for the growing-stock estimation type on timberland | NUMBER(11,6) |
| 3.3.48 | SUBP_COMPONENT_SL_TIMBER | Trees with DIA \geq 5.0 inches - growth component for the sawtimber estimation type on timberland | VARCHAR2(15) |
| 3.3.49 | SUBP_SUBPTYP_GRM_SL_TIMBER | Trees with DIA \geq 5.0 inches - plot type for GRM for the sawtimber estimation type on timberland | NUMBER(1) |
| 3.3.50 | SUBP_TPAGROW_UNADJ_SL_TIMBER | Trees with DIA \geq 5.0 inches - unadjusted trees per acre for growth for the sawtimber estimation type on timberland | NUMBER(11,6) |
| 3.3.51 | SUBP_TPAREMV_UNADJ_SL_TIMBER | Trees with DIA \geq 5.0 inches - unadjusted trees per acre per year for removals for the sawtimber estimation type on timberland | NUMBER(11,6) |
| 3.3.52 | SUBP_TPAMORT_UNADJ_SL_TIMBER | Trees with DIA \geq 5.0 inches - unadjusted trees per acre per year for mortality for the sawtimber estimation type on timberland | NUMBER(11,6) |
| 3.3.53 | GROWTSAL_FOREST | Net annual sound cubic-foot total-stem wood growth of a live tree for the all live estimation type on forest land | NUMBER(13,6) |
| 3.3.54 | GROWCFAL_FOREST | Net annual sound cubic-foot stem wood growth of a live tree for the all live estimation type on forest land | NUMBER(13,6) |
| 3.3.55 | GROWCFGs_FOREST | Net annual merchantable cubic-foot stem wood growth of a growing-stock tree on forest land | NUMBER(13,6) |
| 3.3.56 | GROWBFSL_FOREST | Net annual merchantable board-foot wood growth of a sawtimber tree on forest land | NUMBER(13,6) |
| 3.3.57 | REMVTSAL_FOREST | Sound cubic-foot total-stem wood volume of a live tree for removal purposes for the all live estimation type on forest land | NUMBER(13,6) |
| 3.3.58 | REMVCFAL_FOREST | Sound cubic-foot stem wood volume of a live tree for removal purposes for the all live estimation type on forest land | NUMBER(13,6) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 3.3.59 | REMVCFGS_FOREST | Merchantable cubic-foot stem wood volume of a growing-stock tree for removal purposes on forest land | NUMBER(13,6) |
| 3.3.60 | REMVBFSL_FOREST | Merchantable board-foot wood volume of a sawtimber tree for removal purposes on forest land | NUMBER(13,6) |
| 3.3.61 | MORTTSAL_FOREST | Sound cubic-foot total-stem wood volume of a tree for mortality purposes for the all live estimation type on forest land | NUMBER(13,6) |
| 3.3.62 | MORTCFAL_FOREST | Sound cubic-foot stem wood volume of a tree for mortality purposes for the all live estimation type on forest land | NUMBER(13,6) |
| 3.3.63 | MORTCFGPS_FOREST | Merchantable cubic-foot stem wood volume of a growing-stock tree for mortality purposes on forest land | NUMBER(13,6) |
| 3.3.64 | MORTBFSL_FOREST | Merchantable board-foot wood volume of a sawtimber tree for mortality purposes on forest land | NUMBER(13,6) |
| 3.3.65 | GROWTSAL_TIMBER | Net annual sound cubic-foot total-stem wood growth of a live tree for the all live estimation type on timberland | NUMBER(13,6) |
| 3.3.66 | GROWCFAL_TIMBER | Net annual sound cubic-foot stem wood growth of a live tree for the all live estimation type on timberland | NUMBER(13,6) |
| 3.3.67 | GROWCFGPS_TIMBER | Net annual merchantable cubic-foot stem wood growth of a growing-stock tree on timberland | NUMBER(13,6) |
| 3.3.68 | GROWBFSL_TIMBER | Net annual merchantable board-foot wood growth of a sawtimber tree on timberland | NUMBER(13,6) |
| 3.3.69 | REMVTSAI_TIMBER | Sound cubic-foot total-stem wood volume of a live tree for removal purposes for the all live estimation type on timberland | NUMBER(13,6) |
| 3.3.70 | REMVCFAL_TIMBER | Sound cubic-foot stem wood volume of a live tree for removal purposes for the all live estimation type on timberland | NUMBER(13,6) |
| 3.3.71 | REMVCFGS_TIMBER | Merchantable cubic-foot stem wood volume of a growing-stock tree for removal purposes on timberland | NUMBER(13,6) |
| 3.3.72 | REMVBFSL_TIMBER | Merchantable board-foot wood volume of a sawtimber tree for removal purposes on timberland | NUMBER(13,6) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 3.3.73 | MORTTSAL_TIMBER | Sound cubic-foot total-stem wood volume of a tree for mortality purposes for the all live estimation type on timberland | NUMBER(13,6) |
| 3.3.74 | MORTCFAL_TIMBER | Sound cubic-foot stem wood volume of a tree for mortality purposes for the all live estimation type on timberland | NUMBER(13,6) |
| 3.3.75 | MORTCFGs_TIMBER | Merchantable cubic-foot stem wood volume of a growing-stock tree for mortality purposes on timberland | NUMBER(13,6) |
| 3.3.76 | MORTBFSL_TIMBER | Merchantable board-foot wood volume of a sawtimber tree for mortality purposes on timberland | NUMBER(13,6) |
| 3.3.77 | CREATED_BY | Created by | VARCHAR2(30) |
| 3.3.78 | CREATED_DATE | Created date | DATE |
| 3.3.79 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 3.3.80 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 3.3.81 | MODIFIED_DATE | Modified date | DATE |
| 3.3.82 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------------------|----------------------|
| Primary | TRE_CN | N/A | TRE_GRM_CMP_PK |
| Foreign | TRE_CN | TREE_GRM_COMPONENT to TREE | TRE_GRM_CMP_FK |

This table stores information used to compute net growth, removals, and mortality (GRM) estimates for remeasurement trees. Remeasurement is from the time 1 (T1, most recent past measurement) date to the time 2 (T2, current) date. This table provides the same information as the TREE_GRM_ESTN table, but the data have been reformatted such that each remeasurement tree is represented by a single record in this table as opposed to multiple records in the TREE_GRM_ESTN table. This is an experimental restructuring of the data intended to help FIA develop new methods of presenting data and supporting estimation through download files as well as estimation tools like EVALIDator. Details about the land basis (forest land or timberland), component of change (e.g., survivor tree), and estimation type (all live, growing stock, or sawtimber) are incorporated into the columns in various combinations.

For example, the column SUBP_COMPONENT_AL_FOREST identifies the change component for the all live estimation type on forest land. The same information could be queried from rows in the TREE_GRM_ESTN table by including the following in the WHERE clause of a SQL statement:

```
AND LAND_BASIS = 'FORESTLAND'
AND ESTN_TYPE = 'AL'
```

Queries of rows by attribute estimates and accompanying units (e.g., TREE_GRM_ESTN.ESTIMATE = 'VOLUME' and TREE_GRM_ESTN.ESTN_UNITS = 'CF') are not applicable to this table. The attribute estimates and units are identified by columns in the TREE_GRM_COMPONENT, TREE_GRM_BEGIN, and TREE_GRM_MIDPT tables. For example, TREE_GRM_COMPONENT.GROWCFAL_FOREST stores the net annual sound cubic-foot growth of a live tree on forest land (all live estimation type). The begin and mid-point diameters as well as the begin and mid-point estimates that were part of the TREE_GRM_ESTN table structure are now stored in independent tables (TREE_GRM_BEGIN and TREE_GRM_MIDPT). The standard net growth, removals, and mortality estimates for volume only are included in the TREE_GRM_COMPONENT table. Information on the individual growth components (e.g., growth on ingrowth: G_I) are not included. The TREE_GRM_BEGIN, TREE_GRM_MIDPT, and TREE tables currently support estimates of volume as well as biomass. Carbon estimates can also be produced by assuming a ratio of dry biomass to carbon of 2:1. Multiply the dry biomass estimate by 0.5 to compute an estimate of carbon content.

3.3.1 TRE_CN

Tree sequence number. Foreign key linking the GRM tree component record to the tree record.

3.3.2 PREV_TRE_CN

Previous tree sequence number. Foreign key linking the GRM tree component record to the time 1 tree record if one exists. It can be blank (null) in some cases. For example, an ingrowth tree would not have a time 1 (T1) record.

3.3.3 PLT_CN

Plot sequence number. Foreign key linking the GRM tree component record to the plot record.

3.3.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

3.3.5 DIA_BEGIN

Beginning diameter. Diameter at the beginning of the measurement interval. This is the value actually used in the calculation of GRM estimates and may not match the value on the T1 tree record in all cases. For example, in cases where the point of diameter measurement is moved between T1 and T2, the T1 diameter can be estimated by a model.

3.3.6 DIA_MIDPT

Midpoint diameter. Diameter at the midpoint of the measurement interval.

3.3.7 DIA_END

Ending diameter. Diameter at the end of the remeasurement period.

3.3.8 ANN_DIA_GROWTH

Computed annual diameter growth. The annual diameter growth for the tree expressed as inches per year.

3.3.9 ANN_HT_GROWTH

Computed annual height growth. The annual height growth for a tree expressed as feet per year.

3.3.10 SUBTYP_BEGIN

Beginning plot type code. A code indicating the plot type at the beginning of the remeasurement period. This value is assigned based on the size of the tree at the beginning of the remeasurement period.

Codes: SUBTYP_BEGIN

| Code | Description |
|------|---------------------------------|
| 0 | No plot type. Tree not present. |
| 1 | Subplot. |
| 2 | Microplot. |
| 3 | Macroplot. |

3.3.11 SUBTYP_MIDPT

Midpoint plot type code. A code indicating the plot type at the midpoint of the remeasurement period. This value is assigned based on the size of the tree at the midpoint of the remeasurement period. See [SUBTYP_BEGIN](#) description for codes.

3.3.12 SUBTYP_END

Ending plot type code. A code indicating the plot type at the end of the remeasurement period. This value is assigned based on the size of the tree at the end of the remeasurement period. See [SUBTYP_BEGIN](#) description for codes.

3.3.13 MICR_COMPONENT_AL_FOREST

Trees with DIA ≥ 1.0 inch - growth component for the all live estimation type on forest land. Growth component (trees with DIA ≥ 1.0 inch) on forest land for the all live estimation type.

Note: The MICR prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

Codes: MICR_COMPONENT_AL_FOREST

| Code | Description |
|----------|--|
| CUT0 | Tree was killed due to harvesting activity by T2 ((TREE.STATUSCD = 3) or (TREE.STATUSCD = 2 and TREE.AGENTCD = 80)). Applicable only in periodic-to-periodic, periodic-to-annual, and modeled GRM estimates. |
| CUT 1 | Tree was previously in estimate at T1 and was killed due to harvesting activity by T2 ((TREE.STATUSCD = 3) or (TREE.STATUSCD = 2 and TREE.AGENTCD = 80)). |
| CUT2 | Tree grew across minimum threshold diameter for the estimate since T1 and was killed due to harvesting activity by T2 ((TREE.STATUSCD = 3) or (TREE.STATUSCD = 2 and TREE.AGENTCD = 80)). |
| INGROWTH | Tree grew across minimum threshold diameter for the estimate since T1. For example, a sapling grows across the 5-inch diameter threshold becoming ingrowth on the subplot. |

| Code | Description |
|----------------|---|
| MORTALITY0 | Tree died of natural causes by T2 (TREE.AGENTCD <> 80). Applicable only in periodic-to-periodic, periodic-to-annual, and modeled GRM estimates. |
| MORTALITY1 | Tree was previously in estimate at T1 and died of natural causes by T2 (TREE.AGENTCD <> 80). |
| MORTALITY2 | Tree grew across minimum threshold diameter for the estimate since T1 and died of natural causes by T2 (TREE.AGENTCD <> 80). |
| NOT USED | Tree was either live or dead at T1 and has no status at T2. |
| SURVIVOR | Tree has remained live and in the estimate from T1 through T2. |
| UNKNOWN | Tree lacks information required to classify component usually due to procedural changes. |
| REVERSION1 | Tree grew across minimum threshold diameter for the estimate by the midpoint of the measurement interval and the condition reverted to the land basis by T2. |
| REVERSION2 | Tree grew across minimum threshold diameter for the estimate after the midpoint of the measurement interval and the condition reverted to the land basis by T2. |
| DIVERSION0 | Tree was removed from the estimate by something other than harvesting activity by T2 (not (TREE.STATUSCD = 3) and not (TREE.STATUSCD = 2 and TREE.AGENTCD = 80)). Applicable only in periodic-to-periodic, periodic-to-annual, and modeled GRM estimates. |
| DIVERSION1 | Tree was previously in estimate at T1 and the condition diverted from the land basis by T2 (not (TREE.STATUSCD = 3) and not (TREE.STATUSCD = 2 and TREE.AGENTCD = 80)). |
| DIVERSION2 | Tree grew across minimum threshold diameter for the estimate since T1 and the condition diverted from the land basis by T2 (not (TREE.STATUSCD= 3) and not (TREE.STATUSCD = 2 and TREE.AGENTCD = 80)). |
| CULLINCR | Not used at this time. |
| CULLDECR | Not used at this time. |
| N/A - A2A | Component of change is not defined or does not exist. Applicable only in annual-to-annual GRM estimates. |
| N/A - A2A SOON | Component of change is not defined or does not exist. Applicable only in annual-to-annual GRM estimates. |
| N/A - MODELED | Component of change is not defined or does not exist. Applicable only in annual-to-annual GRM estimates. |
| N/A - P2A | Component of change is not defined or does not exist. Applicable only in periodic-to-annual GRM estimates. |
| N/A - P2P | Component of change is not defined or does not exist. Applicable only in periodic-to-periodic GRM estimates. |
| N/A - PERIODIC | Component of change is not defined or does not exist. Applicable only in periodic-to-periodic GRM estimates. |

3.3.14 MICR_SUBTYP_GRM_AL_FOREST

Trees with DIA ≥ 1.0 inch - plot type for GRM for the all live estimation type on forest land. The plot type for growth, removals, and mortality (GRM) (trees with DIA ≥ 1.0 inch) on forest land for the all live estimation type. This plot type is used during estimation to locate the appropriate stratum adjustment factor. See [SUBTYP_BEGIN](#) description for codes.

Note: The MICR prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.15 MICR_TPAGROW_UNADJ_AL_FOREST

Trees with DIA ≥ 1.0 inch - unadjusted trees per acre for growth for the all live estimation type on forest land. Unadjusted trees per acre for growth (trees with DIA ≥ 1.0 inch) on forest land for the all live estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The MICR prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.16 MICR_TPAREMV_UNADJ_AL_FOREST

Trees with DIA ≥ 1.0 inch - unadjusted trees per acre per year for removals for the all live estimation type on forest land. Unadjusted trees per acre for removals (trees with DIA ≥ 1.0 inch) on forest land for the all live estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The MICR prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.17 MICR_TPAMORT_UNADJ_AL_FOREST

Trees with DIA ≥ 1.0 inch - unadjusted trees per acre per year for mortality for the all live estimation type on forest land. Unadjusted trees per acre per year for mortality (trees with DIA ≥ 1.0 inch) on forest land for the all live estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The MICR prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.18 SUBP_COMPONENT_AL_FOREST

Trees with DIA ≥ 5.0 inches - growth component for the all live estimation type on forest land. Growth component (trees with DIA ≥ 5.0 inches) on forest land for the all live estimation type. See [MICR_COMPONENT_AL_FOREST](#) description for codes.

Note: The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.19 SUBP_SUBPTYP_GRM_AL_FOREST

Trees with DIA ≥ 5.0 inches - plot type for GRM for the all live estimation type on forest land. The plot type for growth, removals, and mortality (GRM) (trees with DIA ≥ 5.0 inches) on forest land for the all live estimation type. This plot type is used during estimation to locate the appropriate stratum adjustment factor. See [SUBPTYP_BEGIN](#) description for codes.

Note: The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.20 **SUBP_TPAGROW_UNADJ_AL_FOREST**

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre for growth for the all live estimation type on forest land. Unadjusted trees per acre for growth (trees with DIA ≥ 5.0 inches) on forest land for the all live estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.21 **SUBP_TPAREMV_UNADJ_AL_FOREST**

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for removals for the all live estimation type on forest land. Unadjusted trees per acre per year for removals (trees with DIA ≥ 5.0 inches) on forest land for the all live estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.22 **SUBP_TPAMORT_UNADJ_AL_FOREST**

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for mortality for the all live estimation type on forest land. Unadjusted trees per acre per year for mortality (trees with DIA ≥ 5.0 inches) on forest land for the all live estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.23 **SUBP_COMPONENT_GS_FOREST**

Trees with DIA ≥ 5.0 inches - growth component for the growing-stock estimation type on forest land. Growth component (trees with DIA ≥ 5 inches) on forest land for the growing-stock estimation type. See [MICR_COMPONENT_AL_FOREST](#) description for codes.

Note: The SUBP prefix on the column name does not relate to the plot size.

3.3.24 **SUBP_SUBPTYP_GRM_GS_FOREST**

Trees with DIA ≥ 5.0 inches - plot type for GRM for the growing-stock estimation type on forest land. The plot type for growth, removals, and mortality (GRM) (trees with DIA ≥ 5.0 inches) on forest land for the growing-stock estimation type. This plot type is used during estimation to locate the appropriate stratum adjustment factor. See [SUBPTYP_BEGIN](#) description for codes.

Note: The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.25 **SUBP_TPAGROW_UNADJ_GS_FOREST**

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre for growth for the growing-stock estimation type on forest land. Unadjusted trees per acre for growth (trees with DIA ≥ 5.0 inches) on forest land for the growing-stock estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.26 **SUBP_TPAREMV_UNADJ_GS_FOREST**

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for removals for the growing-stock estimation type on forest land. Unadjusted trees per acre per year for removals (trees with DIA ≥ 5.0 inches) on forest land for the growing-stock estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.27 **SUBP_TPAMORT_UNADJ_GS_FOREST**

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for mortality for the growing-stock estimation type on forest land. Unadjusted trees per acre per year for mortality (trees with DIA ≥ 5.0 inches) on forest land for the growing-stock estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.28 **SUBP_COMPONENT_SL_FOREST**

Trees with DIA ≥ 5.0 inches - growth component for the sawtimber estimation type on forest land. Growth component (trees with DIA ≥ 5.0 inches) on forest land for the sawtimber estimation type. See [MICR_COMPONENT_AL_FOREST](#) description for codes.

Note: The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.29 SUBP_SUBPTYP_GRM_SL_FOREST

Trees with DIA ≥ 5.0 inches - plot type for GRM for the sawtimber estimation type on forest land. The plot type for growth, removals, and mortality (GRM) (trees with DIA ≥ 5.0 inches) on forest land for the sawtimber estimation type. This plot type is used during estimation to locate the appropriate stratum adjustment factor. See [SUBPTYP_BEGIN](#) description for codes.

Note: The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.30 SUBP_TPAGROW_UNADJ_SL_FOREST

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre for growth for the sawtimber estimation type on forest land. Unadjusted trees per acre for growth (trees with DIA ≥ 5.0 inches) on forest land for the sawtimber estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.31 SUBP_TPAREMV_UNADJ_SL_FOREST

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for removals for the sawtimber estimation type on forest land. Unadjusted trees per acre per year for removals (trees with DIA ≥ 5.0 inches) on forest land for the sawtimber estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.32 SUBP_TPAMORT_UNADJ_SL_FOREST

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for mortality for the sawtimber estimation type on forest land. Unadjusted trees per acre per year for mortality (trees with DIA ≥ 5.0 inches) on forest land for the sawtimber estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.33 MICR_COMPONENT_AL_TIMBER

Trees with DIA ≥ 1.0 inch - growth component for the all live estimation type on timberland. Growth component (trees with DIA ≥ 1.0 inch) on timberland for the all live estimation type. See [MICR_COMPONENT_AL_FOREST](#) description for codes.

Note: The MICR prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.34 MICR_SUBPTYP_GRM_AL_TIMBER

Trees with DIA ≥ 1.0 inch - plot type for GRM for the all live estimation type on timberland. The plot type for growth, removals, and mortality (GRM) (trees with DIA ≥ 1.0 inch) on timberland for the all live estimation type. This plot type is used during estimation to locate the appropriate stratum adjustment factor. See [SUBPTYP_BEGIN](#) description for codes.

Note: The MICR prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.35 MICR_TPAGROW_UNADJ_AL_TIMBER

Trees with DIA ≥ 1.0 inch - unadjusted trees per acre for growth for the all live estimation type on timberland. Unadjusted trees per acre for growth (trees with DIA ≥ 1.0 inch) on timberland for the all live estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The MICR prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.36 MICR_TPAREMV_UNADJ_AL_TIMBER

Trees with DIA ≥ 1.0 inch - unadjusted trees per acre per year for removals for the all live estimation type on timberland. Unadjusted trees per acre per year for removals (trees with DIA ≥ 1.0 inch) on timberland for the all live estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The MICR prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.37 MICR_TPAMORT_UNADJ_AL_TIMBER

Trees with DIA ≥ 1.0 inch - unadjusted trees per acre per year for mortality for the all live estimation type on timberland. Unadjusted trees per acre per year for mortality (trees with DIA ≥ 1.0 inch) on timberland for the all live estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The MICR prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.38 SUBP_COMPONENT_AL_TIMBER

Trees with DIA ≥ 5.0 inches - growth component for the all live estimation type on timberland. Growth component (trees with DIA ≥ 5.0 inches) on timberland for the all live estimation type. See [MICR_COMPONENT_AL_FOREST](#) description for codes.

Note: The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.39 **SUBP_SUBPTYP_GRM_AL_TIMBER**

Trees with DIA ≥ 5.0 inches - plot type for GRM for the all live estimation type on timberland. The plot type for growth, removals, and mortality (GRM) (trees with DIA ≥ 5.0 inches) on timberland for the all live estimation type. This plot type is used during estimation to locate the appropriate stratum adjustment factor. See [SUBPTYP_BEGIN](#) description for codes.

Note: The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.40 **SUBP_TPAGROW_UNADJ_AL_TIMBER**

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre for growth for the all live estimation type on timberland. Unadjusted trees per acre for growth (trees with DIA ≥ 5.0 inches) on timberland for the all live estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.41 **SUBP_TPAREMV_UNADJ_AL_TIMBER**

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for removals for the all live estimation type on timberland. Unadjusted trees per acre per year for removals (trees with DIA ≥ 5.0 inches) on timberland for the all live estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.42 **SUBP_TPAMORT_UNADJ_AL_TIMBER**

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for mortality for the all live estimation type on timberland. Unadjusted trees per acre per year for mortality (trees with DIA ≥ 5.0) on timberland for the all live estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.43 **SUBP_COMPONENT_GS_TIMBER**

Trees with DIA ≥ 5.0 inches - growth component for the growing-stock estimation type on timberland. Growth component (trees with DIA ≥ 5.0 inches) on timberland for the growing-stock estimation type.

Note: The SUBP prefix on the column name does not relate to the plot size. See [MICR_COMPONENT_AL_FOREST](#) description for codes.

3.3.44 **SUBP_SUBPTYP_GRM_GS_TIMBER**

Trees with DIA ≥ 5.0 inches - plot type for GRM for the growing-stock estimation type on timberland. The plot type for growth, removals, and mortality (GRM) (trees with DIA ≥ 5.0 inches) on timberland for the growing-stock estimation type. This plot type is used during estimation to locate the appropriate stratum adjustment factor. See [SUBPTYP_BEGIN](#) description for codes.

Note: The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.45 **SUBP_TPAGROW_UNADJ_GS_TIMBER**

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre for growth for the growing-stock estimation type on timberland. Unadjusted trees per acre for growth (trees with DIA ≥ 5.0 inches) on timberland for the growing-stock estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.46 **SUBP_TPAREMV_UNADJ_GS_TIMBER**

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for removals for the growing-stock estimation type on timberland. Unadjusted trees per acre per year for removals (trees with DIA ≥ 5.0 inches) on timberland for the growing-stock estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.47 **SUBP_TPAMORT_UNADJ_GS_TIMBER**

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for mortality for the growing-stock estimation type on timberland. Unadjusted trees per acre per year for mortality (trees with DIA ≥ 5.0 inches) on timberland for the growing-stock estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.48 **SUBP_COMPONENT_SL_TIMBER**

Trees with DIA ≥ 5.0 inches - growth component for the sawtimber estimation type on timberland. Growth component (trees with DIA ≥ 5.0 inches) on timberland for the sawtimber estimation type. See [MICR_COMPONENT_AL_FOREST](#) description for codes.

Note: The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.49 **SUBP_SUBPTYP_GRM_SL_TIMBER**

Trees with DIA ≥ 5.0 inches - plot type for GRM for the sawtimber estimation type on timberland. The plot type for growth, removals, and mortality (GRM) (trees with DIA ≥ 5.0 inches) on timberland for the sawtimber estimation type. This plot type is used during estimation to locate the appropriate stratum adjustment factor. See [SUBPTYP_BEGIN](#) description for codes.

Note: The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.50 **SUBP_TPAGROW_UNADJ_SL_TIMBER**

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre for growth for the sawtimber estimation type on timberland. Unadjusted trees per acre for growth (trees with DIA ≥ 5.0 inches) on timberland for the sawtimber estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.51 **SUBP_TPAREMV_UNADJ_SL_TIMBER**

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for removals for the sawtimber estimation type on timberland. Unadjusted trees per acre per year for removals (trees with DIA ≥ 5.0 inches) on timberland for the sawtimber estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.52 **SUBP_TPAMORT_UNADJ_SL_TIMBER**

Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for mortality for the sawtimber estimation type on timberland. Unadjusted trees per acre per year for mortality (trees with DIA ≥ 5.0 inches) on timberland for the sawtimber estimation type. This value must be adjusted using the stratum adjustment factors stored in the POP_STRATUM table.

Note: This column is populated with a constant value based on the plot size for those plots using a fixed-radius design. It is populated using a value inversely related to the tree size for plots using a variable-radius design. The SUBP prefix on the column name does not relate to the plot size, but rather to the threshold at which a given estimate can be made.

3.3.53 GROWTSAL_FOREST

Net annual sound cubic-foot total-stem growth of a live tree for the all live estimation type on forest land. The net change in sound cubic-foot total-stem wood volume (TREE.VOLTSSND) per year of the tree (for trees on remeasured plots, $(V_2 - V_1)/(T_2 - T_1)$) where 1 and 2 denote the past and current measurement, respectively; V is volume; T indicates date of measurement; and $T_2 - T_1 = \text{PLOT.REMPER}$). 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, broken top, or other causes. To expand to a per acre value, multiply by SUBP_TPAGROW_UNADJ_AL_FOREST.

3.3.54 GROWCFAL_FOREST

Net annual sound cubic-foot stem wood growth of a live tree for the all live estimation type on forest land. The net change in sound cubic-foot stem wood volume (TREE.VOLCFSND) per year of the tree (for trees on remeasured plots, $(V_2 - V_1)/(T_2 - T_1)$) where 1 and 2 denote the past and current measurement, respectively; V is volume; T indicates date of measurement; and $T_2 - T_1 = \text{PLOT.REMPER}$). 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, broken top, or other causes. To expand to a per acre value, multiply by SUBP_TPAGROW_UNADJ_AL_FOREST.

3.3.55 GROWCFGGS_FOREST

Net annual merchantable cubic-foot stem wood growth of a growing-stock tree on forest land. The net change in merchantable cubic-foot stem wood volume (TREE.VOLCFNET) per year of the tree (for trees on 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, broken top, or other causes. To expand to a per acre value, multiply by SUBP_TPAGROW_UNADJ_GS_FOREST.

3.3.56 GROWBFSL_FOREST

Net annual merchantable board-foot wood growth of a sawtimber tree on forest land. The net change in merchantable board-foot (TREE.VOLBFNET, International 1/4-inch Rule) wood volume per year of the tree (for trees on 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, broken top, or other causes. To expand to a per acre value, multiply by SUBP_TPAGROW_UNADJ_SL_FOREST.

3.3.57 REMVTSAL_FOREST

Sound cubic-foot total-stem wood volume of a live tree for removal purposes for the all live estimation type on forest land. The sound cubic-foot total-stem wood volume (TREE.VOLTSSND) of the tree at the time of removal. To obtain estimates of annual per acre removals, multiply by SUBP_TPAREMV_UNADJ_AL_FOREST.

3.3.58 REMVCFAL_FOREST

Sound cubic-foot stem wood volume of a live tree for removal purposes for the all live estimation type on forest land. The sound cubic-foot stem wood volume (TREE.VOLCFSND) of the tree at the time of removal. To obtain estimates of annual per acre removals, multiply by SUBP_TPAREMV_UNADJ_AL_FOREST.

3.3.59 REMVCFGS_FOREST

Merchantable cubic-foot stem wood volume of a growing-stock tree for removal purposes on forest land. The merchantable cubic-foot stem woodvolume (TREE.VOLCFNET) of the tree at the time of removal. To obtain estimates of annual per acre removals, multiply by SUBP_TPAREMV_UNADJ_GS_FOREST.

3.3.60 REMVBFSL_FOREST

Merchantable board-foot wood volume of a sawtimber tree for removal purposes on forest land. The merchantable board-foot (TREE.VOLBFNET, International 1/4-inch Rule) wood volume of the tree at the time of removal. To obtain estimates of annual per acre removals, multiply by SUBP_TPAREMV_UNADJ_SL_FOREST.

3.3.61 MORTTSAL_FOREST

Sound cubic-foot total-stem wood volume of a tree for mortality purposes for the all live estimation type on forest land. The sound cubic-foot total-stem wood volume (TREE.VOLTSSND) of the tree at the time of mortality. To obtain estimates of annual per acre mortality, multiply by SUBP_TPAMORT_UNADJ_AL_FOREST.

3.3.62 MORTCFAL_FOREST

Sound cubic-foot stem wood volume of a tree for mortality purposes for the all live estimation type on forest land. The sound cubic-foot stem wood volume (TREE.VOLCFSND) of the tree at the time of mortality. To obtain estimates of annual per acre mortality, multiply by SUBP_TPAMORT_UNADJ_AL_FOREST.

3.3.63 MORTCFGPS_FOREST

Merchantable cubic-foot stem wood volume of a growing-stock tree for mortality purposes on forest land. The merchantable cubic-foot stem wood volume (TREE.VOLCFNET) of the tree at the time of mortality. To obtain estimates of annual per acre mortality, multiply by SUBP_TPAMORT_UNADJ_GS_FOREST.

3.3.64 MORTBFSL_FOREST

Merchantable board-foot wood volume of a sawtimber tree for mortality purposes on forest land. The merchantable board-foot (TREE.VOLBFNET, International 1/4-inch Rule) wood volume of the tree at the time of mortality. To obtain estimates of annual per acre mortality, multiply by SUBP_TPAMORT_UNADJ_SL_FOREST.

3.3.65 GROWTSAL_TIMBER

Net annual sound cubic-foot total-stem wood growth of a live tree for the all live estimation type on timberland. The net change in sound cubic-foot total-stem wood volume (TREE.VOLTSSND) per year of the tree (for trees on remeasured plots, $(V2 - V1)/(T2 - T1)$). Because this value is net growth, it may be a negative number. Negative growth values are usually due to mortality ($V2 = 0$) but can also occur on live trees that have a net loss in volume because of damage, rot, broken top, or other causes. To expand to a per acre value, multiply by SUBP_TPAGROW_UNADJ_AL_TIMBER.

3.3.66 GROWCFAL_TIMBER

Net annual sound cubic-foot stem wood growth of a live tree for the all live estimation type on timberland. The net change in sound cubic-foot stem wood volume (TREE.VOLCFSND) per year of the tree (for trees on remeasured plots, $(V2 - V1)/(T2 - T1)$). Because this value is net growth, it may be a negative number. Negative growth values are usually due to mortality ($V2 = 0$) but can also occur on live trees that have a

net loss in volume because of damage, rot, broken top, or other causes. To expand to a per acre value, multiply by SUBP_TPAGROW_UNADJ_AL_TIMBER.

3.3.67 GROWCFGs_TIMBER

Net annual merchantable cubic-foot stem wood growth of a growing-stock tree on timberland. The net change in merchantable cubic-foot stem wood volume (TREE.VOLCFNET per year of the tree (for trees on remeasured plots, $(V2 - V1)/(T2 - T1)$). Because this value is net growth, it may be a negative number. Negative growth values are usually due to mortality ($V2 = 0$) but can also occur on live trees that have a net loss in volume because of damage, rot, broken top, or other causes. To expand to a per acre value, multiply by SUBP_TPAGROW_UNADJ_GS_TIMBER.

3.3.68 GROWBFSL_TIMBER

Net annual merchantable board-foot wood growth of a sawtimber tree on timberland. The net change in merchantable board-foot (TREE.VOLBFNET, International 1/4-inch Rule) wood volume per year of the tree (for trees on remeasured plots, $(V2 - V1)/(T2 - T1)$). Because this value is net growth, it may be a negative number. Negative growth values are usually due to mortality ($V2 = 0$) but can also occur on live trees that have a net loss in volume because of damage, rot, broken top, or other causes. To expand to a per acre value, multiply by SUBP_TPAGROW_UNADJ_SL_TIMBER.

3.3.69 REMVTSAL_TIMBER

Sound cubic-foot total-stem wood volume of a live tree for removal purposes for the all live estimation type on timberland. The sound cubic-foot total-stem wood volume (TREE.VOLTSSND) of the tree at the time of the removal. To obtain estimates of annual per acre removals, multiply by SUBP_TPAREMV_UNADJ_AL_TIMBER.

3.3.70 REMVCFAL_TIMBER

Sound cubic-foot stem wood volume of a live tree for removal purposes for the all live estimation type on timberland. The sound cubic-foot stem wood volume (TREE.VOLCFSND) of the tree at the time of the removal. To obtain estimates of annual per acre removals, multiply by SUBP_TPAREMV_UNADJ_AL_TIMBER.

3.3.71 REMVCFGs_TIMBER

Merchantable cubic-foot stem wood volume of a growing-stock tree for removal purposes on timberland. The merchantable cubic-foot stem wood volume (TREE.VOLCFNET of the tree at the time of removal. To obtain estimates of annual per acre removals, multiply by SUBP_TPAREMV_UNADJ_GS_TIMBER.

3.3.72 REMVBFSL_TIMBER

Merchantable board-foot wood volume of a sawtimber tree for removal purposes on timberland. The merchantable board-foot (TREE.VOLBFNET, International 1/4-inch Rule) wood volume of the tree at the time of removal. To obtain estimates of annual per acre removals, multiply by SUBP_TPAREMV_UNADJ_SL_TIMBER.

3.3.73 MORTTSAL_TIMBER

Sound cubic-foot total-stem wood volume of a tree for mortality purposes for the all live estimation type on timberland. The sound cubic-foot total-stem wood volume (TREE.VOLTSSND) of the tree at the time of mortality. To obtain estimates of annual per acre mortality, multiply by SUBP_TPAMORT_UNADJ_AL_TIMBER.

3.3.74 MORTCFAL_TIMBER

Sound cubic-foot stem wood volume of a tree for mortality purposes for the all live estimation type on timberland. The sound cubic-foot stem wood volume (TREE.[VOLCFSND](#)) of the tree at the time of mortality. To obtain estimates of annual per acre mortality, multiply by SUBP_TPAMORT_UNADJ_AL_TIMBER.

3.3.75 MORTCFGs_TIMBER

Merchantable cubic-foot stem wood volume of a growing-stock tree for mortality purposes on timberland. The merchantable cubic-foot stem wood volume (TREE.[VOLCFNET](#)) of the tree at the time of mortality. To obtain estimates of annual per acre mortality, multiply by SUBP_TPAMORT_UNADJ_GS_TIMBER.

3.3.76 MORTBFSL_TIMBER

Merchantable board-foot wood volume of a sawtimber tree for mortality purposes on timberland. The merchantable board-foot (TREE.[VOLBFNET](#), International 1/4-inch Rule) volume of the tree at the time of mortality. To obtain estimates of annual per acre mortality, multiply by SUBP_TPAMORT_UNADJ_SL_TIMBER.

3.3.77 CREATED_BY

Created by. See SURVEY.[CREATED_BY](#) description for definition.

3.3.78 CREATED_DATE

Created date. See SURVEY.[CREATED_DATE](#) description for definition.

3.3.79 CREATED_IN_INSTANCE

Created in instance. See SURVEY.[CREATED_IN_INSTANCE](#) description for definition.

3.3.80 MODIFIED_BY

Modified by. See SURVEY.[MODIFIED_BY](#) description for definition.

3.3.81 MODIFIED_DATE

Modified date. See SURVEY.[MODIFIED_DATE](#) description for definition.

3.3.82 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

3.4 Tree Growth, Removal, and Mortality Threshold Table

(Oracle table name: TREE_GRM_THRESHOLD)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 3.4.1 | TRE_CN | Tree sequence number | VARCHAR2(34) |
| 3.4.2 | PREV_TRE_CN | Previous tree sequence number | VARCHAR2(34) |
| 3.4.3 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 3.4.4 | STATECD | State code | NUMBER(2) |
| 3.4.5 | THRESHOLD_TYPE | Threshold type | VARCHAR2(10) |
| 3.4.6 | SUBPTYP | Plot type code | NUMBER(1) |
| 3.4.7 | SPCD | Species code | NUMBER(4) |
| 3.4.8 | STATUSCD | Status code | NUMBER(2) |
| 3.4.9 | DIA | Threshold diameter | NUMBER(5,2) |
| 3.4.10 | HT | Total height | NUMBER(3) |
| 3.4.11 | ACTUALHT | Actual height | NUMBER(3) |
| 3.4.12 | CR | Compacted crown ratio | NUMBER(3) |
| 3.4.13 | STANDING_DEAD_CD | Standing dead code | NUMBER(2) |
| 3.4.14 | DIAHTCD | Diameter height code | NUMBER(1) |
| 3.4.15 | CULL | Rotten and missing cull | NUMBER(3) |
| 3.4.16 | ROUGHCULL | Rough cull | NUMBER(3) |
| 3.4.17 | CULLFORM | Form Cull | NUMBER(3) |
| 3.4.18 | CULLMSTOP | Missing top cull | NUMBER(3) |
| 3.4.19 | DECAYCD | Decay class code | NUMBER(2) |
| 3.4.20 | TREECLCD | Tree class code | NUMBER(2) |
| 3.4.21 | HTDMP | Height to diameter measurement point | NUMBER(3,1) |
| 3.4.22 | WDLDSTEM | Woodland tree species stem count | NUMBER(3) |
| 3.4.23 | STDORGCD | Stand origin code | NUMBER(2) |
| 3.4.24 | SITREE | Calculated site index | NUMBER(3) |
| 3.4.25 | BALIVE | Basal area per acre of live trees | NUMBER(9,4) |
| 3.4.26 | VOLTSGRS | Gross cubic-foot total-stem wood volume at the threshold | NUMBER(13,6) |
| 3.4.27 | VOLTSGRS_BARK | Gross cubic-foot total-stem bark volume at the threshold | NUMBER(13,6) |
| 3.4.28 | VOLTSSND | Sound cubic-foot total-stem wood volume at the threshold | NUMBER(13,6) |
| 3.4.29 | VOLTSSND_BARK | Sound cubic-foot total-stem bark volume at the threshold | NUMBER(13,6) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 3.4.30 | VOLCFGRS_STUMP | Gross cubic-foot stump wood volume at the threshold | NUMBER(13,6) |
| 3.4.31 | VOLCFGRS_STUMP_BARK | Gross cubic-foot stump bark volume at the threshold | NUMBER(13,6) |
| 3.4.32 | VOLCFSND_STUMP | Sound cubic-foot stump wood volume at the threshold | NUMBER(13,6) |
| 3.4.33 | VOLCFSND_STUMP_BARK | Sound cubic-foot stump bark volume at the threshold | NUMBER(13,6) |
| 3.4.34 | VOLCFGRS | Gross cubic-foot stem wood volume at the threshold | NUMBER(13,6) |
| 3.4.35 | VOLCFGRS_BARK | Gross cubic-foot stem bark volume at the threshold | NUMBER(13,6) |
| 3.4.36 | VOLCFGRS_TOP | Gross cubic-foot stem-top wood volume at the threshold | NUMBER(13,6) |
| 3.4.37 | VOLCFGRS_TOP_BARK | Gross cubic-foot stem-top bark volume at the threshold | NUMBER(13,6) |
| 3.4.38 | VOLCFSND | Sound cubic-foot stem wood volume at the threshold | NUMBER(13,6) |
| 3.4.39 | VOLCFSND_BARK | Sound cubic-foot stem bark volume at the threshold | NUMBER(13,6) |
| 3.4.40 | VOLCFSND_TOP | Sound cubic-foot stem-top wood volume at the threshold | NUMBER(13,6) |
| 3.4.41 | VOLCFSND_TOP_BARK | Sound cubic-foot stem-top bark volume at the threshold | NUMBER(13,6) |
| 3.4.42 | VOLCFNET | Net cubic-foot stem wood volume at the threshold | NUMBER(13,6) |
| 3.4.43 | VOLCFNET_BARK | Net cubic-foot stem bark volume at the threshold | NUMBER(13,6) |
| 3.4.44 | VOLCSGRS | Gross cubic-foot wood volume in the sawlog portion of a sawtimber tree at the threshold | NUMBER(13,6) |
| 3.4.45 | VOLCSGRS_BARK | Gross cubic-foot bark volume in the sawlog portion of a sawtimber tree at the threshold | NUMBER(13,6) |
| 3.4.46 | VOLCSSND | Sound cubic-foot wood volume in the sawlog portion of a sawtimber tree at the threshold | NUMBER(13,6) |
| 3.4.47 | VOLCSSND_BARK | Sound cubic-foot bark volume in the sawlog portion of a sawtimber tree at the threshold | NUMBER(13,6) |
| 3.4.48 | VOLCSNET | Net cubic-foot wood volume in the sawlog portion of a sawtimber tree at the threshold | NUMBER(13,6) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 3.4.49 | VOLCSNET_BARK | Net cubic-foot bark volume in the sawlog portion of a sawtimber tree at the threshold | NUMBER(13,6) |
| 3.4.50 | VOLBFGRS | Gross board-foot wood volume in the sawlog portion of a sawtimber tree at the threshold | NUMBER(13,6) |
| 3.4.51 | VOLBFNET | Net board-foot wood volume in the sawlog portion of a sawtimber tree at the threshold | NUMBER(13,6) |
| 3.4.52 | VOLBSGRS | Gross board-foot wood volume in the sawlog portion of a sawtimber tree at the threshold (Scribner Rule) | NUMBER(13,6) |
| 3.4.53 | VOLBSNET | Net board-foot wood volume in the sawlog portion of a sawtimber tree at the threshold (Scribner Rule) | NUMBER(13,6) |
| 3.4.54 | DRYBIO_STEM | Dry biomass of wood in the total stem at the threshold | NUMBER(13,6) |
| 3.4.55 | DRYBIO_STEM_BARK | Dry biomass of bark in the total stem at the threshold | NUMBER(13,6) |
| 3.4.56 | DRYBIO_STUMP | Dry biomass of wood in the stump at the threshold | NUMBER(13, 6) |
| 3.4.57 | DRYBIO_STUMP_BARK | Dry biomass of bark in the stump at the threshold | NUMBER(13,6) |
| 3.4.58 | DRYBIO_BOLE | Dry biomass of wood in the merchantable bole at the threshold | NUMBER(13,6) |
| 3.4.59 | DRYBIO_BOLE_BARK | Dry biomass of bark in the merchantable bole at the threshold | NUMBER(13,6) |
| 3.4.60 | DRYBIO_BRANCH | Dry biomass of branches at the threshold | NUMBER(13,6) |
| 3.4.61 | DRYBIO_FOLIAGE | Dry biomass of foliage at the threshold | NUMBER(13,6) |
| 3.4.62 | DRYBIO_AG | Aboveground dry biomass of wood and bark at the threshold | NUMBER(13,6) |
| 3.4.63 | DRYBIO_BG | Belowground dry biomass at the threshold | NUMBER(13,6) |
| 3.4.64 | CARBON_AG | Aboveground carbon of wood and bark at the threshold | NUMBER(13,6) |
| 3.4.65 | CARBON_BG | Belowground carbon at the threshold | NUMBER(13,6) |
| 3.4.66 | DRYBIO_SAWLOG | Dry biomass of wood in the sawlog portion of a sawtimber tree at the threshold | NUMBER(13,6) |
| 3.4.67 | DRYBIO_SAWLOG_BARK | Dry biomass of bark in the sawlog portion of a sawtimber tree at the threshold | NUMBER(13,6) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------|------------------|
| 3.4.68 | CREATED_BY | Created by | VARCHAR2(30) |
| 3.4.69 | CREATED_DATE | Created date | DATE |
| 3.4.70 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 3.4.71 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 3.4.72 | MODIFIED_DATE | Modified date | DATE |
| 3.4.73 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|------------------------|----------------------------|----------------------|
| Primary | TRE_CN, THRESHOLD_TYPE | N/A | TRE_GRM_THRESHS_PK |
| Foreign | TRE_CN | TREE_GRM_THRESHOLD to TREE | TRE_GRM_THRESH_FK |

This table stores information about ingrowth trees at specific tree threshold sizes. An ingrowth tree was not present at T1, but grew across a minimum quality and/or size threshold between inventories. This table does not include a record for every remeasurement tree, only ingrowth trees that require threshold values. Threshold estimates are computed for trees that grow across one or more thresholds during the remeasurement period (see [THRESHOLD_TYPE](#)). The information in this table is used to compute growth, removal, and mortality (GRM) estimates on ingrowth trees. The current structure of the table supports estimates of volume as well as biomass.

3.4.1 **TRE_CN**

Tree sequence number. Foreign key linking the tree GRM threshold record to the T2 tree record.

3.4.2 **PREV_TRE_CN**

Previous tree sequence number. Foreign key linking the tree GRM threshold record to the T1 tree record, if one exists. It can be blank (null) in some cases.

3.4.3 **PLT_CN**

Plot sequence number. Foreign key linking the tree GRM threshold record to the plot record.

3.4.4 **STATECD**

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

3.4.5 **THRESHOLD_TYPE**

Threshold type. A code indicating the threshold type. Threshold types correspond with the tree-size thresholds recognized by FIA.

Codes: THRESHOLD_TYPE

| Code | Description |
|-----------|--|
| Microplot | Tree at the 1-inch size threshold. |
| Subplot | Tree at the 5-inch size threshold. |
| Sawlog | Tree at the sawtimber threshold (9 inches for softwoods, 11 inches for hardwoods). |

3.4.6 SUBPTYP

Plot type code. A code indicating the plot type used for the tree estimates in the TREE_GRM_THRESHOLD table. See TREE_GRM_MIDPT.[SUBPTYP](#) description for codes.

3.4.7 SPCD

Species code. The FIA tree species code at T2, which may be different from the species code at T1. Refer to [appendix F](#) for codes.

3.4.8 STATUSCD

Status code. The value used for the tree estimates in the TREE_GRM_THRESHOLD table. See TREE.[STATUSCD](#) description for definition.

3.4.9 DIA

Threshold diameter. The threshold diameter, in inches, used for the tree estimates in the TREE_GRM_THRESHOLD table.[DIAHTCD](#) See TREE.[DIA](#) for details about how DIA is measured.

3.4.10 HT

Total height. The value used for the tree estimates in the TREE_GRM_THRESHOLD table. See TREE.[HT](#) description for definition.

3.4.11 ACTUALHT

Actual height. The value used for the tree estimates in the TREE_GRM_THRESHOLD table. See TREE.[ACTUALHT](#) description for definition.

3.4.12 CR

Compacted crown ratio. The value used for the tree estimates in the TREE_GRM_THRESHOLD table. See TREE.[CR](#) description for definition.

3.4.13 STANDING_DEAD_CD

Standing dead code. The value used for the tree estimates in the TREE_GRM_THRESHOLD table. See TREE.[STANDING_DEAD_CD](#) description for definition.

3.4.14 DIAHTCD

Diameter height code. The value used for the tree estimates in the TREE_GRM_THRESHOLD table. See TREE.[DIAHTCD](#) description for definition.

3.4.15 CULL

Rotten and missing cull. The value used for the tree estimates in the TREE_GRM_THRESHOLD table. See TREE.[CULL](#) description for definition.

3.4.16 ROUGHCULL

Rough cull. The value used for the tree estimates in the TREE_GRM_THRESHOLD table. See TREE.[ROUGHCULL](#) description for definition.

3.4.17 CULLFORM

Form cull. The value used for the tree estimates in the TREE_GRM_THRESHOLD table. See TREE.[CULLFORM](#) description for definition.

3.4.18 CULLMSTOP

Missing top cull. The value used for the tree estimates in the TREE_GRM_THRESHOLD table. See TREE.[CULLMSTOP](#) description for definition.

3.4.19 DECAYCD

Decay class code. The value used for the tree estimates in the TREE_GRM_THRESHOLD table. See TREE.[DECAYCD](#) description for definition.

3.4.20 TREECLCD

Tree class code. The value used for the estimates in the TREE_GRM_THRESHOLD table. See the TREE.[TREECLCD](#) description for codes.

3.4.21 HTDMP

Height to diameter measurement point. The value used for the tree estimates in the TREE_GRM_THRESHOLD table. See TREE.[HTDMP](#) description for definition.

3.4.22 WDLDSTEM

Woodland tree species stem count. The value used for the tree estimates in the TREE_GRM_THRESHOLD table. See TREE.[WDLDSTEM](#) description for definition.

3.4.23 STDORGCD

Stand origin code. The value used for the tree estimates in the TREE_GRM_THRESHOLD table. See COND.[STDORGCD](#) description for definition.

3.4.24 SITREE

Calculated site index. The value used for the tree estimates in the TREE_GRM_THRESHOLD table. See TREE.[SITREE](#) description for definition.

3.4.25 BALIVE

Basal area per acre of live trees. The value used for the tree estimates in the TREE_GRM_THRESHOLD table. See COND.[BALIVE](#) description for definition.

3.4.26 VOLTSGRS

Gross cubic-foot total-stem wood volume at the threshold. See TREE.[VOLTSGRS](#) description for definition.

3.4.27 VOLTSGRS_BARK

Gross cubic-foot total-stem bark volume at the threshold. See TREE.[VOLTSGRS_BARK](#) description for definition.

3.4.28 VOLTSSND

Sound cubic-foot total-stem wood volume at the threshold. See TREE.[VOLTSSND](#) description for definition.

3.4.29 VOLTSSND_BARK

Sound cubic-foot total-stem bark volume at the threshold. See TREE.[VOLTSSND_BARK](#) description for definition.

3.4.30 VOLCFGRS_STUMP

Gross cubic-foot stump wood volume at the threshold. See TREE.[VOLCFGRS_STUMP](#) description for definition.

3.4.31 VOLCFGRS_STUMP_BARK

Gross cubic-foot stump bark volume at the threshold. See TREE.[VOLCFGRS_STUMP_BARK](#) description for definition.

3.4.32 VOLCFSND_STUMP

Sound cubic-foot stump wood volume at the threshold. See TREE.[VOLCFSND_STUMP](#) description for definition.

3.4.33 VOLCFSND_STUMP_BARK

Sound cubic-foot stump bark volume at the threshold. See TREE.[VOLCFSND_STUMP_BARK](#) description for definition.

3.4.34 VOLCFGRS

Gross cubic-foot stem wood volume at the threshold. See TREE.[VOLCFGRS](#) description for definition.

3.4.35 VOLCFGRS_BARK

Gross cubic-foot stem bark volume at the threshold. See TREE.[VOLCFGRS_BARK](#) description for definition.

3.4.36 VOLCFGRS_TOP

Gross cubic-foot stem-top wood volume at the threshold. See TREE.[VOLCFGRS_TOP](#) description for definition.

3.4.37 VOLCFGRS_TOP_BARK

Gross cubic-foot stem-top bark volume at the threshold. See TREE.[VOLCFGRS_TOP_BARK](#) description for definition.

3.4.38 VOLCFSND

Sound cubic-foot stem wood volume at the threshold. See the TREE.[VOLCFSND](#) description for definition.

3.4.39 VOLCFSND_BARK

Sound cubic-foot stem bark volume at the threshold. See TREE.[VOLCFSND_BARK](#) description for definition.

3.4.40 VOLCFSND_TOP

Sound cubic-foot stem-top wood volume at the threshold. See TREE.[VOLCFSND_TOP](#) description for definition.

3.4.41 VOLCFSND_TOP_BARK

Sound cubic-foot stem-top bark volume at the threshold. See TREE.[VOLCFSND_TOP_BARK](#) description for definition.

3.4.42 VOLCFNET

Net cubic-foot stem wood volume at the threshold. See the TREE.[VOLCFNET](#) description for definition.

3.4.43 VOLCFNET_BARK

Net cubic-foot stem bark volume at the threshold. See TREE.[VOLCFNET_BARK](#) description for definition.

3.4.44 VOLCSGRS

Gross cubic-foot wood volume in the sawlog portion of a sawtimber tree at the threshold. See TREE.[VOLCSGRS](#) description for definition.

3.4.45 VOLCSGRS_BARK

Gross cubic-foot bark volume in the sawlog portion of a sawtimber tree at the threshold. See TREE.[VOLCSGRS_BARK](#) description for definition.

3.4.46 VOLCSSND

Sound cubic-foot wood volume in the sawlog portion of a sawtimber tree at the threshold. See TREE.[VOLCSSND](#) description for definition.

3.4.47 VOLCSSND_BARK

Sound cubic-foot bark volume in the sawlog portion of a sawtimber tree at the threshold. See TREE.[VOLCSSND_BARK](#) description for definition.

3.4.48 VOLCSNET

Net cubic-foot wood volume in the sawlog portion of a sawtimber tree at the threshold. See the TREE.[VOLCSNET](#) description for definition.

3.4.49 VOLCSNET_BARK

Net cubic-foot bark volume in the sawlog portion of a sawtimber tree at the threshold. See TREE.[VOLCSNET_BARK](#) description for definition.

3.4.50 VOLBFGRS

Gross board-foot wood volume in the sawlog portion of a sawtimber tree at the threshold. See TREE.[VOLBFGRS](#) description for definition.

3.4.51 VOLBFNET

Net board-foot wood volume in the sawlog portion of a sawtimber tree at the threshold. See the TREE.[VOLBFNET](#) description for definition.

3.4.52 VOLBSGRS

Gross board-foot wood volume in the sawlog portion of a sawtimber tree at the threshold (Scribner Rule). See TREE.[VOLBSGRS](#) description for definition.

3.4.53 VOLBSNET

Net board-foot wood volume in the sawlog portion of a sawtimber tree at the threshold (Scribner Rule). See TREE.VOLBSNET description for definition.

3.4.54 DRYBIO_STEM

Dry biomass of wood in the total stem at the threshold. See TREE.DRYBIO_STEM description for definition.

3.4.55 DRYBIO_STEM_BARK

Dry biomass of bark in the total stem at the threshold. See TREE.DRYBIO_STEM_BARK description for definition.

3.4.56 DRYBIO_STUMP

Dry biomass of wood in the stump at the threshold. See the TREE.DRYBIO_STUMP description for definition.

3.4.57 DRYBIO_STUMP_BARK

Dry biomass of bark in the stump at the threshold. See TREE.DRYBIO_STUMP_BARK description for definition.

3.4.58 DRYBIO_BOLE

Dry biomass of wood in the merchantable bole at the threshold. See the TREE.DRYBIO_BOLE description for definition.

3.4.59 DRYBIO_BOLE_BARK

Dry biomass of bark in the merchantable bole at the threshold. See TREE.DRYBIO_BOLE_BARK description for definition.

3.4.60 DRYBIO_BRANCH

Dry biomass of branches at the threshold. See TREE.DRYBIO_BRANCH description for definition.

3.4.61 DRYBIO_FOLIAGE

Dry biomass of foliage at the threshold. See TREE.DRYBIO_FOLIAGE description for definition.

3.4.62 DRYBIO_AG

Aboveground dry biomass of wood and bark at the threshold. See the TREE.DRYBIO_AG description for definition.

3.4.63 DRYBIO_BG

Belowground dry biomass at the threshold. See the TREE.DRYBIO_BG description for definition.

3.4.64 CARBON_AG

Aboveground carbon of wood and bark at the threshold. See TREE.CARBON_AG description for definition.

3.4.65 CARBON_BG

Belowground carbon at the threshold. See TREE.CARBON_BG description for definition.

3.4.66 DRYBIO_SAWLOG

Dry biomass of wood in the sawlog portion of a sawtimber tree at the threshold. See TREE.[DRYBIO_SAWLOG](#) description for definition.

3.4.67 DRYBIO_SAWLOG_BARK

Dry biomass of bark in the sawlog portion of a sawtimber tree at the threshold. See TREE.[DRYBIO_SAWLOG_BARK](#) description for definition.

3.4.68 CREATED_BY

Created by. See SURVEY.[CREATED_BY](#) description for definition.

3.4.69 CREATED_DATE

Created date. See SURVEY.[CREATED_DATE](#) description for definition.

3.4.70 CREATED_IN_INSTANCE

Created in instance. See SURVEY.[CREATED_IN_INSTANCE](#) description for definition.

3.4.71 MODIFIED_BY

Modified by. See SURVEY.[MODIFIED_BY](#) description for definition.

3.4.72 MODIFIED_DATE

Modified date. See SURVEY.[MODIFIED_DATE](#) description for definition.

3.4.73 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

3.5 Tree Growth, Removal, and Mortality Midpoint Table

(Oracle table name: TREE_GRM_MIDPT)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 3.5.1 | TRE_CN | Tree sequence number | VARCHAR2(34) |
| 3.5.2 | PREV_TRE_CN | Previous tree sequence number | VARCHAR2(34) |
| 3.5.3 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 3.5.4 | STATECD | State code | NUMBER(2) |
| 3.5.5 | SUBPTYP | Plot type code | NUMBER(1) |
| 3.5.6 | SPCD | Species code | NUMBER(4) |
| 3.5.7 | STATUSCD | Status code | NUMBER(2) |
| 3.5.8 | DIA | Midpoint diameter | NUMBER(5,2) |
| 3.5.9 | HT | Total height | NUMBER(3) |
| 3.5.10 | ACTUALHT | Actual height | NUMBER(3) |
| 3.5.11 | CR | Compacted crown ratio | NUMBER(3) |
| 3.5.12 | STANDING_DEAD_CD | Standing dead code | NUMBER(2) |
| 3.5.13 | DIAHTCD | Diameter height code | NUMBER(1) |
| 3.5.14 | CULL | Rotten and missing cull | NUMBER(3) |
| 3.5.15 | ROUGHCULL | Rough cull | NUMBER(3) |
| 3.5.16 | CULLFORM | Form cull | NUMBER(3) |
| 3.5.17 | CULLMSTOP | Missing top cull | NUMBER(3) |
| 3.5.18 | DECAYCD | Decay class code | NUMBER(2) |
| 3.5.19 | TREECLCD | Tree class code | NUMBER(2) |
| 3.5.20 | HTDMP | Height to diameter measurement point | NUMBER(3,1) |
| 3.5.21 | WDLDSTEM | Woodland tree species stem count | NUMBER(3) |
| 3.5.22 | STDORGCD | Stand origin code | NUMBER(2) |
| 3.5.23 | SITREE | Calculated site index | NUMBER(3) |
| 3.5.24 | BALIVE | Basal area per acre of live trees | NUMBER(9,4) |
| 3.5.25 | VOLTSGRS | Gross cubic-foot total-stem wood volume at the midpoint | NUMBER(13,6) |
| 3.5.26 | VOLTSGRS_BARK | Gross cubic-foot total-stem bark volume at the midpoint | NUMBER(13,6) |
| 3.5.27 | VOLTSSND | Sound cubic-foot total-stem wood volume at the midpoint | NUMBER(13,6) |
| 3.5.28 | VOLTSSND_BARK | Sound cubic-foot total-stem bark volume at the midpoint | NUMBER(13,6) |
| 3.5.29 | VOLCFGGRS_STUMP | Gross cubic-foot stump wood volume at the midpoint | NUMBER(13,6) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 3.5.30 | VOLCFGRS_STUMP_BARK | Gross cubic-foot stump bark volume at the midpoint | NUMBER(13,6) |
| 3.5.31 | VOLCFSND_STUMP | Sound cubic-foot stump wood volume at the midpoint | NUMBER(13,6) |
| 3.5.32 | VOLCFSND_STUMP_BARK | Sound cubic-foot stump bark volume at the midpoint | NUMBER(13,6) |
| 3.5.33 | VOLCFGRS | Gross cubic-foot stem wood volume at the midpoint | NUMBER(13,6) |
| 3.5.34 | VOLCFGRS_BARK | Gross cubic-foot stem bark volume at the midpoint | NUMBER(13,6) |
| 3.5.35 | VOLCFGRS_TOP | Gross cubic-foot stem-top wood volume at the midpoint | NUMBER(13,6) |
| 3.5.36 | VOLCFGRS_TOP_BARK | Gross cubic-foot stem-top bark volume at the midpoint | NUMBER(13,6) |
| 3.5.37 | VOLCFSND | Sound cubic-foot stem wood volume at the midpoint | NUMBER(13,6) |
| 3.5.38 | VOLCFSND_BARK | Sound cubic-foot stem bark volume at the midpoint | NUMBER(13,6) |
| 3.5.39 | VOLCFSND_TOP | Sound cubic-foot stem-top wood volume at the midpoint | NUMBER(13,6) |
| 3.5.40 | VOLCFSND_TOP_BARK | Sound cubic-foot stem-top bark volume at the midpoint | NUMBER(13,6) |
| 3.5.41 | VOLCFNET | Net cubic-foot stem wood volume at the midpoint | NUMBER(13, 6) |
| 3.5.42 | VOLCFNET_BARK | Net cubic-foot stem bark volume at the midpoint | NUMBER(13,6) |
| 3.5.43 | VOLCSGRS | Gross cubic-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint | NUMBER(13,6) |
| 3.5.44 | VOLCSGRS_BARK | Gross cubic-foot bark volume in the sawlog portion of a sawtimber tree at the midpoint | NUMBER(13,6) |
| 3.5.45 | VOLCSSND | Sound cubic-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint | NUMBER(13,6) |
| 3.5.46 | VOLCSSND_BARK | Sound cubic-foot bark volume in the sawlog portion of a sawtimber tree at the midpoint | NUMBER(13,6) |
| 3.5.47 | VOLCSNET | Net cubic-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint | NUMBER(13,6) |
| 3.5.48 | VOLCSNET_BARK | Net cubic-foot bark volume in the sawlog portion of a sawtimber tree at the midpoint | NUMBER(13,6) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 3.5.49 | VOLBFGRS | Gross board-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint | NUMBER(13,6) |
| 3.5.50 | VOLBFNET | Net board-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint | NUMBER(13,6) |
| 3.5.51 | VOLBSGRS | Gross board-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint (Scribner Rule) | NUMBER(13,6) |
| 3.5.52 | VOLBSNET | Net board-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint (Scribner Rule) | NUMBER(13, 6) |
| 3.5.53 | DRYBIO_STEM | Dry biomass of wood in the total stem at the midpoint | NUMBER(13,6) |
| 3.5.54 | DRYBIO_STEM_BARK | Dry biomass of bark in the total stem at the midpoint | NUMBER(13,6) |
| 3.5.55 | DRYBIO_STUMP | Dry biomass of wood in the stump at the midpoint | NUMBER(13,6) |
| 3.5.56 | DRYBIO_STUMP_BARK | Dry biomass of bark in the stump at the midpoint | NUMBER(13,6) |
| 3.5.57 | DRYBIO_BOLE | Dry biomass of wood in the merchantable bole at the midpoint | NUMBER(13,6) |
| 3.5.58 | DRYBIO_BOLE_BARK | Dry biomass of bark in the merchantable bole at the midpoint | NUMBER(13,6) |
| 3.5.59 | DRYBIO_BRANCH | Dry biomass of branches at the midpoint | NUMBER(13,6) |
| 3.5.60 | DRYBIO_FOLIAGE | Dry biomass of foliage at the midpoint | NUMBER(13,6) |
| 3.5.61 | DRYBIO_AG | Aboveground dry biomass of wood and bark at the midpoint | NUMBER(13,6) |
| 3.5.62 | DRYBIO_BG | Belowground dry biomass at the midpoint | NUMBER(13,6) |
| 3.5.63 | CARBON_AG | Aboveground carbon of wood and bark at the midpoint | NUMBER(13,6) |
| 3.5.64 | CARBON_BG | Belowground carbon at the midpoint | NUMBER(13,6) |
| 3.5.65 | DRYBIO_SAWLOG | Dry biomass of wood in the sawlog portion of a sawtimber tree at the midpoint | NUMBER(13,6) |
| 3.5.66 | DRYBIO_SAWLOG_BARK | Dry biomass of bark in the sawlog portion of a sawtimber tree at the midpoint | NUMBER(13,6) |
| 3.5.67 | CREATED_BY | Created by | VARCHAR2(30) |
| 3.5.68 | CREATED_DATE | Created date | DATE |
| 3.5.69 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------|------------------|
| 3.5.70 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 3.5.71 | MODIFIED_DATE | Modified date | DATE |
| 3.5.72 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|------------------------|----------------------|
| Primary | TRE_CN | N/A | TRE_GRM_MIDPT_PK |
| Foreign | TRE_CN | TREE_GRM_MIDPT to TREE | TRE_GRM_MIDPT_FK |

This table stores information about a remeasurement tree at the midpoint. The midpoint is the point in time exactly between the time 1 (T1, most recent past measurement) and time 2 (T2, current) measurement dates. This table does not include a record for every remeasurement tree, but only those where midpoint values are required. Midpoint estimates are computed for trees that experience mortality, removal, or land use diversion or reversion. The information in this table is used to compute growth, removal, and mortality (GRM) estimates on remeasurement trees. This table includes a single record per tree. The current structure of the table supports estimates of volume as well as biomass.

3.5.1 TRE_CN

Tree sequence number. Foreign key linking the tree GRM midpoint record to the T2 tree record.

3.5.2 PREV_TRE_CN

Previous tree sequence number. Foreign key linking the GRM midpoint record to the T1 tree record, if one exists. It can be blank (null) in some cases. For example, an ingrowth tree would not have a T1 record.

3.5.3 PLT_CN

Plot sequence number. Foreign key linking the tree GRM midpoint record to the plot record.

3.5.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

3.5.5 SUBPTYP

Plot type code. A code indicating the plot type used for the tree estimates in TREE_GRM_MIDPT table.

Codes: SUBPTYP

| Code | Description |
|------|--|
| 0 | Undetermined. Assigned in cases where there is no T1 tree record, and the modeled tree grows across either the microplot-to-subplot threshold, or the subplot-to-macropot threshold. |
| 1 | Subplot. |

| Code | Description |
|------|-------------|
| 2 | Microplot. |
| 3 | Macroplot. |

3.5.6 SPCD

Species code. The FIA tree species code at T2, which may be different from the species code at T1. Refer to [appendix F](#) for codes.

3.5.7 STATUSCD

Status code. The value used for the tree estimates in the TREE_GRM_MIDPT table. See TREE.STATUSCD description for definition.

3.5.8 DIA

Midpoint diameter. The estimated midpoint diameter used for the tree estimates in the TREE_GRM_MIDPT table. See TREE.DIA description for definition.

3.5.9 HT

Total height. The value used for the tree estimates in the TREE_GRM_MIDPT table. See TREE.HT description for definition.

3.5.10 ACTUALHT

Actual height. The value used for the tree estimates in the TREE_GRM_MIDPT table. See TREE.ACTUALHT description for definition.

3.5.11 CR

Compacted crown ratio. The value used for the tree estimates in the TREE_GRM_MIDPT table. See TREE.CR description for definition.

3.5.12 STANDING_DEAD_CD

Standing dead code. The value used for the tree estimates in the TREE_GRM_MIDPT table. See TREE.STANDING_DEAD_CD description for definition.

3.5.13 DIAHTCD

Diameter height code. The value for the tree estimates in the TREE_GRM_MIDPT table. See TREE.DIAHTCD description for definition.

3.5.14 CULL

Rotten and missing cull. The value used for the tree estimates in the TREE_GRM_MIDPT table. See TREE.CULL description for definition.

3.5.15 ROUGHCULL

Rough cull. The value used for the tree estimates in the TREE_GRM_MIDPT table. See TREE.ROUGHCULL description for definition.

3.5.16 CULLFORM

Form cull. The value used for the tree estimates in the TREE_GRM_MIDPT table. See TREE.CULLFORM description for definition.

3.5.17 CULLMSTOP

Missing top cull. The value used for the tree estimates in the TREE_GRM_MIDPT table. See TREE.CULLMSTOP description for definition.

3.5.18 DECAYCD

Decay class code. The value used for the tree estimates in the TREE_GRM_MIDPT table. See TREE.DECAYCD description for definition.

3.5.19 TREECLCD

Tree class code. The value used for the tree estimates in the TREE_GRM_MIDPT table. See TREE.TREECLCD description for definition.

3.5.20 HTDMP

Height to diameter measurement point. The value used for the tree estimates in the TREE_GRM_MIDPT table. See TREE.HTDMP description for definition.

3.5.21 WDLDSTEM

Woodland tree species stem count. The value used for the tree estimates in the TREE_GRM_MIDPT table. See TREE.WDLDSTEM description for definition.

3.5.22 STDORGCD

Stand origin code. The value used for the tree estimates in the TREE_GRM_MIDPT table. See COND.STDORGCD description for definition.

3.5.23 SITREE

Calculated site index. The value used for the tree estimates in the TREE_GRM_MIDPT table. See TREE.SITREE description for definition.

3.5.24 BALIVE

Basal area per acre of live trees. The value used for the tree estimates in the TREE_GRM_MIDPT table. See COND.BALIVE description for definition.

3.5.25 VOLTSGRS

Gross cubic-foot total-stem wood volume at the midpoint. See TREE.VOLTSGRS description for definition.

3.5.26 VOLTSGRS_BARK

Gross cubic-foot total-stem bark volume at the midpoint. See TREE.VOLTSGRS_BARK description for definition.

3.5.27 VOLTSSND

Sound cubic-foot total-stem wood volume at the midpoint. See TREE.VOLTSSND description for definition.

3.5.28 VOLTSSND_BARK

Sound cubic-foot total-stem bark volume at the midpoint. See TREE.VOLTSSND_BARK description for definition.

3.5.29 VOLCFGRS_STUMP

Gross cubic-foot stump wood volume at the midpoint. See TREE.[VOLCFGRS_STUMP](#) description for definition.

3.5.30 VOLCFGRS_STUMP_BARK

Gross cubic-foot stump bark volume at the midpoint. See TREE.[VOLCFGRS_STUMP_BARK](#) description for definition.

3.5.31 VOLCFSND_STUMP

Sound cubic-foot stump wood volume at the midpoint. See TREE.[VOLCFSND_STUMP](#) description for definition.

3.5.32 VOLCFSND_STUMP_BARK

Sound cubic-foot stump bark volume at the midpoint. See TREE.[VOLCFSND_STUMP_BARK](#) description for definition.

3.5.33 VOLCFGRS

Gross cubic-foot stem wood volume at the midpoint. See TREE.[VOLCFGRS](#) description for definition.

3.5.34 VOLCFGRS_BARK

Gross cubic-foot stem bark volume at the midpoint. See TREE.[VOLCFGRS_BARK](#) description for definition.

3.5.35 VOLCFGRS_TOP

Gross cubic-foot stem-top wood volume at the midpoint. See TREE.[VOLCFGRS_TOP](#) description for definition.

3.5.36 VOLCFGRS_TOP_BARK

Gross cubic-foot stem-top bark volume at the midpoint. See TREE.[VOLCFGRS_TOP_BARK](#) description for definition.

3.5.37 VOLCFSND

Sound cubic-foot stem wood volume at the midpoint. See TREE.[VOLCFSND](#) description for definition.

3.5.38 VOLCFSND_BARK

Sound cubic-foot stem bark volume at the midpoint. See TREE.[VOLCFSND_BARK](#) description for definition.

3.5.39 VOLCFSND_TOP

Sound cubic-foot stem-top wood volume at the midpoint. See TREE.[VOLCFSND_TOP](#) description for definition.

3.5.40 VOLCFSND_TOP_BARK

Sound cubic-foot stem-top bark volume at the midpoint. See TREE.[VOLCFSND_TOP_BARK](#) description for definition.

3.5.41 VOLCFNET

Net cubic-foot stem wood volume at the midpoint. See TREE.VOLCFNET description for definition.

3.5.42 VOLCFNET_BARK

Net cubic-foot stem bark volume at the midpoint. See TREE.VOLCFNET_BARK description for definition.

3.5.43 VOLCSGRS

Gross cubic-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint. See TREE.VOLCSGRS description for definition.

3.5.44 VOLCSGRS_BARK

Gross cubic-foot bark volume in the sawlog portion of a sawtimber tree at the midpoint. See TREE.VOLCSGRS_BARK description for definition.

3.5.45 VOLCSSND

Sound cubic-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint. See TREE.VOLCSSND description for definition.

3.5.46 VOLCSSND_BARK

Sound cubic-foot bark volume in the sawlog portion of a sawtimber tree at the midpoint. See TREE.VOLCSSND_BARK description for definition.

3.5.47 VOLCSNET

Net cubic-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint. See TREE.VOLCSNET description for definition.

3.5.48 VOLCSNET_BARK

Net cubic-foot bark volume in the sawlog portion of a sawtimber tree at the midpoint. See TREE.VOLCSNET_BARK description for definition.

3.5.49 VOLBFGRS

Gross board-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint. See TREE.VOLBFGRS description for definition.

3.5.50 VOLBFNET

Net board-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint. See TREE.VOLBFNET description for definition.

3.5.51 VOLBSGRS

Gross board-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint (Scribner Rule). See TREE.VOLBSGRS description for definition.

3.5.52 VOLBSNET

Net board-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint (Scribner Rule). See TREE.VOLBSNET description for definition.

3.5.53 DRYBIO_STEM

Dry biomass of wood in the total stem at the midpoint. See TREE.DRYBIO_STEM description for definition.

3.5.54 DRYBIO_STEM_BARK

Dry biomass of bark in the total stem at the midpoint. See TREE.DRYBIO_STEM_BARK description for definition.

3.5.55 DRYBIO_STUMP

Dry biomass wood in the stump at the midpoint. See TREE.DRYBIO_STUMP description for definition.

3.5.56 DRYBIO_STUMP_BARK

Dry biomass of bark in the stump at the midpoint. See TREE.DRYBIO_STUMP_BARK description for definition.

3.5.57 DRYBIO_BOLE

Dry biomass of wood in the merchantable bole at the midpoint. See TREE.DRYBIO_BOLE description for definition.

3.5.58 DRYBIO_BOLE_BARK

Dry biomass of bark in the merchantable bole at the midpoint. See TREE.DRYBIO_BOLE_BARK description for definition.

3.5.59 DRYBIO_BRANCH

Dry biomass of branches at the midpoint. See TREE.DRYBIO_BRANCH description for definition.

3.5.60 DRYBIO_FOLIAGE

Dry biomass of foliage at the midpoint. See TREE.DRYBIO_FOLIAGE description for definition.

3.5.61 DRYBIO_AG

Aboveground dry biomass of wood and bark at the midpoint. See TREE.DRYBIO_AG description for definition.

3.5.62 DRYBIO_BG

Belowground dry biomass at the midpoint. See TREE.DRYBIO_BG description for definition.

3.5.63 CARBON_AG

Aboveground carbon of wood and bark at the midpoint. See TREE.CARBON_AG description for definition.

3.5.64 CARBON_BG

Belowground carbon at the midpoint. See TREE.CARBON_BG description for definition.

3.5.65 DRYBIO_SAWLOG

Dry biomass of wood in the sawlog portion of a sawtimber tree at the midpoint. See TREE.DRYBIO_SAWLOG description for definition.

3.5.66 DRYBIO_SAWLOG_BARK

Dry biomass of bark in the sawlog portion of a sawtimber tree at the midpoint. See TREE.DRYBIO_SAWLOG_BARK description for definition.

3.5.67 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

3.5.68 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

3.5.69 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

3.5.70 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

3.5.71 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

3.5.72 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

3.6 Tree Growth, Removal, and Mortality Begin Table

(Oracle table name: TREE_GRM_BEGIN)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 3.6.1 | TRE_CN | Tree sequence number | VARCHAR2(34) |
| 3.6.2 | PREV_TRE_CN | Previous tree sequence number | VARCHAR2(34) |
| 3.6.3 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 3.6.4 | STATECD | State code | NUMBER(2) |
| 3.6.5 | SUBPTYP | Plot type code | NUMBER(1) |
| 3.6.6 | SPCD | Species code | NUMBER(4) |
| 3.6.7 | STATUSCD | Status code | NUMBER(2) |
| 3.6.8 | DIA | Diameter at T1 | NUMBER(5,2) |
| 3.6.9 | HT | Total height | NUMBER(3) |
| 3.6.10 | ACTUALHT | Actual height | NUMBER(3) |
| 3.6.11 | CR | Compacted crown ratio | NUMBER(3) |
| 3.6.12 | STANDING_DEAD_CD | Standing dead code | NUMBER(2) |
| 3.6.13 | DIAHTCD | Diameter height code | NUMBER(1) |
| 3.6.14 | CULL | Rotten and missing cull | NUMBER(3) |
| 3.6.15 | ROUGHCULL | Rough cull | NUMBER(3) |
| 3.6.16 | CULLFORM | Form Cull | NUMBER(3) |
| 3.6.17 | CULLMSTOP | Missing top cull | NUMBER(3) |
| 3.6.18 | DECAYCD | Decay class code | NUMBER(2) |
| 3.6.19 | TREECLCD | Tree class code | NUMBER(2) |
| 3.6.20 | HTDMP | Height to diameter measurement point | NUMBER(3,1) |
| 3.6.21 | WDLDSTEM | Woodland tree species stem count | NUMBER(3) |
| 3.6.22 | STDORGCD | Stand origin code | NUMBER(2) |
| 3.6.23 | SITREE | Calculated site index | NUMBER(3) |
| 3.6.24 | BALIVE | Basal area per acre of live trees | NUMBER(9,4) |
| 3.6.25 | VOLTSGRS | Gross cubic-foot total-stem wood volume at T1 | NUMBER(13,6) |
| 3.6.26 | VOLTSGRS_BARK | Gross cubic-foot total-stem bark volume at T1 | NUMBER(13,6) |
| 3.6.27 | VOLTSSND | Sound cubic-foot total-stem wood volume at T1 | NUMBER(13,6) |
| 3.6.28 | VOLTSSND_BARK | Sound cubic-foot total-stem bark volume at T1 | NUMBER(13,6) |
| 3.6.29 | VOLCFGGRS_STUMP | Gross cubic-foot stump wood volume at T1 | NUMBER(13,6) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 3.6.30 | VOLCFGRS_STUMP_BARK | Gross cubic-foot stump bark volume at T1 | NUMBER(13,6) |
| 3.6.31 | VOLCFSND_STUMP | Sound cubic-foot stump wood volume at T1 | NUMBER(13,6) |
| 3.6.32 | VOLCFSND_STUMP_BARK | Sound cubic-foot stump bark volume at T1 | NUMBER(13,6) |
| 3.6.33 | VOLCFGRS | Gross cubic-foot stem wood volume at T1 | NUMBER(13,6) |
| 3.6.34 | VOLCFGRS_BARK | Gross cubic-foot stem bark volume at T1 | NUMBER(13,6) |
| 3.6.35 | VOLCFGRS_TOP | Gross cubic-foot stem-top wood volume at T1 | NUMBER(13,6) |
| 3.6.36 | VOLCFGRS_TOP_BARK | Gross cubic-foot stem-top bark volume at T1 | NUMBER(13,6) |
| 3.6.37 | VOLCFSND | Sound cubic-foot stem wood volume at T1 | NUMBER(13,6) |
| 3.6.38 | VOLCFSND_BARK | Sound cubic-foot stem bark volume at T1 | NUMBER(13,6) |
| 3.6.39 | VOLCFSND_TOP | Sound cubic-foot stem-top wood volume at T1 | NUMBER(13,6) |
| 3.6.40 | VOLCFSND_TOP_BARK | Sound cubic-foot stem-top bark volume at T1 | NUMBER(13,6) |
| 3.6.41 | VOLCFNET | Net cubic-foot stem wood volume at T1 | NUMBER(13,6) |
| 3.6.42 | VOLCFNET_BARK | Net cubic-foot stem bark volume at T1 | NUMBER(13,6) |
| 3.6.43 | VOLCSGRS | Gross cubic-foot wood volume in the sawlog portion of a sawtimber tree at T1 | NUMBER(13,6) |
| 3.6.44 | VOLCSGRS_BARK | Gross cubic-foot bark volume in the sawlog portion of a sawtimber tree at T1 | NUMBER(13,6) |
| 3.6.45 | VOLCSSND | Sound cubic-foot wood volume in the sawlog portion of a sawtimber tree at T1 | NUMBER(13,6) |
| 3.6.46 | VOLCSSND_BARK | Sound cubic-foot bark volume in the sawlog portion of a sawtimber tree at T1 | NUMBER(13,6) |
| 3.6.47 | VOLCSNET | Net cubic-foot wood volume in the sawlog portion of a sawtimber tree at T1 | NUMBER(13,6) |
| 3.6.48 | VOLCSNET_BARK | Net cubic-foot bark volume in the sawlog portion of a sawtimber tree at T1 | NUMBER(13,6) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 3.6.49 | VOLBFGRS | Gross board-foot wood volume in the sawlog portion of a sawtimber tree at T1 | NUMBER(13,6) |
| 3.6.50 | VOLBFNET | Net board-foot wood volume in the sawlog portion of a sawtimber tree at T1 | NUMBER(13,6) |
| 3.6.51 | VOLBSGRS | Gross board-foot wood volume in the sawlog portion of a sawtimber tree at T1 (Scribner Rule) | NUMBER(13,6) |
| 3.6.52 | VOLBSNET | Net board-foot wood volume in the sawlog portion of a sawtimber tree at T1 (Scribner Rule) | NUMBER(13,6) |
| 3.6.53 | DRYBIO_STEM | Dry biomass of wood in the total stem at T1 | NUMBER(13,6) |
| 3.6.54 | DRYBIO_STEM_BARK | Dry biomass of bark in the total stem at T1 | NUMBER(13,6) |
| 3.6.55 | DRYBIO_STUMP | Dry biomass of wood in the stump at T1 | NUMBER(13,6) |
| 3.6.56 | DRYBIO_STUMP_BARK | Dry biomass of bark in the stump at T1 | NUMBER(13,6) |
| 3.6.57 | DRYBIO_BOLE | Dry biomass of wood in the merchantable bole at T1 | NUMBER(13,6) |
| 3.6.58 | DRYBIO_BOLE_BARK | Dry biomass of bark in the merchantable bole at T1 | NUMBER(13,6) |
| 3.6.59 | DRYBIO_BRANCH | Dry biomass of branches at T1 | NUMBER(13,6) |
| 3.6.60 | DRYBIO_FOLIAGE | Dry biomass of foliage at T1 | NUMBER(13,6) |
| 3.6.61 | DRYBIO_AG | Aboveground dry biomass of wood and bark at T1 | NUMBER(13,6) |
| 3.6.62 | DRYBIO_BG | Belowground dry biomass at T1 | NUMBER(13,6) |
| 3.6.63 | CARBON_AG | Aboveground carbon of wood and bark at T1 | NUMBER(13,6) |
| 3.6.64 | CARBON_BG | Belowground carbon at T1 | NUMBER(13,6) |
| 3.6.65 | DRYBIO_SAWLOG | Dry biomass of wood in the sawlog portion of a sawtimber tree at T1 | NUMBER(13,6) |
| 3.6.66 | DRYBIO_SAWLOG_BARK | Dry biomass of bark in the sawlog portion of a sawtimber tree at T1 | NUMBER(13,6) |
| 3.6.67 | CREATED_BY | Created by | VARCHAR2(30) |
| 3.6.68 | CREATED_DATE | Created date | DATE |
| 3.6.69 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 3.6.70 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 3.6.71 | MODIFIED_DATE | Modified date | DATE |
| 3.6.72 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|------------------------|----------------------|
| Primary | TRE_CN | N/A | TRE_GRM_BGN_PK |
| Foreign | TRE_CN | TREE_GRM_BEGIN to TREE | TRE_GRM_BGN_FK |

The information in this table is used to compute net growth, removal, and mortality (GRM) estimates on remeasurement trees. This table stores information about a remeasurement tree at the beginning of the remeasurement period (also called time 1 [T1, most recent past measurement]) in cases where values have been recalculated. This table does not include a record for all T1 trees, but only those trees that have recalculated T1 values. T1 values are recalculated during the GRM process for various reasons including movement of the diameter measurement point or disagreement in the species identification between the T2 (current) and T1 field crews. This table includes a single record per tree. The current structure of the table supports estimates of volume as well as biomass.

3.6.1 TRE_CN

Tree sequence number. Foreign key linking the tree GRM begin record to the T2 tree record.

3.6.2 PREV_TRE_CN

Previous tree sequence number. Foreign key linking the tree GRM begin record to T1 tree record.

3.6.3 PLT_CN

Plot sequence number. Foreign key linking the tree GRM begin record to the plot record.

3.6.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

3.6.5 SUBPTYP

Plot type code. A code indicating the plot type used for the tree estimates in the TREE_GRM_BEGIN table.

Codes: SUBPTYP

| Code | Description |
|------|---|
| 0 | Undetermined. Assigned in cases where there is no T1 tree record, and the modeled tree grows across either the microplot-to-subplot threshold, or the subplot-to-macroplot threshold. |
| 1 | Subplot. |
| 2 | Microplot. |
| 3 | Macroplot. |

3.6.6 SPCD

Species code. The FIA tree species code at T2, which may be different from the species code at T1. Refer to [appendix F](#) for codes.

3.6.7 STATUSCD

Status code. The value used for the tree estimates in the TREE_GRM_BEGIN table. See TREE.STATUSCD description for definition.

3.6.8 DIA

Diameter at T1. The estimated T1 diameter used for the tree estimates in the TREE_GRM_BEGIN table. See TREE.DIA description for definition.

3.6.9 HT

Total height. The value used for the tree estimates in the TREE_GRM_BEGIN table. See TREE.HT description for definition.

3.6.10 ACTUALHT

Actual height. The value used for the tree estimates in the TREE_GRM_BEGIN table. See TREE.ACTUALHT description for definition.

3.6.11 CR

Compacted crown ratio. The value used for the tree estimates in the TREE_GRM_BEGIN table. See TREE.CR description for definition.

3.6.12 STANDING_DEAD_CD

Standing dead code. The value used for the tree estimates in the TREE_GRM_BEGIN table. See TREE.STANDING_DEAD_CD description for definition.

3.6.13 DIAHTCD

Diameter height code. The value used for the tree estimates in the TREE_GRM_BEGIN table. See TREE.DIAHTCD description for definition.

3.6.14 CULL

Rotten and missing cull. The value used for the tree estimates in the TREE_GRM_BEGIN table. See TREE.CULL description for definition.

3.6.15 ROUGHCULL

Rough cull. The value used for the tree estimates in the TREE_GRM_BEGIN table. See TREE.ROUGHcull description for definition.

3.6.16 CULLFORM

Form cull. The value used for the tree estimates in the TREE_GRM_BEGIN table. See TREE.CULLFORM description for definition.

3.6.17 CULLMSTOP

Missing top cull. The value used for the tree estimates in the TREE_GRM_BEGIN table. See TREE.CULLMSTOP description for definition.

3.6.18 DECAYCD

Decay class code. The value used for the tree estimates in the TREE_GRM_BEGIN table. See TREE.DECAYCD description for definition.

3.6.19 TREECLCD

Tree class code. The value used for the tree estimates in the TREE_GRM_BEGIN table. See TREE.TREECLCD description for definition.

3.6.20 HTDMP

Height to diameter measurement point. The value used for the tree estimates in the TREE_GRM_BEGIN table. See TREE.HTDMP description for definition.

3.6.21 WDLDSTEM

Woodland tree species stem count. The value used for the tree estimates in the TREE_GRM_BEGIN table. See TREE.WDLDSTEM description for definition.

3.6.22 STDORGCD

Stand origin code. The value used for the tree estimates in the TREE_GRM_BEGIN table. See COND.STDORGCD description for definition.

3.6.23 SITREE

Calculated site index. The value used for the tree estimates in the TREE_GRM_BEGIN table. See TREE.SITREE description for definition.

3.6.24 BALIVE

Basal area per acre of live trees. The value used for the tree estimates in the TREE_GRM_BEGIN table. See COND.BALIVE description for definition.

3.6.25 VOLTSGRS

Gross cubic-foot total-stem wood volume at T1. See TREE.VOLTSGRS description for definition.

3.6.26 VOLTSGRS_BARK

Gross cubic-foot total-stem bark volume at T1. See TREE.VOLTSGRS_BARK description for definition.

3.6.27 VOLTSSND

Sound cubic-foot total-stem wood volume at T1. See TREE.VOLTSSND description for definition.

3.6.28 VOLTSSND_BARK

Sound cubic-foot total-stem bark volume at T1. See TREE.VOLTSSND_BARK description for definition.

3.6.29 VOLCFGGRS_STUMP

Gross cubic-foot stump wood volume at T1. See TREE.VOLCFGGRS_STUMP description for definition.

3.6.30 VOLCFGGRS_STUMP_BARK

Gross cubic-foot stump bark volume at T1. See TREE.VOLCFGGRS_STUMP_BARK description for definition.

3.6.31 VOLCFSND_STUMP

Sound cubic-foot stump wood volume at T1. See TREE.VOLCFSND_STUMP description for definition.

3.6.32 VOLCFSND_STUMP_BARK

Sound cubic-foot stump bark volume at T1. See TREE.VOLCFSND_STUMP_BARK description for definition.

3.6.33 VOLCFGRS

Gross cubic-foot stem wood volume at T1. See TREE.VOLCFGRS description for definition.

3.6.34 VOLCFGRS_BARK

Gross cubic-foot stem bark volume at T1. See TREE.VOLCFGRS_BARK description for definition.

3.6.35 VOLCFGRS_TOP

Gross cubic-foot stem-top wood volume at T1. See TREE.VOLCFGRS_TOP description for definition.

3.6.36 VOLCFGRS_TOP_BARK

Gross cubic-foot stem-top bark volume at T1. See TREE.VOLCFGRS_TOP_BARK description for definition.

3.6.37 VOLCFSND

Sound cubic-foot stem wood volume at T1. See the TREE.VOLCFSND description for definition.

3.6.38 VOLCFSND_BARK

Sound cubic-foot stem bark volume at T1. See TREE.VOLCFSND_BARK description for definition.

3.6.39 VOLCFSND_TOP

Sound cubic-foot stem-top wood volume at T1. See TREE.VOLCFSND_TOP description for definition.

3.6.40 VOLCFSND_TOP_BARK

Sound cubic-foot stem-top bark volume at T1. See TREE.VOLCFSND_TOP_BARK description for definition.

3.6.41 VOLCFNET

Net cubic-foot stem wood volume at T1. See the TREE.VOLCFNET description for definition.

3.6.42 VOLCFNET_BARK

Net cubic-foot stem bark volume at T1. See TREE.VOLCFNET_BARK description for definition.

3.6.43 VOLCSGRS

Gross cubic-foot wood volume in the sawlog portion of a sawtimber tree at T1. See TREE.[VOLCSGRS](#) description for definition.

3.6.44 VOLCSGRS_BARK

Gross cubic-foot bark volume in the sawlog portion of a sawtimber tree at T1. See TREE.[VOLCSGRS_BARK](#) description for definition.

3.6.45 VOLCSSND

Sound cubic-foot wood volume in the sawlog portion of a sawtimber tree at T1. See TREE.[VOLCSSND](#) description for definition.

3.6.46 VOLCSSND_BARK

Sound cubic-foot bark volume in the sawlog portion of a sawtimber tree at T1. See TREE.[VOLCSSND_BARK](#) description for definition.

3.6.47 VOLCSNET

Net cubic-foot wood volume in the sawlog portion of a sawtimber tree at T1. See the TREE.[VOLCSNET](#) description for definition.

3.6.48 VOLCSNET_BARK

Net cubic-foot bark volume in the sawlog portion of a sawtimber tree at T1. See TREE.[VOLCSNET_BARK](#) description for definition.

3.6.49 VOLBFGRS

Gross board-foot wood volume in the sawlog portion of a sawtimber tree at T1. See TREE.[VOLBFGRS](#) description for definition.

3.6.50 VOLBFNET

Net board-foot wood volume in the sawlog portion of a sawtimber tree at T1. See the TREE.[VOLBFNET](#) description for definition.

3.6.51 VOLBSGRS

Gross board-foot wood volume in the sawlog portion of a sawtimber tree at T1 (Scribner Rule). See TREE.[VOLBSGRS](#) description for definition.

3.6.52 VOLBSNET

Net board-foot wood volume in the sawlog portion of a sawtimber tree at T1 (Scribner Rule). See TREE.[VOLBSNET](#) description for the definition.

3.6.53 DRYBIO_STEM

Dry biomass of wood in the total stem at T1. See TREE.[DRYBIO_STEM](#) description for definition.

3.6.54 DRYBIO_STEM_BARK

Dry biomass of bark in the total stem at T1. See TREE.[DRYBIO_STEM_BARK](#) description for definition.

3.6.55 DRYBIO_STUMP

Dry biomass of wood in the tree stump at T1. See the TREE.DRYBIO_STUMP description for definition.

3.6.56 DRYBIO_STUMP_BARK

Dry biomass of bark in the stump at T1. See TREE.DRYBIO_STUMP_BARK description for definition.

3.6.57 DRYBIO_BOLE

Dry biomass of wood in the merchantable bole at T1. See the TREE.DRYBIO_BOLE description for definition.

3.6.58 DRYBIO_BOLE_BARK

Dry biomass of bark in the merchantable bole at T1. See TREE.DRYBIO_BOLE_BARK description for definition.

3.6.59 DRYBIO_BRANCH

Dry biomass of branches at T1. See TREE.DRYBIO_BRANCH description for definition.

3.6.60 DRYBIO_FOLIAGE

Dry biomass of foliage at T1. See TREE.DRYBIO_FOLIAGE description for definition.

3.6.61 DRYBIO_AG

Aboveground dry biomass of wood and bark at T1. See the TREE.DRYBIO_AG description for definition.

3.6.62 DRYBIO_BG

Belowground dry biomass at T1. See the TREE.DRYBIO_BG description for definition.

3.6.63 CARBON_AG

Aboveground carbon of wood and bark at T1. See TREE.CARBON_AG description for definition.

3.6.64 CARBON_BG

Belowground carbon at T1. See TREE.CARBON_BG description for definition.

3.6.65 DRYBIO_SAWLOG

Dry biomass of wood in the sawlog portion of a sawtimber tree at T1. See the TREE.DRYBIO_SAWLOG description for definition.

3.6.66 DRYBIO_SAWLOG_BARK

Dry biomass of bark in the sawlog portion of a sawtimber tree at T1. See TREE.DRYBIO_SAWLOG_BARK description for definition.

3.6.67 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

3.6.68 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

3.6.69 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

3.6.70 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

3.6.71 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

3.6.72 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

3.7 Tree Growth, Removal, and Mortality Estimation Table

(Oracle table name: TREE_GRM_ESTN)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 3.7.1 | CN | Sequence number | VARCHAR2(34) |
| 3.7.2 | STATECD | State code | NUMBER |
| 3.7.3 | INVYR | Inventory year | NUMBER(4) |
| 3.7.4 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 3.7.5 | TRE_CN | Tree sequence number | VARCHAR2(34) |
| 3.7.6 | LAND_BASIS | Land basis for estimate | VARCHAR2(10) |
| 3.7.7 | ESTIMATE | Base attribute that is being estimated | VARCHAR2(20) |
| 3.7.8 | ESTN_TYPE | Estimation type of the tree | VARCHAR2(10) |
| 3.7.9 | ESTN_UNITS | Estimation unit of measurement | VARCHAR2(3) |
| 3.7.10 | COMPONENT | Growth component type | VARCHAR2(15) |
| 3.7.11 | SUBTYP_GRM | Subplot type used for GRM estimation | NUMBER(1) |
| 3.7.12 | REMPER | Remeasurement period | NUMBER(3,1) |
| 3.7.13 | TPAGROW_UNADJ | Growth trees per acre unadjusted | NUMBER(11,6) |
| 3.7.14 | TPAREMV_UNADJ | Removal trees per acre per year unadjusted | NUMBER(11,6) |
| 3.7.15 | TPAMORT_UNADJ | Mortality trees per acre per year unadjusted | NUMBER(11,6) |
| 3.7.16 | ANN_NET_GROWTH | Average annual net growth estimate | NUMBER(13,6) |
| 3.7.17 | REMOVALS | Removal estimate | NUMBER(13,6) |
| 3.7.18 | MORTALITY | Mortality estimate | NUMBER(13,6) |
| 3.7.19 | EST_BEGIN | Beginning estimate | NUMBER(13,6) |
| 3.7.20 | EST_BEGIN_RECALC | Recalculated beginning estimate | VARCHAR2(1) |
| 3.7.21 | EST_END | Ending estimate | NUMBER(13,6) |
| 3.7.22 | EST_MIDPT | Midpoint estimate | NUMBER(13,6) |
| 3.7.23 | EST_THRESHOLD | Threshold estimate | NUMBER(13,6) |
| 3.7.24 | DIA_BEGIN | Beginning diameter | NUMBER(5,2) |
| 3.7.25 | DIA_BEGIN_RECALC | Recalculated diameter | VARCHAR2(1) |
| 3.7.26 | DIA_END | Ending diameter | NUMBER(5,2) |
| 3.7.27 | DIA_MIDPT | Midpoint diameter | NUMBER(5,2) |
| 3.7.28 | DIA_THRESHOLD | Threshold diameter | NUMBER(5,2) |
| 3.7.29 | G_S | Survivor growth | NUMBER(13,6) |
| 3.7.30 | I | Ingrowth | NUMBER(13,6) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-----------------------|------------------|
| 3.7.31 | G_I | Growth on ingrowth | NUMBER(13,6) |
| 3.7.32 | M | Mortality | NUMBER(13,6) |
| 3.7.33 | G_M | Mortality growth | NUMBER(13,6) |
| 3.7.34 | C | Cut | NUMBER(13,6) |
| 3.7.35 | G_C | Cut growth | NUMBER(13,6) |
| 3.7.36 | R | Reversion | NUMBER(13,6) |
| 3.7.37 | G_R | Reversion growth | NUMBER(13,6) |
| 3.7.38 | D | Diversion | NUMBER(13,6) |
| 3.7.39 | G_D | Diversion growth | NUMBER(13,6) |
| 3.7.40 | CD | Cull decrement | NUMBER(13,6) |
| 3.7.41 | G_CD | Cull decrement growth | NUMBER(13,6) |
| 3.7.42 | CI | Cull increment | NUMBER(13,6) |
| 3.7.43 | G_CI | Cull increment growth | NUMBER(13,6) |
| 3.7.44 | CREATED_BY | Created by | VARCHAR2(30) |
| 3.7.45 | CREATED_DATE | Created date | DATE |
| 3.7.46 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 3.7.47 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 3.7.48 | MODIFIED_DATE | Modified date | DATE |
| 3.7.49 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|---|-----------------------|----------------------|
| Primary | CN | N/A | TGE_PK |
| Unique | TRE_CN, LAND_BASIS, ESTIMATE, ESTN_TYPE, ESTN_UNITS | N/A | TGE_UK |
| Foreign | PLT_CN | TREE_GRM_ESTN to PLOT | TGE_PLT_FK |
| Foreign | TRE_CN | TREE_GRM_ESTN to TREE | TGE_TRE_FK |

This table stores information used to compute net growth, removal, and mortality (GRM) estimates on remeasurement tree records. This includes the detailed land basis, component, estimation type, estimation units, as well as the begin, end, and mid-point diameters and the begin, end, and mid-point estimates. In addition, the standard net growth, removal, and mortality estimates are included, as well as estimates for each individual growth component. Users should note that this table usually includes multiple records for each remeasurement tree. For volume estimates, there are generally three records storing estimates for each estimation type (all live, growing stock, sawlog) for each land basis (forest land or timberland). However, if the estimation type is not applicable to the tree (e.g., the tree is not growing-stock form or is not sawlog size), then there could be only one record for each land basis (all live). Currently, this table only stores GRM estimates for volume.

3.7.1 CN

Sequence number. A unique sequence number used to identify a tree GRM estimation record.

3.7.2 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

3.7.3 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

3.7.4 PLT_CN

Plot sequence number. Foreign key linking the GRM tree estimation record to the plot record.

3.7.5 TRE_CN

Tree sequence number. Foreign key linking the GRM tree estimation record to the tree record.

3.7.6 LAND_BASIS

Land basis for estimate. An attribute that categorizes estimates by the land-based domain of interest.

Note: Starting with PLOT.[MANUAL](#) ≥6.0, code descriptions have been modified to match FIA's new definition for accessible forest land and nonforest land. The current wording of "at least 10 percent canopy cover" replaces older wording of "at least 10 percent stocked" as the qualifying criterion in classification. This criterion applies to any tally tree species, including woodland tree species.

Codes: LAND_BASIS

| Code | Description |
|------------|--|
| FORESTLAND | Land that has at least 10 percent canopy cover by live tally trees of any size or has had at least 10 percent canopy cover of live tally species in the past, based on the presence of stumps, snags, or other evidence. To qualify, the area must be at least 1.0 acre in size and 120.0 feet wide. Forest land includes transition zones, such as areas between forest and nonforest lands that meet the minimal tree canopy cover and forest areas adjacent to urban and built-up lands. Roadside, streamside, and shelterbelt strips of trees must have a width of at least 120 feet and continuous length of at least 363 feet to qualify as forest land. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if they are less than 120 feet wide or less than an acre in size. Tree-covered areas in agricultural production settings, such as fruit orchards, or tree-covered areas in urban settings, such as city parks, are not considered forest land. |
| TIMBERLAND | Forest land that is producing or capable of producing 20 cubic feet per acre or more per year of wood at culmination of mean annual increment (MAI). Timberland excludes reserved forest lands. |

3.7.7 ESTIMATE

Base attribute that is being estimated. A descriptor for the base attribute that is being estimated.

3.7.8 ESTN_TYPE

Estimation type of the tree. A code indicating whether the estimation record is for all live, growing-stock, or sawlog trees.

Codes: ESTN_TYPE

| Code | Description |
|------|----------------|
| AL | All live. |
| GS | Growing stock. |
| SL | Sawlog. |

3.7.9 ESTN_UNITS

Estimation unit of measurement. A code indicating the unit of measurement for the estimation record.

Codes: ESTN_UNITS

| Code | Description |
|------|-------------|
| BF | Board feet. |
| CF | Cubic feet. |

3.7.10 COMPONENT

Growth component type. A code indicating the type of change that occurred on the tree between the previous and the current field observations.

Codes: COMPONENT

| Code | Description |
|------------|--|
| CUT0 | Tree was killed due to harvesting activity by T2 ((TREE.STATUSCD = 3) or (TREE.STATUSCD = 2 and TREE.AGENTCD = 80)). Applicable only in periodic-to-periodic, periodic-to-annual, and modeled GRM estimates. |
| CUT1 | Tree was previously in estimate (T1) and was killed due to harvesting activity by T2 ((TREE.STATUSCD = 3) or (TREE.STATUSCD = 2 and TREE.AGENTCD = 80)). |
| CUT2 | Tree grew across minimum threshold diameter for the estimate since T1 and was killed due to harvesting activity by T2 ((TREE.STATUSCD = 3) or (TREE.STATUSCD = 2 and TREE.AGENTCD = 80)). |
| INGROWTH | Tree grew across minimum threshold diameter for the estimate since T1. For example, a sapling grows across the 5-inch diameter threshold becoming ingrowth on the subplot. |
| MORTALITY0 | Tree died of natural causes by T2 (TREE.AGENTCD <> 80). Applicable only in periodic-to-periodic, periodic-to-annual, and modeled GRM estimates. |
| MORTALITY1 | Tree was previously in estimate (T1) and died of natural causes by T2 (TREE.AGENTCD <> 80). |
| MORTALITY2 | Tree grew across minimum threshold diameter for the estimate since T1 and died of natural causes by T2 (TREE.AGENTCD <> 80). |

| Code | Description |
|----------------|--|
| NOT USED | Tree was either live or dead at T1 and has no status at T2. |
| SURVIVOR | Tree has remained live and in the estimate from T1 through T2. |
| UNKNOWN | Tree lacks information required to classify component usually due to procedural changes. |
| REVERSION1 | Tree grew across minimum threshold diameter for the estimate by the midpoint of the measurement interval and the condition reverted to the land basis by T2. |
| REVERSION2 | Tree grew across minimum threshold diameter for the estimate after the midpoint of the measurement interval and the condition reverted to the land basis by T2. |
| DIVERSION0 | Tree was removed from the estimate by something other than harvesting activity by T2 (not (TREE.STATUSCD= 3) and not (TREE.STATUSCD = 2 and TREE.AGENTCD = 80)). Applicable only in periodic-to-periodic, periodic-to-annual, and modeled GRM estimates. |
| DIVERSION1 | Tree was previously in estimate (T1) and the condition diverted from the land basis by T2 (not (TREE.STATUSCD= 3) and not (TREE.STATUSCD = 2 and TREE.AGENTCD = 80)). |
| DIVERSION2 | Tree grew across minimum threshold diameter for the estimate since T1 and the condition diverted from the land basis by T2 (not (TREE.STATUSCD= 3) and not (TREE.STATUSCD = 2 and TREE.AGENTCD = 80)). |
| CULLINCR | Not used at this time. |
| CULLDECR | Not used at this time. |
| N/A - A2A | Component of change is not defined or does not exist. Applicable only in annual-to-annual GRM estimates. |
| N/A - A2A SOON | Component of change is not defined or does not exist. Applicable only in annual-to-annual GRM estimates. |
| N/A - MODELED | Component of change is not defined or does not exist. Applicable only in annual-to-annual GRM estimates. |
| N/A - P2A | Component of change is not defined or does not exist. Applicable only in periodic-to-annual GRM estimates. |
| N/A - P2P | Component of change is not defined or does not exist. Applicable only in periodic-to-periodic GRM estimates. |
| N/A - PERIODIC | Component of change is not defined or does not exist. Applicable only in periodic-to-periodic GRM estimates. |

3.7.11 SUBTYP_GRM

Subplot type used for GRM estimation. A code indicating what plot type is used for assigning the tree per acre value, and which population adjustment factor is used for GRM estimates.

Codes: SUBTYP_GRM

| Code | Description |
|-------------|--------------------|
| 1 | Subplot. |
| 2 | Microplot. |
| 3 | Macroplot. |

3.7.12 REMPER

Remeasurement period. The number of years between measurements for remeasured plots to the nearest 0.1 year. This attribute is blank (null) for new plots or remeasured plots that are not used for growth, removals, or mortality estimates.

3.7.13 TPAGROW_UNADJ

Growth trees per acre unadjusted. The number of growth trees per acre that the sample tree theoretically represents based on the sample design. For fixed-radius plots taken with the mapped plot design (PLOT.DESIGNCD = 1), TPAGROW_UNADJ is set to a constant derived from the plot size. Variable-radius plots were often used in earlier inventories, so the value in TPAGROW_UNADJ decreases as the tree diameter increases. This attribute will be blank (null) if the tree does not contribute to growth estimates. Based on the procedures described in Bechtold and Patterson (2005), this attribute must be adjusted using factors stored in the POP_STRATUM table to derive population estimates. Examples of estimating population totals are shown in [The Forest Inventory and Analysis Database: Population Estimation User Guide](#).

3.7.14 TPAREMV_UNADJ

Removal trees per acre per year unadjusted. The number of removal trees per acre per year that the sample tree theoretically represents based on the sample design. For fixed-radius plots taken with the mapped plot design (PLOT.DESIGNCD = 1), TPAREMV_UNADJ is set to a constant derived from the plot size divided by PLOT.REMPER. Variable-radius plots were often used in earlier inventories, so the value in TPAREMV_UNADJ decreases as the tree diameter increases. This attribute will be blank (null) if the tree does not contribute to removals estimates. Based on the procedures described in Bechtold and Patterson (2005), this attribute must be adjusted using factors stored in the POP_STRATUM table to derive population estimates. Examples of estimating population totals are shown in [The Forest Inventory and Analysis Database: Population Estimation User Guide](#).

3.7.15 TPAMORT_UNADJ

Mortality trees per acre per year unadjusted. The number of mortality trees per acre per year that the sample tree theoretically represents based on the sample design. For fixed-radius plots taken with the mapped plot design (PLOT.DESIGNCD = 1), TPAMORT_UNADJ is set to a constant derived from the plot size divided by PLOT.REMPER. Variable-radius plots were often used in earlier inventories, so the value in TPAMORT_UNADJ decreases as the tree diameter increases. This attribute will be blank (null) if the tree does not contribute to mortality estimates. Based on the procedures described in Bechtold and Patterson (2005), this attribute must be adjusted using factors stored in the POP_STRATUM table to derive population estimates. Examples of estimating population totals are shown in [The Forest Inventory and Analysis Database: Population Estimation User Guide](#).

3.7.16 ANN_NET_GROWTH

Average annual net growth estimate. The net change in the estimate per year of this tree. Because this value is net growth, it may be a negative number. Negative values are usually due to mortality but can also occur on live trees that have a net loss because of damage, rot, broken top, or other causes. To expand to a per acre value, multiply by TPAGROW_UNADJ.

3.7.17 REMOVALS

Removal estimate. The trees that were cut, utilized or not, and trees removed from the land basis (diversion) between time 1 and time 2. The estimate is calculated for the mid-point of the measurement interval.

3.7.18 MORTALITY

Mortality estimate. The trees that died between time 1 and time 2. The estimate is calculated for the mid-point of the measurement interval.

3.7.19 EST_BEGIN

Beginning estimate. Estimate derived from original field observations at time 1, modeled time 1 values for missing trees (TREE.RECONILECD 3 or 4), or recomputed time 1 variables.

3.7.20 EST_BEGIN_RECALC

Recalculated beginning estimate. A code indicating when EST_BEGIN is different (i.e., recalculated) from the time 1 estimate for the purpose of calculating growth. EST_BEGIN is recalculated when any of the follow occur:

- TREE.DIACHECK = 2 at time 2
- TREE.SPCD observed at time 1 <> TREE.SPCD observed at time 2
- TREE.STATUSCD = 2 and TREE.STANDING_DEAD_CD = 1 at time 1 but TREE.STATUSCD = 1 at time 2
- TREE.TREECLCD = 3 or 4 at time 1 but TREE.TREECLCD = 2 at time 2

Codes: EST_BEGIN_RECALC

| Code | Description |
|------|--|
| Y | EST_BEGIN is recalculated. |
| N | EST_BEGIN is from time 1 field observations or derived from modeled time 1 values for missing trees. |

3.7.21 EST_END

Ending estimate. Estimate at time 2.

3.7.22 EST_MIDPT

Midpoint estimate. Estimate at midpoint of measurement interval. Only calculated for removal and mortality trees.

3.7.23 EST_THRESHOLD

Threshold estimate. Estimate at threshold size.

3.7.24 DIA_BEGIN

Beginning diameter. Diameter from original field observations at time 1, modeled time 1 diameter for missing trees (TREE.RECONILECD 3 or 4), or recomputed time 1 diameter based on time 2 observations (see [DIA_BEGIN_RECALC](#)).

3.7.25 DIA_BEGIN_RECALC

Recalculated diameter. A code indicating when DIA_BEGIN is different (i.e., recalculated) from the time 1 diameter for the purpose of calculating growth. DIA_BEGIN is recalculated when TREE.DIACHECK = 2 and time 2.

Codes: DIA_BEGIN_RECALC

| Code | Description |
|------|--|
| Y | DIA_BEGIN is recalculated. |
| N | DIA_BEGIN is from time 1 field diameter or derived from modeled time 1 diameter for missing trees. |

3.7.26 DIA_END

Ending diameter. Diameter at time 2.

3.7.27 DIA_MIDPT

Midpoint diameter. Diameter at midpoint of measurement interval.

3.7.28 DIA_THRESHOLD

Threshold diameter. Diameter at threshold size.

3.7.29 G_S

Survivor growth. The growth on trees tallied at time 1 that survive until time 2.

3.7.30 I

Ingrowth. The estimate of trees at the time that they grow across the diameter threshold between time 1 and time 2. This term also includes trees that subsequently die (i.e., ingrowth mortality), are cut (i.e., ingrowth cut), or diverted to nonforest (i.e., ingrowth diversion); as well as trees that achieve the threshold after an area reverts to a forest land use (i.e., reversion ingrowth).

3.7.31 G_I

Growth on ingrowth. The growth of trees between the time they grow across the diameter threshold and time 2.

3.7.32 M

Mortality. The estimate of trees that die from natural causes between time 1 and time 2. The estimate is based on tree size at the midpoint of the measurement interval (includes mortality growth).

3.7.33 G_M

Mortality growth. The growth of trees that died from natural causes between time 1 and the midpoint of the measurement interval. This term also includes the subsequent growth on ingrowth trees that achieve the diameter threshold prior to mortality.

3.7.34 C

Cut. The estimate of trees cut between time 1 and time 2. The estimate is based on tree size at the midpoint of the measurement interval (includes cut growth). Trees felled or killed in conjunction with a harvest or silvicultural operation (whether they are utilized or

not) are included, but trees on land diverted from forest to nonforest (diversions) are excluded.

3.7.35 G_C

Cut growth. The growth of cut trees between time 1 and the midpoint of the measurement interval. This term also includes the growth on ingrowth trees that achieve the diameter threshold prior to being cut.

3.7.36 R

Reversion. The estimate of trees on land that reverts from a nonforest land use to a forest land use or land that reverts from any source to timberland between time 1 and time 2. The estimate is based on tree size at the midpoint of the measurement interval.

3.7.37 G_R

Reversion growth. The growth of reversion trees from the midpoint of the measurement interval to time 2. This term also includes the growth on ingrowth trees that achieve the diameter threshold after reversion.

3.7.38 D

Diversion. The estimate of trees on forest land diverted to nonforest, or timberland diverted to reserved forest land and other unproductive forest land, whether the tree is utilized or not, between time 1 and time 2. The estimate is based on tree size at the midpoint of the measurement interval (includes diversion growth).

3.7.39 G_D

Diversion growth. The growth of diversion trees from time 1 to the midpoint of the measurement interval. This term also includes the growth on ingrowth trees that achieve the diameter threshold prior to diversion.

3.7.40 CD

Cull decrement. (*core optional*) The net gain in the growing-stock component due to reclassification of cull trees to growing-stock trees between two surveys (i.e., the estimate of trees that were given a cull code at time 1, but reclassified with a growing-stock code at time 2). The estimate is based on tree size at the midpoint of the measurement interval.

3.7.41 G_CD

Cull decrement growth. (*core optional*) The growth from the midpoint of the measurement interval to time 2 on trees that were cull at time 1, but growing-stock at time 2.

3.7.42 CI

Cull increment. (*core optional*) The net reduction in the growing-stock component due to reclassification of growing-stock trees to cull trees between two surveys (i.e., the estimate of trees that were given a growing-stock code at time 1, but reclassified with a cull code at time 2). The estimate is based on tree size at the midpoint of the measurement interval (includes cull increment growth).

3.7.43 G_CI

Cull increment growth. (*core optional*) The growth to the midpoint of the measurement interval between time 1 and 2 of trees that were given a growing-stock code at time 1, but reclassified with a cull code at time 2.

3.7.44 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

3.7.45 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

3.7.46 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

3.7.47 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

3.7.48 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

3.7.49 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

3.8 Begin and End Table

(Oracle table name: BEGINEND)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------|------------------|
| 3.8.1 | ONEORTWO | One or two | NUMBER |
| 3.8.2 | CREATED_BY | Created by | VARCHAR2(30) |
| 3.8.3 | CREATED_DATE | Created date | DATE |
| 3.8.4 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 3.8.5 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 3.8.6 | MODIFIED_DATE | Modified date | DATE |
| 3.8.7 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Unique | ONEORTWO | N/A | BE_UK |

3.8.1 ONEORTWO

One or two. A counter to establish how many times to access a tree record in the TREE_GRM_ESTN table. Possible values of ONEORTWO are 1 and 2. This attribute is used when calculating net growth accounting estimates. It should not be used when summarizing net growth attributes stored in the TREE table (i.e., when not summarizing by the accounting temporal basis). The first time the record is accessed, TREE_GRM_ESTN.EST_BEGIN is acquired along with the classification attribute value at time 1. The second time the record is accessed, TREE_GRM_ESTN.EST_END is acquired along with the classification attribute value at time 2. If TREE_GRM_ESTN.EST_END is null, then TREE_GRM_ESTN.EST_MIDPT is substituted. See [The Forest Inventory and Analysis Database: Population Estimation User Guide](#) for examples of use.

3.8.2 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

3.8.3 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

3.8.4 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

3.8.5 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

3.8.6 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

3.8.7 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

3.9 Seedling Table

(Oracle table name: SEEDLING)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|--------------------------------|---|------------------|
| 3.9.1 | CN | Sequence number | VARCHAR2(34) |
| 3.9.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 3.9.3 | INVYR | Inventory year | NUMBER(4) |
| 3.9.4 | STATECD | State code | NUMBER(4) |
| 3.9.5 | UNITCD | Survey unit code | NUMBER(2) |
| 3.9.6 | COUNTYCD | County code | NUMBER(3) |
| 3.9.7 | PLOT | Plot number | NUMBER(5) |
| 3.9.8 | SUBP | Subplot number | NUMBER(3) |
| 3.9.9 | CONDID | Condition class number | NUMBER(1) |
| 3.9.10 | SPCD | Species code | NUMBER |
| 3.9.11 | SPGRPCD | Species group code | NUMBER(2) |
| 3.9.12 | STOCKING | Tree stocking | NUMBER(7,4) |
| 3.9.13 | TREECOUNT | Tree count for seedlings | NUMBER(3) |
| 3.9.14 | TOTAGE | Total age | NUMBER(3) |
| 3.9.15 | CREATED_BY | Created by | VARCHAR2(30) |
| 3.9.16 | CREATED_DATE | Created date | DATE |
| 3.9.17 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 3.9.18 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 3.9.19 | MODIFIED_DATE | Modified date | DATE |
| 3.9.20 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 3.9.21 | TREECOUNT_CALC | Tree count used in calculations | NUMBER |
| 3.9.22 | TPA_UNADJ | Trees per acre unadjusted | NUMBER(11,6) |
| 3.9.23 | CYCLE | Inventory cycle number | NUMBER(2) |
| 3.9.24 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |
| 3.9.25 | DAMAGE_AGENT_CD1_SRS | Damage agent code 1 (Caribbean Islands), Southern Research Station | NUMBER(5) |
| 3.9.26 | PCT_AFFECTED_DAMAGE_AGENT1_SRS | Percent affected by damage agent 1 (Caribbean Islands), Southern Research Station | NUMBER(3) |
| 3.9.27 | DAMAGE_AGENT_CD2_SRS | Damage agent code 2 (Caribbean Islands), Southern Research Station | NUMBER(5) |
| 3.9.28 | PCT_AFFECTED_DAMAGE_AGENT2_SRS | Percent affected by damage agent 2 (Caribbean Islands), Southern Research Station | NUMBER(3) |
| 3.9.29 | DAMAGE_AGENT_CD3_SRS | Damage agent code 3 (Caribbean Islands), Southern Research Station | NUMBER(5) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|--------------------------------|---|------------------|
| 3.9.30 | PCT_AFFECTED_DAMAGE_AGENT3_SRS | Percent affected by damage agent 3 (Caribbean Islands), Southern Research Station | NUMBER(3) |
| 3.9.31 | AGECD_RMRS | Seedling age code, Rocky Mountain Research Station | NUMBER(1) |
| 3.9.32 | COUNTCHKCD_RMRS | Seedling count check code, Rocky Mountain Research Station | NUMBER(1) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--|------------------|----------------------|
| Primary | CN | N/A | SDL_PK |
| Unique | PLT_CN, SUBP, CONDID, SPCD | N/A | SDL_UK |
| Natural | STATECD, INVYR, UNITCD, COUNTYCD, PLOT, SUBP, CONDID, SPCD | N/A | SDL_NAT_I |
| Foreign | PLT_CN | SEEDLING to PLOT | SDL_PLT_FK |

Seedling data collection overview - When PLOT.MANUAL <2.0, the national *core* procedure was to record the actual seedling count up to six seedlings and then record 6+ if at least six seedlings were present. However, the following regions collected the actual seedling count when PLOT.MANUAL <2.0: Rocky Mountain Research Station (RMRS) and North Central Research Station (NCRS). If PLOT.MANUAL <2.0 and TREECOUNT is blank (null), then a value of 6 in TREECOUNT_CALC represents 6 or more seedlings. In the past, seedlings were often tallied in FIA inventories only to the extent necessary to determine if some minimum number were present, which means that seedlings were often under-reported. **Note:** The SEEDLING record may not exist for some periodic inventories.

3.9.1 CN

Sequence number. A unique sequence number used to identify a seedling record.

3.9.2 PLT_CN

Plot sequence number. Foreign key linking the seedling record to the plot record.

3.9.3 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

3.9.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

3.9.5 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 B](#) for codes.

3.9.6 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

3.9.7 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.

3.9.8 SUBP

Subplot number. The number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4. Other plot designs have various subplot number values. See PLOT.DESIGNCD and [appendix G](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

3.9.9 CONDID

Condition class number. The unique identifying number assigned to a condition on which the seedling(s) is located, and is defined in the COND table. See COND.CONDID for details on the attributes which delineate a condition.

3.9.10 SPCD

Species code. An FIA species code identifying the tree species of the seedling count. Refer to [appendix F](#) for codes.

3.9.11 SPGRPCD

Species group code. A code assigned to each tree species in order to group them for reporting purposes. Codes and their associated names (see REF_SPECIES_GROUP.NAME) are shown in [appendix E](#). Refer to [appendix F](#) for individual tree species and corresponding species group codes.

3.9.12 STOCKING

Tree stocking. The stocking value, in percent, assigned to each count of seedlings, by species. Stocking values are computed using several specific species equations that were developed from normal yield tables and stocking charts. The stocking of seedling count records is used to calculate COND.GSSTK, COND.GSSTKCD, COND.ALSTK, and COND.ALSTKCD on the condition record.

3.9.13 TREETCOUNT

Tree count for seedlings. The number of live seedlings (DIA <1.0 inch) present on the microplot by species and condition class. To qualify for counting, conifer seedlings must be at least 6 inches tall and hardwood seedlings must be at least 12 inches tall. When PLOT.MANUAL <2.0, the national core procedure was to record the actual seedling count up to six seedlings and then record 6+ if at least six seedlings were present. However, the following regions collected the actual seedling count when PLOT.MANUAL <2.0: Rocky Mountain Research Station (RMRS) and North Central Research Station (NCRS). If

PLOT.MANUAL <2.0 and TREECOUNT is blank (null), then a value of 6 in TREECOUNT_CALC represents 6 or more seedlings.

3.9.14 TOTAGE

Total age. The seedling's total age. Total age is collected for a subset of seedling count records, using one representative seedling for the species. The age is obtained by counting the terminal bud scars or the whorls of branches and may be used in the stand age calculation. Only populated by certain FIA work units (SURVEY.RSCD = 22) and is blank (null) when it is not collected.

3.9.15 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

3.9.16 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

3.9.17 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

3.9.18 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

3.9.19 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

3.9.20 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

3.9.21 TREECOUNT_CALC

Tree count used in calculations. This attribute is set either to COUNTCD, which was dropped in FIADB version 2.1, or TREECOUNT. When PLOT.MANUAL <2.0, the national core procedure was to record the actual seedling count up to six seedlings and then record 6+ if at least six seedlings were present. However, the following regions collected the actual seedling count when PLOT.MANUAL <2.0: Rocky Mountain Research Station (RMRS) and North Central Research Station (NCRS). If PLOT.MANUAL <2.0 and TREECOUNT is blank (null), then a value of 6 in TREECOUNT_CALC represents 6 or more seedlings.

3.9.22 TPA_UNADJ

Trees per acre unadjusted. The number of seedlings per acre that the seedling count theoretically represents based on the sample design. For fixed-radius plots taken with the mapped plot design (PLOT.DESIGNCD = 1), TPA_UNADJ equals 74.965282 times the number of seedlings counted. For plots taken with other sample designs, this attribute may be blank (null). Based on the procedures described in Bechtold and Patterson (2005), this attribute can be adjusted using factors stored in the POP_STRATUM table to derive population estimates. Examples of estimating population totals are shown in [The Forest Inventory and Analysis Database: Population Estimation User Guide](#).

3.9.23 CYCLE

Inventory cycle number. See SURVEY.CYCLE description for definition.

3.9.24 SUBCYCLE

Inventory subcycle number. See SURVEY.SUBCYCLE description for definition.

3.9.25 DAMAGE_AGENT_CD1_SRS

Damage agent code 1 (Caribbean Islands), Southern Research Station. A code indicating the first damage agent observed when inspecting the tree from bottom to top (roots, bole, branches, foliage). Up to three damage agents can be recorded (DAMAGE_AGENT_CD1_SRS, DAMAGE_AGENT_CD2_SRS, DAMAGE_AGENT_CD3_SRS). If more than one agent is observed, the most threatening one is listed first where agents threatening survival are listed first and agents threatening wood quality second. The codes used for damage agents come from the January 2012 Pest Trend Impact Plot System (PTIPS) list from the Forest Health Assessment and Applied Sciences Team (FHAAST) that has been modified to meet FIA's needs. See appendix H for the complete list of codes. Only populated by certain FIA work units (SURVEY.RSCD = 33) for the Caribbean Islands.

3.9.26 PCT_AFFECTED_DAMAGE_AGENT1_SRS

Percent affected by damage agent 1 (Caribbean Islands), Southern Research Station. The percent of seedlings on the microplot, by species and condition, which are affected by DAMAGE_AGENT_CD1_SRS. Only populated by certain FIA work units (SURVEY.RSCD = 33) for the Caribbean Islands.

3.9.27 DAMAGE_AGENT_CD2_SRS

Damage agent code 2 (Caribbean Islands), Southern Research Station. See DAMAGE_AGENT_CD1_SRS.

3.9.28 PCT_AFFECTED_DAMAGE_AGENT2_SRS

Percent affected by damage agent 2 (Caribbean Islands), Southern Research Station. The percent of seedlings on the microplot, by species and condition, which are affected by DAMAGE_AGENT_CD2_SRS.

3.9.29 DAMAGE_AGENT_CD3_SRS

Damage agent code 3 (Caribbean Islands), Southern Research Station. See DAMAGE_AGENT_CD1_SRS.

3.9.30 PCT_AFFECTED_DAMAGE_AGENT3_SRS

Percent affected by damage agent 3 (Caribbean Islands), Southern Research Station. The percent of seedlings on the microplot, by species and condition, which are affected by DAMAGE_AGENT_CD3_SRS.

3.9.31 AGECD_RMRS

Seedling age code, Rocky Mountain Research Station. A code used in the field indicating which seedling counts require total age information to be collected. Only populated by certain FIA work units (SURVEY.RSCD = 22).

Codes: AGECD_RMRS

| Code | Description |
|------|---|
| 0 | Do not collect age information for this seedling count. |
| 1 | Collect total age information for this seedling count. |

3.9.32 COUNTCHKCD_RMRS

Seedling count check code, Rocky Mountain Research Station. A code indicating if the seedling count was estimated. Only populated by certain FIA work units (SURVEY.RSCD = 22).

Codes: COUNTCHKCD_RMRS

| Code | Description |
|------|-------------------------------|
| 0 | Seedlings counted accurately. |
| 1 | Seedling count estimated. |

3.10 Site Tree Table

(Oracle table name: SITETREE)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 3.10.1 | CN | Sequence number | VARCHAR2(34) |
| 3.10.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 3.10.3 | PREV_SIT_CN | Previous site tree sequence number | VARCHAR2(34) |
| 3.10.4 | INVYR | Inventory year | NUMBER(4) |
| 3.10.5 | STATECD | State code | NUMBER(4) |
| 3.10.6 | UNITCD | Survey unit code | NUMBER(2) |
| 3.10.7 | COUNTYCD | County code | NUMBER(3) |
| 3.10.8 | PLOT | Plot number | NUMBER(5) |
| 3.10.9 | CONDID | Condition class number | NUMBER(1) |
| 3.10.10 | TREE | Site tree number | NUMBER(9) |
| 3.10.11 | SPCD | Species code | NUMBER |
| 3.10.12 | DIA | Diameter | NUMBER(5,2) |
| 3.10.13 | HT | Total height | NUMBER(3) |
| 3.10.14 | AGEDIA | Tree age at diameter | NUMBER(3) |
| 3.10.15 | SPGRPCD | Species group code | NUMBER(2) |
| 3.10.16 | SITREE | Site index for the tree | NUMBER(3) |
| 3.10.17 | SIBASE | Site index base age | NUMBER(3) |
| 3.10.18 | SUBP | Subplot number | NUMBER(3) |
| 3.10.19 | AZIMUTH | Azimuth | NUMBER(3) |
| 3.10.20 | DIST | Horizontal distance | NUMBER(4,1) |
| 3.10.21 | METHOD | Site tree method code | NUMBER(2) |
| 3.10.22 | SITREE_EST | Estimated site index for the tree | NUMBER(3) |
| 3.10.23 | VALIDCD | Validity code | NUMBER(1) |
| 3.10.24 | CREATED_BY | Created by | VARCHAR2(30) |
| 3.10.25 | CREATED_DATE | Created date | DATE |
| 3.10.26 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 3.10.27 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 3.10.28 | MODIFIED_DATE | Modified date | DATE |
| 3.10.29 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 3.10.30 | CYCLE | Inventory cycle number | NUMBER(2) |
| 3.10.31 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |
| 3.10.32 | AGECHKCD_RMRS | Radial growth and tree age check code, Rocky Mountain Research Station | NUMBER(1) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|---------------------------------|--|------------------|
| 3.10.33 | AGE_DETERMINATION_METHOD_P_NWRS | Age determination method, Pacific Northwest Research Station | NUMBER(1) |
| 3.10.34 | CCLCD_RMRS | Crown class code, Rocky Mountain Research Station | NUMBER(1) |
| 3.10.35 | DAMAGE_AGENT_CD1_RMRS | Damage agent code 1, Rocky Mountain Research Station | NUMBER(5) |
| 3.10.36 | DAMAGE_AGENT_CD2_RMRS | Damage agent code 2, Rocky Mountain Research Station | NUMBER(5) |
| 3.10.37 | DAMAGE_AGENT_CD3_RMRS | Damage agent code 3, Rocky Mountain Research Station | NUMBER(5) |
| 3.10.38 | SIBASE_AGE_PNWRS | Site index equation base age, Pacific Northwest Research Station | NUMBER(3) |
| 3.10.39 | SITETRCD_RMRS | Site tree code, Rocky Mountain Research Station | NUMBER(1) |
| 3.10.40 | SITE_AGE_TREE_STATUS_PNWRS | Site age tree status, Pacific Northwest Research Station | VARCHAR2(1) |
| 3.10.41 | SITE_AGE_TREE_TYPE_PNWRS | Site age tree type, Pacific Northwest Research Station | NUMBER(1) |
| 3.10.42 | SITE_TREE_METHOD_PNWRS | Site tree selection method, Pacific Northwest Research Station | VARCHAR2(1) |
| 3.10.43 | SITREE_EQU_NO_PNWRS | Site index equation number, Pacific Northwest Research Station | NUMBER(3) |
| 3.10.44 | TREECLCD_RMRS | Tree class code, Rocky Mountain Research Station | NUMBER(2) |
| 3.10.45 | TREE_ACT_RMRS | Actual tree number, Rocky Mountain Research Station | NUMBER(3) |
| 3.10.46 | YEAR_AGE_TAKEN | Year age taken | NUMBER(4) |
| 3.10.47 | SIEQN_REF_CD | Site index equation reference code | VARCHAR2(10) |
| 3.10.48 | SITREE_FVS | Site index for the tree, used by the Forest Vegetation Simulator | NUMBER(3) |
| 3.10.49 | SIBASE_FVS | Site index base age used by the Forest Vegetation Simulator | NUMBER(3) |
| 3.10.50 | SIEQN_REF_CD_FVS | Site index equation reference code used by the Forest Vegetation Simulator | VARCHAR2(10) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--|----------------|----------------------|
| Primary | CN | N/A | SIT_PK |
| Unique | PLT_CN, CONDID, TREE | N/A | SIT_UK |
| Natural | STATECD, INVYR, UNITCD, COUNTYCD, PLOT, CONDID, TREE | N/A | SIT_NAT_I |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|------------------|----------------------|
| Foreign | PLT_CN, CONDID | SITETREE to COND | SIT_CND_FK |
| Foreign | PLT_CN | SITETREE to PLOT | SIT_PLT_FK |

Note: The SITETREE record may not exist for some periodic inventory data.

3.10.1 CN

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

3.10.2 PLT_CN

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

3.10.3 PREV_SIT_CN

Previous site tree sequence number. Foreign key linking the site tree to the previous inventory's site tree record for this tree. Only populated for site trees remeasured from a previous annual inventory.

3.10.4 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

3.10.5 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

3.10.6 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 B](#) for codes.

3.10.7 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

3.10.8 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.

3.10.9 CON DID

Condition class number. The unique identifying number assigned to a condition for which the site tree is measured, and is defined in the COND table. See COND.[CONDID](#) for details on the attributes which delineate a condition.

3.10.10 TREE

Site tree number. A number used to uniquely identify a site tree on a condition for a plot visit. For tallied site trees, this number is not necessarily the same as the actual tally tree number that is used to uniquely identify the tree on the subplot. Site tree numbers are not permanent, and the number can be used for a different site tree on a subsequent plot visit.

3.10.11 SPCD

Species code. A standard tree species code. Refer to [appendix F](#) for codes.

3.10.12 DIA

Diameter. The diameter, in inches, of the tree at the point of diameter measurement (d.b.h.).

3.10.13 HT

Total height. The total length (height) of the site tree, in feet, from the ground to the top of the main stem.

3.10.14 AGEDIA

Tree age at diameter. Age, in years, of tree at the point of diameter measurement (d.b.h.). Age is determined by an increment sample.

3.10.15 SPGRPCD

Species group code. A code assigned to each tree species in order to group them for reporting purposes. Codes and their associated names (see `REF_SPECIES_GROUP.NAME`) are shown in [appendix E](#). Refer to [appendix F](#) for individual tree species and corresponding species group codes.

3.10.16 SITREE

Site index for the tree. Site index is calculated for dominant and co-dominant trees using one of several methods (see [The method for determining the site index.](#)). It is expressed as height in feet that the tree is expected to attain at a base or reference age (see [SIBASE](#)). Most commonly, site index is calculated using a family of curves that show site index as a function of total length and either breast-height age or total age. The height-intercept (or growth-intercept) method is commonly used for young trees or species that produce conspicuous annual branch whorls; using this method, site index is calculated with the height growth attained for a short period (usually 3 to 5 years) after the tree has reached breast height. Neither age nor total length determination are necessary when using the height-intercept method; therefore, one or more of those variables may be null for a site tree on which the height-intercept method was used.

3.10.17 SIBASE

Site index base age. The base age (sometimes called reference age), in years, of the site index curves used to derive site index. Base age is specific to a given family of site index curves, and is usually set close to the common rotation age or the age of culmination of mean annual increment for a species. The most commonly used base ages are 25, 50, 80, and 100 years. It is possible for a given species to have different sets of site index curves in different geographic regions, and each set of curves may use a different base age.

3.10.18 SUBP

Subplot number. (*core optional*) The number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4. Other plot designs have various subplot number values. See PLOT.DESIGNCD and [appendix G](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

3.10.19 AZIMUTH

Azimuth. (*core optional*) This attribute now available from the [FIA Spatial Data Services \(SDS\)](#) group by following the instructions provided at <https://www.fs.usda.gov/research/programs/fia/sds>.

3.10.20 DIST

Horizontal distance. (*core optional*) This attribute now available from the [FIA Spatial Data Services \(SDS\)](#) group by following the instructions provided at <https://www.fs.usda.gov/research/programs/fia/sds>.

3.10.21 METHOD

Site tree method code. The method for determining the site index.

Codes: METHOD

| 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. |

3.10.22 SITREE_EST

Estimated site index for the tree. The estimated site index or the site index determined by the height-intercept method.

3.10.23 VALIDCD

Validity code. A code indicating if this site tree provided a valid result from the site index computation. Some trees collected by the field crew yield a negative value from the equation due to their age, height or diameter being outside the range of values for which the equation was developed. Computational results for trees that fail are not used to estimate the site index or site productivity class for the condition. If the site calculation for this tree was successful, this attribute is set to 1.

Codes: VALIDCD

| Code | Description |
|------|---|
| 0 | Tree failed in site index calculations. |
| 1 | Tree was successful in site index calculations. |

3.10.24 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

3.10.25 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

3.10.26 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

3.10.27 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

3.10.28 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

3.10.29 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

3.10.30 CYCLE

Inventory cycle number. See SURVEY.CYCLE description for definition.

3.10.31 SUBCYCLE

Inventory subcycle number. See SURVEY.SUBCYCLE description for definition.

3.10.32 AGECHKCD_RMRS

Radial growth and tree age check code, Rocky Mountain Research Station. A code indicating the method used to obtain radial growth and tree age. Only populated by certain FIA work units (SURVEY.RSCD = 22).

Note: Code 3 was added starting with PLOT.MANUAL = 6.0.

Codes: AGECHKCD_RMRS

| Code | Description |
|------|--|
| 0 | <ul style="list-style-type: none"> Age/radial growth measured directly from core. Age/radial growth calculated from remeasurement data (same tree). |
| 1 | <ul style="list-style-type: none"> Age/radial growth was estimated due to rot. Age/radial growth was estimated because rings were difficult to count (old suppressed trees). Age was estimated because the increment bore could not reach to tree center. |
| 2 | <ul style="list-style-type: none"> Age/radial growth was calculated from a similar remeasure tree (same species and diameter class). Age/radial growth was based on a similar tree off the subplot. |
| 3 | <ul style="list-style-type: none"> Age measured from a collected tree core (for cores collected and sent into the office for aging). |

3.10.33 AGE_DETERMINATION_METHOD_PNWRS

Age determination method, Pacific Northwest Research Station. A code indicating how the site tree age was determined in the field. Age is extrapolated for trees that are too large to reach the pith with an increment borer. Only populated by certain FIA work units (SURVEY.RSCD = 27).

Codes: AGE_DETERMINATION_METHOD_PNWRS

| Code | Description |
|-------------|--------------------|
| 0 | Bored age. |
| 1 | Extrapolated age. |

3.10.34 CCLCD_RMRS

Crown class code, Rocky Mountain Research Station. A code indicating the amount of sunlight received and the crown position of the tree within the canopy. Only populated by certain FIA work units (SURVEY.RSCD = 22).

Codes: CCLCD_RMRS

| 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 canopy 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. |

3.10.35 DAMAGE_AGENT_CD1_RMRS

Damage agent code 1, Rocky Mountain Research Station. A code indicating the first damage agent recorded by the field crew when inspecting the tree from bottom to top (roots, bole, branches, foliage). Up to three damage agents can be recorded per tree (DAMAGE_AGENT_CD1_RMRS, DAMAGE_AGENT_CD2_RMRS, and DAMAGE_AGENT_CD3_RMRS). Damage agents are not necessarily recorded in order of severity.

The codes used for damage agents come from the January 2012 Pest Trend Impact Plot System (PTIPS) list from the Forest Health Assessment & Applied Sciences Team (FHAAST) that has been modified to meet FIA's needs.

See TREE.DAMAGE_AGENT_CD1 for general agent codes. See [appendix H](#) for the complete list of codes. Only populated by certain FIA work units (SURVEY.RSCD = 22).

3.10.36 DAMAGE_AGENT_CD2_RMRS

Damage agent code 2, Rocky Mountain Research Station. See [DAMAGE_AGENT_CD1_RMRS](#). Only populated by certain FIA work units (SURVEY.RSCD = 22).

3.10.37 DAMAGE_AGENT_CD3_RMRS

Damage agent code 3, Rocky Mountain Research Station. See [DAMAGE_AGENT_CD1_RMRS](#). Only populated by certain FIA work units (SURVEY.RSCD = 22).

3.10.38 SIBASE_AGE_PNWRS

Site index equation base age, Pacific Northwest Research Station. A code indicating the range that is used to define the acceptable site index values. Only populated by certain FIA work units (SURVEY.RSCD = 26, 27).

Codes: **SIBASE_AGE_PNWRS**

| Code | Description |
|------|--|
| 50 | 50 year base age, site index should be within 20. |
| 100 | 100 year base age, site index should be within 30. |

3.10.39 SITETRCD_RMRS

Site tree code, Rocky Mountain Research Station. A code indicating if the site tree is considered to be suitable or unsuitable. When suitable site trees are not available, the field crew may select an unsuitable site tree. Site trees are a measure of site productivity expressed by the height to age relationship of dominant and codominant trees. Site trees are not collected for woodland conditions. The requirements for classification are as follows:

Suitable site trees:

- Live sound tree.
- 5.0 inches in diameter (at breast height) or larger.
- Open grown, dominant, or codominant throughout most of its life.
- Minimum of 35 years (d.b.h. age) for softwoods or minimum of 45 years (d.b.h. age) for hardwoods.
- Under rotation age (80 years for aspen and paper birch, 120 years for all other timber species).
- Undamaged top (not dead or broken).
- Vigorous, having an uncompacted crown ratio of at least 50 percent, if possible, and having the best height/age ratio of all the trees on the site.

Unsuitable site trees:

- Relicts.
- Over rotation age but less than 200 years (d.b.h. age).
- Rough trees (i.e., not growing stock).

Only populated by certain FIA work units (SURVEY.RSCD = 22).

Codes: SITETRCD_RMRS

| Code | Description |
|-------------|-----------------------|
| 1 | Suitable site tree. |
| 2 | Unsuitable site tree. |

3.10.40 SITE_AGE_TREE_STATUS_PNWRS

Site age tree status, Pacific Northwest Research Station. A code indicating the site tree status. Only populated by certain FIA work units (SURVEY.RSCD = 26, 27).

Codes: SITE_AGE_TREE_STATUS_PNWRS

| Code | Description |
|-------------|---|
| N | New site tree (copied from previous inventory and updated, copied from current tree tally, or entered manually as non-tally site tree). |
| O | Old site tree (downloaded from previous plot visit). |
| I | Invalid "old" site tree (only to be used for procedural differences or previous crew selection error or if better stand representative site trees are now available). |

3.10.41 SITE_AGE_TREE_TYPE_PNWRS

Site age tree type, Pacific Northwest Research Station. A code indicating whether the tree represents site, age, or a combination of site and age. Only populated by certain FIA work units (SURVEY.RSCD = 26, 27).

Codes: SITE_AGE_TREE_TYPE_PNWRS

| Code | Description |
|-------------|--------------------|
| 1 | Site tree. |
| 2 | Age tree. |
| 3 | Site and age tree. |

3.10.42 SITE_TREE_METHOD_PNWRS

Site tree selection method, Pacific Northwest Research Station. A code indicating the method used to select site trees. Only populated by certain FIA work units (SURVEY.RSCD = 26, 27). Not populated for [Pacific Islands](#).

Codes: SITE_AGE_TREE_TYPE_PNWRS

| Code | Description |
|-------------|---------------------------|
| K | Kings. |
| P | Primary. |
| M | California mixed conifer. |

3.10.43 SITREE_EQU_NO_PNWRS

Site index equation number, Pacific Northwest Research Station. A number that identifies the site index equation used by the portable data recorder in the field to calculate site index. Refer to Hanson and others (2002) for further detail on site index

equations and equation number assignments used by the FIA program for the Pacific Northwest Research Station or contact the PNWRS FIA work unit for further detail ([table 1-1](#)). Only populated by certain FIA work units (SURVEY.RSCD = 26, 27).

3.10.44 TREECLCD_RMRS

Tree class code, Rocky Mountain Research Station. A code indicating the general quality of the tree. Only populated by certain FIA work units (SURVEY.RSCD = 22).

Codes: TREECLCD_RMRS

| Code | Description |
|------|--|
| 1 | Sound-live timber species - All live timber trees (species with diameter measured at breast height) that meet minimum merchantability standards. In general, these trees have at least one solid 8-foot section, are reasonably free of form defect on the merchantable bole, and at least 34 percent or more of the volume is merchantable. Excludes rough or rotten cull timber trees. |
| 3 | Rough-live timber species - All live 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. |

3.10.45 TREE_ACT_RMRS

Actual tree number, Rocky Mountain Research Station. For tallied site trees, this value is the actual tree number used to uniquely identify the tally tree on the subplot. For nontallied site trees, this column may be blank (null) or have a value of 0 recorded. Only populated by certain FIA work units (SURVEY.RSCD = 22).

3.10.46 YEAR_AGE_TAKEN

Year age taken. The year that a tree core was collected and initial age recorded. Only populated by certain FIA work units (SURVEY.RSCD = 27).

3.10.47 SIEQN_REF_CD

Site index equation reference code. See COND_SIEQN_REF_CD description for definition.

3.10.48 SITREE_FVS

Site index for the tree, used by the Forest Vegetation Simulator. This is similar to SITREE, but is computed using the equation required by, and species allowed by, the Forest Vegetation Simulator. Unlike SITREE, however, alternative methods, such as growth intercept, are not used to compute this value. The equation used to compute this variable is referenced in SIEQN_REF_CD_FVS. Site index values in SITREE_FVS are used to determine COND.SICONF_FVS, which is primarily used when exporting FIA data for use in FVS. This attribute is blank (null) when no site index data are available.

3.10.49 SIBASE_FVS

Site index base age used by the Forest Vegetation Simulator. The base age (sometimes called reference age), in years, of the site index curves used to derive site index. Base age is specific to a given family of site index curves, and is usually set close to the common rotation age or the age of culmination of mean annual increment for a species. The most commonly used base ages are 25, 50, 80, and 100 years. It is possible for a given species

to have different sets of site index curves in different geographic regions, and each set of curves may use a different base age.

Note: For a given geographic location, FVS variants may require the use of site index equations that were developed using a different base age than used by the site index equations used in standard FIA compilation procedures. Because of the historical development of FIA procedures and FVS growth models, the two systems have differences in the base ages that are used.

3.10.50 SIEQN_REF_CD_FVS

Site index equation reference code used by the Forest Vegetation Simulator. See COND_SIEQN_REF_CD_FVS description for definition.

Section revision: 04.2024

Chapter 4: Database Tables - Invasive Species; Understory Vegetation

Chapter Contents:

| Section | Database table | Oracle table name |
|---------|--|----------------------|
| 4.1 | Invasive Subplot Species Table | INVASIVE_SUBPLOT_SPP |
| 4.2 | Phase 2 Vegetation Subplot Species Table | P2VEG_SUBPLOT_SPP |
| 4.3 | Phase 2 Vegetation Subplot Structure Table | P2VEG_SUBP_STRUCTURE |

Definitions for database tables:

For further detail and examples, refer to the Overview (chapter 1).

Keys Presented with the Tables

| Key type | Definition |
|----------|--|
| Primary | A single column in a table whose values uniquely identify each row in an Oracle table. |
| Unique | Multiple columns in a table whose values uniquely identify each row in an Oracle table. There can be one and only one row for each unique key value. |
| Natural | A type of unique key made from existing attributes in the table. It is stored as an index in this database. |
| Foreign | A column in a table that is used as a link to a matching column in another Oracle table. |

Oracle Data Types

| Oracle data type | Definition |
|------------------|---|
| DATE | A data type that stores the date. |
| NUMBER | A data type that contains only numbers, positive or negative, with a floating-decimal point. |
| NUMBER(SIZE, D) | A data type that contains only numbers up to a specified maximum size. The maximum size (<i>and optional fixed-decimal point</i>) is specified by the value(s) listed in the parentheses. |
| VARCHAR2(SIZE) | A data type that contains alphanumeric data (numbers and/or characters) up to a specified maximum size. |

4.1 Invasive Subplot Species Table

(Oracle table name: INVASIVE_SUBPLOT_SPP)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-------------------------------|------------------|
| 4.1.1 | CN | Sequence number | VARCHAR2(34) |
| 4.1.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 4.1.3 | INVYR | Inventory year | NUMBER(4) |
| 4.1.4 | STATECD | State code | NUMBER(4) |
| 4.1.5 | UNITCD | Survey unit code | NUMBER(2) |
| 4.1.6 | COUNTYCD | County code | NUMBER(3) |
| 4.1.7 | PLOT | Plot number | NUMBER |
| 4.1.8 | SUBP | Subplot number | NUMBER |
| 4.1.9 | CONDID | Condition class number | NUMBER(1) |
| 4.1.10 | VEG_FLDSPCD | Vegetation field species code | VARCHAR2(10) |
| 4.1.11 | UNIQUE_SP_NBR | Unique species number | NUMBER(2) |
| 4.1.12 | VEG_SPCD | Vegetation species code | VARCHAR2(10) |
| 4.1.13 | COVER_PCT | Cover percent | NUMBER(3) |
| 4.1.14 | CREATED_BY | Created by | VARCHAR2(30) |
| 4.1.15 | CREATED_DATE | Created date | DATE |
| 4.1.16 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 4.1.17 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 4.1.18 | MODIFIED_DATE | Modified date | DATE |
| 4.1.19 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 4.1.20 | CYCLE | Inventory cycle number | NUMBER(2) |
| 4.1.21 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|---|--------------------------------------|----------------------|
| Primary | CN | N/A | ISS_PK |
| Unique | PLT_CN, VEG_FLDSPCD, UNIQUE_SP_NBR, SUBP, CONDID | N/A | ISS_UK |
| Foreign | PLT_CN | INVASIVE_SUBPLOT_SPP to PLOT | ISS_PLT_FK |
| Foreign | PLT_CN, SUBP, CONDID | INVASIVE_SUBPLOT_SPP to SUBP_COND | ISS_SCD_FK |

FIA identifies species and other taxonomic ranks for plants using symbols (SYMBOL) as assigned by NRCS (Natural Resources Conservation Service) for the [PLANTS database](#) (<https://plants.usda.gov>) on a periodic basis. The most recent NRCS download for the FIA program was September 15, 2017.

4.1.1 CN

Sequence number. A unique sequence number used to identify an invasive subplot species record.

4.1.2 PLT_CN

Plot sequence number. Foreign key linking the invasive subplot species record to the plot record for this location.

4.1.3 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

4.1.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

4.1.5 UNITCD

Survey unit code. Forest Inventory and Analysis survey unit identification number. Survey units are usually groups of counties within each State. Refer to [appendix B](#) for codes.

4.1.6 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

4.1.7 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.

4.1.8 SUBP

Subplot number. The number assigned to the subplot where the invasive species is located. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4.

Codes: SUBP

| Code | Description |
|------|--------------------|
| 1 | Center subplot. |
| 2 | North subplot. |
| 3 | Southeast subplot. |
| 4 | Southwest subplot. |

4.1.9 CONDID

Condition class number. The unique identifying number assigned to a condition on which the invasive species is located, and is defined in the COND table. See COND.[CONDID](#) for details on the attributes which delineate a condition.

4.1.10 VEG_FLDSPCD

Vegetation field species code. Species code assigned by the field crew, conforming to the NRCS PLANTS database.

4.1.11 UNIQUE_SP_NBR

Unique species number. A unique number assigned to each invasive species encountered on the plot.

4.1.12 VEG_SPCD

Vegetation species code. A code indicating each sampled vascular invasive plant species found rooted in or overhanging the sampled condition of the subplot at any height. Species codes are the standardized codes in the NRCS PLANTS database.

4.1.13 COVER_PCT

Cover percent. For each species recorded, the canopy cover present on the subplot condition to the nearest 1 percent. Canopy cover is based on a vertically projected polygon described by the outline of the foliage, ignoring any normal spaces occurring between the leaves of plants (Daubenmire 1959), and ignoring overlap among multiple layers of a species. For each species, cover can never exceed 100 percent.

Note: Cover is always recorded as a percent of the full subplot area, even if the condition that was assessed did not cover the full subplot. Canopy cover for species is assigned to the dominant layer.

4.1.14 CREATED_BY

Created by. See SURVEY.[CREATED_BY](#) description for definition.

4.1.15 CREATED_DATE

Created date. See SURVEY.[CREATED_DATE](#) description for definition.

4.1.16 CREATED_IN_INSTANCE

Created in instance. See SURVEY.[CREATED_IN_INSTANCE](#) description for definition.

4.1.17 MODIFIED_BY

Modified by. See SURVEY.[MODIFIED_BY](#) description for definition.

4.1.18 MODIFIED_DATE

Modified date. See SURVEY.[MODIFIED_DATE](#) description for definition.

4.1.19 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

4.1.20 CYCLE

Inventory cycle number. See SURVEY.[CYCLE](#) description for definition.

4.1.21 SUBCYCLE

Inventory subcycle number. See SURVEY.[SUBCYCLE](#) description for definition.

4.2 Phase 2 Vegetation Subplot Species Table

(Oracle table name: P2VEG_SUBPLOT_SPP)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 4.2.1 | CN | Sequence number | VARCHAR2(34) |
| 4.2.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 4.2.3 | INVYR | Inventory year | NUMBER(4) |
| 4.2.4 | STATECD | State code | NUMBER(4) |
| 4.2.5 | UNITCD | Survey unit code | NUMBER(2) |
| 4.2.6 | COUNTYCD | County code | NUMBER(3) |
| 4.2.7 | PLOT | Plot number | NUMBER |
| 4.2.8 | SUBP | Subplot number | NUMBER |
| 4.2.9 | CONDID | Condition class number | NUMBER(1) |
| 4.2.10 | VEG_FLDSPCD | Vegetation field species code | VARCHAR2(10) |
| 4.2.11 | UNIQUE_SP_NBR | Unique species number | NUMBER(2) |
| 4.2.12 | VEG_SPCD | Vegetation species code | VARCHAR2(10) |
| 4.2.13 | GROWTH_HABIT_CD | Growth habit code (species growth habit) | VARCHAR2(2) |
| 4.2.14 | LAYER | Layer (species vegetation layer) | NUMBER(1) |
| 4.2.15 | COVER_PCT | Cover percent (species canopy cover) | NUMBER(3) |
| 4.2.16 | CREATED_BY | Created by | VARCHAR2(30) |
| 4.2.17 | CREATED_DATE | Created date | DATE |
| 4.2.18 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 4.2.19 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 4.2.20 | MODIFIED_DATE | Modified date | DATE |
| 4.2.21 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 4.2.22 | CYCLE | Inventory cycle number | NUMBER(2) |
| 4.2.23 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--|--------------------------------|----------------------|
| Primary | CN | N/A | P2VSSP_PK |
| Unique | PLT_CN, VEG_FLDSPCD, UNIQUE_SP_NBR, SUBP, CONDID | N/A | P2VSSP_UK |
| Foreign | PLT_CN | P2VEG_SUBPLOT_SPP to PLOT | P2VSSP_PLT_FK |
| Foreign | PLT_CN, SUBP, CONDID | P2VEG_SUBPLOT_SPP to SUBP_COND | P2VSSP_SCD_FK |

FIA identifies species and other taxonomic ranks for plants using symbols (SYMBOL) as assigned by NRCS (Natural Resources Conservation Service) for the [PLANTS database](#) (<https://plants.usda.gov>) on a periodic basis. The most recent NRCS download for the FIA program was September 15, 2017.

4.2.1 CN

Sequence number. A unique sequence number used to identify a Phase 2 (P2) vegetation subplot species record.

4.2.2 PLT_CN

Plot sequence number. Foreign key linking the Phase 2 (P2) vegetation subplot species record to the plot record for this location.

4.2.3 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

4.2.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

4.2.5 UNITCD

Survey unit code. Forest Inventory and Analysis survey unit identification number. Survey units are usually groups of counties within each State. Refer to [appendix B](#) for codes.

4.2.6 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

4.2.7 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.

4.2.8 SUBP

Subplot number. The number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot values of 1 through 4.

Codes: SUBP

| Code | Description |
|------|--------------------|
| 1 | Center subplot. |
| 2 | North subplot. |
| 3 | Southeast subplot. |
| 4 | Southwest subplot. |

4.2.9 CONDID

Condition class number. The unique identifying number assigned to a condition on which the vegetation species is located, and is defined in the COND table. See COND.[CONDID](#) for details on the attributes which delineate a condition.

4.2.10 VEG_FLDSPCD

Vegetation field species code. The species code assigned by the field crew, conforming to the NRCS PLANTS database.

4.2.11 UNIQUE_SP_NBR

Unique species number. A unique number indicating each unidentified species encountered on the plot. This attribute identifies the number of species occurrences within each NRCS genus or unknown code. For example, two unidentifiable CAREX species would be entered as two separate records with differing unique species numbers to show that they are not the same species.

4.2.12 VEG_SPCD

Vegetation species code. A code indicating each sampled vascular plant species found rooted in or overhanging the sampled condition of the subplot at any height. Species codes are the standardized codes in the NRCS PLANTS database.

4.2.13 GROWTH_HABIT_CD

Growth habit code (species growth habit). A code indicating the growth habit of the species. Tally tree species are always recorded as trees, even when they exhibited a shrub-like growth habit. If a species had more than one growth habit on the same accessible condition in a subplot, the most prevalent one was recorded; however, both tree habits (SD and LT) could be coded for the same species if PLOT.P2VEG_SAMPLING_LEVEL_DETAIL_CD = 3 and the species was found in both size classes. A species may be recorded with a different growth habit on a different subplot condition on the same plot. P2VEG_SUBPLOT_SPP.GROWTH_HABIT_CD is not to be confused with P2VEG_SUBP_STRUCTURE.GROWTH_HABIT_CD. The codes are similar, but not exactly the same.

Codes: GROWTH_HABIT_CD

| Code | Description |
|------|--|
| SD | Seedlings and Saplings: Small trees less than 5 inches d.b.h. or d.r.c., including tally and non-tally tree species. Seedlings of any length are included (i.e., no minimum). Up to four species are recorded if individual species total aerial canopy cover is at least 3% on the subplot and within the GROWTH_HABIT_CD. |
| SH | Shrubs/Subshrubs/Woody Vines: Woody, multiple-stemmed plants of any size, subshrubs (low-growing shrubs under 1.5 feet tall at maturity), and woody vines. Most cacti are included in this category. Subshrub species are usually included in this category. However, there are many species that can exhibit either subshrub or forb/herb growth habits. Each FIA region will develop a list of common species that can exhibit either growth habits (according to the NRCS PLANTS database) with regional guidance as to which growth habit the species should normally be assigned, while still allowing species assignments to different growth habits when the species is obviously present in a different growth habit. Up to four species are recorded if individual species total aerial canopy cover is at least 3% on the subplot and within the GROWTH_HABIT_CD. |

| Code | Description |
|------|---|
| FB | Forbs: Herbaceous, broad-leaved plants; includes non-woody-vines, ferns (does not include mosses and cryptobiotic crusts). Up to four species are recorded if individual species total aerial canopy cover is at least 3% on the subplot and within the GROWTH_HABIT_CD. |
| GR | Graminoids: Grasses and grass-like plants (includes rushes and sedges). Up to four species are recorded if individual species total aerial canopy cover is at least 3% on the subplot and within the GROWTH_HABIT_CD. |
| LT | Large Trees: Large trees greater than or equal to 5 inches d.b.h. or d.r.c. For PLOT.P2VEG_SAMPLING_LEVEL_DETAIL_CD = 2, only non-tally tree species are included; for PLOT.P2VEG_SAMPLING_LEVEL_DETAIL_CD = 3, tally and non-tally tree species are included. Up to four species of large trees (d.b.h. or d.r.c. at least 5 inches) are recorded if individual species aerial canopy cover is at least 3% on the subplot and within the GROWTH_HABIT_CD. |

Codes: GROWTH_HABIT_CD (additional codes for PNWRS, SURVEY.RSCD = 26, 27) LAYER

| Code | Description |
|------|--|
| ST | Seedlings: Small trees <1 inch d.b.h. or d.r.c. Populated for PLOT.MANUAL <5.0. |
| TR | Trees - Alaska 2005: All trees, regardless of size. Populated for Alaska 2005 Wilderness data category. For more information, contact the PNWRS Analyst Contact (see table 1-1). |

4.2.14 LAYER

Layer (species vegetation layer). A code indicating the vertical layer in which the plant species was found. If a species occurs in more than one layer, the layer where most of the species canopy cover is recorded.

Codes: LAYER

| Code | Description |
|------|-----------------------|
| 1 | 0 to 2.0 feet. |
| 2 | 2.1 to 6.0 feet. |
| 3 | 6.1 to 16.0 feet. |
| 4 | Greater than 16 feet. |

4.2.15 COVER_PCT

Cover percent (species canopy cover). For each species recorded, the canopy cover present on the subplot condition to the nearest 1 percent. Canopy cover is based on a vertically projected polygon described by the outline of the foliage, ignoring any normal spaces occurring between the leaves of plants (Daubenmire 1959), and ignoring overlap among multiple layers of a species. For each species, cover can never exceed 100 percent.

Note: Cover is always recorded as a percent of the full subplot area, even if the condition that was assessed did not cover the full subplot. Canopy cover for species is assigned to the dominant layer.

4.2.16 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

4.2.17 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

4.2.18 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

4.2.19 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

4.2.20 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

4.2.21 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

4.2.22 CYCLE

Inventory cycle number. See SURVEY.CYCLE description for definition.

4.2.23 SUBCYCLE

Inventory subcycle number. See SURVEY.SUBCYCLE description for definition.

4.3 Phase 2 Vegetation Subplot Structure Table

(Oracle table name: P2VEG_SUBP_STRUCTURE)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 4.3.1 | CN | Sequence number | VARCHAR2(34) |
| 4.3.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 4.3.3 | STATECD | State code | NUMBER(4) |
| 4.3.4 | UNITCD | Survey unit code | NUMBER(2) |
| 4.3.5 | COUNTYCD | County code | NUMBER(3) |
| 4.3.6 | PLOT | Plot number | NUMBER |
| 4.3.7 | INVYR | Inventory year | NUMBER(4) |
| 4.3.8 | SUBP | Subplot number | NUMBER |
| 4.3.9 | CONDID | Condition class number | NUMBER(1) |
| 4.3.10 | GROWTH_HABIT_CD | Growth habit code (vegetation structure growth habit) | VARCHAR2(2) |
| 4.3.11 | LAYER | Layer (layer distribution of growth habits) | NUMBER(1) |
| 4.3.12 | COVER_PCT | Cover percent (canopy cover percent) | NUMBER(3) |
| 4.3.13 | CREATED_BY | Created by | VARCHAR2(30) |
| 4.3.14 | CREATED_DATE | Created date | DATE |
| 4.3.15 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 4.3.16 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 4.3.17 | MODIFIED_DATE | Modified date | DATE |
| 4.3.18 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 4.3.19 | CYCLE | Inventory cycle number | NUMBER(2) |
| 4.3.20 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--|----------------|----------------------|
| Primary | CN | N/A | P2VSS_PK |
| Unique | PLT_CN, SUBP, CONDID, GROWTH_HABIT_CD, LAYER | N/A | P2VSS_UK |
| Unique | STATECD, COUNTYCD, PLOT, INVYR, SUBP, CONDID, GROWTH_HABIT_CD, LAYER | N/A | P2VSS_UK2 |
| Unique | STATECD, CYCLE, SUBCYCLE, COUNTYCD, PLOT, SUBP, CONDID, GROWTH_HABIT_CD, LAYER | N/A | P2VSS_UK3 |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|----------------------|-----------------------------------|----------------------|
| Foreign | PLT_CN | P2VEG_SUBP_STRUCTURE to PLOT | P2VSS_PLT_FK |
| Foreign | PLT_CN, SUBP, CONDID | P2VEG_SUBP_STRUCTURE to SUBP_COND | P2VSS_SCD_FK |

4.3.1 CN

Sequence number. A unique sequence number used to identify a Phase 2 (P2) vegetation subplot structure record.

4.3.2 PLT_CN

Plot sequence number. Foreign key linking the Phase 2 (P2) vegetation subplot structure record to the plot record for this location.

4.3.3 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

4.3.4 UNITCD

Survey unit code. Forest Inventory and Analysis survey unit identification number. Survey units are usually groups of counties within each State. Refer to [appendix B](#) for codes.

4.3.5 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

4.3.6 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.

4.3.7 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

4.3.8 SUBP

Subplot number. The number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4.

Codes: SUBP

| Code | Description |
|------|-----------------|
| 1 | Center subplot. |
| 2 | North subplot. |

| Code | Description |
|------|--------------------|
| 3 | Southeast subplot. |
| 4 | Southwest subplot. |

4.3.9 CONDID

Condition class number. The unique identifying number assigned to a condition that exists on the subplot, and is defined in the COND table. See COND.CONDID for details on the attributes which delineate a condition.

4.3.10 GROWTH_HABIT_CD

Growth habit code (vegetation structure growth habit). Vegetation structure growth habit based on species and appearance of plants on the subplot condition. The tree species listed on the [FIA Master Tree Species List](https://usfs-public.app.box.com/v/FIA-TreeSpeciesList) (refer to Public Box folder available at web address: <https://usfs-public.app.box.com/v/FIA-TreeSpeciesList>), after taking into account the Island, Mainland, and Phase 3 / Phase 3 (P2/P3) Sub-lists, are recorded as a tally tree species growth habit (TT), even if the species grows as a shrub in some environments. Woody plants not listed on the Master Tree Species List or those on the exclusion list for the area the plot is located in may have a tree growth habit in some environments, and these are recorded as non-tally tree species (NT). If the growth habit is shrub in another environment, that species is recorded as a shrub (SH).

Note: P2VEG_SUBP_STRUCTURE.GROWTH_HABIT_CD is not to be confused with P2VEG_SUBPLOT_SPP.GROWTH_HABIT_CD. The codes are similar, but not exactly the same.

Codes: GROWTH_HABIT_CD

| Code | Description |
|------|---|
| TT | Tally Tree Species: All <i>core</i> tree species and any <i>core optional</i> tree species selected by a particular FIA work unit. Only tree species on the FIA Master Tree Species List (or those listed as a hybrid, variety, or subspecies) are included, after taking into account the Island, Mainland, and P2/P3 Sub-lists. Any plant of that species is included, regardless of its shape and regardless of whether it was tallied on the subplot or microplot during tree tally. Seedlings (any length, no minimum), saplings, and mature plants are included. |
| NT | Non-tally Tree Species: Tree species not on a particular FIA work unit's tree tally list that are woody plants with a single well-defined, dominant main stem, not supported by other vegetation or structures (not vines), and which are, or are expected to become, greater than 13 feet in height after taking into account the Island, Mainland , and P2/P3 BDSSub-lists. Seedlings (any length, no minimum), saplings, and mature plants are included. |
| SH | Shrubs/Subshrubs/Woody Vines: Woody, multiple-stemmed plants of any size, subshrubs (low-growing shrubs under 1.5 feet tall at maturity), and woody vines. Most cacti are included in this category. |
| FB | Forbs: Herbaceous, broad-leaved plants; includes non-woody-vines, ferns (does not include mosses and cryptobiotic crusts). |

| Code | Description |
|------|---|
| GR | Graminoids: Grasses and grass-like plants (includes rushes and sedges). |
| DS | Dead pinyon species shrubs: Dead pinyon species shrubs and dead portions of live pinyon species shrubs for the following field-recorded forest types: Rocky Mountain juniper (COND.FLDTYPCD = 182), juniper woodland (COND.FLDTYPCD = 184), pinyon-juniper woodland (COND.FLDTYPCD = 185), and western juniper (COND.FLDTYPCD = 369). Refer to appendix D for forest type descriptions. Only populated by certain FIA work units (SURVEY.RSCD = 22). |

Codes: **GROWTH_HABIT_CD** (additional codes for PNWRS, SURVEY.RSCD = 26, 27)

| Code | Description |
|------|---|
| AL | All vegetation: Populated for PLOT.MANUAL <5.0. |
| MO | Moss/bryophytes: Nonvascular, terrestrial green plant, including mosses, hornworts, and liverworts. Only populated for Pacific Islands . |
| SL | Bare soil: Mineral material that, when viewed from above, is not over-topped by grass, forbs, shrubs, or seedlings. It is also not covered by duff, litter, cowpies, woody debris, moss or other material. Sand, stones, and bedrock are not considered bare soil. Populated for PLOT.MANUAL <5.0. |
| SS | Newly sprouted shrub cover: Cover of newly sprouted shrubs after fire. Only populated for PNWRS Fire Effects and Recovery Study (FERS) plots. For more information, contact the PNWRS Analyst Contact (see table 1-1). |
| ST | Seedlings: Small trees <1 inch d.b.h.or d.r.c. Populated for PLOT.MANUAL <5.0. |

4.3.11 LAYER

Layer (layer distribution of growth habits). A code indicating the vertical layer distribution of growth habits. Canopy cover for growth forms is distributed between layers.

Codes: **LAYER**

| Code | Description |
|------|--------------------------------------|
| 1 | 0 to 2.0 feet. |
| 2 | 2.1 to 6.0 feet. |
| 3 | 6.1 to 16.0 feet. |
| 4 | Greater than 16 feet. |
| 5 | Aerial: Canopy cover for all layers. |

4.3.12 COVER_PCT

Cover percent (canopy cover percent). The canopy cover percent for each combination of growth habit and layer. Canopy cover is based on a vertically projected polygon described by the outline of the foliage, ignoring any normal spaces occurring between the leaves of plants (Daubenmire 1959), and ignoring overlap among multiple layers of a species. For each species, cover can never exceed 100 percent.

Note: Cover is always recorded as a percent of the full subplot area, even if the condition that was assessed did not cover the full subplot.

4.3.13 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

4.3.14 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

4.3.15 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

4.3.16 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

4.3.17 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

4.3.18 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

4.3.19 CYCLE

Inventory cycle number. See SURVEY.CYCLE description for definition.

4.3.20 SUBCYCLE

Inventory subcycle number. See SURVEY.SUBCYCLE description for definition.

Section revision: 04.2024

Chapter 5: Database Tables - Down Woody Material

Chapter Contents:

| Section | Database table | Oracle table name |
|---------|---|-------------------------|
| 5.1 | Down Woody Material Visit Table | DWM_VISIT |
| 5.2 | Down Woody Material Coarse Woody Debris Table | DWM_COARSE_WOODY_DEBRIS |
| 5.3 | Down Woody Material Duff, Litter, Fuel Table | DWM_DUFF_LITTER_FUEL |
| 5.4 | Down Woody Material Fine Woody Debris Table | DWM_FINE_WOODY_DEBRIS |
| 5.5 | Down Woody Material Microplot Fuel Table | DWM_MICROPLOT_FUEL |
| 5.6 | Down Woody Material Residual Pile Table | DWM_RESIDUAL_PILE |
| 5.7 | Down Woody Material Transect Segment Table | DWM_TRANSECT_SEGMENT |
| 5.8 | Condition Down Woody Material Calculation Table | COND_DWM_CALC |

Definitions for database tables:

For further detail and examples, refer to the Overview (chapter 1).

Keys Presented with the Tables

| Key type | Definition |
|----------|--|
| Primary | A single column in a table whose values uniquely identify each row in an Oracle table. |
| Unique | Multiple columns in a table whose values uniquely identify each row in an Oracle table. There can be one and only one row for each unique key value. |
| Natural | A type of unique key made from existing attributes in the table. It is stored as an index in this database. |
| Foreign | A column in a table that is used as a link to a matching column in another Oracle table. |

Oracle Data Types

| Oracle data type | Definition |
|------------------|---|
| DATE | A data type that stores the date. |
| NUMBER | A data type that contains only numbers, positive or negative, with a floating-decimal point. |
| NUMBER(SIZE, D) | A data type that contains only numbers up to a specified maximum size. The maximum size (<i>and optional fixed-decimal point</i>) is specified by the value(s) listed in the parentheses. |
| VARCHAR2(SIZE) | A data type that contains alphanumeric data (numbers and/or characters) up to a specified maximum size. |

5.1 Down Woody Material Visit Table

(Oracle table name: DWM_VISIT)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-------------------------------------|------------------|
| 5.1.1 | CN | Sequence number | VARCHAR2(34) |
| 5.1.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 5.1.3 | INVYR | Inventory year | NUMBER(4) |
| 5.1.4 | STATECD | State code | NUMBER(4) |
| 5.1.5 | COUNTYCD | County code | NUMBER(3) |
| 5.1.6 | PLOT | Plot number | NUMBER(5) |
| 5.1.7 | MEASDAY | Measurement day | NUMBER(2) |
| 5.1.8 | MEASMON | Measurement month | NUMBER(2) |
| 5.1.9 | MEASYEAR | Measurement year | NUMBER(4) |
| 5.1.10 | QASTATCD | Quality assurance status code | NUMBER(1) |
| 5.1.11 | CRWTYPED | Crew type code | NUMBER(1) |
| 5.1.12 | SMPKNDCD | Sample kind code | NUMBER(2) |
| 5.1.13 | CREATED_BY | Created by | VARCHAR2(30) |
| 5.1.14 | CREATED_DATE | Created date | DATE |
| 5.1.15 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 5.1.16 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 5.1.17 | MODIFIED_DATE | Modified date | DATE |
| 5.1.18 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 5.1.19 | CWD_SAMPLE_METHOD | Coarse woody debris sample method | VARCHAR2(6) |
| 5.1.20 | FWD_SAMPLE_METHOD | Fine woody debris sample method | VARCHAR2(6) |
| 5.1.21 | MICR_SAMPLE_METHOD | Microplot sample method | VARCHAR2(6) |
| 5.1.22 | DLF_SAMPLE_METHOD | Duff, litter, fuelbed sample method | VARCHAR2(6) |
| 5.1.23 | PILE_SAMPLE_METHOD | Pile sample method | VARCHAR2(6) |
| 5.1.24 | DWM_SAMPLING_STATUS_CD | DWM sampling status code | NUMBER(1) |
| 5.1.25 | DWM_NBR_SUBP | DWM number of subplots | NUMBER(1) |
| 5.1.26 | DWM_NBR_SUBP_TRANSECT | DWM number of transects on subplot | NUMBER(1) |
| 5.1.27 | DWM_SUBPLIST | DWM subplot list | NUMBER(4) |
| 5.1.28 | DWM_TRANSECT_LENGTH | DWM transect length | NUMBER(4,1) |
| 5.1.29 | QA_STATUS | Quality assurance status | NUMBER(1) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--------------------------------|-------------------|----------------------|
| Primary | CN | N/A | DVT_PK |
| Unique | PLT_CN | N/A | DVT_UK |
| Natural | STATECD, INVYR, COUNTYCD, PLOT | N/A | DVT_NAT_I |
| Foreign | PLT_CN | DWM_VISIT to PLOT | DVT_PLT_FK |

5.1.1 CN

Sequence number. A unique sequence number used to identify a down woody material visit record.

5.1.2 PLT_CN

Plot sequence number. Foreign key linking the down woody material visit record to the plot record.

5.1.3 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

5.1.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each state. Refer to [appendix B](#).

5.1.5 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 are used. Refer to [appendix B](#).

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

5.1.6 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, and COUNTYCD, PLOT may be used to uniquely identify a plot.

5.1.7 MEASDAY

Measurement day. The day on which the plot was completed.

5.1.8 MEASMON

Measurement month. The month in which the plot was completed.

Codes: MEASMON

| Code | Description |
|------|-------------|
| 1 | January. |
| 2 | February. |
| 3 | March. |

| Code | Description |
|-------------|--------------------|
| 4 | April. |
| 5 | May. |
| 6 | June. |
| 7 | July. |
| 8 | August. |
| 9 | September. |
| 10 | October. |
| 11 | November. |
| 12 | December. |

5.1.9 MEASYEAR

Measurement year. The year in which the plot was completed. MEASYEAR may differ from INVYR.

5.1.10 QASTATCD

Quality assurance status code. A code indicating the type of plot data collected. Production plots have QASTATCD = 1 or 7.

Codes: QASTATCD

| 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 | Hot check - This is the same as a standard production plot but the measurement is taken under the supervision of a quality assurance crew. |

5.1.11 CRWTPYCD

Crew type code. A code identifying the type of crew measuring the plot.

Codes: CRWTPYCD

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

5.1.12 SMPKNDCC

Sample kind code. A code indicating the type of plot installation.

Codes: SMPKNDCC

| Code | Description |
|------|---|
| 0 | Periodic inventory plot. |
| 1 | Initial installation of a national design plot. |
| 2 | Remeasurement of previously installed national design plot. |
| 3 | Replacement of previously installed national design plot. |
| 4 | Modeled periodic inventory plot (Northeast and North Central only). |

5.1.13 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

5.1.14 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

5.1.15 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

5.1.16 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

5.1.17 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

5.1.18 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

5.1.19 CWD_SAMPLE_METHOD

Coarse woody debris sample method. A code indicating the sampling protocol used to collect coarse woody debris data.

Codes: CWD_SAMPLE_METHOD

| Code | Description | Distance measurement |
|------|---|----------------------|
| 0 | CWD not sampled. | Not applicable. |
| 1 | National P3 protocol. Three 24-foot transects on all subplots. | Slope. |
| 2 | PNWRS P2 protocol. Two 58.9-foot transects per subplot. | Slope. |
| 3 | PNWRS P2 and National P3 protocols overlaid. One 24-foot and two 58.9-foot transects per subplot. | Slope. |
| 4 | PNWRS juniper protocol. | Slope. |
| 5 | PNWRS P2 protocol. Two 24-foot transects per subplot. | Slope. |
| 6 | National P2 protocol, base option. | Horizontal. |
| 7 | National P2 protocol, wildlife option. | Horizontal. |
| 8 | National P2 protocol, rapid assessment option. | Horizontal. |

| Code | Description | Distance measurement |
|-------------|---|-----------------------------|
| 9 | National P3 protocol. Two 24-foot transects per subplot. | Slope. |
| 10 | RMRS P2 protocol. Three 120-foot transects per plot. | Slope. |
| 11 | SRS P2 protocol. One 48-foot transect only on subplot 1 (random orientation). | Horizontal. |
| 12 | PNWRS P2 protocol, transition wildlife. Two 24-foot transects per subplot. | Horizontal. |
| 13 | PNWRS P2 protocol for National Forest System, transition wildlife. Two 24 foot transects per subplot. | Horizontal. |
| 14 | National P2 protocol, wildlife for National Forest System. Two 24-foot transects per subplot. | Horizontal. |
| 15 | PNWRS periodic protocol. Three 55.6-foot transects per subplot. | Horizontal. |
| 16 | PNWRS periodic protocol. Three 55.8-foot transects per subplot. | Horizontal. |
| 17 | National P2 and P3 protocol (2001). Three 58.9-foot transects per subplot. | Horizontal. |

5.1.20 FWD_SAMPLE_METHOD

Fine woody debris sample method. A code indicating the sampling protocol used to collect fine woody debris data.

Codes: FWD_SAMPLE_METHOD

| Code | Description | Distance measurement |
|-------------|---|-----------------------------|
| 0 | FWD not sampled. | Not applicable. |
| 1 | National P2 and P3 protocol. One 10-foot transect for small and medium FWD and one 20-foot transect for large FWD per subplot. | Slope. |
| 2 | National P2 and P3 protocol. One 6-foot transect for small and medium FWD and one 10-foot transect for large FWD per subplot. | Slope. |
| 3 | National P2 protocol (all options). One 6-foot transect for small and medium FWD and one 10-foot transect for large FWD per subplot. | Horizontal. |
| 4 | SRS P2 protocol. One 6-foot transect for small and medium FWD, and one 10-foot transect for large FWD on subplot 1. | Slope. |
| 5 | RMRS P2 protocol. One 6-foot transect for small and medium FWD and one 10-foot transect for large FWD on each of subplots 2, 3 and 4. | Slope. |

5.1.21 MICR_SAMPLE_METHOD

Microplot sample method. A code indicating the sampling protocol used to collect microplot fuels data.

Note: Starting with PLOT.MANUAL = 5.1, DWM sampling on microplots was discontinued.

Codes: MICR_SAMPLE_METHOD

| Code | Description | Distance measurement |
|-------------|--|-----------------------------|
| 0 | Microplot fuel not sampled. | Not applicable. |
| 1 | National P2 and P3 protocol. Percent cover in 10% classes of fuels on all forested conditions combined on the microplot. Fuel classes were live shrubs, dead shrubs, live herbs, dead herbs, litter. | Horizontal. |
| 2 | RMRS P2 protocol. No microplot fuels sampled. | Not applicable. |
| 3 | SRS P2 protocol. Percent cover in 10% classes and height of fuels on 6-foot transect on subplot 1. Fuel classes were shrubs and herbs, live and dead combined. | Slope. |

5.1.22 DLF_SAMPLE_METHOD

Duff, litter, fuelbed sample method. A code indicating the sampling protocol used to collect duff, litter, and fuelbed data.

Codes: DLF_SAMPLE_METHOD

| Code | Description | Distance measurement |
|-------------|---|-----------------------------|
| 0 | Duff, litter, fuel not sampled. | Not applicable. |
| 1 | National P3 protocol. Sampled at 2 points (14 and 24 feet) along each transect with average recorded. | Slope. |
| 2 | National P3 protocol. Sampled at a point located 24 feet along each transect. | Slope. |
| 3 | National P2 protocol (all options). Sampled at a point 24 feet along each transect. | Horizontal. |
| 4 | RMRS P2 protocol. One duff and litter point sampled at a point 24 feet along each transect on subplots 2, 3, and 4. | Horizontal. |
| 5 | SRS P2 protocol. Duff and litter points sampled at 2 points (0 and 48 feet) along a transect on subplot 1. | Horizontal. |

5.1.23 PILE_SAMPLE_METHOD

Pile sample method. A code indicating the sampling protocol used to collect residue pile data.

Codes: PILE_SAMPLE_METHOD

| Code | Description | Distance measurement |
|-------------|---|-----------------------------|
| 0 | Piles not sampled. | Not applicable. |
| 1 | PNWRS P2 protocol. Pile measured if center located within the 58.9-foot macroplot radius. | Horizontal. |
| 2 | National P3 protocol. Pile measured if center located within the 24-foot subplot radius. | Horizontal. |
| 3 | National P2 protocol (all options). Pile measured if it intersects the transect (see DWM_VISIT.DWM_TRANSECT_LENGTH for length of transect). | Horizontal. |

| Code | Description | Distance measurement |
|------|---|----------------------|
| 4 | Pile is on 58.9-foot transect. | Horizontal. |
| 5 | Pile measured if center located within the 58.9-foot transect conditions were mapped only on the 24-foot subplot. | Horizontal. |

5.1.24 DWM_SAMPLING_STATUS_CD

DWM sampling status code. A code indicating the type of National P2 DWM data collected.

Codes: DWM_SAMPLING_STATUS_CD

| Code | Description |
|------|--|
| 0 | Not sampled for National P2 DWM. |
| 1 | BASE sampling option; includes DWM attributes needed to estimate volume, biomass, and carbon of down wood on land conditions sampled with the National P2 DWM protocol. |
| 2 | Wildlife/Ecological sampling option; includes BASE attributes along with other attributes needed to estimate components of wildlife habitats or ecological functions collected on land conditions sampled with National P2 DWM protocol. |
| 3 | Rapid assessment sampling option; includes BASE attributes along with other optional attributes selected for individual situations on land conditions sampled under National P2 DWM protocol. |

5.1.25 DWM_NBR_SUBP

DWM number of subplots. The number of subplots on which National P2 DWM data were collected: 1, 2, 3, or 4.

5.1.26 DWM_NBR_SUBP_TRANSECT

DWM number of transects on subplot. The number of transects per subplot on which National P2 DWM data were collected: 1, 2, or 3.

5.1.27 DWM_SUBPLIST

DWM subplot list. The list of subplots on which National P2 DWM data were collected. The list is a concatenation of the four subplots. Subplots not included are coded as 0. For example, if National P2 DWM data are collected on subplots 1, 2, and 3, then DWM_SUBPLIST = 1230.

5.1.28 DWM_TRANSECT_LENGTH

DWM transect length. The length of National P2 DWM transects in feet. Values must be between 24.0 and 58.9 feet.

5.1.29 QA_STATUS

Quality assurance status. A code indicating the type of plot data collected. Production plots have QA_STATUS = 1 or 7. Codes 2-6 indicate additional quality assurance data. May not be populated for some FIA work units when PLOT.MANUAL <1.0.

Note: QASTATCD and QA_STATUS both reside in this table and have the same description and codes. QASTATCD is a remnant from the Forest Health Monitoring and Phase 3 data collection files, and is retained in this table for continuity with older data.

Codes: QA_STATUS

| 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 | Hot check - This is the same as a standard production plot but the measurement is taken under the supervision of a quality assurance crew. |

5.2 Down Woody Material Coarse Woody Debris Table

(Oracle table name: DWM_COARSE_WOODY_DEBRIS)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 5.2.1 | CN | Sequence number | VARCHAR2(34) |
| 5.2.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 5.2.3 | INVYR | Inventory year | NUMBER(4) |
| 5.2.4 | STATECD | State code | NUMBER(4) |
| 5.2.5 | COUNTYCD | County code | NUMBER(3) |
| 5.2.6 | PLOT | Plot number | NUMBER(5) |
| 5.2.7 | SUBP | Subplot number | NUMBER(1) |
| 5.2.8 | TRANSECT | Transect | NUMBER(3) |
| 5.2.9 | CWDID | Coarse woody debris piece (log) number | NUMBER |
| 5.2.10 | MEASYEAR | Measurement year | NUMBER(4) |
| 5.2.11 | CONDID | Condition class number | NUMBER(1) |
| 5.2.12 | SLOPDIST | Slope distance | NUMBER |
| 5.2.13 | HORIZ_DIST | Horizontal distance | NUMBER |
| 5.2.14 | SPCD | Species code | NUMBER |
| 5.2.15 | DECAYCD | Decay class code | NUMBER(1) |
| 5.2.16 | TRANSdia | Transect diameter | NUMBER(3) |
| 5.2.17 | SMALLdia | Small diameter | NUMBER(3) |
| 5.2.18 | LARGEDIA | Large diameter | NUMBER(3) |
| 5.2.19 | LENGTH | Length of the piece | NUMBER(3) |
| 5.2.20 | HOLLOWCD | Hollow code | VARCHAR2(1) |
| 5.2.21 | CWDHSTCD | Coarse woody debris history code | NUMBER(1) |
| 5.2.22 | VOLCF | Gross cubic-foot volume of the piece | NUMBER |
| 5.2.23 | DRYBIO | Dry biomass of the piece | NUMBER |
| 5.2.24 | CARBON | Carbon weight of the piece | NUMBER |
| 5.2.25 | COVER_PCT | Percent cover represented by each coarse woody debris piece | NUMBER |
| 5.2.26 | LPA_UNADJ | Number of logs (pieces) per acre, unadjusted | NUMBER |
| 5.2.27 | LPA_PLOT | Number of logs (pieces) per acre on the plot, unadjusted | NUMBER |
| 5.2.28 | LPA_COND | Number of logs (pieces) per acre in the condition, unadjusted | NUMBER |
| 5.2.29 | LPA_UNADJ_RGN | Number of logs (pieces) per acre, unadjusted, regional protocol | NUMBER |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 5.2.30 | LPA_PLOT_RGN | Number of logs (pieces) per acre on the plot, unadjusted, regional protocol | NUMBER |
| 5.2.31 | LPA_COND_RGN | Number of logs (pieces) per acre in the condition, unadjusted, regional protocol | NUMBER |
| 5.2.32 | COVER_PCT_RGN | Percent cover, represented by each coarse woody debris piece, regional protocol | NUMBER |
| 5.2.33 | CHARRED_CD | Charred by fire code | NUMBER(1) |
| 5.2.34 | ORNTCD_PNWRS | Orientation code, Pacific Northwest Research Station | VARCHAR2(1) |
| 5.2.35 | CREATED_BY | Created by | VARCHAR2(30) |
| 5.2.36 | CREATED_DATE | Created date | DATE |
| 5.2.37 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 5.2.38 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 5.2.39 | MODIFIED_DATE | Modified date | DATE |
| 5.2.40 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 5.2.41 | CWD_SAMPLE_METHOD | Coarse woody debris sample method | VARCHAR2(6) |
| 5.2.42 | HOLLOW_DIA | Hollow diameter at the point of intersection | NUMBER(3) |
| 5.2.43 | HORIZ_DIST_CD | Horizontal distance code | NUMBER(1) |
| 5.2.44 | INCLINATION | Piece inclination | NUMBER(2) |
| 5.2.45 | LARGE_END_DIA_CLASS | Large end diameter class code | NUMBER(1) |
| 5.2.46 | LENGTH_CD | Coarse woody debris length code | NUMBER(1) |
| 5.2.47 | VOLCF_AC_UNADJ | Gross cubic-foot volume per acre based on target plot transect length, unadjusted | NUMBER |
| 5.2.48 | VOLCF_AC_PLOT | Gross cubic-foot volume per acre based on plot transect length actually measured, unadjusted | NUMBER |
| 5.2.49 | VOLCF_AC_COND | Gross cubic-foot volume per acre based on condition transect length actually measured, unadjusted | NUMBER |
| 5.2.50 | DRYBIO_AC_UNADJ | Dry biomass per acre based on target plot transect length, unadjusted | NUMBER |
| 5.2.51 | DRYBIO_AC_PLOT | Dry biomass per acre based on plot transect length actually measured, unadjusted | NUMBER |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 5.2.52 | DRYBIO_AC_COND | Dry biomass per acre based on condition transect length actually measured, unadjusted | NUMBER |
| 5.2.53 | CARBON_AC_UNADJ | Carbon per acre based on target plot transect length, unadjusted | NUMBER |
| 5.2.54 | CARBON_AC_PLOT | Carbon per acre based on plot transect length actually measured, unadjusted | NUMBER |
| 5.2.55 | CARBON_AC_COND | Carbon per acre based on condition transect length actually measured, unadjusted | NUMBER |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|---|----------------|----------------------|
| Primary | CN | N/A | DCW_PK |
| Unique | PLT_CN, TRANSECT, SUBP, CWDID | N/A | DCW_UK |
| Natural | STATECD, INVYR, COUNTYCD, PLOT, TRANSECT, SUBP, CWDID | N/A | DCW_NAT_I |

5.2.1 CN

Sequence number. A unique sequence number used to identify a down woody material coarse woody debris (CWD) record.

5.2.2 PLT_CN

Plot sequence number. Foreign key linking the down woody material coarse woody debris record to the plot record.

5.2.3 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

5.2.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

5.2.5 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 are used. Refer to [appendix B](#).

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

5.2.6 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combination of attributes, PLOT may be used to uniquely identify a plot.

5.2.7 SUBP

Subplot number. A code indicating the number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4. Other plot designs have various subplot number values. See PLOT.DESIGNCD and [appendix G](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

5.2.8 TRANSECT

Transect. The azimuth, in degrees, of the transect on which coarse woody debris was sampled, extending out from subplot center.

5.2.9 CWDID

Coarse woody debris piece (log) number. A number that uniquely identifies each piece that was tallied along one transect.

5.2.10 MEASYEAR

Measurement year. The year in which the plot was completed. MEASYEAR may differ from INVYR.

5.2.11 CONDID

Condition class number. The unique identifying number assigned to the condition where the piece was sampled. See COND.[CONDID](#) for details on the attributes which delineate a condition.

5.2.12 SLOPDIST

Slope distance. The slope distance, in feet, between the subplot center and the point where the transect intersects the longitudinal center of the piece.

5.2.13 HORIZ_DIST

Horizontal distance. The horizontal distance, in feet, between subplot center and the point where the transect intersects the longitudinal center of the piece.

5.2.14 SPCD

Species code. An FIA tree species code. Refer to [appendix F](#) for codes. If the piece is the woody stem of a shrub, a code of 001 is recorded.

5.2.15 DECAYCD

Decay class code. A code indicating the stage of decay that predominates along the recorded total length of the piece. DECAYCD is used to reduce biomass based on ratios stored in the REF_SPECIES table.

Note: Pieces within decay class 5 must still resemble a log; the pieces must be ≥ 5.0 inches in diameter, ≥ 5.0 inches from the surface of the ground, and at least 3.0 feet long.

Codes: DECAYCD

| Decay class | Structural integrity | Texture of rotten portions | Color of wood | Invasive roots | Branches and twigs |
|--------------------|---|---|----------------------------------|-----------------------|---|
| 1 | Sound, freshly fallen, intact logs. | Intact, no rot; conks of stem decay absent. | Original color. | Absent. | If branches are present, fine twigs are still attached and have tight bark. |
| 2 | Sound. | Mostly intact; sapwood partly soft (starting to decay) but can't be pulled apart by hand. | Original color. | Absent. | If branches are present, many fine twigs are gone and remaining fine twigs have peeling bark. |
| 3 | Heartwood sound; piece supports its own weight. | Hard, large pieces; sapwood can be pulled apart by hand or sapwood absent. | Reddish-brown or original color. | Sapwood only. | Branch stubs will not pull out. |
| 4 | Heartwood rotten; piece does not support its own weight, but maintains its shape. | Soft, small blocky pieces; a metal pin can be pushed into heartwood. | Reddish or light brown. | Throughout. | Branch stubs pull out. |
| 5 | None; piece no longer maintains its shape, it spreads out on ground. | Soft; powdery when dry. | Red-brown to dark brown. | Throughout. | Branch stubs and pitch pockets have usually rotted down. |

5.2.16 TRANSDIA

Transect diameter. The diameter, in inches, at the point where the longitudinal center of the piece intersects the transect.

5.2.17 SMALLDIA

Small diameter. The diameter, in inches, at the small end of the piece, or at the point where the piece tapers down to 3 inches. If the small end is splintered or decomposing, the diameter is measured at a point that best represents the overall volume of the piece.

5.2.18 LARGEDIA

Large diameter. The diameter, in inches, at the large end of the piece, or at the point just above the root collar. If the end is splintered or decomposing, the diameter is measured at a point that best represents the overall volume of the piece.

5.2.19 LENGTH

Length of the piece. Length, in feet, of the piece, measured between the small- and large-end diameters, or if the piece is decay class 5, between the physical ends of the piece.

5.2.20 HOLLOWCD

Hollow code. A code indicating whether or not the piece is hollow. If the piece has a cavity that extends at least 2 feet along the central longitudinal axis and the diameter of the cavity entrance is at least $\frac{1}{4}$ of the diameter at the end of the piece, it is classified as hollow.

Codes: HOLLOWCD

| Code | Description |
|------|--------------------------|
| Y | The piece is hollow. |
| N | The piece is not hollow. |

5.2.21 CWDHSTCD

Coarse woody debris history code. A code indicating whether or not the piece is on the ground as a result of harvesting operations or as a result of natural circumstances.

Codes: CWDHSTCD

| Code | Description |
|------|---|
| 1 | CWD piece is on the ground as a result of natural causes. |
| 2 | CWD piece is on the ground as a result of major recent harvest activity (≤ 15 yrs old). |
| 3 | CWD piece is on the ground as a result of older harvest activity (> 15 yrs old). |
| 4 | CWD piece is on the ground as a result of an incidental harvest (such as firewood cutting). |
| 5 | Exact reason unknown. |

5.2.22 VOLCF

Gross cubic-foot volume of the piece. The gross volume, in cubic feet, estimated for the piece, based on length and either the small- and large-end diameter or just the transect diameter. This is a per piece value and must be multiplied by one of the logs per acre (LPA) to obtain per acre information.

5.2.23 DRYBIO

Dry biomass of the piece. The oven-dry biomass, in pounds, estimated for the piece, adjusted for the degree of decomposition based on DEACYCD. This is a per piece value and must be multiplied by one of the logs per acre (LPA) to obtain per acre information.

5.2.24 CARBON

Carbon weight of the piece. The weight of carbon, in pounds, estimated for the piece, adjusted for the degree of decomposition based on DEACYCD. This is a per piece value and must be multiplied by one of the logs per acre (LPA) to obtain per acre information.

5.2.25 COVER_PCT

Percent cover represented by each coarse woody debris piece. An estimate of the percent of the condition area covered by the piece.

5.2.26 LPA_UNADJ

Number of logs (pieces) per acre, unadjusted. This estimate is the number of logs per acre the individual piece represents. The estimate is based on the target transect length (COND_DWM_CALC.CWD_TL_UNADJ), which is the total length of transect that could

potentially be installed on the plot, before adjustment for partially nonsampled plots in the stratum. This attribute is used to calculate population estimates and not to derive estimates for one condition or individual plot. It should be summed for a condition or plot, adjusted by the factor ADJ_FACTOR_CWD stored in the POP_STRATUM table, and then expanded by the acres in POP_STRATUM.EXPNS to produce population totals for number of CWD logs in an area of interest (e.g., State). It is important to select the appropriate EVALID and use the LPA column associated with that evaluation (see [LPA_UNADJ_RGN](#)).

5.2.27 LPA_PLOT

Number of logs (pieces) per acre on the plot, unadjusted. This estimate is the number of logs per acre the individual piece represents on the plot. The estimate is based on the actual length of transect installed and sampled on the plot. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual plot locations, and is not adjusted or used to develop population estimates. It is important to select the appropriate EVALID and use the LPA column associated with that evaluation (see [LPA_PLOT_RGN](#)).

5.2.28 LPA_COND

Number of logs (pieces) per acre in the condition, unadjusted. This estimate is the number of logs per acre the individual piece represents on one condition on the plot. The estimate is based on the actual length of transect installed and sampled on that condition. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot, and is not adjusted or used to develop population estimates. It is important to select the appropriate EVALID and use the LPA column associated with that evaluation (see [LPA_COND_RGN](#)).

5.2.29 LPA_UNADJ_RGN

Number of logs (pieces) per acre, unadjusted, regional protocol. This estimate is the number of logs per acre the individual piece represents when sampled using a regional protocol that differs from the national *core* design. The estimate is based on the target transect length (COND_DWM_CALC.CWD_TL_UNADJ), which is the total length of transect that could potentially be installed on the plot using the regional sampling protocol, before adjustment for partially nonsampled plots in the stratum. This attribute is used to calculate population estimates and not to derive estimates for one condition or individual plot. It should be summed for a condition or plot, adjusted by the factor ADJ_FACTOR_CWD stored in the POP_STRATUM table, and then expanded by the acres in POP_STRATUM.EXPNS to produce population totals for number of CWD logs in an area of interest (e.g., State). This column will be populated for all plots sampled with a regional protocol, where transect length and configuration differ from the *core* design. When regional protocols and *core* designs are overlaid, those pieces that fall only on the *core* design will have null in this field (e.g., this column contains data for RSCD = 26, where a regional protocol was used to sample all Phase 2 plots in the inventory). Contact FIA work units ([table 1-1](#)) for information on regional sampling protocol. It is important to select the appropriate EVALID and use the LPA column associated with that evaluation (see [LPA_UNADJ](#)).

5.2.30 LPA_PLOT_RGN

Number of logs (pieces) per acre on the plot, unadjusted, regional protocol. This estimate is the number of logs per acre the individual piece represents on the plot when sampled using a regional protocol that differs from the national *core* design. The estimate is based on the actual length of transect installed and sampled on the plot. This attribute

is useful for analysis projects that involve modeling, mapping, or classifying individual plot locations, and is not adjusted or used to develop population estimates. This column will be populated for all plots sampled with a regional protocol, where transect length and configuration differ from the *core* design. When regional protocols and *core* designs are overlaid, those pieces that fall only on the *core* design will have null in this field (e.g., this column contains data for RSCD = 26, where a regional protocol was used to sample all Phase 2 plots in the inventory). Contact FIA work units ([table 1-1](#)) for information on regional sampling protocol. It is important to select the appropriate EVALID and use the LPA column associated with that evaluation (see [LPA_PLOT](#)).

5.2.31 LPA_COND_RGN

Number of logs (pieces) per acre in the condition, unadjusted, regional protocol. This estimate is the number of logs per acre the individual piece represents on one condition on the plot when sampled using a regional protocol that differs from the national *core* design. The estimate is based on the actual length of transect installed and sampled on that condition. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot, and is not adjusted or used to develop population estimates. This column will be populated for all plots sampled with a regional protocol, where transect length and configuration differ from the *core* design. When regional protocols and *core* designs are overlaid, those pieces that fall only on the *core* design will have null in this field (e.g., this column contains data for RSCD = 26, where a regional protocol was used to sample all Phase 2 plots in the inventory). Contact FIA work units ([table 1-1](#)) for information on regional sampling protocol. It is important to select the appropriate EVALID and use the LPA column associated with that evaluation (see [LPA_COND](#)).

5.2.32 COVER_PCT_RGN

Percent cover, represented by each coarse woody debris piece, regional protocol. An estimate of the percent of the condition area covered by the piece, when sampled using a regional protocol.

5.2.33 CHARRED_CD

Charred by fire code. A code indicating the percentage of the piece's surface that has been charred by fire. This attribute was required by some regional protocols and is optional for the National P2 DWM protocol. CHARRED_CD replaces CHRCRD_PNWRS; the code sets are the same.

Codes: CHARRED_CD

| Code | Description |
|------|--|
| 0 | None of the piece is charred by fire. |
| 1 | Up to 1/3 of the piece is charred by fire. |
| 2 | 1/3 to 2/3 of the piece is charred by fire. |
| 3 | 2/3 or more of the piece is charred by fire. |

5.2.34 ORNTCD_PNWRS

Orientation code, Pacific Northwest Research Station. A code indicating the orientation of the piece on the slope. Data collected for field guide (PLOT.MANUAL) versions 1.4-1.7 (INVYR = 2000-2004).

Codes: ORNTCD_PNWRS

| Code | Description |
|-------------|---|
| A | Across - Piece is oriented between vertical and horizontal. |
| F | Flat - Piece is on flat ground (<10% slope). |
| H | Horizontal - Piece is oriented within 15 degrees of the contour. |
| V | Vertical - Piece is oriented within 15 degrees of perpendicular to the contour. |

5.2.35 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

5.2.36 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

5.2.37 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

5.2.38 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

5.2.39 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

5.2.40 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

5.2.41 CWD_SAMPLE_METHOD

Coarse woody debris sample method. A code indicating the sampling protocol used to collect coarse woody debris data.

Codes: CWD_SAMPLE_METHOD

| Code | Description | Transect distance measurement |
|-------------|---|--------------------------------------|
| 0 | CWD not sampled. | Not applicable. |
| 1 | National P3 protocol. Three 24-foot transects on all subplots. | Slope. |
| 2 | PNWRS P2 protocol. Two 58.9-foot transects per subplot. | Slope. |
| 3 | PNWRS P2 and National P3 protocols overlaid. One 24-foot and two 58.9-foot transects per subplot. | Slope. |
| 4 | PNWRS juniper protocol. | Slope. |
| 5 | PNWRS P2 protocol. Two 24-foot transects per subplot. | Slope. |
| 6 | National P2 protocol, base option. | Horizontal. |
| 7 | National P2 protocol, wildlife option. | Horizontal. |
| 8 | National P2 protocol, rapid assessment option. | Horizontal. |
| 9 | National P3 protocol. Two 24-foot transects per subplot. | Slope. |
| 10 | RMRS P2 protocol. Three 120-foot transects per plot. | Slope. |

| Code | Description | Transect distance measurement |
|-------------|---|--------------------------------------|
| 11 | SRS P2 protocol. One 48-foot transect only on subplot 1 (random orientation). | Horizontal. |
| 12 | PNWRS P2 protocol, transition wildlife. Two 24-foot transects per subplot. | Horizontal. |
| 13 | PNWRS P2 protocol for National Forest System, transition wildlife. Two 24-foot transects per subplot. | Horizontal. |
| 14 | National P2 protocol, wildlife for National Forest System. Two 24-foot transects per subplot. | Horizontal. |
| 15 | PNWRS periodic protocol. Three 55.6-foot transects per subplot. | Horizontal. |
| 16 | PNWRS periodic protocol. Three 55.8-foot transects per subplot. | Horizontal. |
| 17 | National P2 and P3 protocol (2001). Three 58.9-foot transects per subplot. | Horizontal. |

5.2.42 HOLLOW_DIA

Hollow diameter at the point of intersection. The diameter of the hollow portion of a piece at the point of intersection with the transect, measured in inches. Required for all options of the National P2 DWM protocol.

5.2.43 HORIZ_DIST_CD

Horizontal distance code. A code indicating if a piece intersects the transect on the subplot or macroplot. Required for all options of the National P2 DWM protocol.

Codes: HORIZ_DIST_CD

| Code | Description |
|-------------|---|
| 1 | Central longitudinal axis of piece intersects the transect on the subplot (≤ 24.0 horizontal feet). |
| 2 | Central longitudinal axis of piece intersects the transect on the macroplot (24.1-58.9 horizontal feet). |

5.2.44 INCLINATION

Piece inclination. (*core optional*) The inclination of the piece from horizontal measured in degrees (0 to 90). This is an optional measurement and might not be populated on every record.

5.2.45 LARGE_END_DIA_CLASS

Large end diameter class code. (*core optional*) A code indicating the diameter class of the large end of a piece of coarse woody debris. This is an optional measurement and might not be populated on every record.

Codes: LARGE_END_DIA_CLASS

| Code | Description |
|-------------|----------------------|
| 1 | 3.0 to 4.9 inches. |
| 2 | 5.0 to 8.9 inches. |
| 3 | 9.0 to 14.9 inches. |
| 4 | 15.0 to 20.9 inches. |
| 5 | 21.0 to 39.9 inches. |
| 6 | 40.0+ inches. |

5.2.46 LENGTH_CD

Coarse woody debris length code. A code indicating the length class of the piece. Codes identify whether the piece is between 0.5 feet and less than 3.0 feet in length, or greater than or equal to 3.0 feet. This is used to correctly filter pieces when combining plots from different protocols. Older protocols only measured pieces ≥ 3.0 feet in length.

Codes: LENGTH_CD

| Code | Description |
|-------------|--|
| 1 | CWD piece length is ≥ 3.0 feet. |
| 2 | CWD piece length is >0.5 feet and <3.0 feet. |

5.2.47 VOLCF_AC_UNADJ

Gross cubic-foot volume per acre based on target plot transect length, unadjusted. This estimate is the gross cubic-foot volume per acre the individual piece represents. The estimate is based on the target transect length (COND_DWM_CALC.CWD_TL_UNADJ), which is the total length of transect that could potentially be installed on the plot, before adjustment for partially nonsampled plots in the stratum. This attribute is used to calculate population estimates and not to derive estimates for one condition or individual plot. It should be summed for a condition or plot, adjusted by the factor ADJ_FACTOR_CWD stored in the POP_STRATUM table, and then expanded by the acres in POP_STRATUM.EXPNS to produce population totals for gross cubic-foot volume of CWD logs in an area of interest (e.g., State).

5.2.48 VOLCF_AC_PLOT

Gross cubic-foot volume per acre based on plot transect length actually measured, unadjusted. This estimate is the gross cubic-foot volume per acre the individual piece represents on the plot. The estimate is based on the actual length of transect installed and sampled on the plot. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual plot locations, and is not adjusted or used to develop population estimates.

5.2.49 VOLCF_AC_COND

Gross cubic-foot volume per acre based on condition transect length actually measured, unadjusted. This estimate is the gross cubic-foot volume per acre the individual piece represents on one condition on the plot. The estimate is based on the actual length of transect installed and sampled on that condition. This attribute is useful

for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot, and is not adjusted or used to develop population estimates.

5.2.50 DRYBIO_AC_UNADJ

Dry biomass per acre based on target plot transect length, unadjusted. This estimate is the oven-dry weight of biomass, in pounds per acre, that the individual piece represents. The estimate is based on the target transect length (COND_DWM_CALC.CWD_TL_UNADJ), which is the total length of transect that could potentially be installed on the plot, before adjustment for partially nonsampled plots in the stratum. This attribute is used to calculate population estimates and not to derive estimates for one condition or individual plot. It should be summed for a condition or plot, adjusted by the factor ADJ_FACTOR_CWD stored in the POP_STRATUM table, and then expanded by the acres in POP_STRATUM.EXPNS to produce population totals for biomass of CWD logs in an area of interest (e.g., State).

5.2.51 DRYBIO_AC_PLOT

Dry biomass per acre based on plot transect length actually measured, unadjusted. This estimate is the oven-dry weight of biomass, in pounds per acre, that the individual piece represents on the plot. The estimate is based on the actual length of transect installed and sampled on the plot. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual plot locations, and is not adjusted or used to develop population estimates.

5.2.52 DRYBIO_AC_COND

Dry biomass per acre based on condition transect length actually measured, unadjusted. This estimate is the oven-dry weight of biomass, in pounds per acre, that the individual piece represents on one condition on the plot. The estimate is based on the actual length of transect installed and sampled on that condition. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot, and is not adjusted or used to develop population estimates.

5.2.53 CARBON_AC_UNADJ

Carbon per acre based on target plot transect length, unadjusted. This estimate is the weight of carbon, in pounds per acre, that the individual piece represents. The estimate is based on the target transect length (COND_DWM_CALC.CWD_TL_UNADJ), which is the total length of transect that could potentially be installed on the plot, before adjustment for partially nonsampled plots in the stratum. This attribute is used to calculate population estimates and not to derive estimates for one condition or individual plot. It should be summed for a condition or plot, adjusted by the factor ADJ_FACTOR_CWD stored in the POP_STRATUM table, and then expanded by the acres in POP_STRATUM.EXPNS to produce population totals for carbon of CWD logs in an area of interest (e.g., State).

5.2.54 CARBON_AC_PLOT

Carbon per acre based on plot transect length actually measured, unadjusted. This estimate is the weight of carbon, in pounds per acre, that the individual piece represents on the plot. The estimate is based on the actual length of transect installed and sampled on the plot. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual plot locations, and is not adjusted or used to develop population estimates.

5.2.55 CARBON_AC_COND

Carbon per acre based on condition transect length actually measured, unadjusted.

This estimate is the weight of carbon, in pounds per acre, that the individual piece represents on one condition on the plot. The estimate is based on the actual length of transect installed and sampled on that condition. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot, and is not adjusted or used to develop population estimates.

5.3 Down Woody Material Duff, Litter, Fuel Table

(Oracle table name: DWM_DUFF_LITTER_FUEL)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|----------------------------|-------------------------------------|------------------|
| 5.3.1 | CN | Sequence number | VARCHAR2(34) |
| 5.3.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 5.3.3 | INVYR | Inventory year | NUMBER(4) |
| 5.3.4 | STATECD | State code | NUMBER(4) |
| 5.3.5 | COUNTYCD | County code | NUMBER(3) |
| 5.3.6 | PLOT | Plot number | NUMBER(5) |
| 5.3.7 | TRANSECT | Transect | NUMBER(3) |
| 5.3.8 | SUBP | Subplot number | NUMBER(1) |
| 5.3.9 | SMPLOCCD | Sample location code | NUMBER(1) |
| 5.3.10 | MEASYEAR | Measurement year | NUMBER(4) |
| 5.3.11 | CONDID | Condition class number | NUMBER(1) |
| 5.3.12 | DUFFDEP | Duff depth | NUMBER |
| 5.3.13 | LITTDEP | Litter depth | NUMBER |
| 5.3.14 | FUELDEP | Fuelbed depth | NUMBER |
| 5.3.15 | CREATED_BY | Created by | VARCHAR2(30) |
| 5.3.16 | CREATED_DATE | Created date | DATE |
| 5.3.17 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 5.3.18 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 5.3.19 | MODIFIED_DATE | Modified date | DATE |
| 5.3.20 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 5.3.21 | DLF_SAMPLE_METHOD | Duff, litter, fuelbed sample method | VARCHAR2(6) |
| 5.3.22 | DUFF_METHOD | Duff measurement method | NUMBER(1) |
| 5.3.23 | DUFF_NONSAMPLE_REASN_CD | Duff nonsampled reason code | NUMBER(2) |
| 5.3.24 | LITTER_METHOD | Litter measurement method | NUMBER(1) |
| 5.3.25 | LITTER_NONSAMPLE_REASN_CD | Litter nonsampled reason code | NUMBER(2) |
| 5.3.26 | FUELBED_METHOD | Fuelbed measurement method | NUMBER(1) |
| 5.3.27 | FUELBED_NONSAMPLE_REASN_CD | Fuelbed nonsampled reason code | NUMBER(2) |
| 5.3.28 | DL_STATUS_CD | Duff and litter sample status code | NUMBER(1) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | CN | N/A | DDL_PK |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--|----------------|----------------------|
| Unique | PLT_CN, TRANSECT, SUBP, SMPLOCCD | N/A | DDL_UK |
| Natural | STATECD, INVYR, COUNTYCD, PLOT, TRANSECT, SUBP, SMPLOCCD | N/A | DDL_NAT_I |

5.3.1 CN

Sequence number. A unique sequence number used to identify a down woody material duff, litter, fuel record.

5.3.2 PLT_CN

Plot sequence number. Foreign key linking the down woody material duff, litter, fuel record to the plot record.

5.3.3 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

5.3.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

5.3.5 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 are used. Refer to [appendix B](#).

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

5.3.6 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combination of attributes, PLOT may be used to uniquely identify a plot.

5.3.7 TRANSECT

Transect. The azimuth, in degrees, of the transect on which duff, litter, and/or fuel were sampled, extending out from subplot center.

5.3.8 SUBP

Subplot number. A code indicating the number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4. Other plot designs have various subplot number values. See PLOT.[DESIGNCD](#) and [appendix G](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

5.3.9 SMPLOCCD

Sample location code. A code indicating the location along the transect where duff, litter, and fuelbed samples were taken. One transect is sampled on each subplot. Prior to 2002,

there were 2 sample locations on the transect (at 14 and 24 feet). Starting in 2002, there is only 1 sample location on the transect (at 24 feet).

Codes: SMPLOCCD

| Code | Description |
|------|---|
| 1 | Duff, litter, and fuelbed sampled at 14 feet. |
| 2 | Duff, litter, and fuelbed sampled at 24 feet. |

5.3.10 MEASYEAR

Measurement year. The year in which the plot was completed. MEASYEAR may differ from INVYR.

5.3.11 CON DID

Condition class number. The unique identifying number assigned to the condition where the duff/litter/fuel measurement(s) was taken. See COND.[CONDID](#) for details on the attributes which delineate a condition.

5.3.12 DUFFDEP

Duff depth. Depth of duff layer to the nearest 0.1 inch. The measurement is taken at an exact point on the transect (see [SMPLOCCD](#) for location; see [TRANSECT](#) for azimuth; see [DLF_SAMPLE_METHOD](#) to determine if the measurement was taken at slope or horizontal distance). Duff is the layer just below litter. It consists of decomposing leaves and other organic material. There are no recognizable plant parts; the duff layer is usually dark decomposed organic matter. When moss is present, the top of the duff layer is just below the green portion of the moss. The bottom of this layer is the point where mineral soil begins. To use these data, calculate an average depth for the condition.

5.3.13 LITTDEP

Litter depth. Depth of litter layer to the nearest 0.1 inch. The measurement is taken at an exact point on the transect (see [SMPLOCCD](#) for location; see [TRANSECT](#) for azimuth; see [DLF_SAMPLE_METHOD](#) to determine if the measurement was taken at slope or horizontal distance). Litter is the layer of freshly fallen leaves, needles, twigs (<0.25 inch in diameter), cones, detached bark chunks, dead moss, dead lichens, detached small chunks of rotted wood, dead herbaceous stems, and flower parts (detached and not upright). Litter is the loose plant material found on the top surface of the forest floor. Little decomposition has begun in this layer. To use these data, calculate an average depth for the condition.

5.3.14 FUELDEP

Fuelbed depth. Depth of the fuelbed to the nearest 0.1 foot. The measurement is taken at an exact point on the transect (see [SMPLOCCD](#) for location; see [TRANSECT](#) for azimuth; see [DLF_SAMPLE_METHOD](#) to determine if the measurement was taken at slope or horizontal distance). The fuelbed is the accumulated mass of dead, woody material on the surface of the forest floor. It begins at the top of the duff layer, and includes litter, FWD, CWD, and dead woody shrubs. In this definition, the fuelbed does not include dead hanging branches from standing trees. To use these data, calculate an average depth for the condition.

5.3.15 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

5.3.16 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

5.3.17 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

5.3.18 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

5.3.19 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

5.3.20 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

5.3.21 DLF_SAMPLE_METHOD

Duff, litter, fuelbed sample method. A code indicating the sampling protocol used to collect duff, litter, and fuelbed data.

Codes: DLF_SAMPLE_METHOD

| Code | Description | Distance measurement |
|------|---|----------------------|
| 0 | Duff, litter, fuelbed not sampled. | Not applicable. |
| 1 | National P3 protocol. Sampled at 2 points (14 and 24 feet) along each transect with average recorded. | Slope. |
| 2 | National P3 protocol. Sampled at a point located 24 feet along each transect. | Slope. |
| 3 | National P2 protocol (all options). Sampled at a point 24 feet along each transect. | Horizontal. |
| 4 | RMRS P2 protocol. One duff and litter point sampled at a point 24 feet along each transect on subplots 2, 3, and 4. | Horizontal. |
| 5 | SRS P2 protocol. Duff and litter points sampled at 2 points (0 and 48 feet) along a transect on subplot 1. | Horizontal. |

5.3.22 DUFF_METHOD

Duff measurement method. A code indicating the measurement of duff depth.

Codes: DUFF_METHOD

| Code | Description |
|------|---------------------------------------|
| NULL | Not included in protocol. |
| 0 | Included in protocol but not sampled. |
| 1 | Measured. |
| 2 | Estimated. |
| 3 | Measured up to maximum depth. |

5.3.23 DUFF_NONSAMPLE_REASN_CD

Duff nonsampled reason code. A code indicating the reason duff depth was not measured.

Codes: DUFF_NONSAMPLE_REASN_CD

| Code | Description |
|------|--|
| 04 | Time limitation. |
| 05 | Lost data. |
| 10 | Other - The point was not measured (for example, snow/water covering sample point, or some other obstruction prevented measurement). |

5.3.24 LITTER_METHOD

Litter measurement method. A code indicating the measurement of litter depth.

Codes: LITTER_METHOD

| Code | Description |
|------|---------------------------------------|
| NULL | Not included in protocol. |
| 0 | Included in protocol but not sampled. |
| 1 | Measured. |
| 2 | Estimated. |
| 3 | Measured up to maximum depth. |

5.3.25 LITTER_NONSAMPLE_REASN_CD

Litter nonsampled reason code. A code indicating the reason litter depth was not measured.

Codes: LITTER_NONSAMPLE_REASN_CD

| Code | Description |
|------|--|
| 04 | Time limitation. |
| 05 | Lost data. |
| 10 | Other - The point was not measured (for example, snow/water covering sample point, or some other obstruction prevented measurement). |

5.3.26 FUELBED_METHOD

Fuelbed measurement method. A code indicating the measurement of fuelbed depth.

Codes: FUELBED_METHOD

| Code | Description |
|------|---------------------------------------|
| NULL | Not included in protocol. |
| 0 | Included in protocol but not sampled. |
| 1 | Measured. |
| 2 | Estimated. |
| 3 | Measured up to maximum depth. |

5.3.27 FUELBED_NONSAMPLE_REASN_CD

Fuelbed nonsampled reason code. A code indicating the reason fuelbed depth was not measured.

FUELBED_NONSAMPLE_REASN_CD

| Code | Description |
|------|--|
| 04 | Time limitation. |
| 05 | Lost data. |
| 10 | Other - The point was not measured (for example, snow/water covering sample point, or some other obstruction prevented measurement). |

5.3.28 DL_STATUS_CD

Duff and litter sample status code. A code indicating the sample status for duff and litter depth on the transect. If the measurement point is on a sampled condition, but the duff/litter depth is not measurable (e.g., due to snow), a value of 0 is recorded for this attribute. If the measurement point is on a sampled condition, but the DUFFDEP and LITTDEP = 0, a value of 1 is recorded for this attribute.

Note: This attribute is set to a value of 1 for noncensus water conditions (COND.COND_STATUS_CD = 3) and nonsampled nonforest conditions (COND.NF_COND_STATUS_CD = 5).

Codes: DL_STATUS_CD

| Code | Description |
|------|------------------------------------|
| 0 | Duff and litter point not sampled. |
| 1 | Duff and litter point sampled. |

5.4 Down Woody Material Fine Woody Debris Table

(Oracle table name: DWM_FINE_WOODY_DEBRIS)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 5.4.1 | CN | Sequence number | VARCHAR2(34) |
| 5.4.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 5.4.3 | INVYR | Inventory year | NUMBER(4) |
| 5.4.4 | STATECD | State code | NUMBER(4) |
| 5.4.5 | COUNTYCD | County code | NUMBER(3) |
| 5.4.6 | PLOT | Plot number | NUMBER(5) |
| 5.4.7 | TRANSECT | Transect | NUMBER(3) |
| 5.4.8 | SUBP | Subplot number | NUMBER(1) |
| 5.4.9 | CONDID | Condition class number | NUMBER(1) |
| 5.4.10 | MEASYEAR | Measurement year | NUMBER(4) |
| 5.4.11 | SMALLCT | Small-size class count | NUMBER(3) |
| 5.4.12 | MEDIUMCT | Medium-size class count | NUMBER(3) |
| 5.4.13 | LARGECT | Large-size class count | NUMBER(3) |
| 5.4.14 | RSNCTCD | Reason count code | NUMBER(1) |
| 5.4.15 | PILESCD | Piles code | NUMBER(1) |
| 5.4.16 | SMALL_TL_COND | Small-size class transect length in condition | NUMBER |
| 5.4.17 | SMALL_TL_PLOT | Small-size class transect length on plot | NUMBER |
| 5.4.18 | SMALL_TL_UNADJ | Small-size class transect length on plot, unadjusted | NUMBER |
| 5.4.19 | MEDIUM_TL_COND | Medium-size class transect length in condition | NUMBER |
| 5.4.20 | MEDIUM_TL_PLOT | Medium-size class transect length on plot | NUMBER |
| 5.4.21 | MEDIUM_TL_UNADJ | Medium-size class transect length on plot, unadjusted | NUMBER |
| 5.4.22 | LARGE_TL_COND | Large-size class transect length in condition | NUMBER |
| 5.4.23 | LARGE_TL_PLOT | Large-size class transect length on plot | NUMBER |
| 5.4.24 | LARGE_TL_UNADJ | Large-size class transect length on plot, unadjusted | NUMBER |
| 5.4.25 | CREATED_BY | Created by | VARCHAR2(30) |
| 5.4.26 | CREATED_DATE | Created date | DATE |
| 5.4.27 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 5.4.28 | MODIFIED_BY | Modified by | VARCHAR2(30) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 5.4.29 | MODIFIED_DATE | Modified date | DATE |
| 5.4.30 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 5.4.31 | FWD_STATUS_CD | Fine woody debris sample status | NUMBER(1) |
| 5.4.32 | FWD_NONSAMPLE_REASN_CD | Fine woody debris nonsampled reason code | NUMBER(2) |
| 5.4.33 | FWD_SAMPLE_METHOD | Fine woody debris sample method | VARCHAR2(6) |
| 5.4.34 | SLOPE | Transect percent slope | NUMBER(3) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--|----------------|----------------------|
| Primary | CN | N/A | DFW_PK |
| Unique | PLT_CN, TRANSECT, SUBP, CONDID | N/A | DFW_UK |
| Natural | STATECD, INVYR, COUNTYCD, PLOT, TRANSECT, SUBP, CONDID | N/A | DFW_NAT_I |

5.4.1 CN

Sequence number. A unique sequence number used to identify a down woody material fine woody debris (FWD) record.

5.4.2 PLT_CN

Plot sequence number. Foreign key linking the down woody material fine woody debris record to the plot record.

5.4.3 INVYR

Inventory year. See SURVEY.INVYR description for definition.

5.4.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

5.4.5 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 are used. Refer to [appendix B](#).

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

5.4.6 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combination of attributes, PLOT may be used to uniquely identify a plot.

5.4.7 TRANSECT

Transect. The azimuth, in degrees, of the transect on which fine woody debris was sampled, extending out from subplot center.

5.4.8 SUBP

Subplot number. A code indicating the number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4. Other plot designs have various subplot number values. See PLOT.DESIGNCD and [appendix G](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

5.4.9 CONDID

Condition class number. The unique identifying number assigned to the condition where the fine woody debris (FWD) was sampled. See COND.[CONDID](#) for details on the attributes which delineate a condition.

5.4.10 MEASYEAR

Measurement year. The year in which the plot was completed. MEASYEAR may differ from INVYR.

5.4.11 SMALLCT

Small-size class count. The number of pieces of 1-hr fuels counted in the small-size class (0.01- to 0.24-inch diameter) in one condition along the transect segment on the plot specified in the sample design to measure small-size class FWD. Individual pieces are tallied up to 50, then ocularly estimated over a tally of 50.

5.4.12 MEDIUMCT

Medium-size class count. The number of pieces of 10-hr fuels counted in the medium-size class (0.25- to 0.9-inch diameter) in one condition along the transect segment on the plot specified in the sample design to measure medium-size class FWD. Individual pieces are tallied up to 50, then ocularly estimated over a tally of 50.

5.4.13 LARGECT

Large-size class count. The number of pieces of 100-hr fuels counted in the large-size class (1.0- to 2.9-inch diameter) in one condition along the transect segment on the plot specified in the sample design to measure large-size class FWD. Individual pieces are tallied up to 20, then ocularly estimated over a tally of 20.

5.4.14 RSNCTCD

Reason count code. A code indicating the reason that SMALLCT, MEDIUMCT, or LARGECT has more than 100 pieces tallied.

Codes: RSNCTCD

| Code | Description |
|------|--|
| 0 | FWD is not unusually high (<100). |
| 1 | High count is due to an overall high density of FWD across the transect. |
| 2 | Wood rat's nest located on transect. |
| 3 | Tree or shrub laying across transect. |
| 4 | Other reason. |

5.4.15 PILESCD

Piles code. A code indicating whether a residue pile intersects the FWD transect segment. If the code is 1 (Yes), then FWD is not sampled.

Codes: PILESCD

| Code | Description |
|------|--|
| 0 | No pile is present on the transect. FWD was sampled. |
| 1 | Yes, a pile is present on the transect. FWD was not sampled. |

5.4.16 SMALL_TL_COND

Small-size class transect length in condition. Sum of the transect segment lengths, in feet, that were installed to measure small-sized FWD in one condition on the plot.

5.4.17 SMALL_TL_PLOT

Small-size class transect length on plot. Sum of the transect segment lengths, in feet, that were installed to measure small-sized FWD on the plot. This total length includes all sampled conditions, excluding hazardous or access denied conditions.

5.4.18 SMALL_TL_UNADJ

Small-size class transect length on plot, unadjusted. Sum of all transect segment lengths, in feet, on the plot that were specified in the sample design to measure small-sized FWD. Includes transects in all conditions, sampled and nonsampled. This value must be adjusted using POP_STRATUM.ADJ_FACTOR_FWD_SM to derive population estimates.

5.4.19 MEDIUM_TL_COND

Medium-size class transect length in condition. Sum of transect segment lengths, in feet, that were installed to measure medium-sized FWD in one condition on the plot.

5.4.20 MEDIUM_TL_PLOT

Medium-size class transect length on plot. Sum of transect segment lengths, in feet, that were installed to measure medium-sized FWD on the plot. This total length includes segments in all sampled conditions, excluding hazardous or access denied conditions.

5.4.21 MEDIUM_TL_UNADJ

Medium-size class transect length on plot, unadjusted. Sum of all transect segment lengths, in feet, on the plot that were specified in the sample design to measure medium-sized FWD. Includes transects in all conditions, sampled and nonsampled. This value must be adjusted using POP_STRATUM.ADJ_FACTOR_FWD_SM to derive population estimates.

5.4.22 LARGE_TL_COND

Large-size class transect length in condition. Sum of transect segment lengths, in feet, that were installed to measure large-sized FWD in one condition on the plot.

5.4.23 LARGE_TL_PLOT

Large-size class transect length on plot. Sum of transect segment lengths, in feet, that were installed to measure large-sized FWD on the entire plot. This total length includes segments in all sampled conditions, excluding hazardous or access denied conditions.

5.4.24 LARGE_TL_UNADJ

Large-size class transect length on plot, unadjusted. Sum of all transect segment lengths, in feet, that were installed to measure large-sized FWD on the entire plot. Includes transects in all conditions, sampled and nonsampled. This value must be adjusted using POP_STRATUM.ADJ_FACTOR_FWD_LG to derive population estimates.

5.4.25 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

5.4.26 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

5.4.27 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

5.4.28 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

5.4.29 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

5.4.30 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

5.4.31 FWD_STATUS_CD

Fine woody debris sample status. A code indicating the sampling status of the fine woody debris transect segment.

Codes: FWD_STATUS_CD

| Code | Description |
|------|-----------------------------------|
| 0 | FWD transect segment not sampled. |
| 1 | FWD transect segment sampled. |

5.4.32 FWD_NONSAMPLE_REASN_CD

Fine woody debris nonsampled reason code. A code indicating the reason fine woody debris was not measured.

Codes: FWD_NONSAMPLE_REASN_CD

| Code | Description |
|------|--|
| 04 | Time limitation. |
| 05 | Lost data. |
| 10 | Other - The point was not measured (for example, snow/water covering transect segment, or some other obstruction prevented measurement). |

5.4.33 FWD_SAMPLE_METHOD

Fine woody debris sample method. A code indicating the sampling protocol used to collect fine woody debris data.

Codes: FWD_SAMPLE_METHOD

| Code | Description | Transect distance measurement |
|-------------|--|--------------------------------------|
| 0 | FWD not sampled. | Not applicable. |
| 1 | National P2 and P3 protocol. One 10-foot transect for small and medium FWD and one 20-foot transect for large FWD per subplot. | Slope. |
| 2 | National P2 and P3 protocol. One 6-foot transect for small and medium FWD and one 10-foot transect for large FWD per subplot. | Slope. |
| 3 | National P2 protocol (all options). One 6-foot transect for small and medium FWD and one 10-foot transect for large FWD per subplot. | Horizontal. |
| 4 | SRS P2 protocol. One 6-foot transect for small and medium FWD, and one 10-foot transect for large FWD on subplot 1. | Slope. |
| 5 | RMRS P2 protocol. One 6-foot transect for small and medium FWD and one 10-foot transect for large FWD on each of subplots 2, 3, and 4. | Slope. |

5.4.34 SLOPE

Transect percent slope. The average percent slope of the transect within the condition class being sampled. Slope ranges from 0 to 155 percent.

5.5 Down Woody Material Microplot Fuel Table

(Oracle table name: DWM_MICROPLOT_FUEL)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-------------------------|------------------|
| 5.5.1 | CN | Sequence number | VARCHAR2(34) |
| 5.5.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 5.5.3 | INVYR | Inventory year | NUMBER(4) |
| 5.5.4 | STATECD | State code | NUMBER(4) |
| 5.5.5 | COUNTYCD | County code | NUMBER(3) |
| 5.5.6 | PLOT | Plot number | NUMBER(5) |
| 5.5.7 | SUBP | Subplot number | NUMBER(1) |
| 5.5.8 | MEASYEAR | Measurement year | NUMBER(4) |
| 5.5.9 | LVSHRBCD | Live shrub code | NUMBER(2) |
| 5.5.10 | DSHRBCD | Dead shrub code | NUMBER(2) |
| 5.5.11 | LVHRBCD | Live herb code | NUMBER(2) |
| 5.5.12 | DHRBCD | Dead herb code | NUMBER(2) |
| 5.5.13 | LITTERCD | Litter code | NUMBER |
| 5.5.14 | LVSHRBHT | Live shrub height | NUMBER |
| 5.5.15 | DSHRBHT | Dead shrub height | NUMBER |
| 5.5.16 | LVHRBHT | Live herb height | NUMBER |
| 5.5.17 | DHRBHT | Dead herb height | NUMBER |
| 5.5.18 | CREATED_BY | Created by | VARCHAR2(30) |
| 5.5.19 | CREATED_DATE | Created date | DATE |
| 5.5.20 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 5.5.21 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 5.5.22 | MODIFIED_DATE | Modified date | DATE |
| 5.5.23 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 5.5.24 | MICR_SAMPLE_METHOD | Microplot sample method | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--------------------------------------|----------------|----------------------|
| Primary | CN | N/A | DMF_PK |
| Unique | PLT_CN, SUBP | N/A | DMF_UK |
| Natural | STATECD, INVYR, COUNTYCD, PLOT, SUBP | N/A | DMF_NAT_I |

5.5.1 CN

Sequence number. A unique sequence number used to identify a down woody material microplot fuel record.

5.5.2 PLT_CN

Plot sequence number. Foreign key linking the down woody material micropot fuel record to the plot record.

5.5.3 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

5.5.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

5.5.5 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 are used. Refer to [appendix B](#).

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

5.5.6 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combination of attributes, PLOT may be used to uniquely identify a plot.

5.5.7 SUBP

Subplot number. A code indicating the number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4. Other plot designs have various subplot number values. See PLOT.[DESIGNCD](#) and [appendix G](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

5.5.8 MEASYEAR

Measurement year. The year in which the plot was completed. MEASYEAR may differ from INVYR.

5.5.9 LVSHRBCD

Live shrub code. A cover class code indicating the percent cover of the forested micropot area covered with live shrubs.

Codes: LVSHRBCD

| Code | Description |
|------|-------------------|
| 00 | Absent |
| 01 | Trace (<1% cover) |
| 10 | 1-10% |
| 20 | 11-20% |
| 30 | 21-30% |
| 40 | 31-40% |
| 50 | 41-50% |

| Code | Description |
|-------------|--------------------|
| 60 | 51-60% |
| 70 | 61-70% |
| 80 | 71-80% |
| 90 | 81-90% |
| 99 | 91-100% |

5.5.10 DSHRBCD

Dead shrub code. A cover class code indicating the percent cover of the forested microplot area covered with dead shrubs and dead branches attached to live shrubs if visible from above.

Codes: DSHRBCD

| Code | Description |
|-------------|--------------------|
| 00 | Absent |
| 01 | Trace (<1% cover) |
| 10 | 1-10% |
| 20 | 11-20% |
| 30 | 21-30% |
| 40 | 31-40% |
| 50 | 41-50% |
| 60 | 51-60% |
| 70 | 61-70% |
| 80 | 71-80% |
| 90 | 81-90% |
| 99 | 91-100% |

5.5.11 LVHRBCD

Live herb code. A cover class code indicating the percent cover of the forested microplot area covered with live herbaceous plants.

Codes: LVHRBCD

| Code | Description |
|-------------|--------------------|
| 00 | Absent |
| 01 | Trace (<1% cover) |
| 10 | 1-10% |
| 20 | 11-20% |
| 30 | 21-30% |
| 40 | 31-40% |
| 50 | 41-50% |
| 60 | 51-60% |
| 70 | 61-70% |

| Code | Description |
|------|-------------|
| 80 | 71-80% |
| 90 | 81-90% |
| 99 | 91-100% |

5.5.12 DHRBCD

Dead herb code. A cover class code indicating the percent cover of the forested micropot area covered with dead herbaceous plants and dead leaves attached to live plants if visible from above.

Codes: DHRBCD

| Code | Description |
|------|-------------------|
| 00 | Absent |
| 01 | Trace (<1% cover) |
| 10 | 1-10% |
| 20 | 11-20% |
| 30 | 21-30% |
| 40 | 31-40% |
| 50 | 41-50% |
| 60 | 51-60% |
| 70 | 61-70% |
| 80 | 71-80% |
| 90 | 81-90% |
| 99 | 91-100% |

5.5.13 LITTERCD

Litter code. A cover class code indicating the percent cover of the forested micropot area covered with litter. Litter is the layer of freshly fallen leaves, twigs, dead moss, dead lichens, and other fine particles of organic matter found on the surface of the forest floor. Decomposition is minimal.

Codes: LITTERCD

| Code | Description |
|------|-------------------|
| 00 | Absent |
| 01 | Trace (<1% cover) |
| 10 | 1-10% |
| 20 | 11-20% |
| 30 | 21-30% |
| 40 | 31-40% |
| 50 | 41-50% |
| 60 | 51-60% |
| 70 | 61-70% |

| Code | Description |
|------|-------------|
| 80 | 71-80% |
| 90 | 81-90% |
| 99 | 91-100% |

5.5.14 LVSHRBHT

Live shrub height. Indicates the height of the tallest live shrub to the nearest 0.1 foot. Heights <6 feet are measured and heights \geq 6 feet are estimated.

5.5.15 DSHRBHT

Dead shrub height. Indicates the height of the tallest dead shrub to the nearest 0.1 foot. Heights <6 feet are measured and heights \geq 6 feet are estimated.

5.5.16 LVHRBHT

Live herb height. Indicates the height (at the tallest point) of the live herbaceous layer to the nearest 0.1 foot. Maximum height is 6 feet.

5.5.17 DHRBHT

Dead herb height. Indicates the height (at the tallest point) of the dead herbaceous layer to the nearest 0.1 foot. Maximum height is 6 feet.

5.5.18 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

5.5.19 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

5.5.20 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

5.5.21 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

5.5.22 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

5.5.23 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

5.5.24 MICR_SAMPLE_METHOD

Microplot sample method. A code indicating the sampling protocol used to collect microplot fuels data.

Note: Starting with PLOT.MANUAL = 5.1, DWM sampling on microplots was discontinued.

Codes: MICR_SAMPLE_METHOD

| Code | Description | Distance measurement |
|-------------|---|-----------------------------|
| 0 | Microplot fuel not sampled. | Not applicable. |
| 1 | National P2 and P3 protocol. Percent cover in 10% classes of fuels on all forested conditions combined on the microplot. Fuel classes were: live shrubs, dead shrubs, live herbs, dead herbs, litter. | Horizontal. |
| 2 | RMRS P2 protocol. No microplot fuels sampled. | Not applicable. |
| 3 | SRS P2 protocol. Percent cover in 10% classes and height of fuels on 6-foot transect on subplot 1. Fuel classes were shrubs and herbs, live and dead combined. | Slope. |

5.6 Down Woody Material Residual Pile Table

(Oracle table name: DWM_RESIDUALPILE)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 5.6.1 | CN | Sequence number | VARCHAR2(34) |
| 5.6.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 5.6.3 | INVYR | Inventory year | NUMBER(4) |
| 5.6.4 | STATECD | State code | NUMBER(4) |
| 5.6.5 | COUNTYCD | County code | NUMBER(3) |
| 5.6.6 | PLOT | Plot number | NUMBER(5) |
| 5.6.7 | SUBP | Subplot number | NUMBER(1) |
| 5.6.8 | PILE | Pile number | NUMBER |
| 5.6.9 | MEASYEAR | Measurement year | NUMBER(4) |
| 5.6.10 | CONDID | Condition class number | NUMBER(1) |
| 5.6.11 | SHAPECD | Shape code | NUMBER(1) |
| 5.6.12 | AZIMUTH | Azimuth | NUMBER(3) |
| 5.6.13 | DENSITY | Density | NUMBER(2) |
| 5.6.14 | HEIGHT1 | Height first measurement | NUMBER(2) |
| 5.6.15 | WIDTH1 | Width first measurement | NUMBER(2) |
| 5.6.16 | LENGTH1 | Length first measurement | NUMBER(2) |
| 5.6.17 | HEIGHT2 | Height second measurement | NUMBER(2) |
| 5.6.18 | WIDTH2 | Width second measurement | NUMBER(2) |
| 5.6.19 | LENGTH2 | Length second measurement | NUMBER(2) |
| 5.6.20 | VOLCF | Gross cubic-foot volume of the residual pile | NUMBER |
| 5.6.21 | DRYBIO | Dry biomass of the residual pile | NUMBER |
| 5.6.22 | CARBON | Carbon weight of the residual pile | NUMBER |
| 5.6.23 | PPA_UNADJ | Piles per acre, unadjusted, for population estimates | NUMBER |
| 5.6.24 | PPA_PLOT | Piles per acre, unadjusted, for plot estimates | NUMBER |
| 5.6.25 | PPA_COND | Piles per acre, unadjusted, for condition estimates | NUMBER |
| 5.6.26 | CREATED_BY | Created by | VARCHAR2(30) |
| 5.6.27 | CREATED_DATE | Created date | DATE |
| 5.6.28 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 5.6.29 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 5.6.30 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 5.6.31 | MODIFIED_DATE | Modified date | DATE |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 5.6.32 | COMPHT | Compacted height of the residual pile | NUMBER(2) |
| 5.6.33 | DECAYCD | Decay class code of the residual pile | NUMBER(1) |
| 5.6.34 | HORIZ_BEGNDIST | Beginning horizontal distance of the residual pile | NUMBER(3,1) |
| 5.6.35 | HORIZ_ENDDIST | Ending horizontal distance of the residual pile | NUMBER(3,1) |
| 5.6.36 | PILE_SAMPLE_METHOD | Pile sample method | VARCHAR2(6) |
| 5.6.37 | SPCD | Species code for the residual pile | NUMBER(4) |
| 5.6.38 | TRANSECT | Transect | NUMBER(3) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--|----------------|----------------------|
| Primary | CN | N/A | DRP_PK |
| Unique | PLT_CN, SUBP, TRANSECT, PILE | N/A | DRP_UK |
| Natural | STATECD, INVYR, COUNTYCD, PLOT, SUBP, PILE | N/A | DRP_NAT_I |

5.6.1 CN

Sequence number. A unique sequence number used to identify a down woody material residual pile record.

5.6.2 PLT_CN

Plot sequence number. Foreign key linking the down woody material residual pile record to the plot record.

5.6.3 INVYR

Inventory year. See SURVEY.INVYR description for definition.

5.6.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

5.6.5 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 are used. Refer to [appendix B](#).

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

5.6.6 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combination of attributes, PLOT may be used to uniquely identify a plot.

5.6.7 SUBP

Subplot number. A code indicating the number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4. Other plot designs have various subplot number values. See PLOT.DESIGNCD and [appendix G](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

5.6.8 PILE

Pile number. A number that uniquely identifies each pile tallied on a subplot.

5.6.9 MEASYEAR

Measurement year. The year in which the plot was completed. MEASYEAR may differ from INVYR.

5.6.10 CONDID

Condition class number. The unique identifying number assigned to the condition where the pile center is located. See COND.[CONDID](#) for details on the attributes that delineate a condition.

5.6.11 SHAPECD

Shape code. A code indicating the shape of the pile. The type of shape is used to select an equation to estimate pile cubic volume. See figure 5-1 below.

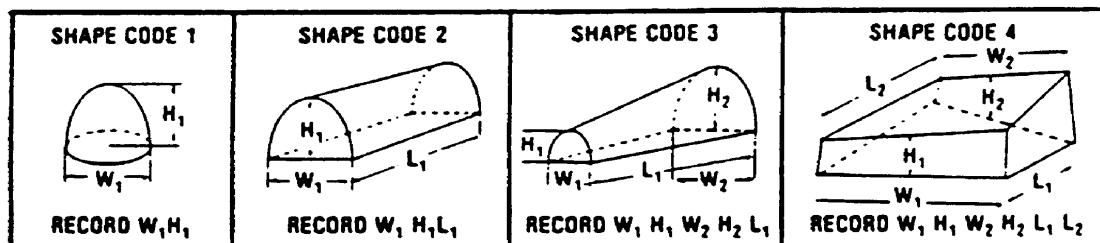


Figure 5-1: PILE SHAPE codes (Hardy 1996). Figure 14-12 from the [Forest Inventory and Analysis National Core Field Guide](#) (Phase 3, version 3.0).

Codes: SHAPECD

| Code | Description |
|------|-----------------------|
| 1 | Paraboloids. |
| 2 | Half-cylinder. |
| 3 | Half-frustum of cone. |
| 4 | Irregular solid. |

5.6.12 AZIMUTH

Azimuth. The azimuth, to the nearest degree, from the subplot center to the pile. This azimuth centers on the pile so that it can be relocated. Due north is recorded as 360 degrees.

5.6.13 DENSITY

Density. A code indicating the percent of the pile that consists of woody material ≥ 3 inches. Air, soil, rock, and live plants are not included in the estimate. Estimated to the nearest 10 percent.

Codes: DENSITY

| Code | Description |
|------|-------------------|
| 00 | Absent |
| 01 | Trace (<1% cover) |
| 10 | 1-10% |
| 20 | 11-20% |
| 30 | 21-30% |
| 40 | 31-40% |
| 50 | 41-50% |
| 60 | 51-60% |
| 70 | 61-70% |
| 80 | 71-80% |
| 90 | 81-90% |
| 99 | 91-100% |

5.6.14 HEIGHT1

Height first measurement. The estimated height, in feet, of either end of the pile. Pile HEIGHT1 may equal pile HEIGHT2. See figure 5-1 under [SHAPECD](#).

5.6.15 WIDTH1

Width first measurement. The estimated width, in feet, of the side of HEIGHT1. Pile WIDTH1 may equal pile WIDTH2. See figure 5-1 under [SHAPECD](#).

5.6.16 LENGTH1

Length first measurement. The estimated length, in feet, of either side of the pile. Pile LENGTH1 may equal pile LENGTH2. See figure 5-1 under [SHAPECD](#).

5.6.17 HEIGHT2

Height second measurement. The estimated height, in feet, of either end of the pile. Pile HEIGHT1 may equal pile HEIGHT2. See figure 5-1 under [SHAPECD](#).

5.6.18 WIDTH2

Width second measurement. The estimated width, in feet, of the side of HEIGHT2. Pile WIDTH1 may equal pile WIDTH2. See figure 5-1 under [SHAPECD](#).

5.6.19 LENGTH2

Length second measurement. The length, in feet, of either side of the pile. Pile LENGTH1 may equal pile LENGTH2. See figure 5-1 under [SHAPECD](#).

5.6.20 VOLCF

Gross cubic-foot volume of the residual pile. The gross volume, in cubic feet, of the pile, calculated with equations based on shape code and pile dimensions. This is an individual pile value and must be multiplied by one of the piles per acre (PPA) columns to obtain per acre information.

5.6.21 DRYBIO

Dry biomass of the residual pile. The oven-dry weight, in pounds, estimated for the pile. This is an individual pile value and must be multiplied by one of the piles per acre (PPA) columns to obtain per acre information.

5.6.22 CARBON

Carbon weight of the residual pile. The weight of carbon, in pounds, estimated for the pile. This is an individual pile value and must be multiplied by one of the piles per acre (PPA) columns to obtain per acre information.

5.6.23 PPA_UNADJ

Piles per acre, unadjusted, for population estimates. The number of piles per acre that the pile represents before adjustment for partially nonsampled plots in the stratum. The estimate must be adjusted using factors stored on the POP_STRATUM table to derive population estimates.

Note: A per acre estimate of the pile is calculated by multiplying PPA_UNADJ and any pile attribute of interest (e.g., DRYBIO).

5.6.24 PPA_PLOT

Piles per acre, unadjusted, for plot estimates. The number of piles per acre that the pile represents on the individual plot. This estimate is based on the condition area actually sampled on the plot; therefore, it excludes access denied or hazardous conditions. It is used to expand pile attributes for plot-level analyses, where it is important to have an estimate for an individual plot location. This PPA is never adjusted and is not used to derive population estimates.

5.6.25 PPA_COND

Piles per acre, unadjusted, for condition estimates. The number of piles per acre that the pile represents on one condition on the plot. This estimate is based on the condition area actually sampled on the plot, therefore excludes access denied or hazardous conditions. It is used to expand pile attributes for condition-level analyses, where it is important to have an estimate for an individual condition. This PPA is never adjusted and is not used to derive population estimates.

5.6.26 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

5.6.27 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

5.6.28 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

5.6.29 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

5.6.30 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

5.6.31 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

5.6.32 COMPHT

Compacted height of the residual pile. The average height of a pile of woody debris in feet, visually compacted to exclude air, debris, and pieces less than 3 inches at the point of intersection with the transect. Populated for all options of the National P2 DWM protocol.

5.6.33 DECAYCD

Decay class code of the residual pile. A code indicating the predominant decay class of the pile. Populated for all options of the National P2 DWM protocol.

Codes: DECAYCD

| Decay class | Structural integrity | Texture of rotten portions | Color of wood | Invading roots | Branches and twigs |
|-------------|---|---|----------------------------------|----------------|---|
| 1 | Sound, freshly fallen, intact logs. | Intact, no rot; conks of stem decay absent. | Original color. | Absent. | If branches are present, fine twigs are still attached and have tight bark. |
| 2 | Sound. | Mostly intact; sapwood partly soft (starting to decay) but can't be pulled apart by hand. | Original color. | Absent. | If branches are present, many fine twigs are gone and remaining fine twigs have peeling bark. |
| 3 | Heartwood sound; piece supports its own weight. | Hard, large pieces; sapwood can be pulled apart by hand or sapwood absent. | Reddish-brown or original color. | Sapwood only. | Branch stubs will not pull out. |
| 4 | Heartwood rotten; piece does not support its own weight, but maintains its shape. | Soft, small blocky pieces; a metal pin can be pushed into heartwood. | Reddish or light brown. | Throughout. | Branch stubs pull out. |
| 5 | None; piece no longer maintains its shape, it spreads out on ground. | Soft; powdery when dry. | Red-brown to dark brown. | Throughout. | Branch stubs and pitch pockets have usually rotted down. |

5.6.34 HORIZ_BEGNDIST

Beginning horizontal distance of the residual pile. The horizontal length of the transect in feet from subplot center to the beginning of the pile where pieces cannot be tallied individually. Populated for all options of the National P2 DWM protocol.

5.6.35 HORIZ_ENDDIST

Ending horizontal distance of the residual pile. The horizontal length of the transect in feet from subplot center to the end of the pile where pieces can be tallied individually again.

5.6.36 PILE_SAMPLE_METHOD

Pile sample method. A code indicating the sampling protocol used to collect residue pile data.

Codes: PILE_SAMPLE_METHOD

| Code | Description | Distance measurement |
|------|---|----------------------|
| 0 | Piles not sampled. | Not applicable. |
| 1 | PNWRS P2 protocol. Pile measured if center located within the 58.9-foot macroplot radius. | Horizontal. |
| 2 | National P3 protocol. Pile measured if center located within the 24-foot subplot radius. | Horizontal. |
| 3 | National P2 protocol (all options). Pile measured if it intersects the transect (see DWM_VISIT.DWM_TRANSECT_LENGTH for length of transect). | Horizontal. |

5.6.37 SPCD

Species code for the residual pile. A code indicating the predominant species, or species group, of pieces in the pile. If it was not possible to determine the species, or if there was a mixture of species, the genus or hardwood/softwood was recorded.

5.6.38 TRANSECT

Transect. The azimuth, in degrees, of the transect on which the pile was sampled, extending out from subplot center.

5.7 Down Woody Material Transect Segment Table

(Oracle table name: DWM_TRANSECT_SEGMENT)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-----------------------------|---|------------------|
| 5.7.1 | CN | Sequence number | VARCHAR2(34) |
| 5.7.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 5.7.3 | INVYR | Inventory year | NUMBER(4) |
| 5.7.4 | STATECD | State code | NUMBER(4) |
| 5.7.5 | COUNTYCD | County code | NUMBER(3) |
| 5.7.6 | PLOT | Plot number | NUMBER(5) |
| 5.7.7 | SUBP | Subplot number | NUMBER(1) |
| 5.7.8 | TRANSECT | Transect | NUMBER(3) |
| 5.7.9 | SEGMENT | Segment number | NUMBER(1) |
| 5.7.10 | MEASYEAR | Measurement year | NUMBER(4) |
| 5.7.11 | CONDID | Condition class number | NUMBER(1) |
| 5.7.12 | SLOPE_BEGNDIST | Beginning slope distance of the transect segment | NUMBER |
| 5.7.13 | SLOPE_ENDDIST | Ending slope distance of the transect segment | NUMBER |
| 5.7.14 | SLOPE | Transect percent slope | NUMBER(3) |
| 5.7.15 | HORIZ_LENGTH | Horizontal length of the transect segment | NUMBER |
| 5.7.16 | HORIZ_BEGNDIST | Beginning horizontal distance of the transect segment | NUMBER |
| 5.7.17 | HORIZ_ENDDIST | Ending horizontal distance of the transect segment | NUMBER |
| 5.7.18 | CREATED_BY | Created by | VARCHAR2(30) |
| 5.7.19 | CREATED_DATE | Created date | DATE |
| 5.7.20 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 5.7.21 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 5.7.22 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 5.7.23 | MODIFIED_DATE | Modified date | DATE |
| 5.7.24 | SEGMENT_STATUS_CD | Segment sample status code | NUMBER(1) |
| 5.7.25 | SEGMENT_NONSAMPLE_REASON_CD | Segment nonsampled reason code | NUMBER(2) |
| 5.7.26 | TRANSECT_LENGTH | Transect length | NUMBER(4,1) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|---|----------------|----------------------|
| Primary | CN | N/A | DTS_PK |
| Unique | PLT_CN, SUBP, TRANSECT, SEGMENT | N/A | DTS_UK |
| Natural | STATECD, INVYR, COUNTYCD, PLOT, SUBP, TRANSECT, SEGMENT | N/A | DTS_NAT_I |

5.7.1 CN

Sequence number. A unique sequence number used to identify a down woody material transect segment record.

5.7.2 PLT_CN

Plot sequence number. Foreign key linking the down woody material transect segment record to the plot record.

5.7.3 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

5.7.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

5.7.5 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 are used. Refer to [appendix B](#).

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

5.7.6 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combination of attributes, PLOT may be used to uniquely identify a plot.

5.7.7 SUBP

Subplot number. A code indicating the number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4. Other plot designs have various subplot number values. See PLOT.[DESIGNCD](#) and [appendix G](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

5.7.8 TRANSECT

Transect. The azimuth, in degrees, of the transect, extending out from subplot center.

5.7.9 SEGMENT

Segment number. A number identifying a segment on the transect within one condition, recorded sequentially from subplot center out to the end of the transect. Each condition is given a segment number as it is encountered and mapped along the transect. A segment is a continuous length of line within one condition. Segment number 8 is an office generated segment, indicating field crews did not actually measure or install the segment. Most often, this is for entire subplots that are nonsampled nonforest land.

5.7.10 MEASYEAR

Measurement year. The year in which the plot was completed. MEASYEAR may differ from INVYR.

5.7.11 CONDID

Condition class number. The unique identifying number assigned to the condition where the transect segment is located. See COND.[CONDID](#) for details on the attributes which delineate a condition.

5.7.12 SLOPE_BEGNDIST

Beginning slope distance of the transect segment. The location on the transect where the segment begins, in slope distance in feet. A segment is a continuous length of line within one condition. The beginning distance is the point on the transect line where the condition class changes and a new segment begins. If the beginning distance is zero, this is the start of the transect at subplot center. Each segment has a beginning and ending distance recorded as slope distance in the field, measured from the subplot center.

5.7.13 SLOPE_ENDDIST

Ending slope distance of the transect segment. The location on the transect where the segment ends, in slope distance in feet. A segment is a continuous length of line within one condition. The ending distance is the point on the transect line where the condition class of the current segment changes, or the point where the transect ends on the subplot. Each segment has a beginning and ending distance recorded as slope distance in the field, measured from the subplot center.

5.7.14 SLOPE

Transect percent slope. The average percent slope of the transect within the condition class being sampled. Slope ranges from 0 to 155 percent.

5.7.15 HORIZ_LENGTH

Horizontal length of the transect segment. The horizontal length of the individual transect segment in feet.

5.7.16 HORIZ_BEGNDIST

Beginning horizontal distance of the transect segment. The location on the transect where the segment begins, in horizontal distance in feet. A segment is a continuous length of line within one condition. The beginning distance is the point on the transect line where the condition class changes and a new segment begins. If the beginning distance is zero, this is the start of the transect at subplot center. Each segment has a beginning and

ending distance recorded as slope distance in the field, which is then converted to horizontal distance.

5.7.17 HORIZ_ENDDIST

Ending horizontal distance of the transect segment. The location on the transect where the segment ends, in horizontal distance in feet. A segment is a continuous length of line within one condition. The ending distance is the point on the transect line where the condition class of the current segment changes, or the point where the transect ends on the subplot. Each segment has a beginning and ending distance recorded as slope distance in the field, which is then converted to horizontal distance.

5.7.18 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

5.7.19 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

5.7.20 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

5.7.21 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

5.7.22 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

5.7.23 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

5.7.24 SEGMENT_STATUS_CD

Segment sample status code. A code indicating the sampling status of the transect segment. Populated for all options of the National P2 DWM protocol.

Codes: SEGMENT_STATUS_CD

| Code | Description |
|------|-------------------------------|
| 0 | Transect segment not sampled. |
| 1 | Transect segment sampled. |

5.7.25 SEGMENT_NONSAMPLE_REASON_CD

Segment nonsampled reason code. A code indicating the reason DWM measurement was not conducted on a transect segment.

Codes: SEGMENT_NONSAMPLE_REASON_CD

| Code | Description |
|------|---|
| 04 | Time limitation. |
| 05 | Lost data. |
| 10 | Other - The transect segment was not measured (for example, snow/water covering transect segment, or some other obstruction prevented measurement). |

5.7.26 TRANSECT_LENGTH

Transect length. The target length of the full transect, in horizontal distance in feet. This is an office-generated value.

5.8 Condition Down Woody Material Calculation Table

(Oracle table name: COND_DWM_CALC)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 5.8.1 | CN | Sequence number | VARCHAR2(34) |
| 5.8.2 | STATECD | State code | NUMBER(4) |
| 5.8.3 | COUNTYCD | County code | NUMBER(3) |
| 5.8.4 | PLOT | Plot number | NUMBER |
| 5.8.5 | MEASYEAR | Measurement year | NUMBER(4) |
| 5.8.6 | INVYR | Inventory year | NUMBER(4) |
| 5.8.7 | CONDID | Condition class number | NUMBER(1) |
| 5.8.8 | EVALID | Evaluation identifier | NUMBER(6) |
| 5.8.9 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 5.8.10 | CND_CN | Condition sequence number | VARCHAR2(34) |
| 5.8.11 | STRATUM_CN | Stratum sequence number | VARCHAR2(34) |
| 5.8.12 | PHASE | Phase | VARCHAR2(3) |
| 5.8.13 | CONDPROP_CWD | Proportion of coarse woody debris transects in the condition | NUMBER(13,12) |
| 5.8.14 | CONDPROP_FWD_SM | Proportion of fine woody debris transects used to sample small-sized pieces in the condition | NUMBER(13,12) |
| 5.8.15 | CONDPROP_FWD_MD | Proportion of fine woody debris transects used to sample medium-sized pieces in the condition | NUMBER(13,12) |
| 5.8.16 | CONDPROP_FWD_LG | Proportion of fine woody debris transects used to sample large-sized pieces in the condition | NUMBER(13,12) |
| 5.8.17 | CONDPROP_DUFF | Proportion of sample points used to measure duff, litter, and fuelbed in the condition | NUMBER(13,12) |
| 5.8.18 | CWD_TL_COND | Coarse woody debris transect length in the condition | NUMBER(13,10) |
| 5.8.19 | CWD_TL_UNADJ | Coarse woody debris transect length, unadjusted | NUMBER(13,10) |
| 5.8.20 | CWD_TL_ADJ | Coarse woody debris transect length, adjusted | NUMBER(13,10) |
| 5.8.21 | CWD_LPA_COND | Number of coarse woody debris logs (pieces) per acre in the condition | NUMBER |
| 5.8.22 | CWD_LPA_UNADJ | Number of coarse woody debris logs (pieces) per acre, unadjusted | NUMBER |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 5.8.23 | CWD_LPA_ADJ | Number of coarse woody debris logs (pieces) per acre, adjusted | NUMBER |
| 5.8.24 | CWD_VOLCF_COND | Coarse woody debris cubic-foot volume per acre in the condition | NUMBER |
| 5.8.25 | CWD_VOLCF_UNADJ | Coarse woody debris cubic-foot volume per acre, unadjusted | NUMBER |
| 5.8.26 | CWD_VOLCF_ADJ | Coarse woody debris cubic-foot volume per acre, adjusted | NUMBER |
| 5.8.27 | CWD_DRYBIO_COND | Coarse woody debris biomass per acre in the condition | NUMBER |
| 5.8.28 | CWD_DRYBIO_UNADJ | Coarse woody debris biomass per acre, unadjusted | NUMBER |
| 5.8.29 | CWD_DRYBIO_ADJ | Coarse woody debris biomass per acre, adjusted | NUMBER |
| 5.8.30 | CWD_CARBON_COND | Coarse woody debris carbon density in the condition | NUMBER |
| 5.8.31 | CWD_CARBON_UNADJ | Coarse woody debris carbon density, unadjusted | NUMBER |
| 5.8.32 | CWD_CARBON_ADJ | Coarse woody debris carbon density, adjusted | NUMBER |
| 5.8.33 | FWD_SM_TL_COND | Small-size class fine woody debris transect length in the condition | NUMBER(13,10) |
| 5.8.34 | FWD_SM_TL_UNADJ | Small-size class fine woody debris transect length, unadjusted | NUMBER(13,10) |
| 5.8.35 | FWD_SM_TL_ADJ | Small-size class fine woody debris transect length, adjusted | NUMBER(13,10) |
| 5.8.36 | FWD_SM_CNT_COND | Small-size class fine woody debris pieces count in the condition | NUMBER |
| 5.8.37 | FWD_SM_VOLCF_COND | Small-size class fine woody debris cubic-foot volume per acre in the condition | NUMBER |
| 5.8.38 | FWD_SM_VOLCF_UNADJ | Small-size class fine woody debris cubic-foot volume per acre, unadjusted | NUMBER |
| 5.8.39 | FWD_SM_VOLCF_ADJ | Small-size class fine woody debris cubic-foot volume per acre, adjusted | NUMBER |
| 5.8.40 | FWD_SM_DRYBIO_COND | Small-size class fine woody debris biomass per acre in the condition | NUMBER |
| 5.8.41 | FWD_SM_DRYBIO_UNADJ | Small-size class fine woody debris biomass per acre, unadjusted | NUMBER |
| 5.8.42 | FWD_SM_DRYBIO_ADJ | Small-size class fine woody debris biomass per acre, adjusted | NUMBER |
| 5.8.43 | FWD_SM_CARBON_COND | Small-size class fine woody debris carbon density in the condition | NUMBER |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 5.8.44 | FWD_SM_CARBON_UNADJ | Small-size class fine woody debris carbon density, unadjusted | NUMBER |
| 5.8.45 | FWD_SM_CARBON_ADJ | Small-size class fine woody debris carbon density, adjusted | NUMBER |
| 5.8.46 | FWD_MD_TL_COND | Medium-size class fine woody debris transect length in the condition | NUMBER(13,10) |
| 5.8.47 | FWD_MD_TL_UNADJ | Medium-size class fine woody debris transect length, unadjusted | NUMBER(13,10) |
| 5.8.48 | FWD_MD_TL_ADJ | Medium-size class fine woody debris transect length, adjusted | NUMBER(13,10) |
| 5.8.49 | FWD_MD_CNT_COND | Medium-size class fine woody debris pieces count in the condition | NUMBER |
| 5.8.50 | FWD_MD_VOLCF_COND | Medium-size class fine woody debris cubic-foot volume per acre in the condition | NUMBER |
| 5.8.51 | FWD_MD_VOLCF_UNADJ | Medium-size class fine woody debris cubic-foot volume per acre, unadjusted | NUMBER |
| 5.8.52 | FWD_MD_VOLCF_ADJ | Medium-size class fine woody debris cubic-foot volume per acre, adjusted | NUMBER |
| 5.8.53 | FWD_MD_DRYBIO_COND | Medium-size class fine woody debris biomass per acre in the condition | NUMBER |
| 5.8.54 | FWD_MD_DRYBIO_UNADJ | Medium-size class fine woody debris biomass per acre, unadjusted | NUMBER |
| 5.8.55 | FWD_MD_DRYBIO_ADJ | Medium-size class fine woody debris biomass per acre, adjusted | NUMBER |
| 5.8.56 | FWD_MD_CARBON_COND | Medium-size class fine woody debris carbon density in the condition | NUMBER |
| 5.8.57 | FWD_MD_CARBON_UNADJ | Medium-size class fine woody debris carbon density, unadjusted | NUMBER |
| 5.8.58 | FWD_MD_CARBON_ADJ | Medium-size class fine woody debris carbon density, adjusted | NUMBER |
| 5.8.59 | FWD_LG_TL_COND | Large-size class fine woody debris transect length in the condition | NUMBER(13,10) |
| 5.8.60 | FWD_LG_TL_UNADJ | Large-size class fine woody debris transect length, unadjusted | NUMBER(13,10) |
| 5.8.61 | FWD_LG_TL_ADJ | Large-size class fine woody debris transect length, adjusted | NUMBER(13,10) |
| 5.8.62 | FWD_LG_CNT_COND | Large-size class fine woody debris pieces count in the condition | NUMBER |
| 5.8.63 | FWD_LG_VOLCF_COND | Large-size class fine woody debris cubic-foot volume per acre in the condition | NUMBER |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 5.8.64 | FWD_LG_VOLCF_UNADJ | Large-size class fine woody debris cubic-foot volume per acre, unadjusted | NUMBER |
| 5.8.65 | FWD_LG_VOLCF_ADJ | Large-size class fine woody debris cubic-foot volume per acre, adjusted | NUMBER |
| 5.8.66 | FWD_LG_DRYBIO_COND | Large-size class fine woody debris biomass per acre in the condition | NUMBER |
| 5.8.67 | FWD_LG_DRYBIO_UNADJ | Large-size class fine woody debris biomass per acre, unadjusted | NUMBER |
| 5.8.68 | FWD_LG_DRYBIO_ADJ | Large-size class fine woody debris biomass per acre, adjusted | NUMBER |
| 5.8.69 | FWD_LG_CARBON_COND | Large-size class fine woody debris carbon density in the condition | NUMBER |
| 5.8.70 | FWD_LG_CARBON_UNADJ | Large-size class fine woody debris carbon density, unadjusted | NUMBER |
| 5.8.71 | FWD_LG_CARBON_ADJ | Large-size class fine woody debris carbon density, adjusted | NUMBER |
| 5.8.72 | PILE_SAMPLE_AREA_COND | Condition area sampled for piles | NUMBER(13,12) |
| 5.8.73 | PILE_SAMPLE_AREA_UNADJ | Plot area sampled for piles in all conditions, unadjusted | NUMBER(13,12) |
| 5.8.74 | PILE_SAMPLE_AREA_ADJ | Plot area sampled for piles in all conditions, adjusted | NUMBER(13,12) |
| 5.8.75 | PILE_VOLCF_COND | Cubic-foot volume per acre of piles in the condition | NUMBER |
| 5.8.76 | PILE_VOLCF_UNADJ | Cubic-foot volume per acre of piles, unadjusted | NUMBER |
| 5.8.77 | PILE_VOLCF_ADJ | Cubic-foot volume per acre of piles, adjusted | NUMBER |
| 5.8.78 | PILE_DRYBIO_COND | Biomass per acre of piles in the condition | NUMBER |
| 5.8.79 | PILE_DRYBIO_UNADJ | Biomass per acre of piles, unadjusted | NUMBER |
| 5.8.80 | PILE_DRYBIO_ADJ | Biomass per acre of piles, adjusted | NUMBER |
| 5.8.81 | PILE_CARBON_COND | Carbon density of piles in the condition | NUMBER |
| 5.8.82 | PILE_CARBON_UNADJ | Carbon density of piles, unadjusted | NUMBER |
| 5.8.83 | PILE_CARBON_ADJ | Carbon density of piles, adjusted | NUMBER |
| 5.8.84 | FUEL_DEPTH | Average fuelbed depth in the condition | NUMBER |
| 5.8.85 | FUEL_BIOMASS | Average fuelbed biomass per acre in the condition | NUMBER |
| 5.8.86 | FUEL_CARBON | Average fuelbed carbon density in the condition | NUMBER |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 5.8.87 | DUFF_DEPTH | Average duff depth in the condition | NUMBER |
| 5.8.88 | DUFF_BIOMASS | Average duff biomass per acre in the condition | NUMBER |
| 5.8.89 | DUFF_CARBON | Average duff carbon density in the condition | NUMBER |
| 5.8.90 | LITTER_DEPTH | Average litter depth in the condition | NUMBER |
| 5.8.91 | LITTER_BIOMASS | Average litter biomass per acre in the condition | NUMBER |
| 5.8.92 | LITTER_CARBON | Average litter carbon density in the condition | NUMBER |
| 5.8.93 | DUFF_TC_COND | Number of duff, litter, and fuelbed sampling points in the condition | NUMBER(14,12) |
| 5.8.94 | DUFF_TC_UNADJ | Number of duff, litter, and fuelbed sampling points on the entire plot, unadjusted | NUMBER(14,12) |
| 5.8.95 | DUFF_TC_ADJ | Number of duff, litter, and fuelbed sampling points on the entire plot, adjusted | NUMBER(14,12) |
| 5.8.96 | AVG_WOOD_DENSITY | Average wood density | NUMBER(12,10) |
| 5.8.97 | CREATED_BY | Created by | VARCHAR2(30) |
| 5.8.98 | CREATED_DATE | Created date | DATE |
| 5.8.99 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 5.8.100 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 5.8.101 | MODIFIED_DATE | Modified date | DATE |
| 5.8.102 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 5.8.103 | CYCLE | Inventory cycle number | NUMBER(2) |
| 5.8.104 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |
| 5.8.105 | UNITCD | Survey unit code | NUMBER(2) |
| 5.8.106 | RSCD | Region or station code | NUMBER(2) |
| 5.8.107 | PILE_TL_COND | Piles transect length in the condition | NUMBER(13,10) |
| 5.8.108 | PILE_TL_UNADJ | Piles transect length, unadjusted | NUMBER(13,10) |
| 5.8.109 | PILE_TL_ADJ | Piles transect length, adjusted | NUMBER(13,10) |
| 5.8.110 | CONDPROP_PILE | Proportion of piles plot area or transect lengths in the condition | NUMBER(13,12) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--|----------------|----------------------|
| Primary | CN | N/A | CDC_PK |
| Unique | PLT_CN, CONDID, EVALID, RSCD | N/A | CDC_UK |
| Unique | STATECD, COUNTYCD, PLOT, INVYR, CONDID, EVALID, RSCD | N/A | CDC_UK2 |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|---|------------------------------|----------------------|
| Unique | STATECD, CYCLE, SUBCYCLE, COUNTYCD, PLOT, CONDID, VALIDID, RSCD | N/A | CDC_UK3 |
| Foreign | CND_CN | COND_DWM_CALC to COND | CDC_CND_FK |
| Foreign | PLT_CN | COND_DWM_CALC to PLOT | CDC_PLT_FK |
| Foreign | STRATUM_CN | COND_DWM_CALC to POP_STRATUM | CDC_PSM_FK |

The size classes for fine woody debris (FWD) are as follows:

- Small-size class – pieces must be 0.01- to 0.24-inch in diameter and located on a transect segment length on the plot specified in the sample design to measure small-size FWD.
- Medium-size class – pieces must be 0.25- to 0.09-inch in diameter and located on a transect segment length on the plot specified in the sample design to measure medium-size FWD.
- Large-size class – pieces must be 1.0- to 2.9-inches in diameter and located on a transect segment length on the plot specified in the sample design to measure large-size FWD.

5.8.1 CN

Sequence number. A unique sequence number used to identify a condition down woody material calculation record.

5.8.2 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

5.8.3 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 are used. Refer to [appendix B](#).

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

5.8.4 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combination of variables, PLOT may be used to uniquely identify a plot.

5.8.5 MEASYEAR

Measurement year. The year in which the plot was completed. MEASYEAR may differ from INVYR.

5.8.6 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

5.8.7 CONDID

Condition class number. The unique identifying number assigned to a condition on a plot. See COND.[CONDID](#) for details on the attributes which delineate a condition.

5.8.8 EVALID

Evaluation identifier. See POP_EVAL.[EVALID](#) description for definition.

5.8.9 PLT_CN

Plot sequence number. Foreign key linking the condition down woody material calculation record to the plot record.

5.8.10 CND_CN

Condition sequence number. Foreign key linking the condition down woody material calculation record to the condition record for this location.

5.8.11 STRATUM_CN

Stratum sequence number. Foreign key linking the condition down woody material calculation record to the population stratum record.

5.8.12 PHASE

Phase. A code indicating the plot design for DWM measurements. Only populated for certain FIA work units (SURVEY.RSCD = 26, 27).

Codes: PHASE

| Code | Description |
|------|---|
| P2 | Phase 2 plot design. |
| P3 | Phase 3 plot design. |
| P23 | Phase 2 and phase 3 plot (both designs co-located). |

5.8.13 CONDPROP_CWD

Proportion of coarse woody debris transects in the condition. A proportion developed by summing the CWD transect lengths in one condition and dividing that by the total unadjusted CWD transect length on the plot (CWD_TL_COND/CWD_TL_UNADJ).

5.8.14 CONDPROP_FWD_SM

Proportion of fine woody debris transects used to sample small-sized pieces in the condition. A proportion developed by summing the FWD transect lengths in one condition and dividing that by the total unadjusted FWD transect length on the plot (FWD_SM_TL_COND/FWD_SM_TL_UNADJ).

5.8.15 CONDPROP_FWD_MD

Proportion of fine woody debris transects used to sample medium-sized pieces in the condition. A proportion developed by summing the FWD transect lengths in one condition and dividing that by the total unadjusted FWD transect length on the plot (FWD_MD_TL_COND/FWD_MD_TL_UNADJ).

5.8.16 CONDPROP_FWD_LG

Proportion of fine woody debris transects used to sample large-sized pieces in the condition. A proportion developed by summing the FWD transect lengths in one condition and dividing that by the total unadjusted FWD transect length on the plot (FWD_LG_TL_COND/FWD_LG_TL_UNADJ).

5.8.17 CONDPROP_DUFF

Proportion of sample points used to measure duff, litter, and fuelbed in the condition. A proportion developed by summing the number of sample points in one condition and dividing that by the total number of points on the plot (DUFF_TC_COND/DUFF_TC_UNADJ).

5.8.18 CWD_TL_COND

Coarse woody debris transect length in the condition. The sum of all transect lengths, in feet, in one condition on a plot. This total length is used to calculate per-acre estimates of volume, biomass, carbon, and number of logs for CWD in the condition. CWD attribute columns that end with a '_COND' suffix use this length in the estimation equation.

5.8.19 CWD_TL_UNADJ

Coarse woody debris transect length, unadjusted. The sum of all transect lengths, in feet, in all conditions on a plot, as specified by the sampling design. CWD_TL_UNADJ (target transect length) is the maximum length of transect line that would be installed for CWD on each subplot across all conditions (forest, nonforest, sampled, nonsampled) on the plot, before adjustment for partially nonsampled plots in the stratum. This attribute is used in equations to calculate the unadjusted per-acre attributes of CWD, which are columns that end with an '_UNADJ' suffix.

5.8.20 CWD_TL_ADJ

Coarse woody debris transect length, adjusted. The sum of all transect lengths, in feet, in all conditions on a plot, as specified by the sampling design, CWD_TL_ADJ (adjusted target transect length) is the maximum length of transect line that would be installed on each subplot across all conditions (forest, nonforest, sampled, nonsampled) on the plot, after adjustment for partially nonsampled plots in the stratum. This attribute is used in equations to calculate the adjusted per-acre attributes of CWD, which are columns that end with an '_ADJ' suffix.

5.8.21 CWD_LPA_COND

Number of coarse woody debris logs (pieces) per acre in the condition. The sum of logs per acre from all pieces tallied in one condition on a plot, based on transects installed in that condition. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot.

Note: Because this attribute describes one condition on a plot, it is not used to develop population estimates and is never adjusted. When multiple conditions exist on a plot and one estimate is needed for the plot location (e.g., for a GIS analysis), the plot estimate must be based on the sum of transect lengths from all sampled conditions of interest. For example, an estimate for all forested conditions on the plot would require that CWD_LPA_COND be multiplied by CWD_TL_COND / (sum of CWD_TL_COND on forest conditions) and then summed to the plot level.

5.8.22 CWD_LPA_UNADJ

Number of coarse woody debris logs (pieces) per acre, unadjusted. The sum of logs per acre from all CWD pieces tallied in one condition on a plot, before adjustment for partially nonsampled plots in the stratum. It is based on the target transect length (CWD_TL_UNADJ), which is the total length of transect that could potentially be installed on the plot. This attribute is used to calculate population estimates and not to derive estimates for one condition or individual plot. It must be adjusted by the factor ADJ_FACTOR_CWD stored in the POP_STRATUM table and then expanded by the acres in POP_STRATUM.EXPNS to produce population totals for number of CWD logs.

5.8.23 CWD_LPA_ADJ

Number of coarse woody debris logs (pieces) per acre, adjusted. The sum of logs per acre from all CWD pieces tallied in one condition on a plot, after adjustment for partially nonsampled plots in the stratum. It is based on the adjusted target transect length (CWD_TL_ADJ), which is the total length of transect that could potentially be installed on the plot. This attribute is used to calculate population estimates and not to derive estimates for one condition or individual plots. For ease of use, this attribute has been adjusted by the factor ADJ_FACTOR_CWD stored in the POP_STRATUM table. To expand per acre values to population totals for number of CWD logs, multiply by the acres in POP_STRATUM.EXPNS.

5.8.24 CWD_VOLCF_COND

Coarse woody debris cubic-foot volume per acre in the condition. The sum of gross volume, in cubic feet per acre, from all CWD pieces tallied in one condition on a plot, based on transects installed in that condition. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot.

Note: Because this attribute describes one condition on a plot, it is not used to develop population estimates and is never adjusted. When multiple conditions exist on a plot and one estimate is needed for the plot location (e.g., for a GIS analysis), the plot estimate must be based on the sum of transect lengths from all sampled conditions of interest. For example, an estimate for all forested conditions on the plot would require that CWD_VOLCF_COND be multiplied by CWD_TL_COND / (sum of CWD_TL_COND on forest conditions) and then summed to the plot level.

5.8.25 CWD_VOLCF_UNADJ

Coarse woody debris cubic-foot volume per acre, unadjusted. The sum of gross volume, in cubic feet per acre, from all CWD pieces tallied in one condition on a plot, before adjustment for partially nonsampled plots in the stratum. This attribute is based on the target transect length (CWD_TL_UNADJ), and is used to calculate population estimates and not used to derive estimates for one condition or individual plot. It must be adjusted by the factor ADJ_FACTOR_CWD stored in the POP_STRATUM table and then expanded by the acres in POP_STRATUM.EXPNS to produce population totals for gross cubic volume of CWD.

5.8.26 CWD_VOLCF_ADJ

Coarse woody debris cubic-foot volume per acre, adjusted. The sum of gross volume on a plot, in cubic feet per acre, from all CWD pieces tallied in one condition, after adjustment for partially nonsampled plots in the stratum. This attribute is based on the adjusted target transect length (CWD_TL_ADJ), and is used to calculate population estimates and not to derive estimates for one condition or individual plot. For ease of use,

this attribute has been adjusted by the factor ADJ_FACTOR_CWD stored in the POP_STRATUM table. To expand per acre values to population totals for gross cubic volume of CWD, multiply by the acres in POP_STRATUM.EXPNS.

5.8.27 CWD_DRYBIO_COND

Coarse woody debris biomass per acre in the condition. The sum of biomass, in oven-dry pounds per acre, from all CWD pieces tallied in one condition on a plot, based on transects installed in that condition. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot.

Note: Because this attribute describes one condition on a plot, it is not used to develop population estimates and is never adjusted. When multiple conditions exist on a plot and one estimate is needed for the plot location (e.g., for a GIS analysis), the plot estimate must be based on the sum of transect lengths from all sampled conditions of interest. For example, an estimate for all forested conditions on the plot would require that CWD_DRYBIO_COND be multiplied by CWD_TL_COND / (sum of CWD_TL_COND on forest conditions) and then summed to the plot level.

5.8.28 CWD_DRYBIO_UNADJ

Coarse woody debris biomass per acre, unadjusted. The sum of biomass, in oven-dry pounds per acre, from all CWD pieces tallied in one condition on a plot, before adjustment for partially nonsampled plots in the stratum. This attribute is based on the target transect length (CWD_TL_UNADJ), and is used to calculate population estimates and not used to derive estimates for one condition or individual plot. It must be adjusted by the factor ADJ_FACTOR_CWD stored in the POP_STRATUM table and then expanded by the acres in POP_STRATUM.EXPNS to produce population totals for dry biomass of CWD.

5.8.29 CWD_DRYBIO_ADJ

Coarse woody debris biomass per acre, adjusted. The sum of biomass, in oven-dry pounds per acre, from all CWD pieces tallied in one condition on a plot, after adjustment for partially nonsampled plots in the stratum. This attribute is based on the adjusted target transect length (CWD_TL_ADJ), and is used to calculate population estimates and not used to derive estimates for one condition or individual plot. For ease of use, this attribute has been adjusted by the factor ADJ_FACTOR_CWD stored in the POP_STRATUM table. To expand per acre values to population totals for dry biomass of CWD, multiply by the acres in POP_STRATUM.EXPNS.

5.8.30 CWD_CARBON_COND

Coarse woody debris carbon density in the condition. The sum of carbon, in pounds per acre, from all CWD pieces tallied in one condition on a plot, based on transects installed in that condition. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot.

Note: Because this attribute describes one condition on a plot, it is not used to develop population estimates and is never adjusted. When multiple conditions exist on a plot and one estimate is needed for the plot location (e.g., for a GIS analysis), the plot estimate must be based on the sum of transect lengths from all sampled conditions of interest. For example, an estimate for all forested conditions on the plot would require that CWD_CARBON_COND be multiplied by CWD_TL_COND / (sum of CWD_TL_COND on forest conditions) and then summed to the plot level.

5.8.31 CWD_CARBON_UNADJ

Coarse woody debris carbon density, unadjusted. The sum of carbon, in pounds per acre, from all CWD pieces tallied in one condition on a plot, before adjustment for partially nonsampled plots in the stratum. This attribute is based on the target transect length (CWD_TL_UNADJ), and is used to calculate population estimates and not used to derive estimates for one condition or individual plot. It must be adjusted by the factor ADJ_FACTOR_CWD stored in the POP_STRATUM table and then expanded by the acres in POP_STRATUM.EXPNS to produce population totals for carbon mass of CWD.

5.8.32 CWD_CARBON_ADJ

Coarse woody debris carbon density, adjusted. The sum of carbon, in pounds per acre, from all CWD pieces tallied in one condition on a plot, after adjustment for partially nonsampled plots in the stratum. This attribute is based on the adjusted target transect length (CWD_TL_ADJ), and is used to calculate population estimates and not used to derive estimates for one condition or individual plot. For ease of use, this attribute has been adjusted by the factor ADJ_FACTOR_CWD stored in the POP_STRATUM table. To expand per acre values to population totals for carbon mass of CWD, multiply by the acres in POP_STRATUM.EXPNS.

5.8.33 FWD_SM_TL_COND

Small-size class fine woody debris transect length in the condition. The sum of all transect lengths, in feet, in one condition on the plot. This total length is used to calculate per-acre estimates of volume, biomass, and carbon for small-size class FWD in the condition. Attribute columns that end with a '_COND' suffix use this length in the estimation equation.

5.8.34 FWD_SM_TL_UNADJ

Small-size class fine woody debris transect length, unadjusted. The sum of all transect lengths, in feet, in all conditions on a plot, as specified by the sampling design. FWD_SM_TL_UNADJ (target transect length) is the maximum length of transect line that would be installed for small-size class FWD on each subplot across all conditions (forest, nonforest, sampled, nonsampled) on the plot, before adjustment for partially nonsampled plots in the stratum. This attribute is used in equations to calculate the unadjusted per-acre attributes of small-size class FWD, which are columns that end with an '_UNADJ' suffix.

5.8.35 FWD_SM_TL_ADJ

Small-size class fine woody debris transect length, adjusted. The sum of all transect lengths, in feet, in all conditions on a plot, as specified by the sampling design. FWD_SM_TL_ADJ (adjusted target transect length) is the maximum length of transect line that would be installed for small-size class FWD on each subplot across all conditions (forest, nonforest, sampled, nonsampled) on a plot, after adjustment for partially nonsampled plots in the stratum. This attribute is used in equations to calculate the adjusted per-acre attributes of small-size class FWD, which are columns that end with an '_ADJ' suffix.

5.8.36 FWD_SM_CNT_COND

Small-size class fine woody debris pieces count in the condition. The total number of small-size class FWD pieces on all transects in one condition on a plot.

5.8.37 FWD_SM_VOLCF_COND

Small-size class fine woody debris cubic-foot volume per acre in the condition. The sum of volume, in cubic feet per acre, of small-size class FWD tallied in one condition on a plot, based on transects installed in that condition. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot.

Note: Because this attribute describes one condition on a plot, it is not used to develop population estimates and is never adjusted. When multiple conditions exist on a plot and one estimate is needed for the plot location (e.g., for a GIS analysis), the plot estimate must be based on the sum of transect lengths from all sampled conditions of interest.

5.8.38 FWD_SM_VOLCF_UNADJ

Small-size class fine woody debris cubic-foot volume per acre, unadjusted. The sum of volume, in cubic feet per acre, of small-size class FWD pieces tallied in one condition on a plot, before adjustment for partially nonsampled plots in the stratum. This attribute is based on the target transect length (FWD_SM_TL_UNADJ) and is used to calculate population totals and not to derive estimates for one condition or individual plot. It must be adjusted by the factor ADJ_FACTOR_FWD_SM stored in the POP_STRATUM table and then expanded by the acres in POP_STRATUM.EXPNS before producing population estimates for cubic volume of small-size class FWD.

5.8.39 FWD_SM_VOLCF_ADJ

Small-size class fine woody debris cubic-foot volume per acre, adjusted. The sum of volume, in cubic feet per acre, of small-size class FWD pieces tallied in one condition on a plot, after adjustment for partially nonsampled plots in the stratum. This attribute is based on the adjusted target transect length (FWD_SM_TL_ADJ) and is used to calculate population totals and not to derive estimates for one condition or individual plot. For ease of use, this attribute has been adjusted by the factor ADJ_FACTOR_FWD_SM stored in the POP_STRATUM table. To expand per acre values to population totals for cubic volume of small-size class FWD, multiply by the acres in POP_STRATUM.EXPNS.

5.8.40 FWD_SM_DRYBIO_COND

Small-size class fine woody debris biomass per acre in the condition. The sum of biomass, in oven-dry pounds per acre, of small-size class FWD tallied in one condition on a plot, based on transects installed in that condition. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot.

Note: Because this attribute describes one condition on a plot, it is not used to develop population estimates and is never adjusted. When multiple conditions exist on a plot and one estimate is needed for the plot location (e.g., for a GIS analysis), the plot estimate must be based on the sum of transect lengths from all sampled conditions of interest.

5.8.41 FWD_SM_DRYBIO_UNADJ

Small-size class fine woody debris biomass per acre, unadjusted. The sum of biomass, in oven-dry pounds per acre, of small-size class FWD pieces tallied in one condition on a plot, before adjustment for partially nonsampled plots in the stratum. This attribute is based on the target transect length (FWD_SM_TL_UNADJ) and is used to calculate population totals and not used to derive estimates for one condition or individual plot. It must be adjusted by the factor ADJ_FACTOR_FWD_SM stored in the POP_STRATUM table and then expanded by the acres in POP_STRATUM.EXPNS before producing population estimates for dry biomass of small-size class FWD.

5.8.42 FWD_SM_DRYBIO_ADJ

Small-size class fine woody debris biomass per acre, adjusted. The sum of biomass, in oven-dry pounds per acre, of small-size class FWD pieces tallied in one condition on a plot, after adjustment for partially nonsampled plots in the stratum. This attribute is based on the adjusted target transect length (FWD_SM_TL_ADJ) and is used to calculate population totals and not used to derive estimates for one condition or individual plot. For ease of use, this attribute has been adjusted by the factor ADJ_FACTOR_FWD_SM stored in the POP_STRATUM table. To expand per acre values to population totals for dry biomass of small-size class FWD, multiply by the acres in POP_STRATUM.EXPNS.

5.8.43 FWD_SM_CARBON_COND

Small-size class fine woody debris carbon density in the condition. The sum of carbon, in pounds per acre, of small-size class FWD tallied in one condition on a plot, based on transects installed in that condition. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot.

Note: Because this attribute describes one condition on a plot, it is not used to develop population estimates and is never adjusted. When multiple conditions exist on a plot and one estimate is needed for the plot location (e.g., for a GIS analysis), the plot estimate must be based on the sum of transect lengths from all sampled conditions of interest.

5.8.44 FWD_SM_CARBON_UNADJ

Small-size class fine woody debris carbon density, unadjusted. The sum of carbon, in pounds per acre, of small-size class FWD pieces tallied in one condition on a plot, before adjustment for partially nonsampled plots in the stratum. This attribute is based on the target transect length (FWD_SM_TL_UNADJ) and is used to calculate population totals and not used to derive estimates for one condition or individual plot. It must be adjusted by the factor ADJ_FACTOR_FWD_SM stored in the POP_STRATUM table and then expanded by the acres in POP_STRATUM.EXPNS before producing population estimates for carbon mass of small-size class FWD.

5.8.45 FWD_SM_CARBON_ADJ

Small-size class fine woody debris carbon density, adjusted. The sum of carbon, in pounds per acre, of small-size class FWD pieces tallied in one condition on a plot, after adjustment for partially nonsampled plots in the stratum. This attribute is based on the adjusted target transect length (FWD_SM_TL_ADJ) and is used to calculate population totals and not used to derive estimates for one condition or individual plot. For ease of use, this attribute has been adjusted by the factor ADJ_FACTOR_FWD_SM stored in the POP_STRATUM table. To expand per acre values to population totals for carbon mass of small-size class FWD, multiply by the acres in POP_STRATUM.EXPNS.

5.8.46 FWD_MD_TL_COND

Medium-size class fine woody debris transect length in the condition. The sum of all transect lengths, in feet, in one condition on a plot. This total length is used to calculate per-acre estimates of volume, biomass, and carbon for medium-size class FWD in the condition. Attribute columns that end with a '_COND' suffix use this length in the estimation equation.

5.8.47 FWD_MD_TL_UNADJ

Medium-size class fine woody debris transect length, unadjusted. The sum of all transect lengths, in feet, in all conditions on a plot, as specified by the sampling design.

FWD_MD_TL_UNADJ (target transect length) is the maximum length of transect line that would be installed for medium-size class FWD on each subplot across all conditions (forest, nonforest, sampled, nonsampled) on the plot, before adjustment for partially nonsampled plots in the stratum. This attribute is used in equations to calculate the unadjusted per-acre attributes of medium-size class FWD, which are columns that end with an '_UNADJ' suffix.

5.8.48 FWD_MD_TL_ADJ

Medium-size class fine woody debris transect length, adjusted. The sum of all transect lengths, in feet, in all conditions on a plot, as specified by the sampling design.

FWD_MD_TL_ADJ (adjusted target transect length) is the maximum length of transect line that would be installed for medium-size class FWD on each subplot across all conditions (forest, nonforest, sampled, nonsampled) on the plot, after adjustment for partially nonsampled plots in the stratum. This attribute is used in equations to calculate the adjusted per-acre attributes of medium-size class FWD, which are columns that end with an '_ADJ' suffix.

5.8.49 FWD_MD_CNT_COND

Medium-size class fine woody debris pieces count in the condition. The total number of medium-size class FWD pieces on all transects in one condition on a plot.

5.8.50 FWD_MD_VOLCF_COND

Medium-size class fine woody debris cubic-foot volume per acre in the condition. The sum of volume, in cubic feet per acre, of medium-size class FWD tallied in one condition on a plot, based on transects installed in that condition. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot.

Note: Because this attribute describes one condition on a plot, it is not used to develop population estimates and is never adjusted. When multiple conditions exist on a plot and one estimate is needed for the plot location (e.g., for a GIS analysis), the plot estimate must be based on the sum of transect lengths from all sampled conditions of interest.

5.8.51 FWD_MD_VOLCF_UNADJ

Medium-size class fine woody debris cubic-foot volume per acre, unadjusted. The sum of volume, in cubic feet per acre, of medium-size class FWD pieces tallied in one condition on a plot, before adjustment for partially nonsampled plots in the stratum. This attribute is based on the target transect length (FWD_MD_TL_UNADJ) and is used to calculate population totals and not used to derive estimates for one condition or individual plot. It must be adjusted by the factor ADJ_FACTOR_FWD_SM stored in the POP_STRATUM table and then expanded by the acres in POP_STRATUM.EXPNS before producing population estimates for cubic volume of medium-size class FWD.

5.8.52 FWD_MD_VOLCF_ADJ

Medium-size class fine woody debris cubic-foot volume per acre, adjusted. The sum of volume, in cubic feet per acre, of medium-size class FWD pieces tallied in one condition on a plot, after adjustment for partially nonsampled plots in the stratum. This attribute is based on the adjusted target transect length (FWD_MD_TL_ADJ) and is used to calculate population totals and not used to derive estimates for one condition or individual plot. For ease of use, this attribute has been adjusted by the factor ADJ_FACTOR_FWD_SM stored in the POP_STRATUM table. To expand per acre values to population totals for cubic volume of medium-size class FWD, multiply by the acres in POP_STRATUM.EXPNS.

5.8.53 FWD_MD_DRYBIO_COND

Medium-size class fine woody debris biomass per acre in the condition. The sum of biomass, in oven-dry pounds per acre, of medium-size class FWD tallied in one condition on a plot, based on transects installed in that condition. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot.

Note: Because this attribute describes one condition on a plot, it is not used to develop population estimates and is never adjusted. When multiple conditions exist on a plot and one estimate is needed for the plot location (e.g., for a GIS analysis), the plot estimate must be based on the sum of transect lengths from all sampled conditions of interest.

5.8.54 FWD_MD_DRYBIO_UNADJ

Medium-size class fine woody debris biomass per acre, unadjusted. The sum of biomass, in oven-dry pounds per acre, of medium-size class FWD pieces tallied in one condition on a plot, before adjustment for partially nonsampled plots in the stratum. This attribute is based on the target transect length (FWD_MD_TL_UNADJ) and is used to calculate population totals and not used to derive estimates for one condition or individual plot. It must be adjusted by the factor ADJ_FACTOR_FWD_SM stored in the POP_STRATUM table and then expanded by the acres in POP_STRATUM.EXPNS before producing population estimates for dry biomass of medium-size class FWD.

5.8.55 FWD_MD_DRYBIO_ADJ

Medium-size class fine woody debris biomass per acre, adjusted. The sum of biomass, in oven-dry pounds per acre, of medium-size class FWD pieces tallied in one condition on a plot, after adjustment for partially nonsampled plots in the stratum. This attribute is based on the adjusted target transect length (FWD_MD_TL_ADJ) and is used to calculate population totals and not used to derive estimates for one condition or individual plot. For ease of use, this attribute has been adjusted by the factor ADJ_FACTOR_FWD_SM stored in the POP_STRATUM table. To expand per acre values to population totals for dry biomass of medium-size class FWD, multiply by the acres in POP_STRATUM.EXPNS.

5.8.56 FWD_MD_CARBON_COND

Medium-size class fine woody debris carbon density in the condition. The sum of carbon, in pounds per acre, of medium-size class FWD tallied in one condition on a plot, based on transects installed in that condition. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot.

Note: Because this attribute describes one condition on a plot, it is not used to develop population estimates and is never adjusted. When multiple conditions exist on a plot and one estimate is needed for the plot location (e.g., for a GIS analysis), the plot estimate must be based on the sum of transect lengths from all sampled conditions of interest.

5.8.57 FWD_MD_CARBON_UNADJ

Medium-size class fine woody debris carbon density, unadjusted. The sum of carbon, in pounds per acre, of medium-size class FWD pieces tallied in one condition on a plot, before adjustment for partially nonsampled plots in the stratum. This attribute is based on the target transect length (FWD_MD_TL_UNADJ) and is used to calculate population totals and not used to derive estimates for one condition or individual plot. It must be adjusted by the factor ADJ_FACTOR_FWD_SM stored in the POP_STRATUM table and then expanded by the acres in POP_STRATUM.EXPNS before producing population estimates for carbon mass of medium-size class FWD.

5.8.58 FWD_MD_CARBON_ADJ

Medium-size class fine woody debris carbon density, adjusted. The sum of carbon, in pounds per acre, of medium-size class FWD pieces tallied in one condition on a plot, after adjustment for partially nonsampled plots in the stratum. This attribute is based on the adjusted target transect length (FWD_MD_TL_ADJ) and is used to calculate population totals and not used to derive estimates for one condition or individual plot. For ease of use, this attribute has been adjusted by the factor ADJ_FACTOR_FWD_SM stored in the POP_STRATUM table. To expand per acre values to population totals for carbon mass of medium-size class FWD, multiply by the acres in POP_STRATUM.EXPNS.

5.8.59 FWD_LG_TL_COND

Large-size class fine woody debris transect length in the condition. The sum of all transect lengths, in feet, in one condition on a plot. This total length is used to calculate per-acre estimates of volume, biomass, and carbon for large-size class FWD in the condition. Attribute columns that end with a '_COND' suffix use this length in the estimation equation.

5.8.60 FWD_LG_TL_UNADJ

Large-size class fine woody debris transect length, unadjusted. The sum of all transect lengths, in feet, in all conditions on a plot, as specified by the sampling design. FWD_LG_TL_UNADJ (target transect length) is the maximum length of transect line that would be installed for large-size class FWD on each subplot across all conditions (forest, nonforest, sampled, nonsampled) on the plot, before adjustment for partially nonsampled plots in the stratum. This attribute is used in equations to calculate the unadjusted per-acre attributes of large-size class FWD, which are columns that end with an '_UNADJ' suffix.

5.8.61 FWD_LG_TL_ADJ

Large-size class fine woody debris transect length, adjusted. The sum of all transect lengths, in feet, in all conditions on a plot, as specified by the sampling design. FWD_LG_TL_ADJ (adjusted target transect length) is the maximum length of transect line that could be installed for large-size class FWD on each subplot across all conditions (forest, nonforest, sampled, nonsampled) on the plot, after adjustment for partially nonsampled plots in the stratum. This attribute is used in equations to calculate the adjusted per-acre attributes of large-size class FWD, which are columns that end with an '_ADJ' suffix.

5.8.62 FWD_LG_CNT_COND

Large-size class fine woody debris pieces count in the condition. The total number of large-size class FWD pieces on all transects in one condition on a plot.

5.8.63 FWD_LG_VOLCF_COND

Large-size class fine woody debris cubic-foot volume per acre in the condition. The sum of volume, in cubic feet per acre, of large-size class FWD tallied in one condition on a plot, based on transects installed in that condition. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot.

Note: Because this attribute describes one condition on a plot, it is not used to develop population estimates and is never adjusted. When multiple conditions exist on a plot and one estimate is needed for the plot location (e.g., for a GIS analysis), the plot estimate must be based on the sum of transect lengths from all sampled conditions of interest.

5.8.64 FWD_LG_VOLCF_UNADJ

Large-size class fine woody debris cubic-foot volume per acre, unadjusted. The sum of volume, in cubic feet per acre, of large-size class FWD pieces tallied in one condition on a plot, before adjustment for partially nonsampled plots in the stratum. This attribute is based on the target transect length (FWD_LG_TL_UNADJ) and is used to calculate population totals and not used to derive estimates for one condition or individual plot. It must be adjusted by the factor ADJ_FACTOR_FWD_LG stored in the POP_STRATUM table and then expanded by the acres in POP_STRATUM.EXPNS before producing population estimates for cubic volume of large-size class FWD.

5.8.65 FWD_LG_VOLCF_ADJ

Large-size class fine woody debris cubic-foot volume per acre, adjusted. The sum of volume, in cubic feet per acre, of large-size class FWD pieces tallied in one condition on a plot, after adjustment for partially nonsampled plots in the stratum. This attribute is based on the adjusted target transect length (FWD_LG_TL_ADJ) and is used to calculate population totals and not used to derive estimates for one condition or individual plot. For ease of use, this attribute has been adjusted by the factor ADJ_FACTOR_FWD_LG stored in the POP_STRATUM table. To expand per acre values to population totals for cubic volume of large-size class FWD, multiply by the acres in POP_STRATUM.EXPNS.

5.8.66 FWD_LG_DRYBIO_COND

Large-size class fine woody debris biomass per acre in the condition. The sum of biomass, in oven-dry pounds per acre, of large-size class FWD tallied in one condition on a plot, based on transects installed in that condition. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot.

Note: Because this attribute describes one condition on a plot, it is not used to develop population estimates and is never adjusted. When multiple conditions exist on a plot and one estimate is needed for the plot location (e.g., for a GIS analysis), the plot estimate must be based on the sum of transect lengths from all sampled conditions of interest.

5.8.67 FWD_LG_DRYBIO_UNADJ

Large-size class fine woody debris biomass per acre, unadjusted. The sum of biomass, in oven-dry pounds per acre, of large-size class FWD pieces tallied in one condition on a plot, before adjustment for partially nonsampled plots in the stratum. This attribute is based on the target transect length (FWD_LG_TL_UNADJ) and is used to calculate population totals and not used to derive estimates for one condition or individual plot. It must be adjusted by the factor ADJ_FACTOR_FWD_LG stored in the POP_STRATUM table and then expanded by the acres in POP_STRATUM.EXPNS before producing population estimates for dry biomass of large-size class FWD.

5.8.68 FWD_LG_DRYBIO_ADJ

Large-size class fine woody debris biomass per acre, adjusted. The sum of biomass, in oven-dry pounds per acre, of large-size class FWD pieces tallied in one condition on a plot, after adjustment for partially nonsampled plots in the stratum. This attribute is based on the adjusted target transect length (FWD_LG_TL_ADJ) and is used to calculate population totals and not used to derive estimates for one condition or individual plot. For ease of use, this attribute has been adjusted by the factor ADJ_FACTOR_FWD_LG stored in the POP_STRATUM table. To expand per acre values to population totals for dry biomass of large-size class FWD, multiply by the acres in POP_STRATUM.EXPNS.

5.8.69 FWD_LG_CARBON_COND

Large-size class fine woody debris carbon density in the condition. The sum of carbon, in pounds per acre, of large-size class FWD tallied in one condition on a plot, based on transects installed in that condition. This attribute is useful for analysis projects that involve modeling, mapping, or classifying individual conditions within a plot.

Note: Because this attribute describes one condition on a plot, it is not used to develop population estimates and is never adjusted. When multiple conditions exist on a plot and one estimate is needed for the plot location (e.g., for a GIS analysis), the plot estimate must be based on the sum of transect lengths from all sampled conditions of interest.

5.8.70 FWD_LG_CARBON_UNADJ

Large-size class fine woody debris carbon density, unadjusted. The sum of carbon, in pounds per acre, of large-size class FWD pieces tallied in one condition on a plot, before adjustment for partially nonsampled plots in the stratum. This attribute is based on the target transect length (FWD_LG_TL_UNADJ) and is used to calculate population totals and not used to derive estimates for one condition or individual plot. It must be adjusted by the factor ADJ_FACTOR_FWD_LG stored in the POP_STRATUM table and then expanded by the acres in POP_STRATUM.EXPNS before producing population estimates for carbon mass of large-size class FWD.

5.8.71 FWD_LG_CARBON_ADJ

Large-size class fine woody debris carbon density, adjusted. The sum of carbon, in pounds per acre, of large-size class FWD pieces tallied in one condition on a plot, after adjustment for partially nonsampled plots in the stratum. This attribute is based on the adjusted target transect length (FWD_LG_TL_ADJ) and is used to calculate population totals and not used to derive estimates for one condition or individual plot. For ease of use, this attribute has been adjusted by the factor ADJ_FACTOR_FWD_LG stored in the POP_STRATUM table. To expand per acre values to population totals for carbon mass of large-size class FWD, multiply by the acres in POP_STRATUM.EXPNS.

5.8.72 PILE_SAMPLE_AREA_COND

Condition area sampled for piles. The area, in acres, of the condition where piles are sampled. The area of the condition on each subplot or macroplot is summed across the plot.

5.8.73 PILE_SAMPLE_AREA_UNADJ

Plot area sampled for piles in all conditions, unadjusted. The sum of the area, in acres, of all subplots or macroplots specified in the sampling design. If the macroplot was sampled (COND.PLOT_BASIS = MACR), this value would be 1 because each macroplot is 0.25 acre. If the subplot was sampled (COND.PLOT_BASIS = SUBP), this value would be about 0.166 because each subplot is 0.0415 acres.

5.8.74 PILE_SAMPLE_AREA_ADJ

Plot area sampled for piles in all conditions, adjusted. The sum of the area, in acres, of all subplots or macroplots specified in the sampling design, adjusted for partially nonsampled plots in the stratum. This column has been adjusted by either ADJ_FACTOR_MACR or ADJ_FACTOR_SUBP stored in the POP_STRATUM table.

5.8.75 PILE_VOLCF_COND

Cubic-foot volume per acre of piles in the condition. The sum of volume, in cubic feet per acre, of piles in the condition. This per-acre value is used when conducting a condition-level analysis on individual plots and is not used to produce population estimates.

5.8.76 PILE_VOLCF_UNADJ

Cubic-foot volume per acre of piles, unadjusted. The sum of volume, in cubic feet per acre, of piles tallied in one condition on the plot, and unadjusted for partially nonsampled plots in the stratum. This attribute must be adjusted by either ADJ_FACTOR_MACR or ADJ_FACTOR_SUBP stored in the POP_STRATUM table before producing population estimates for cubic volume of piles.

5.8.77 PILE_VOLCF_ADJ

Cubic-foot volume per acre of piles, adjusted. The sum of volume, in cubic feet per acre, of piles tallied in one condition on the plot, and adjusted for partially nonsampled plots in the stratum. This attribute has been adjusted by either ADJ_FACTOR_MACR or ADJ_FACTOR_SUBP stored in the POP_STRATUM table and can be used to produce population estimates for cubic volume of piles.

5.8.78 PILE_DRYBIO_COND

Biomass per acre of piles in the condition. The sum of biomass, in oven-dry pounds per acre, of piles tallied in one condition on the plot, weighted by the condition proportion. This per-acre value is used when conducting a condition-level analysis on individual plots and is not used to produce population estimates.

5.8.79 PILE_DRYBIO_UNADJ

Biomass per acre of piles, unadjusted. The sum of biomass, in oven-dry pounds per acre, of piles tallied in one condition on the plot, and unadjusted for partially nonsampled plots in the stratum. This attribute must be adjusted by either ADJ_FACTOR_MACR or ADJ_FACTOR_SUBP stored in the POP_STRATUM table before producing population estimates for dry biomass of piles.

5.8.80 PILE_DRYBIO_ADJ

Biomass per acre of piles, adjusted. The sum of biomass, in oven-dry pounds per acre, of piles tallied in one condition on the plot, and adjusted for partially nonsampled plots in the stratum. This attribute has been adjusted by either ADJ_FACTOR_MACR or ADJ_FACTOR_SUBP stored in the POP_STRATUM table and can be used to produce population estimates for dry biomass of piles.

5.8.81 PILE_CARBON_COND

Carbon density of piles in the condition. The sum of carbon, in pounds per acre, of piles tallied in one condition on the plot, weighted by the condition proportion. This per-acre value is used when conducting a condition-level analysis on individual plots and is not used to produce population estimates.

5.8.82 PILE_CARBON_UNADJ

Carbon density of piles, unadjusted. The sum of carbon, in pounds per acre, of piles tallied in one condition on the plot, and unadjusted for partially nonsampled plots in the stratum. This attribute must be adjusted by either ADJ_FACTOR_MACR or

ADJ_FACTOR_SUBP stored in the POP_STRATUM table before producing population estimates for carbon mass of piles.

5.8.83 PILE_CARBON_ADJ

Carbon density of piles, adjusted. The sum of carbon, in pounds per acre, of piles tallied in one condition on the plot, and adjusted for partially nonsampled plots in the stratum. This attribute has been adjusted by either ADJ_FACTOR_MACR or ADJ_FACTOR_SUBP stored in the POP_STRATUM table before producing population estimates for carbon mass of piles.

5.8.84 FUEL_DEPTH

Average fuelbed depth in the condition. The average depth, in feet, of the fuelbed in the condition on the plot. Fuelbed depth extends from the start of the litter layer to the highest piece of woody debris found at the sample point. The depth is measured at the 24-foot location of each transect on the subplot. All sample depths collected in one condition are averaged. The column is null if no sample points land in the condition.

5.8.85 FUELBIOMASS

Average fuelbed biomass per acre in the condition. The average biomass, in oven-dry pounds per acre, of the fuelbed in the condition on the plot.

5.8.86 FUEL_CARBON

Average fuelbed carbon density in the condition. The average carbon, in pounds per acre, of the fuelbed in the condition on the plot.

5.8.87 DUFF_DEPTH

Average duff depth in the condition. The average depth, in inches, of duff in the condition on the plot. Duff depth is measured at the 24-foot location of each transect on the subplot. All sample depths collected in one condition are averaged. The column is null if no sample points land in the condition.

5.8.88 DUFF_BIOMASS

Average duff biomass per acre in the condition. The average biomass, in oven-dry pounds per acre, of duff in the condition on the plot.

5.8.89 DUFF_CARBON

Average duff carbon density in the condition. The average carbon, in pounds per acre, of duff in the condition on the plot.

5.8.90 LITTER_DEPTH

Average litter depth in the condition. The average depth, in inches, of litter in the condition on the plot. Litter depth is measured at the 24-foot location of each transect on the subplot. All sample depths collected in one condition are averaged. The column is null if no sample points land in the condition.

5.8.91 LITTER_BIOMASS

Average litter biomass per acre in the condition. The average biomass, in oven-dry pounds per acre, of litter in the condition on the plot.

5.8.92 LITTER_CARBON

Average litter carbon density in the condition. The average carbon, in pounds per acre, of litter in the condition on the plot.

5.8.93 DUFF_TC_COND

Number of duff, litter, and fuelbed sampling points in the condition. The number of sampling points measured within one condition. This count is used to estimate an average for biomass or carbon of duff, litter, or fuelbed in one condition on the plot. Depth is measured at the 24-foot location on each transect.

5.8.94 DUFF_TC_UNADJ

Number of duff, litter, and fuelbed sampling points on the entire plot, unadjusted. The number of sampling points on the plot (including unmeasured), as specified by the sample design, before adjustment for partially nonsampled plots in the stratum. This count is used to estimate an average for biomass or carbon of duff, litter, or fuelbed on the plot. Depth is measured at the 24-foot location on each transect.

5.8.95 DUFF_TC_ADJ

Number of duff, litter, and fuelbed sampling points on the entire plot, adjusted. The number of sampling points on the plot (including unmeasured), as specified by the sample design, after adjustment for partially nonsampled plots in the stratum. This count is used to estimate an average for biomass or carbon of duff, litter, or fuelbed on the plot. Depth is measured at the 24-foot location on each transect.

5.8.96 AVG_WOOD_DENSITY

Average wood density. Average dry wood density, in pounds per cubic foot, computed by summing density of all live trees of known species weighted by cubic-foot volume. This value is only used to estimate biomass of FWD where species is not recorded.

5.8.97 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

5.8.98 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

5.8.99 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

5.8.100 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

5.8.101 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

5.8.102 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

5.8.103 CYCLE

Inventory cycle number. See SURVEY.CYCLE description for definition.

5.8.104 SUBCYCLE

Inventory subcycle number. See SURVEY.[SUBCYCLE](#) description for definition.

5.8.105 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 B](#) for codes.

5.8.106 RSCD

Region or Station code. See SURVEY.[RSCD](#) description for definition.

5.8.107 PILE_TL_COND

Piles transect length in the condition. The sum of all transect lengths, in feet, in one condition on a plot. This total length is used to calculate per-acre estimates of volume, biomass, and carbon for piles in the condition. Piles attribute columns that end with a '_COND' suffix use this length in the estimation equation.

5.8.108 PILE_TL_UNADJ

Piles transect length, unadjusted. The sum of all transect lengths, in feet, in all conditions on a plot, as specified by the sampling design. PILE_TL_UNADJ (target transect length) is the maximum length of transect line that would be installed for piles on all subplots across all conditions (forest, nonforest, sampled, nonsampled) on the plot, before adjustment for partially nonsampled plots in the stratum. This attribute is used in equations to calculate the unadjusted per-acre attributes of piles, which are columns That end with an '_UNADJ' suffix.

5.8.109 PILE_TL_ADJ

Piles transect length, adjusted. The sum of all transect lengths, in feet, in all conditions on a plot, as specified by the sampling design. PILE_TL_ADJ (adjusted target transect length) is the maximum length of transect line that would be installed on all subplots across all conditions (forest, nonforest, sampled, nonsampled) on the plot, after adjustment for partially nonsampled plot in the stratum. This attribute is used in equations to calculate the adjusted per-acre attributes of piles, which are columns that end with an '_ADJ' suffix.

5.8.110 CONDPROP_PILE

Proportion of piles plot area or transect lengths in the condition. A proportion developed by summing the piles plot area or transect length in one condition and dividing that by the total unadjusted piles plot area or transect length on the plot (PLOT_TL_COND/PILE_TL_UNADJ).

Section revision: 01.2024

Chapter 6: Database Tables - Northern Research Station (NRS) Tree Regeneration Indicator

Chapter Contents:

| Section | Database table | Oracle table name |
|---------|---|-------------------|
| 6.1 | Plot Regeneration Table | PLOT_REGEN |
| 6.2 | Subplot Regeneration Table | SUBPLOT_REGEN |
| 6.3 | Seedling Regeneration Table | SEEDLING_REGEN |

In 2012, the Northern Research Station (SURVEY.RSCD = 23, 24) implemented a new protocol, Tree Seedling Regeneration, on a subset of the P2 grid (P2 plus) to estimate regeneration success (McWilliams and others 2012). The protocol includes counts of seedlings at least 2 inches in length and an assessment of browse impact on the plot. These data, in combination with the P2 Vegetation and Invasive Plants data, can be used to provide information about the expected future forest composition and the adequacy of the forest to sustain its native composition.

Definitions for database tables:

For further detail and examples, refer to the Overview (chapter 1).

Keys Presented with the Tables

| Key type | Definition |
|----------|--|
| Primary | A single column in a table whose values uniquely identify each row in an Oracle table. |
| Unique | Multiple columns in a table whose values uniquely identify each row in an Oracle table. There can be one and only one row for each unique key value. |
| Natural | A type of unique key made from existing attributes in the table. It is stored as an index in this database. |
| Foreign | A column in a table that is used as a link to a matching column in another Oracle table. |

Oracle Data Types

| Oracle data type | Definition |
|------------------|---|
| DATE | A data type that stores the date. |
| NUMBER | A data type that contains only numbers, positive or negative, with a floating-decimal point. |
| NUMBER(SIZE, D) | A data type that contains only numbers up to a specified maximum size. The maximum size (<i>and optional fixed-decimal point</i>) is specified by the value(s) listed in the parentheses. |
| VARCHAR2(SIZE) | A data type that contains alphanumeric data (numbers and/or characters) up to a specified maximum size. |

6.1 Plot Regeneration Table

(Oracle table name: PLOT_REGEN)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---------------------------|------------------|
| 6.1.1 | CN | Sequence number | VARCHAR2(34) |
| 6.1.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 6.1.3 | INVYR | Inventory year | NUMBER(4) |
| 6.1.4 | STATECD | State code | NUMBER(4) |
| 6.1.5 | UNITCD | Survey unit code | NUMBER(2) |
| 6.1.6 | COUNTYCD | County code | NUMBER(3) |
| 6.1.7 | PLOT | Plot number | NUMBER(5) |
| 6.1.8 | BROWSE_IMPACT | Browse impact | NUMBER(1) |
| 6.1.9 | CREATED_BY | Created by | VARCHAR2(30) |
| 6.1.10 | CREATED_DATE | Created date | DATE |
| 6.1.11 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 6.1.12 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 6.1.13 | MODIFIED_DATE | Modified date | DATE |
| 6.1.14 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 6.1.15 | CYCLE | Inventory cycle number | NUMBER(2) |
| 6.1.16 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--|------------------|----------------------|
| Primary | CN | N/A | PLTREGEN_PK |
| Unique | STATECD, COUNTYCD, PLOT, INVYR | N/A | PLTREGEN_UK1 |
| Unique | STATECD, COUNTYCD, PLOT, CYCLE, SUBCYCLE | N/A | PLTREGEN_UK2 |
| Foreign | PLT_CN | PLTREGEN to PLOT | PLTREGEN_PLT_FK |

6.1.1 CN

Sequence number. A unique sequence number used to identify a plot regeneration record.

6.1.2 PLT_CN

Plot sequence number. Foreign key linking the plot regeneration record to the plot record for this location.

6.1.3 INVYR

Inventory year. See SURVEY.INVYR description for definition.

6.1.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

6.1.5 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 B](#) for codes.

6.1.6 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

6.1.7 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.

6.1.8 BROWSE_IMPACT

Browse impact. A code designating the amount of animal browse pressure exerted on the regeneration of the accessible forest area within the four subplots. Pressure may be due to browse by deer, elk, feral hogs, livestock, moose, and other wildlife.

Codes: BROWSE_IMPACT

| Code | Description |
|------|---|
| 1 | Very low - plot is inside a well-maintained exclosure. |
| 2 | Low - no browsing observed, vigorous seedling(s) present (no exclosure present). |
| 3 | Medium - browsing evidence observed but not common, seedlings common. |
| 4 | High - browsing evidence common OR seedlings are rare. |
| 5 | Very high - browsing evidence omnipresent OR forest floor bare, severe browse line. |

6.1.9 CREATED_BY

Created by. See SURVEY.[CREATED_BY](#) description for definition.

6.1.10 CREATED_DATE

Created date. See SURVEY.[CREATED_DATE](#) description for definition.

6.1.11 CREATED_IN_INSTANCE

Created in instance. See SURVEY.[CREATED_IN_INSTANCE](#) description for definition.

6.1.12 MODIFIED_BY

Modified by. See SURVEY.[MODIFIED_BY](#) description for definition.

6.1.13 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

6.1.14 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

6.1.15 CYCLE

Inventory cycle number. See SURVEY.CYCLE description for definition.

6.1.16 SUBCYCLE

Inventory subcycle number. See SURVEY.SUBCYCLE description for definition.

6.2 Subplot Regeneration Table

(Oracle table name: SUBPLOT_REGEN)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|----------------------------|-------------------------------------|------------------|
| 6.2.1 | CN | Sequence number | VARCHAR2(34) |
| 6.2.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 6.2.3 | SBP_CN | Subplot sequence number | VARCHAR2(34) |
| 6.2.4 | INVYR | Inventory year | NUMBER(4) |
| 6.2.5 | STATECD | State code | NUMBER(4) |
| 6.2.6 | UNITCD | Survey unit code | NUMBER(2) |
| 6.2.7 | COUNTYCD | County code | NUMBER(3) |
| 6.2.8 | PLOT | Plot number | NUMBER(5) |
| 6.2.9 | SUBP | Subplot number | NUMBER(2) |
| 6.2.10 | REGEN_SUBP_STATUS_CD | Regeneration subplot status code | NUMBER(1) |
| 6.2.11 | REGEN_NONSAMPLE_REASON_CD | Regeneration nonsampled reason code | NUMBER(2) |
| 6.2.12 | SUBPLOT_SITE_LIMITATIONS | Subplot site limitations | NUMBER(1) |
| 6.2.13 | MICROPLOT_SITE_LIMITATIONS | Microplot site limitations | NUMBER(1) |
| 6.2.14 | CREATED_BY | Created by | VARCHAR2(30) |
| 6.2.15 | CREATED_DATE | Created date | DATE |
| 6.2.16 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 6.2.17 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 6.2.18 | MODIFIED_DATE | Modified date | DATE |
| 6.2.19 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 6.2.20 | CYCLE | Inventory cycle number | NUMBER(2) |
| 6.2.21 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |
| 6.2.22 | REGEN_MICR_STATUS_CD | Regeneration microplot status code | NUMBER (1) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--------------------------------------|--------------------------|----------------------|
| Primary | CN | N/A | SBPREGEN_PK |
| Unique | STATECD, COUNTYCD, PLOT, SUBP, INVYR | N/A | SBPREGEN_UK |
| Foreign | PLT_CN | SUBPLOT_REGEN to PLOT | SBPREGEN_PLT_FK |
| Foreign | SBP_CN | SUBPLOT_REGEN to SUBPLOT | SBPREGEN_SBP_FK |

6.2.1 CN

Sequence number. A unique sequence number used to identify a subplot regeneration record.

6.2.2 PLT_CN

Plot sequence number. Foreign key linking the subplot regeneration record to the plot record for this location.

6.2.3 SBP_CN

Subplot sequence number. Foreign key linking the subplot regeneration record to the subplot record for this location.

6.2.4 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

6.2.5 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

6.2.6 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 B](#) for codes.

6.2.7 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

6.2.8 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.

6.2.9 SUBP

Subplot number. The number assigned to the subplot where subplot regeneration data were collected.

Codes: SUBP

| Code | Description |
|------|--------------------|
| 1 | Center subplot. |
| 2 | North subplot. |
| 3 | Southeast subplot. |
| 4 | Southwest subplot. |

6.2.10 REGEN_SUBP_STATUS_CD

Regeneration subplot status code. A code indicating whether or not the subplot was sampled for advanced regeneration. This attribute was retired starting with INVYR = 2015. Data for all years are now populated in REGEN_MICR_STATUS_CD.

Note: For INVYR <2015, the field guide referenced the sampling unit as the subplot even though seedlings are and have only been counted on the microplots.

Codes: REGEN_SUBP_STATUS_CD

| Code | Description |
|------|--|
| 1 | Subplot sampled for advanced regeneration. |
| 2 | Subplot not sampled for advanced regeneration. |

6.2.11 REGEN_NONSAMPLE_REASN_CD

Regeneration nonsampled reason code. A code indicating the reason a microplot was not sampled for advanced regeneration.

Codes: REGEN_NONSAMPLE_REASN_CD

| Code | Description |
|------|--|
| 10 | Other (e.g., snow or water covering vegetation). |

6.2.12 SUBPLOT_SITE_LIMITATIONS

Subplot site limitations. A code indicating if the site has a limitation on at least 30 percent of the accessible forest area of the subplot that would inhibit or preclude the presence of regenerating seedlings. This attribute was retired starting with INVYR = 2015. Note: For INVYR <2015, the field guide referenced the sampling unit as the subplot even though seedlings are and have only been counted on the microplots.

Codes: SUBPLOT_SITE_LIMITATIONS

| Code | Description |
|------|--|
| 1 | No site limitation. |
| 2 | Rocky surface with little or no soil. |
| 3 | Water-saturated soils (during the growing season). |

6.2.13 MICROPLOT_SITE_LIMITATIONS

Microplot site limitations. A code indicating if the site has a limitation on at least 30 percent of the accessible forest area of the microplot that would inhibit or preclude the presence of regenerating seedlings.

Codes: MICROPLOT_SITE_LIMITATIONS

| Code | Description |
|------|---|
| 1 | No site limitation. |
| 2 | Rocky surface with little or no soil. |
| 3 | Water-saturated soil (during the growing season). |
| 4 | Thick duff layer (in excess of 2 inches thick). |

6.2.14 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

6.2.15 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

6.2.16 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

6.2.17 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

6.2.18 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

6.2.19 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

6.2.20 CYCLE

Inventory cycle number. See SURVEY.CYCLE description for definition.

6.2.21 SUBCYCLE

Inventory subcycle number. See SURVEY.SUBCYCLE description for definition.

6.2.22 REGEN_MICR_STATUS_CD

Regeneration microplot status code. A code indicating whether the microplot was sampled for advanced regeneration. Based on the procedures described in Bechtold and Patterson (2005), POP_STRATUM.ADJ_FACTOR_REGEN_MICR should be applied when making population estimates. This compensates for any nonsampled microplots or cases where the sampling status is ambiguous (codes 3 through 9).

Codes: REGEN_MICR_STATUS_CD

| Code | Description |
|------|---|
| 1 | Advance regeneration sampled - accessible forest land condition present on the microplot. |
| 2 | Advance regeneration sampled - no accessible forest land condition present on the microplot. |
| 3 | Advance regeneration nonsampled - accessible forest land condition present on the microplot, but advance regeneration variables cannot be assessed (<i>core</i> SEEDLING.TREECOUNT is still measured). |
| 4 | Advance regeneration nonsampled - QA/QC did not measure subplot/microplot for tree/sapling/seedling data (PLOT.QA_STATUS = 2-5 only). |
| 5 | Nonsampled - subplot not sampled (SUBPLOT.SUBP_STATUS_CD = 3). |
| 9 | Advance regeneration sample status is ambiguous - collected under earlier, more general definition; refer to REGEN_SUBP_STATUS_CD. |

6.3 Seedling Regeneration Table

(Oracle table name: SEEDLING_REGEN)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-----------------------------------|------------------|
| 6.3.1 | CN | Sequence number | VARCHAR2(34) |
| 6.3.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 6.3.3 | CND_CN | Condition sequence number | VARCHAR2(34) |
| 6.3.4 | SCD_CN | Subplot condition sequence number | VARCHAR2(34) |
| 6.3.5 | INVYR | Inventory year | NUMBER(4) |
| 6.3.6 | STATECD | State code | NUMBER(4) |
| 6.3.7 | UNITCD | Survey unit code | NUMBER(2) |
| 6.3.8 | COUNTYCD | County code | NUMBER(3) |
| 6.3.9 | PLOT | Plot number | NUMBER(5) |
| 6.3.10 | SUBP | Subplot number | NUMBER(1) |
| 6.3.11 | CONDID | Condition class number | NUMBER(1) |
| 6.3.12 | SPCD | Species code | NUMBER |
| 6.3.13 | SPGRPCD | Species group code | NUMBER(2) |
| 6.3.14 | SEEDLING_SOURCE_CD | Seedling source code | VARCHAR2(2) |
| 6.3.15 | LENGTH_CLASS_CD | Length class code | NUMBER(1) |
| 6.3.16 | SEEDLINGCOUNT | Count of qualifying seedlings | NUMBER(3) |
| 6.3.17 | CREATED_BY | Created by | VARCHAR2(30) |
| 6.3.18 | CREATED_DATE | Created date | DATE |
| 6.3.19 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 6.3.20 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 6.3.21 | MODIFIED_DATE | Modified date | DATE |
| 6.3.22 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 6.3.23 | CYCLE | Inventory cycle number | NUMBER(2) |
| 6.3.24 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |
| 6.3.25 | TPA_UNADJ | Trees per acre unadjusted | NUMBER(11,6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|---|-----------------------------|----------------------|
| Primary | CN | N/A | SDLREGEN_PK |
| Unique | STATECD, COUNTYCD, PLOT, SUBP, INVYR, SPCD, CONDID, SEEDLING_SOURCE_CD, LENGTH_CLASS_CD | N/A | SDLREGEN_UK |
| Foreign | CND_CN | SEEDLING_REGEN to COND | SDLREGEN_CND_FK |
| Foreign | PLT_CN | SEEDLING_REGEN to PLOT | SDLREGEN_PLT_FK |
| Foreign | SCD_CN | SEEDLING_REGEN to SUBP_COND | SDLREGEN_SCD_FK |

6.3.1 CN

Sequence number. A unique sequence number used to identify a seedling regeneration record.

6.3.2 PLT_CN

Plot sequence number. Foreign key linking the seedling regeneration record to the plot record for this location.

6.3.3 CND_CN

Condition sequence number. Foreign key linking the seedling regeneration record to the condition record for this location.

6.3.4 SCD_CN

Subplot condition sequence number. Foreign key linking the seedling regeneration record to the subplot condition record for this location.

6.3.5 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

6.3.6 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

6.3.7 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 B](#) for codes.

6.3.8 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

6.3.9 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.

6.3.10 SUBP

Subplot number. The number assigned to the subplot where seedling regeneration data were collected.

Codes: SUBP

| Code | Description |
|------|--------------------|
| 1 | Center subplot. |
| 2 | North subplot. |
| 3 | Southeast subplot. |
| 4 | Southwest subplot. |

6.3.11 CONDID

Condition class number. The unique identifying number assigned to a condition on which the regeneration seedling is located, and is defined in the COND table. See COND.[CONDID](#) for details on the attributes which delineate a condition.

6.3.12 SPCD

Species code. An FIA tree species code. Refer to [appendix F](#) for codes.

6.3.13 SPGRPCD

Species group code. A code assigned to each tree species in order to group them for reporting purposes. Codes and their associated names (see REF_SPECIES_GROUP.[NAME](#)) are shown in [appendix E](#). Refer to [appendix F](#) for individual tree species and corresponding species group codes.

6.3.14 SEEDLING_SOURCE_CD

Seedling source code. A code indicating the source of the seedlings.

Codes: SEEDLING_SOURCE_CD

| Code | Description |
|------|--|
| 1 | Other seedling. |
| 2 | Stump sprout. |
| 3 | Competitive oak, hickory, or butternut seedling (Note: Research indicates that competitive seedlings are highly likely to become dominant or codominant stems in the next stand during forest succession. To be classified as competitive, stems must have a root collar diameter [d.r.c.] >0.75 inches or have a length of at least 3 feet. In situations with relatively high tally, it should only be necessary to check at least 10% of d.r.c.'s.) |

6.3.15 LENGTH_CLASS_CD

Length class code. A code indicating the length class of the seedlings.

Codes: LENGTH_CLASS_CD

| Code | Description |
|-------------|-----------------------------------|
| 1 | 2 inches to less than 6 inches. |
| 2 | 6 inches to less than 12 inches. |
| 3 | 1 foot to less than 3 feet. |
| 4 | 3 feet to less than 5 feet. |
| 5 | 5 feet to less than 10 feet. |
| 6 | Greater than or equal to 10 feet. |

6.3.16 SEEDLINGCOUNT

Count of qualifying seedlings. A count of the number of established live tally tree seedlings counted on the microplot by subplot, species, condition class number, seedling source, and length class.

6.3.17 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

6.3.18 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

6.3.19 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

6.3.20 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

6.3.21 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

6.3.22 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

6.3.23 CYCLE

Inventory cycle number. See SURVEY.CYCLE description for definition.

6.3.24 SUBCYCLE

Inventory subcycle number. See SURVEY.SUBCYCLE description for definition.

6.3.25 TPA_UNADJ

Trees per acre unadjusted. The number of trees per acre that the sample seedling count theoretically represents for the whole plot. Sum TPA_UNADJ for all seedling regeneration table records by plot to derive the total number of seedlings per acre represented by plot. This attribute must be adjusted using POP_STRATUM.ADJ_FACTOR_REGEN_MICR to derive population estimates. Examples of estimating population totals are shown in [The Forest Inventory and Analysis Database: Population Estimation User Guide](#).

Section revision: 01.2024

Chapter 7: Database Tables - Ground Cover, Pacific Northwest Research Station (PNWRS)

Chapter Contents:

| Section | Database table | Oracle table name |
|---------|--|--------------------|
| 7.1 | Ground Cover Table | GRND_CVR |
| 7.2 | Ground Layer Functional Groups Table | GRND_LYR_FNCTL_GRP |
| 7.3 | Ground Layer Microquadrat Table | GRND_LYR_MICROQUAD |

Definitions for database tables:

For further detail and examples, refer to the Overview (chapter 1).

Keys Presented with the Tables

| Key type | Definition |
|----------|--|
| Primary | A single column in a table whose values uniquely identify each row in an Oracle table. |
| Unique | Multiple columns in a table whose values uniquely identify each row in an Oracle table. There can be one and only one row for each unique key value. |
| Natural | A type of unique key made from existing attributes in the table. It is stored as an index in this database. |
| Foreign | A column in a table that is used as a link to a matching column in another Oracle table. |

Oracle Data Types

| Oracle data type | Definition |
|------------------|---|
| DATE | A data type that stores the date. |
| NUMBER | A data type that contains only numbers, positive or negative, with a floating-decimal point. |
| NUMBER(SIZE, D) | A data type that contains only numbers up to a specified maximum size. The maximum size (<i>and optional fixed-decimal point</i>) is specified by the value(s) listed in the parentheses. |
| VARCHAR2(SIZE) | A data type that contains alphanumeric data (numbers and/or characters) up to a specified maximum size. |

7.1 Ground Cover Table

(Oracle table name: GRND_CVR)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-----------------------------|------------------|
| 7.1.1 | CN | Sequence number | VARCHAR2(34) |
| 7.1.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 7.1.3 | INVYR | Inventory year | NUMBER(4) |
| 7.1.4 | STATECD | State code | NUMBER(4) |
| 7.1.5 | UNITCD | Survey unit code | NUMBER(2) |
| 7.1.6 | COUNTYCD | County code | NUMBER(3) |
| 7.1.7 | PLOT | Plot number | NUMBER(5) |
| 7.1.8 | SUBP | Subplot number | NUMBER |
| 7.1.9 | TRANSECT | Transect | NUMBER(3) |
| 7.1.10 | CVR_PCT | Cover percent | NUMBER(3) |
| 7.1.11 | GRND_CVR_SEG | Ground cover segment number | NUMBER(1) |
| 7.1.12 | GRND_CVR_TYP | Ground cover type | VARCHAR2(4) |
| 7.1.13 | CYCLE | Inventory cycle number | NUMBER(2) |
| 7.1.14 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |
| 7.1.15 | CREATED_BY | Created by | VARCHAR2(30) |
| 7.1.16 | CREATED_DATE | Created date | DATE |
| 7.1.17 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 7.1.18 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 7.1.19 | MODIFIED_DATE | Modified date | DATE |
| 7.1.20 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|---|------------------|----------------------|
| Primary | CN | N/A | GRND_CVR_PK |
| Unique | PLT_CN, SUBP, TRANSECT, GRND_CVR_SEG, GRND_CVR_TYP | N/A | GRND_CVR_UK |
| Foreign | PLT_CN | GRND_CVR to PLOT | GRND_CVR_PLT_FK |

This table contains ground cover measurement data for National Forest System (NFS) ownership protocols. Currently, this table is populated only by the PNWRS FIA work unit (SURVEY.RSCD = 26). Ground surface cover data for the RMRS FIA work unit (SURVEY.RSCD = 22) is stored in the SUBPLOT table.

7.1.1 CN

Sequence number. A unique sequence number used to identify a ground cover record.

7.1.2 PLT_CN

Plot sequence number. Foreign key linking the ground cover record to the plot record.

7.1.3 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

7.1.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

7.1.5 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 B](#) for codes.

7.1.6 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

7.1.7 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.

7.1.8 SUBP

Subplot number. The number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4. Other plot designs have various subplot number values. See PLOT.[DESIGNCD](#) and [appendix G](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

7.1.9 TRANSECT

Transect. A code indicating the transect on which ground cover was measured. Each code represents the azimuth of the transect line, extending out from subplot center.

Codes: TRANSECT (INVYR ≤2012)

| Code | Description |
|------|---|
| 30 | Transect extends 30 degrees from subplot center. |
| 150 | Transect extends 150 degrees from subplot center. |
| 270 | Transect extends 270 degrees from subplot center. |

Codes: TRANSECT (INVYR ≥2013)

| Subplot | Code | Description |
|----------------|-------------|---|
| 1 | 90 | Transect extends 90 degrees from subplot center. |
| 1 | 270 | Transect extends 270 degrees from subplot center. |
| 2 | 360 | Transect extends 360 degrees from subplot center. |
| 2 | 180 | Transect extends 180 degrees from subplot center. |
| 3 | 135 | Transect extends 135 degrees from subplot center. |
| 3 | 315 | Transect extends 315 degrees from subplot center. |
| 4 | 45 | Transect extends 45 degrees from subplot center. |
| 4 | 225 | Transect extends 225 degrees from subplot center. |

7.1.10 CVR_PCT

Cover percent. The percentage of cover to the nearest 1 percent, for a ground cover type found on each transect segment. If multiple ground cover types (e.g., [BARE](#), [LITT](#), [ROCK](#)) are present on a segment, a separate record is populated for each category. Individual categories add up to 100 percent for each 10-foot segment along the transect.

7.1.11 GRND_CVR_SEG

Ground cover segment number. A code indicating a 10-foot segment on the ground cover transect. A segment is a continuous length of line within one condition, and is based on slope distance from point center.

Codes: GRND_CVR_SEG

| Code | Description |
|-------------|--|
| 1 | Segment for 4.0-14.0 feet (slope distance). |
| 2 | Segment for 14.0-24.0 feet (slope distance). |

7.1.12 GRND_CVR_TYP

Ground cover type. A code indicating the ground cover type found on each transect segment. If multiple ground cover types (e.g., [BARE](#), [LITT](#), [ROCK](#)) are present on a segment, a separate record is populated for each category. Individual categories add up to 100 percent for each 10-foot segment along the transect.

Ground cover items must be in contact with the ground (e.g., a log suspended 1-foot above the ground over the transect does not count as ground cover). If items overlay each other (e.g., [MOSS](#) over [ROCK](#), [LITT](#) over [WOOD](#)), the item viewed from above is measured.

Ground cover type is only recorded for condition classes on R5 or R6 Forest Service administered lands (COND.ADFORCD = 501-699); the category '[NONS](#)' is recorded for portions of the transect not on R5 or R6 Forest Service administered land.

Codes: GRND_CVR_TYP

| Code | Description |
|-------------|--|
| ASH | Residue after wood and other combustible material has been burned off. Does not include ash from aerial volcanic expulsions. |
| BARE | Exposed Soil: Bare soil, composed of particles less than 1/8 inch in diameter, which is not covered by rock, cryptogams, or organic material. Does not include any part of a road (see definition for road). |
| BAVE | The basal area cover, at ground surface, of any plants occupying the ground surface area (this category only includes area where plant stems come out of the ground). Includes any trees, shrubs, basal grasses, and forbs (live, or senesced from the current year). Senesced = live during the current year's growing season, but now dead. |
| CRYP | Thin, biotically dominated ground or surface crusts on soil in dry rangeland conditions; e.g., cryptogamic crust (algae, lichen, mosses or cyanobacteria). |
| DEVP | Surface area occupied or covered by any man-made structure other than a road, such as a building, dam, parking lot, electronic site/structure. |
| LICH | An organism generally recognized as a single plant consisting of a fungus and an alga or cyanobacterium living in a symbiotic association. This code does not apply to lichen growing on bare soil in dry rangeland conditions. For rangeland conditions see cryptogamic crusts. |
| LITT | Leaf and needle litter, and duff not yet incorporated into the decomposed top humus layer (includes animal droppings). |
| MOSS | Nonvascular, terrestrial green plant, including mosses, hornworts, and liverworts. Always herbaceous. This code does not apply to moss growing on bare soil in dry rangeland conditions. For rangeland conditions see cryptogamic crusts. |
| NOIN | Non-inventoried condition classes on R5 or R6 Forest Service administered land: Census water, noncensus water, or nonsampled (hazardous, access denied, outside U.S. boundary). |
| NONS | Nonsampled: Condition class is not on R5 or R6 Forest Service administered land. |
| PEIS | Surface area covered by ice and snow at the time of plot measurement, considered permanent. |
| ROAD | Includes improved roads used to assign condition class, which are generally constructed using machinery, and is the area where the original topography has been disturbed by cutbanks and fill. Also includes unimproved trails impacted by regular use of motorized machines (e.g., motorcycles, jeeps, and off road vehicles). Non-motorized trails and unimproved traces, and roads created by occasional use for skidding logs are not included. |
| ROCK | Relatively hard, naturally formed mineral or petrified matter greater than 1/8 inch in diameter appearing on the soil surface, as small to large fragments, or as relatively large bodies, cliffs, outcrops or peaks. Includes bedrock. Does not include tephra or pyroclastic material (see definition for TEPH). |
| TEPH | All material formed by volcanic explosion or aerial expulsion from a volcanic vent, such as tephra, or pyroclastic material. |
| TRIS | Surface area covered by ice and snow at the time of plot measurement, considered transient. |
| WATE | Water is coded where the water table is above the ground surface during the growing season, such as streams, bogs, swamps, marshes, and ponds. |
| WOOD | Woody Material, Slash & Debris: Any woody material, small and large woody debris, regardless of depth. Includes stumps. Litter is not included. |

7.1.13 CYCLE

Inventory cycle number. See SURVEY.[CYCLE](#) description for definition.

7.1.14 SUBCYCLE

Inventory subcycle number. See SURVEY.[SUBCYCLE](#) description for definition.

7.1.15 CREATED_BY

Created by. See SURVEY.[CREATED_BY](#) description for definition.

7.1.16 CREATED_DATE

Created date. See SURVEY.[CREATED_DATE](#) description for definition.

7.1.17 CREATED_IN_INSTANCE

Created in instance. See SURVEY.[CREATED_IN_INSTANCE](#) description for definition.

7.1.18 MODIFIED_BY

Modified by. See SURVEY.[MODIFIED_BY](#) description for definition.

7.1.19 MODIFIED_DATE

Modified date. See SURVEY.[MODIFIED_DATE](#) description for definition.

7.1.20 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

7.2 Ground Layer Functional Groups Table

(Oracle table name: GRND_LYR_FNCTL_GRP)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|----------------------------|---|------------------|
| 7.2.1 | CN | Sequence number | VARCHAR2(34) |
| 7.2.2 | STATECD | State code | NUMBER(2) |
| 7.2.3 | COUNTYCD | County code | NUMBER(3) |
| 7.2.4 | PLOT | Plot number | NUMBER(5) |
| 7.2.5 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 7.2.6 | INVYR | Inventory year | NUMBER(4) |
| 7.2.7 | INV_VST_NBR | Inventory visit number | NUMBER(2) |
| 7.2.8 | CYCLE | Inventory cycle number | NUMBER(2) |
| 7.2.9 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |
| 7.2.10 | UNITCD | Survey unit code | NUMBER(2) |
| 7.2.11 | SUBP | Subplot number | NUMBER(1) |
| 7.2.12 | TRANSECT | Transect (Interior Alaska) | NUMBER(3) |
| 7.2.13 | MICROQUAD | Microquadrat number (Interior Alaska) | NUMBER(2) |
| 7.2.14 | FUNCTIONAL_GROUP_CD | Functional group code (Interior Alaska) | VARCHAR2(5) |
| 7.2.15 | FUNCTIONAL_GROUP_UNCERTAIN | Functional group uncertain (Interior Alaska) | VARCHAR2(1) |
| 7.2.16 | COVER_CLASS_CD | Cover class code (Interior Alaska) | VARCHAR2(2) |
| 7.2.17 | DEPTH_CLASS_CD | Depth class code (Interior Alaska) | VARCHAR2(2) |
| 7.2.18 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 7.2.19 | MODIFIED_DATE | Modified date | Date |
| 7.2.20 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 7.2.21 | CREATED_BY | Created by | VARCHAR2(30) |
| 7.2.22 | CREATED_DATE | Created date | Date |
| 7.2.23 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 7.2.24 | GRND_LYR_CONFIG | Ground layer configuration name | VARCHAR2(20) |
| 7.2.25 | MQUADPAC_UNADJ | Microquadrat area expansion to acre, unadjusted | NUMBER |
| 7.2.26 | BULKDENS | Functional group bulk density | NUMBER |
| 7.2.27 | DRYBIOT | Functional group biomass | NUMBER |
| 7.2.28 | CARBON | Functional group carbon | NUMBER |
| 7.2.29 | NITROGEN | Functional group nitrogen | NUMBER |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|---|--------------------------------|----------------------|
| Primary | CN | N/A | FGLFGP_PK |
| Unique | PLT_CN, SUBP, TRANSECT, MICROQUAD, FUNCTIONAL_GROUP_CD | N/A | FGLFGP_UK |
| Unique | STATECD, COUNTYCD, PLOT, INVYR, INV_VST_NBR, SUBP, TRANSECT, MICROQUAD, FUNCTIONAL_GROUP_CD | N/A | FGLFGP_UK2 |
| Unique | STATECD, CYCLE, SUBCYCLE, COUNTYCD, PLOT, SUBP, TRANSECT, MICROQUAD, FUNCTIONAL_GROUP_CD, INV_VST_NBR | N/A | FGLFGP_UK3 |
| Foreign | PLT_CN | GRND_LYR_FUNCTL_GRP to PLOT | FGLFGP_PLT_FK |

Currently, this table is populated only by the PNWRS FIA work unit (SURVEY. RSCD = 27).

7.2.1 CN

Sequence number. A unique sequence number used to identify a ground layer functional groups record.

7.2.2 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

7.2.3 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

7.2.4 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.

7.2.5 PLT_CN

Plot sequence number. Foreign key linking the ground layer functional groups record to the plot record.

7.2.6 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

7.2.7 INV_VST_NBR

Inventory visit number. Visit number within a cycle. A plot is usually visited once per cycle, but may be visited again for quality assurance visits or other measurements.

7.2.8 CYCLE

Inventory cycle number. See SURVEY.[CYCLE](#) description for definition.

7.2.9 SUBCYCLE

Inventory subcycle number. See SURVEY.[SUBCYCLE](#) description for definition.

7.2.10 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 B](#) for codes.

7.2.11 SUBP

Subplot number. The number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4.

Codes: SUBP

| Code | Description |
|------|--------------------|
| 1 | Center subplot. |
| 2 | North subplot. |
| 3 | Southeast subplot. |
| 4 | Southwest subplot. |

7.2.12 TRANSECT

Transect (Interior Alaska). The transect azimuth, in degrees, to identify which transect is being sampled. Azimuth indicates direction from subplot center.

Codes: TRANSECT (Interior Alaska)

| Code | Subplot |
|------|---------|
| 90 | 1 |
| 270 | 1 |
| 360 | 2 |
| 180 | 2 |
| 135 | 3 |
| 315 | 3 |
| 45 | 4 |
| 225 | 4 |

7.2.13 MICROQUAD

Microquadrat number (Interior Alaska). A code indicating the number of the microquadrat. This code identifies the placement of the microquadrat, in feet (horizontal distance), on the transect.

Codes: MICROQUAD

| Code | Description |
|------|---|
| 5 | Microquadrat located at the 5-foot mark on the transect. |
| 10 | Microquadrat located at the 10-foot mark on the transect. |
| 15 | Microquadrat located at the 15-foot mark on the transect. |
| 20 | Microquadrat located at the 20-foot mark on the transect. |

7.2.14 FUNCTIONAL_GROUP_CD

Functional group code (Interior Alaska). A code indicating the functional group observed on the microquadrat.

Codes: FUNCTIONAL_GROUP_CD

| Code | Description |
|------|--|
| MS | <i>Sphagnum</i> peat-moss. |
| MN | N-fixing feather mosses: <i>Pleurozium</i> , <i>Hylocomium</i> . |
| MF | Other feather (pleurocarp) mosses: <i>Thuidium</i> , <i>Kindbergia</i> . |
| MT | Turf (acrocarp) mosses: <i>Bryum</i> , <i>Mnium</i> , <i>Polytrichum</i> . |
| VF | Flat (thalloid) liverworts: <i>Marchantia</i> , <i>Conocephalum</i> . |
| VS | Stem-and-leaf liverworts: <i>Anthelia</i> , <i>Cephaloziella</i> , <i>Marsupella</i> . |
| LF | Forage lichens: branched- <i>Cladonia</i> , <i>Alectoria</i> , <i>Bryocaulon</i> . |
| LN | N-fixing foliose lichens: <i>Peltigera</i> , <i>Nephroma</i> , <i>Solorina</i> , <i>Sticta</i> . |
| LU | N-fixing fruticose lichens: <i>Stereocaulon</i> . |
| LL | Other foliose Lichens: <i>Parmelia</i> , <i>Physcia</i> . |
| LR | Other fruticose lichens: unbranched- <i>Cladonia</i> , <i>Hypogymnia</i> . |
| CO | Orange lichens: <i>Xanthoria</i> , <i>Candelaria</i> . |
| CC | Biotic soil crust: <i>Psora</i> , <i>Placidium</i> , cyanobacteria. |

7.2.15 FUNCTIONAL_GROUP_UNCERTAIN

Functional group uncertain (Interior Alaska). A code indicating the reliability of the functional group identification (see FUNCTIONAL_GROUP_CD). This attribute was collected for the 2014 Interior Alaska Pilot.

Codes: FUNCTIONAL_GROUP_UNCERTAIN

| Code | Description |
|------|---|
| Y | Yes - The field crew was certain in the functional group identification. |
| N | No - The field crew was uncertain in the functional group identification. |

7.2.16 COVER_CLASS_CD

Cover class code (Interior Alaska). A code indicating the cover class for the vertically projected percent cover over the entire microquadrat, combining together all species included in the functional group.

Codes: COVER_CLASS_CD

| Code | Percent cover | Description |
|-------------|----------------------|--------------------------------|
| 0 | Absent | None. |
| T | >0 to 0.1% | Trace. |
| 1 | >0.1 to 1% | Two postage stamps. |
| 2 | >1 to 2% | Half a standard business card. |
| 5 | >2 to 5% | One business card. |
| 10 | >5 to 10% | One U.S. dollar bill. |
| 25 | >10 to 25% | - |
| 50 | >25 to 50% | - |
| 75 | >50 to 75% | - |
| 95 | >75 to 95% | - |
| 99 | >95% | Virtually complete cover. |

7.2.17 DEPTH_CLASS_CD

Depth class code (Interior Alaska). A code indicating the depth class for the functional group on the microquadrat. This attribute is recorded up to a maximum depth of 16 inches.

Codes: COVER_CLASS_CD

| Code | Description |
|-------------|--|
| 0 | Absent. |
| T | 0 to 1/8 inch (trace, often used for thin biotic soil crusts.) |
| Q | >1/8 to 1/4 inch. |
| H | >1/4 to 1/2 inch. |
| 1 | >1/2 to 1 inch. |
| 2 | >1 to 2 inches. |
| 4 | >2 to 4 inches |
| 8 | >4 to 8 inches. |
| 16 | >8 to 16 inches. |

7.2.18 MODIFIED_BY

Modified by. See SURVEY.[MODIFIED_BY](#) description for definition.

7.2.19 MODIFIED_DATE

Modified date. See SURVEY.[MODIFIED_DATE](#) description for definition.

7.2.20 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

7.2.21 CREATED_BY

Created by. See SURVEY.[CREATED_BY](#) description for definition.

7.2.22 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

7.2.23 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

7.2.24 GRND_LYR_CONFIG

Ground layer configuration name. A descriptor identifying the ground layer configuration.

Codes: GRND_LYR_CONFIG

| Code | Description |
|-------|------------------|
| INTAK | Interior Alaska. |

7.2.25 MQUADPAC_UNADJ

Microquadrat area expansion to acre, unadjusted. Used for the expansion of the microquadrat area to an acre, based on 32 microquadrats per plot. The value 1264.642632 is used for PLOT.DESIGNCD = 506.

7.2.26 BULKDENS

Functional group bulk density. The calculated bulk density of the functional group.

7.2.27 DRYBIOT

Functional group biomass. The calculated biomass of the functional group on the microquadrat, in pounds per acre.

7.2.28 CARBON

Functional group carbon. The calculated carbon of the functional group on the microquadrat, in pounds per acre.

7.2.29 NITROGEN

Functional group nitrogen. The calculated nitrogen of the functional group on the microquadrat, in pounds per acre.

7.3 Ground Layer Microquadrat Table

(Oracle table name: GRND_LYR_MICROQUAD)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 7.3.1 | CN | Sequence number | VARCHAR2(34) |
| 7.3.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 7.3.3 | STATECD | State code | NUMBER(2) |
| 7.3.4 | CYCLE | Inventory cycle number | NUMBER(2) |
| 7.3.5 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |
| 7.3.6 | INVYR | Inventory year | NUMBER(4) |
| 7.3.7 | INV_VST_NBR | Inventory visit number | NUMBER(2) |
| 7.3.8 | UNITCD | Survey unit code | NUMBER(2) |
| 7.3.9 | COUNTYCD | County code | NUMBER(3) |
| 7.3.10 | PLOT | Plot number | NUMBER(5) |
| 7.3.11 | SUBP | Subplot number | NUMBER(1) |
| 7.3.12 | TRANSECT | Transect (Interior Alaska) | NUMBER(3) |
| 7.3.13 | MICROQUAD | Microquadrat number (Interior Alaska) | NUMBER(2) |
| 7.3.14 | CONDID | Condition class number | NUMBER(1) |
| 7.3.15 | MICROQUAD_STATUS_CD | Microquadrat status code (Interior Alaska) | NUMBER(1) |
| 7.3.16 | SNOW_COVER_PCT | Percent snow cover (Interior Alaska) | NUMBER(3) |
| 7.3.17 | TRAMPLING | Trampling code (Interior Alaska) | NUMBER(1) |
| 7.3.18 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 7.3.19 | MODIFIED_DATE | Modified date | Date |
| 7.3.20 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 7.3.21 | CREATED_BY | Created by | VARCHAR2(30) |
| 7.3.22 | CREATED_DATE | Created date | Date |
| 7.3.23 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--|----------------------------|----------------------|
| Primary | CN | N/A | FGLMP_PK |
| Unique | PLT_CN, SUBP, TRANSECT, MICROQUAD | N/A | FGLMP_UK |
| Unique | STATECD, COUNTYCD, PLOT, INVYR, INV_VST_NBR, SUBP, TRANSECT, MICROQUAD | N/A | FGLMP_UK2 |
| Unique | STATECD, CYCLE, SUBCYCLE, COUNTYCD, PLOT, SUBP, TRANSECT, MICROQUAD, INV_VST_NBR | N/A | FGLMP_UK3 |
| Foreign | PLT_CN | GRND_LYR_MICROQUAD to PLOT | FGLMP_PLT_FK |

Currently, this table is populated only by the PNWRS FIA work unit (SURVEY.RSCD = 27).

7.3.1 CN

Sequence number. A unique sequence number used to identify a ground layer microquadrat record.

7.3.2 PLT_CN

Plot sequence number. Foreign key linking the ground layer microquadrat record to the plot record.

7.3.3 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

7.3.4 CYCLE

Inventory cycle number. See SURVEY.CYCLE description for definition.

7.3.5 SUBCYCLE

Inventory subcycle number. See SURVEY.SUBCYCLE description for definition.

7.3.6 INVYR

Inventory year. See SURVEY.INVYR description for definition.

7.3.7 INV_VST_NBR

Inventory visit number. Visit number within a cycle. A plot is usually visited once per cycle, but may be visited again for quality assurance visits or other measurements.

7.3.8 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 B](#) for codes.

7.3.9 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

7.3.10 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.

7.3.11 SUBP

Subplot number. The number assigned to the subplot. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4.

Codes: SUBP

| Code | Description |
|------|--------------------|
| 1 | Center subplot. |
| 2 | North subplot. |
| 3 | Southeast subplot. |
| 4 | Southwest subplot. |

7.3.12 TRANSECT

Transect (Interior Alaska). The transect azimuth, in degrees, to identify which transect is being sampled. Azimuth indicates direction from subplot center.

Codes: TRANSECT

| Code | Subplot |
|------|---------|
| 90 | 1 |
| 270 | 1 |
| 360 | 2 |
| 180 | 2 |
| 135 | 3 |
| 315 | 3 |
| 45 | 4 |
| 225 | 4 |

7.3.13 MICROQUAD

Microquadrat number (Interior Alaska). A code indicating the number of the microquadrat. This code identifies the placement of the microquadrat, in feet (horizontal distance), on the transect.

Codes: MICROQUAD

| Code | Description |
|------|---|
| 5 | Microquadrat located at the 5-foot mark on the transect. |
| 10 | Microquadrat located at the 10-foot mark on the transect. |
| 15 | Microquadrat located at the 15-foot mark on the transect. |
| 20 | Microquadrat located at the 20-foot mark on the transect. |

7.3.14 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.

7.3.15 MICROQUAD_STATUS_CD

Microquadrat status code. A code indicating how the microquadrat was sampled.

Codes: MICROQUAD_STATUS_CD

| Code | Description |
|------|--|
| 1 | Microquad sampled ($\geq 50\%$ of the microquad is in an accessible forest condition), lichens or moss were found. |
| 2 | Microquad sampled ($\geq 50\%$ of the microquad is in an accessible nonforest vegetated or noncensus water condition), lichens or moss were found. |
| 3 | Microquad sampled ($\geq 50\%$ of the microquad is in an accessible forest condition), lichens and moss were not found or were 100% snow covered. |
| 4 | Microquad sampled ($\geq 50\%$ of the microquad is in an accessible nonforest vegetated or noncensus water condition), lichens and moss were not found or were 100% snow covered. |
| 5 | Microquad not sampled, access denied. |
| 6 | Microquad not sampled, hazardous. |
| 7 | Microquad not sampled, census water. |
| 8 | Microquad not sampled, other reason - enter in microquad notes. |

7.3.16 SNOW_COVER_PCT

Percent snow cover (Interior Alaska). The percent of the microquadrat area covered in snow.

7.3.17 TRAMPLING

Trampling code (Interior Alaska). A code indicating the level of damage to plants or disturbance of the ground layer by humans, livestock, or wildlife. This code is assigned to the microquadrat at the start of the ground layer measurements.

Codes: TRAMPLING

| Code | Description |
|-------------|---|
| 1 | Low: 0-10% of microquad trampled; pristine to relatively undisturbed. |
| 2 | Moderate: 10-50% of microquad trampled; trampling by animals or field crew. |
| 3 | Heavy: >50% of microquad trampled; hiking trail or heavily grazed. |

7.3.18 MODIFIED_BY

Modified by. See SURVEY.[MODIFIED_BY](#) description for definition.

7.3.19 MODIFIED_DATE

Modified date. See SURVEY.[MODIFIED_DATE](#) description for definition.

7.3.20 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

7.3.21 CREATED_BY

Created by. See SURVEY.[CREATED_BY](#) description for definition.

7.3.22 CREATED_DATE

Created date. See SURVEY.[CREATED_DATE](#) description for definition.

7.3.23 CREATED_IN_INSTANCE

Created in instance. See SURVEY.[CREATED_IN_INSTANCE](#) description for definition.

Section revision: 04.2024

Chapter 8: Database Tables - Soils, Pacific Northwest Research Station (PNWRS)

Chapter Contents:

| Section | Database table | Oracle table name |
|---------|------------------------------------|------------------------|
| 8.1 | Subplot Soil Sample Location Table | SUBP_SOIL_SAMPLE_LOC |
| 8.2 | Subplot Soil Sample Layer Table | SUBP_SOIL_SAMPLE_LAYER |

The soils tables in this chapter are currently only populated by the PNWRS FIA work unit (SURVEY.rscd = 26, 27).

Refer to the "The Forest Inventory and Analysis Database: Database Description and User Guide for Phase 3 (version 6.0.1)" for documentation pertaining to other soils tables populated by FIA (available at web address:
<https://www.fs.usda.gov/research/products/dataandtools/tools/fia-datamart>).

Definitions for database tables:

For further detail and examples, refer to the Overview (chapter 1).

Keys Presented with the Tables

| Key type | Definition |
|----------|--|
| Primary | A single column in a table whose values uniquely identify each row in an Oracle table. |
| Unique | Multiple columns in a table whose values uniquely identify each row in an Oracle table. There can be one and only one row for each unique key value. |
| Natural | A type of unique key made from existing attributes in the table. It is stored as an index in this database. |
| Foreign | A column in a table that is used as a link to a matching column in another Oracle table. |

Oracle Data Types

| Oracle data type | Definition |
|------------------|---|
| DATE | A data type that stores the date. |
| NUMBER | A data type that contains only numbers, positive or negative, with a floating-decimal point. |
| NUMBER(SIZE, D) | A data type that contains only numbers up to a specified maximum size. The maximum size (<i>and optional fixed-decimal point</i>) is specified by the value(s) listed in the parentheses. |
| VARCHAR2(SIZE) | A data type that contains alphanumeric data (numbers and/or characters) up to a specified maximum size. |

8.1 Subplot Soil Sample Location Table

(Oracle table name: SUBP_SOIL_SAMPLE_LOC)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 8.1.1 | CN | Sequence number | VARCHAR2(34) |
| 8.1.2 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 8.1.3 | STATECD | State code | NUMBER(2) |
| 8.1.4 | COUNTYCD | County code | NUMBER(3) |
| 8.1.5 | PLOT | Plot number | NUMBER(5) |
| 8.1.6 | INV_VST_NBR | Inventory visit number | NUMBER(2) |
| 8.1.7 | INVYR | Inventory year | NUMBER(4) |
| 8.1.8 | CYCLE | Inventory cycle number | NUMBER(2) |
| 8.1.9 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |
| 8.1.10 | UNITCD | Survey unit code | NUMBER(2) |
| 8.1.11 | SUBP | Subplot number | NUMBER(1) |
| 8.1.12 | VSTNBR | Visit number | NUMBER(1) |
| 8.1.13 | CONDID | Condition class number | NUMBER(1) |
| 8.1.14 | SOILS_SAMPLE_METHOD_CD | Soils sample method code | NUMBER(1) |
| 8.1.15 | SOILS_SAMPLE_STATUS_CD | Soils sample status code | NUMBER(2) |
| 8.1.16 | CORE_SIZE | Soil core size | NUMBER(4,3) |
| 8.1.17 | CORE_LENGTH | Soil core length | NUMBER(3,1) |
| 8.1.18 | CORE_BOTTOM_CD | Core bottom code | NUMBER(1) |
| 8.1.19 | HOLE_DEPTH | Hole depth | NUMBER(3,1) |
| 8.1.20 | RESTRICTION_DEPTH_CD_1 | Restriction depth code 1 | NUMBER(1) |
| 8.1.21 | RESTRICTION_DEPTH_CD_2 | Restriction depth code 2 | NUMBER(1) |
| 8.1.22 | RESTRICTION_DEPTH_CD_3 | Restriction depth code 3 | NUMBER(1) |
| 8.1.23 | RESTRICTION_DEPTH_CD_4 | Restriction depth code 4 | NUMBER(1) |
| 8.1.24 | RESTRICTION_DEPTH_1 | Restriction depth 1 | NUMBER(3,1) |
| 8.1.25 | RESTRICTION_DEPTH_2 | Restriction depth 2 | NUMBER(3,1) |
| 8.1.26 | RESTRICTION_DEPTH_3 | Restriction depth 3 | NUMBER(3,1) |
| 8.1.27 | RESTRICTION_DEPTH_4 | Restriction depth 4 | NUMBER(3,1) |
| 8.1.28 | C_TOT_3IN_MG_AC | Total carbon per acre, 3 inches depth | NUMBER(10,6) |
| 8.1.29 | N_TOT_3IN_MG_AC | Total nitrogen per acre, 3 inches depth | NUMBER(10,6) |
| 8.1.30 | USED_IN_ESTIMATION_CD | Used in estimation code | NUMBER(1) |
| 8.1.31 | CREATED_BY | Created by | VARCHAR2(30) |
| 8.1.32 | CREATED_DATE | Created date | DATE |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------|------------------|
| 8.1.33 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 8.1.34 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 8.1.35 | MODIFIED_DATE | Modified date | DATE |
| 8.1.36 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|------------------------------|----------------------|
| Primary | CN | N/A | SSSL_PK |
| Foreign | PLT_CN | SUBP_SOIL_SAMPLE_LOC to PLOT | SSSL_FK |

8.1.1 CN

Sequence number. A unique sequence number used to identify a subplot soil sample location record.

8.1.2 PLT_CN

Plot sequence number. Foreign key linking the subplot soil sample location record to the plot record.

8.1.3 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

8.1.4 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

8.1.5 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.

8.1.6 INV_VST_NBR

Inventory visit number. Visit number within a cycle. A plot is usually visited once per cycle, but may be visited again for quality assurance visits or other measurements.

8.1.7 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

8.1.8 CYCLE

Inventory cycle number. See SURVEY.[CYCLE](#) description for definition.

8.1.9 SUBCYCLE

Inventory subcycle number. See SURVEY.SUBCYCLE description for definition.

8.1.10 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 B](#) for codes.

8.1.11 SUBP

Subplot number. The number assigned to the subplot adjacent to the soil sampling site. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4. Soils protocols use only subplots 2-4.

Codes: SUBP

| Code | Description |
|------|--------------------|
| 2 | North subplot. |
| 3 | Southeast subplot. |
| 4 | Southwest subplot. |

8.1.12 VSTNBR

Visit number. The number of the soil sampling location at which the soil sample was collected. Values are 1-9.

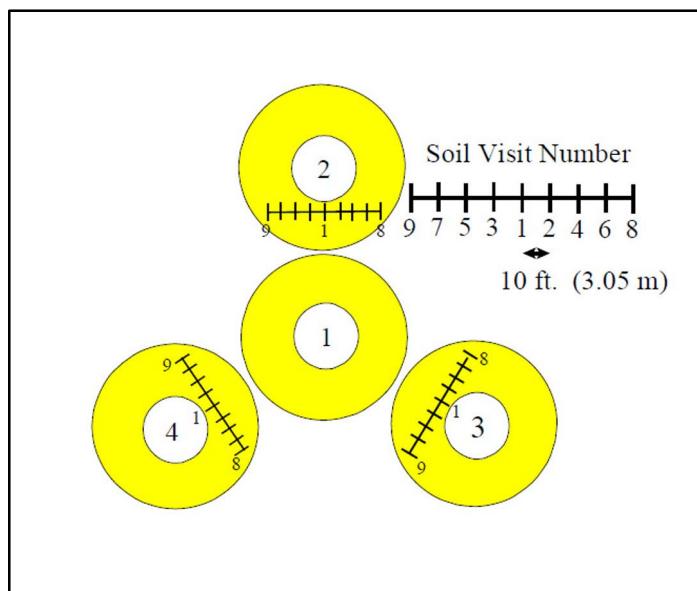


Figure 8-1: Location of soil sampling site.

8.1.13 CONDID

Condition class number. The unique identifying number assigned to the condition where the soil sample was collected. If the condition class of the soil sample site differs from any

condition class mapped on the four subplots, then CONDID = 0. If no soil sample was collected, this attribute is blank (null).

8.1.14 SOILS_SAMPLE_METHOD_CD

Soils sample method code. A code indicating which soils protocol was used.

Codes: SOILS_SAMPLE_METHOD_CD

| Code | Description |
|------|--|
| 1 | P3 soils sample method. |
| 2 | Interior Alaska pilot soils sample method. |
| 3 | Interior Alaska soils sample method. |
| 4 | Hawaii soils sample method. |

8.1.15 SOILS_SAMPLE_STATUS_CD

Soils sample status code. A code indicating whether some or all of the soils protocol was applied (sampled) at the soil sampling location, and if not, the reason the location was not sampled.

Codes: SOILS_SAMPLE_STATUS_CD (When SOILS_SAMPLE_METHOD_CD = 1)

| Code | Description |
|------|--|
| 01 | Sampled: forest that has been identified as a condition on the plot. |
| 02 | Not sampled: non-forest. |
| 03 | Not sampled forest condition: too rocky to sample. |
| 04 | Not sampled forest condition: water or boggy. |
| 05 | Not sampled forest condition: access denied. |
| 06 | Not sampled forest condition: too dangerous to sample. |
| 07 | Not sampled forest condition: obstruction in sampling area. |
| 08 | Not sampled forest condition: broken or lost equipment. |
| 09 | Not sampled forest condition: other. |
| 11 | Sampled: forest that has NOT been identified as a condition on the plot. |

Codes: SOILS_SAMPLE_STATUS_CD (When SOILS_SAMPLE_METHOD_CD = 2, 3, 4)

| Code | Description |
|------|------------------------------|
| 1 | Sampled. |
| 2 | Not sampled: standing water. |
| 3 | Not sampled: access denied. |
| 4 | Not sampled: hazardous. |
| 5 | Not sampled: other. |

8.1.16 CORE_SIZE

Soil core size. The inner diameter (inches) of the sample soil core collected.

8.1.17 CORE_LENGTH

Soil core length. The length of the soil core to the nearest 0.1 inch.

8.1.18 CORE_BOTTOM_CD

Soil core bottom code. A code indicating the substrate at the bottom of the core.

Codes: CORE_BOTTOM_CD

| Code | Description |
|------|-----------------------------|
| 1 | Identifiable plant parts. |
| 2 | Unidentifiable plant parts. |
| 5 | Mineral soil. |
| 6 | Unknown material. |

8.1.19 HOLE_DEPTH

Hole depth. The depth of the cored hole to the nearest 0.1 inch.

8.1.20 RESTRICTION_DEPTH_CD_1

Restriction depth code 1. A code indicating the estimated substrate encountered when probing at location 1.

Codes: RESTRICTION_DEPTH_CD_1

| Code | Description |
|------|-----------------------------------|
| 1 | Frozen soil. |
| 2 | Gravel. |
| 3 | Substrate not reached >40 inches. |
| 4 | Substrate unknown. |
| 5 | Bedrock. |
| 6 | Sand. |

8.1.21 RESTRICTION_DEPTH_CD_2

Restriction depth code 2. A code indicating the estimated substrate encountered when probing at location 2. See [RESTRICTION_DEPTH_CD_1](#) for codes and definitions.

8.1.22 RESTRICTION_DEPTH_CD_3

Restriction depth code 3. A code indicating the estimated substrate encountered when probing at location 3. See [RESTRICTION_DEPTH_CD_1](#) for codes and definitions.

8.1.23 RESTRICTION_DEPTH_CD_4

Restriction depth code 4. A code indicating the estimated substrate encountered when probing at location 4. See [RESTRICTION_DEPTH_CD_1](#) for codes and definitions.

8.1.24 RESTRICTION_DEPTH_1

Restriction depth 1. The maximum depth, to the nearest 0.5 inch, encountered when probing for a restriction at location 1.

8.1.25 RESTRICTION_DEPTH_2

Restriction depth 2. The maximum depth, to the nearest 0.5 inch, encountered when probing for a restriction at location 2.

8.1.26 RESTRICTION_DEPTH_3

Restriction depth 3. The maximum depth, to the nearest 0.5 inch, encountered when probing for a restriction at location 3.

8.1.27 RESTRICTION_DEPTH_4

Restriction depth 4. The maximum depth, to the nearest 0.5 inch, encountered when probing for a restriction at location 4.

8.1.28 C_TOT_3IN_MG_AC

Total carbon per acre, 3 inches depth. The total carbon content (Mg) per acre to a standard depth of 3 inches.

8.1.29 N_TOT_3IN_MG_AC

Total nitrogen per acre, 3 inches depth. The total nitrogen content (Mg) per acre to a standard depth of 3 inches.

8.1.30 USED_IN_ESTIMATION_CD

Used in estimation code. A code indicating whether or not the soil core is included in population estimates.

Codes: USED IN ESTIMATION_CD

| Code | Description |
|------|--|
| 0 | The soil core is not included in population estimates. |
| 1 | The soil core is included in population estimates. |

8.1.31 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

8.1.32 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

8.1.33 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

8.1.34 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

8.1.35 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

8.1.36 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

8.2 Subplot Soil Sample Layer Table

(Oracle table name: **SUBP_SOIL_SAMPLE_LAYER**)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------------|--|------------------|
| 8.2.1 | CN | Sequence number | VARCHAR2(34) |
| 8.2.2 | SSSL_CN | Subplot soil sample location sequence number | VARCHAR2(34) |
| 8.2.3 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 8.2.4 | STATECD | State code | NUMBER(4) |
| 8.2.5 | COUNTYCD | County code | NUMBER(3) |
| 8.2.6 | PLOT | Plot number | NUMBER(6) |
| 8.2.7 | INVYR | Inventory year | NUMBER(4) |
| 8.2.8 | INV_VST_NBR | Inventory visit number | NUMBER(2) |
| 8.2.9 | CYCLE | Inventory cycle number | NUMBER(2) |
| 8.2.10 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |
| 8.2.11 | SUBP | Subplot number | NUMBER(1) |
| 8.2.12 | VSTNBR | Visit number | NUMBER(1) |
| 8.2.13 | SAMPLER_TYPE | Sampler type | VARCHAR2(2) |
| 8.2.14 | SAMPLE_DIA | Sample diameter | NUMBER(7,3) |
| 8.2.15 | LAYER_TYPE | Layer type | VARCHAR2(30) |
| 8.2.16 | SOIL_SAMP_PER_AC | Soil sample area expansion factor | NUMBER(14,6) |
| 8.2.17 | LAYER_THICKNESS | Layer thickness | NUMBER(5,3) |
| 8.2.18 | LAYER_COLLECTED_CD | Layer collected code | NUMBER(1) |
| 8.2.19 | WT_FIELD_MOIST | Field-moist soil weight | NUMBER(7,2) |
| 8.2.20 | WT_AIR_DRY | Air-dry soil weight | NUMBER(7,2) |
| 8.2.21 | WT_OVEN_DRY | Oven-dry soil weight | NUMBER(7,2) |
| 8.2.22 | WT_ROCK | Rock particle weight | NUMBER(7,2) |
| 8.2.23 | WATER_CONTENT_PCT_FIELD_MOIST | Field-moist water content percent | NUMBER(6,2) |
| 8.2.24 | WATER_CONTENT_PCT_RESIDUAL | Residual water content percent | NUMBER(6,2) |
| 8.2.25 | WATER_CONTENT_PCT_TOTAL | Total water content percent | NUMBER(6,2) |
| 8.2.26 | BULK_DENSITY | Bulk density | NUMBER(10,6) |
| 8.2.27 | COARSE_FRACTION_PCT | Coarse fraction percent | NUMBER(7,3) |
| 8.2.28 | BULK_DENSITY_FINE | Bulk density of fine soil fraction | NUMBER(10,6) |
| 8.2.29 | TEXTURE_CD | Texture code | NUMBER(1) |
| 8.2.30 | PH_H2O | pH in water | NUMBER(7,3) |
| 8.2.31 | PH_CACL2 | pH in calcium chloride solution | NUMBER(7,3) |
| 8.2.32 | ECEC | Effective cation exchange capacity | NUMBER(7,3) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 8.2.33 | EXCHNG_AL | Exchangeable aluminum | NUMBER(7,3) |
| 8.2.34 | EXCHNG_CA | Exchangeable calcium | NUMBER(8,3) |
| 8.2.35 | EXCHNG_CD | Exchangeable cadmium | NUMBER(7,3) |
| 8.2.36 | EXCHNG_CU | Exchangeable copper | NUMBER(7,3) |
| 8.2.37 | EXCHNG_FE | Exchangeable iron | NUMBER(7,3) |
| 8.2.38 | EXCHNG_K | Exchangeable potassium | NUMBER(7,3) |
| 8.2.39 | EXCHNG_MG | Exchangeable magnesium | NUMBER(8,3) |
| 8.2.40 | EXCHNG_MN | Exchangeable manganese | NUMBER(7,3) |
| 8.2.41 | EXCHNG_NA | Exchangeable sodium | NUMBER(8,3) |
| 8.2.42 | EXCHNG_NI | Exchangeable nickel | NUMBER(7,3) |
| 8.2.43 | EXCHNG_PB | Exchangeable lead | NUMBER(7,3) |
| 8.2.44 | EXCHNG_S | Exchangeable sulfur | NUMBER(8,3) |
| 8.2.45 | EXCHNG_ZN | Exchangeable zinc | NUMBER(7,3) |
| 8.2.46 | BRAY1_P | Bray 1 phosphorus | NUMBER(7,3) |
| 8.2.47 | OLSEN_P | Olsen phosphorus | NUMBER(7,3) |
| 8.2.48 | C_ORG_PCT | Organic carbon percent | NUMBER(7,3) |
| 8.2.49 | C_INORG_PCT | Inorganic carbon percent | NUMBER(7,3) |
| 8.2.50 | C_TOTAL_PCT | Total carbon percent | NUMBER(7,3) |
| 8.2.51 | C_MG_AC | Carbon content per acre | NUMBER(10,6) |
| 8.2.52 | C_MIN3_MG_AC | Carbon content 3-inch depth per acre | NUMBER(10,6) |
| 8.2.53 | N_TOTAL_PCT | Total nitrogen percent | NUMBER(7,3) |
| 8.2.54 | N_MG_AC | Nitrogen content per acre | NUMBER(10,6) |
| 8.2.55 | N_MIN3_MG_AC | Nitrogen content 3-inch depth per acre | NUMBER(10,6) |
| 8.2.56 | CREATED_BY | Created by | VARCHAR2(30) |
| 8.2.57 | CREATED_DATE | Created date | DATE |
| 8.2.58 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 8.2.59 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 8.2.60 | MODIFIED_DATE | Modified date | DATE |
| 8.2.61 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|---|----------------------|
| Primary | CN | N/A | SSSLYR_PK |
| Foreign | PLT_CN | SUBP_SOIL_SAMPLE_LAYER to PLOT | SSSLYR_FK |
| Foreign | SSSL_CN | SUBP_SOIL_SAMPLE_LAYER to SUBP_SOIL_SAMPLE_LOC | SSSLYR_FK2 |

8.2.1 CN

Sequence number. A unique sequence number used to identify a subplot soil sample layer record.

8.2.2 SSSL_CN

Subplot soil sample location sequence number. Foreign key linking the subplot soil sample layer record to the subplot soil sample location record.

8.2.3 PLT_CN

Plot sequence number. Foreign key linking the subplot soil sample layer record to the plot record.

8.2.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

8.2.5 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

8.2.6 PLOT

Plot number. An identifier for a plot. Along with STATECD, INVYR, UNITCD, COUNTYCD and/or some other combinations of variables, PLOT may be used to uniquely identify a plot.

8.2.7 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

8.2.8 INV_VST_NBR

Inventory visit number. Visit number within a cycle. A plot is usually visited once per cycle, but may be visited again for quality assurance visits or other measurements.

8.2.9 CYCLE

Inventory cycle number. See SURVEY.[CYCLE](#) description for definition.

8.2.10 SUBCYCLE

Inventory subcycle number. See SURVEY.[SUBCYCLE](#) description for definition..

8.2.11 SUBP

Subplot number. The number assigned to the subplot adjacent to the soil sampling site. The national plot design (PLOT.DESIGNCD = 1) has subplot number values of 1 through 4. Soils protocols use only subplots 2-4.

Codes: SUBP

| Code | Description |
|------|--------------------|
| 2 | North subplot. |
| 3 | Southeast subplot. |
| 4 | Southwest subplot. |

8.2.12 VSTNBR

Visit number. The number of the soil sampling location at which the soil sample was collected. Values are 1-9.

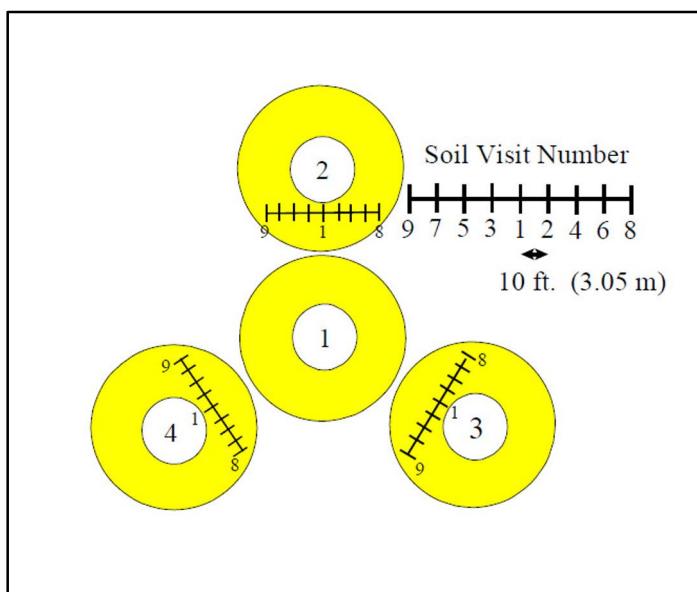


Figure 8-2: Location of soil sampling site.

8.2.13 SAMPLER_TYPE

Sampler type. A code indicating the type of soil sampler used.

Codes: SAMPLER_TYPE

| Code | Description |
|------|---------------|
| BD | Bulk density. |
| SF | Sample frame. |
| O | Other. |

8.2.14 SAMPLE_DIA

Sample diameter. The diameter (inches) of the sample area.

8.2.15 LAYER_TYPE

Layer type. A code indicating the soil layer type of the sample. Code values differ depending on the value of SUBP_SOIL_SAMPLE_LOC.SOILS_SAMPLE_METHOD_CD.

Codes: LAYER_TYPE (when SOILS_SAMPLE_METHOD_CD = 1) (P3 Soils)

| Code | Description |
|---------------------|--|
| LITTER | Litter layer. |
| FOREST FLOOR | Forest floor. |
| MINERAL_SOIL_0-4_IN | Mineral soil layer collected at 0-4 inches in depth. |
| MINERAL_SOIL_4-8_IN | Mineral soil layer collected at 4-8 inches in depth. |

Codes: LAYER_TYPE (when SOILS_SAMPLE_METHOD_CD = 2) (Interior Alaska pilot)

| Code | Description |
|---------------|-----------------------|
| IDENT_PARTS | Identifiable parts. |
| UNIDENT_PARTS | Unidentifiable parts. |
| MINERAL_SOIL | Mineral soil. |
| UNK_SOIL | Unknown soil. |

Codes: LAYER_TYPE (when SOILS_SAMPLE_METHOD_CD = 3) (Interior Alaska)

| Code | Description |
|-------------------|----------------------------|
| LITTER | Litter layer. |
| GREEN_MOSS_LICHEN | Green moss / lichen layer. |
| IDENT_PARTS | Identifiable parts. |
| UNIDENT_PARTS | Unidentifiable parts. |
| MINERAL_SOIL | Mineral soil. |
| UNK_SOIL | Unknown soil. |

Codes: LAYER_TYPE (when SOILS_SAMPLE_METHOD_CD = 4) (Hawaii)

| Code | Description |
|------------------------|-------------------------------|
| MINERAL_SOIL_0-20_CM | 0-20 cm mineral soil layer. |
| MINERAL_SOIL_20-40_CM | 20-40 cm mineral soil layer. |
| MINERAL_SOIL_40-60_CM | 40-60 cm mineral soil layer. |
| MINERAL_SOIL_60-80_CM | 60-80 cm mineral soil layer. |
| MINERAL_SOIL_80-100_CM | 80-100 cm mineral soil layer. |

8.2.16 SOIL_SAMP_PER_AC

Soil sample area expansion factor. The expansion factor from the layer sampling area to an acre.

8.2.17 LAYER_THICKNESS

Layer thickness. The layer thickness to the nearest 0.1 inch.

8.2.18 LAYER_COLLECTED_CD

Layer collected code. A code indicating whether or not a soil layer was sampled.

Codes: TEXTURE_CD

| Code | Description |
|------|--|
| 1 | Sample collected for analysis. |
| 2 | Sample not collected for analysis; other reason. |

8.2.19 WT_FIELD_MOIST

Field-moist soil weight. The weight (g) of the soil sample as received from the field.

8.2.20 WT_AIR_DRY

Air-dry soil weight. The weight (g) of the soil sample after air-drying at ambient temperature.

8.2.21 WT_OVEN_DRY

Oven-dry soil weight. The calculated weight (g) of the soil sample based on an oven-dried subsample

8.2.22 WT_ROCK

Rock particle weight. The weight (g) of mineral soil >2 mm in size.

8.2.23 WATER_CONTENT_PCT_FIELD_MOIST

Field-moist water content percent. The field-moist to air-dry water content in percent.

8.2.24 WATER_CONTENT_PCT_RESIDUAL

Residual water content percent. The air-dry to oven-dry water content in percent.

8.2.25 WATER_CONTENT_PCT_TOTAL

Total water content percent. The field-moist to air-dry (WATER_CONTENT_PPCT_FIELD_MOIST) plus air-dry to oven-dry water (WATER_CONTENT_PCT_RESIDUAL) contents in percent.

8.2.26 BULK_DENSITY

Bulk density. The soil bulk density calculated as weight per unit volume of soil, g/cm³.

8.2.27 COARSE_FRACTION_PCT

Coarse fraction percent. The percentage of mineral soil >2 mm in size.

8.2.28 BULK_DENSITY_FINE

Bulk density of fine soil fraction. The bulk density of mineral soil particles <2 mm calculated as weight per unit volume of soil, g/cm³.

8.2.29 TEXTURE_CD

Texture code. A code indicating the texture of the soil layer.

Codes: TEXTURE_CD for P3 (SOILS_SAMPLE_METHOD_CD = 1)

| Code | Description |
|------|---------------|
| 0 | Organic. |
| 1 | Loamy. |
| 2 | Clayey. |
| 3 | Sandy. |
| 4 | Coarse sand. |
| 9 | Not measured. |

Codes: TEXTURE_CD for Interior Alaska (SOILS_SAMPLE_METHOD_CD = 2, 3)

| Code | Description |
|------|---------------|
| 1 | Loamy. |
| 2 | Clayey. |
| 3 | Sandy. |
| 4 | Coarse sand. |
| 9 | Not measured. |

8.2.30 PH_H2O

pH in water. Soil pH measured in a 1:1 soil/water suspension.

8.2.31 PH_CACL2

pH in calcium chloride solution. Soil pH measured in 0.01 M CaCl₂ solution.

8.2.32 ECEC

Effective cation exchange capacity. Exchangeable sodium (Na) + potassium (K) + magnesium (Mg) + calcium (Ca) + aluminum (Al) in cmolc/kg.

8.2.33 EXCHNG_AL

Exchangeable aluminum. Exchangeable aluminum (Al) in mg/kg.

8.2.34 EXCHNG_CA

Exchangeable calcium. Exchangeable calcium (Ca) in mg/kg.

8.2.35 EXCHNG_CD

Exchangeable cadmium. Exchangeable cadmium (Cd) in mg/kg.

8.2.36 EXCHNG CU

Exchangeable copper. Exchangeable copper (Cu) in mg/kg.

8.2.37 EXCHNG_FE

Exchangeable iron. Exchangeable iron (Fe) in mg/kg.

8.2.38 EXCHNG_K

Exchangeable potassium. Exchangeable potassium (K) in mg/kg.

8.2.39 EXCHNG_MG

Exchangeable magnesium. Exchangeable magnesium (Mg) in mg/kg.

8.2.40 EXCHNG_MN

Exchangeable manganese. Exchangeable manganese (Mn) in mg/kg.

8.2.41 EXCHNG_NA

Exchangeable sodium. Exchangeable sodium (Na) in mg/kg.

8.2.42 EXCHNG_NI

Exchangeable nickel. Exchangeable nickel (Ni) in mg/kg.

8.2.43 EXCHNG_PB

Exchangeable lead. Exchangeable lead (Pb) in mg/kg.

8.2.44 EXCHNG_S

Exchangeable sulfur. Exchangeable sulfur (S) in mg/kg.

8.2.45 EXCHNG_ZN

Exchangeable zinc. Exchangeable zinc (Zn) in mg/kg.

8.2.46 BRAY1_P

Bray 1 phosphorus. Bray 1 extractable phosphorus in mg/kg.

8.2.47 OLSEN_P

Olsen phosphorus. Olsen extractable phosphorus in mg/kg.

8.2.48 C_ORG_PCT

Organic carbon percent. Organic carbon in percent.

8.2.49 C_INORG_PCT

Inorganic carbon percent. Inorganic carbon (carbonates) in percent.

8.2.50 C_TOTAL_PCT

Total carbon percent. Total carbon (organic + inorganic) in percent.

8.2.51 C_MG_AC

Carbon content per acre. Carbon content (Mg) per acre.

8.2.52 C_MIN3_MG_AC

Carbon content 3-inch depth per acre. Carbon content (Mg) per acre to a standard depth of three inches.

8.2.53 N_TOTAL_PCT

Total nitrogen percent. Total nitrogen (N) in percent.

8.2.54 N_MG_AC

Nitrogen content per acre. Nitrogen content (Mg) per acre.

8.2.55 N_MIN3_MG_AC

Nitrogen content 3-inch depth per acre. Nitrogen content (Mg) per acre to a standard depth of three inches.

8.2.56 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

8.2.57 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

8.2.58 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

8.2.59 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

8.2.60 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

8.2.61 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

Section revision: 04.2024

Chapter 9: Database Tables - Population

Chapter Contents:

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| 9.5 | Population Evaluation Type Table | POP_EVAL_TYP |
| 9.6 | Population Plot Stratum Assignment Table | POP_PLOT_STRATUM_ASSGN |
| 9.7 | Population Stratum Table | POP_STRATUM |

Definitions for database tables:

For further detail and examples, refer to the Overview (chapter 1).

Keys Presented with the Tables

| Key type | Definition |
|----------|--|
| Primary | A single column in a table whose values uniquely identify each row in an Oracle table. |
| Unique | Multiple columns in a table whose values uniquely identify each row in an Oracle table. There can be one and only one row for each unique key value. |
| Natural | A type of unique key made from existing attributes in the table. It is stored as an index in this database. |
| Foreign | A column in a table that is used as a link to a matching column in another Oracle table. |

Oracle Data Types

| Oracle data type | Definition |
|------------------|---|
| DATE | A data type that stores the date. |
| NUMBER | A data type that contains only numbers, positive or negative, with a floating-decimal point. |
| NUMBER(SIZE, D) | A data type that contains only numbers up to a specified maximum size. The maximum size (<i>and optional fixed-decimal point</i>) is specified by the value(s) listed in the parentheses. |
| VARCHAR2(SIZE) | A data type that contains alphanumeric data (numbers and/or characters) up to a specified maximum size. |

9.1 Population Estimation Unit Table

(Oracle table name: POP_ESTN_UNIT)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 9.1.1 | CN | Sequence number | VARCHAR2(34) |
| 9.1.2 | EVAL_CN | Evaluation sequence number | VARCHAR2(34) |
| 9.1.3 | RSCD | Region or station code | NUMBER(2) |
| 9.1.4 | VALID | Evaluation identifier | NUMBER(6) |
| 9.1.5 | ESTN_UNIT | Estimation unit | NUMBER(6) |
| 9.1.6 | ESTN_UNIT_DESCR | Estimation unit description | VARCHAR2(255) |
| 9.1.7 | STATECD | State code | NUMBER(4) |
| 9.1.8 | AREALAND_EU | Land area within the estimation unit | NUMBER(12,2) |
| 9.1.9 | AREATOT_EU | Total area within the estimation unit | NUMBER(12,2) |
| 9.1.10 | AREA_USED | Area used to calculate all expansion factors | NUMBER(12,2) |
| 9.1.11 | AREA_SOURCE | Area source | VARCHAR2(50) |
| 9.1.12 | P1PNTCNT_EU | Phase 1 point count for the estimation unit | NUMBER(12) |
| 9.1.13 | P1SOURCE | Phase 1 source | VARCHAR2(50) |
| 9.1.14 | CREATED_BY | Created by | VARCHAR2(30) |
| 9.1.15 | CREATED_DATE | Created date | DATE |
| 9.1.16 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 9.1.17 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 9.1.18 | MODIFIED_DATE | Modified date | DATE |
| 9.1.19 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|------------------------|---------------------------|----------------------|
| Primary | CN | N/A | PEU_PK |
| Unique | RSCD, VALID, ESTN_UNIT | N/A | PEU_UK |
| Foreign | EVAL_CN | POP_ESTN_UNIT to POP_EVAL | PEU_PEV_FK |

9.1.1 CN

Sequence number. A unique sequence number used to identify a population estimation unit record.

9.1.2 EVAL_CN

Evaluation sequence number. Foreign key linking the estimation unit record to the evaluation record.

9.1.3 RSCD

Region or Station code. See SURVEY.RSCD description for definition.

9.1.4 EVALID

Evaluation identifier. See POP_EVAL.EVALID description for definition.

9.1.5 ESTN_UNIT

Estimation unit. A number assigned to the specific geographic area that is stratified. Estimation units are often determined by a combination of geographical boundaries, sampling intensity and ownership.

9.1.6 ESTN_UNIT_DESCR

Estimation unit description. A description of the estimation unit (e.g., name of the county).

9.1.7 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#). For evaluations that do not conform to the boundaries of a single State the value of STATECD should be set to 99.

9.1.8 AREALAND_EU

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

9.1.9 AREATOT_EU

Total area within the estimation unit. The area of land and census water, in acres, enclosed by the estimation unit.

9.1.10 AREA_USED

Area used to calculate all expansion factors. This value is equivalent to AREATOT_EU when estimates are for all area, including census water; and this value is equivalent to AREALAND_EU when estimates are for land area only.

9.1.11 AREA_SOURCE

Area source. A descriptor for the source of the area numbers. Usually, the area source is either the U.S. Census Bureau or area estimates based on pixel counts. Example descriptors are 'US CENSUS 2000' and 'PIXEL COUNT.'

9.1.12 P1PNTCNT_EU

Phase 1 point count for the estimation unit. For remotely sensed data, this will be the total number of pixels in the estimation unit.

9.1.13 P1SOURCE

Phase 1 source. A descriptor for the Phase 1 data source used for this stratification. Example descriptors are 'NLCD 2001 CANOPY' and 'IKONOS.'

9.1.14 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

9.1.15 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

9.1.16 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

9.1.17 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

9.1.18 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

9.1.19 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

9.2 Population Evaluation Table

(Oracle table name: POP_EVAL)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------------------|------------------|
| 9.2.1 | CN | Sequence number | VARCHAR2(34) |
| 9.2.2 | EVAL_GRP_CN | Evaluation group sequence number | VARCHAR2(34) |
| 9.2.3 | RSCD | Region or station code | NUMBER(2) |
| 9.2.4 | EVALID | Evaluation identifier | NUMBER(6) |
| 9.2.5 | EVAL_DESCR | Evaluation description | VARCHAR2(255) |
| 9.2.6 | STATECD | State code | NUMBER(4) |
| 9.2.7 | LOCATION_NM | Location name | VARCHAR2(255) |
| 9.2.8 | REPORT_YEAR_NM | Report year name | VARCHAR2(255) |
| 9.2.9 | START_INVYR | Start inventory year | NUMBER(4) |
| 9.2.10 | END_INVYR | End inventory year | NUMBER(4) |
| 9.2.11 | LAND_ONLY | Land only | VARCHAR2(1) |
| 9.2.12 | TIMBERLAND_ONLY | Timberland only | VARCHAR2(1) |
| 9.2.13 | GROWTH_ACCT | Growth accounting | VARCHAR2(1) |
| 9.2.14 | ESTN_METHOD | Estimation method | VARCHAR2(40) |
| 9.2.15 | NOTES | Notes | VARCHAR2(2000) |
| 9.2.16 | CREATED_BY | Created by | VARCHAR2(30) |
| 9.2.17 | CREATED_DATE | Created date | DATE |
| 9.2.18 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 9.2.19 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 9.2.20 | MODIFIED_DATE | Modified date | DATE |
| 9.2.21 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|--------------------------|----------------------|
| Primary | CN | N/A | PEV_PK |
| Unique | RSCD, EVALID | N/A | PEV_UK |
| Foreign | EVAL_GRP_CN | POP_EVAL to POP_EVAL_GRP | PEV_PEG_FK |

9.2.1 CN

Sequence number. A unique sequence number used to identify a population evaluation record.

9.2.2 EVAL_GRP_CN

Evaluation group sequence number. Foreign key linking the population evaluation record to the population evaluation group record.

9.2.3 RSCD

Region or Station code. See SURVEY.RSCD description for definition.

9.2.4 EVALID

Evaluation identifier. The EVALID is the unique identifier that represents the population used to produce a type of estimate. The EVALID is generally a concatenation of a 2-digit State code, a 2-digit year code, and a 2-digit evaluation type code (see REF_POP_EVAL_TYP_DESCR.EVAL_TYP_CD). For example, EVALID = 261600 represents the Michigan 2016 evaluation for all sampled and nonsampled plots.

If several types of evaluations are combined for an EVALID, the lowest evaluation type code number within the set is typically used for the last 2 digits of the EVALID. For example, the type code of 03 is used when the evaluation combines sampled plots for tree growth, removals, mortality, and area change estimates. However, the type code of 03 can also be used if the evaluation only combines sampled plots for tree growth and mortality.

Example evaluation type code used for EVALID when evaluation types are combined:

| Last 2 digits of EVALID | Evaluation type description |
|-------------------------|---|
| 01 | Sampled plots used for current area and tree-level estimates. |
| 03 | Sampled plots used for tree growth, removals, mortality, and area change estimates. |

9.2.5 EVAL_DESCR

Evaluation description. A description of the area being evaluated (often a State), the time period of the evaluation, and the type of estimates that can be computed using the evaluation (e.g., area, volume, growth, removals, mortality). For example, 'MINNESOTA 2017: 2013-2017: CURRENT AREA, CURRENT VOLUME' is an evaluation description.

9.2.6 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

9.2.7 LOCATION_NM

Location name. Geographic area as it would appear in the title of a report.

9.2.8 REPORT_YEAR_NM

Report year name. The data collection years that would appear in the title of a report.

9.2.9 START_INVYR

Start inventory year. The starting year for the data included in the evaluation.

9.2.10 END_INVYR

End inventory year. The ending year for the data included in the evaluation.

9.2.11 LAND_ONLY

Land only. A code indicating area used in stratifying evaluations. See POP_ESTN_UNIT.AREA_SOURCE for more information.

Codes: LAND_ONLY

| Code | Description |
|------|--|
| Y | Only census land was used in the stratification process. |
| N | Census land and water were used in the stratification process. |

9.2.12 TIMBERLAND_ONLY

Timberland only. A code indicating if the estimate can be made for timberland or for timberland and forest land. Timberland is a subset of forest land defined as nonreserved forest land capable of producing at least 20 cubic feet of wood volume per acre per year (COND.COND_STATUS_CD = 1, COND.RESERVCD = 0, COND.SITECLCD <7).

Codes: TIMBERLAND_ONLY

| Code | Description |
|------|---|
| Y | Only timberland attributes can be estimated for the evaluation. |
| N | Both timberland and forest land attributes can be estimated for the evaluation. |

9.2.13 GROWTH_ACCT

Growth accounting. A code indicating whether the evaluation can be used for growth accounting. This attribute is blank (null) when the POP_EVAL_TYP.EVAL_TYP is not 'EXPGROW' evaluation type. See [The Forest Inventory and Analysis Database: Population Estimation User Guide](#) for examples of the growth accounting method.

Codes: GROWTH_ACCT

| Code | Description |
|------|--|
| Y | The evaluation can be used for growth accounting. |
| N | The evaluation cannot be used for growth accounting. |

9.2.14 ESTN_METHOD

Estimation method. Describes the method of estimation. Post-stratification is used for most inventories where PLOT.MANUAL ≥ 1.0 .

Values

- Simple random sampling
- Stratified random sampling
- Double sampling for stratification
- Post-stratification
- Subsampling units of unequal size

9.2.15 NOTES

Notes. Additional information related to the evaluation, such as notes pertaining to any special procedures that had to be implemented for the stratification method. This column may also include citation(s) for any publications that used the evaluation.

9.2.16 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

9.2.17 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

9.2.18 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

9.2.19 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

9.2.20 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

9.2.21 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

9.3 Population Evaluation Attribute Table

(Oracle table name: POP_EVAL_ATTRIBUTE)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------------|------------------|
| 9.3.1 | CN | Sequence number | VARCHAR2(34) |
| 9.3.2 | EVAL_CN | Evaluation sequence number | VARCHAR2(34) |
| 9.3.3 | ATTRIBUTE_NBR | Attribute number | NUMBER(6) |
| 9.3.4 | STATECD | State code | NUMBER(4) |
| 9.3.5 | CREATED_BY | Created by | VARCHAR2(30) |
| 9.3.6 | CREATED_DATE | Created date | DATE |
| 9.3.7 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 9.3.8 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 9.3.9 | MODIFIED_DATE | Modified date | DATE |
| 9.3.10 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|------------------------|--------------------------------|----------------------|
| Unique | EVAL_CN, ATTRIBUTE_NBR | N/A | PEA_UK |
| Foreign | EVAL_CN | POP_EVAL_ATTRIBUTE to POP_EVAL | PEA_PEV_FK |

9.3.1 CN

Sequence number. A unique sequence number used to identify a population evaluation attribute record.

9.3.2 EVAL_CN

Evaluation sequence number. Foreign key linking the population evaluation attribute record to the population evaluation record.

9.3.3 ATTRIBUTE_NBR

Attribute number. Foreign key linking the population evaluation attribute record to the reference population attribute record.

9.3.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

9.3.5 CREATED_BY

Created by. See SURVEY.[CREATED_BY](#) description for definition.

9.3.6 CREATED_DATE

Created date. See SURVEY.[CREATED_DATE](#) description for definition.

9.3.7 CREATED_IN_INSTANCE

Created in instance. See SURVEY.[CREATED_IN_INSTANCE](#) description for definition.

9.3.8 MODIFIED_BY

Modified by. See SURVEY.[MODIFIED_BY](#) description for definition.

9.3.9 MODIFIED_DATE

Modified date. See SURVEY.[MODIFIED_DATE](#) description for definition.

9.3.10 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

9.4 Population Evaluation Group Table

(Oracle table name: POP_EVAL_GRP)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|------------------------------|------------------|
| 9.4.1 | CN | Sequence number | VARCHAR2(34) |
| 9.4.2 | RSCD | Region or station code | NUMBER(2) |
| 9.4.3 | EVAL_GRP | Evaluation group | NUMBER(6) |
| 9.4.4 | EVAL_GRP_DESCR | Evaluation group description | VARCHAR2(255) |
| 9.4.5 | STATECD | State code | NUMBER(4) |
| 9.4.6 | NOTES | Notes | VARCHAR2(2000) |
| 9.4.7 | CREATED_BY | Created by | VARCHAR2(30) |
| 9.4.8 | CREATED_DATE | Created date | DATE |
| 9.4.9 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 9.4.10 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 9.4.11 | MODIFIED_DATE | Modified date | DATE |
| 9.4.12 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | CN | N/A | PEG_PK |
| Unique | RSCD, EVAL_GRP | N/A | PEG_UK |
| Index | EVAL_GRP | N/A | PEG_EVAL_I |

9.4.1 CN

Sequence number. A unique sequence number used to identify a population evaluation group record.

9.4.2 RSCD

Region or Station code. See SURVEY.RSCD description for definition.

9.4.3 EVAL_GRP

Evaluation group. An identifier for the evaluation group. This identifier includes the "State code" (first 2 digits) and the "year" (last 4 digits) used to identify the evaluation group. The last year of a measurement interval (which is a "range of years" that is typically 5, 7, or 10 years in length) is used for the identifier label.

9.4.4 EVAL_GRP_DESCR

Evaluation group description. A brief description for the evaluation group. This description includes the State and year used to identify the evaluation group, and the types of estimates that can be computed using the evaluation group (e.g., area, volume, growth, removals, mortality). The last year of a measurement interval (which is a "range of years" that is typically 5, 7, or 10 years in length) is used for the description. For example, 'MINNESOTA 2017: ALL AREA, CURRENT AREA, CURRENT VOLUME, AREA

CHANGE, GROWTH, REMOVALS, MORTALITY, DWM, REGENERATION' is an evaluation group description.

9.4.5 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#). For evaluations that do not conform to the boundaries of a single State the value of STATECD should be set to 99.

9.4.6 NOTES

Notes. Population evaluation group notes.

9.4.7 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

9.4.8 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

9.4.9 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

9.4.10 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

9.4.11 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

9.4.12 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

9.5 Population Evaluation Type Table

(Oracle table name: POP_EVAL_TYP)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------------------|------------------|
| 9.5.1 | CN | Sequence number | VARCHAR2(34) |
| 9.5.2 | EVAL_GRP_CN | Evaluation group sequence number | VARCHAR2(34) |
| 9.5.3 | EVAL_CN | Evaluation sequence number | VARCHAR2(34) |
| 9.5.4 | EVAL_TYP | Evaluation type | VARCHAR2(15) |
| 9.5.5 | CREATED_BY | Created by | VARCHAR2(30) |
| 9.5.6 | CREATED_DATE | Created date | DATE |
| 9.5.7 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 9.5.8 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 9.5.9 | MODIFIED_DATE | Modified date | DATE |
| 9.5.10 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------------------------|---|----------------------|
| Primary | CN | N/A | PET_PK |
| Unique | EVAL_GRP_CN, EVAL_CN, EVAL_TYP | N/A | PET_UK1 |
| Unique | EVAL_GRP_CN, EVAL_TYP | N/A | PET_UK2 |
| Foreign | EVAL_GRP_CN | POP_EVAL_TYP to POP_EVAL_GRP | PET_PEG_FK |
| Foreign | EVAL_CN | POP_EVAL_TYP to POP_EVAL | PET_PEV_FK |
| Foreign | EVAL_TYP | POP_EVAL_TYP to REF_POP_EVAL_TYP_DESCR | PET_PED_FK |

9.5.1 CN

Sequence number. A unique sequence number used to identify a population evaluation type record.

9.5.2 EVAL_GRP_CN

Evaluation group sequence number. Foreign key linking the population evaluation type record to the population evaluation group record.

9.5.3 EVAL_CN

Evaluation sequence number. Foreign key linking the population evaluation type record to the population evaluation record.

9.5.4 EVAL_TYP

Evaluation type. An identifier describing the type of evaluation. Evaluation type is needed to generate summary reports for an inventory. For example, a specific evaluation is

associated with the evaluation for tree volume (EXPVOL). See REF_POP_EVAL_TYP_DESCR.EVAL_TYP_CD for codes.

9.5.5 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

9.5.6 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

9.5.7 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

9.5.8 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

9.5.9 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

9.5.10 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

9.6 Population Plot Stratum Assignment Table

(Oracle table name: POP_PLOT_STRATUM_ASSGN)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-------------------------|------------------|
| 9.6.1 | CN | Sequence number | VARCHAR2(34) |
| 9.6.2 | STRATUM_CN | Stratum sequence number | VARCHAR2(34) |
| 9.6.3 | PLT_CN | Plot sequence number | VARCHAR2(34) |
| 9.6.4 | STATECD | State code | NUMBER(4) |
| 9.6.5 | INVYR | Inventory year | NUMBER(4) |
| 9.6.6 | UNITCD | Survey unit code | NUMBER(2) |
| 9.6.7 | COUNTYCD | County code | NUMBER(3) |
| 9.6.8 | PLOT | Plot number | NUMBER(5) |
| 9.6.9 | RSCD | Region or station code | NUMBER(2) |
| 9.6.10 | EVALID | Evaluation identifier | NUMBER(6) |
| 9.6.11 | ESTN_UNIT | Estimation unit | NUMBER(6) |
| 9.6.12 | STRATUMCD | Stratum code | NUMBER(6) |
| 9.6.13 | CREATED_BY | Created by | VARCHAR2(30) |
| 9.6.14 | CREATED_DATE | Created date | DATE |
| 9.6.15 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 9.6.16 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 9.6.17 | MODIFIED_DATE | Modified date | DATE |
| 9.6.18 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|---------------------------------------|--|----------------------|
| Primary | CN | N/A | PPSA_PK |
| Unique | RSCD, EVALID, STATECD, COUNTYCD, PLOT | N/A | PPSA_UK |
| Foreign | PLT_CN | POP_PLOT_STRATUM_ASSGN to PLOT | PPSA_PLT_FK |
| Foreign | STRATUM_CN | POP_PLOT_STRATUM_ASSGN to POP_STRATUM | PPSA_PSM_FK |

9.6.1 CN

Sequence number. A unique sequence number used to identify a population plot stratum assignment record.

9.6.2 STRATUM_CN

Stratum sequence number. Foreign key linking the population plot stratum assignment record to the population stratum record.

9.6.3 PLT_CN

Plot sequence number. Foreign key linking the population plot stratum assignment record to the plot record.

9.6.4 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

9.6.5 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

9.6.6 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 B](#) for codes.

9.6.7 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

9.6.8 PLOT

Plot number. An identifier for a plot. Along with INVYR, STATECD, UNITCD, COUNTYCD, PLOT may be used to uniquely identify a plot.

9.6.9 RSCD

Region or Station code. See SURVEY.[RSCD](#) description for definition.

9.6.10 EVALID

Evaluation identifier. See POP_EVAL.[EVALID](#) description for definition.

9.6.11 ESTN_UNIT

Estimation unit. A number assigned to the specific geographic area that is stratified. Estimation units are often determined by a combination of geographical boundaries, sampling intensity and ownership.

9.6.12 STRATUMCD

Stratum code. A code uniquely identifying a stratum within an estimation unit.

9.6.13 CREATED_BY

Created by. See SURVEY.[CREATED_BY](#) description for definition.

9.6.14 CREATED_DATE

Created date. See SURVEY.[CREATED_DATE](#) description for definition.

9.6.15 CREATED_IN_INSTANCE

Created in instance. See SURVEY.[CREATED_IN_INSTANCE](#) description for definition.

9.6.16 MODIFIED_BY

Modified by. See SURVEY.[MODIFIED_BY](#) description for definition.

9.6.17 MODIFIED_DATE

Modified date. See SURVEY.[MODIFIED_DATE](#) description for definition.

9.6.18 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

9.7 Population Stratum Table

(Oracle table name: POP_STRATUM)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 9.7.1 | CN | Sequence number | VARCHAR2(34) |
| 9.7.2 | ESTN_UNIT_CN | Estimation unit sequence number | VARCHAR2(34) |
| 9.7.3 | RSCD | Region or station code | NUMBER(2) |
| 9.7.4 | VALID | Evaluation identifier | NUMBER(6) |
| 9.7.5 | ESTN_UNIT | Estimation unit | NUMBER(6) |
| 9.7.6 | STRATUMCD | Stratum code | NUMBER(6) |
| 9.7.7 | STRATUM_DESCR | Stratum description | VARCHAR2(255) |
| 9.7.8 | STATECD | State code | NUMBER(4) |
| 9.7.9 | P1POINTCNT | Phase 1 point count | NUMBER(12) |
| 9.7.10 | P2POINTCNT | Phase 2 point count | NUMBER(12) |
| 9.7.11 | EXPNS | Expansion factor | NUMBER |
| 9.7.12 | ADJ_FACTOR_MACR | Adjustment factor for the macroplot | NUMBER |
| 9.7.13 | ADJ_FACTOR_SUBP | Adjustment factor for the subplot | NUMBER |
| 9.7.14 | ADJ_FACTOR_MICR | Adjustment factor for the microplot | NUMBER |
| 9.7.15 | ADJ_FACTOR_CWD | Adjustment factor for coarse woody debris | NUMBER |
| 9.7.16 | ADJ_FACTOR_FWD_SM | Adjustment factor for small fine woody debris | NUMBER |
| 9.7.17 | ADJ_FACTOR_FWD_LG | Adjustment factor for large fine woody debris | NUMBER |
| 9.7.18 | ADJ_FACTOR_DUFF | Adjustment factor for the duff and litter layer | NUMBER |
| 9.7.19 | CREATED_BY | Created by | VARCHAR2(30) |
| 9.7.20 | CREATED_DATE | Created date | DATE |
| 9.7.21 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 9.7.22 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 9.7.23 | MODIFIED_DATE | Modified date | DATE |
| 9.7.24 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 9.7.25 | ADJ_FACTOR_PILE | Adjustment factor for piles | NUMBER |
| 9.7.26 | ADJ_FACTOR_REGEN_MICR | Adjustment factor for tree regeneration indicator on the microplot | NUMBER |
| 9.7.27 | ADJ_FACTOR_INV_SUBP | Adjustment factor for invasive species on the subplot | NUMBER |
| 9.7.28 | ADJ_FACTOR_P2VEG_SUBP | Adjustment factor for Phase 2 vegetation profile on the subplot | NUMBER |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|------------------------------|--|------------------|
| 9.7.29 | ADJ_FACTOR_GRNDLYR_MICROQUAD | Adjustment factor for ground cover layer on the microquadrat | NUMBER |
| 9.7.30 | ADJ_FACTOR_SOIL | Adjustment factor for soils | NUMBER |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|------------------------------------|------------------------------|----------------------|
| Primary | CN | N/A | PSM_PK |
| Unique | RSCD, EVALID, ESTN_UNIT, STRATUMCD | N/A | PSM_UK |
| Foreign | ESTN_UNIT_CN | POP_STRATUM to POP_ESTN_UNIT | PSM_PEU_FK |

9.7.1 CN

Sequence number. A unique sequence number used to identify a population stratum record.

9.7.2 ESTN_UNIT_CN

Estimation unit sequence number. Foreign key linking the stratum record to the estimation unit record.

9.7.3 RSCD

Region or Station code. See SURVEY.RSCD description for definition.

9.7.4 EVALID

Evaluation identifier. See POP_EVAL.EVALID description for definition.

9.7.5 ESTN_UNIT

Estimation unit. A number assigned to the specific geographic area that is stratified. Estimation units are often determined by a combination of geographical boundaries, sampling intensity and ownership.

9.7.6 STRATUMCD

Stratum code. A code uniquely identifying a stratum within an estimation unit.

9.7.7 STRATUM_DESCR

Stratum description. A brief description or phrase used to identify a stratum. A stratum is a non-overlapping subdivision of the population. Each plot is assigned to one and only one subdivision or stratum; the relative sizes of strata are used to compute strata weights (Bechtold and Patterson 2005). Strata are usually based on land use (e.g., forest or nonforest) but may also be based on other criteria (e.g., ownership, crown cover).

9.7.8 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#). For evaluations that do not conform to the boundaries of a single State the value of STATECD should be set to 99.

9.7.9 P1POINTCNT

Phase 1 point count. The number of basic units (pixels or points) in the stratum.

9.7.10 P2POINTCNT

Phase 2 point count. The number of field plots that are within the stratum.

9.7.11 EXPNS

Expansion factor. The area, in acres, that a stratum represents divided by the number of sampled plots in that stratum:

$$\text{EXPNS} = (\text{POP_ESTN_UNIT.AREA_USED} * \text{P1POINTCNT} / \text{POP_ESTN_UNIT.P1PNTCNT_EU}) / \text{P2POINTCNT}.$$

This attribute can be used to obtain estimates of population area when summed across all the plots in the population of interest.

Refer to [The Forest Inventory and Analysis Database: Population Estimation User Guide](#) for detailed examples.

9.7.12 ADJ_FACTOR_MACR

Adjustment factor for the macroplot. A value that adjusts the population estimates to account for partially nonsampled plots due to hazardous conditions or denied access. It is used with condition proportion (COND.CONDPROP_UNADJ) and area expansion (EXPNS) to provide area estimates, when COND.PROP_BASIS = 'MACR' (indicating macroplot installed). ADJ_FACTOR_MACR is also used with EXPNS and trees per acre unadjusted (e.g., TREE.TPA_UNADJ) to provide tree estimates for sampled land. If a macroplot was not installed, this attribute is left blank (null). Refer to [The Forest Inventory and Analysis Database: Population Estimation User Guide](#) for detailed examples.

9.7.13 ADJ_FACTOR_SUBP

Adjustment factor for the subplot. A value that adjusts the population estimates to account for partially nonsampled plots due to hazardous conditions or denied access. It is used with condition proportion (COND.CONDPROP_UNADJ) and area expansion (EXPNS) to provide area estimates, when COND.PROP_BASIS = 'SUBP' (indicating subplots installed). ADJ_FACTOR_SUBP is also used with EXPNS and trees per acre unadjusted (e.g., TREE.TPA_UNADJ) to provide tree estimates for sampled land. Refer to [The Forest Inventory and Analysis Database: Population Estimation User Guide](#) for detailed examples.

9.7.14 ADJ_FACTOR_MICR

Adjustment factor for the microplot. A value that adjusts population estimates to account for partially nonsampled plots due to hazardous conditions or denied access. It is used with area expansion (EXPNS) and seedlings per acre unadjusted (SEEDLING.TPA_UNADJ) or saplings per acre unadjusted (TREE.TPA_UNADJ where TREE.DIA < 5.0) to provide tree estimates for sampled land. Refer to [The Forest Inventory and Analysis Database: Population Estimation User Guide](#) for detailed examples.

9.7.15 ADJ_FACTOR_CWD

Adjustment factor for coarse woody debris. A value that adjusts the population estimates to account for partially nonsampled transects due to hazardous conditions or denied access. This attribute is used in the process that populates adjusted values in COND_DWM_CALC (i.e., plot-level estimate, condition, and adjustment for estimation).

9.7.16 ADJ_FACTOR_FWD_SM

Adjustment factor for small fine woody debris. A value that adjusts the population estimates to account for partially nonsampled transects due to hazardous conditions or denied access. This attribute is used in the process that populates adjusted values in COND_DWM_CALC (i.e., plot-level estimate, condition, and adjustment for estimation).

9.7.17 ADJ_FACTOR_FWD_LG

Adjustment factor for large fine woody debris. A value that adjusts the population estimates to account for partially nonsampled transects due to hazardous conditions or denied access. This attribute is used in the process that populates adjusted values in COND_DWM_CALC (i.e., plot-level estimate, condition, and adjustment for estimation).

9.7.18 ADJ_FACTOR_DUFF

Adjustment factor for the duff and litter layer. A value that adjusts the population estimates to account for partially nonsampled points due to hazardous conditions or denied access. This attribute is used in the process that populates adjusted values in COND_DWM_CALC (i.e., plot-level estimate, condition, and adjustment for estimation).

9.7.19 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

9.7.20 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

9.7.21 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

9.7.22 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

9.7.23 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

9.7.24 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

9.7.25 ADJ_FACTOR_PILE

Adjustment factor for piles. A value that adjusts the population estimates to account for partially nonsampled transects or plots due to hazardous conditions or denied access.

9.7.26 ADJ_FACTOR_REGEN_MICR

Adjustment factor for tree regeneration indicator on the microplot. A value that adjusts the population estimates to account for partially nonsampled plots due to hazardous conditions or denied access. This is the ratio of the total area of the microplot footprint to the area of the microplot footprint that was actually sampled. This value is for plots that include an optional tree regeneration indicator sample protocol. Only populated by certain FIA work units (SURVEY.RSCD = 23, 24).

9.7.27 ADJ_FACTOR_INV_SUBP

Adjustment factor for invasive species on the subplot. A value that adjusts the population estimates to account for partially nonsampled plots due to hazardous conditions or denied access. This is the ratio of the total area of the subplot footprint to the area of the subplot footprint that was actually sampled. This value is for plots that include an optional invasive species sample protocol.

9.7.28 ADJ_FACTOR_P2VEG_SUBP

Adjustment factor for Phase 2 vegetation profile on the subplot. A value that adjusts the population estimates to account for partially nonsampled plots due to hazardous conditions or denied access. This is the ratio of the total area of the subplot footprint to the area of the subplot footprint that was actually sampled. This value is for plots that include an optional P2 (Phase 2) vegetation profile sample protocol.

9.7.29 ADJ_FACTOR_GRNDLYR_MICROQUAD

Adjustment factor for ground cover layer on the microquadrat. A value that adjusts the population estimates to account for partially nonsampled plots due to hazardous conditions or denied access. This is the ratio of the total area of the microquadrat footprint to the area of the microquadrat footprint that was actually sampled. This value is for plots that include an optional ground cover layer sample protocol. Only populated by certain FIA work units (SURVEY.RSCD = 27).

9.7.30 ADJ_FACTOR_SOIL

Adjustment factor for soils. A value that adjusts the population estimates to account for partially nonsampled plots due to hazardous conditions or denied access. This is the ratio of the total soil points of the footprint to the number of soil points that were actually sampled. This value is for plots that include a soil sample.

Section revision: 04.2024

Chapter 10: Database Tables - Plot Geometry; Plot Snapshot

Chapter Contents:

| Section | Database table | Oracle table name |
|---------|-------------------------------------|-------------------|
| 10.1 | Plot Geometry Table | PLOTGEOM |
| 10.2 | Plot Snapshot Table | PLOTSNAP |

Definitions for database tables:

For further detail and examples, refer to the Overview (chapter 1).

Keys Presented with the Tables

| Key type | Definition |
|----------|--|
| Primary | A single column in a table whose values uniquely identify each row in an Oracle table. |
| Unique | Multiple columns in a table whose values uniquely identify each row in an Oracle table. There can be one and only one row for each unique key value. |
| Natural | A type of unique key made from existing attributes in the table. It is stored as an index in this database. |
| Foreign | A column in a table that is used as a link to a matching column in another Oracle table. |

Oracle Data Types

| Oracle data type | Definition |
|------------------|---|
| DATE | A data type that stores the date. |
| NUMBER | A data type that contains only numbers, positive or negative, with a floating-decimal point. |
| NUMBER(SIZE, D) | A data type that contains only numbers up to a specified maximum size. The maximum size (<i>and optional fixed-decimal point</i>) is specified by the value(s) listed in the parentheses. |
| VARCHAR2(SIZE) | A data type that contains alphanumeric data (numbers and/or characters) up to a specified maximum size. |

10.1 Plot Geometry Table

(Oracle table name: PLOTGEOM)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 10.1.1 | CN | Sequence number | VARCHAR2(34) |
| 10.1.2 | STATECD | State code | NUMBER |
| 10.1.3 | INVYR | Inventory year | NUMBER |
| 10.1.4 | UNITCD | Survey unit code | NUMBER |
| 10.1.5 | COUNTYCD | County code | NUMBER |
| 10.1.6 | PLOT | Plot number | NUMBER |
| 10.1.7 | LAT | Latitude | NUMBER |
| 10.1.8 | LON | Longitude | NUMBER |
| 10.1.9 | CONGCD | Congressional district code | NUMBER |
| 10.1.10 | ECOSUBCD | Ecological subsection code | VARCHAR2(7) |
| 10.1.11 | HUC | Hydrologic unit code | NUMBER |
| 10.1.12 | EMAP_HEX | EMAP hexagon | NUMBER |
| 10.1.13 | FIPSCOUNTY | FIPS county code | NUMBER |
| 10.1.14 | ROADLESSCD | Roadless code | VARCHAR2(4) |
| 10.1.15 | CREATED_BY | Created by | VARCHAR2(30) |
| 10.1.16 | CREATED_DATE | Created date | DATE |
| 10.1.17 | CREATED_IN_INSTANCE | Created in instance | NUMBER(6) |
| 10.1.18 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 10.1.19 | MODIFIED_DATE | Modified date | DATE |
| 10.1.20 | MODIFIED_IN_INSTANCE | Modified in instance | NUMBER(6) |
| 10.1.21 | ALP_ADFORCD | Administrative forest code | NUMBER |
| 10.1.22 | FVS_VARIANT | Forest vegetation simulator variant | VARCHAR2(2) |
| 10.1.23 | FVS_LOC_CD | Forest vegetation simulator location code | NUMBER(6) |
| 10.1.24 | FVS_REGION | Forest vegetation simulator region code | NUMBER(2) |
| 10.1.25 | FVS_FOREST | Forest vegetation simulator forest code | NUMBER(2) |
| 10.1.26 | FVS_DISTRICT | Forest vegetation simulator district code | NUMBER(2) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|------------------|----------------------|
| Primary | CN | N/A | PLOTGEOM_PK |
| Foreign | CN | PLOTGEOM to PLOT | PLOTGEOM_PLT_FK |

10.1.1 CN

Sequence number. A unique sequence number used to identify a plot geometry record, and is equal to the CN identifier in the PLOT table.

10.1.2 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

10.1.3 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

10.1.4 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 B](#) for codes.

10.1.5 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

10.1.6 PLOT

Plot number. An identifier for a plot. Along with INVYR, STATECD, UNITCD, COUNTYCD, PLOT may be used to uniquely identify a plot.

10.1.7 LAT

Latitude. The approximate latitude of the plot in decimal degrees using NAD 83 datum (these [Pacific Islands](#) plots use WSG84 datum - SURVEY.RSCD = 26 and SURVEY.STATECD = 60, 64, 66, 68, 69, or 70). Actual plot coordinates cannot be released because of a Privacy provision enacted by Congress in the Food Security Act of 1985. Therefore, this attribute is approximately +/- 1 mile and, for annual inventory data, most plots are within +/- 1/2 mile. Annual data have additional uncertainty for private plots caused by swapping plot coordinates for up to 20 percent of the plots. In some cases, the county centroid is used when the actual coordinate is not available.

10.1.8 LON

Longitude. The approximate longitude of the plot in decimal degrees using NAD 83 datum (these [Pacific Islands](#) plots use WSG84 datum - SURVEY.RSCD = 26 and SURVEY.STATECD = 60, 64, 66, 68, 69, or 70). Actual plot coordinates cannot be released because of a Privacy provision enacted by Congress in the Food Security Act of 1985. Therefore, this attribute is approximately +/- 1 mile and, for annual inventory data, most plots are within +/- 1/2 mile. Annual data have additional uncertainty for private plots caused by swapping plot coordinates for up to 20 percent of the plots. In some cases, the county centroid is used when the actual coordinate is not available.

10.1.9 CONGCD

Congressional district code. A territorial division of a State from which a member of the U.S. House of Representatives is elected. The congressional district code assigned to a plot (regardless of when it was measured) is for the current Congress CONGCD is a 4-digit code. The first 2 digits are the State FIPS code and the last 2 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 will be for the nearest congressional district in the correct State. This attribute is coded for the coterminous States and Alaska, and is left blank (null) in all other instances. For more information about the coverage used to assign this attribute, see National Atlas of the United States (2007). This assignment is derived using a spatial intersection of PLOT.LAT and PLOT.LON.

10.1.10 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 for the coterminous United States were developed as part of the "[Ecological Subregions: Sections and Subsections for the Conterminous United States](#) (Cleland and others 2007) (<https://www.fs.usda.gov/research/treesearch/48672>).

For Alaska, the ecological section codes are equivalent to the ecoregions designated by Nowacki and others in Ecoregions of Alaska: 2001. U.S. Geological Survey Open-File Report 02-297.

A full description of Alaska ecoregions can be found in Spencer and others (2002) "[Home is where the habitat is: An ecosystem foundation for wildlife distribution and behavior](#)" (https://www.nsf.gov/pubs/2003/nsf03021/nsf03021_2.pdf). In: Arctic Research of the United States. 2002. Volume 16:6-17. This attribute is coded for the coterminous United States, southeast and south coastal Alaska, and is left blank (null) in all other instances. This assignment is derived using a spatial intersection of PLOT.LAT and PLOT.LON.

10.1.11 HUC

Hydrologic unit code. A code representing a watershed area that is the fourth-level hydrological subdivision as classified by the [USGS National Water Information System \(NWIS\)](#). URL: <https://water.usgs.gov/GIS/huc.html>. This assignment is derived using a spatial intersection of PLOT.LAT and PLOT.LON.

10.1.12 EMAP_HEX

EMAP hexagon. The identifier for the approximately 160,000 acre Environmental Monitoring and Assessment Program (EMAP) hexagon in which the plot is located. [EMAP hexagons](#) are available to the public, cover the coterminous United States, and have been used in summarizing and aggregating data about numerous natural resources. This assignment is derived using a spatial intersection of PLOT.LAT and PLOT.LON. May not be populated for some FIA work units when PLOT.MANUAL <1.0.

10.1.13 FIPSCOUNTY

FIPS county code. State code concatenated with the county code.

10.1.14 ROADLESSCD

Roadless code. A code indicating the management type of the inventoried roadless area the plot falls in, as designated by USDA Forest Service, within the National Forest System lands. The current metadata files available at the [National Inventoried Roadless Areas](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsm8_037001.html) web page (https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsm8_037001.html). This assignment is derived using a spatial intersection of PLOT.LAT and PLOT.LON.

Codes: ROADLESSCD

| Code | Description |
|------|---|
| 1B | Inventoried roadless areas where road construction and reconstruction is prohibited. |
| 1B-1 | Inventoried roadless areas that are recommended for wilderness designation in the forest plan and where road construction and reconstruction is prohibited. |
| 1C | Inventoried roadless areas where road construction and reconstruction is not prohibited. |

10.1.15 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

10.1.16 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

10.1.17 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

10.1.18 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

10.1.19 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

10.1.20 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

10.1.21 ALP_ADFORCD

Administrative forest code. Identifies the administrative unit (Forest Service Region and National Forest) in which the plot center is located. The first 2 digits of the 4-digit code are for the region number and the last 2 digits are for the Administrative National Forest number. Based solely on the most recent ALP (Automated Lands Program) layers (BASICOWNERSHIP and ADMINISTRATIVEFOREST) and the exact plot location. A plot can be assigned an ADFORCD irrespective of the plot's OWNCD value(s). Refer to [appendix C](#) for codes.

10.1.22 FVS_VARIANT

Forest vegetation simulator variant. A code indicating the Forest Vegetation Simulator (FVS) geographic variant assigned to the plot. The assignment is derived using a spatial intersection of PLOT.LAT and PLOT.LON, and the official Forest Vegetation Simulator variant map. See REF_FVS_VAR_NAME.FVS VARIANT for codes.

10.1.23 FVS_LOC_CD

Forest vegetation simulator location code. A code indicating the National Forest System location assigned to the plot using a spatial intersection of PLOT.LAT and PLOT.LON, and the official Forest Vegetation Simulator variant map. All FIA plot locations that fall within the boundary of an FVS geographic variant are assigned a location code, regardless of the ownership on which they occur. FVS_LOC_CD is stored in the format RRFF, with RR being NFS Region codes 01-06, 08-10 or other jurisdictions/ownerships (07), and FF being NFS Forest codes. There is an exception to this format when the plot falls within the boundary of the Southern (SN) variant, where the format is RFFDD, with R being NFS Region code (8), FF being NFS Forest codes, and DD being the NFS District code. See [appendix M](#) for codes.

10.1.24 FVS_REGION

Forest vegetation simulator region code. A code indicating the NFS Region assigned to the plot using a spatial intersection of PLOT.LAT and PLOT.LON and the official Forest Vegetation Simulator variant map. All FIA plot locations that fall within the boundary of an FVS variant are assigned to a region, regardless of the ownership on which they occur. See [appendix M](#) for codes.

10.1.25 FVS_FOREST

Forest vegetation simulator forest code. A code indicating the NFS National Forest assigned to the plot using a spatial intersection of PLOT.LAT and PLOT.LON and the official Forest Vegetation Simulator variant map. All FIA plot locations that fall within the boundary of an FVS variant are assigned to a forest, regardless of the ownership on which they occur. This is not to be confused with the administrative forest codes (COND.ADFORCD). See [appendix M](#) for codes.

10.1.26 FVS_DISTRICT

Forest vegetation simulator district code. A code indicating the NFS National Forest District assigned to the plot using a spatial intersection of PLOT.LAT and PLOT.LON and the official Forest Vegetation Simulator variant map. All FIA plot locations that fall within the boundary of an FVS variant are assigned to a district, regardless of the ownership on which they occur. See [appendix M](#) for codes.

10.2 Plot Snapshot Table

(Oracle table name: PLOTSNAP)

| Subsection | Column name | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 10.2.1 | CN | Sequence number | VARCHAR2(34) |
| 10.2.2 | SRV_CN | Survey sequence number | VARCHAR2(34) |
| 10.2.3 | CTY_CN | County sequence number | VARCHAR2(34) |
| 10.2.4 | PREV_PLT_CN | Previous plot sequence number | VARCHAR2(34) |
| 10.2.5 | INVYR | Inventory year | NUMBER(4) |
| 10.2.6 | STATECD | State code | NUMBER(4) |
| 10.2.7 | UNITCD | Survey unit code | NUMBER(2) |
| 10.2.8 | COUNTYCD | County code | NUMBER(3) |
| 10.2.9 | PLOT | Plot number | NUMBER(5) |
| 10.2.10 | PLOT_STATUS_CD | Plot status code | NUMBER(1) |
| 10.2.11 | PLOT_NONSAMPLE_REASN_CD | Plot nonsampled reason code | NUMBER(2) |
| 10.2.12 | MEASYEAR | Measurement year | NUMBER(4) |
| 10.2.13 | MEASMON | Measurement month | NUMBER(2) |
| 10.2.14 | MEASDAY | Measurement day | NUMBER(2) |
| 10.2.15 | REMPER | Remeasurement period | NUMBER(3,1) |
| 10.2.16 | KINDCD | Sample kind code | NUMBER(2) |
| 10.2.17 | DESIGNCD | Design code | NUMBER(4) |
| 10.2.18 | RDDISTCD | Horizontal distance to improved road code | NUMBER(2) |
| 10.2.19 | WATERCD | Water on plot code | NUMBER(2) |
| 10.2.20 | LAT | Latitude | NUMBER(8,6) |
| 10.2.21 | LON | Longitude | NUMBER(9,6) |
| 10.2.22 | ELEV | Elevation | NUMBER(5) |
| 10.2.23 | GROW_TYP_CD | Type of annual volume growth code | NUMBER(2) |
| 10.2.24 | MORT_TYP_CD | Type of annual mortality volume code | NUMBER(2) |
| 10.2.25 | P2PANEL | Phase 2 panel number | NUMBER(2) |
| 10.2.26 | P3PANEL | Phase 3 panel number | NUMBER(2) |
| 10.2.27 | ECOSUBCD | Ecological subsection code | VACHAR2(7) |
| 10.2.28 | CONGCD | Congressional district code | NUMBER(4) |
| 10.2.29 | MANUAL | Manual (field guide) version number | NUMBER(3,1) |
| 10.2.30 | MANUAL_DB | Manual version of the data | NUMBER(3,1) |
| 10.2.31 | SUBPANEL | Subpanel | NUMBER(2) |
| 10.2.32 | KINDCD_NC | Sample kind code, North Central | NUMBER(2) |
| 10.2.33 | QA_STATUS | Quality assurance status | NUMBER(1) |

| Subsection | Column name | Descriptive name | Oracle data type |
|------------|----------------------|--|------------------|
| 10.2.34 | CREATED_BY | Created by | VARCHAR2(30) |
| 10.2.35 | CREATED_DATE | Created date | DATE |
| 10.2.36 | CREATED_IN_INSTANCE | Created in instance | NUMBER(6) |
| 10.2.37 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 10.2.38 | MODIFIED_DATE | Modified date | DATE |
| 10.2.39 | MODIFIED_IN_INSTANCE | Modified in instance | NUMBER(6) |
| 10.2.40 | MICROPLOT_LOC | Microplot location | VARCHAR2(12) |
| 10.2.41 | DECLINATION | Declination | NUMBER(4,1) |
| 10.2.42 | EMAP_HEX | EMAP hexagon | NUMBER(7) |
| 10.2.43 | SAMP_METHOD_CD | Sample method code | NUMBER(1) |
| 10.2.44 | SUBP_EXAMINE_CD | Subplots examined code | NUMBER(1) |
| 10.2.45 | MACRO_BREAKPOINT_DIA | Macroplot breakpoint diameter | NUMBER(2) |
| 10.2.46 | INTENSITY | Intensity | VARCHAR2(2) |
| 10.2.47 | CYCLE | Inventory cycle number | NUMBER(2) |
| 10.2.48 | SUBCYCLE | Inventory subcycle number | NUMBER(2) |
| 10.2.49 | ECO_UNIT_PNW | Ecological unit, Pacific Northwest Research Station | VARCHAR2(10) |
| 10.2.50 | TOPO_POSITION_PNW | Topographic position, Pacific Northwest Research Station | VARCHAR2(2) |
| 10.2.51 | EVAL_GRP_CN | Evaluation group sequence number | VARCHAR2(34) |
| 10.2.52 | EVAL_GRP | Evaluation group | NUMBER(6) |
| 10.2.53 | EXPALL | Expansion factor for EXPALL evaluation | NUMBER |
| 10.2.54 | EXPCURR | Expansion factor for EXPCURR evaluation | NUMBER |
| 10.2.55 | EXPVOL | Expansion factor for EXPVOL evaluation | NUMBER |
| 10.2.56 | EXPGROW | Expansion factor for EXPGROW evaluation | NUMBER |
| 10.2.57 | EXPMORT | Expansion factor for EXPMORT evaluation | NUMBER |
| 10.2.58 | EXPREMV | Expansion factor for EXPREMV evaluation | NUMBER |
| 10.2.59 | EXPCHNG | Expansion factor for EXPCHNG evaluation | NUMBER |
| 10.2.60 | EXPDWM | Expansion factor for EXPDWM evaluation | NUMBER |
| 10.2.61 | EXPREGEN | Expansion factor for EXPREGEN evaluation | NUMBER |
| 10.2.62 | EXPINV | Expansion factor for EXPINV evaluation | NUMBER |

| Subsection | Column name | Descriptive name | Oracle data type |
|------------|------------------|---|------------------|
| 10.2.63 | EXPP2VEG | Expansion factor for EXPP2VEG evaluation | NUMBER |
| 10.2.64 | EXPSoIL | Expansion factor for EXPSoIL evaluation | NUMBER |
| 10.2.65 | EXPCRWN | Expansion factor for EXPCRWN evaluation | NUMBER |
| 10.2.66 | EXPGRNDLYR | Expansion factor for EXPGRNDLYR | NUMBER |
| 10.2.67 | ADJ_EXPALL | Adjustment factor for EXPALL evaluation | NUMBER |
| 10.2.68 | ADJ_EXPCURR | Adjustment factor for EXPCURR evaluation | NUMBER |
| 10.2.69 | ADJ_EXPVOL_MACR | Macroplot adjustment factor for EXPVOL evaluation | NUMBER |
| 10.2.70 | ADJ_EXPVOL_SUBP | Subplot adjustment factor for EXPVOL evaluation | NUMBER |
| 10.2.71 | ADJ_EXPVOL_MICR | Microplot adjustment factor for EXPVOL evaluation | NUMBER |
| 10.2.72 | ADJ_EXPGROW_MACR | Macroplot adjustment factor for EXPGROW evaluation | NUMBER |
| 10.2.73 | ADJ_EXPGROW_SUBP | Subplot adjustment factor for EXPGROW evaluation | NUMBER |
| 10.2.74 | ADJ_EXPGROW_MICR | Microplot adjustment factor for EXPGROW evaluation | NUMBER |
| 10.2.75 | ADJ_EXPMORT_MACR | Macroplot adjustment factor for EXPMORT evaluation | NUMBER |
| 10.2.76 | ADJ_EXPMORT_SUBP | Subplot adjustment factor for EXPMORT evaluation | NUMBER |
| 10.2.77 | ADJ_EXPMORT_MICR | Microplot adjustment factor for EXPMORT evaluation | NUMBER |
| 10.2.78 | ADJ_EXPREMV_MACR | Macroplot adjustment factor for EXPREMV evaluation | NUMBER |
| 10.2.79 | ADJ_EXPREMV_SUBP | Subplot adjustment factor for EXPREMV evaluation | NUMBER |
| 10.2.80 | ADJ_EXPREMV_MICR | Microplot adjustment factor for EXPREMV evaluation | NUMBER |
| 10.2.81 | ADJ_EXPCHNG_MACR | Macroplot adjustment factor for EXPCHNG evaluation | NUMBER |
| 10.2.82 | ADJ_EXPCHNG_SUBP | Subplot adjustment factor for EXPCHNG evaluation | NUMBER |
| 10.2.83 | ADJ_EXPCHNG_MICR | Microplot adjustment for EXPCHNG evaluation | NUMBER |
| 10.2.84 | ADJ_EXPDWM_CWD | Adjustment factor for coarse woody debris estimates using EXPDWM evaluation | NUMBER |

| Subsection | Column name | Descriptive name | Oracle data type |
|------------|------------------------------|---|------------------|
| 10.2.85 | ADJ_EXPDWM_FWD_SM | Adjustment factor for small fine woody debris estimates using EXPDWM evaluation | NUMBER |
| 10.2.86 | ADJ_EXPDWM_FWD_LG | Adjustment factor large fine woody debris estimates using EXPDWM for evaluation | NUMBER |
| 10.2.87 | ADJ_EXPDWM_DUFF | Adjustment factor for duff, litter, and fuelbed estimates using EXPDWM evaluation | NUMBER |
| 10.2.88 | ADJ_EXPDWM_PILE | Adjustment factor for pile estimates using EXPDWM evaluation | NUMBER |
| 10.2.89 | ADJ_EXPREGEN_MICR | Microplot adjustment factor for estimates using EXPREGEN evaluation | NUMBER |
| 10.2.90 | ADJ_EXPINV_SUBP | Subplot adjustment factor for estimates using EXPINV evaluation | NUMBER |
| 10.2.91 | ADJ_EXPP2VEG_SUBP | Subplot adjustment factor for estimates using EXPP2VEG evaluation | NUMBER |
| 10.2.92 | ADJ_EXPSOIL | Adjustment factor for EXPSOIL evaluation | NUMBER |
| 10.2.93 | ADJ_EXPGRNDLYR_MICROQUA D | Microquadrat adjustment factor for estimates using EXPGRNDLYR evaluation type | NUMBER |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Unique | CN, EVAL_GRP | N/A | PLOTSNP_UK |

10.2.1 CN

Sequence number. A unique sequence number (equal to the CN identifier in the PLOT table), which, combined with the EVAL_GRP_CN, is used to identify a plot snapshot record.

10.2.2 SRV_CN

Survey sequence number. Foreign key linking the plot snapshot record to the survey record.

10.2.3 CTY_CN

County sequence number. Foreign key linking the plot snapshot record to the county record.

10.2.4 PREV_PLT_CN

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

Note: PREV_PLT_CN is only valid for prior plot visits that were sampled using the FIA national plot design for annual inventory. It cannot be used to link prior plot visits that were sampled using a different plot design for periodic inventory.

10.2.5 INVYR

Inventory year. See SURVEY.[INVYR](#) description for definition.

10.2.6 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

10.2.7 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 B](#) for codes.

10.2.8 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 are used. Refer to [appendix B](#) for codes.

Note: Summarizing data by county is not recommended for Alaska datasets. For assistance with analyses for Alaska, please consult the PNWRS analyst contact listed in [table 1-1](#).

10.2.9 PLOT

Plot number. An identifier for a plot. Along with INVYR, STATECD, UNITCD, COUNTYCD, PLOT may be used to uniquely identify a plot.

10.2.10 PLOT_STATUS_CD

Plot status code. A code that describes the sampling status of the plot. Blank (null) values may be present for periodic inventories.

Codes: PLOT_STATUS_CD

| Code | Description |
|------|--|
| 1 | Sampled - at least one accessible forest land condition present on plot. |
| 2 | Sampled - no accessible forest land condition present on plot. |
| 3 | Nonsampled. |

10.2.11 PLOT_NONSAMPLE_REASON_CD

Plot nonsampled reason code. A code indicating the reason the entire plot was not sampled. Not populated for sampled plots.

Codes: PLOT_NONSAMPLE_REASN_CD

| Code | Description |
|-------------|--|
| 01 | Outside U.S. boundary - Entire plot is outside of the U.S. border. |
| 02 | Denied access area - Access to the entire plot is denied by the legal owner, or by the owner of the only reasonable route to the plot. |
| 03 | Hazardous - Entire plot cannot be accessed because of a hazard or danger, for example cliffs, quarries, strip mines, illegal substance plantations, high water, etc. |
| 05 | Lost data - Plot data file was discovered to be corrupt after a panel was completed and submitted for processing. |
| 06 | Lost plot - Entire plot cannot be found. |
| 07 | Wrong location - Previous plot can be found, but its placement is beyond the tolerance limits for plot location. |
| 08 | Skipped visit - Entire plot skipped. Used for plots that are not completed prior to the time a panel is finished and submitted for processing. This code is for office use only. |
| 09 | Dropped intensified plot - Intensified plot dropped due to a change in grid density. This code used only by units engaged in intensification. This code is for office use only. |
| 10 | Other - Entire plot not sampled due to a reason other than one of the specific reasons already listed. |
| 11 | Ocean - Plot falls in ocean water below mean high tide line. |

10.2.12 MEASYEAR

Measurement year. The year in which the plot was completed. MEASYEAR may differ from INVYR.

10.2.13 MEASMON

Measurement month. The month in which the plot was completed. May be blank (null) for periodic inventory.

Codes: MEASMON

| Code | Description |
|-------------|--------------------|
| 1 | January. |
| 2 | February. |
| 3 | March. |
| 4 | April. |
| 5 | May. |
| 6 | June. |
| 7 | July. |
| 8 | August. |
| 9 | September. |
| 10 | October. |
| 11 | November. |
| 12 | December. |

10.2.14 MEASDAY

Measurement day. The day of the month in which the plot was completed. May be blank (null) for periodic inventory.

10.2.15 REMPER

Remeasurement period. The number of years between measurements for remeasured plots. This attribute is blank (null) for new plots or remeasured plots that are not used for growth, removals, or mortality estimates. For data processed with NIMS, REMPER is the number of years between measurements to the nearest 0.1 year. For data processed with systems other than NIMS, 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 work unit. Contact the appropriate FIA work unit ([table 1-1](#)) for information on how this is done for a particular State.

10.2.16 KINDCD

Sample kind code. A code indicating the type of plot installation. Database users may also want to examine DESIGNCD to obtain additional information about the kind of plot being selected.

Codes: KINDCD

| Code | Description |
|------|--|
| 0 | Periodic inventory plot. |
| 1 | Initial installation of a National design plot. |
| 2 | Remeasurement of previously installed National design plot. |
| 3 | Replacement of previously installed National design plot. |
| 4 | Modeled periodic inventory plot (Northeastern and North Central only). |

10.2.17 DESIGNCD

Design code. A code indicating the type of plot design used to collect the data. Refer to [appendix G](#) for a list of codes and descriptions.

10.2.18 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. May not be populated for some FIA work units when PLOT.MANUAL <1.0.

Codes: RDDISTCD

| 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. |

| Code | Description |
|------|-----------------------|
| 8 | 3 to 5 miles. |
| 9 | Greater than 5 miles. |

10.2.19 WATERCD

Water on plot code. Water body <1 acre in size or a stream <30 feet wide that has the greatest impact on the area within the sampled portions of any of the four subplots. The coding hierarchy is listed in order from large permanent water to temporary water. May not be populated for some FIA work units.

Codes: WATERCD

| Code | Description |
|------|---|
| 0 | None - no water sources within the sampled condition class(es). |
| 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 acre 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. |

10.2.20 LAT

Latitude. The approximate latitude of the plot in decimal degrees using NAD 83 datum (these [Pacific Islands](#) plots use WSG84 datum - SURVEY.RSCD = 26 and SURVEY.STATECD = 60, 64, 66, 68, 69, or 70). Actual plot coordinates cannot be released because of a Privacy provision enacted by Congress in the Food Security Act of 1985. Therefore, this attribute is approximately +/- 1 mile and, for annual inventory data, most plots are within +/- 1/2 mile. Annual data have additional uncertainty for private plots caused by swapping plot coordinates for up to 20 percent of the plots. In some cases, the county centroid is used when the actual coordinate is not available.

10.2.21 LON

Longitude. The approximate longitude of the plot in decimal degrees using NAD 83 datum (these [Pacific Islands](#) plots use WSG84 datum - SURVEY.RSCD = 26 and SURVEY.STATECD = 60, 64, 66, 68, 69, or 70). Actual plot coordinates cannot be released because of a Privacy provision enacted by Congress in the Food Security Act of 1985. Therefore, this attribute is approximately +/- 1 mile and, for annual inventory data, most plots are within +/- 1/2 mile. Annual data have additional uncertainty for private plots caused by swapping plot coordinates for up to 20 percent of the plots. In some cases, the county centroid is used when the actual coordinate is not available.

10.2.22 ELEV

Elevation. The distance the plot is located above sea level. ELEV is based on approximate plot coordinates (see LAT and LON). For certain FIA work units (SURVEY.RSCD = 22, 23, 24, 33), the ELEV value is rounded to the nearest 10 feet. For other FIA work units

(SURVEY.RSCD = 26, 27), the ELEV value is based on 200-foot groupings, and then a mid-point value is returned starting at 100 feet. Negative values indicate distance below sea level.

10.2.23 GROW_TYP_CD

Type of annual volume growth code. A code indicating how volume growth is estimated. Current annual growth is an estimate of the amount of volume that was added to a tree in the year before the tree was sampled, and is based on the measured diameter increment recorded when the tree was sampled or on a modeled diameter for the previous year. Periodic annual growth is an estimate of the average annual change in volume occurring between two measurements, usually the current inventory and the previous inventory, where the same plot is evaluated twice. Periodic annual growth is the increase in volume between inventories divided by the number of years between each inventory. This attribute is blank (null) if the plot does not contribute to the growth estimate.

Codes: GROW_TYP_CD

| Code | Description |
|------|------------------|
| 1 | Current annual. |
| 2 | Periodic annual. |

10.2.24 MORT_TYP_CD

Type of annual mortality volume code. A code indicating how mortality volume is estimated. Current annual mortality is an estimate of the volume of trees dying in the year before the plot was measured, and is based on the year of death or on a modeled estimate. Periodic annual mortality is an estimate of the average annual volume of trees dying between two measurements, usually the current inventory and previous inventory, where the same plot is evaluated twice. Periodic annual mortality is the loss of volume between inventories divided by the number of years between each inventory. Periodic average annual mortality is the most common type of annual mortality estimated. This attribute is blank (null) if the plot does not contribute to the mortality estimate.

Codes: MORT_TYP_CD

| Code | Description |
|------|------------------|
| 1 | Current annual. |
| 2 | Periodic annual. |

10.2.25 P2PANEL

Phase 2 panel number. The value for P2PANEL ranges from 1 to 5 for annual inventories and is blank (null) for periodic inventories. A panel is a sample in which the same elements are measured on two or more occasions. FIA divides the plots in each State into 5 panels that can be used to independently sample the population.

10.2.26 P3PANEL

Phase 3 panel number. A panel is a sample in which the same elements are measured on two or more occasions. FIA divides the plots in each State into 5 panels that can be used to independently sample the population. The value for P3PANEL ranges from 1 to 5 for

those plots where Phase 3 data were collected. If the plot is not a Phase 3 plot, then this attribute is left blank (null).

10.2.27 ECOSUBCD

Ecological subsection code. A code identifying an area of similar surficial geology, lithology, geomorphic process, soil groups, subregional climate, and potential natural communities. See PLOT.[ECOSUBCD](#) for details on the source of the codes.

10.2.28 CONGCD

Congressional district code. A territorial division of a State from which a member of the U.S. House of Representatives is elected. See PLOT.[CONGCD](#) for other details related to congressional code.

10.2.29 MANUAL

Manual (field guide) version number. Version number of the Field Guide used to describe procedures for collecting data on the plot. The National FIA Field Guide began with version 1.0; therefore data taken using the National Field procedures will have PLOT.MANUAL ≥ 1.0 . Data taken according to field instructions prior to the use of the National Field Guide have PLOT.MANUAL < 1.0 .

10.2.30 MANUAL_DB

Manual version of the data. Version of the National Field Guide used to describe procedures for collecting data on the plot. The data in the database have been standardized to this version. Versions of the national field guide are available on the [FIA website](#) (<https://www.fia.fs.usda.gov/library/field-guides-methods-proc/index.php>).

10.2.31 SUBPANEL

Subpanel. Annual inventory subpanel assignment for the plot for FIA work units using subpaneling. FIA uses a 5-panel system (see [P2PANEL](#)), but may further subdivide the 5 panels into subpanels. The following FIA work units subdivide each P2PANEL into 2 subpanels (SUBPANEL = 1 or 2), for a total of 10 subpanels. For these FIA work units, 1 subpanel is usually scheduled for measurement each year: RMRS (SURVEY.RSCD = 22); PNWRS (SURVEY.RSCD = 26, 27); SRS (SURVEY.RSCD = 33, only for Oklahoma where UNITCD ≥ 3). Populated for all plots using the National Field Guide protocols (MANUAL ≥ 1.0).

Codes: SUBPANEL

| Code | Description |
|------|-----------------------|
| 0 | Subpaneling not used. |
| 1 | Subpanel1. |
| 2 | Subpanel2. |

10.2.32 KINDCD_NC

Sample kind code, North Central. This attribute is populated through 2005 for the former North Central work unit (SURVEY.RSCD = 23) and is blank (null) for all other FIA work units.

Codes: KINDCD_NC

| Code | Description |
|-------------|----------------------------------|
| 0 | New/lost. |
| 6 | Remeasured. |
| 8 | Old location but not remeasured. |
| 20 | Skipped. |
| 33 | Replacement of lost plot. |

10.2.33 QA_STATUS

Quality assurance status. A code indicating the type of plot data collected. Production plots have QA_STATUS = 1 or 7. May not be populated for some FIA work units when PLOT.MANUAL <1.0.

Codes: QA_STATUS

| 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). |

10.2.34 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

10.2.35 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

10.2.36 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

10.2.37 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

10.2.38 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

10.2.39 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

10.2.40 MICROPLOT_LOC

Microplot location. A code indicating the location of the microplot center on the subplot. The offset microplot center is located 12 feet due east (90 degrees) of subplot center. The current standard 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. Populated for annual inventory and may be populated for periodic inventory.

Codes: MICROPLOT_LOC

| Code | Description |
|-------------|---|
| OFFSET | The microplot center is offset from the subplot center. |
| CENTER | The microplot center is at the subplot center. |

10.2.41 DECLINATION

Declination. (*core optional*) The azimuth correction used to adjust magnetic north to true north and is defined as follows:

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

This field is only used in cases where FIA work units are adjusting azimuths to correspond to true north. This field includes a decimal place because the USGS corrections are provided to the nearest half degree. DECLINATION is set to a value of 0.0 for plots that are sampled using magnetic azimuths. Only populated by certain FIA work units (SURVEY.RSCD = 26, 27).

10.2.42 EMAP_HEX

EMAP hexagon. The identifier for the approximately 160,000 acre Environmental Monitoring and Assessment Program (EMAP) hexagon in which the plot is located. [EMAP hexagons](#) are available to the public, cover the coterminous United States, and have been used in summarizing and aggregating data about numerous natural resources. For information about State code 5, contact the regional representative ([table 1-1](#)). May not be populated for some FIA work units when PLOT.MANUAL <1.0.

10.2.43 SAMP_METHOD_CD

Sample method code. A code indicating if the plot was observed in the field or remotely sensed in the office.

Codes: SAMP_METHOD_CD

| Code | Description |
|-------------|---|
| 1 | Field visited, meaning a field crew physically examined the plot and recorded information at least about subplot 1 center condition (see SUBP_EXAMINE_CD below). |
| 2 | Remotely sensed, meaning a determination was made using some type of imagery that a field visit was not necessary. When the plot is sampled remotely, the number of subplots examined (SUBP_EXAMINE_CD) usually equals 1. |

10.2.44 SUBP_EXAMINE_CD

Subplots examined code. A code indicating the number of subplots examined. By default, PLOT_STATUS_CD = 1 plots have all 4 subplots examined.

Codes: SUBP_EXAMINE_CD

| Code | Description |
|-------------|--|
| 1 | Only subplot 1 center condition examined and all other subplots assumed (inferred) to be the same. |
| 4 | All four subplots fully described (no assumptions/inferences). |

10.2.45 MACRO_BREAKPOINT_DIA

Macroplot breakpoint diameter. (*core optional*) A macroplot breakpoint diameter is the diameter (either d.b.h. or d.r.c.) above which trees are measured on the plot extending from 0.01 to 58.9 feet horizontal distance from the center of each subplot. Examples of different breakpoint diameters used by western FIA work units are 24 inches or 30 inches (RSCD = 26, 27), or 21 inches (RSCD = 22). Installation of macroplots is *core optional* to more adequately sample large trees. If macroplots are not being installed, this item will be left blank (null).

10.2.46 INTENSITY

Intensity. A code used to identify FIA base grid annual inventory plots and plots that have been added to intensify a particular sample. Under the FIA base grid, one plot is collected in each theoretical hexagonal polygon, which is approximately 6,000 acres in size. INTENSITY values of 1-200 are tied to the FIA base grid. INTENSITY = 1 approximates 1 plot per 6,000 acres. INTENSITY values = 2-200 indicate further intensification tied to the FIA base grid in a specific repeatable geometric pattern. INTENSITY values greater than 1 may not have any relation to the amount of intensification applied (e.g., INTENSITY = 2 does NOT necessarily mean 2x spatial intensification). For certain FIA work units (SURVEY.RSCD = 26, 27), INTENSITY values greater than 201 are tied to the older Continuous Vegetation Survey (CVS) plot grid (used by FS Region 6, Oregon Department of Forestry, and BLM) or other special studies. Populated when PLOT.MANUAL ≥ 1.0 .

10.2.47 CYCLE

Inventory cycle number. See SURVEY.CYCLE description for definition.

10.2.48 SUBCYCLE

Inventory subcycle number. See SURVEY.SUBCYCLE description for definition.

10.2.49 ECO_UNIT_PNW

Ecological unit, Pacific Northwest Research Station. Plots taken by PNWRS FIA are assigned to the ecological unit in which they are located. Certain units have stocking adjustments made to the plots that occur on very low productivity lands, which thereby reduces the estimated potential productivity of the plot. More information can be found in MacLean (1973). Only populated by certain FIA work units (SURVEY.RSCD = 26, 27).

10.2.50 TOPO_POSITION_PNW

Topographic position, Pacific Northwest Research Station. The topographic position that describes the plot area. Illustrations available in Plot section of the PNWRS field guide located at the web page for [PNWRS FIA Field Manuals](#) (<https://www.fs.usda.gov/pnw/page/pnw-fia-field-manuals-0>). Adapted from information found in Wilson (1900). Only populated by certain FIA work units (SURVEY.RSCD = 26).

Codes: TOPO_POSITION_PNW

| Code | Topographic position | Common shape of slope |
|-------------|---|------------------------------|
| 1 | Ridge top or mountain peak over 130 feet. | Flat. |
| 2 | Narrow ridge top or mountain peak over 130 feet wide. | Convex. |
| 3 | Side hill - upper 1/3. | Convex. |
| 4 | Side hill - middle 1/3. | No rounding. |
| 5 | Side hill - lower 1/3. | Concave. |
| 6 | Canyon bottom less than 660 feet wide. | Concave. |
| 7 | Bench, terrace or dry flat. | Flat. |
| 8 | Broad alluvial flat over 660 feet wide. | Flat. |
| 9 | Swamp or wet flat. | Flat. |

10.2.51 EVAL_GRP_CN

Evaluation group sequence number. Foreign key linking the plot snapshot record to the population evaluation group record.

10.2.52 EVAL_GRP

Evaluation group. An identifier for the evaluation group. This identifier includes the "State code" (first two digits) and the "year" (last four digits) used to identify the evaluation group. The last year of a measurement interval (which is a "range of years" that is typically 5, 7, or 10 years in length) is used for the identifier label.

10.2.53 EXPALL

Expansion factor for EXPALL evaluation. The value of POP_STRATUM.EXPNS for estimates using evaluations where 'EXPALL' is recorded in the POP_EVAL_TYP column. See REF_POP_EVAL_TYP_DESCR.EVAL_TYP_CD for descriptions.

10.2.54 EXPCURR

Expansion factor for EXPCURR evaluation. The value of POP_STRATUM.EXPNS for estimates using evaluations where 'EXPCURR' is recorded in the POP_EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPCURR evaluation. See REF_POP_EVAL_TYP_DESCR.EVAL_TYP_CD for descriptions.

10.2.55 EXPVOL

Expansion factor for EXPVOL evaluation. The value of POP_STRATUM.EXPNS for estimates using evaluations where 'EXPVOL' is recorded in the POP_EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPVOL evaluation. See REF_POP_EVAL_TYP_DESCR.EVAL_TYP_CD for descriptions.

10.2.56 EXPGROW

Expansion factor for EXPGROW evaluation. The value of POP_STRATUM.EXPNS for estimates using evaluations where 'EXPGROW' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPGROW evaluation. See REF_POP_EVAL_TYP_DESCR.EVAL_TYP_CD for descriptions.

10.2.57 EXPMORT

Expansion factor for EXPMORT evaluation. The value of POP_STRATUM.EXPNS for estimates using evaluations where 'EXPMORT' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPMORT evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.58 EXPREMV

Expansion factor for EXPREMV evaluation. The value of POP_STRATUM.EXPNS for estimates using evaluations where 'EXPREMV' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPREMV evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.59 EXPCHNG

Expansion factor for EXPCHNG evaluation. The value of POP_STRATUM.EXPNS for estimates using evaluations where 'EXPCHNG' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPCHNG evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.60 EXPDWM

Expansion factor for EXPDWM evaluation. The value of POP_STRATUM.EXPNS for estimates using evaluations where 'EXPDWM' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPDWM evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.61 EXPREGEN

Expansion factor for EXPREGEN evaluation. The value of POP_STRATUM.EXPNS for estimates using evaluations where 'EXPREGEN' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPREGEN evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.62 EXPINV

Expansion factor for EXPINV evaluation. The value of POP_STRATUM.EXPNS for estimates using evaluations where 'EXPINV' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPINV evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.63 EXPP2VEG

Expansion factor for EXPP2VEG evaluation. The value of POP_STRATUM.EXPNS for estimates using evaluations where 'EXPP2VEG' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPP2VEG evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.64 EXPSOIL

Expansion factor for EXPSOIL evaluation. The value of POP_STRATUM.EXPNS for estimates using evaluations where 'EXPSOIL' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPSOIL evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.65 EXPCRWN

Expansion factor for EXPCRWN evaluation. The value of POP_STRATUM.EXPNS for estimates using evaluations where 'EXPCRWN' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPCRWN evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.66 EXPGRNDLYR

Expansion factor for EXPGRNDLYR evaluation. The value of POP_STRATUM.EXPNS for estimates using evaluations where 'EXPGRNDLYR' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPGRNDLYR evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.67 ADJ_EXPALL

Adjustment factor for EXPALL evaluation. The value of either POP_STRATUM.ADJ_FACTOR_SUBP or POP_STRATUM.ADJ_FACTOR_MACR (depending on the value of COND.PROP_BASIS) for estimates using evaluations where 'EXPALL' is recorded in the POP_EVAL_TYP.EVAL_TYP column. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.68 ADJ_EXPCURR

Adjustment factor for EXPCURR evaluation. The value of either POP_STRATUM.ADJ_FACTOR_SUBP or POP_STRATUM.ADJ_FACTOR_MACR (depending on the value of COND.PROP_BASIS) for estimates using evaluations where 'EXPCURR' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPCURR evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.69 ADJ_EXPVOL_MACR

Macroplot adjustment factor for EXPVOL evaluation. The value of POP_STRATUM.ADJ_FACTOR_MACR for estimates using evaluations where 'EXPVOL' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPVOL evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.70 ADJ_EXPVOL_SUBP

Subplot adjustment factor for EXPVOL evaluation. The value of POP_STRATUM.ADJ_FACTOR_SUBP for estimates using evaluations where 'EXPVOL' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPVOL evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.71 ADJ_EXPVOL_MICR

Microplot adjustment factor for EXPVOL evaluation. The value of POP_STRATUM.ADJ_FACTOR_MICR for estimates using evaluations where 'EXPVOL' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPVOL evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.72 ADJ_EXPGROW_MACR

Macroplot adjustment factor for EXPGROW evaluation. The value of POP_STRATUM.ADJ_FACTOR_MACR for estimates using evaluations where 'EXPGROW' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPGROW evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.73 ADJ_EXPGROW_SUBP

Subplot adjustment factor for EXPGROW evaluation. The value of POP_STRATUM.ADJ_FACTOR_SUBP for estimates using evaluations where 'EXPGROW' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPGROW evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.74 ADJ_EXPGROW_MICR

Microplot adjustment factor for EXPGROW evaluation. The value of POP_STRATUM.ADJ_FACTOR_MICR for estimates using evaluations where 'EXPGROW' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPGROW evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.75 ADJ_EXPMORT_MACR

Macroplot adjustment factor for EXPMORT evaluation. The value of POP_STRATUM.ADJ_FACTOR_MACR for estimates using evaluations where 'EXPMORT' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPMORT evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.76 ADJ_EXPMORT_SUBP

Subplot adjustment factor for EXPMORT evaluation. The value of POP_STRATUM.ADJ_FACTOR_SUBP for estimates using evaluations where 'EXPMORT' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPMORT evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.77 ADJ_EXPMORT_MICR

Microplot adjustment factor for EXPMORT evaluation. The value of POP_STRATUM.ADJ_FACTOR_MICR for estimates using evaluations where 'EXPMORT' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPMORT evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.78 ADJ_EXPREMV_MACR

Macroplot adjustment factor for EXPREMV evaluation. The value of POP_STRATUM.ADJ_FACTOR_MACR for estimates using evaluations where 'EXPREMV' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPREMV evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.79 ADJ_EXPREMV_SUBP

Subplot adjustment factor for EXPREMV evaluation. The value of POP_STRATUM.ADJ_FACTOR_SUBP for estimates using evaluations where 'EXPREMV' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPREMV evaluation. See [REF_POP_EVAL_TYP_DESCR.EVAL_TYP_CD](#) for descriptions.

10.2.80 ADJ_EXPREMV_MICR

Microplot adjustment factor for EXPREMV evaluation. The value of POP_STRATUM.ADJ_FACTOR_MICR for estimates using evaluations where 'EXPREMV' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPREMV evaluation. See [REF_POP_EVAL_TYP_DESCR.EVAL_TYP_CD](#) for descriptions.

10.2.81 ADJ_EXPCHNG_MACR

Macroplot adjustment factor for EXPCHNG evaluation. The value of POP_STRATUM.ADJ_FACTOR_MACR for estimates using evaluations where 'EXPCHNG' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPCHNG evaluation. See [REF_POP_EVAL_TYP_DESCR.EVAL_TYP_CD](#) for descriptions.

10.2.82 ADJ_EXPCHNG_SUBP

Subplot adjustment factor for EXPCHNG evaluation. The value of POP_STRATUM.ADJ_FACTOR_SUBP for estimates using evaluations where 'EXPCHNG' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPCHNG evaluation. See [REF_POP_EVAL_TYP_DESCR.EVAL_TYP_CD](#) for descriptions.

10.2.83 ADJ_EXPCHNG_MICR

Microplot adjustment factor for EXPCHNG evaluation. The value of POP_STRATUM.ADJ_FACTOR_MICR for estimates using evaluations where 'EXPCHNG' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPCHNG evaluation. See [REF_POP_EVAL_TYP_DESCR.EVAL_TYP_CD](#) for descriptions.

10.2.84 ADJ_EXPDWM_CWD

Adjustment factor for coarse woody debris estimates using EXPDWM evaluation. The value of POP_STRATUM.ADJ_FACTOR_CWD for estimates using evaluations where 'EXPDWM' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPDWM evaluation. See [REF_POP_EVAL_TYP_DESCR.EVAL_TYP_CD](#) for descriptions.

10.2.85 ADJ_EXPDWM_FWD_SM

Adjustment factor for small fine woody debris estimates using EXPDWM evaluation. The value of POP_STRATUM.ADJ_FACTOR_FWD_SM for estimates using evaluations where 'EXPDWM' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPDWM evaluation. See [REF_POP_EVAL_TYP_DESCR.EVAL_TYP_CD](#) for descriptions.

10.2.86 ADJ_EXPDWM_FWD_LG**Adjustment factor for large fine woody debris estimates using EXPDWM evaluation.**

The value of POP_STRATUM.ADJ_FACTOR_FWD_LG for estimates using evaluations where 'EXPDWM' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPDWM evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.87 ADJ_EXPDWM_DUFF**Adjustment factor for duff, litter, and fuelbed estimates using EXPDWM evaluation.**

The value of POP_STRATUM.ADJ_FACTOR_DUFF for estimates using evaluations where 'EXPDWM' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPDWM evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.88 ADJ_EXPDWM_PILE**Adjustment factor for pile estimates using EXPDWM evaluation.** The value of

POP_STRATUM.ADJ_FACTOR_PILE for estimates using evaluations where 'EXPDWM' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPDWM evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.89 ADJ_EXPREGEN_MICR**Microplot adjustment factor for estimates using EXPREGEN evaluation.** The value of

POP_STRATUM.ADJ_FACTOR_REGEN_MICR for estimates using evaluations where 'EXPREGEN' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPREGEN evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.90 ADJ_EXPINV_SUBP**Subplot adjustment factor for estimates using EXPINV evaluation.** The value of

POP_STRATUM.ADJ_FACTOR_INV_SUBP for estimates using evaluations where 'EXPINV' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPINV evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.91 ADJ_EXPP2VEG_SUBP**Subplot adjustment factor for estimates using EXPP2VEG evaluation.** The value of

POP_STRATUM.ADJ_FACTOR_P2VEG_SUBP for estimates using evaluations where 'EXPP2VEG' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPP2VEG evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

10.2.92 ADJ_EXPSOIL**Adjustment factor for EXPSOIL evaluation.** The value of

POP_STRATUM.ADJ_FACTOR_SOIL for estimates using evaluations where 'EXPSOIL' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPSOIL evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions

10.2.93 ADJ_EXPGRNDLYR_MICROQUAD

Microquadrat adjustment factor for estimates using EXPGRNDLYR evaluation type.

The value of POP_STRATUM.ADJ_FACTOR_GRNDLYR_MICROQUAD for estimates using evaluations where 'EXPGRNDLYR' is recorded in the POP_EVAL_TYP.EVAL_TYP column. This attribute is left blank (null) if the plot is not included in the EXPGRNDLYR evaluation. See REF_POP_EVAL_TYP_DESCR.[EVAL_TYP_CD](#) for descriptions.

Section revision: 04.2024

Chapter 11: Database Tables - Reference

Chapter Contents:

| Section | Database table | Oracle table name |
|---------|--|--------------------------|
| 11.1 | Reference Population Attribute Table | REF_POP_ATTRIBUTE |
| 11.2 | Reference Population Evaluation Type Description Table | REF_POP_EVAL_TYP_DESCR |
| 11.3 | Reference Forest Type Table | REF_FOREST_TYPE |
| 11.4 | Reference Forest Type Group Table | REF_FOREST_TYPE_GROUP |
| 11.5 | Reference Species Table | REF_SPECIES |
| 11.6 | Reference Plant Dictionary | REF_PLANT_DICTIONARY |
| 11.7 | Reference Species Group Table | REF_SPECIES_GROUP |
| 11.8 | Reference Invasive Species Table | REF_INVASIVE_SPECIES |
| 11.9 | Reference Habitat Type Description Table | REF_HAPtyp_DESCRIPTION |
| 11.10 | Reference Habitat Type Publication Table | REF_HABtyp_PUBLICATION |
| 11.11 | Reference Citation Table | REF_CITATION |
| 11.12 | Reference Forest Inventory and Analysis Database Version Table | REF_FIADB_VERSION |
| 11.13 | Reference State Elevation Table | REF_STATE_ELEV |
| 11.14 | Reference Unit Table | REF_UNIT |
| 11.15 | Reference Research Station Table | REF_RESEARCH_STATION |
| 11.16 | Reference National Vegetation Classification Standard (NVCS) Hierarchy Structure Table | REF_NVCS_HIERARCHY_STRCT |
| 11.17 | Reference National Vegetation Classification Standard Level 1 Codes Table | REF_NVCS_LEVEL_1_CODES |
| 11.18 | Reference National Vegetation Classification Standard Level 2 Codes Table | REF_NVCS_LEVEL_2_CODES |
| 11.19 | Reference National Vegetation Classification Standard Level 3 Codes Table | REF_NVCS_LEVEL_3_CODES |

| Section | Database table | Oracle table name |
|----------------|---|------------------------------|
| 11.20 | Reference National Vegetation Classification Standard Level 4 Codes Table | REF_NVCS_LEVEL_4_CODES |
| 11.21 | Reference National Vegetation Classification Standard Level 5 Codes Table | REF_NVCS_LEVEL_5_CODES |
| 11.22 | Reference National Vegetation Classification Standard Level 6 Codes Table | REF_NVCS_LEVEL_6_CODES |
| 11.23 | Reference National Vegetation Classification Standard Level 7 Codes Table | REF_NVCS_LEVEL_7_CODES |
| 11.24 | Reference National Vegetation Classification Standard Level 8 Codes Table | REF_NVCS_LEVEL_8_CODES |
| 11.25 | Reference Damage Agent Table | REF_DAMAGE_AGENT |
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| 11.27 | Reference Forest Vegetation Simulator Variant Name Table | REF_FVS_VAR_NAME |
| 11.28 | Reference Forest Vegetation Simulator Location Name Table | REF_FVS_LOC_NAME |
| 11.29 | Reference Owner Group Code Table | REF_OWNGRPCD |
| 11.30 | Reference Difference Test Per Acre Table | REF_DIFFERENCE_TEST_PER_ACRE |
| 11.31 | Reference Difference Test Totals Table | REF_DIFFERENCE_TEST_TOTALS |
| 11.32 | Reference Site Index Equation Table | REF_SIEQN |
| 11.33 | Reference Tree Growth, Removal, and Mortality Type Table | REF_GRM_TYPE |
| 11.34 | Reference International to Doyle Volume Factors Table | REF_INTL_TO_DOYLE_FACTOR |
| 11.35 | Reference Tree Carbon Ratio Dead Table | REF_TREE_CARBON_RATIO_DEAD |
| 11.36 | Reference Tree Decay Proportion Table | REF_TREE_DECAY_PROP |
| 11.37 | Reference Tree Standing Dead Crown Ratio Proportion Table | REF_TREE_STND_DEAD_CR_PROP |
| 11.38 | Reference Ground Layer Table | REF_GRND_LYR |

Definitions for database tables:

For further detail and examples, refer to the Overview (chapter 1).

Keys Presented with the Tables

| Key type | Definition |
|----------|--|
| Primary | A single column in a table whose values uniquely identify each row in an Oracle table. |
| Unique | Multiple columns in a table whose values uniquely identify each row in an Oracle table. There can be one and only one row for each unique key value. |
| Natural | A type of unique key made from existing attributes in the table. It is stored as an index in this database. |
| Foreign | A column in a table that is used as a link to a matching column in another Oracle table. |

Oracle Data Types

| Oracle data type | Definition |
|------------------|---|
| DATE | A data type that stores the date. |
| NUMBER | A data type that contains only numbers, positive or negative, with a floating-decimal point. |
| NUMBER(SIZE, D) | A data type that contains only numbers up to a specified maximum size. The maximum size (<i>and optional fixed-decimal point</i>) is specified by the value(s) listed in the parentheses. |
| VARCHAR2(SIZE) | A data type that contains alphanumeric data (numbers and/or characters) up to a specified maximum size. |

11.1 Reference Population Attribute Table

(Oracle table name: REF_POP_ATTRIBUTE)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 11.1.1 | ATTRIBUTE_NBR | Attribute number | NUMBER |
| 11.1.2 | ATTRIBUTE_DESCR | Attribute description | VARCHAR2(255) |
| 11.1.3 | EVAL_TYP | Evaluation type | VARCHAR2(15) |
| 11.1.4 | NOTES | Notes | VARCHAR2(2000) |
| 11.1.5 | SQL_QUERY | SQL estimate script | VARCHAR2(4000) |
| 11.1.6 | ACTIVE | Active | VARCHAR2(1) |
| 11.1.7 | GROWTH_ACCT | Growth accounting | VARCHAR2(1) |
| 11.1.8 | LAND_BASIS | Land basis | VARCHAR2(32) |
| 11.1.9 | SQL_QUERY_SE | SQL estimation script with sampling error | CLOB |
| 11.1.10 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.1.11 | CREATED_DATE | Created date | DATE |
| 11.1.12 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.1.13 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.1.14 | MODIFIED_DATE | Modified date | DATE |
| 11.1.15 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Unique | ATTRIBUTE_NBR | N/A | PAE_UK |

11.1.1 ATTRIBUTE_NBR

Attribute number. A numeric code used to identify an attribute record. See codes and descriptions in [Forest Inventory and Analysis Database: Population Estimation User Guide](#) (see appendix A).

11.1.2 ATTRIBUTE_DESCR

Attribute description. A description of the attribute. See the descriptions in [Forest Inventory and Analysis Database: Population Estimation User Guide](#) (see appendix A).

11.1.3 EVAL_TYP

Evaluation type. An identifier describing the type of evaluation. Evaluation type is needed to generate summary reports for an inventory. For example, a specific evaluation is associated with the evaluation for tree volume (EXPVOL). See [REF_POP_EVAL_TYP_DESCR.EVAL_TYP_CD](#) for codes.

11.1.4 NOTES

Notes. Reference population attribute notes.

11.1.5 SQL_QUERY

SQL estimate script. SQL script used to generate the population estimate for this attribute.

11.1.6 ACTIVE

Active. A code indicating whether or not the attribute is valid.

Codes: ACTIVE

| Code | Description |
|------|--|
| Y | Yes, the attribute is active (valid). |
| N | No, the attribute is not active (not valid). |

11.1.7 GROWTH_ACCT

Growth accounting. A code indicating whether the estimate can be used for growth accounting. This attribute is blank (null) when the EVAL_TYP is not 'EXPGROW' evaluation type. See the [Forest Inventory and Analysis Database: Population Estimation User Guide](#) for examples of the growth accounting method.

Codes: GROWTH_ACCT

| Code | Description |
|------------|---|
| Y | Attribute can be used for growth accounting. |
| N | Attribute cannot be used for growth accounting. |
| Null/blank | Attribute is not applicable for growth estimates. |
| M | This code is no longer used/valid. |

11.1.8 LAND_BASIS

Land basis An attribute that categorizes estimates by the land-based domain of interest.

Note: Starting with PLOT.[MANUAL](#) ≥6.0, code descriptions have been modified to match FIA's new definition for accessible forest land and nonforest land. The current wording of "at least 10 percent canopy cover" replaces older wording of "at least 10 percent stocked" as the qualifying criterion in classification. This criterion applies to any tally tree species, including woodland tree species.

Codes: LAND_BASIS

| Code | Description |
|-------------|--|
| Forest land | Land that has at least 10 percent canopy cover by live tally trees of any size or has had at least 10 percent canopy cover of live tally species in the past, based on the presence of stumps, snags, or other evidence. To qualify, the area must be at least 1.0 acre in size and 120.0 feet wide. Forest land includes transition zones, such as areas between forest and nonforest lands that meet the minimal tree canopy cover and forest areas adjacent to urban and built-up lands. Roadside, streamside, and shelterbelt strips of trees must have a width of at least 120 feet and continuous length of at least 363 feet to qualify as forest land. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if they are less than 120 feet wide or less than an acre in size. Tree-covered areas in agricultural production settings, such as fruit orchards, or tree-covered areas in urban settings, such as city parks, are not considered forest land. |
| Timberland | Forest land that is producing or capable of producing 20 cubic feet per acre or more per year of wood at culmination of mean annual increment (MAI). Timberland excludes reserved forest lands. |
| All land | All area, including land, noncensus water, and census water. |

11.1.9 SQL_QUERY_SE

SQL estimate script with sampling error. Not available for download.

11.1.10 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.1.11 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.1.12 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.1.13 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.1.14 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.1.15 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.2 Reference Population Evaluation Type Description Table

(Oracle table name: REF_POP_EVAL_TYP_DESCR)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------------|------------------|
| 11.2.1 | CN | Sequence number | VARCHAR2(34) |
| 11.2.2 | LABEL_ORDER | Label order | NUMBER(2) |
| 11.2.3 | EVAL_TYP | Evaluation type | VARCHAR2(15) |
| 11.2.4 | EVAL_TYP_LABEL | Evaluation type label | VARCHAR2(15) |
| 11.2.5 | CHANGE_EVAL_TYP | Change evaluation type | VARCHAR2(1) |
| 11.2.6 | EVAL_TYP_DESCR | Evaluation type descriptor | VARCHAR2(255) |
| 11.2.7 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.2.8 | CREATED_DATE | Created date | DATE |
| 11.2.9 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.2.10 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.2.11 | MODIFIED_DATE | Modified date | DATE |
| 11.2.12 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 11.2.13 | EVAL_TYP_CD | Evaluation type code | VARCHAR2(2) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | CN | N/A | PED_PK |
| Unique | EVAL_TYP | N/A | PED_UK |

11.2.1 CN

Sequence number. A unique sequence number used to identify a reference population evaluation type description record.

11.2.2 LABEL_ORDER

Label order. The order in which to assemble EVAL_TYP to create standardized evaluation group descriptions.

11.2.3 EVAL_TYP

Evaluation type. An identifier describing the type of evaluation. Evaluation type is needed to generate summary reports for an inventory. For example, a specific evaluation is associated with the evaluation for tree volume (EXPVOL). Evaluation types (EVAL_TYP), the corresponding code (EVAL_TYP_CD), and the description of the evaluation types (EVAL_TYP_DESCR) are as follows:

Codes: EVAL_TYP

| Evaluation type | Evaluation type code (EVAL_TYP_CD) | Description |
|------------------------|---|---|
| EXPALL | 00 | All plots: sampled and nonsampled. |
| EXPCURR | 01 | Sampled plots used for current area and condition-level estimates. |
| EXPVOL | 02 | Sampled plots used for current tree-level estimates. |
| EXPGROW | 03 | Sampled plots used for tree growth estimates. |
| EXPMORT | 04 | Sampled plots used for tree mortality estimates. |
| EXPREMV | 05 | Sampled plots used for tree removal estimates. |
| EXPCHNG | 06 | Sampled plots used for area change estimates. |
| EXPDWIM | 07 | Sampled plots used for down woody material estimates. |
| EXPREGEN | 08 | Sampled plots used for tree regeneration estimates (RSCD = 23, 24). |
| EXPINV | 09 | Sampled plots used for invasive species estimates. |
| EXPP2VEG | 10 | Sampled plots used for Phase 2 vegetation estimates. |
| EXPSOIL | 11 | Sampled plots used for soils estimates. |
| EXPCRWN | 12 | Sampled plots used for tree crown estimates. |
| EXPGRNLDLYR | 13 | Sampled plots used for ground cover layer estimates (RSCD = 27). |

11.2.4 EVAL_TYP_LABEL

Evaluation type label. The label used for the EVAL_TYP description.

11.2.5 CHANGE_EVAL_TYP

Change evaluation type. A code indicating whether the EVAL_TYP computes change attributes, such as growth, removals, and mortality.

Codes: CHANGE_EVAL_TYP

| Code | Description |
|-------------|---|
| Y | Yes, computes change attributes. |
| N | No, does not compute change attributes. |

11.2.6 EVAL_TYP_DESCR

Evaluation type descriptor. The descriptor for each evaluation type (EVAL_TYP). See [EVAL_TYP](#) and [EVAL_TYP_CD](#) for the list of codes.

11.2.7 CREATED_BY

Created by. See SURVEY.[CREATED_BY](#) description for definition.

11.2.8 CREATED_DATE

Created date. See SURVEY.[CREATED_DATE](#) description for definition.

11.2.9 CREATED_IN_INSTANCE

Created in instance. See SURVEY.[CREATED_IN_INSTANCE](#) description for definition.

11.2.10 MODIFIED_BY

Modified by. See SURVEY.[MODIFIED_BY](#) description for definition.

11.2.11 MODIFIED_DATE

Modified date. See SURVEY.[MODIFIED_DATE](#) description for definition.

11.2.12 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

11.2.13 EVAL_TYP_CD

Evaluation type code. A code used to describe the evaluation type. Evaluation type (EVAL_TYP) is used to identify a specific set of plots that can be used to make a statistically valid sample-based estimate for a population (e.g., area of land).

Codes: EVAL_TYP_CD

| Evaluation type code (EVAL_TYP_CD) | Evaluation type (EVAL_TYP) | Evaluation type description |
|------------------------------------|----------------------------|---|
| 00 | EXPALL | All plots: sampled and nonsampled. |
| 01 | EXPCURR | Sampled plots used for current area and condition-level estimates. |
| 02 | EXPVOL | Sampled plots used for current tree-level estimates. |
| 03 | EXPGROW | Sampled plots used for tree growth estimates. |
| 04 | EXPMORT | Sampled plots used for tree mortality estimates. |
| 05 | EXPREMV | Sampled plots used for tree removal estimates. |
| 06 | EXPCHNG | Sampled plots used for area change estimates. |
| 07 | EXPDWM | Sampled plots used for down woody material estimates. |
| 08 | EXPREGEN | Sampled plots used for tree regeneration estimates (RSCD = 23, 24). |
| 09 | EXPINV | Sampled plots used for invasive species estimates. |
| 10 | EXPP2VEG | Sampled plots used for Phase 2 vegetation estimates. |
| 11 | EXPSOIL | Sampled plots used for soils estimates. |
| 12 | EXPCRWN | Sampled plots used for tree crown estimates. |
| 13 | EXPGRNDLYR | Sampled plots used for ground cover layer estimates (RSCD = 27). |

11.3 Reference Forest Type Table

(Oracle table name: REF_FOREST_TYPE)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|------------------------|------------------|
| 11.3.1 | VALUE | Value | NUMBER(3) |
| 11.3.2 | MEANING | Meaning | VARCHAR2(80) |
| 11.3.3 | TYPGRPCD | Forest type group code | NUMBER(3) |
| 11.3.4 | MANUAL_START | Manual start | NUMBER(3,1) |
| 11.3.5 | MANUAL_END | Manual end | NUMBER(3,1) |
| 11.3.6 | ALLOWED_IN_FIELD | Allowed in field | VARCHAR2(1) |
| 11.3.7 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.3.8 | CREATED_DATE | Created date | DATE |
| 11.3.9 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.3.10 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.3.11 | MODIFIED_DATE | Modified date | DATE |
| 11.3.12 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | VALUE | N/A | RFT_PK |

11.3.1 VALUE

Value. A code used for the forest type (COND.FORTYPCD, COND.FLDTYPCD, COND.FORTYPCDCALC). Refer to [appendix D](#).

11.3.2 MEANING

Meaning. The descriptive name corresponding with the forest type code (VALUE). Refer to [appendix D](#).

11.3.3 TYPGRPCD

Forest type group code. A code assigned to individual forest types in order to group them for reporting purposes. Refer to [appendix D](#).

11.3.4 MANUAL_START

Manual start. The first version of the Field Guide (PLOT.[MANUAL](#)) that the forest type code (VALUE) was used.

11.3.5 MANUAL_END

Manual end. The last version of the Field Guide (PLOT.[MANUAL](#)) that the forest type code (VALUE) was valid. When MANUAL_END is blank (null), the code is still valid.

11.3.6 ALLOWED_IN_FIELD

Allowed in field. An indicator to show if a code (VALUE) is allowed to be used by the field crews. This is a Yes/No ('Y' / 'N') field. Specifically, forest type group codes are not allowed in the Field Guide nor is the code for a nonstocked forest type (VALUE = 999).

11.3.7 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.3.8 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.3.9 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.3.10 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.3.11 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.3.12 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.4 Reference Forest Type Group Table

(Oracle table name: REF_FOREST_TYPE_GROUP)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 11.4.1 | VALUE | Value | NUMBER(3) |
| 11.4.2 | MEANING | Meaning | VARCHAR2(80) |
| 11.4.3 | ABBR | Abbreviation | VARCHAR2(40) |
| 11.4.4 | DUFF_DENSITY | Duff density | NUMBER(12,10) |
| 11.4.5 | DUFF_CARBON_RATIO | Duff carbon ratio | NUMBER(12,11) |
| 11.4.6 | LITTER_DENSITY | Litter density | NUMBER(12,10) |
| 11.4.7 | LITTER_CARBON_RATIO | Litter carbon ratio | NUMBER(12,11) |
| 11.4.8 | PILE_DENSITY | Pile density | NUMBER(12,10) |
| 11.4.9 | PILE_CARBON_RATIO | Pile carbon ratio | NUMBER(12,11) |
| 11.4.10 | PILE_DECAY_RATIO | Pile decay ratio | NUMBER(12,11) |
| 11.4.11 | FWD_DENSITY | Fine woody debris density | NUMBER(12,10) |
| 11.4.12 | FWD_CARBON_RATIO | Fine woody debris carbon ratio | NUMBER(12,11) |
| 11.4.13 | FWD_DECAY_RATIO | Fine woody debris decay ratio | NUMBER(12,11) |
| 11.4.14 | FWD_SMALL_QMD | Small fine woody debris quadratic mean diameter | NUMBER(12,10) |
| 11.4.15 | FWD_MEDIUM_QMD | Medium fine woody debris quadratic mean diameter | NUMBER(12,10) |
| 11.4.16 | FWD_LARGE_QMD | Large fine woody debris quadratic mean diameter | NUMBER(12,10) |
| 11.4.17 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.4.18 | CREATED_DATE | Created date | DATE |
| 11.4.19 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.4.20 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.4.21 | MODIFIED_DATE | Modified date | DATE |
| 11.4.22 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | VALUE | N/A | FTGP_PK |

11.4.1 VALUE

Value. A code used for the forest type group, which is assigned to individual forest types (COND.FORTYPCD, COND.FLDTYPCD, COND.FORTYPCDCALC) for reporting purposes. VALUE is linked to the TYPGRPCD in the REF_FOREST_TYPE table. Refer to [appendix D](#).

11.4.2 MEANING

Meaning. The descriptive name corresponding with the forest type group code (VALUE). Refer to [appendix D](#).

11.4.3 ABBR

Abbreviation. The forest type group abbreviation.

11.4.4 DUFF_DENSITY

Duff density. The average oven-dry density of duff in pounds per cubic foot for the forest type group.

11.4.5 DUFF_CARBON_RATIO

Duff carbon ratio. The ratio of carbon weight to biomass of duff for the forest type group.

11.4.6 LITTER_DENSITY

Litter density. The average oven-dry density of litter in pounds per cubic foot for the forest type group.

11.4.7 LITTER_CARBON_RATIO

Litter carbon ratio. The ratio of carbon weight to biomass of litter for the forest type group.

11.4.8 PILE_DENSITY

Pile density. The average oven-dry density of piles in pounds per cubic foot for the forest type group.

11.4.9 PILE_CARBON_RATIO

Pile carbon ratio. The ratio of carbon weight to biomass of piles for the forest type group.

11.4.10 PILE_DECAY_RATIO

Pile decay ratio. The ratio of decayed to sound wood weight of piles for the forest type group.

11.4.11 FWD_DENSITY

Fine woody debris density. The average oven-dry density of fine woody debris in pounds per cubic foot for the forest type group.

11.4.12 FWD_CARBON_RATIO

Fine woody debris carbon ratio. The ratio of carbon weight to biomass of fine woody debris for the forest type group.

11.4.13 FWD_DECAY_RATIO

Fine woody debris decay ratio. The ratio of decayed to sound wood weight of fine woody debris for the forest type group.

11.4.14 FWD_SMALL_QMD

Small fine woody debris quadratic mean diameter. The quadratic mean diameter of small fine woody debris for the forest type group. A constant value is used for all forest type groups.

11.4.15 FWD_MEDIUM_QMD

Medium fine woody debris quadratic mean diameter. The quadratic mean diameter of medium fine woody debris for the forest type group. A constant value is used for all forest type groups.

11.4.16 FWD_LARGE_QMD

Large fine woody debris quadratic mean diameter. The quadratic mean diameter of large fine woody debris for the forest type group. A constant value is used for all forest type groups.

11.4.17 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.4.18 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.4.19 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.4.20 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.4.21 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.4.22 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.5 Reference Species Table

(Oracle table name: REF_SPECIES)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|------------------------------|--|------------------|
| 11.5.1 | SPCD | Species code | NUMBER(38) |
| 11.5.2 | COMMON_NAME | Common name | VARCHAR2(100) |
| 11.5.3 | SHARED_COMMON_NAME_IND | Shared common name indicator | CHAR(1) |
| 11.5.4 | GENUS | Genus | VARCHAR2(4000) |
| 11.5.5 | SPECIES | Species | VARCHAR2(4000) |
| 11.5.6 | VARIETY | Variety | VARCHAR2(4000) |
| 11.5.7 | SUBSPECIES | Subspecies | VARCHAR2(4000) |
| 11.5.8 | SCIENTIFIC_NAME | Scientific name | VARCHAR2(4000) |
| 11.5.9 | SPECIES_SYMBOL | Species symbol | VARCHAR2(10) |
| 11.5.10 | E_SPGRPCD | Eastern species group code | NUMBER |
| 11.5.11 | W_SPGRPCD | Western species group code | NUMBER |
| 11.5.12 | C_SPGRPCD | Caribbean Islands species group code | NUMBER |
| 11.5.13 | P_SPGRPCD | Pacific Islands species group code | NUMBER |
| 11.5.14 | MAJOR_SPGRPCD | Major species group code | NUMBER |
| 11.5.15 | STOCKING_SPGRPCD | Stocking species group code | NUMBER |
| 11.5.16 | FOREST_TYPE_SPGRPCD | Forest type species group code | NUMBER |
| 11.5.17 | JENKINS_SPGRPCD | Jenkins species group code | NUMBER |
| 11.5.18 | JENKINS_SAPLING_ADJUSTMENT | Jenkins sapling adjustment factor | NUMBER |
| 11.5.19 | SITETREE | Site tree | VARCHAR2(1) |
| 11.5.20 | SFTWD_HRDWD | Softwood or hardwood | VARCHAR2(1) |
| 11.5.21 | WOODLAND | Woodland species indicator | VARCHAR2(1) |
| 11.5.22 | WOOD_SPGR_GREENVOL_DRYWT | Green specific gravity of wood | NUMBER |
| 11.5.23 | WOOD_SPGR_GREENVOL_DRYWT_CIT | Citation for WOOD_SPGR_GREENVOL_DRYWT | NUMBER |
| 11.5.24 | BARK_SPGR_GREENVOL_DRYWT | Green specific gravity of bark | NUMBER |
| 11.5.25 | BARK_SPGR_GREENVOL_DRYWT_CIT | Citation for BARK_SPGR_GREENVOL_DRYWT | NUMBER |
| 11.5.26 | MC_PCT_GREEN_WOOD | Moisture content of green wood as a percent of oven-dry weight | NUMBER |
| 11.5.27 | MC_PCT_GREEN_WOOD_CIT | Citation for MC_PCT_GREEN_WOOD | NUMBER |
| 11.5.28 | MC_PCT_GREEN_BARK | Moisture content of green bark as a percent of oven-dry weight | NUMBER |
| 11.5.29 | MC_PCT_GREEN_BARK_CIT | Citation for MC_PCT_GREEN_BARK | NUMBER |
| 11.5.30 | BARK_VOL_PCT | Bark volume as a percent of wood volume | NUMBER |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------------|---------------------------------------|------------------|
| 11.5.31 | BARK_VOL_PCT_CIT | Citation for BARK_VOL_PCT | NUMBER |
| 11.5.32 | CWD_DECAY_RATIO1 | Coarse woody debris decay ratio 1 | NUMBER |
| 11.5.33 | CWD_DECAY_RATIO2 | Coarse woody debris decay ratio 2 | NUMBER |
| 11.5.34 | CWD_DECAY_RATIO3 | Coarse woody debris decay ratio 3 | NUMBER |
| 11.5.35 | CWD_DECAY_RATIO4 | Coarse woody debris decay ratio 4 | NUMBER |
| 11.5.36 | CWD_DECAY_RATIO5 | Coarse woody debris decay ratio 5 | NUMBER |
| 11.5.37 | DWM_CARBON_RATIO | Down woody debris carbon ratio | NUMBER |
| 11.5.38 | CARBON_RATIO_LIVE | Wood carbon fraction | NUMBER |
| 11.5.39 | DRYWT_TO_GREENWT_CONVERSATION | Dry weight to green weight conversion | NUMBER |
| 11.5.40 | CREATED_DATE | Created date | DATE |
| 11.5.41 | MODIFIED_DATE | Modified date | DATE |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Unique | SPCD | N/A | RS_UK |

FIA identifies species and other taxonomic ranks for plants using symbols (SYMBOL) as assigned by NRCS (Natural Resources Conservation Service) for the [PLANTS database](#) (<https://plants.usda.gov>) on a periodic basis. The most recent NRCS download for the FIA program was September 15, 2017.

11.5.1 SPCD

Species code. An FIA tree species code. Refer to [appendix F](#) for codes.

11.5.2 COMMON_NAME

Common name. Common name of the species. Refer to [appendix F](#).

11.5.3 SHARED_COMMON_NAME_IND

Shared common name indicator. A yes/no ('Y' / 'N') value indicating whether or not the common name for the species (see COMMON_NAME) is shared by multiple species. Species with a shared common name are marked with a 'Y' in this column.

Codes: SHARED_COMMON_NAME_IND

| Code | Description |
|------|--|
| Y | Yes, the common named is shared by multiple species. |
| N | No, the common name is unique to this species. |

11.5.4 GENUS

Genus. The genus name associated with the FIA tree species code. Refer to [appendix F](#).

11.5.5 SPECIES

Species. The species name associated with the FIA tree species code. Refer to [appendix F](#).

11.5.6 VARIETY

Variety. The variety name associated with the FIA tree species code.

11.5.7 SUBSPECIES

Subspecies. The subspecies name associated with the FIA tree species code.

11.5.8 SCIENTIFIC_NAME

Scientific name. The Natural Resources Conservation Service (NRCS) [PLANTS database](#) scientific name for the taxon SYMBOL.

11.5.9 SPECIES_SYMBOL

Species symbol. The NRCS PLANTS database [symbol](#) code assigned to the specific plant taxon and associated with the FIA species code ([SPCD](#)).

11.5.10 E_SPGRPCD

Eastern species group code. A code indicating the species group assignment for eastern species. The assignment of a species group code is dependent on the State or region (e.g., All, Eastern, Western, Tropical/Subtropical) in which a tree is tallied. Species group codes and names can be found in [appendix E](#).

11.5.11 W_SPGRPCD

Western species group code. A code indicating the FIADB species group assignment for western species. The assignment of a species group code is dependent on the State or region (e.g., All, Eastern, Western, Tropical/Subtropical) in which a tree is tallied. Species group codes and names can be found in [appendix E](#).

11.5.12 C_SPGRPCD

Caribbean Islands species group code. A code indicating the species group assignment for [Caribbean Islands](#) species. The assignment of a species group code is dependent on the State or region (e.g., All, Eastern, Western, Tropical/Subtropical) in which a tree is tallied. Species group codes and names can be found in [appendix E](#).

11.5.13 P_SPGRPCD

Pacific Islands species group code. A code indicating the species group assignment for [Pacific Islands](#) species. The assignment of a species group code is dependent on the State or region (e.g., All, Eastern, Western, Tropical/Subtropical) in which a tree is tallied. Species group codes and names can be found in [appendix E](#).

11.5.14 MAJOR_SPGRPCD

Major species group code. A code indicating the major species group, which can be used for reporting purposes.

Codes: MAJOR_SPGRPCD

| Code | Description |
|------|------------------|
| 1 | Pines. |
| 2 | Other softwoods. |

| Code | Description |
|-------------|--------------------|
| 3 | Soft hardwoods. |
| 4 | Hard hardwoods. |

11.5.15 STOCKING_SPGRPCD

Stocking species group code. A code indicating which stocking equation a species is assigned.

Codes: STOCKING_SPGRPCD

| Code | Description |
|-------------|-----------------------------|
| 1 | Spruce-fir. |
| 2 | Western larch. |
| 3 | Black spruce. |
| 4 | Jack pine. |
| 5 | Lodgepole pine. |
| 6 | Shortleaf pine. |
| 7 | Slash pine. |
| 8 | Western white pine. |
| 9 | Longleaf pine. |
| 10 | Ponderosa pine. |
| 11 | Red pine. |
| 12 | Pond pine. |
| 13 | Eastern white pine. |
| 14 | Loblolly pine. |
| 15 | Douglas-fir. |
| 16 | Northern white cedar. |
| 17 | Eastern hemlock. |
| 18 | Western hemlock. |
| 19 | Redwood. |
| 20 | Average softwood. |
| 25 | Red maple. |
| 26 | Red alder. |
| 27 | Maple, beech, birch. |
| 28 | Paper birch. |
| 29 | Oaks and hickory. |
| 30 | Black walnut. |
| 31 | Sweetgum. |
| 32 | Aspen. |
| 33 | Cherry, ash, yellow poplar. |
| 35 | Basswood. |
| 36 | Elm, ash, cottonwood. |

| Code | Description |
|------|-------------------|
| 37 | Average hardwood. |
| 38 | Dryland species. |

11.5.16 FOREST_TYPE_SPGRPCD

Forest type species group code. A code used during processing to assign a forest type to a condition. This is for office use only. These processing codes differ from the codes listed for REF_FOREST_TYPE GROUP. [VALUE](#) and the codes listed in [appendix D](#) (Forest Type Codes and Names).

11.5.17 JENKINS_SPGRPCD

Jenkins species group code. A code that identifies a group of similar species, which is used to apply the correct biomass estimation equation and coefficient developed by Jenkins and others (2003). A specific set of biomass equation coefficients are assigned to each group. Additional explanation about how to estimate biomass, and when to use a certain set of coefficients, is provided in [appendix K](#).

Codes: JENKINS_SPGRPCD

| Code | Description |
|------|--------------------------------|
| 1 | Cedar/larch. |
| 2 | Douglas-fir. |
| 3 | True fir/hemlock. |
| 4 | Pine. |
| 5 | Spruce. |
| 6 | Aspen/alder/cottonwood-willow. |
| 7 | Soft maple/birch. |
| 8 | Mixed hardwood. |
| 9 | Hard maple/oak/hickory/beech. |
| 10 | Juniper/oak/mesquite. |

11.5.18 JENKINS_SAPLING_ADJUSTMENT

Jenkins sapling adjustment factor. A factor used to compute the biomass of saplings. Sapling biomass is computed by multiplying diameter (DIA) by the appropriate species adjustment factor (from Jenkins and others [2003]). The sapling adjustment factor was computed as a national average ratio of the total dry biomass divided by the Jenkins total biomass for all 5.0-inch trees, which is the size at which biomass based on volume begins. Because this adjustment factor was computed at the species level, there is a specific adjustment factor for each species. See [appendix K](#) for details on biomass equations.

11.5.19 SITETREE

Site tree. Indicates whether the tree species can be coded as a site tree. Tree species that are applicable to have site data collected are marked with an 'X' in this column.

Codes:

| Code | Description |
|------|--------------------------|
| S | Softwood classification. |
| H | Hardwood classification. |

11.5.20 SFTWD_HRDWD

Softwood or hardwood. A code indicating whether the species has been classified as a softwood or a hardwood.

11.5.21 WOODLAND

Woodland species indicator. a yes/no ('Y' / 'N') indicating whether or not the tree species is classified by FIA as a woodland species. The diameter for a woodland species is measured at root collar (d.r.c.). Woodland species are marked with a 'Y' in this column.

Codes: Woodland

| Code | Description |
|------|---|
| Y | Yes, this tree species is classified by FIA as a woodland species. |
| N | No, this tree species is not classified by FIA as a woodland species. |

11.5.22 WOOD_SPGR_GREENVOL_DRYWT

Green specific gravity of wood. This attribute is used to determine the oven-dry weight, in pounds, of live and dead trees based on volume attributes in the TREE table (VOLCFSND, VOLCFGRS, VOLCFNET, etc.). These volumes are assumed to be green wood volumes.

11.5.23 WOOD_SPGR_GREENVOL_DRYWT_CIT

Citation for WOOD_SPGR_GREENVOL_DRYWT. A code indicating the citation for the WOOD_SPGR_GREENVOL_DRYWT attribute. Refer to REF_CITATION.CITATION_NBR to determine the citation corresponding to the WOOD_SPGR_GREENVOL_DRYWT_CIT code.

11.5.24 BARK_SPGR_GREENVOL_DRYWT

Green specific gravity of bark. A value for the green specific gravity of bark (green volume and oven-dry weight).

11.5.25 BARK_SPGR_GREENVOL_DRYWT_CIT

Citation for BARK_SPGR_GREENVOL_DRYWT. A code indicating the citation for the BARK_SPGR_GREENVOL_DRYWT attribute. Refer to REF_CITATION.CITATION_NBR to determine the citation corresponding to the BARK_SPGR_GREENVOL_DRYWT_CIT code.

11.5.26 MC_PCT_GREEN_WOOD

Moisture content of green wood as a percent of oven-dry weight. Wood and bark are often sold based on green weight. The user is cautioned that green weights can be extremely variable geographically, seasonally, within species and across various portions of individual trees.

11.5.27 MC_PCT_GREEN_WOOD_CIT

Citation for MC_PCT_GREEN_WOOD. A code indicating the citation for the MC_PCT_GREEN_WOOD attribute. Refer to REF_CITATION.CITATION_NBR to determine the citation corresponding to the MC_PCT_GREEN_WOOD_CIT code.

11.5.28 MC_PCT_GREEN_BARK

Moisture content of green bark as a percent of oven-dry weight. Wood and bark are often sold based on green weight. The user is cautioned that green weights can be extremely variable geographically, seasonally, within species and across various portions of individual trees.

11.5.29 MC_PCT_GREEN_BARK_CIT

Citation for MC_PCT_GREEN_BARK. A code indicating the citation for the MC_PCT_GREEN_BARK attribute. Refer to REF_CITATION.CITATION_NBR to determine the citation corresponding to the MC_PCT_GREEN_BARK_CIT code.

11.5.30 BARK_VOL_PCT

Bark volume as a percent of wood volume. Bark volume expressed as a percent of wood volume. The volume of bark does not include voids due to ridges and valleys in bark.

11.5.31 BARK_VOL_PCT_CIT

Citation for BARK_VOL_PCT. A code indicating the citation for the BARK_VOL_PCT attribute. Refer to REF_CITATION.CITATION_NBR to determine the citation corresponding to the BARK_VOL_PCT_CIT code.

11.5.32 CWD_DECAY_RATIO1

Coarse woody debris decay ratio 1. Ratio of decayed to sound wood weight of CWD indicated by decay class 1.

11.5.33 CWD_DECAY_RATIO2

Coarse woody debris decay ratio 2. Ratio of decayed to sound wood weight of CWD indicated by decay class 2.

11.5.34 CWD_DECAY_RATIO3

Coarse woody debris decay ratio 3. Ratio of decayed to sound wood weight of CWD indicated by decay class 3.

11.5.35 CWD_DECAY_RATIO4

Coarse woody debris decay ratio 4. Ratio of decayed to sound wood weight of CWD indicated by decay class 4.

11.5.36 CWD_DECAY_RATIO5

Coarse woody debris decay ratio 5. Ratio of decayed to sound wood weight of CWD indicated by decay class 5.

11.5.37 DWM_CARBON_RATIO

Down woody debris carbon ratio. Ratio of carbon to dry wood weight.

11.5.38 CARBON_RATIO_LIVE

Wood carbon fraction. The mass of carbon per unit dry mass of wood, expressed as a proportion (ranging from 0-1), obtained from elemental analyses of dry wood samples. Synonymous with "wood carbon concentrations" or related terms in scientific literature (Doraisami and others 2022). This ratio is multiplied by live tree biomass estimates to obtain live tree carbon estimates.

11.5.39 DRYWT_TO_GREENWT_CONVERSION

Dry weight to green weight conversion. A coefficient used to convert oven-dry weight to green weight. Dry weight is converted to green weight by multiplying the dry weight by DRYWT_TO_GREENWT_CONVERSION (e.g., for green weight of tree bole, multiply TREE.DRYBIO_BOLE by DRYWT_TO_GREENWT_CONVERSION).

```
drywt_to_greenwt_conversion =((1 - (bark_vol_pct / (100 + bark_vol_pct))) *  
    wood_spgr_greenvol_drywt /  
    ((1 - (bark_vol_pct / (100 + bark_vol_pct))) *  
    wood_spgr_greenvol_drywt +  
    (bark_vol_pct / (100 + bark_vol_pct)) * bark_spgr_greenvol_drywt) *  
    (1.0 + mc_pct_green_wood * 0.01) +  
    (bark_vol_pct / (100 + bark_vol_pct)) * bark_spgr_greenvol_drywt /  
    ((1 - (bark_vol_pct / (100 + bark_vol_pct))) *  
    wood_spgr_greenvol_drywt +  
    (bark_vol_pct / (100 + bark_vol_pct)) * bark_spgr_greenvol_drywt) *  
    (1.0 + mc_pct_green_bark * 0.01))
```

11.5.40 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.5.41 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.6 Reference Plant Dictionary

(Oracle table name: REF_PLANT_DICTIONARY)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|--------------------------|-----------------------------|------------------|
| 11.6.1 | CN | Sequence number | VARCHAR2(34) |
| 11.6.2 | SYMBOL_TYPE | Symbol type | VARCHAR2(20) |
| 11.6.3 | SYMBOL | Symbol | VARCHAR2(16) |
| 11.6.4 | SCIENTIFIC_NAME | Scientific name | VARCHAR2(100) |
| 11.6.5 | NEW_SYMBOL | New symbol | VARCHAR2(16) |
| 11.6.6 | NEW_SCIENTIFIC_NAME | New scientific name | VARCHAR2(100) |
| 11.6.7 | COMMON_NAME | Common name | VARCHAR2(100) |
| 11.6.8 | CATEGORY | Category | VARCHAR2(15) |
| 11.6.9 | FAMILY | Family | VARCHAR2(25) |
| 11.6.10 | GROWTH_HABIT | Growth habit | VARCHAR2(50) |
| 11.6.11 | DURATION | Duration | VARCHAR2(50) |
| 11.6.12 | US_NATIVITY | United States nativity | VARCHAR2(100) |
| 11.6.13 | STATE_DISTRIBUTION | State distribution | VARCHAR2(300) |
| 11.6.14 | STATE_AND_PROVINCE | State and province | VARCHAR2(500) |
| 11.6.15 | SCIENTIFIC_NAME_W_AUTHOR | Scientific name with author | VARCHAR2(500) |
| 11.6.16 | GENERA_BINOMIAL_AUTHOR | Genera binomial author | VARCHAR2(100) |
| 11.6.17 | TRINOMIAL_AUTHOR | Trinomial author | VARCHAR2(100) |
| 11.6.18 | QUADRINOMIAL_AUTHOR | Quadrinomial author | VARCHAR2(100) |
| 11.6.19 | XGENUS | Cross genus | VARCHAR2(1) |
| 11.6.20 | GENUS | Genus | VARCHAR2(40) |
| 11.6.21 | XSPECIES | Cross species | VARCHAR2(1) |
| 11.6.22 | SPECIES | Species | VARCHAR2(50) |
| 11.6.23 | SSP | Subspecies indicator | VARCHAR2(4) |
| 11.6.24 | XSUBSPECIES | Cross subspecies | VARCHAR2(1) |
| 11.6.25 | SUBSPECIES | Subspecies | VARCHAR2(30) |
| 11.6.26 | VAR | Variety indicator | VARCHAR2(4) |
| 11.6.27 | XVARIETY | Cross variety | VARCHAR2(1) |
| 11.6.28 | VARIETY | Variety | VARCHAR2(30) |
| 11.6.29 | SUBVAR | Subvariety indicator | VARCHAR2(7) |
| 11.6.30 | SUBVARIETY | Subvariety | VARCHAR2(30) |
| 11.6.31 | F | Forma indicator | VARCHAR2(2) |
| 11.6.32 | FORMA | Forma | VARCHAR2(30) |
| 11.6.33 | NOTES | Notes | VARCHAR2(2000) |
| 11.6.34 | CREATED_BY | Created by | VARCHAR2(30) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------|------------------|
| 11.6.35 | CREATED_DATE | Created date | DATE |
| 11.6.36 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.6.37 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.6.38 | MODIFIED_DATE | Modified date | DATE |
| 11.6.39 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|------------------------------------|----------------|----------------------|
| Primary | CN | N/A | RPD_PK |
| Unique | SYMBOL_TYPE, SYMBOL, NEW_SYMBOL | N/A | RPD_UK |

FIA identifies species and other taxonomic ranks for plants using symbols (SYMBOL) as assigned by NRCS (Natural Resources Conservation Service) for the [PLANTS database](#) (<https://plants.usda.gov>) on a periodic basis. The most recent NRCS download for the FIA program was September 15, 2017.

11.6.1 CN

Sequence number. A unique sequence number used to identify a reference plant dictionary record.

11.6.2 SYMBOL_TYPE

Symbol type. This attribute describes the type of NRCS PLANTS symbol.

Codes: SYMBOL_TYPE

| Code | Symbol type |
|---------|--|
| Species | Accepted symbol identified to species, subspecies, or variety. |
| Genus | Accepted symbol identified to genus. |
| Old | Synonym symbol for an old scientific name. |
| Unknown | Symbol used to identify generic categories of unknown plants. |

11.6.3 SYMBOL

Symbol. The NRCS PLANTS database symbol code assigned to a specific plant taxon.

11.6.4 SCIENTIFIC_NAME

Scientific name. The NRCS PLANTS database scientific name for the taxon SYMBOL.

11.6.5 NEW_SYMBOL

New symbol. Populated only when 'Old' is recorded in the SYMBOL_TYPE column. Represents the new NRCS PLANTS database accepted code that has been updated from the old synonym symbol. When SYMBOL_TYPE = 'Species' or 'Genus' is recorded, the current accepted code is found in the SYMBOL column. See table 9-1 for an example that displays the old and current records for a species that was updated to a new symbol code.

Table 11-1: REF_PLANT_DICTIONARY table example displaying codes for an old and current record.

| SYMBOL_TYPE | SYMBOL | SCIENTIFIC_NAME | NEW_SYMBOL | NEW_SCIENTIFIC_NAME | SCIENTIFIC_NAME_W_AUTHOR | GENERA_BINOMIAL_AUTHOR |
|-------------|--------|-----------------------|------------|-----------------------|------------------------------------|------------------------|
| Old | ABAM4 | Abamaamer-icana | NAAM | Narthecium-americanum | Abama americana (Ker Gawl.) Morong | (Ker Gawl.) Morong |
| Species | NAAM | Narthecium-americanum | - | - | Narthecium americanum Ker Gawl. | Ker Gawl. |

11.6.6 NEW_SCIENTIFIC_NAME

New scientific name. Populated only when 'Old' is recorded in the SYMBOL_TYPE column. Represents the new NRCS PLANTS database accepted scientific name that has been updated from the old synonym scientific name. When SYMBOL_TYPE = 'Species' or 'Genus' is recorded, the current accepted scientific name is found in the SCIENTIFIC_NAME column. See table 9-1 in [NEW_SYMBOL](#) for an example that displays the old and current records for a species that was updated to a new symbol code.

11.6.7 COMMON_NAME

Common name. The NRCS PLANTS database common name associated with the taxon SYMBOL.

11.6.8 CATEGORY

Category. Indicates the broad taxonomic category for the symbol. Attribute is blank (null) when 'Unknown' is recorded in the SYMBOL column.

Codes: CATEGORY

| Code | Category |
|------------|---|
| Dicot | Division Magnoliophyta; Class Magnoliopsida. |
| Fern | Division Pteridophyta. |
| Gymnosperm | Division Coniferophyta (conifers). |
| Horsetail | Division Equisetophyta. |
| Lycopod | Division Lycopodiophyta; Class Lycopodiopsida; Order Lycopodiales (clubmoss). |
| Monocot | Division Magnoliophyta; Class Liliopsida. |
| Psilophyte | Division Psilotophyta (whisk-ferns). |
| Quillwort | Division Lycopodiophyta; Class Lycopodiopsida; Order Isoetales. |

11.6.9 FAMILY

Family. The NRCS PLANTS database family name associated with the species SYMBOL.

11.6.10 GROWTH_HABIT

Growth habit. The growth habit of the symbol according to the NRCS PLANTS database. Some plants have different growth habits depending on environment or location, so a

plant can have more than one value. Code descriptions are from the NRCS PLANTS documentation.

Codes: GROWTH_HABIT

| Code | Growth habit |
|-----------|---|
| Forb/herb | Vascular plant without significant woody tissue above or at the ground. Forbs and herbs may be annual, biennial, or perennial but always lack significant thickening by secondary woody growth and have perennating buds borne at or below the ground surface. In PLANTS, graminoids are excluded, but ferns, horsetails, lycopods, and whisk-ferns are included. |
| Graminoid | Grass or grass-like plant, including grasses (Poaceae), sedges (Cyperaceae), rushes (Juncaceae), arrow-grasses (Juncaginaceae), and quillworts (Isoetes). |
| Liana | Climbing plant found in tropical forests with long, woody rope-like stems of anomalous anatomical structure. |
| Shrub | Perennial, multi-stemmed woody plant that is usually less than 4 to 5 meters (13 to 16 feet) in height. Shrubs typically have several stems arising from or near the ground, but may be taller than 5 meters or single-stemmed under certain environmental conditions. |
| Subshrub | Low-growing shrub usually under 0.5 m (1.5 feet) tall, never exceeding 1 meter (3 feet) tall at maturity. |
| Tree | Perennial, woody plant with a single stem (trunk), normally greater than 4 to 5 meters (13 to 16 feet) in height; under certain environmental conditions, some tree species may develop a multi-stemmed or short growth form (less than 4 meters or 13 feet in height). |
| Vine | Twining/climbing plant with relatively long stems, can be woody or herbaceous. |

11.6.11 DURATION

Duration. The duration of a plant according to the NRCS PLANTS database. A plant can be associated with more than one type of duration.

Codes: DURATION

| Code | Duration |
|-----------|---|
| Annual | Individual completes life cycle in a single year. |
| Biennial | Individual completes life cycle over two growing seasons. |
| Perennial | Individuals live for many years, including herbaceous plants that re-sprout from roots. |
| Unknown | Life cycle and duration unknown. |

11.6.12 US_NATIVITY

United States nativity. A code indicating the native status jurisdiction and the native status of the plant. There are plants present in the table that do not currently exist in the United States (i.e., jurisdiction is outside of the United States). A plant that is native to any part of a native status jurisdiction (e.g., 'L48' [the lower 48 States]) is considered native, even if some populations within that area are introduced. Thus the 'L48' native status for smooth cord grass (*Spartina alterniflora*) is 'N' (Native) despite the existence of introduced populations on the West Coast. A plant like dandelion (*Taraxacum officinale*), however, is considered native and introduced because it has some infra-taxa that are native to 'L48' and some that are introduced there.

Codes: US_NATIVITY (Status - Native)

| Jurisdiction code | Description |
|--------------------------|--|
| AK | Alaska. |
| CAN | Canada. |
| GL | Greenland (Denmark). |
| HI | Hawaii. |
| L48 | Lower 48 States. |
| NA | North America (only non-vascular plants and lichens have native status given at this level). |
| NAV | Navassa Island (the sole Caribbean member of the United States Minor Outlying Islands). |
| PB | Pacific Basin excluding Hawaii. |
| PR | Puerto Rico. |
| SPM | St. Pierre and Miquelon (France). |
| VI | U.S. Virgin Islands. |
| AS | American Samoa. |
| PW | Palau. |
| FM | Micronesia, Federated States. |
| MP | Northern Mariana Islands. |

Codes: US_NATIVITY (Status - Native)

| Status code | United States nativity |
|--------------------|---|
| N | Native. |
| N? | Probably Native. |
| NI | Native and Introduced - some infra-taxa are native and others are introduced. |
| NI? | Native and Probably Introduced - some infra-taxa are native and others are probably introduced. |

Codes: US_NATIVITY (Status - Introduced)

| Status code | United States nativity |
|--------------------|---|
| GP | Garden persistent - persists around gardens and old habitations, not naturalized. |
| GP? | Probably Garden persistent - persists around gardens and old habitations, not naturalized. |
| I | Introduced. |
| I? | Probably Introduced. |
| N?I | Probably Native and Introduced - some infra-taxa are probably native and others are introduced. |
| W | Waif - an ephemeral introduction, not persistently naturalized. |
| W? | Probably a Waif - an ephemeral introduction, not persistently naturalized. |

11.6.13 STATE_DISTRIBUTION

State distribution. State distribution of the plant according to the NRCS PLANTS database.

11.6.14 STATE_AND_PROVINCE

State and province. State and province distribution of the plant according to the NRCS PLANTS database.

11.6.15 SCIENTIFIC_NAME_W_AUTHOR

Scientific name with author. Scientific name with author of the plant according to the NRCS PLANTS database.

11.6.16 GENERA_BINOMIAL_AUTHOR

Genera binomial author. Genera binomial author of the plant according to the NRCS PLANTS database.

11.6.17 TRINOMIAL_AUTHOR

Trinomial author. Trinomial author of the plant according to the NRCS PLANTS database.

11.6.18 QUADRINOMIAL_AUTHOR

Quadrinomial author. Quadrinomial author of the plant according to the NRCS PLANTS database.

11.6.19 XGENUS

Cross genus. The cross-genus hybridization indicator.

11.6.20 GENUS

Genus. The NRCS PLANTS database genus name.

11.6.21 XSPECIES

Cross species. The cross-species hybridization indicator.

11.6.22 SPECIES

Species. The NRCS PLANTS database species name.

11.6.23 SSP

Subspecies indicator. The term "ssp." is a botanical abbreviation for the taxonomic rank of "subspecies." This column is populated with 'spp.' for plants that have this term included within their name as listed in the NRCS PLANTS database. This column remains null for other plants. When populated, the subspecies name associated with the taxon symbol is listed in the SUBSPECIES column.

11.6.24 XSUBSPECIES

Cross subspecies. Cross-subspecies hybridization indicator.

11.6.25 SUBSPECIES

Subspecies. The NRCS PLANTS database subspecies name.

11.6.26 VAR

Variety indicator. The term "var." is a botanical abbreviation for the taxonomic rank of "variety." This column is populated with 'var.' for plants that have this term included within their name as listed in the NRCS PLANTS database. This column remains null for other plants. When populated, the variety name associated with the taxon symbol is listed in the VARIETY column.

11.6.27 XVARIETY

Cross variety. Cross-variety hybridization indicator.

11.6.28 VARIETY

Variety. The NRCS PLANTS database variety name.

11.6.29 SUBVAR

Subvariety indicator. The term "subvar." is a botanical abbreviation for the taxonomic rank of "subvariety." This column is populated with 'subvar.' for plants that have this term included within their name as listed in the NRCS PLANTS database. This column remains null for other plants. When populated, the subvariety name associated with the taxon symbol is listed in the SUBVARIETY column.

11.6.30 SUBVARIETY

Subvariety. Subvariety of the plant according to the NRCS PLANTS database.

11.6.31 F

Forma indicator. The term "f." is a botanical abbreviation for the taxonomic rank of "forma." This column is populated with 'f.' for plants that have this term included within their name as listed in the NRCS PLANTS database. This column remains null for other plants. When populated, the forma name associated with the taxon symbol is listed in the FORMA column.

11.6.32 FORMA

Forma. Forma of the plant according to the NRCS PLANTS database.

11.6.33 NOTES

Notes. Notes pertaining to the record.

11.6.34 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.6.35 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.6.36 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.6.37 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.6.38 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.6.39 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

11.7 Reference Species Group Table

(Oracle table name: REF_SPECIES_GROUP)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--------------------|------------------|
| 11.7.1 | SPGRPCD | Species group code | NUMBER(4) |
| 11.7.2 | NAME | Name | VARCHAR2(40) |
| 11.7.3 | REGION | Region | VARCHAR2(4000) |
| 11.7.4 | CLASS | Class | VARCHAR2(4000) |
| 11.7.5 | CREATED_DATE | Created date | DATE |
| 11.7.6 | MODIFIED_DATE | Modified date | DATE |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Unique | SPGRPCD | N/A | RSG_UK |

11.7.1 SPGRPCD

Species group code. A code assigned to each tree species in order to group them for reporting purposes. Codes and their associated names (NAME) are shown in [appendix E](#). Refer to [appendix F](#) for individual tree species and corresponding species group codes.

11.7.2 NAME

Name. A descriptive name for each species group code (SPGRPCD). Refer to [appendix E](#).

11.7.3 REGION

Region. A descriptor for the section of the United States in which the species, and therefore species group, is commonly found.

Codes: REGION

| Code | Description |
|----------------------|-------------------------------|
| All | All regions. |
| Eastern | Eastern region. |
| Western | Western region. |
| Tropical/Subtropical | Tropical/Subtropical regions. |

11.7.4 CLASS

Class. A classification type for the trees within the species group.

Codes: CLASS

| Code | Description |
|----------|------------------------|
| Softwood | Softwood tree species. |
| Hardwood | Hardwood tree species. |

11.7.5 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.7.6 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.8 Reference Invasive Species Table

(Oracle table name: REF_INVASIVE_SPECIES)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------|------------------|
| 11.8.1 | CN | Sequence number | VARCHAR2(34) |
| 11.8.2 | STATECD | State code | NUMBER(4) |
| 11.8.3 | SYMBOL | Symbol | VARCHAR2(16) |
| 11.8.4 | INV_GROUP_CD | Invasive group code | NUMBER |
| 11.8.5 | UNITCD_LIST | Unit code list | VARCHAR2(20) |
| 11.8.6 | START_DATE | Start date | DATE |
| 11.8.7 | END_DATE | End date | DATE |
| 11.8.8 | MANUAL_START | Manual start | NUMBER(3,1) |
| 11.8.9 | MANUAL_END | Manual end | NUMBER(3,1) |
| 11.8.10 | NOTES | Notes | VARCHAR2(2000) |
| 11.8.11 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.8.12 | CREATED_DATE | Created date | DATE |
| 11.8.13 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.8.14 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.8.15 | MODIFIED_DATE | Modified date | DATE |
| 11.8.16 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | CN | N/A | RIS_PK |
| Unique | STATECD, SYMBOL | N/A | RIS_UK |

FIA identifies species and other taxonomic ranks for plants using symbols (SYMBOL) as assigned by NRCS (Natural Resources Conservation Service) for the [PLANTS database](#) (<https://plants.usda.gov>) on a periodic basis. The most recent NRCS download for the FIA program was September 15, 2017. The plants identified here are also present in REF_PLANT_DICTIONARY (REF_INVASIVE_SPECIES.SYMBOL = REF_PLANT_DICTIONARY.SYMBOL). The FIA invasive species list is derived from the invasives identified in the PLANTS database and using other ancillary information.

11.8.1 CN

Sequence number. A unique sequence number used to identify a reference invasive species record.

11.8.2 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

11.8.3 SYMBOL

Symbol. The NRCS PLANTS database symbol code assigned to a specific plant taxon.

11.8.4 INV_GROUP_CD

Invasive group code. A code that can be used to group multiple species that are difficult to distinguish from one another. This code typically represents the most likely species in the invasive species group, or the first one in the group, if the field person was unable to make a positive identification. These groups are typically defined by region.

11.8.5 UNITCD_LIST

Unit code list. A list of survey unit codes (UNITCD) separated by commas, which identifies the geographical areas within the State where the species is likely to be found. For example, for Oregon (STATECD = 41), UNITCD_LIST = 0, 1, 2 indicates that the species is likely to be found in the Northwest, West Central, and Southeast survey units. Refer to [appendix B](#) for survey unit codes (UNITCD) by State.

11.8.6 START_DATE

Start date. The date the species was inserted in the REF_INVASIVE_SPECIES table for use as a recordable invasive plant species for a State.

11.8.7 END_DATE

End date. The date the species was no longer considered an invasive plant species for a State.

11.8.8 MANUAL_START

Manual start. The first version of the Field Guide (PLOT.[MANUAL](#)) that the invasive species (SYMBOL) was used.

11.8.9 MANUAL_END

Manual end. The last version of the Field Guide (PLOT.[MANUAL](#)) that the invasive species (SYMBOL) was valid. When MANUAL_END is blank (null), the code is still valid.

11.8.10 NOTES

Notes. Notes on this invasive species for this State (e.g., why added or removed from list).

11.8.11 CREATED_BY

Created by. See SURVEY.[CREATED_BY](#) description for definition.

11.8.12 CREATED_DATE

Created date. See SURVEY.[CREATED_DATE](#) description for definition.

11.8.13 CREATED_IN_INSTANCE

Created in instance. See SURVEY.[CREATED_IN_INSTANCE](#) description for definition.

11.8.14 MODIFIED_BY

Modified by. See SURVEY.[MODIFIED_BY](#) description for definition.

11.8.15 MODIFIED_DATE

Modified date. See SURVEY.[MODIFIED_DATE](#) description for definition.

11.8.16 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

11.9 Reference Habitat Type Description Table

(Oracle table name: REF_HABTYP_DESCRIPTION)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------|------------------|
| 11.9.1 | CN | Sequence number | VARCHAR2(34) |
| 11.9.2 | HABTYP_CD | Habitat type code | VARCHAR2(10) |
| 11.9.3 | PUB_CD | Publication code | VARCHAR2(10) |
| 11.9.4 | SCIENTIFIC_NAME | Scientific name | VARCHAR2(115) |
| 11.9.5 | COMMON_NAME | Common name | VARCHAR2(255) |
| 11.9.6 | VALID | Valid | VARCHAR2(1) |
| 11.9.7 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.9.8 | CREATED_DATE | Created date | DATE |
| 11.9.9 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.9.10 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.9.11 | MODIFIED_DATE | Modified date | DATE |
| 11.9.12 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-------------------|--|----------------------|
| Primary | CN | N/A | RHN_PK |
| Unique | HABTYP_CD, PUB_CD | N/A | RHN_UK |
| Foreign | PUB_CD | REF_HABTYP_DESCRIPTION to REF_HABTYP_PUBLICATION | RHN_RPN_FK |

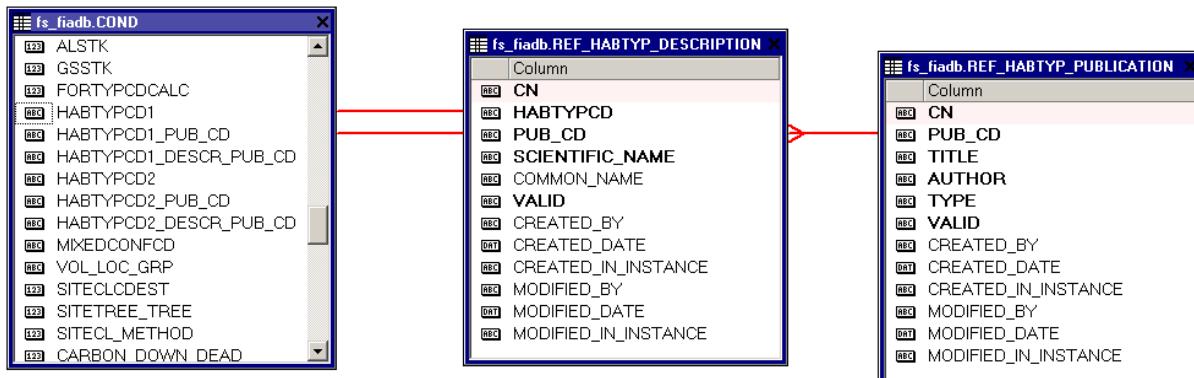


Figure 11-1: Illustration of how publication information can be derived.

11.9.1 CN

Sequence number. A unique sequence number used to identify a reference habitat type description record.

11.9.2 HABTYP_CD

Habitat type code. A code representing a habitat type. Unique codes are determined by combining both habitat type code and publication code (HABTYP_CD and PUB_CD).

11.9.3 PUB_CD

Publication code. A code indicating the publication that lists the name and/or description associated with a particular habitat type code (HABTYP_CD).

11.9.4 SCIENTIFIC_NAME

Scientific name. This attribute contains some type of descriptor, usually the Latin name, of the plant(s) associated with the habitat type code. It has values such as the entire scientific name or the shortened synonym of the plant(s) represented by the habitat type code or it may have an English geographic type of descriptor.

11.9.5 COMMON_NAME

Common name. This attribute contains some type of descriptor, usually the common name, of the plant(s) associated with the habitat type code.

11.9.6 VALID

Valid. A flag to indicate if this is a valid, documented habitat type code. Values are 'Y' (yes) and 'N' (no).

11.9.7 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.9.8 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.9.9 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.9.10 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.9.11 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.9.12 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.10 Reference Habitat Type Publication Table

(Oracle table name: REF_HABTYP_PUBLICATION)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-----------------------|------------------|
| 11.10.1 | CN | Sequence number | VARCHAR2(34) |
| 11.10.2 | PUB_CD | Publication code | VARCHAR2(10) |
| 11.10.3 | TITLE | Title of publication | VARCHAR2(200) |
| 11.10.4 | AUTHOR | Author of publication | VARCHAR2(200) |
| 11.10.5 | TYPE | Type of publication | VARCHAR2(10) |
| 11.10.6 | VALID | Valid | VARCHAR2(1) |
| 11.10.7 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.10.8 | CREATED_DATE | Created date | DATE |
| 11.10.9 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.10.10 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.10.11 | MODIFIED_DATE | Modified date | DATE |
| 11.10.12 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | CN | N/A | RPN_PK |
| Unique | PUB_CD | N/A | RPN_UK |

11.10.1 CN

Sequence number. A unique sequence number used to identify a reference habitat type publication record.

11.10.2 PUB_CD

Publication code. A code indicating the publication that lists the name and/or description associated with a particular habitat type code (REF_HABTYP_DESCRIPTION.HABTYP_CD).

11.10.3 TITLE

Title of publication. The title of the publication associated with the publication code (PUB_CD).

11.10.4 AUTHOR

Author of publication. The author of the publication associated with the publication code (PUB_CD).

11.10.5 TYPE

Type of publication. A code indicating if the habitat type publication describes potential vegetation or existing vegetation. If it is unknown which type of habitat is being described, then '?' is recorded in this column.

Codes: TYPE

| Code | Duration |
|-------|--|
| PVREF | Potential vegetation. |
| EVREF | Existing vegetation. |
| ? | The type (potential or existing) is unknown. |

11.10.6 VALID

Valid. A flag to indicate if this publication is valid for FIA. Values are 'Y' (yes) and 'N' (no).

11.10.7 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.10.8 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.10.9 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.10.10 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.10.11 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.10.12 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.11 Reference Citation Table

(Oracle table name: REF_CITATION)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------|------------------|
| 11.11.1 | CITATION_NBR | Citation number | NUMBER(7) |
| 11.11.2 | CITATION | Citation | VARCHAR2(2000) |
| 11.11.3 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.11.4 | CREATED_DATE | Created date | DATE |
| 11.11.5 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.11.6 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.11.7 | MODIFIED_DATE | Modified date | DATE |
| 11.11.8 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | CITATION_NBR | N/A | CIT_PK |

11.11.1 CITATION_NBR

Citation number. A unique number used to identify a REF_CITATION record. Citation information is currently available in the database only for information about the source of specific gravity and bark volume percent values contained in the REF_SPECIES table. REF_SPECIES attributes ending in '_CIT' link back to the REF_CITATION table through CITATION_NBR.

11.11.2 CITATION

Citation. This attribute is usually a publication citation. In some cases, CITATION may contain more specific information about how data were populated for a field.

11.11.3 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.11.4 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.11.5 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.11.6 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.11.7 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.11.8 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.12 Reference Forest Inventory and Analysis Database Version Table

(Oracle table name: REF_FIADB_VERSION)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------|------------------|
| 11.12.1 | VERSION | Version identifier | VARCHAR2(40) |
| 11.12.2 | INSTALL_TYPE | Install type | VARCHAR2(10) |
| 11.12.3 | DESCR | Version description | VARCHAR2(2000) |
| 11.12.4 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.12.5 | CREATED_DATE | Created date | DATE |
| 11.12.6 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.12.7 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.12.8 | MODIFIED_DATE | Modified date | DATE |
| 11.12.9 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | VERSION | N/A | RFN_PK |

11.12.1 VERSION

Version identifier. A unique identifier for the FIADB version.

11.12.2 INSTALL_TYPE

Install type. A brief description of the version installation type.

Codes: INSTALL_TYPE

| Installation type value | Description |
|-------------------------|---|
| INITIAL | Initial installation of FIADB. |
| UPDATE | Major update of previous FIADB version. |
| RELEASE | Minor revision of FIADB version. |

11.12.3 DESCR

Version description. A description of the FIADB version. This may include a literature citation and internet links to documentation.

11.12.4 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.12.5 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.12.6 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.12.7 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.12.8 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.12.9 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.13 Reference State Elevation Table

(Oracle table name: REF_STATE_ELEV)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------|------------------|
| 11.13.1 | STATECD | State code | NUMBER(4) |
| 11.13.2 | MIN_ELEV | Minimum elevation | NUMBER(5) |
| 11.13.3 | MAX_ELEV | Maximum elevation | NUMBER(5) |
| 11.13.4 | LOWEST_POINT | Lowest point | VARCHAR2(30) |
| 11.13.5 | HIGHEST_POINT | Highest point | VARCHAR2(30) |
| 11.13.6 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.13.7 | CREATED_DATE | Created date | DATE |
| 11.13.8 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.13.9 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.13.10 | MODIFIED_DATE | Modified date | DATE |
| 11.13.11 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | STATECD | N/A | RSE_PK |

11.13.1 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

11.13.2 MIN_ELEV

Minimum elevation. The minimum elevation within the State in feet.

11.13.3 MAX_ELEV

Maximum elevation. The maximum elevation within the State in feet.

11.13.4 LOWEST_POINT

Lowest point. The name of the lowest point within the State. 'SL' refers to sea level. Negative minimum elevations are listed here.

11.13.5 HIGHEST_POINT

Highest point. The name of the highest point within the State. Alternative names are also provided.

11.13.6 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.13.7 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.13.8 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.13.9 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.13.10 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.13.11 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.14 Reference Unit Table

(Oracle table name: REF_UNIT)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------|------------------|
| 11.14.1 | STATECD | State code | NUMBER(4) |
| 11.14.2 | VALUE | Value | NUMBER(2) |
| 11.14.3 | MEANING | Meaning | VARCHAR2(80) |
| 11.14.4 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.14.5 | CREATED_DATE | Created date | DATE |
| 11.14.6 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.14.7 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.14.8 | MODIFIED_DATE | Modified date | DATE |
| 11.14.9 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | STATECD, VALUE | N/A | UNT_PK |

11.14.1 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

11.14.2 VALUE

Value. 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 B](#) for codes.

11.14.3 MEANING

Meaning. The name corresponding to the survey unit code (VALUE) in the State (STATECD). Refer to [appendix B](#).

11.14.4 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.14.5 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.14.6 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.14.7 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.14.8 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.14.9 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.15 Reference Research Station Table

(Oracle table name: REF_RESEARCH_STATION)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-------------------------------|------------------|
| 11.15.1 | STATECD | State code | NUMBER(4) |
| 11.15.2 | RSCD | Region or station code | NUMBER(2) |
| 11.15.3 | RS | Research station abbreviation | VARCHAR2(5) |
| 11.15.4 | STATE_NAME | State name | VARCHAR2(40) |
| 11.15.5 | STATE_ABBR | State abbreviation | VARCHAR2(4) |
| 11.15.6 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.15.7 | CREATED_DATE | Created date | DATE |
| 11.15.8 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.15.9 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.15.10 | MODIFIED_DATE | Modified date | DATE |
| 11.15.11 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | STATECD | N/A | RES_PK |

11.15.1 STATECD

State code. Bureau of the Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

11.15.2 RSCD

Region or Station code. See SURVEY.RSCD description for definition.

11.15.3 RS

Research station abbreviation. Abbreviation for the research station.

Codes: RS

| Code | Description |
|-------|-------------------------------------|
| RMRS | Rocky Mountain Research Station. |
| NCRS | North Central Research Station. |
| NERS | Northeastern Research Station. |
| PNWRS | Pacific Northwest Research Station. |
| SRS | Southern Research Station. |

11.15.4 STATE_NAME

State name. Refer to [appendix B](#).

11.15.5 STATE_ABBR

State abbreviation. The two-character State abbreviation. [Refer to appendix B.](#)

11.15.6 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.15.7 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.15.8 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.15.9 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.15.10 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.15.11 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.16 Reference National Vegetation Classification Standard (NVCS) Hierarchy Structure Table

(Oracle table name: REF_NVCS_HIERARCHY_STRCT)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-----------------------------|------------------|
| 11.16.1 | HIERARCHY_VERSION | Hierarchy version | VARCHAR2(30) |
| 11.16.2 | PRIMARY_CLASS | Primary class | VARCHAR2(8) |
| 11.16.3 | NVCS_LEVEL_1_LABEL | Level 1 label of the NVCS | VARCHAR2(30) |
| 11.16.4 | NVCS_LEVEL_1_CD | Level 1 code of the NVCS | VARCHAR2(3) |
| 11.16.5 | NVCS_LEVEL_2_LABEL | Level 2 label of the NVCS | VARCHAR2(30) |
| 11.16.6 | NVCS_LEVEL_2_CD | Level 2 code of the NVCS | VARCHAR2(8) |
| 11.16.7 | NVCS_LEVEL_3_LABEL | Level 3 label of the NVCS | VARCHAR2(30) |
| 11.16.8 | NVCS_LEVEL_3_CD | Level 3 code of the NVCS | VARCHAR2(10) |
| 11.16.9 | NVCS_LEVEL_4_LABEL | Level 4 label of the NVCS | VARCHAR2(30) |
| 11.16.10 | NVCS_LEVEL_4_CD | Level 4 code of the NVCS | VARCHAR2(13) |
| 11.16.11 | NVCS_LEVEL_5_LABEL | Level 5 label of the NVCS | VARCHAR2(30) |
| 11.16.12 | NVCS_LEVEL_5_CD | Level 5 code of the NVCS | VARCHAR2(20) |
| 11.16.13 | NVCS_LEVEL_6_LABEL | Level 6 label of the NVCS | VARCHAR2(30) |
| 11.16.14 | NVCS_LEVEL_6_CD | Level 6 code of the NVCS | VARCHAR2(20) |
| 11.16.15 | NVCS_LEVEL_7_LABEL | Level 7 label of the NVCS | VARCHAR2(30) |
| 11.16.16 | NVCS_LEVEL_7_CD | Level 7 code of the NVCS | VARCHAR2(25) |
| 11.16.17 | NVCS_LEVEL_8_LABEL | Level 8 label of the NVCS | VARCHAR2(30) |
| 11.16.18 | NVCS_LEVEL_8_CD | Level 8 code of the NVCS | VARCHAR2(25) |
| 11.16.19 | NVCS_LEVEL_1_MEANING | Level 1 meaning of the NVCS | VARCHAR2(100) |
| 11.16.20 | NVCS_LEVEL_2_MEANING | Level 2 meaning of the NVCS | VARCHAR2(100) |
| 11.16.21 | NVCS_LEVEL_3_MEANING | Level 3 meaning of the NVCS | VARCHAR2(100) |
| 11.16.22 | NVCS_LEVEL_4_MEANING | Level 4 meaning of the NVCS | VARCHAR2(100) |
| 11.16.23 | NVCS_LEVEL_5_MEANING | Level 5 meaning of the NVCS | VARCHAR2(100) |
| 11.16.24 | NVCS_LEVEL_6_MEANING | Level 6 meaning of the NVCS | VARCHAR2(100) |
| 11.16.25 | NVCS_LEVEL_7_MEANING | Level 7 meaning of the NVCS | VARCHAR2(100) |
| 11.16.26 | NVCS_LEVEL_8_MEANING | Level 8 meaning of the NVCS | VARCHAR2(100) |
| 11.16.27 | NVCS_LEVEL_1_NOTE | Level 1 note of the NVCS | VARCHAR2(1000) |
| 11.16.28 | NVCS_LEVEL_2_NOTE | Level 2 note of the NVCS | VARCHAR2(1000) |
| 11.16.29 | NVCS_LEVEL_3_NOTE | Level 3 note of the NVCS | VARCHAR2(1000) |
| 11.16.30 | NVCS_LEVEL_4_NOTE | Level 4 note of the NVCS | VARCHAR2(1000) |
| 11.16.31 | NVCS_LEVEL_5_NOTE | Level 5 note of the NVCS | VARCHAR2(1000) |
| 11.16.32 | NVCS_LEVEL_6_NOTE | Level 6 note of the NVCS | VARCHAR2(1000) |
| 11.16.33 | NVCS_LEVEL_7_NOTE | Level 7 note of the NVCS | VARCHAR2(1000) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--------------------------|------------------|
| 11.16.34 | NVCS_LEVEL_8_NOTE | Level 8 note of the NVCS | VARCHAR2(1000) |
| 11.16.35 | CITATION_NBR | Citation number | NUMBER(7) |
| 11.16.36 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.16.37 | CREATED_DATE | Created date | DATE |
| 11.16.38 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.16.39 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.16.40 | MODIFIED_DATE | Modified date | DATE |
| 11.16.41 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

This table describes the structure of a given National Vegetation Classification Standard (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](#) (www.usnvc.org) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL \geq 1.0).

11.16.1 HIERARCHY_VERSION

Hierarchy version. A version indicator for the National Vegetation Classification hierarchy.

11.16.2 PRIMARY_CLASS

Primary class. The primary classification determined by the NVCS classification algorithm. 'NATURAL' or 'CULTURAL' are the valid values. As of August 2017, the classification algorithm has only been developed for the eastern continental United States excluding the western edges of the Plains States, Oklahoma, and Texas. This column will only be populated for forested conditions in the supported area.

Note: For more information on the 'NATURAL' and 'CULTURAL' vegetation classifications, refer to the [Plant Communities and Vegetation Classification](#) web page on the USNVC website (available at web address: <https://usnvc.org/about/plant-communities-and-vegetation-classification/>).

11.16.3 NVCS_LEVEL_1_LABEL

Level 1 label of the NVCS. A label assigned to the current level of the NVCS hierarchy.

11.16.4 NVCS_LEVEL_1_CD

Level 1 code of the NVCS. The NVCS code describing the vegetative community of the condition at the first level of the NVCS hierarchy. It is populated for both the 'NATURAL' and 'CULTURAL' primary classifications. Code definitions can be found in the [Reference National Vegetation Classification Standard Level 1 Codes Table](#) (NVCS_LEVEL_1_CODES). Joins to this table must use both the NVCS_PRIMARY_CLASS and NVCS_LEVEL_1_CD values as shown in the following example.

```

SELECT c.cn AS cnd_cn,
       c.nvcs_primary_class,
       c.nvcs_level_1_cd,
       r.meaning
  FROM cond c, ref_nvcs_level_1_codes r

```

```
WHERE c.nvcs_primary_class = r.primary_class
    AND c.nvcs_level_1_cd = r.nvcs_code;
```

11.16.5 NVCS_LEVEL_2_LABEL

Level 2 label of the NVCS. A label assigned to the current level of the NVCS hierarchy.

11.16.6 NVCS_LEVEL_2_CD

Level 2 code of the NVCS. The NVCS code describing the vegetative community of the condition at the second level of the NVCS hierarchy. It is populated for both the 'NATURAL' and 'CULTURAL' primary classifications. Code definitions can be found in the [Reference National Vegetation Classification Standard Level 2 Codes Table](#) (NVCS_LEVEL_2_CODES). Joins to this table must use both the NVCS_PRIMARY_CLASS and NVCS_LEVEL_2_CD values as shown in the following example.

```
SELECT c.cn AS cnd_cn,
       c.nvcs_primary_class,
       c.nvcs_level_2_cd,
       r.meaning
  FROM cond c, ref_nvcs_level_2_codes r
 WHERE c.nvcs_primary_class = r.primary_class
    AND c.nvcs_level_2_cd = r.nvcs_code;
```

11.16.7 NVCS_LEVEL_3_LABEL

Level 3 label of the NVCS. A label assigned to the current level of the NVCS hierarchy.

11.16.8 NVCS_LEVEL_3_CD

Level 3 code of the NVCS. The NVCS code describing the vegetative community of the condition at the third level of the NVCS hierarchy. It is populated for both the 'NATURAL' and 'CULTURAL' primary classifications. Code definitions can be found in the [Reference National Vegetation Classification Standard Level 3 Codes Table](#) (NVCS_LEVEL_3_CODES). Joins to this table must use both the NVCS_PRIMARY_CLASS and NVCS_LEVEL_3_CD values as shown in the following example.

```
SELECT c.cn AS cnd_cn,
       c.nvcs_primary_class,
       c.nvcs_level_3_cd,
       r.meaning
  FROM cond c, ref_nvcs_level_3_codes r
 WHERE c.nvcs_primary_class = r.primary_class
    AND c.nvcs_level_3_cd = r.nvcs_code;
```

11.16.9 NVCS_LEVEL_4_LABEL

Level 4 label of the NVCS. A label assigned to the current level of the NVCS hierarchy.

11.16.10 NVCS_LEVEL_4_CD

Level 4 code of the NVCS. The NVCS code describing the vegetative community of the condition at the fourth level of the NVCS hierarchy. It is populated for both the 'NATURAL' and 'CULTURAL' primary classifications. Code definitions can be found in the [Reference National Vegetation Classification Standard Level 4 Codes Table](#) (NVCS_LEVEL_4_CODES).

Joins to this table must use both the NVCS_PRIMARY_CLASS and NVCS_LEVEL_4_CD values as shown in the following example.

```
SELECT c.cn AS cnd_cn,
       c.nvcs_primary_class,
       c.nvcs_level_4_cd,
       r.meaning
  FROM cond c, ref_nvcs_level_4_codes r
 WHERE c.nvcs_primary_class = r.primary_class
   AND c.nvcs_level_4_cd = r.nvcs_code;
```

11.16.11 NVCS_LEVEL_5_LABEL

Level 5 label of the NVCS. A label assigned to the current level of the NVCS hierarchy.

11.16.12 NVCS_LEVEL_5_CD

Level 5 code of the NVCS. The NVCS code describing the vegetative community of the condition at the fifth level of the NVCS hierarchy. It is populated for both the 'NATURAL' and 'CULTURAL' primary classifications. Code definitions can be found in the [Reference National Vegetation Classification Standard Level 5 Codes Table \(NVCS_LEVEL_5_CODES\)](#). Joins to this table must use both the NVCS_PRIMARY_CLASS and NVCS_LEVEL_5_CD values as shown in the following example.

```
SELECT c.cn AS cnd_cn,
       c.nvcs_primary_class,
       c.nvcs_level_5_cd,
       r.meaning
  FROM cond c, ref_nvcs_level_5_codes r
 WHERE c.nvcs_primary_class = r.primary_class
   AND c.nvcs_level_5_cd = r.nvcs_code;
```

11.16.13 NVCS_LEVEL_6_LABEL

Level 6 label of the NVCS. A label assigned to the current level of the NVCS hierarchy.

11.16.14 NVCS_LEVEL_6_CD

Level 6 code of the NVCS. The NVCS code describing the vegetative community of the condition at the sixth level of the NVCS hierarchy. It is populated for the 'CULTURAL' primary classification. Code definitions can be found in the [Reference National Vegetation Classification Standard Level 6 Codes Table \(NVCS_LEVEL_6_CODES\)](#). Joins to this table must use both the NVCS_PRIMARY_CLASS and NVCS_LEVEL_6_CD values as shown in the following example.

```
SELECT c.cn AS cnd_cn,
       c.nvcs_primary_class,
       c.nvcs_level_6_cd,
       r.meaning
  FROM cond c, ref_nvcs_level_6_codes r
 WHERE c.nvcs_primary_class = r.primary_class
   AND c.nvcs_level_6_cd = r.nvcs_code;
```

11.16.15 NVCS_LEVEL_7_LABEL

Level 7 label of the NVCS. A label assigned to the current level of the NVCS hierarchy.

11.16.16 NVCS_LEVEL_7_CD

Level 7 code of the NVCS. The NVCS code describing the vegetative community of the condition at the seventh level of the NVCS hierarchy. It is populated for the 'CULTURAL' primary classification. Code definitions can be found in the [Reference National Vegetation Classification Standard Level 7 Codes Table](#) (NVCS_LEVEL_7_CODES). Joins to this table must use both the NVCS_PRIMARY_CLASS and NVCS_LEVEL_7_CD values as shown in the following example.

```
SELECT c.cn AS cnd_cn,
       c.nvcs_primary_class,
       c.nvcs_level_7_cd,
       r.meaning
  FROM cond c, ref_nvcs_level_7_codes r
 WHERE c.nvcs_primary_class = r.primary_class
   AND c.nvcs_level_7_cd = r.nvcs_code;
```

11.16.17 NVCS_LEVEL_8_LABEL

Level 8 label of the NVCS. A label assigned to the current level of the NVCS hierarchy.

11.16.18 NVCS_LEVEL_8_CD

Level 8 code of the NVCS. The NVCS code describing the vegetative community of the condition at the eighth level of the NVCS hierarchy. It is populated for the 'CULTURAL' primary classification. Code definitions can be found in the [Reference National Vegetation Classification Standard Level 8 Codes Table](#) (NVCS_LEVEL_8_CODES). Joins to this table must use both the NVCS_PRIMARY_CLASS and NVCS_LEVEL_8_CD values as shown in the following example.

```
SELECT c.cn AS cnd_cn,
       c.nvcs_primary_class,
       c.nvcs_level_8_cd,
       r.meaning
  FROM cond c, ref_nvcs_level_8_codes r
 WHERE c.nvcs_primary_class = r.primary_class
   AND c.nvcs_level_8_cd = r.nvcs_code;
```

11.16.19 NVCS_LEVEL_1_MEANING

Level 1 meaning of the NVCS. The meaning of the code at the current level of the NVCS hierarchy.

11.16.20 NVCS_LEVEL_2_MEANING

Level 2 meaning of the NVCS. The meaning of the code at the current level of the NVCS hierarchy.

11.16.21 NVCS_LEVEL_3_MEANING

Level 3 meaning of the NVCS. The meaning of the code at the current level of the NVCS hierarchy.

11.16.22 NVCS_LEVEL_4_MEANING

Level 4 meaning of the NVCS. The meaning of the code at the current level of the NVCS hierarchy.

11.16.23 NVCS_LEVEL_5_MEANING

Level 5 meaning of the NVCS. The meaning of the code at the current level of the NVCS hierarchy.

11.16.24 NVCS_LEVEL_6_MEANING

Level 6 meaning of the NVCS. The meaning of the code at the current level of the NVCS hierarchy.

11.16.25 NVCS_LEVEL_7_MEANING

Level 7 meaning of the NVCS. The meaning of the code at the current level of the NVCS hierarchy.

11.16.26 NVCS_LEVEL_8_MEANING

Level 8 meaning of the NVCS. The meaning of the code at the current level of the NVCS hierarchy.

11.16.27 NVCS_LEVEL_1_NOTE

Level 1 note of the NVCS. Any remark relevant to the hierarchy structure record.

11.16.28 NVCS_LEVEL_2_NOTE

Level 2 note of the NVCS. Any remark relevant to the hierarchy structure record.

11.16.29 NVCS_LEVEL_3_NOTE

Level 3 note of the NVCS. Any remark relevant to the hierarchy structure record.

11.16.30 NVCS_LEVEL_4_NOTE

Level 4 note of the NVCS. Any remark relevant to the hierarchy structure record.

11.16.31 NVCS_LEVEL_5_NOTE

Level 5 note of the NVCS. Any remark relevant to the hierarchy structure record.

11.16.32 NVCS_LEVEL_6_NOTE

Level 6 note of the NVCS. Any remark relevant to the hierarchy structure record.

11.16.33 NVCS_LEVEL_7_NOTE

Level 7 note of the NVCS. Any remark relevant to the hierarchy structure record.

11.16.34 NVCS_LEVEL_8_NOTE

Level 8 note of the NVCS. Any remark relevant to the hierarchy structure record.

11.16.35 CITATION_NBR

Citation number. Foreign key to the parent REF_CITATION record.

11.16.36 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.16.37 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.16.38 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.16.39 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.16.40 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.16.41 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.17 Reference National Vegetation Classification Standard Level 1 Codes Table

(Oracle table name: REF_NVCS_LEVEL_1_CODES)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-----------------------|------------------|
| 11.17.1 | CN | Sequence number | VARCHAR2(34) |
| 11.17.2 | PRIMARY_CLASS | Primary class | VARCHAR2(8) |
| 11.17.3 | HIERARCHY_LEVEL | Hierarchy level | NUMBER(2) |
| 11.17.4 | HIERARCHY_LEVEL_LABEL | Hierarchy level label | VARCHAR2(30) |
| 11.17.5 | NVCS_CODE | NVCS code | VARCHAR2(20) |
| 11.17.6 | MEANING | Meaning | VARCHAR2(100) |
| 11.17.7 | NOTE | Note | VARCHAR2(1000) |
| 11.17.8 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.17.9 | CREATED_DATE | Created date | DATE |
| 11.17.10 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.17.11 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.17.12 | MODIFIED_DATE | Modified date | DATE |
| 11.17.13 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--------------------------|----------------|----------------------|
| Primary | CN | N/A | RNVCSHS1_PK |
| Unique | PRIMARY_CLASS, NVCS_CODE | N/A | RNVCSHS1_UK |

This table defines the codes for the first level of the National Vegetation Classification Standard (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](http://www.usnvc.org) (www.usnvc.org) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL ≥1.0).

11.17.1 CN

Sequence number. A unique sequence number used to identify a reference NVCS level 1 codes record.

11.17.2 PRIMARY_CLASS

Primary class. The primary classification determined by the NVCS classification algorithm. 'NATURAL' or 'CULTURAL' are the valid values. As of August 2017, the classification algorithm has only been developed for the eastern continental United States excluding the western edges of the Plains States, Oklahoma, and Texas. This column will only be populated for forested conditions in the supported area.

Note: For more information on the 'NATURAL' and 'CULTURAL' vegetation classifications, refer to the [Plant Communities and Vegetation Classification](#) web page on the USNVC

website (available at web address:
<https://usnvc.org/about/plant-communities-and-vegetation-classification/>).

11.17.3 HIERARCHY_LEVEL

Hierarchy level. An integer value indicating at what level in the National Vegetation Classification Standard hierarchy the current record exists.

11.17.4 HIERARCHY_LEVEL_LABEL

Hierarchy level label. A label assigned to the current level of the NVCS hierarchy.

11.17.5 NVCS_CODE

NVCS code. A code representing the classification at the current level of the NVCS hierarchy.

Codes: NVCS_CODE

| NVCS_CODE | MEANING |
|-----------|--|
| -2 | Algorithm does not support area where the sampling point fell. |
| -1 | Algorithm failed to produce a solution. |
| 1 | Forest & Woodland. |
| 7 | Agricultural & Developed Vegetation. |

11.17.6 MEANING

Meaning. The meaning of the code at the current level of the NVCS hierarchy.

Codes: MEANING

| NVCS_CODE | MEANING |
|-----------|--|
| -2 | Algorithm does not support area where the sampling point fell. |
| -1 | Algorithm failed to produce a solution. |
| 1 | Forest & Woodland. |
| 7 | Agricultural & Developed Vegetation. |

11.17.7 NOTE

Note. Any remark relevant to the hierarchy structure record.

11.17.8 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.17.9 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.17.10 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.17.11 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.17.12 MODIFIED_DATE

Modified date. See SURVEY.[MODIFIED_DATE](#) description for definition.

11.17.13 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

11.18 Reference National Vegetation Classification Standard Level 2 Codes Table

(Oracle table name: REF_NVCS_LEVEL_2_CODES)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-----------------------|------------------|
| 11.18.1 | CN | Sequence number | VARCHAR2(34) |
| 11.18.2 | PRIMARY_CLASS | Primary class | VARCHAR2(8) |
| 11.18.3 | HIERARCHY_LEVEL | Hierarchy level | NUMBER(2) |
| 11.18.4 | HIERARCHY_LEVEL_LABEL | Hierarchy level label | VARCHAR2(30) |
| 11.18.5 | NVCS_CODE | NVCS code | VARCHAR2(20) |
| 11.18.6 | MEANING | Meaning | VARCHAR2(100) |
| 11.18.7 | NOTE | Note | VARCHAR2(1000) |
| 11.18.8 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.18.9 | CREATED_DATE | Created date | DATE |
| 11.18.10 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.18.11 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.18.12 | MODIFIED_DATE | Modified date | DATE |
| 11.18.13 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--------------------------|----------------|----------------------|
| Primary | CN | N/A | RNVCSHS2_PK |
| Unique | PRIMARY_CLASS, NVCS_CODE | N/A | RNVCSHS2_UK |

This table defines the codes for the second level of the National Vegetation Classification Standard (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](http://www.usnvc.org) (www.usnvc.org) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL ≥1.0).

11.18.1 CN

Sequence number. A unique sequence number used to identify a reference NVCS level 2 codes record.

11.18.2 PRIMARY_CLASS

Primary class. The primary classification determined by the NVCS classification algorithm. 'NATURAL' or 'CULTURAL' are the valid values. As of August 2017, the classification algorithm has only been developed for the eastern continental United States excluding the western edges of the Plains States, Oklahoma, and Texas. This column will only be populated for forested conditions in the supported area.

Note: For more information on the 'NATURAL' and 'CULTURAL' vegetation classifications, refer to the [Plant Communities and Vegetation Classification](#) web page on the USNVC

website (available at web address:
<https://usnvc.org/about/plant-communities-and-vegetation-classification/>).

11.18.3 HIERARCHY_LEVEL

Hierarchy level. An integer value indicating at what level in the National Vegetation Classification Standard hierarchy the current record exists.

11.18.4 HIERARCHY_LEVEL_LABEL

Hierarchy level label. A label assigned to the current level of the NVCS hierarchy.

11.18.5 NVCS_CODE

NVCS code. A code representing the classification at the current level of the NVCS hierarchy.

Codes: NVCS_CODE

| NVCS_CODE | MEANING |
|------------------|--|
| -2.-2 | Algorithm does not support area where the sampling point fell. |
| -1.-1 | Algorithm failed to produce a solution. |
| 1.A | Tropical Forest & Woodland. |
| 1.B | Temperate & Boreal Forest & Woodland. |
| 7.A | Woody Agricultural Vegetation. |

11.18.6 MEANING

Meaning. The meaning of the code at the current level of the NVCS hierarchy.

Codes: MEANING

| NVCS_CODE | MEANING |
|------------------|--|
| -2.-2 | Algorithm does not support area where the sampling point fell. |
| -1.-1 | Algorithm failed to produce a solution. |
| 1.A | Tropical Forest & Woodland. |
| 1.B | Temperate & Boreal Forest & Woodland. |
| 7.A | Woody Agricultural Vegetation. |

11.18.7 NOTE

Note. Any remark relevant to the hierarchy structure record.

11.18.8 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.18.9 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.18.10 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.18.11 MODIFIED_BY

Modified by. See SURVEY.[MODIFIED_BY](#) description for definition.

11.18.12 MODIFIED_DATE

Modified date. See SURVEY.[MODIFIED_DATE](#) description for definition.

11.18.13 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

11.19 Reference National Vegetation Classification Standard Level 3 Codes Table

(Oracle table name: REF_NVCS_LEVEL_3_CODES)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-----------------------|------------------|
| 11.19.1 | CN | Sequence number | VARCHAR2(34) |
| 11.19.2 | PRIMARY_CLASS | Primary class | VARCHAR2(8) |
| 11.19.3 | HIERARCHY_LEVEL | Hierarchy level | NUMBER(2) |
| 11.19.4 | HIERARCHY_LEVEL_LABEL | Hierarchy level label | VARCHAR2(30) |
| 11.19.5 | NVCS_CODE | NVCS code | VARCHAR2(20) |
| 11.19.6 | MEANING | Meaning | VARCHAR2(100) |
| 11.19.7 | NOTE | Note | VARCHAR2(1000) |
| 11.19.8 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.19.9 | CREATED_DATE | Created date | DATE |
| 11.19.10 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.19.11 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.19.12 | MODIFIED_DATE | Modified date | DATE |
| 11.19.13 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--------------------------|----------------|----------------------|
| Primary | CN | N/A | RNVCSHS3_PK |
| Unique | PRIMARY_CLASS, NVCS_CODE | N/A | RNVCSHS3_UK |

This table defines the codes for the third level of the National Vegetation Classification Standard (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](http://www.usnvc.org) (www.usnvc.org) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL ≥1.0).

11.19.1 CN

Sequence number. A unique sequence number used to identify a reference NVCS level 3 codes record.

11.19.2 PRIMARY_CLASS

Primary class. The primary classification determined by the NVCS classification algorithm. 'NATURAL' or 'CULTURAL' are the valid values. As of August 2017, the classification algorithm has only been developed for the eastern continental United States excluding the western edges of the Plains States, Oklahoma, and Texas. This column will only be populated for forested conditions in the supported area.

Note: For more information on the 'NATURAL' and 'CULTURAL' vegetation classifications, refer to the [Plant Communities and Vegetation Classification](#) web page on the USNVC

website (available at web address:
<https://usnvc.org/about/plant-communities-and-vegetation-classification/>).

11.19.3 HIERARCHY_LEVEL

Hierarchy level. An integer value indicating at what level in the National Vegetation Classification Standard hierarchy the current record exists.

11.19.4 HIERARCHY_LEVEL_LABEL

Hierarchy level label. A label assigned to the current level of the NVCS hierarchy.

11.19.5 NVCS_CODE

NVCS code. A code representing the classification at the current level of the NVCS hierarchy.

Codes: NVCS_CODE

| NVCS_CODE | MEANING |
|------------------|--|
| -2.-2.-2 | Algorithm does not support area where the sampling point fell. |
| -1.-1.-1 | Algorithm failed to produce a solution. |
| 1.A.1 | Tropical Dry Forest & Woodland. |
| 1.A.2 | Tropical Lowland Humid Forest. |
| 1.A.4 | Tropical Flooded & Swamp Forest. |
| 1.B.1 | Warm Temperate Forest & Woodland. |
| 1.B.2 | Cool Temperate Forest & Woodland. |
| 1.B.3 | Temperate Flooded & Swamp Forest. |
| 1.B.4 | Boreal Forest & Woodland. |
| 1.B.5 | Boreal Flooded & Swamp Forest. |
| 7.A.2 | Forest Plantation & Agroforestry. |

11.19.6 MEANING

Meaning. The meaning of the code at the current level of the NVCS hierarchy.

Codes: NVCS_CODE

| NVCS_CODE | MEANING |
|------------------|--|
| -2.-2.-2 | Algorithm does not support area where the sampling point fell. |
| -1.-1.-1 | Algorithm failed to produce a solution. |
| 1.A.1 | Tropical Dry Forest & Woodland. |
| 1.A.2 | Tropical Lowland Humid Forest. |
| 1.A.4 | Tropical Flooded & Swamp Forest. |
| 1.B.1 | Warm Temperate Forest & Woodland. |
| 1.B.2 | Cool Temperate Forest & Woodland. |
| 1.B.3 | Temperate Flooded & Swamp Forest. |
| 1.B.4 | Boreal Forest & Woodland. |
| 1.B.5 | Boreal Flooded & Swamp Forest. |
| 7.A.2 | Forest Plantation & Agroforestry. |

11.19.7 NOTE

Note. Any remark relevant to the hierarchy structure record.

11.19.8 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.19.9 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.19.10 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.19.11 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.19.12 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.19.13 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.20 Reference National Vegetation Classification Standard Level 4 Codes Table

(Oracle table name: REF_NVCS_LEVEL_4_CODES)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-----------------------|------------------|
| 11.20.1 | CN | Sequence number | VARCHAR2(34) |
| 11.20.2 | PRIMARY_CLASS | Primary class | VARCHAR2(8) |
| 11.20.3 | HIERARCHY_LEVEL | Hierarchy level | NUMBER(2) |
| 11.20.4 | HIERARCHY_LEVEL_LABEL | Hierarchy level label | VARCHAR2(30) |
| 11.20.5 | NVCS_CODE | NVCS code | VARCHAR2(20) |
| 11.20.6 | MEANING | Meaning | VARCHAR2(100) |
| 11.20.7 | NOTE | Note | VARCHAR2(1000) |
| 11.20.8 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.20.9 | CREATED_DATE | Created date | DATE |
| 11.20.10 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.20.11 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.20.12 | MODIFIED_DATE | Modified date | DATE |
| 11.20.13 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--------------------------|----------------|----------------------|
| Primary | CN | N/A | RNVCSHS4_PK |
| Unique | PRIMARY_CLASS, NVCS_CODE | N/A | RNVCSHS4_UK |

This table defines the codes for the fourth level of the National Vegetation Classification Standard (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](http://www.usnvc.org) (www.usnvc.org) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL ≥1.0).

11.20.1 CN

Sequence number. A unique sequence number used to identify a reference NVCS level 4 codes record.

11.20.2 PRIMARY_CLASS

Primary class. The primary classification determined by the NVCS classification algorithm. 'NATURAL' or 'CULTURAL' are the valid values. As of August 2017, the classification algorithm has only been developed for the eastern continental United States excluding the western edges of the Plains States, Oklahoma, and Texas. This column will only be populated for forested conditions in the supported area.

Note: For more information on the 'NATURAL' and 'CULTURAL' vegetation classifications, refer to the [Plant Communities and Vegetation Classification](#) web page on the USNVC

website (available at web address:
<https://usnvc.org/about/plant-communities-and-vegetation-classification/>).

11.20.3 HIERARCHY_LEVEL

Hierarchy level. An integer value indicating at what level in the National Vegetation Classification Standard hierarchy the current record exists.

11.20.4 HIERARCHY_LEVEL_LABEL

Hierarchy level label. A label assigned to the current level of the NVCS hierarchy.

11.20.5 NVCS_CODE

NVCS code. A code representing the classification at the current level of the NVCS hierarchy.

Codes: NVCS_CODE

| NVCS_CODE | MEANING |
|------------------|--|
| -2.-2.-2.-2 | Algorithm does not support area where the sampling point fell. |
| -1.-1.-1.-1 | Algorithm failed to produce a solution. |
| 1.A.1.Ea | Caribbean-Mesoamerican Dry Forest & Woodland. |
| 1.A.2.Eg | Caribbean-Mesoamerican Lowland Humid Forest. |
| 1.A.4.Ed | Caribbean-Central American Flooded & Swamp Forest. |
| 1.B.1.Na | Southeastern North American Forest & Woodland. |
| 1.B.2.Na | Eastern North American Forest & Woodland. |
| 1.B.2.Ne | North American Great Plains Forest & Woodland. |
| 1.B.3.Na | Eastern North American-Great Plains Flooded & Swamp Forest. |
| 1.B.3.Nb | Southeastern North American Flooded & Swamp Forest. |
| 1.B.4.Na | North American Boreal Forest & Woodland. |
| 1.B.5.Na | North American Boreal Flooded & Swamp Forest. |
| 7.A.2.1 | Forest Plantation. |

11.20.6 MEANING

Meaning. The meaning of the code at the current level of the NVCS hierarchy.

Codes: NVCS_CODE

| NVCS_CODE | MEANING |
|------------------|--|
| -2.-2.-2.-2 | Algorithm does not support area where the sampling point fell. |
| -1.-1.-1.-1 | Algorithm failed to produce a solution. |
| 1.A.1.Ea | Caribbean-Mesoamerican Dry Forest & Woodland. |
| 1.A.2.Eg | Caribbean-Mesoamerican Lowland Humid Forest. |
| 1.A.4.Ed | Caribbean-Central American Flooded & Swamp Forest. |
| 1.B.1.Na | Southeastern North American Forest & Woodland. |
| 1.B.2.Na | Eastern North American Forest & Woodland. |
| 1.B.2.Ne | North American Great Plains Forest & Woodland. |
| 1.B.3.Na | Eastern North American-Great Plains Flooded & Swamp Forest. |

| NVCS_CODE | MEANING |
|-----------|---|
| 1.B.3.Nb | Southeastern North American Flooded & Swamp Forest. |
| 1.B.4.Na | North American Boreal Forest & Woodland. |
| 1.B.5.Na | North American Boreal Flooded & Swamp Forest. |
| 7.A.2.1 | Forest Plantation. |

11.20.7 NOTE

Note. Any remark relevant to the hierarchy structure record.

11.20.8 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.20.9 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.20.10 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.20.11 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.20.12 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.20.13 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.21 Reference National Vegetation Classification Standard Level 5 Codes Table

(Oracle table name: REF_NVCS_LEVEL_5_CODES)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-----------------------|------------------|
| 11.21.1 | CN | Sequence number | VARCHAR2(34) |
| 11.21.2 | PRIMARY_CLASS | Primary class | VARCHAR2(8) |
| 11.21.3 | HIERARCHY_LEVEL | Hierarchy level | NUMBER(2) |
| 11.21.4 | HIERARCHY_LEVEL_LABEL | Hierarchy level label | VARCHAR2(30) |
| 11.21.5 | NVCS_CODE | NVCS code | VARCHAR2(20) |
| 11.21.6 | MEANING | Meaning | VARCHAR2(100) |
| 11.21.7 | NOTE | Note | VARCHAR2(1000) |
| 11.21.8 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.21.9 | CREATED_DATE | Created date | DATE |
| 11.21.10 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.21.11 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.21.12 | MODIFIED_DATE | Modified date | DATE |
| 11.21.13 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--------------------------|----------------|----------------------|
| Primary | CN | N/A | RNVCSHS5_PK |
| Unique | PRIMARY_CLASS, NVCS_CODE | N/A | RNVCSHS5_UK |

This table defines the codes for the fifth level of the National Vegetation Classification Standard (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](http://www.usnvc.org) (www.usnvc.org) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL ≥1.0).

11.21.1 CN

Sequence number. A unique sequence number used to identify a reference NVCS level 5 codes record.

11.21.2 PRIMARY_CLASS

Primary class. The primary classification determined by the NVCS classification algorithm. 'NATURAL' or 'CULTURAL' are the valid values. As of August 2017, the classification algorithm has only been developed for the eastern continental United States excluding the western edges of the Plains States, Oklahoma, and Texas. This column will only be populated for forested conditions in the supported area.

Note: For more information on the 'NATURAL' and 'CULTURAL' vegetation classifications, refer to the [Plant Communities and Vegetation Classification](#) web page on the USNVC

website (available at web address:
<https://usnvc.org/about/plant-communities-and-vegetation-classification/>).¹¹

11.21.3 HIERARCHY_LEVEL

Hierarchy level. An integer value indicating at what level in the National Vegetation Classification Standard hierarchy the current record exists.

11.21.4 HIERARCHY_LEVEL_LABEL

Hierarchy level label. A label assigned to the current level of the NVCS hierarchy.

11.21.5 NVCS_CODE

NVCS code. A code representing the classification at the current level of the NVCS hierarchy.

Codes: NVCS_CODE

| NVCS_CODE | MEANING |
|------------------|---|
| -2.-2.-2.-2.-2 | Algorithm does not support area where the sampling point fell. |
| -1.-1.-1.-1.-1 | Algorithm failed to produce a solution. |
| 1.A.1.Ea.M296 | Caribbean-Mesoamerican Pine Dry Forest. |
| 1.A.1.Ea.M134 | Caribbean Coastal Lowland Dry Forest. |
| 1.A.1.Ea.M294 | Caribbean Dry Limestone Forest. |
| 1.A.1.Ea.M514 | Caribbean Ruderal Dry Forest. |
| 1.A.2.Eg.M281 | Caribbean Lowland Humid Forest. |
| 1.A.4.Ed.M618 | Caribbean Floodplain Forest. |
| 1.A.4.Ed.M617 | Caribbean Swamp Forest. |
| 1.A.4.Ed.M005 | Western Atlantic & Caribbean Mangrove. |
| 1.B.1.Na.M007 | Longleaf Pine Woodland. |
| 1.B.1.Na.M885 | Southeastern Coastal Plain Evergreen Oak - Mixed Hardwood Forest. |
| 1.B.1.Na.M008 | Southern Mesic Mixed Broadleaf Forest. |
| 1.B.1.Na.M305 | Southeastern North American Ruderal Forest. |
| 1.B.2.Na.M016 | Southern & South-Central Oak - Pine Forest & Woodland. |
| 1.B.2.Na.M502 | Appalachian-Northeastern Oak - Hardwood - Pine Forest & Woodland. |
| 1.B.2.Na.M883 | Appalachian-Interior-Northeastern Mesic Forest. |
| 1.B.2.Na.M012 | Central Midwest Oak Forest, Woodland & Savanna. |
| 1.B.2.Na.M882 | Central Midwest Mesic Forest. |
| 1.B.2.Na.M159 | Laurentian-Acadian Pine - Hardwood Forest & Woodland. |
| 1.B.2.Na.M014 | Laurentian-Acadian Mesic Hardwood - Conifer Forest. |
| 1.B.2.Na.M013 | Eastern North American Ruderal Forest. |
| 1.B.2.Ne.M151 | Great Plains Forest & Woodland. |
| 1.B.3.Na.M029 | Central Hardwood Floodplain Forest. |
| 1.B.3.Na.M503 | Central Hardwood Swamp Forest. |
| 1.B.3.Na.M504 | Laurentian-Acadian-North Atlantic Coastal Flooded & Swamp Forest. |
| 1.B.3.Na.M028 | Great Plains Floodplain Forest. |
| 1.B.3.Na.M302 | Eastern North American Ruderal Flooded & Swamp Forest. |

| NVCS_CODE | MEANING |
|--------------------|--|
| 1.B.3.Nb.M161 | Pond-cypress Basin Swamp. |
| 1.B.3.Nb.M033 | Southern Coastal Plain Basin Swamp & Flatwoods. |
| 1.B.3.Nb.M032 | Southern Coastal Plain Evergreen Hardwood - Conifer Swamp. |
| 1.B.3.Nb.M031 | Southern Coastal Plain Floodplain Forest. |
| 1.B.3.Nb.M154 | Southern Great Plains Floodplain Forest & Woodland. |
| 1.B.3.Nb.M310 | Southeastern North American Ruderal Flooded & Swamp Forest. |
| 1.B.3.Nb.M031/M033 | Southern Coastal Plain Floodplain Forest/Southern Coastal Plain Basin Swamp & Flatwoods. |
| 1.B.4.Na.M495 | Eastern North American Boreal Forest. |
| 1.B.4.Na.M179 | North American Boreal Subarctic & Subalpine Woodland. |
| 1.B.5.Na.M299 | North American Boreal Conifer Poor Swamp. |
| 1.B.5.Na.M300 | North American Boreal Flooded & Rich Swamp Forest. |
| 7.A.2.1.1 | Tropical Forest Plantation. |
| 7.A.2.1.2 | Temperate & Boreal Plantation. |

11.21.6 MEANING

Meaning. The meaning of the code at the current level of the NVCS hierarchy.

Codes: MEANING

| NVCS_CODE | MEANING |
|----------------|---|
| -2.-2.-2.-2.-2 | Algorithm does not support area where the sampling point fell. |
| -1.-1.-1.1- | Algorithm failed to produce a solution. |
| 1.A.1.Ea.M296 | Caribbean-Mesoamerican Pine Dry Forest. |
| 1.A.1.Ea.M134 | Caribbean Coastal Lowland Dry Forest. |
| 1.A.1.Ea.M294 | Caribbean Dry Limestone Forest. |
| 1.A.1.Ea.M514 | Caribbean Ruderal Dry Forest. |
| 1.A.2.Eg.M281 | Caribbean Lowland Humid Forest. |
| 1.A.4.Ed.M618 | Caribbean Floodplain Forest. |
| 1.A.4.Ed.M617 | Caribbean Swamp Forest. |
| 1.A.4.Ed.M005 | Western Atlantic & Caribbean Mangrove. |
| 1.B.1.Na.M007 | Longleaf Pine Woodland. |
| 1.B.1.Na.M885 | Southeastern Coastal Plain Evergreen Oak - Mixed Hardwood Forest. |
| 1.B.1.Na.M008 | Southern Mesic Mixed Broadleaf Forest. |
| 1.B.1.Na.M305 | Southeastern North American Ruderal Forest. |
| 1.B.2.Na.M016 | Southern & South-Central Oak - Pine Forest & Woodland. |
| 1.B.2.Na.M502 | Appalachian-Northeastern Oak - Hardwood - Pine Forest & Woodland. |
| 1.B.2.Na.M883 | Appalachian-Interior-Northeastern Mesic Forest. |
| 1.B.2.Na.M012 | Central Midwest Oak Forest, Woodland & Savanna. |
| 1.B.2.Na.M882 | Central Midwest Mesic Forest. |
| 1.B.2.Na.M159 | Laurentian-Acadian Pine - Hardwood Forest & Woodland. |

| NVCS_CODE | MEANING |
|--------------------|--|
| 1.B.2.Na.M014 | Laurentian-Acadian Mesic Hardwood - Conifer Forest. |
| 1.B.2.Na.M013 | Eastern North American Ruderal Forest. |
| 1.B.2.Ne.M151 | Great Plains Forest & Woodland. |
| 1.B.3.Na.M029 | Central Hardwood Floodplain Forest. |
| 1.B.3.Na.M503 | Central Hardwood Swamp Forest. |
| 1.B.3.Na.M504 | Laurentian-Acadian-North Atlantic Coastal Flooded & Swamp Forest. |
| 1.B.3.Na.M028 | Great Plains Floodplain Forest. |
| 1.B.3.Na.M302 | Eastern North American Ruderal Flooded & Swamp Forest. |
| 1.B.3.Nb.M161 | Pond-cypress Basin Swamp. |
| 1.B.3.Nb.M033 | Southern Coastal Plain Basin Swamp & Flatwoods. |
| 1.B.3.Nb.M032 | Southern Coastal Plain Evergreen Hardwood - Conifer Swamp. |
| 1.B.3.Nb.M031 | Southern Coastal Plain Floodplain Forest. |
| 1.B.3.Nb.M154 | Southern Great Plains Floodplain Forest & Woodland. |
| 1.B.3.Nb.M310 | Southeastern North American Ruderal Flooded & Swamp Forest. |
| 1.B.3.Nb.M031/M033 | Southern Coastal Plain Floodplain Forest/Southern Coastal Plain Basin Swamp & Flatwoods. |
| 1.B.4.Na.M495 | Eastern North American Boreal Forest. |
| 1.B.4.Na.M179 | North American Boreal Subarctic & Subalpine Woodland. |
| 1.B.5.Na.M299 | North American Boreal Conifer Poor Swamp. |
| 1.B.5.Na.M300 | North American Boreal Flooded & Rich Swamp Forest. |
| 7.A.2.1.1 | Tropical Forest Plantation. |
| 7.A.2.1.2 | Temperate & Boreal Plantation. |

11.21.7 NOTE

Note. Any remark relevant to the hierarchy structure record.

11.21.8 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.21.9 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.21.10 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.21.11 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.21.12 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.21.13 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.22 Reference National Vegetation Classification Standard Level 6 Codes Table

(Oracle table name: REF_NVCS_LEVEL_6_CODES)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-----------------------|------------------|
| 11.22.1 | CN | Sequence number | VARCHAR2(34) |
| 11.22.2 | PRIMARY_CLASS | Primary class | VARCHAR2(8) |
| 11.22.3 | HIERARCHY_LEVEL | Hierarchy level | NUMBER(2) |
| 11.22.4 | HIERARCHY_LEVEL_LABEL | Hierarchy level label | VARCHAR2(30) |
| 11.22.5 | NVCS_CODE | NVCS code | VARCHAR2(20) |
| 11.22.6 | MEANING | Meaning | VARCHAR2(100) |
| 11.22.7 | NOTE | Note | VARCHAR2(1000) |
| 11.22.8 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.22.9 | CREATED_DATE | Created date | DATE |
| 11.22.10 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.22.11 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.22.12 | MODIFIED_DATE | Modified date | DATE |
| 11.22.13 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--------------------------|----------------|----------------------|
| Primary | CN | N/A | RNVCSHS6_PK |
| Unique | PRIMARY_CLASS, NVCS_CODE | N/A | RNVCSHS6_UK |

This table defines the codes for the sixth level of the National Vegetation Classification Standard (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](http://www.usnvc.org) (www.usnvc.org) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL ≥1.0).

11.22.1 CN

Sequence number. A unique sequence number used to identify a reference NVCS level 6 codes record.

11.22.2 PRIMARY_CLASS

Primary class. The primary classification determined by the NVCS classification algorithm. 'CULTURAL' is the valid value. As of August 2017, the classification algorithm has only been developed for the eastern continental United States excluding the western edges of the Plains States, Oklahoma, and Texas. This column will only be populated for forested conditions in the supported area.

Note: For more information on the 'NATURAL' and 'CULTURAL' vegetation classifications, refer to the [Plant Communities and Vegetation Classification](#) web page on the USNVC

website (available at web address:
<https://usnvc.org/about/plant-communities-and-vegetation-classification/>).

11.22.3 HIERARCHY_LEVEL

Hierarchy level. An integer value indicating at what level in the National Vegetation Classification Standard hierarchy the current record exists.

11.22.4 HIERARCHY_LEVEL_LABEL

Hierarchy level label. A label assigned to the current level of the NVCS hierarchy.

11.22.5 NVCS_CODE

NVCS code. A code representing the classification at the current level of the NVCS hierarchy.

Codes: NVCS_CODE

| NVCS_CODE | MEANING |
|-------------------|--|
| -2.-2.-2.-2.-2.-2 | Algorithm does not support area where the sampling point fell. |
| -1.-1.-1.-1.-1.-1 | Algorithm failed to produce a solution. |
| 7.A.2.1.1.a | Caribbean Forest Plantation. |
| 7.A.2.1.2.a | Eastern North American Temperate Forest Plantation. |

11.22.6 MEANING

Meaning. The meaning of the code at the current level of the NVCS hierarchy.

Codes: MEANING

| NVCS_CODE | MEANING |
|-------------------|--|
| -2.-2.-2.-2.-2.-2 | Algorithm does not support area where the sampling point fell. |
| -1.-1.-1.-1.-1.-1 | Algorithm failed to produce a solution. |
| 7.A.2.1.1.a | Caribbean Forest Plantation. |
| 7.A.2.1.2.a | Eastern North American Temperate Forest Plantation. |

11.22.7 NOTE

Note. Any remark relevant to the hierarchy structure record.

11.22.8 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.22.9 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.22.10 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.22.11 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.22.12 MODIFIED_DATE

Modified date. See SURVEY.[MODIFIED_DATE](#) description for definition.

11.22.13 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

11.23 Reference National Vegetation Classification Standard Level 7 Codes Table

(Oracle table name: REF_NVCS_LEVEL_7_CODES)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-----------------------|------------------|
| 11.23.1 | CN | Sequence number | VARCHAR2(34) |
| 11.23.2 | PRIMARY_CLASS | Primary class | VARCHAR2(8) |
| 11.23.3 | HIERARCHY_LEVEL | Hierarchy level | NUMBER(2) |
| 11.23.4 | HIERARCHY_LEVEL_LABEL | Hierarchy level label | VARCHAR2(30) |
| 11.23.5 | NVCS_CODE | NVCS code | VARCHAR2(20) |
| 11.23.6 | MEANING | Meaning | VARCHAR2(100) |
| 11.23.7 | NOTE | Note | VARCHAR2(1000) |
| 11.23.8 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.23.9 | CREATED_DATE | Created date | DATE |
| 11.23.10 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.23.11 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.23.12 | MODIFIED_DATE | Modified date | DATE |
| 11.23.13 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--------------------------|----------------|----------------------|
| Primary | CN | N/A | RNVCSHS7_PK |
| Unique | PRIMARY_CLASS, NVCS_CODE | N/A | RNVCSHS7_UK |

This table defines the codes for the seventh level of the National Vegetation Classification Standard (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](http://www.usnvc.org) (www.usnvc.org) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL ≥1.0).

11.23.1 CN

Sequence number. A unique sequence number used to identify a reference NVCS level 7 codes record.

11.23.2 PRIMARY_CLASS

Primary class. The primary classification determined by the NVCS classification algorithm. 'CULTURAL' is the valid value. As of August 2017, the classification algorithm has only been developed for the eastern continental United States excluding the western edges of the Plains States, Oklahoma, and Texas. This column will only be populated for forested conditions in the supported area.

Note: For more information on the 'NATURAL' and 'CULTURAL' vegetation classifications, refer to the [Plant Communities and Vegetation Classification](#) web page on the USNVC

website (available at web address:
<https://usnvc.org/about/plant-communities-and-vegetation-classification/>).

11.23.3 HIERARCHY_LEVEL

Hierarchy level. An integer value indicating at what level in the National Vegetation Classification Standard hierarchy the current record exists.

11.23.4 HIERARCHY_LEVEL_LABEL

Hierarchy level label. A label assigned to the current level of the NVCS hierarchy.

11.23.5 NVCS_CODE

NVCS code. A code representing the classification at the current level of the NVCS hierarchy.

Codes: NVCS_CODE

| NVCS_CODE | MEANING |
|-------------------|--|
| -2.-2.-2.-2.-2.-2 | Algorithm does not support area where the sampling point fell. |
| -1.-1.-1.-1.-1.-1 | Algorithm failed to produce a solution. |
| 7.A.2.1.1.a.2 | Exotic Caribbean Conifer Plantation. |
| 7.A.2.1.1.a.3 | Native Caribbean Hardwood Plantation. |
| 7.A.2.1.1.a.5 | Exotic Caribbean Palm Plantation. |
| 7.A.2.1.2.a.11 | Exotic Southern Hardwood Plantation. |
| 7.A.2.1.2.a.1 | Native Northern Pine Plantation. |
| 7.A.2.1.2.a.5 | Native Miscellaneous Southern Conifer Plantation. |
| 7.A.2.1.2.a.6 | Exotic Northern Conifer Plantation. |
| 7.A.2.1.2.a.7 | Exotic Southern Conifer Plantation. |

11.23.6 MEANING

Meaning. The meaning of the code at the current level of the NVCS hierarchy.

Codes: MEANING

| NVCS_CODE | MEANING |
|-------------------|--|
| -2.-2.-2.-2.-2.-2 | Algorithm does not support area where the sampling point fell. |
| -1.-1.-1.-1.-1.-1 | Algorithm failed to produce a solution. |
| 7.A.2.1.1.a.2 | Exotic Caribbean Conifer Plantation. |
| 7.A.2.1.1.a.3 | Native Caribbean Hardwood Plantation. |
| 7.A.2.1.1.a.5 | Exotic Caribbean Palm Plantation. |
| 7.A.2.1.2.a.11 | Exotic Southern Hardwood Plantation. |
| 7.A.2.1.2.a.1 | Native Northern Pine Plantation. |
| 7.A.2.1.2.a.5 | Native Miscellaneous Southern Conifer Plantation. |
| 7.A.2.1.2.a.6 | Exotic Northern Conifer Plantation. |
| 7.A.2.1.2.a.7 | Exotic Southern Conifer Plantation. |

11.23.7 NOTE

Note. Any remark relevant to the hierarchy structure record.

11.23.8 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.23.9 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.23.10 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.23.11 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.23.12 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.23.13 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.24 Reference National Vegetation Classification Standard Level 8 Codes Table

(Oracle table name: REF_NVCS_LEVEL_8_CODES)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|-----------------------|------------------|
| 11.24.1 | CN | Sequence number | VARCHAR2(34) |
| 11.24.2 | PRIMARY_CLASS | Primary class | VARCHAR2(8) |
| 11.24.3 | HIERARCHY_LEVEL | Hierarchy level | NUMBER(2) |
| 11.24.4 | HIERARCHY_LEVEL_LABEL | Hierarchy level label | VARCHAR2(30) |
| 11.24.5 | NVCS_CODE | NVCS code | VARCHAR2(25) |
| 11.24.6 | MEANING | Meaning | VARCHAR2(100) |
| 11.24.7 | NOTE | Note | VARCHAR2(1000) |
| 11.24.8 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.24.9 | CREATED_DATE | Created date | DATE |
| 11.24.10 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.24.11 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.24.12 | MODIFIED_DATE | Modified date | DATE |
| 11.24.13 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|--------------------------|----------------|----------------------|
| Primary | CN | N/A | RNVCSHS8_PK |
| Unique | PRIMARY_CLASS, NVCS_CODE | N/A | RNVCSHS8_UK |

This table defines the codes for the eighth level of the National Vegetation Classification Standard (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](http://www.usnvc.org) (www.usnvc.org) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL ≥1.0).

11.24.1 CN

Sequence number. A unique sequence number used to identify a reference NVCS level 8 codes record.

11.24.2 PRIMARY_CLASS

Primary class. The primary classification determined by the NVCS classification algorithm. 'CULTURAL' is the valid values. As of August 2017, the classification algorithm has only been developed for the eastern continental United States excluding the western edges of the Plains States, Oklahoma, and Texas. This column will only be populated for forested conditions in the supported area.

Note: For more information on the 'NATURAL' and 'CULTURAL' vegetation classifications, refer to the [Plant Communities and Vegetation Classification](#) web page on the USNVC

website (available at web address:
<https://usnvc.org/about/plant-communities-and-vegetation-classification/>).

11.24.3 HIERARCHY_LEVEL

Hierarchy level. An integer value indicating at what level in the National Vegetation Classification Standard hierarchy the current record exists.

11.24.4 HIERARCHY_LEVEL_LABEL

Hierarchy level label. A label assigned to the current level of the NVCS hierarchy.

11.24.5 NVCS_CODE

NVCS code. A code representing the classification at the current level of the NVCS hierarchy.

Codes: NVCS_CODE

| NVCS_CODE | MEANING |
|--------------------------|--|
| -2.-2.-2.-2.-2.-2.-2 | Algorithm does not support area where the sampling point fell. |
| -1.-1.-1.-1.-1.-1.-1 | Algorithm failed to produce a solution. |
| 7.A.2.1.1.a.2.CST008393 | Honduras Pine Plantation. |
| 7.A.2.1.1.a.3.CST008394 | Beach She-oak Plantation. |
| 7.A.2.1.1.a.5.CST003512 | Coconut Palm Plantation. |
| 7.A.2.1.2.a.11.CST008451 | Sawtooth Oak Wildlife Planting. |
| 7.A.2.1.1.a.5.CST007178 | Eastern White Pine Plantation. |
| 7.A.2.1.1.a.5.CST007161 | Jack Pine Plantation. |
| 7.A.2.1.1.a.5.CST006902 | Native Miscellaneous Northern Pine Plantation. |
| 7.A.2.1.1.a.5.CST007177 | Red Pine Plantation. |
| 7.A.2.1.1.a.5.CST007182 | Balsam Fir Plantation. |
| 7.A.2.1.1.a.5.CST004758 | Red Spruce Plantation. |
| 7.A.2.1.1.a.5.CST007164 | White Spruce Plantation. |
| 7.A.2.1.2.a.1.CST007187 | Exotic Miscellaneous Southern Conifer Plantation. |
| 7.A.2.1.2.a.1.CST007179 | Loblolly Pine Plantation. |
| 7.A.2.1.2.a.1.CST007176 | Longleaf Pine Plantation. |
| 7.A.2.1.2.a.1.CST007171 | Mid- to Late-Successional Slash Pine Managed Forest. |
| 7.A.2.1.2.a.1.CST008436 | Pitch Pine Plantation. |
| 7.A.2.1.2.a.1.CST007168 | Sand Pine Plantation. |
| 7.A.2.1.2.a.1.CST007169 | Shortleaf Pine Plantation. |
| 7.A.2.1.2.a.1.CST007170 | Slash Pine Plantation. |
| 7.A.2.1.2.a.1.CST004730 | Virginia Pine Plantation. |
| 7.A.2.1.2.a.1.CST007108 | West Gulf Coastal Plain Managed Loblolly Pine Forest. |
| 7.A.2.1.2.a.1.CST003760 | West Gulf Coastal Plain Mature, Managed Shortleaf Pine Forest. |
| 7.A.2.1.2.a.5.CST007452 | Bald-cypress Plantation. |
| 7.A.2.1.2.a.5.CST007183 | Exotic Miscellaneous Northern Conifer Plantation. |
| 7.A.2.1.2.a.5.CST006408 | Larch Plantation. |
| 7.A.2.1.2.a.5.CST006313 | Mixed Pine Conifer Plantation. |

| NVCS_CODE | MEANING |
|-------------------------|--|
| 7.A.2.1.2.a.5.CST007167 | Norway Spruce Plantation. |
| 7.A.2.1.2.a.5.CST006686 | Scotch Pine Plantation. |
| 7.A.2.1.2.a.5.CST007189 | Aspen Plantation. |
| 7.A.2.1.2.a.5.CST007190 | Black Locust Plantation. |
| 7.A.2.1.2.a.5.CST007188 | Black Walnut Plantation. |
| 7.A.2.1.2.a.5.CST007193 | Native Miscellaneous Northern Hardwood Plantation. |
| 7.A.2.1.2.a.6.CST007945 | Maritime Pine Plantation. |
| 7.A.2.1.2.a.7.CST004482 | Eastern Cottonwood Plantation. |
| 7.A.2.1.2.a.7.CST007155 | Miscellaneous Southern Hardwood Plantation. |
| 7.A.2.1.2.a.7.CST003740 | Pecan Plantation. |
| 7.A.2.1.2.a.7.CST007450 | Sweetgum Plantation. |
| 7.A.2.1.2.a.7.CST007451 | Sycamore Plantation. |
| 7.A.2.1.2.a.7.CST007197 | Tuliptree Plantation. |

11.24.6 MEANING

Meaning. The meaning of the code at the current level of the NVCS hierarchy.

Codes: MEANING

| NVCS_CODE | MEANING |
|--------------------------|--|
| 2.-2.-2.-2.-2.-2.-2 | Algorithm does not support area where the sampling point fell. |
| -1.-1.-1.-1.-1.-1.-1 | Algorithm failed to produce a solution. |
| 7.A.2.1.1.a.2.CST008393 | Honduras Pine Plantation. |
| 7.A.2.1.1.a.3.CST008394 | Beach She-oak Plantation. |
| 7.A.2.1.1.a.5.CST003512 | Coconut Palm Plantation. |
| 7.A.2.1.2.a.11.CST008451 | Sawtooth Oak Wildlife Planting. |
| 7.A.2.1.1.a.5.CST007178 | Eastern White Pine Plantation. |
| 7.A.2.1.1.a.5.CST007161 | Jack Pine Plantation. |
| 7.A.2.1.1.a.5.CST006902 | Native Miscellaneous Northern Pine Plantation. |
| 7.A.2.1.1.a.5.CST007177 | Red Pine Plantation. |
| 7.A.2.1.1.a.5.CST007182 | Balsam Fir Plantation. |
| 7.A.2.1.1.a.5.CST004758 | Red Spruce Plantation. |
| 7.A.2.1.1.a.5.CST007164 | White Spruce Plantation. |
| 7.A.2.1.2.a.1.CST007187 | Exotic Miscellaneous Southern Conifer Plantation. |
| 7.A.2.1.2.a.1.CST007179 | Loblolly Pine Plantation. |
| 7.A.2.1.2.a.1.CST007176 | Longleaf Pine Plantation. |
| 7.A.2.1.2.a.1.CST007171 | Mid- to Late-Successional Slash Pine Managed Forest. |
| 7.A.2.1.2.a.1.CST008436 | Pitch Pine Plantation. |
| 7.A.2.1.2.a.1.CST007168 | Sand Pine Plantation. |
| 7.A.2.1.2.a.1.CST007169 | Shortleaf Pine Plantation. |
| 7.A.2.1.2.a.1.CST007170 | Slash Pine Plantation. |

| NVCS_CODE | MEANING |
|-------------------------|--|
| 7.A.2.1.2.a.1.CST004730 | Virginia Pine Plantation. |
| 7.A.2.1.2.a.1.CST007108 | West Gulf Coastal Plain Managed Loblolly Pine Forest. |
| 7.A.2.1.2.a.1.CST003760 | West Gulf Coastal Plain Mature, Managed Shortleaf Pine Forest. |
| 7.A.2.1.2.a.5.CST007452 | Bald-cypress Plantation. |
| 7.A.2.1.2.a.5.CST007183 | Exotic Miscellaneous Northern Conifer Plantation. |
| 7.A.2.1.2.a.5.CST006408 | Larch Plantation. |
| 7.A.2.1.2.a.5.CST006313 | Mixed Pine Conifer Plantation. |
| 7.A.2.1.2.a.5.CST007167 | Norway Spruce Plantation. |
| 7.A.2.1.2.a.5.CST006686 | Scotch Pine Plantation. |
| 7.A.2.1.2.a.5.CST007189 | Aspen Plantation. |
| 7.A.2.1.2.a.5.CST007190 | Black Locust Plantation. |
| 7.A.2.1.2.a.5.CST007188 | Black Walnut Plantation. |
| 7.A.2.1.2.a.5.CST007193 | Native Miscellaneous Northern Hardwood Plantation. |
| 7.A.2.1.2.a.6.CST007945 | Maritime Pine Plantation. |
| 7.A.2.1.2.a.7.CST004482 | Eastern Cottonwood Plantation. |
| 7.A.2.1.2.a.7.CST007155 | Miscellaneous Southern Hardwood Plantation. |
| 7.A.2.1.2.a.7.CST003740 | Pecan Plantation. |
| 7.A.2.1.2.a.7.CST007450 | Sweetgum Plantation. |
| 7.A.2.1.2.a.7.CST007451 | Sycamore Plantation. |
| 7.A.2.1.2.a.7.CST007197 | Tuliptree Plantation. |

11.24.7 NOTE

Note. Any remark relevant to the hierarchy structure record.

11.24.8 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.24.9 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.24.10 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.24.11 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.24.12 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.24.13 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.25 Reference Damage Agent Table

(Oracle table name: REF_DAMAGE_AGENT)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---------------------------------|------------------|
| 11.25.1 | CODE | Damage agent code | NUMBER(5) |
| 11.25.2 | COMMON_NAME | Common name of damage agent | VARCHAR2(80) |
| 11.25.3 | SCIENTIFIC_NAME | Scientific name of damage agent | VARCHAR2(80) |
| 11.25.4 | THRESHOLD | Threshold for damage agent | VARCHAR2(2000) |
| 11.25.5 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.25.6 | CREATED_DATE | Created date | DATE |
| 11.25.7 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.25.8 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.25.9 | MODIFIED_DATE | Modified date | DATE |
| 11.25.10 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 11.25.11 | DAG_CODE | Damage agent group code | NUMBER(5) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|---|----------------------|
| Primary | CODE | N/A | DA_PK |
| Foreign | DAG_CODE | REF_DAMAGE_AGENT to REF_DAMAGE_AGENT_GROUP | DA_DAG_FK |

11.25.1 CODE

Damage agent code. The code assigned to a tree damage agent. The current list of damage agents used by FIA became national (*core*) starting with version 6.0 of the National Field Guide. Damage is a composite variable. Up to three damaging agents may be recorded per tree. Many damaging agents are host specific and their potential for damage could vary by region. Refer to [appendix H](#) for damage agent codes and thresholds. Refer to regional field guides for further detail describing when tree damage agents are to be recorded.

11.25.2 COMMON_NAME

Common name of damage agent. The common name assigned to the tree damage agent.

11.25.3 SCIENTIFIC_NAME

Scientific name of damage agent. The scientific name assigned to the tree damage agent.

11.25.4 THRESHOLD

Threshold for damage agent. The threshold required for a tree damage agent to be recorded. Refer to [appendix H](#) for damage agent codes and thresholds. Refer to regional field guides for further detail describing when tree damage agents are to be recorded.

11.25.5 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.25.6 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.25.7 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.25.8 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.25.9 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.25.10 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.25.11 DAG_CODE

Damage agent group code. The code assigned to a tree damage agent group (see CODE for the specific agent code). The current list of damage agents used by FIA became national (*core*) starting with version 6.0 of the National Field Guide. Damage is a composite variable. Up to three damaging agents may be recorded per tree. Many damaging agents are host specific and their potential for damage could vary by region. Refer to appendix H for damage agent codes and thresholds. Refer to regional field guides for further detail describing when tree damage agents are to be recorded.

11.26 Reference Damage Agent Group Table

(Oracle table name: REF_DAMAGE_AGENT_GROUP)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--------------------------------|------------------|
| 11.26.1 | CODE | Damage agent group code | NUMBER(5) |
| 11.26.2 | DESCRIPTION | Damage agent group description | VARCHAR2(80) |
| 11.26.3 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.26.4 | CREATED_DATE | Created date | DATE |
| 11.26.5 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.26.6 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.26.7 | MODIFIED_DATE | Modified date | DATE |
| 11.26.8 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | CODE | N/A | DAG_PK |

11.26.1 CODE

Damage agent group code. The code assigned to a tree damage agent group. The current list of damage agents used by FIA became national (*core*) starting with version 6.0 of the National Field Guide. Damage is a composite variable. Up to three damaging agents may be recorded per tree. Many damaging agents are host specific and their potential for damage could vary by region. Refer to [appendix H](#) for damage agent codes and thresholds. Refer to regional field guides for further detail describing when tree damage agents are to be recorded.

Codes: Code

| Code | Description |
|-------|---------------------------------|
| 0 | No damage. |
| 10000 | General Insects. |
| 11000 | Bark Beetles. |
| 12000 | Defoliators. |
| 13000 | Chewing Insects. |
| 14000 | Sucking Insects. |
| 15000 | Boring Insects. |
| 16000 | Seed/Cone/Flower/Fruit Insects. |
| 17000 | Gallmaker. |
| 18000 | Insect redators. |
| 19000 | General Diseases. |
| 20000 | Biotic Damage. |
| 21000 | Root/Butt Diseases. |

| Code | Description |
|-------------|----------------------------------|
| 22000 | Cankers. |
| 22500 | Stem Decay. |
| 23000 | Parasitic/Epiphytic Plants. |
| 24000 | Decline Complexes/Dieback/Wilts. |
| 25000 | Foliage diseases. |
| 26000 | Stem Rusts. |
| 27000 | Broom Rusts. |
| 30000 | Fire. |
| 41000 | Wild Animals. |
| 42000 | Domestic Animals. |
| 50000 | Abiotic Damage. |
| 60000 | Competition. |
| 70000 | Human Activities. |
| 71000 | Harvest. |
| 80000 | Multi-Damage (Insects/Disease). |
| 85000 | Invasive Plants. |
| 90000 | Other Damages and Symptoms. |
| 99000 | UNKNOWN. |

11.26.2 DESCRIPTION

Damage agent group description. The general title assigned to the damage agent group (e.g., Bark Beetles, Defoliators, Boring Insects, Cankers, Stem Rusts, Fire).

11.26.3 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.26.4 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.26.5 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.26.6 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.26.7 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.26.8 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.27 Reference Forest Vegetation Simulator Variant Name Table

(Oracle table name: REF_FVS_VAR_NAME)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 11.27.1 | CN | Sequence number | VARCHAR2(34) |
| 11.27.2 | FVS_VARIANT | Forest vegetation simulator variant | VARCHAR2(2) |
| 11.27.3 | FVS_VAR_NAME | Forest vegetation simulator variant name | VARCHAR2(65) |
| 11.27.4 | MANUAL_START | Manual start | NUMBER(3,1) |
| 11.27.5 | MANUAL_END | Manual end | NUMBER(3,1) |
| 11.27.6 | ALLOWED_IN_FIELD | Allowed in field | VARCHAR2(1) |
| 11.27.7 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.27.8 | CREATED_DATE | Created date | DATE |
| 11.27.9 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.27.10 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.27.11 | MODIFIED_DATE | Modified date | DATE |
| 11.27.12 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | CN | N/A | RFVN_PK |

11.27.1 CN

Sequence number. A unique sequence number used to identify a reference forest vegetation simulator variant name record.

11.27.2 FVS_VARIANT

Forest vegetation simulator variant. A code indicating the Forest Vegetation Simulator (FVS) geographic variant assigned to the plot. The assignment is derived using a spatial intersection of PLOT.LAT and PLOT.LON, and the official Forest Vegetation Simulator variant map.

Codes: FVS_VARIANT

| Code | Description |
|-------------|--|
| AK | Southeast Alaska and Coastal British Columbia (SEAPROG). |
| BM | Blue Mountains. |
| CA | Inland California and Southern Cascades (ICASCA). |
| CI | Central Idaho. |
| CR | Central Rockies. |
| C9 | Central States. |
| EC | Eastern Cascades. |
| EM | Eastern Montana. |
| IE | Inland Empire. |
| LS | Lake States. |
| NC | Northern California (Klamath Mountains). |
| NE | Northeast. |
| PN | Pacific Northwest Coast. |
| SN | Southern. |
| SO | South Central Oregon and Northwest California (SORNEC). |
| TT | Tetons. |
| UT | Utah. |
| WC | Westside Cascades. |
| WS | Western Sierra Nevada. |

11.27.3 FVS_VAR_NAME

Forest vegetation simulator variant name. The name assigned to the FVS variant. See [FVS_VARIANT](#) for code names.

11.27.4 MANUAL_START

Manual start. The first version of the Field Guide (PLOT.[MANUAL](#)) that the species variant was valid.

11.27.5 MANUAL_END

Manual end. The last version of the Field Guide (PLOT.[MANUAL](#)) that the species variant was valid. When MANUAL_END is blank (null), the variant is still valid.

11.27.6 ALLOWED_IN_FIELD

Allowed in field. An indicator to show if a code (VALUE) is allowed to be used by the field crews. This is a Yes / No ('Y' / 'N') field.

11.27.7 CREATED_BY

Created by. See SURVEY.[CREATED_BY](#) description for definition.

11.27.8 CREATED_DATE

Created date. See SURVEY.[CREATED_DATE](#) description for definition.

11.27.9 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.27.10 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.27.11 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.27.12 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.28 Reference Forest Vegetation Simulator Location Name Table

(Oracle table name: REF_FVS_LOC_NAME)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 11.28.1 | CN | Sequence number | VARCHAR2(34) |
| 11.28.2 | FVS_LOC_CD | Forest vegetation simulator location code | VARCHAR2(6) |
| 11.28.3 | FVS_LOC_CD_NAME | Forest vegetation simulator location code name | VARCHAR2(70) |
| 11.28.4 | MANUAL_START | Manual start | NUMBER(3,1) |
| 11.28.5 | MANUAL_END | Manual end | NUMBER(3,1) |
| 11.28.6 | ALLOWED_IN_FIELD | Allowed in field | VARCHAR2(1) |
| 11.28.7 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.28.8 | CREATED_DATE | Created date | DATE |
| 11.28.9 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.28.10 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.28.11 | MODIFIED_DATE | Modified date | DATE |
| 11.28.12 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | FVS_LOC_CD | N/A | RFLN_PK |

11.28.1 CN

Sequence number. A unique sequence number used to identify a reference forest vegetation simulator location name record.

11.28.2 FVS_LOC_CD

Forest vegetation simulator location code. A code indicating the National Forest System location assigned to the plot using a spatial intersection of PLOT, LAT and PLOT.LON, and the official Forest Vegetation Simulator variant map. All FIA plot locations that fall within the boundary of an FVS geographic variant are assigned a location code, regardless of the ownership on which they occur. FVS_LOC_CD is stored in the format RRFF, with RR being NFS Region codes 01-06, 08-10 or other jurisdictions/ownerships (07), and FF being NFS Forest codes. There is an exception to this format when the plot falls within the boundary of the Southern (SN) variant, where the format is RFFFDD, with R being NFS Region code (8), FF being NFS Forest codes, and DD being the NFS District code. See [appendix M](#) for codes.

11.28.3 FVS_LOC_CD_NAME

Forest vegetation simulator location code name. The name assigned to the FVS location code. See [appendix M](#) for codes.

11.28.4 MANUAL_START

Manual start. The first version of the Field Guide (PLOT.MANUAL) that the species variant was valid.

11.28.5 MANUAL_END

Manual end. The last version of the Field Guide (PLOT.MANUAL) that the species variant was valid. When MANUAL_END is blank (null), the variant is still valid.

11.28.6 ALLOWED_IN_FIELD

Allowed in field. An indicator to show if a code (VALUE) is allowed to be used by the field crews. This is a Yes / No ('Y' / 'N') field.

11.28.7 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.28.8 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.28.9 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.28.10 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.28.11 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.28.12 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.29 Reference Owner Group Code Table

(Oracle table name: REF_OWNGRPCD)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--------------------------|------------------|
| 11.29.1 | OWNGRPCD | Owner group code | NUMBER(2) |
| 11.29.2 | MEANING | Owner group code meaning | VARCHAR2(100) |
| 11.29.3 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.29.4 | CREATED_DATE | Created date | DATE |
| 11.29.5 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.29.6 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.29.7 | MODIFIED_DATE | Modified date | DATE |
| 11.29.8 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | OWNGRPCD | N/A | REF_OWNGRPCD_PK |

11.29.1 OWNGRPCD

Owner group code. (*core for all accessible forest land; core optional for other sampled land*) A broader group of landowner classes than owner class code (COND.OWNCD). When PLOT.DESIGNCD = 999, OWNGRPCD may be blank (null). See COND.[OWNGRPCD](#) for codes.

11.29.2 MEANING

Owner group code meaning. The description assigned to the OWNGRPCD. See COND.[OWNGRPCD](#) for codes and descriptions.

11.29.3 CREATED_BY

Created by. See SURVEY.[CREATED_BY](#) description for definition.

11.29.4 CREATED_DATE

Created date. See SURVEY.[CREATED_DATE](#) description for definition.

11.29.5 CREATED_IN_INSTANCE

Created in instance. See SURVEY.[CREATED_IN_INSTANCE](#) description for definition.

11.29.6 MODIFIED_BY

Modified by. See SURVEY.[MODIFIED_BY](#) description for definition.

11.29.7 MODIFIED_DATE

Modified date. See SURVEY.[MODIFIED_DATE](#) description for definition.

11.29.8 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

11.30 Reference Difference Test Per Acre Table

(Oracle table name: REF_DIFFERENCE_TEST_PER_ACRE)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------------------|------------------|
| 11.30.1 | CN | Sequence number | VARCHAR2(34) |
| 11.30.2 | COMPARISON | Comparison | VARCHAR2(4000) |
| 11.30.3 | COMPARISON_TYPE | Comparison type | VARCHAR2(4000) |
| 11.30.4 | ATTRIBUTE_NBR | Attribute number | VARCHAR2(10) |
| 11.30.5 | SCRIPT | Script | VARCHAR2(4000) |
| 11.30.6 | COMMENT_1 | Comment 1 | VARCHAR2(4000) |
| 11.30.7 | SQL_COL_1 | SQL script section for column 1 | VARCHAR2(4000) |
| 11.30.8 | COMMENT_2 | Comment 2 | VARCHAR2(4000) |
| 11.30.9 | SQL_COL_2 | SQL script section for column 2 | VARCHAR2(4000) |
| 11.30.10 | COMMENT_3 | Comment 3 | VARCHAR2(4000) |
| 11.30.11 | SQL_COL_3 | SQL script section for column 3 | VARCHAR2(4000) |
| 11.30.12 | COMMENT_4 | Comment 4 | VARCHAR2(4000) |
| 11.30.13 | SQL_COL_4 | SQL script section for column 4 | VARCHAR2(4000) |
| 11.30.14 | COMMENT_5 | Comment 5 | VARCHAR2(4000) |
| 11.30.15 | SQL_COL_5 | SQL script section for column 5 | VARCHAR2(4000) |
| 11.30.16 | COMMENT_6 | Comment 6 | VARCHAR2(4000) |
| 11.30.17 | SQL_COL_6 | SQL script section for column 6 | VARCHAR2(4000) |
| 11.30.18 | COMMENT_7 | Comment 7 | VARCHAR2(4000) |
| 11.30.19 | SQL_COL_7 | SQL script section for column 7 | VARCHAR2(4000) |
| 11.30.20 | COMMENT_8 | Comment 8 | VARCHAR2(4000) |
| 11.30.21 | SQL_COL_8 | SQL script section for column 8 | VARCHAR2(4000) |
| 11.30.22 | COMMENT_9 | Comment 9 | VARCHAR2(4000) |
| 11.30.23 | SQL_COL_9 | SQL script section for column 9 | VARCHAR2(4000) |
| 11.30.24 | COMMENT_10 | Comment 10 | VARCHAR2(4000) |
| 11.30.25 | SQL_COL_10 | SQL script section for column 10 | VARCHAR2(4000) |
| 11.30.26 | COMMENT_11 | Comment 11 | VARCHAR2(4000) |
| 11.30.27 | SQL_COL_11 | SQL script section for column 11 | VARCHAR2(4000) |
| 11.30.28 | COMMENT_12 | Comment 12 | VARCHAR2(4000) |
| 11.30.29 | SQL_COL_12 | SQL script section for column 12 | VARCHAR2(4000) |
| 11.30.30 | COMMENT_13 | Comment 13 | VARCHAR2(4000) |
| 11.30.31 | SQL_COL_13 | SQL script section for column 13 | VARCHAR2(4000) |
| 11.30.32 | COMMENT_14 | Comment 14 | VARCHAR2(4000) |
| 11.30.33 | SQL_COL_14 | SQL script section for column 14 | VARCHAR2(4000) |
| 11.30.34 | COMMENT_15 | Comment 15 | VARCHAR2(4000) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------------------|------------------|
| 11.30.35 | SQL_COL_15 | SQL script section for column 15 | VARCHAR2(4000) |
| 11.30.36 | COMMENT_16 | Comment 16 | VARCHAR2(4000) |
| 11.30.37 | SQL_COL_16 | SQL script section for column 16 | VARCHAR2(4000) |
| 11.30.38 | COMMENT_17 | Comment 17 | VARCHAR2(4000) |
| 11.30.39 | SQL_COL_17 | SQL script section for column 17 | VARCHAR2(4000) |
| 11.30.40 | COMMENT_18 | Comment 18 | VARCHAR2(4000) |
| 11.30.41 | SQL_COL_18 | SQL script section for column 18 | VARCHAR2(4000) |
| 11.30.42 | COMMENT_19 | Comment 19 | VARCHAR2(4000) |
| 11.30.43 | SQL_COL_19 | SQL script section for column 19 | VARCHAR2(4000) |
| 11.30.44 | COMMENT_20 | Comment 20 | VARCHAR2(4000) |
| 11.30.45 | SQL_COL_20 | SQL script section for column 20 | VARCHAR2(4000) |
| 11.30.46 | COMMENT_21 | Comment 21 | VARCHAR2(4000) |
| 11.30.47 | SQL_COL_21 | SQL script section for column 21 | VARCHAR2(4000) |
| 11.30.48 | COMMENT_22 | Comment 22 | VARCHAR2(4000) |
| 11.30.49 | SQL_COL_22 | SQL script section for column 22 | VARCHAR2(4000) |
| 11.30.50 | COMMENT_23 | Comment 23 | VARCHAR2(4000) |
| 11.30.51 | SQL_COL_23 | SQL script section for column 23 | VARCHAR2(4000) |
| 11.30.52 | COMMENT_24 | Comment 24 | VARCHAR2(4000) |
| 11.30.53 | SQL_COL_24 | SQL script section for column 24 | VARCHAR2(4000) |
| 11.30.54 | COMMENT_25 | Comment 25 | VARCHAR2(4000) |
| 11.30.55 | SQL_COL_25 | SQL script section for column 25 | VARCHAR2(4000) |
| 11.30.56 | COMMENT_26 | Comment 26 | VARCHAR2(4000) |
| 11.30.57 | SQL_COL_26 | SQL script section for column 26 | VARCHAR2(4000) |
| 11.30.58 | COMMENT_27 | Comment 27 | VARCHAR2(4000) |
| 11.30.59 | SQL_COL_27 | SQL script section for column 27 | VARCHAR2(4000) |
| 11.30.60 | COMMENT_28 | Comment 28 | VARCHAR2(4000) |
| 11.30.61 | SQL_COL_28 | SQL script section for column 28 | VARCHAR2(4000) |
| 11.30.62 | COMMENT_29 | Comment 29 | VARCHAR2(4000) |
| 11.30.63 | SQL_COL_29 | SQL script section for column 29 | VARCHAR2(4000) |
| 11.30.64 | COMMENT_30 | Comment 30 | VARCHAR2(4000) |
| 11.30.65 | SQL_COL_30 | SQL script section for column 30 | VARCHAR2(4000) |
| 11.30.66 | COMMENT_31 | Comment 31 | VARCHAR2(4000) |
| 11.30.67 | SQL_COL_31 | SQL script section for column 31 | VARCHAR2(4000) |
| 11.30.68 | COMMENT_32 | Comment 32 | VARCHAR2(4000) |
| 11.30.69 | SQL_COL_32 | SQL script section for column 32 | VARCHAR2(4000) |
| 11.30.70 | COMMENT_33 | Comment 33 | VARCHAR2(4000) |
| 11.30.71 | SQL_COL_33 | SQL script section for column 33 | VARCHAR2(4000) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------------------|------------------|
| 11.30.72 | COMMENT_34 | Comment 34 | VARCHAR2(4000) |
| 11.30.73 | SQL_COL_34 | SQL script section for column 34 | VARCHAR2(4000) |
| 11.30.74 | COMMENT_35 | Comment 35 | VARCHAR2(4000) |
| 11.30.75 | SQL_COL_35 | SQL script section for column 35 | VARCHAR2(4000) |
| 11.30.76 | COMMENT_36 | Comment 36 | VARCHAR2(4000) |
| 11.30.77 | SQL_COL_36 | SQL script section for column 36 | VARCHAR2(4000) |
| 11.30.78 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.30.79 | CREATED_DATE | Created date | DATE |
| 11.30.80 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.30.81 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.30.82 | MODIFIED_DATE | Modified date | DATE |
| 11.30.83 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | CN | N/A | RDTPA_PK |

This table contains Oracle SQL scripts for comparing ratio estimates, per acre, of an attribute between two different groups. For example, is the number of standing dead trees per acre significantly different between the current and most recent previous inventory. To effectively use these scripts the user will need a thorough understanding of parametric statistics and FIADB (see [The Forest Inventory and Analysis Database: Population Estimation User Guide](#) for examples). Each comparison is available by record. A complete script can be created for each comparison by concatenating the SQL section columns (e.g., SQL_COL_1) in order as indicated by the number in each SQL section column name.

11.30.1 CN

Sequence number. A unique sequence number used to identify a reference difference test per acre record.

11.30.2 COMPARISON

Comparison. Identifies the attribute being compared for two different groups of interest. The description of the attribute follows a derivation of REF_POP_ATTRIBUTE.ATTRIBUTE_DESCR for REF_DIFFERENCE_TEST_PER_ACRE.ATTRIBUTE_NBR matching REF_POP_ATTRIBUTE.ATTRIBUTE_NBR.

11.30.3 COMPARISON_TYPE

Comparison type. Identifies the type of attribute being compared. Type (e.g., 'temporal_tree_per_acre') indicates if the comparison is over time (temporal), identifies the sampled item type (e.g., tree) and specifies the ratios (e.g., per acre).

11.30.4 ATTRIBUTE_NBR

Attribute number. Identifies the attribute record, REF_POP_ATTRIBUTE.ATTRIBUTE_NBR, associated with COMPARISON.

11.30.5 SCRIPT

Script. Name of the SQL file with comments (e.g., COMMENT_1) and SQL (e.g., SQL_COL_1) used to populate this table. The file is not available in the public domain.

11.30.6 COMMENT_1

Comment 1. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_1 is associated with SQL_COL_1. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.7 SQL_COL_1

SQL script section for column 1. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.8 COMMENT_2

Comment 2. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_2 is associated with SQL_COL_2. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.9 SQL_COL_2

SQL script section for column 2. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.10 COMMENT_3

Comment 3. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_3 is associated with SQL_COL_3. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.11 SQL_COL_3

SQL script section for column 3. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.12 COMMENT_4

Comment 4. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_4 is associated with SQL_COL_4. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.13 SQL_COL_4

SQL script section for column 4. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.14 COMMENT_5

Comment 5. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_5 is associated with SQL_COL_5. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.15 SQL_COL_5

SQL script section for column 5. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.16 COMMENT_6

Comment 6. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_6 is associated with SQL_COL_6. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.17 SQL_COL_6

SQL script section for column 6. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.18 COMMENT_7

Comment 7. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_7 is associated with SQL_COL_7. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.19 SQL_COL_7

SQL script section for column 7. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.20 COMMENT_8

Comment 8. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_8 is associated with SQL_COL_8. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.21 SQL_COL_8

SQL script section for column 8. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.22 COMMENT_9

Comment 9. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_9 is associated with SQL_COL_9. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.23 SQL_COL_9

SQL script section for column 9. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.24 COMMENT_10

Comment 10. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_10 is associated with SQL_COL_10. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.25 SQL_COL_10

SQL script section for column 10. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.26 COMMENT_11

Comment 11. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_11 is associated with SQL_COL_11. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.27 SQL_COL_11

SQL script section for column 11. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.28 COMMENT_12

Comment 12. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_12 is associated with SQL_COL_12. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.29 SQL_COL_12

SQL script section for column 12. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.30 COMMENT_13

Comment 13. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_13 is associated with SQL_COL_13. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.31 SQL_COL_13

SQL script section for column 13. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.32 COMMENT_14

Comment 14. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_14 is associated with SQL_COL_14. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.33 SQL_COL_14

SQL script section for column 14. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.34 COMMENT_15

Comment 15. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_15 is associated with SQL_COL_15. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.35 SQL_COL_15

SQL script section for column 15. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.36 COMMENT_16

Comment 16. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_16 is associated with SQL_COL_16. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.37 SQL_COL_16

SQL script section for column 16. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.38 COMMENT_17

Comment 17. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_17 is associated with SQL_COL_17. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.39 SQL_COL_17

SQL script section for column 17. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.40 COMMENT_18

Comment 18. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_18 is associated with SQL_COL_18. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.41 SQL_COL_18

SQL script section for column 18. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.42 COMMENT_19

Comment 19. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_19 is associated with SQL_COL_19. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.43 SQL_COL_19

SQL script section for column 19. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.44 COMMENT_20

Comment 20. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_20 is associated with SQL_COL_20. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.45 SQL_COL_20

SQL script section for column 20. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.46 COMMENT_21

Comment 21. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_21 is associated with SQL_COL_21. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.47 SQL_COL_21

SQL script section for column 21. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.48 COMMENT_22

Comment 22. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_22 is associated with SQL_COL_22. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.49 SQL_COL_22

SQL script section for column 22. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.50 COMMENT_23

Comment 23. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_23 is associated with SQL_COL_23. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.51 SQL_COL_23

SQL script section for column 23. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.52 COMMENT_24

Comment 24. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_24 is associated with SQL_COL_24. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.53 SQL_COL_24

SQL script section for column 24. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.54 COMMENT_25

Comment 25. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_25 is associated with SQL_COL_25. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.55 SQL_COL_25

SQL script section for column 25. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.56 COMMENT_26

Comment 26. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_26 is associated with SQL_COL_26. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.57 SQL_COL_26

SQL script section for column 26. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.58 COMMENT_27

Comment 27. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_27 is associated with SQL_COL_27. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.59 SQL_COL_27

SQL script section for column 27. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.60 COMMENT_28

Comment 28. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_28 is associated with SQL_COL_28. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.61 SQL_COL_28

SQL script section for column 28. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.62 COMMENT_29

Comment 29. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_29 is associated with SQL_COL_29. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.63 SQL_COL_29

SQL script section for column 29. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.64 COMMENT_30

Comment 30. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_30 is associated with SQL_COL_30. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.65 SQL_COL_30

SQL script section for column 30. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.66 COMMENT_31

Comment 31. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_31 is associated with SQL_COL_31. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.67 SQL_COL_31

SQL script section for column 31. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.68 COMMENT_32

Comment 32. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_32 is associated with SQL_COL_32. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.69 SQL_COL_32

SQL script section for column 32. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.70 COMMENT_33

Comment 33. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_33 is associated with SQL_COL_33. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.71 SQL_COL_33

SQL script section for column 33. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.72 COMMENT_34

Comment 34. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_34 is associated with SQL_COL_34. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.73 SQL_COL_34

SQL script section for column 34. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.74 COMMENT_35

Comment 35. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_35 is associated with SQL_COL_35. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.75 SQL_COL_35

SQL script section for column 35. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.76 COMMENT_36

Comment 36. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_36 is associated with SQL_COL_36. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.30.77 SQL_COL_36

SQL script section for column 36. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.30.78 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.30.79 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.30.80 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.30.81 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.30.82 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.30.83 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.31 Reference Difference Test Totals Table

(Oracle table name: REF_DIFFERENCE_TEST_TOTALS)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------------------|------------------|
| 11.31.1 | CN | Sequence number | VARCHAR2(34) |
| 11.31.2 | COMPARISON | Comparison | VARCHAR2(4000) |
| 11.31.3 | COMPARISON_TYPE | Comparison type | VARCHAR2(4000) |
| 11.31.4 | ATTRIBUTE_NBR | Attribute number | VARCHAR2(10) |
| 11.31.5 | SCRIPT | Script | VARCHAR2(4000) |
| 11.31.6 | COMMENT_1 | Comment 1 | VARCHAR2(4000) |
| 11.31.7 | SQL_COL_1 | SQL script section for column 1 | VARCHAR2(4000) |
| 11.31.8 | COMMENT_2 | Comment 2 | VARCHAR2(4000) |
| 11.31.9 | SQL_COL_2 | SQL script section for column 2 | VARCHAR2(4000) |
| 11.31.10 | COMMENT_3 | Comment 3 | VARCHAR2(4000) |
| 11.31.11 | SQL_COL_3 | SQL script section for column 3 | VARCHAR2(4000) |
| 11.31.12 | COMMENT_4 | Comment 4 | VARCHAR2(4000) |
| 11.31.13 | SQL_COL_4 | SQL script section for column 4 | VARCHAR2(4000) |
| 11.31.14 | COMMENT_5 | Comment 5 | VARCHAR2(4000) |
| 11.31.15 | SQL_COL_5 | SQL script section for column 5 | VARCHAR2(4000) |
| 11.31.16 | COMMENT_6 | Comment 6 | VARCHAR2(4000) |
| 11.31.17 | SQL_COL_6 | SQL script section for column 6 | VARCHAR2(4000) |
| 11.31.18 | COMMENT_7 | Comment 7 | VARCHAR2(4000) |
| 11.31.19 | SQL_COL_7 | SQL script section for column 7 | VARCHAR2(4000) |
| 11.31.20 | COMMENT_8 | Comment 8 | VARCHAR2(4000) |
| 11.31.21 | SQL_COL_8 | SQL script section for column 8 | VARCHAR2(4000) |
| 11.31.22 | COMMENT_9 | Comment 9 | VARCHAR2(4000) |
| 11.31.23 | SQL_COL_9 | SQL script section for column 9 | VARCHAR2(4000) |
| 11.31.24 | COMMENT_10 | Comment 10 | VARCHAR2(4000) |
| 11.31.25 | SQL_COL_10 | SQL script section for column 10 | VARCHAR2(4000) |
| 11.31.26 | COMMENT_11 | Comment 11 | VARCHAR2(4000) |
| 11.31.27 | SQL_COL_11 | SQL script section for column 11 | VARCHAR2(4000) |
| 11.31.28 | COMMENT_12 | Comment 12 | VARCHAR2(4000) |
| 11.31.29 | SQL_COL_12 | SQL script section for column 12 | VARCHAR2(4000) |
| 11.31.30 | COMMENT_13 | Comment 13 | VARCHAR2(4000) |
| 11.31.31 | SQL_COL_13 | SQL script section for column 13 | VARCHAR2(4000) |
| 11.31.32 | COMMENT_14 | Comment 14 | VARCHAR2(4000) |
| 11.31.33 | SQL_COL_14 | SQL script section for column 14 | VARCHAR2(4000) |
| 11.31.34 | COMMENT_15 | Comment 15 | VARCHAR2(4000) |

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------------------|------------------|
| 11.31.35 | SQL_COL_15 | SQL script section for column 15 | VARCHAR2(4000) |
| 11.31.36 | COMMENT_16 | Comment 16 | VARCHAR2(4000) |
| 11.31.37 | SQL_COL_16 | SQL script section for column 16 | VARCHAR2(4000) |
| 11.31.38 | COMMENT_17 | Comment 17 | VARCHAR2(4000) |
| 11.31.39 | SQL_COL_17 | SQL script section for column 17 | VARCHAR2(4000) |
| 11.31.40 | COMMENT_18 | Comment 18 | VARCHAR2(4000) |
| 11.31.41 | SQL_COL_18 | SQL script section for column 18 | VARCHAR2(4000) |
| 11.31.42 | COMMENT_19 | Comment 19 | VARCHAR2(4000) |
| 11.31.43 | SQL_COL_19 | SQL script section for column 19 | VARCHAR2(4000) |
| 11.31.44 | COMMENT_20 | Comment 20 | VARCHAR2(4000) |
| 11.31.45 | SQL_COL_20 | SQL script section for column 20 | VARCHAR2(4000) |
| 11.31.46 | COMMENT_21 | Comment 21 | VARCHAR2(4000) |
| 11.31.47 | SQL_COL_21 | SQL script section for column 21 | VARCHAR2(4000) |
| 11.31.48 | COMMENT_22 | Comment 22 | VARCHAR2(4000) |
| 11.31.49 | SQL_COL_22 | SQL script section for column 22 | VARCHAR2(4000) |
| 11.31.50 | COMMENT_23 | Comment 23 | VARCHAR2(4000) |
| 11.31.51 | SQL_COL_23 | SQL script section for column 23 | VARCHAR2(4000) |
| 11.31.52 | COMMENT_24 | Comment 24 | VARCHAR2(4000) |
| 11.31.53 | SQL_COL_24 | SQL script section for column 24 | VARCHAR2(4000) |
| 11.31.54 | COMMENT_25 | Comment 25 | VARCHAR2(4000) |
| 11.31.55 | SQL_COL_25 | SQL script section for column 25 | VARCHAR2(4000) |
| 11.31.56 | COMMENT_26 | Comment 26 | VARCHAR2(4000) |
| 11.31.57 | SQL_COL_26 | SQL script section for column 26 | VARCHAR2(4000) |
| 11.31.58 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.31.59 | CREATED_DATE | Created date | DATE |
| 11.31.60 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.31.61 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.31.62 | MODIFIED_DATE | Modified date | DATE |
| 11.31.63 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | CN | N/A | RDTT_PK |

This table contains Oracle SQL scripts for comparing total estimates of an attribute between two different groups. For example, is the total number of standing dead trees significantly different between the current and most recent previous inventory. To effectively use these scripts the user will need a thorough understanding of parametric statistics and FIADB (see [The Forest Inventory and Analysis Database: Population Estimation User Guide](#) for examples). Each comparison

is available by record. A complete script can be created for each comparison by concatenating the SQL section columns (e.g., SQL_COL_1) in order as indicated by the number in each SQL section column name.

11.31.1 CN

Sequence number. A unique sequence number used to identify a reference difference test totals record.

11.31.2 COMPARISON

Comparison. Identifies the attribute being compared for two different groups of interest. The description of the attribute follows a derivation of
REF_POP_ATTRIBUTE.ATTRIBUTE_DESCR for
REF_DIFFERENCE_TEST_TOTALS.ATTRIBUTE_NBR matching
REF_POP_ATTRIBUTE.ATTRIBUTE_NBR.

11.31.3 COMPARISON_TYPE

Comparison type. Identifies the type of attribute being compared. Type (e.g., 'temporal_tree_per_acre') indicates if the comparison is over time (temporal), identifies the sampled item type (e.g., tree) and specifies the ratios (e.g., per acre).

11.31.4 ATTRIBUTE_NBR

Attribute number. Identifies the attribute record, REF_POP_ATTRIBUTE.ATTRIBUTE_NBR, associated with COMPARISON.

11.31.5 SCRIPT

Script. Name of the SQL file with comments (e.g., COMMENT_1) and SQL (e.g., SQL_COL_1) used to populate this table. The file is not available in the public domain.

11.31.6 COMMENT_1

Comment 1. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_1 is associated with SQL_COL_1. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.7 SQL_COL_1

SQL script section for column 1. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.8 COMMENT_2

Comment 2. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_2 is associated with SQL_COL_2. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.9 SQL_COL_2

SQL script section for column 2. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.10 COMMENT_3

Comment 3. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_3 is associated with SQL_COL_3. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.11 SQL_COL_3

SQL script section for column 3. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.12 COMMENT_4

Comment 4. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_4 is associated with SQL_COL_4. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.13 SQL_COL_4

SQL script section for column 4. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.14 COMMENT_5

Comment 5. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_5 is associated with SQL_COL_5. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.15 SQL_COL_5

SQL script section for column 5. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.16 COMMENT_6

Comment 6. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_6 is associated with SQL_COL_6. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.17 SQL_COL_6

SQL script section for column 6. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.18 COMMENT_7

Comment 7. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_7 is associated with SQL_COL_7. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.19 SQL_COL_7

SQL script section for column 7. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.20 COMMENT_8

Comment 8. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_8 is associated with SQL_COL_8. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.21 SQL_COL_8

SQL script section for column 8. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.22 COMMENT_9

Comment 9. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_9 is associated with SQL_COL_9. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.23 SQL_COL_9

SQL script section for column 9. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.24 COMMENT_10

Comment 10. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_10 is associated with SQL_COL_10. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.25 SQL_COL_10

SQL script section for column 10. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.26 COMMENT_11

Comment 11. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_11 is associated with SQL_COL_11. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.27 SQL_COL_11

SQL script section for column 11. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.28 COMMENT_12

Comment 12. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_12 is associated with SQL_COL_12. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.29 SQL_COL_12

SQL script section for column 12. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.30 COMMENT_13

Comment 13. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_13 is associated with SQL_COL_13. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.31 SQL_COL_13

SQL script section for column 13. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.32 COMMENT_14

Comment 14. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_14 is associated with SQL_COL_14. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.33 SQL_COL_14

SQL script section for column 14. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.34 COMMENT_15

Comment 15. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_15 is associated with SQL_COL_15. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.35 SQL_COL_15

SQL script section for column 15. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.36 COMMENT_16

Comment 16. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_16 is associated with SQL_COL_16. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.37 SQL_COL_16

SQL script section for column 16. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.38 COMMENT_17

Comment 17. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_17 is associated with SQL_COL_17. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.39 SQL_COL_17

SQL script section for column 17. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.40 COMMENT_18

Comment 18. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_18 is associated with SQL_COL_18. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.41 SQL_COL_18

SQL script section for column 18. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.42 COMMENT_19

Comment 19. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_19 is associated with SQL_COL_19. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.43 SQL_COL_19

SQL script section for column 19. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.44 COMMENT_20

Comment 20. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_20 is associated with SQL_COL_20. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.45 SQL_COL_20

SQL script section for column 20. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.46 COMMENT_21

Comment 21. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_21 is associated with SQL_COL_21. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.47 SQL_COL_21

SQL script section for column 21. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.48 COMMENT_22

Comment 22. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_22 is associated with SQL_COL_22. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.49 SQL_COL_22

SQL script section for column 22. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.50 COMMENT_23

Comment 23. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_23 is associated with SQL_COL_23. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.51 SQL_COL_23

SQL script section for column 23. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.52 COMMENT_24

Comment 24. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_24 is associated with SQL_COL_24. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.53 SQL_COL_24

SQL script section for column 24. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.54 COMMENT_25

Comment 25. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_25 is associated with SQL_COL_25. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.55 SQL_COL_25

SQL script section for column 25. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.56 COMMENT_26

Comment 26. Comment for associated SQL section where association is indicated by the common number. For example, COMMENT_26 is associated with SQL_COL_26. The comment indicates if the section of SQL varies by COMPARISON_TYPE.

11.31.57 SQL_COL_26

SQL script section for column 26. Complete SQL scripts for each unique combination of COMPARISON, COMPARISON_TYPE and ATTRIBUTE_NBR are created by concatenating each of these SQL sections in order.

11.31.58 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.31.59 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.31.60 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.31.61 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.31.62 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.31.63 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.32 Reference Site Index Equation Table

(Oracle table name: REF_SIEQN)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|--|------------------|
| 11.32.1 | CN | Sequence number | VARCHAR2(34) |
| 11.32.2 | SIEQN_REF_CD | Site index equation reference code | VARCHAR2(10) |
| 11.32.3 | SIEQN_REF_NOTES | Site index equation references and notes | VARCHAR2(540) |
| 11.32.4 | SIEQN_LOC_DESC_FSVEG | Site index equation coverage area in FSVeg | VARCHAR2(100) |
| 11.32.5 | SIEQN_AGE_BASIS | Base age basis | VARCHAR2(10) |
| 11.32.6 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.32.7 | CREATED_DATE | Created date | DATE |
| 11.32.8 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.32.9 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.32.10 | MODIFIED_DATE | Modified date | DATE |
| 11.32.11 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|-----------------|----------------|----------------------|
| Primary | CN | N/A | REF_SIEQN_PK |
| Unique | SIEQN_REF_CD | N/A | REF_SIEQN_UK |

11.32.1 CN

Sequence number. A unique sequence number used to identify a reference site index record.

11.32.2 SIEQN_REF_CD

Site index equation reference code. Internal reference code for site index calculation.

11.32.3 SIEQN_REF_NOTES

Site index equation references and notes. Any notes pertaining to the record, such as the primary reference for the SIEQN_REF_CD.

11.32.4 SIEQN_LOC_DESC_FSVEG

Site index equation coverage area in FSVeg. This is the general geographic area covered by the equation, as described in the original publication. The geographic area where the equation is used in FIA compilation and for use in the Forest Vegetation Simulator (FVS) may differ from the original described area. Users should consult the original publication for comparison to the area represented in COND.VOL_LOC_GRP and the area covered by FVS variant locations. Field Sampled Vegetation (FSVeg) is a Forest Service application that stores data about trees, fuels, down woody material, surface cover, and understory vegetation. FSVeg supports the business of common stand exam, fuels data collection, permanent grid inventories, and other vegetation inventory collection processes.

11.32.5 SIEQN_AGE_BASIS

Base age basis. Denotes if the tree age used in the equation is expected to be breast height age or total age. The base age used by the equation can be found in SITETREE.SIBASE, SITETREE.SIBASE_FVS, COND.SIBASE, and COND.SIBASE_FVS depending on whether site index is used for FIA compilation or use in FVS.

11.32.6 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.32.7 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.32.8 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.32.9 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition.

11.32.10 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.32.11 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.33 Reference Tree Growth, Removal, and Mortality Type Table

(Oracle table name: REF_GRM_TYPE)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---|------------------|
| 11.33.1 | CN | Sequence number | VARCHAR2(34) |
| 11.33.2 | RSCD | Region or Station code | NUMBER(2) |
| 11.33.3 | STATECD | State code | NUMBER(4) |
| 11.33.4 | START_INVYR | Start inventory year | NUMBER(4) |
| 11.33.5 | END_INVYR | End inventory year | NUMBER(4) |
| 11.33.6 | GRM_TYP | Growth, removal, and mortality type | VARCHAR2(15) |
| 11.33.7 | GROW_TYP_CD | Type of annual volume growth code | NUMBER(2) |
| 11.33.8 | MORT_TYP_CD | Type of annual mortality volume code | NUMBER(2) |
| 11.33.9 | REMV_TYP_CD | Type of annual removals volume code | NUMBER(2) |
| 11.33.10 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.33.11 | CREATED_DATE | Created date | DATE |
| 11.33.12 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.33.13 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.33.14 | MODIFIED_DATE | Modified date | DATE |
| 11.33.15 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |
| 11.33.16 | TIMBERLAND_ONLY | Timberland only | VARCHAR2(1) |
| 11.33.17 | GRM_BUILD_LOCATION | Growth, removal, and mortality build location | VARCHAR2(5) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|----------------------------|----------------|----------------------|
| Primary | CN | N/A | RGT_PK |
| Unique | RSCD, STATECD, START_INVYR | N/A | RGT_UK |

11.33.1 CN

Sequence number. A unique sequence number used to identify a reference tree growth, removal, and mortality type record.

11.33.2 RSCD

Region or Station code. See SURVEY.RSCD description for definition.

11.33.3 STATECD

State code. Bureau of Census Federal Information Processing Standards (FIPS) 2-digit code for each State. Refer to [appendix B](#).

11.33.4 START_INVYR

Start inventory year. The starting year, by State (STATECD), for the GRM estimation protocol specified for the record. The GRM protocol is summarized from a combination of codes for GRM_TYP, GROW_TYP_CD, MORT_TYP_CD, and REMV_TYP_CD.

11.33.5 END_INVYR

End inventory year. The ending year, by State (STATECD), for the GRM estimation protocol specified for the record. The GRM protocol is summarized from a combination of codes for GRM_TYP, GROW_TYP_CD, MORT_TYP_CD, REMV_TYP_CD. If this column is blank (null), the GRM protocol is still active.

11.33.6 GRM_TYP

Growth, removal, and mortality type. A descriptor for the growth, removals, and mortality (GRM) protocol type used for estimation.

Codes: GRM_TYP

| Code | Description |
|---------|----------------------------|
| A2A | Annual to annual. |
| P2A | Periodic to annual. |
| P2P | Periodic to periodic. |
| MODELED | Modeled. |
| NONE | None - GRM not applicable. |

11.33.7 GROW_TYP_CD

Type of annual volume growth code. A code indicating how volume growth is estimated. Current annual growth is an estimate of the amount of volume that was added to a tree in the year before the tree was sampled, and is based on the measured diameter increment recorded when the tree was sampled or on a modeled diameter for the previous year. Periodic annual growth is an estimate of the average annual change in volume occurring between two measurements, usually the current inventory and the previous inventory, where the same plot is evaluated twice. Periodic annual growth is the increase in volume between inventories divided by the number of years between each inventory.

Codes: GROW_TYP_CD

| Code | Description |
|------|------------------|
| 1 | Current annual. |
| 2 | Periodic annual. |

11.33.8 MORT_TYP_CD

Type of annual mortality volume code. A code indicating how mortality volume is estimated. Current annual mortality is an estimate of the volume of trees dying in the year before the plot was measured, and is based on the year of death or on a modeled estimate. Periodic annual mortality is an estimate of the average annual volume of trees dying between two measurements, usually the current inventory and previous inventory, where the same plot is evaluated twice. Periodic annual mortality is the loss of volume between inventories divided by the number of years between each inventory. Periodic average annual mortality is the most common type of annual mortality estimated.

Codes: MORT_TYP_CD

| Code | Description |
|-------------|--------------------|
| 1 | Current annual. |
| 2 | Periodic annual. |

11.33.9 REMV_TYP_CD

Type of annual removals volume code. A code indicating how removals volume is estimated. Periodic annual removals is an estimate of the average annual volume of trees removed between two measurements, usually the current inventory and previous inventory, where the same plot is evaluated twice. Periodic annual removals is the loss of volume between inventories divided by the number of trees between each inventory.

Codes: REMV_TYP_CD

| Code | Description |
|-------------|--------------------|
| 0 | No estimate. |
| 2 | Periodic annual. |

11.33.10 CREATED_BY

Created by. See SURVEY.CREATED_BY description for definition.

11.33.11 CREATED_DATE

Created date. See SURVEY.CREATED_DATE description for definition.

11.33.12 CREATED_IN_INSTANCE

Created in instance. See SURVEY.CREATED_IN_INSTANCE description for definition.

11.33.13 MODIFIED_BY

Modified by. See SURVEY.MODIFIED_BY description for definition,

11.33.14 MODIFIED_DATE

Modified date. See SURVEY.MODIFIED_DATE description for definition.

11.33.15 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.MODIFIED_IN_INSTANCE description for definition.

11.33.16 TIMBERLAND_ONLY

Timberland only. A code indicating if the GRM estimation is only for timberland or for timberland and forest land. Timberland is a subset of forest land defined as nonreserved forest land capable of producing as least 20 cubic feet of wood volume per acre per year (COND.COND_STATUS_CD = 1, COND.RESERVCD = 0, COND.SITECLCD <7).

Codes: TIMBERLAND_ONLY

| Code | Description |
|-------------|---|
| Y | GRM estimates for timberland only. |
| N | GRM estimation for both timberland and forest land. |

11.33.17 GRM_BUILD_LOCATION

Growth, removal, and mortality build location. An identifier for the database in which the TREE_GRM_* tables were initially populated. This attribute is for office use only.

Codes: GRM_BUILD_LOCATION

| Code | Description |
|-------|--|
| NIMS | National Information Management System (NIMS) – The TREE_GRM_* tables were initially populated with NIMS using the national annual GRM algorithm. |
| FIADB | Forest Inventory and Analysis Database (FIADB) – The TREE_GRM_* tables were directly populated in FIADB for periodic remeasurement data or using regional GRM compilation systems. |
| N/A | Not applicable. |

11.34 Reference International to Doyle Volume Factors Table

(Oracle table name: REF_INTL_TO_DOYLE_FACTOR)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------|------------------|
| 11.34.1 | DIA_2INCH_CLASS | Diameter class | NUMBER(2) |
| 11.34.2 | SOFTWOOD | Softwood or hardwood | VARCHAR2(1) |
| 11.34.3 | FACTOR | Factor | NUMBER(5,4) |
| 11.34.4 | CREATED_BY | Created by | VARCHAR2(30) |
| 11.34.5 | CREATED_DATE | Created date | DATE |
| 11.34.6 | CREATED_IN_INSTANCE | Created in instance | VARCHAR2(6) |
| 11.34.7 | MODIFIED_BY | Modified by | VARCHAR2(30) |
| 11.34.8 | MODIFIED_DATE | Modified date | DATE |
| 11.34.9 | MODIFIED_IN_INSTANCE | Modified in instance | VARCHAR2(6) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|---------------------------|----------------|----------------------|
| Primary | DIA_2INCH_CLASS, SOFTWOOD | N/A | RIDF_PK |

11.34.1 DIA_2INCH_CLASS

Diameter class. A code indicating the diameter class. This code is used to group tree diameters into a class of a specified range.

Codes:

| Code | Description |
|------|---|
| 8 | 8-inch class (trees 7.0-8.9 inches in diameter). |
| 10 | 10-inch class (trees 9.0-10.9 inches in diameter). |
| 12 | 12-inch class (trees 11.0-12.9 inches in diameter). |
| 14 | 14-inch class (trees 13.0-14.9 inches in diameter). |
| 16 | 16-inch class (trees 15.0-16.9 inches in diameter). |
| 18 | 18-inch class (trees 17.0-18.9 inches in diameter). |
| 20 | 20-inch class (trees 19.0-20.9 inches in diameter). |
| 22 | 22-inch class (trees 21.0-22.9 inches in diameter). |
| 24 | 24-inch class (trees 23.0-24.9 inches in diameter). |
| 26 | 26-inch class (trees 25.0-26.9 inches in diameter). |
| 28 | 28-inch class (trees 27.0-28.9 inches in diameter). |
| 30 | 30-inch class (trees ≥ 29 inches in diameter). |

11.34.2 SOFTWOOD

Softwood or hardwood. A code indicating whether the factor (see [FACTOR](#)) is for a softwood or hardwood species.

Codes:

| Code | Description |
|------|-------------------|
| Y | Softwood species. |
| N | Hardwood species. |

11.34.3 FACTOR

Factor. The factor that is multiplied by International ¼-inch log rule board-foot volume to produce Doyle log rule board-foot volume.

11.34.4 CREATED_BY

Created by. See SURVEY.[CREATED_BY](#) description for definition.

11.34.5 CREATED_DATE

Created date. See SURVEY.[CREATED_DATE](#) description for definition.

11.34.6 CREATED_IN_INSTANCE

Created in instance. See SURVEY.[CREATED_IN_INSTANCE](#) description for definition.

11.34.7 MODIFIED_BY

Modified by. See SURVEY.[MODIFIED_BY](#) description for definition.

11.34.8 MODIFIED_DATE

Modified date. See SURVEY.[MODIFIED_DATE](#) description for definition.

11.34.9 MODIFIED_IN_INSTANCE

Modified in instance. See SURVEY.[MODIFIED_IN_INSTANCE](#) description for definition.

11.35 Reference Tree Carbon Ratio Dead Table

(Oracle table name: REF_TREE_CARBON_RATIO_DEAD)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------|------------------|
| 11.35.1 | CN | Sequence number | NUMBER(38) |
| 11.35.2 | SFTWD_HRDWD | Softwood or hardwood | VARCHAR2(1) |
| 11.35.3 | DECAYCD | Decay class code | NUMBER(1) |
| 11.35.4 | CARBON_RATIO | Wood carbon fraction | NUMBER(6,5) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|----------------------|----------------|----------------------|
| Primary | CN | N/A | REFTCRD_PK |
| Unique | SFTWD_HRDWD, DECAYCD | N/A | REFTCRD_UK |

11.35.1 CN

Sequence number. A unique sequence number used to identify a reference tree carbon ratio dead record.

11.35.2 SFTWD_HRDWD

Softwood or hardwood. A code indicating whether the tree species has been classified a softwood or hardwood species.

Codes: SFTWD_HRDWD

| Code | Description |
|------|--------------------------|
| S | Softwood classification. |
| H | Hardwood classification. |

11.35.3 DECAYCD

Decay class code. A code indicating the stage of decay in a standing dead tree (TREE.STANDING_DEAD_CD = 1) .

Codes: DECAYCD

| Code | Description |
|-------------|---|
| 1 | All limbs and branches are present - The tree top is pointed and 100 percent bark remains. For Douglas-fir species, sapwood presence and condition is intact, sound, incipient decay, hard, original color, and heartwood condition is sound, hard, with original color - used as a guide for other species. |
| 2 | Few limbs and no fine branches - The tree top may be broken and variable bark remaining. For Douglas-fir species, sapwood presence and condition is sloughing, advance decay, fibrous, firm to soft, light brown, and the heartwood condition is sound at base, incipient decay in outer edge of upper bole, hard, light to reddish brown - used as a guide for other species. |
| 3 | Limbs stubs only - Tree top is broken and variable percent bark remains. For Douglas-fir species, sapwood presence and condition is sloughing, fibrous, soft, light to reddish brown and heartwood condition is incipient decay at base, advanced decay throughout upper bole, fibrous, hard to firm, reddish brown - used as a guide for other species. |
| 4 | Few or no limb stubs present - The tree top is broken and variable percent bark remains. For Douglas-fir species, sapwood presence and condition is sloughing, cubical, soft, reddish to dark brown, and the heartwood condition is advanced decay at base, sloughing from upper bole, fibrous to cubical, soft dark reddish brown - used as a guide for other species. |
| 5 | No limbs or branches - The top is broken and less than 20 percent of the bark remains. For Douglas-fir species sapwood presence and condition is none and heartwood condition is sloughing, cubical, soft, dark brown, or fibrous, very soft, dark reddish brown, encased in hardened shell - used as a guide for other species. |

11.35.4 CARBON_RATIO

Wood carbon fraction. The mass of carbon per unit dry mass of wood, expressed as a proportion (ranging from 0-1), obtained from elemental analyses of dry wood samples. Synonymous with "wood carbon concentrations" or related terms in scientific literature (Doraisami and others 2022). The ratio is applied by softwood/hardwood classification ([SFTWD_HRDWD](#)) and decay class ([DECAYCD](#)) and multiplied by dead tree biomass estimates to obtain dead tree carbon estimates.

11.36 Reference Tree Decay Proportion Table

(Oracle table name: REF_TREE_DECAY_PROP)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|------------------------|------------------|
| 11.36.1 | CN | Sequence number | NUMBER(38) |
| 11.36.2 | DECAYCD | Decay class code | NUMBER(1) |
| 11.36.3 | SFTWD_HRDWD | Softwood or hardwood | VARCHAR2(1) |
| 11.36.4 | DENSITY_PROP | Density proportion | NUMBER(3,2) |
| 11.36.5 | BARK_LOSS_PROP | Bark loss proportion | NUMBER(3,2) |
| 11.36.6 | BRANCH_LOSS_PROP | Branch loss proportion | NUMBER(3,2) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|----------------------|----------------|----------------------|
| Primary | CN | N/A | REFTDP_PK |
| Unique | DECAYCD, SFTWD_HRDWD | N/A | REFTDP_UK |

11.36.1 CN

Sequence number. A unique sequence number used to identify a reference tree decay proportion record.

11.36.2 DECAYCD

Decay class code. A code indicating the stage of decay in a standing dead tree (TREE.STANDING_DEAD_CD = 1).

Note: Not populated for standing dead saplings (1.0 - 4.9 inches d.b.h./d.r.c.) when PLOT.MANUAL <7.0.

Codes: DECAYCD

| Code | Description |
|------|---|
| 1 | All limbs and branches are present - The tree top is pointed and 100 percent bark remains. For Douglas-fir species, sapwood presence and condition is intact, sound, incipient decay, hard, original color, and heartwood condition is sound, hard, with original color - used as a guide for other species. |
| 2 | Few limbs and no fine branches - The tree top may be broken and variable bark remaining. For Douglas-fir species, sapwood presence and condition is sloughing, advance decay, fibrous, firm to soft, light brown, and the heartwood condition is sound at base, incipient decay in outer edge of upper bole, hard, light to reddish brown - used as a guide for other species. |
| 3 | Limbs stubs only - Tree top is broken and variable percent bark remains. For Douglas-fir species, sapwood presence and condition is sloughing, fibrous, soft, light to reddish brown and heartwood condition is incipient decay at base, advanced decay throughout upper bole, fibrous, hard to firm, reddish brown - used as a guide for other species. |

| Code | Description |
|------|--|
| 4 | Few or no limb stubs present - The tree top is broken and variable percent bark remains. For Douglas-fir species, sapwood presence and condition is sloughing, cubical, soft, reddish to dark brown, and the heartwood condition is advanced decay at base, sloughing from upper bole, fibrous to cubical, soft dark reddish brown - used as a guide for other species. |
| 5 | No limbs or branches - The top is broken and less than 20 percent of the bark remains. For Douglas-fir species sapwood presence and condition is none and heartwood condition is sloughing, cubical, soft, dark brown, or fibrous, very soft, dark reddish brown, encased in hardened shell - used as a guide for other species. |

11.36.3 SFTWD_HRDWD

Softwood or hardwood. A code indicating whether the tree species has been classified a softwood or hardwood species.

Codes: SFTWD_HRDWD

| Code | Description |
|------|--------------------------|
| S | Softwood classification. |
| H | Hardwood classification. |

11.36.4 DENSITY_PROP

Density proportion. The proportion of the tree remaining after deductions for decay.

11.36.5 BARK_LOSS_PROP

Bark loss proportion. The proportion of the bark component remaining after deductions for decay.

11.36.6 BRANCH_LOSS_PROP

Branch loss proportion. The proportion of the branch component remaining after deductions for decay.

11.37 Reference Tree Standing Dead Crown Ratio Proportion Table

(Oracle table name: REF_TREE_STND_DEAD_CR_PROP)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|----------------------|------------------|
| 11.37.1 | CN | Sequence number | NUMBER(38) |
| 11.37.2 | ECOPROV | Ecoregion province | VARCHAR2(10) |
| 11.37.3 | SFTWD_HRDWD | Softwood or hardwood | VARCHAR2(1) |
| 11.37.4 | CR_MEAN | Crown ratio mean | NUMBER(4,3) |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|----------------------|----------------|----------------------|
| Primary | CN | N/A | REFTSDCP_PK |
| Unique | ECOPROV, SFTWD_HRDWD | N/A | REFTSDCP_UK |

11.37.1 CN

Sequence number. A unique sequence number used to identify a reference tree standing dead crown ratio proportion record.

11.37.2 ECOPROV

Ecoregion province. A code indicating the ecoregion province. A province is a zone at the ecoregion level that contains nested sections that are delineated by similarities in surficial geology, lithology, geomorphic process, soil groups, subregional climate, and potential natural communities.

For detailed descriptions on provinces and sections in the conterminous United States, see McNab and others (2007). For further information for Alaska ecoregions, see Nowacki and others (2002).

Codes: ECOPROV

| Code | Description |
|------|---|
| 132 | Intermontane Boreal. |
| 133 | Alaska Range Transition. |
| 211 | Northeastern Mixed Forest Province. |
| 212 | Laurentian Mixed Forest Province. |
| 221 | Eastern Broadleaf Forest Province. |
| 222 | Midwest Broadleaf Forest Province. |
| 223 | Central Interior Broadleaf Forest Province. |
| 231 | Southeastern Mixed Forest Province. |
| 232 | Outer Coastal Plain Mixed Forest Province. |
| 234 | Lower Mississippi Riverine Forest Province. |
| 242 | Pacific Lowland Mixed Forest Province. |

| Code | Description |
|-----------|---|
| 251 | Prairie Parkland (Temperate) Province. |
| 255 | Prairie Parkland (Subtropical) Province. |
| 261 | California Coastal Chaparral Forest and Shrub Province. |
| 262 | California Dry Steppe Province. |
| 263 | California Coastal Steppe, Mixed Forest, and Redwood Forest Province. |
| 313 | Colorado Plateau Semidesert Province. |
| 315 | Southwest Plateau and Plains Dry Steppe and Shrub Province. |
| 321 | Chihuahuan Semidesert Province. |
| 322 | American Semidesert and Desert Province. |
| 331 | Great Plains-Palouse Dry Steppe Province. |
| 332 | Great Plains Steppe Province. |
| 341 | Intermountain Semidesert and Desert Province. |
| 342 | Intermountain Semidesert Province. |
| 411 | Everglades Province. |
| M132 | Intermontane Boreal Province - Mountains. |
| M133 | Alaska Range Transition Province - Mountains. |
| M134 | Coastal Mountains Transition Province - Mountains. |
| M211 | Adirondack-New England Mixed Forest - Coniferous Forest - Alpine Meadow Province. |
| M221 | Central Appalachian Broadleaf Forest - Coniferous Forest - Meadow Province. |
| M223 | Ozark Broadleaf Forest - Meadow Province. |
| M231 | Ouachita Mixed Forest - Meadow Province. |
| M241 | Coastal Rainforest Province - Mountains. |
| M242 | Cascade Mixed Forest - Coniferous Forest - Alpine Meadow Province. |
| M261 | Sierran Steppe - Mixed Forest - Coniferous Forest - Alpine Meadow Province. |
| M262 | California Coastal Range Open Woodland - Shrub - Coniferous Forest - Meadow Province. |
| M313 | Arizona-New Mexico Mountains Semidesert - Open Woodland - Coniferous Forest - Alpine Meadow Province. |
| M331 | Southern Rocky Mountain Steppe - Open Woodland - Coniferous Forest - Alpine Meadow Province. |
| M332 | Middle Rocky Mountain Steppe - Coniferous Forest - Alpine Meadow Province. |
| M333 | Northern Rocky Mountain Forest-Steppe - Coniferous Forest - Alpine Meadow Province. |
| M334 | Black Hills Coniferous Forest Province. |
| M341 | Nevada-Utah Mountains Semidesert - Coniferous Forest - Alpine Meadow Province. |
| UNDEFINED | Undefined. |

11.37.3 SFTWD_HRDWD

Softwood or hardwood. A code indicating whether the tree species has been classified a softwood or hardwood species.

Codes: SFTWD_HRDWD

| Code | Description |
|------|--------------------------|
| S | Softwood classification. |
| H | Hardwood classification. |

11.37.4 CR_MEAN

Crown ratio mean. The mean crown ratio for the ecoregion province ([ECOPROV](#)) and softwood/hardwood classification ([SFTWD_HRDWD](#)).

11.38 Reference Ground Layer Table

(Oracle table name: REF_GRND_LYR)

| Subsection | Column name (attribute) | Descriptive name | Oracle data type |
|------------|-------------------------|---------------------------------|------------------|
| 11.38.1 | CN | Sequence number | NUMBER(38) |
| 11.38.2 | GRND_LYR_CONFIG | Ground layer configuration name | VARCHAR2(20) |
| 11.38.3 | FUNCTIONAL_GROUP_CD | Functional group code | VARCHAR2(10) |
| 11.38.4 | CARBON_PCT | Percent carbon | NUMBER(5,2) |
| 11.38.5 | NITROGEN_PCT | Percent nitrogen | NUMBER(5,2) |
| 11.38.6 | BULKDENSITY_COEFF_M | Bulk density coefficient m | NUMBER(5,4) |
| 11.38.7 | BULKDENSITY_COEFF_A | Bulk density coefficient a | NUMBER(5,4) |
| 11.38.8 | BULKDENSITY_COEFF_B | Bulk density coefficient b | NUMBER(6,4) |
| 11.38.9 | CREATED_DATE | Created date | DATE |
| 11.38.10 | MODIFIED_DATE | modified date | DATE |

| Key Type | Column(s) order | Tables to link | Abbreviated notation |
|----------|---|----------------|----------------------|
| Primary | CN | N/A | REFGLYR_PK |
| Unique | GRND_LYR_CONFIG, FUNCTIONAL_GROUP_CD | N/A | REFGLYR_UK |

11.38.1 CN

Sequence number. A unique sequence number used to identify a reference ground layer record.

11.38.2 GRND_LYR_CONFIG

Ground layer configuration name. A descriptor identifying the ground layer configuration.

Codes: GRND_LYR_CONFIG

| Code | Description |
|-------|------------------|
| INTAK | Interior Alaska. |

11.38.3 FUNCTIONAL_GROUP_CD

Functional group code. A code indicating the ground layer functional group.

Codes: FUNCTIONAL_GROUP_CD

| Code | Description |
|-------------|--|
| MS | <i>Sphagnum</i> peat-moss. |
| MN | N-fixing feather mosses: <i>Pleurozium</i> , <i>Hylocomium</i> . |
| MF | Other feather (pleurocarp) mosses: <i>Thuidium</i> , <i>Kindbergia</i> . |
| MT | Turf (acrocarp) mosses: <i>Bryum</i> , <i>Mnium</i> , <i>Polytrichum</i> . |
| VF | Flat (thalloid) liverworts: <i>Marchantia</i> , <i>Conocephalum</i> . |
| VS | Stem-and-leaf liverworts: <i>Anthelia</i> , <i>Cephaloziella</i> , <i>Marsupella</i> . |
| LF | Forage lichens: branched- <i>Cladonia</i> , <i>Alectoria</i> , <i>Bryocaulon</i> . |
| LN | N-fixing foliose lichens: <i>Peltigera</i> , <i>Nephroma</i> , <i>Solorina</i> , <i>Sticta</i> . |
| LU | N-fixing fruticose lichens: <i>Stereocaulon</i> . |
| LL | Other foliose lichens: <i>Parmelia</i> , <i>Physcia</i> . |
| LR | Other fruticose lichens: unbranched- <i>Cladonia</i> , <i>Hypogymnia</i> . |
| CO | Orange lichens: <i>Xanthoria</i> , <i>Candelaria</i> . |
| CC | Biotic soil crust: <i>Psora</i> , <i>Placidium</i> , cyanobacteria. |

11.38.4 CARBON_PCT

Percent carbon. The percent carbon content for the ground layer functional group ([FUNCTIONAL_GROUP_CD](#)).

11.38.5 NITROGEN_PCT

Percent nitrogen. The percent nitrogen content for the ground layer functional group ([FUNCTIONAL_GROUP_CD](#)).

11.38.6 BULKDENSITY_COEFF_M

Bulk density coefficient m. The value assigned to coefficient "m" for calculating bulk density of the ground layer functional group ([FUNCTIONAL_GROUP_CD](#)). See Smith and others (2015) for more detail.

11.38.7 BULKDENSITY_COEFF_A

Bulk density coefficient a. The value assigned to coefficient "a" for calculating bulk density of the ground layer functional group ([FUNCTIONAL_GROUP_CD](#)). See Smith and others (2015) for more detail.

11.38.8 BULKDENSITY_COEFF_B

Bulk density coefficient b. The value assigned to coefficient "b" for calculating bulk density of the ground layer functional group ([FUNCTIONAL_GROUP_CD](#)). See Smith and others (2015) for more detail.

11.38.9 CREATED_DATE

Created date. See SURVEY.[CREATED_DATE](#) description for definition.

11.38.10 MODIFIED_DATE

Modified date. See SURVEY.[MODIFIED_DATE](#) description for definition.

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Index of Tables

The following table contains an alphabetized list and brief descriptions of the tables included within this user guide.

| Index - Quick Link: | | | |
|---------------------|---|---|---|
| A | B | C | D |
| E | F | G | H |
| I | J | K | L |
| M | N | O | P |
| Q | R | S | T |
| U | V | W | X |
| Y | Z | - | - |

| Section | Oracle table name | Table name | Description |
|---------|-------------------|-------------------------------------|---|
| | | A | |
| | | B | |
| 3.8 | BEGINEND | Begin and End Table | Begin and end table. This table contains a counter to establish how many times to access a tree record in the TREE_GRM_ESTN table. This is used when calculating net growth accounting estimates. |
| 2.7 | BOUNDARY | Boundary Table | Boundary table. This table provides a description of the demarcation line between two conditions that occur on a single subplot. <ul style="list-style-type: none"> • BOUNDARY.PLT_CN = PLOT.CN links the boundary records to the unique plot record. |
| | | C | |

| Section | Oracle table name | Table name | Description |
|----------|-------------------------|---|--|
| 2.5 | COND | Condition Table | <p>Condition table. This 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).</p> <ul style="list-style-type: none"> COND.PLT_CN = PLOT.CN links the condition class record(s) to the plot table. COND.PLT_CN = SITETREE.PLT_CN and COND.CON DID = SITETREE.CON DID links the condition class record to the site tree data. COND.PLT_CN = TREE.PLT_CN and COND.CON DID = TREE.CON DID links the condition class record to the tree data. |
| 5.8 | COND_DWM_CALC | Condition Down Woody Material Calculation Table | <p>Condition down woody material calculation table. This table contains calculated values and condition-level estimates for down woody attributes by plot number (PLOT), condition class number (CONDID), and evaluation identifier (EVALID).</p> <ul style="list-style-type: none"> COND_DWM_CALC.PLT_CN = PLOT.CN links the down woody material calculation records to the unique plot record. COND_DWM_CALC.CND_CN = COND.CN links the down woody material calculation records to the unique condition record. COND_DWM_CALC.STRATUM_CN = POP_STRATUM.CN links the down woody material calculation records to the unique population stratum record. |
| 2.3 | COUNTY | County Table | <p>County table. This table contains survey unit codes and is also a reference table for the county codes and names.</p> <ul style="list-style-type: none"> COUNTY.CN = PLOT.CTY_CN links the unique county record to the plot record. |
| D | | | |
| 5.2 | DWM_COARSE_WOODY_DEBRIS | Down Woody Material Coarse Woody Debris Table | <p>Down woody material coarse woody debris table. This table provides information for each piece of coarse woody debris measured along the transects.</p> <ul style="list-style-type: none"> DWM_COARSE_WOODY_DEBRIS.PLT_CN = PLOT.CN links the down woody material coarse woody debris records to the unique plot record. DWM_COARSE_WOODY_DEBRIS.PLT_CN = COND.PLT_CN and DWM_COARSE_WOODY_DEBRIS.CON DID = COND.CON DID links the coarse woody debris records to the unique condition record. |

| Section | Oracle table name | Table name | Description |
|---------|-----------------------|--|--|
| 5.3 | DWM_DUFF_LITTER_FUEL | Down Woody Material Duff, Litter, Fuel Table | <p>Down woody material duff, litter, fuel table. This table provides information on the duff, litter, fuelbed depths measured at a point on the transects.</p> <ul style="list-style-type: none"> • DWM_DUFF_LITTER_FUEL.PLT_CN = PLOT.CN links the duff, litter, fuelbed records to the unique plot record. • DWM_DUFF_LITTER_FUEL.PLT_CN = COND.PLT_CN and DWM_DUFF_LITTER_FUEL.CONDID = COND.CONDID links the duff, litter, fuel records to the unique condition record. |
| 5.4 | DWM_FINE_WOODY_DEBRIS | Down Woody Material Fine Woody Debris Table | <p>Down woody material fine woody debris table. This table provides information on the fine woody debris measured along a segment of the transects.</p> <ul style="list-style-type: none"> • DWM_FINE_WOODY_DEBRIS.PLT_CN = PLOT.CN links the fine woody debris records to the unique plot record. • DWM_FINE_WOODY_DEBRIS.PLT_CN = COND.PLT_CN and DWM_FINE_WOODY_DEBRIS.CONDID = COND.CONDID links the fine woody debris records to the unique condition record. |
| 5.5 | DWM_MICROPLOT_FUEL | Down Woody Material Microplot Fuel Table | <p>Down woody material microplot fuel table. This table provides information on the fuel loads (shrubs and herbs) measured on the microplot.</p> <ul style="list-style-type: none"> • DWM_MICROPLOT_FUEL.PLT_CN = PLOT.CN links the microplot fuel records to the unique plot record. |
| 5.6 | DWM_RESIDUALPILE | Down Woody Material Residual Pile Table | <p>Down woody material residual pile table. This table provides information on the wood piles measured on the subplot.</p> <ul style="list-style-type: none"> • DWM_RESIDUALPILE.PLT_CN = PLOT.CN links the wood piles records to the unique plot record. • DWM_RESIDUALPILE.PLT_CN = COND.PLT_CN and DWM_RESIDUALPILE.CONDID = COND.CONDID links the wood piles records to the unique condition record. |
| 5.7 | DWM_TRANSECT_SEGMENT | Down Woody Material Transect Segment Table | <p>Down woody material transect segment table. This table describes the down woody material transect segment lengths by condition class.</p> <ul style="list-style-type: none"> • DWM_TRANSECT_SEGMENT.PLT_CN = PLOT.CN links the down woody material transect length records to the unique plot record. • DWM_TRANSECT_SEGMENT.PLT_CN = COND.PLT_CN and DWM_TRANSECT_SEGMENT.CONDID = COND.CONDID links the down woody material transect segment records to the unique condition record. |

| Section | Oracle table name | Table name | Description |
|---------|----------------------|--------------------------------------|---|
| 5.1 | DWM_VISIT | Down Woody Material Visit Table | <p>Down woody material visit table. This table provides general information on down woody material indicator visit, such as the date of the DWM survey.</p> <ul style="list-style-type: none"> DWM_VISIT.PLT_CN = PLOT.CN links the down woody material indicator visit record to the unique plot record. |
| | | E | |
| | | F | |
| | | G | |
| 7.1 | GRND_CVR | Ground Cover Table | <p>Ground cover table. This table provides ground cover measurement data for National Forest System (NFS) ownership protocols.</p> <ul style="list-style-type: none"> GRND_CVR.PLT_CN = PLOT.CN links the ground cover record to the unique plot record. |
| 7.2 | GRND_LYR_FNCTL_GRP | Ground Layer Functional Groups Table | Ground layer functional groups table. This table is used to record the data for thirteen ground layer functional groups that may be found on the sampled microquadrats. These data are used to determine nonvascular forest floor composition and carbon content on forest and nonforest conditions. |
| 7.3 | GRND_LYR_MICROQUAD | Ground Layer Microquadrat Table | Ground layer microquadrat table. This table records ground layer data for the microquadrats. |
| | | H | |
| | | I | |
| 4.1 | INVASIVE_SUBPLOT_SPP | Invasive Subplot Species Table | <p>Invasive subplot species table. This table provides percent cover data of invasive species identified on the subplot.</p> <ul style="list-style-type: none"> INVASIVE_SUBPLOT_SPP.PLT_CN = PLOT.CN links the invasive subplot species record(s) to the unique plot record. INVASIVE_SUBPLOT_SPP.PLT_CN = SUBP_COND.PLT_CN and INVASIVE_SUBPLOT_SPP.CONDID = SUBP_COND.CONDID and INVASIVE_SUBPLOT_SPP.SUBP = SUBP_COND.SUBP links the invasive subplot species record(s) to the unique subplot condition record. INVASIVE_SUBPLOT_SPP.VEG_SPCD = REF_PLANT_DICTIONARY.SYMBOL links the invasive vegetation subplot NRCS species code to the plant dictionary reference species code. |
| | | J | |
| | | K | |
| | | L | |
| | | M | |

| Section | Oracle table name | Table name | Description |
|---------|----------------------|--|--|
| | | N | |
| | | O | |
| | | P | |
| 4.3 | P2VEG_SUBP_STRUCTURE | Phase 2 Vegetation Subplot Structure Table | <p>Phase 2 Vegetation subplot structure table. This table provides percent cover by layer by growth habit.</p> <ul style="list-style-type: none"> P2VEG_SUBP_STRUCTURE.PLT_CN = PLOT.CN links the subplot structure record(s) to the unique plot record. P2VEG_SUBP_STRUCTURE.PLT_CN = SUBP_COND.PLT_CN and P2VEG_SUBP_STRUCTURE.CONDID = SUBO_COND.CONDID and P2VEG_SUBP_STRUCTURE.SUBP = SUBP_COND.SUBP links the vegetation subplot structure record(s) to the unique subplot condition record. |
| 4.2 | P2VEG_SUBPLOT_SPP | Phase 2 Vegetation Subplot Species Table | <p>Phase 2 Vegetation subplot species table. This table provides percent cover data of vegetation species identified on the subplot.</p> <ul style="list-style-type: none"> P2VEG_SUBPLOT_SPP.PLT_CN != PLOT.CN links the vegetation subplot species record(s) to the unique plot record. P2VEG_SUBPLOT_SPP.PLT_CN = SUBO_COND.PLT_CN and P2VEG_SUBPLOT_SPP.CONDID = SUBP_COND.CONDID and P2VEG_SUBPLOT_SPP.SUBP != SUBP_COND.SUBP links the vegetation subplot species record(s) to the unique subplot condition record. P2VEG_SUBPLOT_SPP.VEG_SPCD = REF_PLANT_DICTIONARY.SYMBOL links the P2 vegetation subplot NRCS species code to the plant dictionary reference species code. |
| 2.4 | PLOT | Plot Table | <p>Plot table. This table provides information relevant to the entire 1-acre field plot. This table links to most other tables, and the linkage is made using PLOT.CN = TABLE_NAME.PLT_CN (TABLE_NAME is the name of any table containing the column name PLT_CN). Below are some examples of linking PLOT to other tables.</p> <ul style="list-style-type: none"> PLOT.CN = COND.PLT_CN links the unique plot record to the condition class record(s). PLOT.CN = SUBPLOT.PLT_CN links the unique plot record to the subplot records. PLOT.CN = TREE.PLT_CN links the unique plot record to the tree records. PLOT.CN = SEEDLING.PLT_CN links the unique plot record to the seedling records. |

| Section | Oracle table name | Table name | Description |
|---------|-------------------|--|---|
| 10.1 | PLOTGEOM | Plot Geometry Table | Plot geometry table. This table contains geometric attributes associated with the plot location, such as the hydrological unit and roadless codes. <ul style="list-style-type: none"> • PLOTGEOM.CN = PLOT.CN links the unique plot record between the two tables. |
| 10.2 | PLOTSNAP | Plot Snapshot Table | Plot snapshot table. This table combines the information in the PLOT table with information in the PLOT_EVAL_GRP and POP_STRATUM tables to provide a snapshot of the plot records with their associated expansion and adjustment factors. <ul style="list-style-type: none"> • PLOTSNAP.CN = PLOT.CN links the unique plot record between the two tables. |
| 6.1 | PLOT_REGEN | Plot Regeneration Table | Plot regeneration table. This table contains the information for the four subplots describing the amount of animal browse pressure exerted on the regeneration of trees. <ul style="list-style-type: none"> • PLOT_REGEN.PLT_CN = PLOT.CN links the unique plot record to the unique plot regeneration record. |
| 9.1 | POP_ESTN_UNIT | Population Estimation Unit Table | Population estimation unit table. This table contains information about estimation units. An estimation unit is a geographic area that can be drawn on a map. It has a known area, and the sampling intensity must be the same within a stratum within an estimation unit. Generally, estimation units are contiguous areas, but exceptions are made when certain ownerships, usually National Forests, are sampled at different intensities. One record in the POP_ESTN_UNIT table corresponds to a single estimation unit. <p>POP_ESTN_UNIT.CN = POP_STRATUM.ESTN_UNIT_CN links the unique stratified geographical area (ESTN_UNIT) to the strata (STRATUMCD) that are assigned to each ESTN_UNIT.</p> |

| Section | Oracle table name | Table name | Description |
|---------|--------------------|---------------------------------------|--|
| 9.2 | POP_EVAL | Population Evaluation Table | <p>Population evaluation table. This table provides information about evaluations. An evaluation is the combination of a set of plots (the sample) and a set of Phase 1 data (obtained through remote sensing, called a stratification) that can be used to produce population estimates for a State (an evaluation may be created to produce population estimates for a region other than a State, such as the Black Hills National Forest). A record in the POP_EVAL table identifies one evaluation and provides some descriptive information about how the evaluation may be used.</p> <ul style="list-style-type: none"> POP_EVAL.CN = POP_ESTN_UNIT.EVAL_CN links the unique evaluation identifier (EVALID) in the POP_EVAL table to the unique geographical areas (ESTN_UNIT) that are stratified. Within a population evaluation (EVALID) there can be multiple population estimation units, or geographic areas across which there are a number of values being estimated (e.g., estimation of volume across counties for a given State). |
| 9.3 | POP_EVAL_ATTRIBUTE | Population Evaluation Attribute Table | <p>Population evaluation attribute table. This table provides information as to which population estimates can be provided by an evaluation. If an evaluation can produce only 22 of all the population estimates in the REF_POP_ATTRIBUTE table, there will be 22 records in the POP_EVAL_ATTRIBUTE table (one per population estimate) for that evaluation.</p> <ul style="list-style-type: none"> POP_EVAL_ATTRIBUTE.EVAL_CN = POP_EVAL.CN links the unique evaluation identifier to the list of population estimates that can be derived for that evaluation. |
| 9.4 | POP_EVAL_GRP | Population Evaluation Group Table | <p>Population evaluation group table. This table lists and describes the evaluation groups. One record in the POP_EVAL_GRP table can be linked to all the evaluations that were used in generating estimates for a State inventory report.</p> <ul style="list-style-type: none"> POP_EVAL_GRP.CN=POP_EVAL_TYP.EVAL_GRP_CN links the evaluation group record to the evaluation type record. |

| Section | Oracle table name | Table name | Description |
|---------|------------------------|--|---|
| 9.5 | POP_EVAL_TYP | Population Evaluation Type Table | <p>Population evaluation type table. This table provides information on the type of evaluations that were used to generate a set of tables for an inventory report. In a typical State inventory report, one evaluation is used to generate an estimate of the total land area; a second evaluation is used to generate current estimates of volume, numbers of trees and biomass; and a third evaluation is used for estimating growth, removals and mortality.</p> <ul style="list-style-type: none"> • POP_EVAL_TYP.EVAL_CN = POP_EVAL.CN links the evaluation type record to the evaluation record. • POP_EVAL_TYP.EVAL_GRP_CN=POP_EVAL_GRP.CN links the evaluation type record to the evaluation group record. • POP_EVAL_TYP.EVAL_TYP = REF_POP_EVAL_TYP_DESCR.EVAL_TYP links an evaluation type record to an evaluation type description reference record. |
| 9.6 | POP_PLOT_STRATUM_ASSGN | Population Plot Stratum Assignment Table | <p>Population plot stratum assignment table. This table provides a way to assign stratum information to a plot. Stratum information is assigned to a plot by overlaying the plot's location on the Phase 1 imagery. Plots are linked to their appropriate stratum for an evaluation via the POP_PLOT_STRATUM_ASSGN table.</p> <ul style="list-style-type: none"> • POP_PLOT_STRATUM_ASSGN.PLT_CN = PLOT.CN links the stratum assigned to the plot record. |
| 9.7 | POP_STRATUM | Population Stratum Table | <p>Population stratum table. This table provides information about individual strata. The area within an estimation unit is divided into strata. The area for each stratum can be calculated by determining the proportion of Phase 1 pixels/plots in each stratum and multiplying that proportion by the total area in the estimation unit. Information for a single stratum is stored in a single record of the POP_STRATUM table.</p> <ul style="list-style-type: none"> • POP_STRATUM.CN = POP_PLOT_STRATUM_ASSGN.STRATUM_CN links the defined stratum to each plot. |
| 2.2 | PROJECT | Project Table | <p>Project table. This table provides a list of FIA inventory projects. Each project targets one and only one population for study. A project is assigned to an FIA work unit, which has stewardship over that project.</p> |
| | | Q | |
| | | R | |

| Section | Oracle table name | Table name | Description |
|---------|------------------------------|--|---|
| 11.11 | REF_CITATION | Reference Citation Table | <p>Reference citation table. This table identifies the published source for information on specific gravities, moisture content, and bark as a percent of wood volume that is provided in the REF_SPECIES table.</p> <ul style="list-style-type: none"> • REF_CITATION.CITATION_NBR = REF_SPECIES.WOOD_SPGR_GREENVOL_DRYWT_CIT. • REF_CITATION.CITATION_NBR = REF_SPECIES.BARK_SPGR_GREENVOL_DRYWT_CIT • REF_CITATION.CITATION_NBR = REF_SPECIES.MC_PCT_GREEN_WOOD_CIT. • REF_CITATION.CITATION_NBR = REF_SPECIES.MC_PCT_GREEN_BARK_CIT. • REF_CITATION.CITATION_NBR = REF_SPECIES.WOOD_SPGR_MC12VOL_DRYWT_CIT • REF_CITATION.CITATION_NBR = REF_SPECIES.BARK_VOL_PCT_CIT. |
| 11.25 | REF_DAMAGE_AGENT | Reference Damage Agent Table | <p>Reference damage agent table. This table identifies damage agent codes, common and scientific names, and measurement thresholds for all damages collected.</p> <ul style="list-style-type: none"> • REF_DAMAGE_AGENT.DAG_CODE = REF_DAMAGE_AGENT_GROUP.CODE links the damage agent code to the damage agent group code. |
| 11.26 | REF_DAMAGE_AGENT_GROUP | Reference Damage Agent Group Table | <p>Reference damage agent group table. This table identifies the codes and descriptions of the damage agent groups.</p> |
| 11.30 | REF_DIFFERENCE_TEST_PER_ACRE | Reference Difference Test Per Acre Table | <p>Reference difference test per acre table. This table contains Oracle SQL scripts for comparing ratio estimates (per acre) of an attribute between two different groups.</p> |
| 11.31 | REF_DIFFERENCE_TEST_TOTALS | Reference Difference Test Totals Table | <p>Reference difference test totals table. This table contains Oracle SQL scripts for comparing total estimates of an attribute between two different groups.</p> |
| 11.12 | REF_FIADB_VERSION | Reference Forest Inventory and Analysis Database Version Table | <p>Reference forest inventory and analysis database version table. This table contains information identifying the format of the currently available FIADB.</p> |

| Section | Oracle table name | Table name | Description |
|---------|-----------------------|---|--|
| 11.3 | REF_FOREST_TYPE | Reference Forest Type Table | <p>Reference forest type table. This table contains forest type codes, descriptive names and other information. Data users should link codes as shown below and then obtain the information stored in MEANING to convert the code to a name.</p> <ul style="list-style-type: none"> • REF_FOREST_TYPE.VALUE = COND.FORTYPCD links the forest type reference record to the condition forest code used for reporting and analysis purposes. • REF_FOREST_TYPE.VALUE = COND.FLDTYPCD links the forest type reference record to the condition forest type code recorded by field crews. • REF_FOREST_TYPE.VALUE = COND.FORTYPCDCALC links the forest type reference record to the condition forest type code calculated by an algorithm. |
| 11.4 | REF_FOREST_TYPE_GROUP | Reference Forest Type Group Table | <p>Reference forest type group table. This table contains forest type grouping codes, and descriptive names. Data users should link codes as shown below and then obtain the information stored in MEANING to convert the code to a name.</p> <ul style="list-style-type: none"> • REF_FOREST_TYPE_GROUP.VALUE = REF_FOREST_TYPE.TYPGRPCD links the forest type group reference record to the forest type reference record. To display the forest type group code, the forest type reference record must be linked to the condition record by linking REF_FOREST_TYPE.VALUE to COND.FORTYPCD, COND.FLDTYPCD, or COND.FORTYPCDCALC. |
| 11.28 | REF_FVS_LOC_NAME | Reference Forest Vegetation Simulator Location Name Table | <p>Reference forest vegetation simulator location name table. This table contains FVS variant codes, and descriptive names.</p> |
| 11.27 | REF_FVS_VAR_NAME | Reference Forest Vegetation Simulator Variant Name Table | <p>Reference forest vegetation simulator variant name table. This table contains FVS location codes, and descriptive names.</p> |
| 11.33 | REF_GRM_TYPE | Reference Tree Growth, Removal, and Mortality Type Table | <p>Reference tree growth, removal, and mortality type table. This table summarizes information identifying the method used for growth, removals, and mortality (GRM) estimation.</p> |
| 11.38 | REF_GRND_LYR | Reference Ground Layer Table | <p>Reference ground layer table. This table stores bulk density coefficients for ground layer functional groups and associated information (e.g., ground layer configuration name, percent carbon content, percent nitrogen content).</p> |

| Section | Oracle table name | Table name | Description |
|---------|--------------------------|---|--|
| 11.9 | REF_HABTYP_DESCRIPTION | Reference Habitat Type Description Table | <p>Reference habitat type description table. This table contains habitat type codes, and associated scientific plant species abbreviation and common name for each habitat type. Users wanting to know the publication that further describes the habitat type should link codes as shown below to obtain the corresponding publication information.</p> <ul style="list-style-type: none"> • REF_HABTYP_DESCRIPTION.HABTYP_CD = COND.HABTYP_CD and REF_HABTYP_DESCRIPTION.PUB_CD = COND.HABTYP_CD_DESCR_PUB_CD and REF_HABTYP_DESCRIPTION.PUB_CD = REF_HABTYP_PUBLICATION.PUB_CD links the primary habitat type code to reference description habitat code and primary habitat type publication code to the reference description publication code and reference description publication code to the publication reference information. (see figure 9-1). • REF_HABTYP_DESCRIPTION.HABTYP_CD = COND.HABTYP_CD and REF_HABTYP_DESCRIPTION.PUB_CD = COND.HABTYP_CD_DESCR_PUB_CD and REF_HABTYP_DESCRIPTION.PUB_CD = REF_HABTYP_PUBLICATION.PUB_CD links the secondary habitat type code to reference description habitat code and secondary habitat type publication code to the reference description publication code and reference description publication code to the publication reference information. |
| 11.10 | REF_HABTYP_PUBLICATION | Reference Habitat Type Publication Table | <p>Reference habitat type publication table. This table contains the publication information (title, author) for the publication code. See the links described above in REF_HABTYP_DESCRIPTION.</p> |
| 11.34 | REF_INTL_TO_DOYLE_FACTOR | Reference International to Doyle Volume Factors Table | <p>Reference international to Doyle volumes factors. This table contains conversion factors (by diameter class) that are multiplied by International 1/4-inch log rule board-foot volume to produce Doyle log rule board-foot volume. The Doyle log rule conversion factors are based on tree volumes from Illinois, Indiana, Iowa, and Missouri (Brand and Walkowiak 1991).</p> |
| 11.8 | REF_INVASIVE_SPECIES | Reference Invasive Species Table | <p>Reference invasive species table. This table contains the invasive species list by State.</p> <ul style="list-style-type: none"> • REF_INVASIVE_SPECIES.SYMBOL = INVASIVE_SUBPLOT_SPP.VEG_SPCD links the invasive species reference to the invasive species NRCS code. • REF_INVASIVE_SPECIES.SYMBOL = REF_PLANT_DICTIONARY.SYMBOL links the invasive species reference to the plant dictionary reference NRCS species code. |

| Section | Oracle table name | Table name | Description |
|---------|--------------------------|--|--|
| 11.16 | REF_NVCS_HIERARCHY_STRCT | Reference National Vegetation Classification Standard (NVCS) Hierarchy Structure Table | Reference national vegetation classification standard (NVCS) hierarchy structure table. This table describes the structure of a given National Vegetation Classification Standard (NVCS) hierarchy. |
| 11.17 | REF_NVCS_LEVEL_1_CODES | Reference National Vegetation Classification Standard Level 1 Codes Table | Reference national vegetation classification standard level 1 codes table. This table contains definitions of the codes for the first level of the National Vegetation Classification Standard (NVCS) hierarchy. |
| 11.18 | REF_NVCS_LEVEL_2_CODES | Reference National Vegetation Classification Standard Level 2 Codes Table | Reference national vegetation classification standard level 2 codes table. This table contains definitions of the codes for the second level of the National Vegetation Classification Standard (NVCS) hierarchy. |
| 11.19 | REF_NVCS_LEVEL_3_CODES | Reference National Vegetation Classification Standard Level 3 Codes Table | Reference national vegetation classification standard level 3 codes table. This table contains definitions of the codes for the third level of the National Vegetation Classification Standard (NVCS) hierarchy. |
| 11.20 | REF_NVCS_LEVEL_4_CODES | Reference National Vegetation Classification Standard Level 4 Codes Table | Reference national vegetation classification standard level 4 codes table. This table contains definitions of the codes for the fourth level of the National Vegetation Classification Standard (NVCS) hierarchy. |
| 11.21 | REF_NVCS_LEVEL_5_CODES | Reference National Vegetation Classification Standard Level 5 Codes Table | Reference national vegetation classification standard level 5 codes table. This table contains definitions of the codes for the fifth level of the National Vegetation Classification Standard (NVCS) hierarchy. |
| 11.22 | REF_NVCS_LEVEL_6_CODES | Reference National Vegetation Classification Standard Level 6 Codes Table | Reference national vegetation classification standard level 6 codes table. This table contains definitions of the codes for the sixth level of the National Vegetation Classification Standard (NVCS) hierarchy. |

| Section | Oracle table name | Table name | Description |
|---------|------------------------|---|---|
| 11.23 | REF_NVCS_LEVEL_7_CODES | Reference National Vegetation Classification Standard Level 7 Codes Table | Reference national vegetation classification standard level 7 codes table. This table contains definitions of the codes for the seventh level of the National Vegetation Classification Standard (NVCS) hierarchy. |
| 11.24 | REF_NVCS_LEVEL_8_CODES | Reference National Vegetation Classification Standard Level 8 Codes Table | Reference national vegetation classification standard level 8 codes table. This table contains definitions of the codes for the eighth level of the National Vegetation Classification Standard (NVCS) hierarchy. |
| 11.29 | REF_OWNGRPCD | Reference Owner Group Code Table | Reference owner group code. This table identifies the codes and descriptions of the owner groups. |
| 11.6 | REF_PLANT_DICTIONARY | Reference Plant Dictionary | <p>Reference plant dictionary table. This table contains information about plant species as defined in the NRCS PLANTS database. The species symbol, common name, scientific name, growth habit and other identifying information are included in this table. Data users should link codes as shown below and then obtain the information stored in one of the columns such as COMMON_NAME or SCIENTIFIC_NAME to convert the code to a name.</p> <ul style="list-style-type: none"> • REF_PLANT_DICTIONARY.SYMBOL = INVASIVE_SUBPLOT_SPP.VEG_SPCD links the plant dictionary reference species code to the invasive vegetation subplot NRCS species code. • REF_PLANT_DICTIONARY.SYMBOL = P2VEG_SUBPLOT_SPP.VEG_SPCD links the plant dictionary reference species code to the P2 vegetation subplot NRCS species code. |
| 11.1 | REF_POP_ATTRIBUTE | Reference Population Attribute Table | <p>Reference population attribute table. This table identifies all of the population estimates that are currently supported, and provides information useful to the estimation procedure, such as how to calculate forest area.</p> <ul style="list-style-type: none"> • REF_POP_ATTRIBUTE.ATTRIBUTE_NBR = POP_EVAL_ATTRIBUTE.ATTRIBUTE_NBR links the description of the unique population estimate to the records of evaluations that can be used to make those estimates. |
| 11.2 | REF_POP_EVAL_TYP_DESCR | Reference Population Evaluation Type Description Table | <p>Reference population evaluation type description table. This table contains the description for each evaluation type.</p> <ul style="list-style-type: none"> • REF_POP_EVAL_TYP_DESCR.EVAL_TYP = POP_EVAL_TYP.EVAL_TYP links an evaluation type description reference record to an evaluation type record. |

| Section | Oracle table name | Table name | Description |
|---------|----------------------------|--|---|
| 11.15 | REF_RESEARCH_STATION | Reference Research Station Table | Reference research station table. This table contains the state codes, and abbreviations, and the region or station codes and abbreviations. |
| 11.32 | REF_SIEQN | Reference Site Index Equation Table | Reference site index equation table. This table contains information about site index equations, including references and notes. |
| 11.5 | REF_SPECIES | Reference Species Table | <p>Reference species table. This table contains the species code, descriptive common name, scientific name, and many other attributes for each species. For example, data users who want to convert the species code to the associated common name should link codes as shown below and then obtain the information stored in COMMON_NAME.</p> <ul style="list-style-type: none"> • REF_SPECIES.SPCD = TREE.SPCD links the species reference table record to the tree species code. • REF_SPECIES.SPCD = SEEDLING.SPCD links the species reference table record to the seedling species code. • REF_SPECIES.SPCD = SITETREE.SPCD links the species reference table record to the site tree species code. |
| 11.7 | REF_SPECIES_GROUP | Reference Species Group Table | <p>Reference species group table. This table contains the species group code, descriptive name, and several other attributes for each species group. Data users should link codes as shown below and then obtain the information stored in NAME to convert the code to a descriptive name.</p> <ul style="list-style-type: none"> • REF_SPECIES_GROUP.SPGRPCD = TREE.SPGRPCD links the species group reference table to the tree species group code. • REF_SPECIES_GROUP.SPGRPCD = SEEDLING.SPGRPCD links the species reference table record to the seedling species group code. • REF_SPECIES_GROUP.SPGRPCD = SITETREE.SPGRPCD links the species reference table record to the site tree species group code. |
| 11.13 | REF_STATE_ELEV | Reference State Elevation Table | <p>Reference state elevation table. This table contains information about minimum and maximum elevation found within a State.</p> <ul style="list-style-type: none"> • REF_STATE_ELEV.STATECD = SURVEY.STATECD links the State elevation reference record to the survey record. |
| 11.35 | REF_TREE_CARBON_RATIO_DEAD | Reference Tree Carbon Ratio Dead Table | Reference tree carbon ratio dead table. This table stores mean carbon ratios by decay class and softwood/hardwood classification. These carbon ratios are used by FIA for the "National Scale Volume and Biomass" (NSVB) system to estimate aboveground carbon in standing dead trees. Refer to appendix K for information on FIA volume, biomass, and carbon estimates. |

| Section | Oracle table name | Table name | Description |
|----------|---------------------------|---|--|
| 11.36 | REF_TREE_DECAY_PR_OP | Reference Tree Decay Proportion Table | Reference tree decay proportion table. This table stores density reduction factors by decay class and softwood/hardwood classification. These values are used by FIA for the "National Scale Volume and Biomass" (NSVB) system to estimate loss of mass for a decayed standing dead trees (compared to a live tree) and applied to stem wood, stem bark, and branch biomass. Refer to appendix K for information on FIA volume, biomass, and carbon estimation. |
| 11.37 | REF_TREE_SND_DEAD_CR_PROP | Reference Tree Standing Dead Crown Ratio Proportion Table | Reference tree decay proportion table. This table stores mean crown ratio values by ecoregion province and softwood/hardwood classification. These values are used by FIA for the "National Scale Volume and Biomass" (NSVB) system when accounting for volume and biomass loss due to broken tops for standing dead trees. |
| 11.14 | REF_UNIT | Reference Unit Table | Reference unit table. This table contains the description for each survey unit in a State. <ul style="list-style-type: none"> REF_UNIT.STATECD = PLOT.STATECD and REF_UNIT.VALUE = PLOT.UNITCD links the survey unit description (MEANING) to the PLOT record. |
| S | | | |
| 3.9 | SEEDLING | Seedling Table | Seedling table. This table provides a count of the number of live 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. <ul style="list-style-type: none"> SEEDLING.PLT_CN = PLOT.CN links the seedling records to the unique plot record. SEEDLING.PLT_CN = COND.PLT_CN and SEEDLING.CON DID = COND.CON DID links the condition record to the seedling record. |
| 6.3 | SEEDLING_REGEN | Seedling Regeneration Table | Seedling regeneration table. This table contains provides information on the seedling count by condition, species, source, and length class for the tree regeneration study. <ul style="list-style-type: none"> SEEDLING_REGEN.PLT_CN = PLOT.CN links the unique plot record to the seedling regeneration records. SEEDLING_REGEN.PLT_CN = COND.PLT_CN and SEEDLING_REGEN.CON DID = COND.CON DID links the regeneration seedling records to the unique condition record. |
| 3.10 | SITETREE | Site Tree Table | Site tree table. This table provides information on the site tree(s) collected in order to calculate site index and/or site productivity information for a condition. <ul style="list-style-type: none"> SITETREE.PLT_CN = PLOT.CN links the site tree records to the unique plot record. SITETREE.PLT_CN = COND.PLT_CN and SITETREE.CON DID = COND.CON DID links the site tree record(s) to the unique condition class record. |

| Section | Oracle table name | Table name | Description |
|---------|------------------------|------------------------------------|---|
| 8.2 | SUBP_SOIL_SAMPLE_LAYER | Subplot Soil Sample Layer Table | Subplot soil sample layer table. This table contains information about the bulk density, percent carbon and nitrogen content, and carbon and nitrogen content per acre for each soil profile layer type associated with a soil sample location. |
| 8.1 | SUBP_SOIL_SAMPLE_LOC | Subplot Soil Sample Location Table | Subplot soil sample location table. This table contains information about soil sample status and method, depth to restriction, and total carbon and nitrogen per acre, 3 inches. |
| 2.6 | SUBPLOT | Subplot Table | <p>Subplot table. This table describes the features of a single subplot. There are multiple subplots per 1-acre field plot and there can be multiple conditions sampled on each subplot.</p> <ul style="list-style-type: none"> • SUBPLOT.PLT_CN = PLOT.CN links the unique plot record to the subplot records. • SUBPLOT.PLT_CN = COND.PLT_CN and SUBPLOT.MACRCOND = COND.CON DID links the macroplot conditions to the condition class record. • SUBPLOT.PLT_CN = COND.PLT_CN and SUBPLOT.SUBPCOND = COND.CON DID links the subplot conditions to the condition class record. • SUBPLOT.PLT_CN = COND.PLT_CN and SUBPLOT.MICRCOND = COND.CON DID links the microplot conditions to the condition class record. |
| 2.7 | SUBP_COND | Subplot Condition Table | <p>Subplot condition table. This table contains information about the proportion of a subplot in a condition.</p> <ul style="list-style-type: none"> • SUBP_COND.PLT_CN = PLOT.CN links the subplot condition class record to the plot table. • SUBP_COND.PLT_CN = COND.PLT_CN and SUBP_COND.CON DID = COND.CON DID links the condition class records found on the four subplots to the subplot description. |
| 2.9 | SUBP_COND_CHNG_MTRX | Subplot Condition Change Matrix | <p>Subplot condition change matrix table. This table contains information about the mix of current and previous conditions that occupy the same area on the subplot.</p> <ul style="list-style-type: none"> • SUBP_COND_CHNG_MTRX.PLT_CN = PLOT.CN links the subplot condition change matrix records to the unique plot record. • SUBP_COND_CHNG_MTRX.PREV_PLT_CN = PLOT.PREV_PLT_CN links the subplot condition change matrix records to the unique previous plot record. |

| Section | Oracle table name | Table name | Description |
|---------|--------------------|---|--|
| 6.2 | SUBPLOT_REGEN | Subplot Regeneration Table | <p>Subplot regeneration table. This table provides information on the subplot survey status and the site survey limitations, if any, for the tree regeneration study.</p> <ul style="list-style-type: none"> • SUBPLOT_REGEN.PLT_CN = PLOT.CN links the unique plot record to the subplot regeneration records. • SUBPLOT_REGEN.PLT_CN = SUBPLOT.PLT_CN and SUBPLOT_REGEN.SUBP = SUBPLOT.SUBP links the subplot record to the subplot regeneration record. |
| 2.1 | SURVEY | Survey Table | <p>Survey table. This table contains one record for each year an inventory is conducted in a State for annual inventory or one record for each periodic inventory.</p> <ul style="list-style-type: none"> • SURVEY.CN = PLOT.SRV_CN links the unique inventory record for a State and year to the plot records. |
| | | T | |
| 3.1 | TREE | Tree Table | <p>Tree table. This table provides information for each tree 1 inch in diameter and larger found on a microplot, subplot, or <i>core optional</i> macroplot.</p> <ul style="list-style-type: none"> • TREE.PLT_CN = PLOT.CN links the tree records to the unique plot record. • TREE.PLT_CN = COND.PLT_CN and TREE.CON DID = COND.CON DID links the tree records to the unique condition record. |
| 3.6 | TREE_GRM_BEGIN | Tree Growth, Removal, and Mortality Begin Table | <p>Tree growth, removal, and mortality begin table. This table contains information for remeasured trees where values have been calculated for the beginning of the remeasurement period. Only those trees where information was recalculated for time 1 (T1) are included. The information in this table is used to produce growth, removal and mortality estimates on remeasured trees.</p> <ul style="list-style-type: none"> • TREE_GRM_BEGIN.TRE_CN = TREE.TRE_CN links the records in this table to the corresponding tree record in the TREE table. |
| 3.3 | TREE_GRM_COMPONENT | Tree Growth, Removal, and Mortality Component Table | <p>Tree growth, removal, and mortality component table. This table stores information used to compute growth, removals, and mortality estimates for remeasurement trees. Each remeasurement tree has a single record in this table.</p> <ul style="list-style-type: none"> • TREE_GRM_COMPONENT.TRE_CN = TREE.TRE_CN links the records in this table to the corresponding tree record in the TREE table. |

| Section | Oracle table name | Table name | Description |
|---------|---------------------|--|---|
| 3.7 | TREE_GRM_ESTN | Tree Growth, Removal, and Mortality Estimation Table | <p>Tree growth, removal, and mortality estimation table. This table contains information used to produce estimates of growth, removals and mortality.</p> <ul style="list-style-type: none"> • TREE_GRM_ESTN.PLT_CN = PLOT.CN links the tree GRM estimation records to the unique plot record. • TREE_GRM_ESTN.TRE_CN = TREE.CN links the tree GRM estimation records to the unique tree record. |
| 3.5 | TREE_GRM_MIDPT | Tree Growth, Removal, and Mortality Midpoint Table | <p>Tree growth, removal, and mortality midpoint table. This table contains information about a remeasured tree at the midpoint of the remeasurement period. It does not contain a record for every tree. Midpoint estimates are computed for trees that experience mortality, removal, or land use diversion or reversion. The information in this table is used to compute growth, removal, and mortality estimates on remeasurement trees.</p> <ul style="list-style-type: none"> • TREE_GRM_MIDPT.TRE_CN = TREE.TRE_CN links the records in this table to the corresponding tree record in the TREE table. |
| 3.4 | TREE_GRM_THRESHOLD | Tree Growth, Removal, and Mortality Threshold Table | <p>Tree growth, removal, and mortality threshold table. This table stores information about ingrowth trees at specific tree threshold sizes.</p> <ul style="list-style-type: none"> • TREE_GRM_THRESHOLD.TRE_CN = TREE.CN links the tree GRM threshold records to the unique tree record. |
| 3.2 | TREE_WOODLAND_STEMS | Tree Woodland Stems Table | <p>Tree woodland stems table. This table stores data for the individual stems of a woodland species tree. Individual woodland stem diameter measurements contribute to the calculation of the diameter stored on the parent TREE table record.</p> <ul style="list-style-type: none"> • TREE_WOODLAND_STEMS.TRE_CN = TREE.CN links a woodland stems record to the corresponding unique tree record. |
| | | U | |
| | | V | |
| | | W | |
| | | X | |
| | | Y | |
| | | Z | |

Section revision: 04.2024

Index of Column Names

The following table contains an alphabetized list of all of the column names (attributes) in the database tables included within this user guide. The Oracle table name and descriptive name associated with each attribute are also listed. The "Subsection" number indicates the location of the attribute within this user guide. The "Field Guide section" number indicates the location of the attribute within the FIA National Core Field Guide. A dash means there is no field guide section for the attribute.

| Index - Quick Link: | | | |
|---------------------|---|---|---|
| A | B | C | D |
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| Y | Z | - | - |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|-----------------------|---|
| A | | | | |
| 11.4.3 | - | ABBR | REF_FOREST_TYPE_GROUP | Abbreviation |
| 11.1.6 | - | ACTIVE | REF_POP_ATTRIBUTE | Active |
| 3.1.22 | 5.15 | ACTUALHT | TREE | Actual height |
| 3.6.10 | - | ACTUALHT | TREE_GRM_BEGIN | Actual height |
| 3.5.10 | - | ACTUALHT | TREE_GRM_MIDPT | Actual height |
| 3.4.11 | - | ACTUALHT | TREE_GRM_THRESHOLD | Actual height |
| 3.1.134 | - | ACTUALHT_CALC | TREE | Actual height, calculated |
| 3.1.135 | - | ACTUALHT_CALC_CD | TREE | Actual height, calculated, code |
| 2.5.15 | - | ADFORCD | COND | Administrative forest code |
| 10.2.67 | - | ADJ_EXPALL | PLOTSNAP | Adjustment factor for EXPALL evaluation |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|--------------------------|-------------------|---|
| 10.2.81 | - | ADJ_EXPCHNG_MACR | PLOTSNAP | Macroplot adjustment factor for EXPCHNG evaluation |
| 10.2.83 | - | ADJ_EXPCHNG_MICR | PLOTSNAP | Microplot adjustment factor for EXPCHNG evaluation |
| 10.2.82 | - | ADJ_EXPCHNG_SUBP | PLOTSNAP | Subplot adjustment factor for EXPCHNG evaluation |
| 10.2.68 | - | ADJ_EXPCURR | PLOTSNAP | Adjustment factor for EXPCURR evaluation |
| 10.2.84 | - | ADJ_EXPDWM_CWD | PLOTSNAP | Adjustment factor for coarse woody debris estimates using EXPDWM evaluation |
| 10.2.87 | - | ADJ_EXPDWM_DUFF | PLOTSNAP | Adjustment factor for duff, litter, and fuelbed estimates using EXPDWM evaluation |
| 10.2.86 | - | ADJ_EXPDWM_FWD_LG | PLOTSNAP | Adjustment factor for large fine woody debris estimates using EXPDWM evaluation |
| 10.2.85 | - | ADJ_EXPDWM_FWD_SM | PLOTSNAP | Adjustment factor for small fine woody debris estimates using EXPDWM evaluation |
| 10.2.88 | - | ADJ_EXPDWM_PILE | PLOTSNAP | Adjustment factor for pile estimates using EXPDWM evaluation |
| 10.2.93 | - | ADJ_EXPGRNDLYR_MICROQUAD | PLOTSNAP | Microquadrat adjustment factor for estimates using EXPGRNDLYR evaluation type |
| 10.2.72 | - | ADJ_EXPGROW_MACR | PLOTSNAP | Macroplot adjustment factor for EXPGROW evaluation |
| 10.2.74 | - | ADJ_EXPGROW_MICR | PLOTSNAP | Microplot adjustment factor for EXPGROW evaluation |
| 10.2.73 | - | ADJ_EXPGROW_SUBP | PLOTSNAP | Subplot adjustment factor for EXPGROW evaluation |
| 10.2.90 | - | ADJ_EXPINV_SUBP | PLOTSNAP | Subplot adjustment factor for estimates using EXPINV evaluation |
| 10.2.75 | - | ADJ_EXPMORT_MACR | PLOTSNAP | Macroplot adjustment factor for EXPMORT evaluation |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------------|-------------------|---|
| 10.2.77 | - | ADJ_EXPMORT_MICR | PLOTSNAP | Microplot adjustment factor for EXPMORT evaluation |
| 10.2.76 | - | ADJ_EXPMORT_SUBP | PLOTSNAP | Subplot adjustment factor for EXPMORT evaluation |
| 10.2.91 | - | ADJ_EXPP2VEG_SUBP | PLOTSNAP | Subplot adjustment factor for estimates using EXPP2VEG evaluation |
| 10.2.89 | - | ADJ_EXPREGEN_MICR | PLOTSNAP | Microplot adjustment factor for estimates using EXPREGEN evaluation |
| 10.2.78 | - | ADJ_EXPREMV_MACR | PLOTSNAP | Macroplot adjustment factor for EXPREMV evaluation |
| 10.2.80 | - | ADJ_EXPREMV_MICR | PLOTSNAP | Microplot adjustment factor for EXPREMV evaluation |
| 10.2.79 | - | ADJ_EXPREMV_SUBP | PLOTSNAP | Subplot adjustment factor for EXPREMV evaluation |
| 10.2.92 | - | ADJ_EXPSOIL | PLOTSNAP | Adjustment factor for EXPSOIL evaluation |
| 10.2.69 | - | ADJ_EXPVOL_MACR | PLOTSNAP | Macroplot adjustment factor for EXPVOL evaluation |
| 10.2.71 | - | ADJ_EXPVOL_MICR | PLOTSNAP | Microplot adjustment factor for EXPVOL evaluation |
| 10.2.70 | - | ADJ_EXPVOL_SUBP | PLOTSNAP | Subplot adjustment factor for EXPVOL evaluation |
| 9.7.15 | - | ADJ_FACTOR_CWD | POP_STRATUM | Adjustment factor for coarse woody debris |
| 9.7.18 | - | ADJ_FACTOR_DUFF | POP_STRATUM | Adjustment factor for the duff and litter layer |
| 9.7.17 | - | ADJ_FACTOR_FWD_LG | POP_STRATUM | Adjustment factor for large fine woody debris |
| 9.7.16 | - | ADJ_FACTOR_FWD_SM | POP_STRATUM | Adjustment factor for small fine woody debris |
| 9.7.29 | - | ADJ_FACTOR_GRNDLYR_MICROQ_UAD | POP_STRATUM | Adjustment factor for ground cover layer on the microquadrat |
| 9.7.27 | - | ADJ_FACTOR_INV_SUBP | POP_STRATUM | Adjustment factor for invasive species on the subplot |
| 9.7.12 | - | ADJ_FACTOR_MACR | POP_STRATUM | Adjustment factor for the macroplot |
| 9.7.14 | - | ADJ_FACTOR_MICR | POP_STRATUM | Adjustment factor for the microplot |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|--------------------------------|--------------------|---|
| 9.7.28 | - | ADJ_FACTOR_P2VEG_SUBP | POP_STRATUM | Adjustment factor for Phase 2 vegetation profile on the subplot |
| 9.7.25 | - | ADJ_FACTOR_PILE | POP_STRATUM | Adjustment factor for piles |
| 9.7.26 | - | ADJ_FACTOR_REGEN_MICR | POP_STRATUM | Adjustment factor for tree regeneration indicator on the microplot |
| 9.7.30 | - | ADJ_FACTOR_SOIL | POP_STRATUM | Adjustment factor for soil points sampled |
| 9.7.13 | - | ADJ_FACTOR_SUBP | POP_STRATUM | Adjustment factor for the subplot |
| 2.5.103 | - | ADMIN_WITHDRAWN_CD | COND | Administratively withdrawn code |
| 2.5.106 | 2.5.33 | AFFORESTATION_CD | COND | Current afforestation code |
| 2.5.118 | - | AGE_BASIS_CD_PNWRS | COND | Age basis code, Pacific Northwest Research Station |
| 3.10.33 | - | AGE_DETERMINATION_METHOD_PNWRS | SITETREE | Age determination method, Pacific Northwest Research Station |
| 3.9.31 | - | AGECD_RMRS | SEEDLING | Seedling age code, Rocky Mountain Research Station |
| 3.10.32 | - | AGECHKCD_RMRS | SITETREE | Radial growth and tree age check code, Rocky Mountain Research Station |
| 3.1.148 | - | AGECHKCD_RMRS | TREE | Radial growth and tree age check code, Rocky Mountain Research Station |
| 3.10.14 | 7.2.5 | AGEDIA | SITETREE | Tree age at diameter |
| 3.1.27 | 5.21 | AGENTCD | TREE | Cause of death (agent) code |
| 3.1.146 | - | AGENTCD_NERS | TREE | General damage / cause of death (agent) code, Northeastern Research Station |
| 11.3.6 | - | ALLOWED_IN_FIELD | REF_FOREST_TYPE | Allowed in field |
| 11.28.6 | - | ALLOWED_IN_FIELD | REF_FVS_LOC_NAME | Allowed in field |
| 11.27.6 | - | ALLOWED_IN_FIELD | REF_FVS_VAR_NAME | Allowed in field |
| 10.1.21 | - | ALP_ADFORCD | PLOTGEOM | Administrative forest code |
| 2.5.53 | - | ALSTK | COND | All-live-tree stocking percent |
| 2.5.37 | - | ALSTKCD | COND | All live stocking code |
| 3.3.8 | - | ANN_DIA_GROWTH | TREE_GRM_COMPONENT | Computed annual diameter growth |
| 3.3.9 | - | ANN_HT_GROWTH | TREE_GRM_COMPONENT | Computed annual height growth |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|------------------------------|------------------------------|--|
| 2.1.8 | - | ANN_INVENTORY | SURVEY | Annual inventory |
| 3.7.16 | - | ANN_NET_GROWTH | TREE_GRM_ESTN | Average annual net growth estimate |
| 9.1.11 | - | AREA_SOURCE | POP_ESTN_UNIT | Area source |
| 9.1.10 | - | AREA_USED | POP_ESTN_UNIT | Area used to calculate all expansion factors |
| 9.1.8 | - | AREALAND_EU | POP_ESTN_UNIT | Land area within the estimation unit |
| 9.1.9 | - | AREATOT_EU | POP_ESTN_UNIT | Total area within the estimation unit |
| 2.5.34 | - | ASPECT | COND | Condition aspect |
| 2.6.17 | 3.9 | ASPECT | SUBPLOT | Subplot aspect |
| 11.1.2 | - | ATTRIBUTE_DESCR | REF_POP_ATTRIBUTE | Attribute description |
| 9.3.3 | - | ATTRIBUTE_NBR | POP_EVAL_ATTRIBUTE | Attribute number |
| 11.1.1 | - | ATTRIBUTE_NBR | REF_POP_ATTRIBUTE | Attribute number |
| 11.30.4 | - | ATTRIBUTE_NBR | REF_DIFFERENCE_TEST_PER_ACRE | Attribute number |
| 11.31.4 | - | ATTRIBUTE_NBR | REF_DIFFERENCE_TEST_TOTALS | Attribute number |
| 11.10.4 | - | AUTHOR | REF_HABTYP_PUBLICATION | Author of publication |
| 5.8.96 | - | AVG_WOOD_DENSITY | COND_DWM_CALC | Average wood density |
| 5.6.12 | - | AZIMUTH | DWM_RESIDUALPILE | Azimuth |
| 3.10.19 | 7.2.8 | AZIMUTH | SITETREE | Azimuth |
| 3.1.12 | 5.4 | AZIMUTH | TREE | Azimuth |
| | | B | | |
| 2.5.51 | - | BALIVE | COND | Basal area per acre of live trees |
| 3.6.24 | - | BALIVE | TREE_GRM_BEGIN | Basal area per acre of live trees |
| 3.5.24 | - | BALIVE | TREE_GRM_MIDPT | Basal area per acre of live trees |
| 3.4.25 | - | BALIVE | TREE_GRM_THRESHOLD | Basal area per acre of live trees |
| 11.36.5 | - | BARK_LOSS_PROP | REF_TREE_DECAY_PROP | Bark loss proportion |
| 11.36.6 | - | BRANCH_LOSS_PROP | REF_TREE_DECAY_PROP | Branch loss proportion |
| 11.5.24 | - | BARK_SPGR_GREENVOL_DRYWT | REF_SPECIES | Green specific gravity of bark |
| 11.5.25 | - | BARK_SPGR_GREENVOL_DRYWT_CIT | REF_SPECIES | Citation for BARK_SPGR_GREENVOL_DRYWT |
| 11.5.30 | - | BARK_VOL_PCT | REF_SPECIES | Bark volume as a percent of wood volume |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-----------------------------|--------------------------|---|
| 11.5.59 | - | BARK_VOL_PCT_CIT | REF_SPECIES | Citation for BARK_VOL_PCT |
| 3.1.63 | - | BFSND | TREE | Board-foot-cull soundness |
| 3.1.147 | - | BFSNDCD_NERS | TREE | Board-foot soundness code, Northeastern Research Station |
| 3.1.56 | - | BHAGE | TREE | Breast height age |
| 3.1.66 | - | BOLEHT | TREE | Bole height |
| 3.1.100 | - | BORED_CD_PNWRS | TREE | Tree bored code, Pacific Northwest Research Station |
| 3.1.143 | - | BOUGHS_AVAILABLE_NCNS | TREE | Balsam fir boughs available, North Central Research Station |
| 3.1.144 | - | BOUGHS_HRVST_NCNS | TREE | Balsam fir boughs harvested, North Central Research Station |
| 8.2.46 | - | BRAY1_P | SUBP_SOIL_SAMPLE_LAYER | Bray 1 phosphorus |
| 6.1.8 | - | BROWSE_IMPACT | PLOT_REGEN | Browse impact |
| 11.38.7 | - | BULKDENSITY_COEFF_A | REF_GRND_LYR | Bulk density coefficient a |
| 11.38.8 | - | BULKDENSITY_COEFF_B | REF_GRND_LYR | Bulk density coefficient b |
| 11.38.6 | - | BULKDENSITY_COEFF_M | REF_GRND_LYR | Bulk density coefficient m |
| 8.2.26 | - | BULK_DENSITY | SUBP_SOIL_SAMPLE_LAYER | Bulk density |
| 8.2.28 | - | BULK_DENSITY_FINE | SUBP_SOIL_SAMPLE_LAYER | Bulk density of fine soil fraction |
| 7.2.26 | - | BULKDENS | GRND_LYR_FNCTL_GRP | Functional group bulk density |
| | | C | | |
| 3.7.34 | - | C | TREE_GRM_ESTN | Cut |
| 8.2.49 | - | C_INORG_PCT | SUBP_SOIL_SAMPLE_LAYER | Inorganic carbon percent |
| 8.2.51 | - | C_MG_AC | SUBP_SOIL_SAMPLE_LAYER | Carbon content per acre |
| 8.2.52 | - | C_MIN3_MG_AC | SUBP_SOIL_SAMPLE_LAYER | Carbon content 3-inch depth per acre |
| 8.2.48 | - | C_ORG_PCT | SUBP_SOIL_SAMPLE_LAYER | Organic carbon percent |
| 11.5.12 | - | C_SPGRPCD | REF_SPECIES | Caribbean Islands species group code |
| 8.1.28 | - | C_TOT_3IN_MG_AC | SUBP_SOIL_SAMPLE_LOC | Total carbon per acre, 3 inches depth |
| 8.2.50 | - | C_TOTAL_PCT | SUBP_SOIL_SAMPLE_LAYER | Total carbon percent |
| 2.5.96 | - | CANOPY_CVR_SAMPLE_METHOD_CD | COND | Canopy cover sample method code |
| 5.2.24 | - | CARBON | DWM_COARSE_WOODY_DEB_RIS | Carbon weight of the piece |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|----------------------------|--|
| 5.6.22 | - | CARBON | DWM_RESIDUAL_PILE | Carbon weight of the residual pile |
| 7.2.28 | - | CARBON | GRND_LYR_FNCTL_GRP | Functional group carbon |
| 5.2.55 | - | CARBON_AC_COND | DWM_COARSE_WOODY_DEB_RIS | Carbon per acre based on condition transect length actually measured, unadjusted |
| 5.2.54 | - | CARBON_AC_PLOT | DWM_COARSE_WOODY_DEB_RIS | Carbon per acre based on plot transect length actually measured, unadjusted |
| 5.2.53 | - | CARBON_AC_UNADJ | DWM_COARSE_WOODY_DEB_RIS | Carbon per acre based on target plot transect length, unadjusted |
| 3.1.96 | - | CARBON_AG | TREE | Aboveground carbon of wood and bark |
| 3.6.63 | - | CARBON_AG | TREE_GRM_BEGIN | Aboveground carbon of wood and bark at T1 |
| 3.5.63 | - | CARBON_AG | TREE_GRM_MIDPT | Aboveground carbon of wood and bark at the midpoint |
| 3.4.64 | - | CARBON_AG | TREE_GRM_THRESHOLD | Aboveground carbon of wood and bark at the threshold |
| 3.1.97 | - | CARBON_BG | TREE | Belowground carbon |
| 3.6.64 | - | CARBON_BG | TREE_GRM_BEGIN | Belowground carbon at T1 |
| 3.5.64 | - | CARBON_BG | TREE_GRM_MIDPT | Belowground carbon at the midpoint |
| 3.4.65 | - | CARBON_BG | TREE_GRM_THRESHOLD | Belowground carbon at the threshold |
| 2.5.67 | - | CARBON_DOWN_DEAD | COND | Carbon in down dead |
| 2.5.68 | - | CARBON_LITTER | COND | Carbon in litter |
| 11.38.4 | - | CARBON_PCT | REF_GRND_LYR | Carbon percent |
| 11.35.4 | - | CARBON_RATIO | REF_TREE_CARBON_RATIO_DEAD | Wood carbon fraction |
| 11.5.74 | - | CARBON_RATIO_LIVE | REF_SPECIES | Wood carbon fraction |
| 2.5.69 | - | CARBON_SOIL_ORG | COND | Carbon in soil organic material |
| 2.5.70 | - | CARBON_UNDERSTORY_AG | COND | Carbon in understory aboveground |
| 2.5.71 | - | CARBON_UNDERSTORY_BG | COND | Carbon in understory belowground |
| 11.6.8 | - | CATEGORY | REF_PLANT_DICTIONARY | Category |
| 3.1.162 | - | CAVITY_USE_PNWRS | TREE | Cavity presence, Pacific Northwest Research Station |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|---------------------------|---|
| 3.1.25 | 5.17 | CCLCD | TREE | Crown class code |
| 3.10.34 | - | CCLCD_RMRS | SITETREE | Crown class code, Rocky Mountain Research Station |
| 3.7.40 | - | CD | TREE_GRM_ESTN | Cull decrement |
| 3.1.52 | 12.9 | CDENCD | TREE | Crown density code |
| 3.1.53 | 12.10 | CDIEBKCD | TREE | Crown dieback code |
| 3.1.123 | - | CENTROID_DIA | TREE | Centroid diameter (Pacific Islands) |
| 3.1.124 | - | CENTROID_DIA_HT | TREE | Calculated centroid diameter height (Pacific Islands) |
| 3.1.125 | - | CENTROID_DIA_HT_ACTUAL | TREE | Actual centroid diameter height (Pacific Islands) |
| 3.1.64 | - | CFSND | TREE | Cubic-foot-cull soundness |
| 2.5.104 | 2.5.36 | CHAINING_CD | COND | Chaining code |
| 11.2.5 | - | CHANGE_EVAL_TYP | REF_POP_EVAL_TYP_DESCR | Change evaluation type |
| 5.2.33 | - | CHARRED_CD | DWM_COARSE_WOODY_DEB_RIS | Charred by fire code |
| 3.7.42 | - | CI | TREE_GRM_ESTN | Cull increment |
| 11.11.2 | - | CITATION | REF_CITATION | Citation |
| 11.11.1 | - | CITATION_NBR | REF_CITATION | Citation number |
| 11.16.35 | - | CITATION_NBR | REF_NVCS_HIERARCHY_STRICT | Citation number |
| 11.7.4 | - | CLASS | REF_SPECIES_GROUP | Class |
| 3.1.50 | 12.6 | CLIGHTCD | TREE | Crown light exposure code |
| 2.5.1 | - | CN | COND | Sequence number |
| 5.8.1 | - | CN | COND_DWM_CALC | Sequence number |
| 2.3.5 | - | CN | COUNTY | Sequence number |
| 5.2.1 | - | CN | DWM_COARSE_WOODY_DEB_RIS | Sequence number |
| 5.3.1 | - | CN | DWM_DUFF_LITTER_FUEL | Sequence number |
| 5.4.1 | - | CN | DWM_FINE_WOODY_DEBRIS | Sequence number |
| 5.5.1 | - | CN | DWM_MICROPLOT_FUEL | Sequence number |
| 5.6.1 | - | CN | DWM_RESIDUAL_PILE | Sequence number |
| 5.7.1 | - | CN | DWM_TRANSECT_SEGMENT | Sequence number |
| 5.1.1 | - | CN | DWM_VISIT | Sequence number |
| 7.1.1 | - | CN | GRND_CVR | Sequence number |
| 7.2.1 | - | CN | GRND_LYR_FNCTL_GRP | Sequence number |
| 7.3.1 | - | CN | GRND_LYR_MICROQUAD | Sequence number |
| 4.1.1 | - | CN | INVASIVE_SUBPLOT_SPP | Sequence number |
| 4.3.1 | - | CN | P2VEG_SUBP_STRUCTURE | Sequence number |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|-------------------------------|------------------|
| 4.2.1 | - | CN | P2VEG_SUBPLOT_SPP | Sequence number |
| 2.4.1 | - | CN | PLOT | Sequence number |
| 6.1.1 | - | CN | PLOT_REGEN | Sequence number |
| 10.1.1 | - | CN | PLOTGEOM | Sequence number |
| 10.2.1 | - | CN | PLOTSNAP | Sequence number |
| 9.1.1 | - | CN | POP_ESTN_UNIT | Sequence number |
| 9.2.1 | - | CN | POP_EVAL | Sequence number |
| 9.3.1 | - | CN | POP_EVAL_ATTRIBUTE | Sequence number |
| 9.4.1 | - | CN | POP_EVAL_GRP | Sequence number |
| 9.5.1 | - | CN | POP_EVAL_TYP | Sequence number |
| 9.6.1 | - | CN | POP_PLOT_STRATUM_ASSGN | Sequence number |
| 9.7.1 | - | CN | POP_STRATUM | Sequence number |
| 11.30.1 | - | CN | REF_DIFFERENCE_TEST_PER_ACRES | Sequence number |
| 2.2.1 | - | CN | PROJECT | Sequence number |
| 11.31.1 | - | CN | REF_DIFFERENCE_TEST_TOTALS | Sequence number |
| 11.28.1 | - | CN | REF_FVS_LOC_NAME | Sequence number |
| 11.27.1 | - | CN | REF_FVS_VAR_NAME | Sequence number |
| 11.33.1 | - | CN | REF_GRM_TYPE | Sequence number |
| 11.38.1 | - | CN | REF_GRND_LYR | Sequence number |
| 11.9.1 | - | CN | REF_HABTYP_DESCRIPTION | Sequence number |
| 11.10.1 | - | CN | REF_HABTYP_PUBLICATION | Sequence number |
| 11.8.1 | - | CN | REF_INVASIVE_SPECIES | Sequence number |
| 11.17.1 | - | CN | REF_NVCS_LEVEL_1_CODES | Sequence number |
| 11.18.1 | - | CN | REF_NVCS_LEVEL_2_CODES | Sequence number |
| 11.19.1 | - | CN | REF_NVCS_LEVEL_3_CODES | Sequence number |
| 11.20.1 | - | CN | REF_NVCS_LEVEL_4_CODES | Sequence number |
| 11.21.1 | - | CN | REF_NVCS_LEVEL_5_CODES | Sequence number |
| 11.22.1 | - | CN | REF_NVCS_LEVEL_6_CODES | Sequence number |
| 11.23.1 | - | CN | REF_NVCS_LEVEL_7_CODES | Sequence number |
| 11.24.1 | - | CN | REF_NVCS_LEVEL_8_CODES | Sequence number |
| 11.6.1 | - | CN | REF_PLANT_DICTIONARY | Sequence number |
| 11.2.1 | - | CN | REF_POP_EVAL_TYP_DESCR | Sequence number |
| 11.32.1 | - | CN | REF_SIEQN | Sequence number |
| 11.35.1 | - | CN | REF_TREE_CARBON_RATIO_DEAD | Sequence number |
| 11.36.1 | - | CN | REF_TREE_DECAY_PROP | Sequence number |
| 11.37.1 | - | CN | REF_TREE_STND_DEAD_CR_PROP | Sequence number |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|------------------------------|---------------------------|
| 3.9.1 | - | CN | SEEDLING | Sequence number |
| 6.3.1 | - | CN | SEEDLING_REGEN | Sequence number |
| 3.10.1 | - | CN | SITETREE | Sequence number |
| 2.7.1 | - | CN | SUBP_COND | Sequence number |
| 2.9.1 | - | CN | SUBP_COND_CHNG_MTRX | Sequence number |
| 8.2.1 | - | CN | SUBP_SOIL_SAMPLE_LAYER | Sequence number |
| 8.1.1 | - | CN | SUBP_SOIL_SAMPLE_LOC | Sequence number |
| 2.6.1 | - | CN | SUBPLOT | Sequence number |
| 6.2.1 | - | CN | SUBPLOT_REGEN | Sequence number |
| 2.1.1 | - | CN | SURVEY | Sequence number |
| 3.1.1 | - | CN | TREE | Sequence number |
| 3.7.1 | - | CN | TREE_GRM_ESTN | Sequence number |
| 3.2.1 | - | CN | TREE_WOODLAND_STEMS | Sequence number |
| 5.8.10 | - | CND_CN | COND_DWM_CALC | Condition sequence number |
| 6.3.3 | - | CND_CN | SEEDLING_REGEN | Condition sequence number |
| 8.2.27 | - | COARSE_FRACTION_PCT | SUBP_SOIL_SAMPLE_LAYER | Coarse fraction percent |
| 11.25.1 | - | CODE | REF_DAMAGE_AGENT | Damage agent code |
| 11.26.1 | - | CODE | REF_DAMAGE_AGENT_GROUP | Damage agent group code |
| 11.30.6 | - | COMMENT_1 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 1 |
| 11.31.6 | - | COMMENT_1 | REF_DIFFERENCE_TEST_TOTALS | Comment 1 |
| 11.30.8 | - | COMMENT_2 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 2 |
| 11.31.8 | - | COMMENT_2 | REF_DIFFERENCE_TEST_TOTALS | Comment 2 |
| 11.30.10 | - | COMMENT_3 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 3 |
| 11.31.10 | - | COMMENT_3 | REF_DIFFERENCE_TEST_TOTALS | Comment 3 |
| 11.30.12 | - | COMMENT_4 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 4 |
| 11.31.12 | - | COMMENT_4 | REF_DIFFERENCE_TEST_TOTALS | Comment 4 |
| 11.30.14 | - | COMMENT_5 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 5 |
| 11.31.14 | - | COMMENT_5 | REF_DIFFERENCE_TEST_TOTALS | Comment 5 |
| 11.30.16 | - | COMMENT_6 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 6 |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|-------------------------------|------------------|
| 11.31.16 | - | COMMENT_6 | REF_DIFFERENCE_TEST_TOT_ALS | Comment 6 |
| 11.30.18 | - | COMMENT_7 | REF_DIFFERENCE_TEST_PER_ACRES | Comment 7 |
| 11.31.18 | - | COMMENT_7 | REF_DIFFERENCE_TEST_TOT_ALS | Comment 7 |
| 11.30.20 | - | COMMENT_8 | REF_DIFFERENCE_TEST_PER_ACRES | Comment 8 |
| 11.31.20 | - | COMMENT_8 | REF_DIFFERENCE_TEST_TOT_ALS | Comment 8 |
| 11.30.22 | - | COMMENT_9 | REF_DIFFERENCE_TEST_PER_ACRES | Comment 9 |
| 11.31.22 | - | COMMENT_9 | REF_DIFFERENCE_TEST_TOT_ALS | Comment 9 |
| 11.30.24 | - | COMMENT_10 | REF_DIFFERENCE_TEST_PER_ACRES | Comment 10 |
| 11.31.24 | - | COMMENT_10 | REF_DIFFERENCE_TEST_TOT_ALS | Comment 10 |
| 11.30.26 | - | COMMENT_11 | REF_DIFFERENCE_TEST_PER_ACRES | Comment 11 |
| 11.31.26 | - | COMMENT_11 | REF_DIFFERENCE_TEST_TOT_ALS | Comment 11 |
| 11.30.28 | - | COMMENT_12 | REF_DIFFERENCE_TEST_PER_ACRES | Comment 12 |
| 11.31.28 | - | COMMENT_12 | REF_DIFFERENCE_TEST_TOT_ALS | Comment 12 |
| 11.30.30 | - | COMMENT_13 | REF_DIFFERENCE_TEST_PER_ACRES | Comment 13 |
| 11.31.30 | - | COMMENT_13 | REF_DIFFERENCE_TEST_TOT_ALS | Comment 13 |
| 11.30.32 | - | COMMENT_14 | REF_DIFFERENCE_TEST_PER_ACRES | Comment 14 |
| 11.31.32 | - | COMMENT_14 | REF_DIFFERENCE_TEST_TOT_ALS | Comment 14 |
| 11.30.34 | - | COMMENT_15 | REF_DIFFERENCE_TEST_PER_ACRES | Comment 15 |
| 11.31.34 | - | COMMENT_15 | REF_DIFFERENCE_TEST_TOT_ALS | Comment 15 |
| 11.30.36 | - | COMMENT_16 | REF_DIFFERENCE_TEST_PER_ACRES | Comment 16 |
| 11.31.36 | - | COMMENT_16 | REF_DIFFERENCE_TEST_TOT_ALS | Comment 16 |
| 11.30.38 | - | COMMENT_17 | REF_DIFFERENCE_TEST_PER_ACRES | Comment 17 |
| 11.31.38 | - | COMMENT_17 | REF_DIFFERENCE_TEST_TOT_ALS | Comment 17 |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|------------------------------|------------------|
| 11.30.40 | - | COMMENT_18 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 18 |
| 11.31.40 | - | COMMENT_18 | REF_DIFFERENCE_TEST_TOTALS | Comment 18 |
| 11.30.42 | - | COMMENT_19 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 19 |
| 11.31.42 | - | COMMENT_19 | REF_DIFFERENCE_TEST_TOTALS | Comment 19 |
| 11.30.44 | - | COMMENT_20 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 20 |
| 11.31.44 | - | COMMENT_20 | REF_DIFFERENCE_TEST_TOTALS | Comment 20 |
| 11.30.46 | - | COMMENT_21 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 21 |
| 11.31.46 | - | COMMENT_21 | REF_DIFFERENCE_TEST_TOTALS | Comment 21 |
| 11.30.48 | - | COMMENT_22 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 22 |
| 11.31.48 | - | COMMENT_22 | REF_DIFFERENCE_TEST_TOTALS | Comment 22 |
| 11.30.50 | - | COMMENT_23 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 23 |
| 11.31.50 | - | COMMENT_23 | REF_DIFFERENCE_TEST_TOTALS | Comment 23 |
| 11.30.52 | - | COMMENT_24 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 24 |
| 11.31.52 | - | COMMENT_24 | REF_DIFFERENCE_TEST_TOTALS | Comment 24 |
| 11.30.54 | - | COMMENT_25 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 25 |
| 11.31.54 | - | COMMENT_25 | REF_DIFFERENCE_TEST_TOTALS | Comment 25 |
| 11.30.56 | - | COMMENT_26 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 26 |
| 11.31.56 | - | COMMENT_26 | REF_DIFFERENCE_TEST_TOTALS | Comment 26 |
| 11.30.58 | - | COMMENT_27 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 27 |
| 11.30.60 | - | COMMENT_28 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 28 |
| 11.30.62 | - | COMMENT_29 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 29 |
| 11.30.64 | - | COMMENT_30 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 30 |
| 11.30.66 | - | COMMENT_31 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 31 |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|--------------------------|------------------------------|---|
| 11.30.68 | - | COMMENT_32 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 32 |
| 11.30.70 | - | COMMENT_33 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 33 |
| 11.30.72 | - | COMMENT_34 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 34 |
| 11.30.74 | - | COMMENT_35 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 35 |
| 11.30.76 | - | COMMENT_36 | REF_DIFFERENCE_TEST_PER_ACRE | Comment 36 |
| 11.25.2 | - | COMMON_NAME | REF_DAMAGE_AGENT | Common name of damage agent |
| 11.9.5 | - | COMMON_NAME | REF_HABTYP_DESCRIPTION | Common name |
| 11.6.7 | - | COMMON_NAME | REF_PLANT_DICTIONARY | Common name |
| 11.5.2 | - | COMMON_NAME | REF_SPECIES | Common name |
| 5.6.32 | - | COMPHT | DWM_RESIDUALPILE | Compacted height of the residual pile |
| 11.30.2 | - | COMPARISON | REF_DIFFERENCE_TEST_PER_ACRE | Comparison |
| 11.31.2 | - | COMPARISON | REF_DIFFERENCE_TEST_TOTALS | Comparison |
| 11.30.3 | - | COMPARISON_TYPE | REF_DIFFERENCE_TEST_PER_ACRE | Comparison type |
| 11.31.3 | - | COMPARISON_TYPE | REF_DIFFERENCE_TEST_TOTALS | Comparison type |
| 3.7.10 | - | COMPONENT | TREE_GRM_ESTN | Growth component type |
| 2.4.60 | - | CONDCHNGCD_RMRS | PLOT | Condition class change code, Rocky Mountain Research Station |
| 2.5.10 | 2.4.3 | COND_NONSAMPLE_REASON_CD | COND | Condition nonsampled reason code |
| 2.5.119 | - | COND_STATUS_CHNG_CD_RMRS | COND | Condition class status change code, Rocky Mountain Research Station |
| 2.5.9 | 2.4.2 | COND_STATUS_CD | COND | Condition status code |
| 2.5.8 | 2.4.1 | CONDID | COND | Condition class number |
| 5.8.7 | - | CONDID | COND_DWM_CALC | Condition class number |
| 5.2.11 | - | CONDID | DWM_COARSE_WOODY_DEBRIS | Condition class number |
| 5.3.12 | - | CONDID | DWM_DUFF_LITTER_FUEL | Condition class number |
| 5.4.9 | - | CONDID | DWM_FINE_WOODY_DEBRIS | Condition class number |
| 5.6.10 | - | CONDID | DWM_RESIDUALPILE | Condition class number |
| 5.7.11 | - | CONDID | DWM_TRANSECT_SEGMENT | Condition class number |
| 7.3.14 | - | CONDID | GRND_LYR_MICROQUAD | Condition class number |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|----------------------|---|
| 4.1.9 | 9.4 | CONDID | INVASIVE_SUBPLOT_SPP | Condition class number |
| 4.3.9 | 8.3.2 | CONDID | P2VEG_SUBP_STRUCTURE | Condition class number |
| 4.2.9 | 8.3.2 | CONDID | P2VEG_SUBPLOT_SPP | Condition class number |
| 3.9.9 | 6.3 | CONDID | SEEDLING | Condition class number |
| 6.3.11 | - | CONDID | SEEDLING_REGEN | Condition class number |
| 3.10.9 | - | CONDID | SITETREE | Condition class number |
| 2.7.9 | - | CONDID | SUBP_COND | Condition class number |
| 2.9.6 | - | CONDID | SUBP_COND_CHNG_MTRX | Condition class number |
| 8.1.13 | - | CONDID | SUBP_SOIL_SAMPLE_LOC | Condition class number |
| 3.1.11 | 5.3 | CONDID | TREE | Condition class number |
| 2.6.15 | - | CONDLIST | SUBPLOT | Subplot/macroplot condition list |
| 5.8.13 | - | CONDPROP_CWD | COND_DWM_CALC | Proportion of coarse woody debris transects in the condition |
| 5.8.17 | - | CONDPROP_DUFF | COND_DWM_CALC | Proportion of sample points used to measure duff, litter, and fuelbed in the condition |
| 5.8.16 | - | CONDPROP_FWD_LG | COND_DWM_CALC | Proportion of fine woody debris transects used to sample large-sized pieces in the condition |
| 5.8.15 | - | CONDPROP_FWD_MD | COND_DWM_CALC | Proportion of fine woody debris transects used to sample medium-sized pieces in the condition |
| 5.8.14 | - | CONDPROP_FWD_SM | COND_DWM_CALC | Proportion of fine woody debris transects used to sample small-sized pieces in the condition |
| 5.8.110 | - | CONDPROP_PILE | COND_DWM_CALC | Proportion of piles plot area or transect lengths in the condition |
| 2.5.29 | - | CONDPROP_UNADJ | COND | Condition proportion unadjusted |
| 3.1.173 | - | CONEPRESCD1 | TREE | Cone presence code 1 |
| 3.1.174 | - | CONEPRESCD2 | TREE | Cone presence code 2 |
| 3.1.175 | - | CONEPRESCD3 | TREE | Cone presence code 3 |
| 2.4.28 | - | CONGCD | PLOT | Congressional district code |
| 10.1.9 | - | CONGCD | PLOTGEOM | Congressional district code |
| 8.1.18 | - | CORE_BOTTOM_CD | SUBP_SOIL_SAMPLE_LOC | Core bottom code |
| 8.1.17 | - | CORE_LENGTH | SUBP_SOIL_SAMPLE_LOC | Soil core length |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------------|---|
| 3.1.163 | - | CORE_LENGTH_PNWRS | TREE | Length of measured core, Pacific Northwest Research Station |
| 8.1.16 | - | CORE_SIZE | SUBP_SOIL_SAMPLE_LOC | Soil core size |
| 3.9.32 | - | COUNTCHKCD_RMRS | SEEDLING | Seedling count check code, Rocky Mountain Research Station |
| 2.5.6 | - | COUNTYCD | COND | County code |
| 5.8.3 | - | COUNTYCD | COND_DWM_CALC | County code |
| 2.3.3 | - | COUNTYCD | COUNTY | County code |
| 5.2.5 | - | COUNTYCD | DWM_COARSE_WOODY_DEB_RIS | County code |
| 5.3.5 | - | COUNTYCD | DWM_DUFF_LITTER_FUEL | County code |
| 5.4.5 | - | COUNTYCD | DWM_FINE_WOODY_DEBRIS | County code |
| 5.5.5 | - | COUNTYCD | DWM_MICROPLOT_FUEL | County code |
| 5.6.5 | - | COUNTYCD | DWM_RESIDUALPILE | County code |
| 5.7.5 | - | COUNTYCD | DWM_TRANSECT_SEGMENT | County code |
| 5.1.5 | - | COUNTYCD | DWM_VISIT | County code |
| 7.1.6 | - | COUNTYCD | GRND_CVR | County code |
| 7.2.3 | - | COUNTYCD | GRND_LYR_FNCTL_GRP | County code |
| 7.3.9 | - | COUNTYCD | GRND_LYR_MICROQUAD | County code |
| 4.1.6 | - | COUNTYCD | INVASIVE_SUBPLOT_SPP | County code |
| 4.3.5 | - | COUNTYCD | P2VEG_SUBP_STRUCTURE | County code |
| 4.2.6 | - | COUNTYCD | P2VEG_SUBPLOT_SPP | County code |
| 2.4.8 | 1.2 | COUNTYCD | PLOT | County code |
| 6.1.6 | - | COUNTYCD | PLOT_REGEN | County code |
| 10.1.5 | - | COUNTYCD | PLOTGEOM | County code |
| 10.2.8 | - | COUNTYCD | PLOTSNAP | County code |
| 9.6.7 | - | COUNTYCD | POP_PLOT_STRATUM_ASSGN | County code |
| 3.9.6 | - | COUNTYCD | SEEDLING | County code |
| 6.3.8 | - | COUNTYCD | SEEDLING_REGEN | County code |
| 3.10.7 | - | COUNTYCD | SITETREE | County code |
| 2.7.6 | - | COUNTYCD | SUBP_COND | County code |
| 8.2.5 | - | COUNTYCD | SUBP_SOIL_SAMPLE_LAYER | County code |
| 8.1.4 | - | COUNTYCD | SUBP_SOIL_SAMPLE_LOC | County code |
| 2.6.7 | - | COUNTYCD | SUBPLOT | County code |
| 6.2.7 | - | COUNTYCD | SUBPLOT_REGEN | County Code |
| 3.1.7 | - | COUNTYCD | TREE | County code |
| 3.2.6 | - | COUNTYCD | TREE_WOODLAND_STEMS | County code |
| 2.3.4 | - | COUNTYNM | COUNTY | County name |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|----------------------------|---|
| 7.2.16 | - | COVER_CLASS_CD | GRND_LYR_FNCTL_GRP | Cover class code (Interior Alaska) |
| 5.2.25 | - | COVER_PCT | DWM_COARSE_WOODY_DEB_RIS | Percent cover represented by each coarse woody debris piece |
| 4.1.13 | 9.7 | COVER_PCT | INVASIVE_SUBPLOT_SPP | Cover percent |
| 4.3.12 | - | COVER_PCT | P2VEG_SUBP_STRUCTURE | Cover percent (canopy cover percent) |
| 4.2.15 | 8.5.4 | COVER_PCT | P2VEG_SUBPLOT_SPP | Cover percent (species canopy layer) |
| 5.2.32 | - | COVER_PCT_RGN | DWM_COARSE_WOODY_DEB_RIS | Percent cover, represented by each coarse woody debris piece, regional protocol |
| 3.1.49 | 12.7 | CPOS_CD | TREE | Crown position code |
| 3.1.24 | 5.19 | CR | TREE | Compacted crown ratio |
| 3.6.11 | - | CR | TREE_GRM_BEGIN | Compacted crown ratio |
| 3.5.11 | - | CR | TREE_GRM_MIDPT | Compacted crown ratio |
| 3.4.12 | - | CR | TREE_GRM_THRESHOLD | Compacted crown ratio |
| 11.37.4 | - | CR_MEAN | REF_TREE_STND_DEAD_CR_PROP | Crown ratio mean |
| 2.5.120 | - | CRCOV_PCT_RMRS | COND | Live crown cover percent, Rocky Mountain Research Station |
| 3.8.2 | - | CREATED_BY | BEGINEND | Created by |
| 2.5.72 | - | CREATED_BY | COND | Created by |
| 5.8.97 | - | CREATED_BY | COND_DWM_CALC | Created by |
| 2.3.6 | - | CREATED_BY | COUNTY | Created by |
| 5.2.35 | - | CREATED_BY | DWM_COARSE_WOODY_DEB_RIS | Created by |
| 5.3.15 | - | CREATED_BY | DWM_DUFF_LITTER_FUEL | Created by |
| 5.4.25 | - | CREATED_BY | DWM_FINE_WOODY_DEBRIS | Created by |
| 5.5.18 | - | CREATED_BY | DWM_MICROPLOT_FUEL | Created by |
| 5.6.26 | - | CREATED_BY | DWM_RESIDUALPILE | Created by |
| 5.7.18 | - | CREATED_BY | DWM_TRANSECT_SEGMENT | Created by |
| 5.1.13 | - | CREATED_BY | DWM_VISIT | Created by |
| 7.1.15 | - | CREATED_BY | GRND_CVR | Created by |
| 7.2.21 | - | CREATED_BY | GRND_LYR_FNCTL_GRP | Created by |
| 7.3.21 | - | CREATED_BY | GRND_LYR_MICROQUAD | Created by |
| 4.1.14 | - | CREATED_BY | INVASIVE_SUBPLOT_SPP | Created by |
| 4.3.13 | - | CREATED_BY | P2VEG_SUBP_STRUCTURE | Created by |
| 4.2.16 | - | CREATED_BY | P2VEG_SUBPLOT_SPP | Created by |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|------------------------------|------------------|
| 2.4.32 | - | CREATED_BY | PLOT | Created by |
| 6.1.9 | - | CREATED_BY | PLOT_REGEN | Created by |
| 10.1.15 | - | CREATED_BY | PLOTGEOM | Created by |
| 10.2.34 | - | CREATED_BY | PLOTSNAP | Created by |
| 9.1.14 | - | CREATED_BY | POP_ESTN_UNIT | Created by |
| 9.2.16 | - | CREATED_BY | POP_EVAL | Created by |
| 9.3.5 | - | CREATED_BY | POP_EVAL_ATTRIBUTE | Created by |
| 9.4.7 | - | CREATED_BY | POP_EVAL_GRP | Created by |
| 9.5.5 | - | CREATED_BY | POP_EVAL_TYP | Created by |
| 9.6.13 | - | CREATED_BY | POP_PLOT_STRATUM_ASSGN | Created by |
| 9.7.19 | - | CREATED_BY | POP_STRATUM | Created by |
| 2.2.4 | - | CREATED_BY | PROJECT | Created by |
| 11.11.3 | - | CREATED_BY | REF_CITATION | Created by |
| 11.25.5 | - | CREATED_BY | REF_DAMAGE_AGENT | Created by |
| 11.26.3 | - | CREATED_BY | REF_DAMAGE_AGENT_GROUP | Created by |
| 11.30.78 | - | CREATED_BY | REF_DIFFERENCE_TEST_PER_ACRE | Created by |
| 11.31.58 | - | CREATED_BY | REF_DIFFERENCE_TEST_TOTALS | Created by |
| 11.12.4 | - | CREATED_BY | REF_FIADB_VERSION | Created by |
| 11.3.7 | - | CREATED_BY | REF_FOREST_TYPE | Created by |
| 11.4.17 | - | CREATED_BY | REF_FOREST_TYPE_GROUP | Created by |
| 11.28.7 | - | CREATED_BY | REF_FVS_LOC_NAME | Created by |
| 11.27.7 | - | CREATED_BY | REF_FVS_VAR_NAME | Created by |
| 11.33.10 | - | CREATED_BY | REF_GRM_TYPE | Created by |
| 11.9.7 | - | CREATED_BY | REF_HABTYP_DESCRIPTION | Created by |
| 11.10.7 | - | CREATED_BY | REF_HABTYP_PUBLICATION | Created by |
| 11.34.4 | - | CREATED_BY | REF_INTL_TO_DOYLE_FACTORS | Created by |
| 11.8.11 | - | CREATED_BY | REF_INVASIVE_SPECIES | Created by |
| 11.16.36 | - | CREATED_BY | REF_NVCS_HIERARCHY_STRUCT | Created by |
| 11.17.8 | - | CREATED_BY | REF_NVCS_LEVEL_1_CODES | Created by |
| 11.18.8 | - | CREATED_BY | REF_NVCS_LEVEL_2_CODES | Created by |
| 11.19.8 | - | CREATED_BY | REF_NVCS_LEVEL_3_CODES | Created by |
| 11.20.8 | - | CREATED_BY | REF_NVCS_LEVEL_4_CODES | Created by |
| 11.21.8 | - | CREATED_BY | REF_NVCS_LEVEL_5_CODES | Created by |
| 11.22.8 | - | CREATED_BY | REF_NVCS_LEVEL_6_CODES | Created by |
| 11.23.8 | - | CREATED_BY | REF_NVCS_LEVEL_7_CODES | Created by |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------------|------------------|
| 11.24.8 | - | CREATED_BY | REF_NVCS_LEVEL_8_CODES | Created by |
| 11.29.3 | - | CREATED_BY | REF_OWNGRPCD | Created by |
| 11.6.34 | - | CREATED_BY | REF_PLANT_DICTIONARY | Created by |
| 11.1.10 | - | CREATED_BY | REF_POP_ATTRIBUTE | Created by |
| 11.2.7 | - | CREATED_BY | REF_POP_EVAL_TYP_DESCR | Created by |
| 11.15.6 | - | CREATED_BY | REF_RESEARCH_STATION | Created by |
| 11.32.6 | - | CREATED_BY | REF_SIEQN | Created by |
| 11.13.6 | - | CREATED_BY | REF_STATE_ELEV | Created by |
| 11.14.4 | - | CREATED_BY | REF_UNIT | Created by |
| 3.9.15 | - | CREATED_BY | SEEDLING | Created by |
| 6.3.17 | - | CREATED_BY | SEEDLING_REGEN | Created by |
| 3.10.24 | - | CREATED_BY | SITETREE | Created by |
| 2.7.10 | - | CREATED_BY | SUBP_COND | Created by |
| 2.9.10 | - | CREATED_BY | SUBP_COND_CHNG_MTRX | Created by |
| 8.2.56 | - | CREATED_BY | SUBP_SOIL_SAMPLE_LAYER | Created by |
| 8.1.31 | - | CREATED_BY | SUBP_SOIL_SAMPLE_LOC | Created by |
| 2.6.20 | - | CREATED_BY | SUBPLOT | Created by |
| 6.2.14 | - | CREATED_BY | SUBPLOT_REGEN | Created by |
| 2.1.10 | - | CREATED_BY | SURVEY | Created by |
| 3.1.71 | - | CREATED_BY | TREE | Created by |
| 3.6.67 | - | CREATED_BY | TREE_GRM_BEGIN | Created by |
| 3.3.77 | - | CREATED_BY | TREE_GRM_COMPONENT | Created by |
| 3.7.44 | - | CREATED_BY | TREE_GRM_ESTN | Created by |
| 3.5.67 | - | CREATED_BY | TREE_GRM_MIDPT | Created by |
| 3.4.68 | - | CREATED_BY | TREE_GRM_THRESHOLD | Created by |
| 3.2.16 | - | CREATED_BY | TREE_WOODLAND_STEMS | Created by |
| 3.8.3 | - | CREATED_DATE | BEGINEND | Created date |
| 2.5.73 | - | CREATED_DATE | COND | Created date |
| 5.8.98 | - | CREATED_DATE | COND_DWM_CALC | Created date |
| 2.3.7 | - | CREATED_DATE | COUNTY | Created date |
| 5.2.36 | - | CREATED_DATE | DWM_COARSE_WOODY_DEB_RIS | Created date |
| 5.3.16 | - | CREATED_DATE | DWM_DUFF_LITTER_FUEL | Created date |
| 5.4.26 | - | CREATED_DATE | DWM_FINE_WOODY_DEBRIS | Created date |
| 5.5.19 | - | CREATED_DATE | DWM_MICROPLOT_FUEL | Created date |
| 5.6.27 | - | CREATED_DATE | DWM_RESIDUALPILE | Created date |
| 5.7.19 | - | CREATED_DATE | DWM_TRANSECT_SEGMENT | Created date |
| 5.1.14 | - | CREATED_DATE | DWM_VISIT | Created date |
| 7.1.16 | - | CREATED_DATE | GRND_CVR | Created date |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|------------------------------|------------------|
| 7.2.22 | - | CREATED_DATE | GRND_LYR_FNCTL_GRP | Created date |
| 7.3.22 | - | CREATED_DATE | GRND_LYR_MICROQUAD | Created date |
| 4.1.15 | - | CREATED_DATE | INVASIVE_SUBPLOT_SPP | Created date |
| 4.3.14 | - | CREATED_DATE | P2VEG_SUBP_STRUCTURE | Created date |
| 4.2.17 | - | CREATED_DATE | P2VEG_SUBPLOT_SPP | Created date |
| 2.4.33 | - | CREATED_DATE | PLOT | Created date |
| 6.1.10 | - | CREATED_DATE | PLOT_REGEN | Created date |
| 10.1.16 | - | CREATED_DATE | PLOTGEOM | Created date |
| 10.2.35 | - | CREATED_DATE | PLOTSNAP | Created date |
| 9.1.15 | - | CREATED_DATE | POP_ESTN_UNIT | Created date |
| 9.2.17 | - | CREATED_DATE | POP_EVAL | Created date |
| 9.3.6 | - | CREATED_DATE | POP_EVAL_ATTRIBUTE | Created date |
| 9.4.8 | - | CREATED_DATE | POP_EVAL_GRP | Created date |
| 9.5.6 | - | CREATED_DATE | POP_EVAL_TYP | Created date |
| 9.6.14 | - | CREATED_DATE | POP_PLOT_STRATUM_ASSGN | Created date |
| 9.7.20 | - | CREATED_DATE | POP_STRATUM | Created date |
| 2.2.5 | - | CREATED_DATE | PROJECT | Created date |
| 11.11.4 | - | CREATED_DATE | REF_CITATION | Created date |
| 11.25.6 | - | CREATED_DATE | REF_DAMAGE_AGENT | Created date |
| 11.26.4 | - | CREATED_DATE | REF_DAMAGE_AGENT_GROUP | Created date |
| 11.30.79 | - | CREATED_DATE | REF_DIFFERENCE_TEST_PER_ACRE | Created date |
| 11.31.59 | - | CREATED_DATE | REF_DIFFERENCE_TEST_TOTALS | Created date |
| 11.12.5 | - | CREATED_DATE | REF_FIADB_VERSION | Created date |
| 11.3.8 | - | CREATED_DATE | REF_FOREST_TYPE | Created date |
| 11.4.18 | - | CREATED_DATE | REF_FOREST_TYPE_GROUP | Created date |
| 11.28.8 | - | CREATED_DATE | REF_FVS_LOC_NAME | Created date |
| 11.27.8 | - | CREATED_DATE | REF_FVS_VAR_NAME | Created date |
| 11.33.11 | - | CREATED_DATE | REF_GRM_TYPE | Created date |
| 11.38.9 | - | CREATED_DATE | REF_GRND_LYR | Created date |
| 11.9.8 | - | CREATED_DATE | REF_HABTYP_DESCRIPTION | Created date |
| 11.10.8 | - | CREATED_DATE | REF_HABTYP_PUBLICATION | Created date |
| 11.34.5 | - | CREATED_DATE | REF_INTL_TO_DOYLE_FACTOR | Created date |
| 11.8.12 | - | CREATED_DATE | REF_INVASIVE_SPECIES | Created date |
| 11.16.37 | - | CREATED_DATE | REF_NVCS_HIERARCHY_STRUCT | Created date |
| 11.17.9 | - | CREATED_DATE | REF_NVCS_LEVEL_1_CODES | Created date |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|------------------------|---------------------|
| 11.18.9 | - | CREATED_DATE | REF_NVCS_LEVEL_2_CODES | Created date |
| 11.19.9 | - | CREATED_DATE | REF_NVCS_LEVEL_3_CODES | Created date |
| 11.20.9 | - | CREATED_DATE | REF_NVCS_LEVEL_4_CODES | Created date |
| 11.21.9 | - | CREATED_DATE | REF_NVCS_LEVEL_5_CODES | Created date |
| 11.22.9 | - | CREATED_DATE | REF_NVCS_LEVEL_6_CODES | Created date |
| 11.23.9 | - | CREATED_DATE | REF_NVCS_LEVEL_7_CODES | Created date |
| 11.24.9 | - | CREATED_DATE | REF_NVCS_LEVEL_8_CODES | Created date |
| 11.29.4 | - | CREATED_DATE | REF_OWNGRPCD | Created date |
| 11.6.35 | - | CREATED_DATE | REF_PLANT_DICTIONARY | Created date |
| 11.1.11 | - | CREATED_DATE | REF_POP_ATTRIBUTE | Created date |
| 11.2.8 | - | CREATED_DATE | REF_POP_EVAL_TYP_DESCR | Created date |
| 11.15.7 | - | CREATED_DATE | REF_RESEARCH_STATION | Created date |
| 11.32.7 | - | CREATED_DATE | REF_SIEQN | Created date |
| 11.5.78 | - | CREATED_DATE | REF_SPECIES | Created date |
| 11.7.5 | - | CREATED_DATE | REF_SPECIES_GROUP | Created date |
| 11.13.7 | - | CREATED_DATE | REF_STATE_ELEV | Created date |
| 11.14.5 | - | CREATED_DATE | REF_UNIT | Created date |
| 3.9.16 | - | CREATED_DATE | SEEDLING | Created date |
| 6.3.18 | - | CREATED_DATE | SEEDLING_REGEN | Created date |
| 3.10.25 | - | CREATED_DATE | SITETREE | Created date |
| 2.7.11 | - | CREATED_DATE | SUBP_COND | Created date |
| 2.9.11 | - | CREATED_DATE | SUBP_COND_CHNG_MTRX | Created date |
| 8.2.57 | - | CREATED_DATE | SUBP_SOIL_SAMPLE_LAYER | Created date |
| 8.1.32 | - | CREATED_DATE | SUBP_SOIL_SAMPLE_LOC | Created date |
| 2.6.21 | - | CREATED_DATE | SUBPLOT | Created date |
| 6.2.15 | - | CREATED_DATE | SUBPLOT_REGEN | Created date |
| 2.1.11 | - | CREATED_DATE | SURVEY | Created date |
| 3.1.72 | - | CREATED_DATE | TREE | Created date |
| 3.6.68 | - | CREATED_DATE | TREE_GRM_BEGIN | Created date |
| 3.3.78 | - | CREATED_DATE | TREE_GRM_COMPONENT | Created date |
| 3.7.45 | - | CREATED_DATE | TREE_GRM_ESTN | Created date |
| 3.5.68 | - | CREATED_DATE | TREE_GRM_MIDPT | Created date |
| 3.4.69 | - | CREATED_DATE | TREE_GRM_THRESHOLD | Created date |
| 3.2.17 | - | CREATED_DATE | TREE_WOODLAND_STEMS | Created date |
| 3.8.4 | - | CREATED_IN_INSTANCE | BEGINEND | Created in instance |
| 2.5.74 | - | CREATED_IN_INSTANCE | COND | Created in instance |
| 5.8.99 | - | CREATED_IN_INSTANCE | COND_DWM_CALC | Created in instance |
| 2.3.8 | - | CREATED_IN_INSTANCE | COUNTY | Created in instance |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|------------------------------|---------------------|
| 5.2.37 | - | CREATED_IN_INSTANCE | DWM_COARSE_WOODY_DEBRIS | Created in instance |
| 5.3.17 | - | CREATED_IN_INSTANCE | DWM_DUFF_LITTER_FUEL | Created in instance |
| 5.4.27 | - | CREATED_IN_INSTANCE | DWM_FINE_WOODY_DEBRIS | Created in instance |
| 5.5.20 | - | CREATED_IN_INSTANCE | DWM_MICROPLOT_FUEL | Created in instance |
| 5.6.28 | - | CREATED_IN_INSTANCE | DWM_RESIDUALPILE | Created in instance |
| 5.7.20 | - | CREATED_IN_INSTANCE | DWM_TRANSECT_SEGMENT | Created in instance |
| 5.1.15 | - | CREATED_IN_INSTANCE | DWM_VISIT | Created in instance |
| 7.1.17 | - | CREATED_IN_INSTANCE | GRND_CVR | Created in instance |
| 7.2.23 | - | CREATED_IN_INSTANCE | GRND_LRY_FNCTL_GRP | Created in instance |
| 7.3.23 | - | CREATED_IN_INSTANCE | GRND_LYR_MICROQUAD | Created in instance |
| 4.1.16 | - | CREATED_IN_INSTANCE | INVASIVE_SUBPLOT_SPP | Created in instance |
| 4.3.15 | - | CREATED_IN_INSTANCE | P2VEG_SUBP_STRUCTURE | Created in instance |
| 4.2.18 | - | CREATED_IN_INSTANCE | P2VEG_SUBPLOT_SPP | Created in instance |
| 2.4.34 | - | CREATED_IN_INSTANCE | PLOT | Created in instance |
| 6.1.11 | - | CREATED_IN_INSTANCE | PLOT_REGEN | Created in instance |
| 10.1.17 | - | CREATED_IN_INSTANCE | PLOTGEOM | Created in instance |
| 10.2.36 | - | CREATED_IN_INSTANCE | PLOTSNAP | Created in instance |
| 9.1.16 | - | CREATED_IN_INSTANCE | POP_ESTN_UNIT | Created in instance |
| 9.2.18 | - | CREATED_IN_INSTANCE | POP_EVAL | Created in instance |
| 9.3.7 | - | CREATED_IN_INSTANCE | POP_EVAL_ATTRIBUTE | Created in instance |
| 9.4.9 | - | CREATED_IN_INSTANCE | POP_EVAL_GRP | Created in instance |
| 9.5.7 | - | CREATED_IN_INSTANCE | POP_EVAL_TYP | Created in instance |
| 9.6.15 | - | CREATED_IN_INSTANCE | POP_PLOT_STRATUM_ASSGN | Created in instance |
| 9.7.21 | - | CREATED_IN_INSTANCE | POP_STRATUM | Created in instance |
| 2.2.6 | - | CREATED_IN_INSTANCE | PROJECT | Created in instance |
| 11.11.5 | - | CREATED_IN_INSTANCE | REF_CITATION | Created in instance |
| 11.25.7 | - | CREATED_IN_INSTANCE | REF_DAMAGE_AGENT | Created in instance |
| 11.26.5 | - | CREATED_IN_INSTANCE | REF_DAMAGE_AGENT_GROUP | Created in instance |
| 11.30.80 | - | CREATED_IN_INSTANCE | REF_DIFFERENCE_TEST_PER_ACRE | Created in instance |
| 11.31.60 | - | CREATED_IN_INSTANCE | REF_DIFFERENCE_TEST_TOTALS | Created in instance |
| 11.12.6 | - | CREATED_IN_INSTANCE | REF_FIADB_VERSION | Created in instance |
| 11.3.9 | - | CREATED_IN_INSTANCE | REF_FOREST_TYPE | Created in instance |
| 11.4.19 | - | CREATED_IN_INSTANCE | REF_FOREST_TYPE_GROUP | Created in instance |
| 11.28.9 | - | CREATED_IN_INSTANCE | REF_FVS_LOC_NAME | Created in instance |
| 11.27.9 | - | CREATED_IN_INSTANCE | REF_FVS_VAR_NAME | Created in instance |
| 11.33.12 | - | CREATED_IN_INSTANCE | REF_GRM_TYPE | Created in instance |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|---------------------------|---------------------|
| 11.9.9 | - | CREATED_IN_INSTANCE | REF_HABTYP_DESCRIPTION | Created in instance |
| 11.10.9 | - | CREATED_IN_INSTANCE | REF_HABTYP_PUBLICATION | Created in instance |
| 11.34.6 | - | CREATED_IN_INSTANCE | REF_INTL_TO_DOYLE_FACTO_R | Created in instance |
| 11.8.13 | - | CREATED_IN_INSTANCE | REF_INVASIVE_SPECIES | Created in instance |
| 11.16.38 | - | CREATED_IN_INSTANCE | REF_NVCS_HIERARCHY_STRICT | Created in instance |
| 11.17.10 | - | CREATED_IN_INSTANCE | REF_NVCS_LEVEL_1_CODES | Created in instance |
| 11.18.10 | - | CREATED_IN_INSTANCE | REF_NVCS_LEVEL_2_CODES | Created in instance |
| 11.19.10 | - | CREATED_IN_INSTANCE | REF_NVCS_LEVEL_3_CODES | Created in instance |
| 11.20.10 | - | CREATED_IN_INSTANCE | REF_NVCS_LEVEL_4_CODES | Created in instance |
| 11.21.10 | - | CREATED_IN_INSTANCE | REF_NVCS_LEVEL_5_CODES | Created in instance |
| 11.22.10 | - | CREATED_IN_INSTANCE | REF_NVCS_LEVEL_6_CODES | Created in instance |
| 11.23.10 | - | CREATED_IN_INSTANCE | REF_NVCS_LEVEL_7_CODES | Created in instance |
| 11.24.10 | - | CREATED_IN_INSTANCE | REF_NVCS_LEVEL_8_CODES | Created in instance |
| 11.29.5 | - | CREATED_IN_INSTANCE | REF_OWNRPCD | Created in instance |
| 11.6.36 | - | CREATED_IN_INSTANCE | REF_PLANT_DICTIONARY | Created in instance |
| 11.1.13 | - | CREATED_IN_INSTANCE | REF_POP_ATTRIBUTE | Created in instance |
| 11.2.9 | - | CREATED_IN_INSTANCE | REF_POP_EVAL_TYP_DESCR | Created in instance |
| 11.15.8 | - | CREATED_IN_INSTANCE | REF_RESEARCH_STATION | Created in instance |
| 11.32.8 | - | CREATED_IN_INSTANCE | REF_SIEQN | Created in instnace |
| 11.13.8 | - | CREATED_IN_INSTANCE | REF_STATE_ELEV | Created in instance |
| 11.14.6 | - | CREATED_IN_INSTANCE | REF_UNIT | Created in instance |
| 3.9.17 | - | CREATED_IN_INSTANCE | SEEDLING | Created in instance |
| 6.3.19 | - | CREATED_IN_INSTANCE | SEEDLING_REGEN | Created in instance |
| 3.10.26 | - | CREATED_IN_INSTANCE | SITETREE | Created in instance |
| 2.7.12 | - | CREATED_IN_INSTANCE | SUBP_COND | Created in instance |
| 2.9.12 | - | CREATED_IN_INSTANCE | SUBP_COND_CHNG_MTRX | Created in instance |
| 8.2.58 | - | CREATED_IN_INSTANCE | SUBP_SOIL_SAMPLE_LAYER | Created in instance |
| 8.1.33 | - | CREATED_IN_INSTANCE | SUBP_SOIL_SAMPLE_LOC | Created in instance |
| 2.6.22 | - | CREATED_IN_INSTANCE | SUBPLOT | Created in instance |
| 6.2.16 | - | CREATED_IN_INSTANCE | SUBPLOT_REGEN | Created in instance |
| 2.1.12 | - | CREATED_IN_INSTANCE | SURVEY | Created in instance |
| 3.1.73 | - | CREATED_IN_INSTANCE | TREE | Created in instance |
| 3.6.69 | - | CREATED_IN_INSTANCE | TREE_GRM_BEGIN | Created in instance |
| 3.3.89 | - | CREATED_IN_INSTANCE | TREE_GRM_COMPONENT | Created in instance |
| 3.7.46 | - | CREATED_IN_INSTANCE | TREE_GRM_ESTN | Created in instance |
| 3.5.69 | - | CREATED_IN_INSTANCE | TREE_GRM_MIDPT | Created in instance |
| 3.4.70 | - | CREATED_IN_INSTANCE | TREE_GRM_THRESHOLD | Created in instance |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|---------------------|--|
| 3.2.18 | - | CREATED_IN_INSTANCE | TREE_WOODLAND_STEMS | Created in instance |
| 2.6.35 | - | CROWN_CLOSURE_ME_NERS | SUBPLOT | Crown closure (Maine), Northeastern Research Station |
| 5.1.11 | - | CRWTYPCD | DWM_VISIT | Crew type code |
| 2.4.3 | - | CTY_CN | PLOT | County sequence number |
| 10.2.3 | - | CTY_CN | PLOTSNAP | County sequence number |
| 3.1.28 | - | CULL | TREE | Rotten and missing cull |
| 3.6.14 | - | CULL | TREE_GRM_BEGIN | Rotten and missing cull |
| 3.5.14 | - | CULL | TREE_GRM_MIDPT | Rotten and missing cull |
| 3.4.15 | - | CULL | TREE_GRM_THRESHOLD | Rotten and missing cull |
| 3.1.136 | - | CULL_BF_ROTEN | TREE | Rotten/missing board-foot cull of the sawlog |
| 3.1.137 | - | CULL_BF_ROTEN_CD | TREE | Rotten/missing board-foot cull of the sawlog code |
| 3.1.138 | - | CULL_BF_ROUGH | TREE | Rough board-foot cull of the sawlog |
| 3.1.139 | - | CULL_BF_ROUGH_CD | TREE | Rough board-foot cull of the sawlog code |
| 3.1.81 | 5.13 | CULL_FLD | TREE | Rotten/missing cull, field recorded |
| 3.1.61 | - | CULLBF | TREE | Board-foot cull |
| 3.1.62 | - | CULLCF | TREE | Cubic-foot cull |
| 3.1.58 | - | CULLDEAD | TREE | Dead cull |
| 3.1.59 | - | CULLFORM | TREE | Form cull |
| 3.6.16 | - | CULLFORM | TREE_GRM_BEGIN | Form cull |
| 3.5.16 | - | CULLFORM | TREE_GRM_MIDPT | Form cull |
| 3.4.17 | - | CULLFORM | TREE_GRM_THRESHOLD | Form cull |
| 3.1.60 | - | CULLMSTOP | TREE | Missing top cull |
| 3.6.17 | - | CULLMSTOP | TREE_GRM_BEGIN | Missing top cull |
| 3.5.17 | - | CULLMSTOP | TREE_GRM_MIDPT | Missing top cull |
| 3.4.18 | - | CULLMSTOP | TREE_GRM_THRESHOLD | Missing top cull |
| 3.1.164 | - | CULTURALLY_KILLED_PNWRS | TREE | Culturally killed code, Pacific Northwest Research Station |
| 3.1.51 | 12.8 | CVIGORCD | TREE | Crown vigor code (sapling) |
| 7.1.10 | - | CVR_PCT | GRND_CVR | Cover percent |
| 5.8.32 | - | CWD_CARBON_ADJ | COND_DWM_CALC | Coarse woody debris carbon density, adjusted |
| 5.8.30 | - | CWD_CARBON_COND | COND_DWM_CALC | Coarse woody debris carbon density in the condition |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|-------------------------|---|
| 5.8.31 | - | CWD_CARBON_UNADJ | COND_DWM_CALC | Coarse woody debris carbon density, unadjusted |
| 11.5.63 | - | CWD_DECAY_RATIO1 | REF_SPECIES | Coarse woody debris decay ratio 1 |
| 11.5.64 | - | CWD_DECAY_RATIO2 | REF_SPECIES | Coarse woody debris decay ratio 2 |
| 11.5.65 | - | CWD_DECAY_RATIO3 | REF_SPECIES | Coarse woody debris decay ratio 3 |
| 11.5.66 | - | CWD_DECAY_RATIO4 | REF_SPECIES | Coarse woody debris decay ratio 4 |
| 11.5.67 | - | CWD_DECAY_RATIO5 | REF_SPECIES | Coarse woody debris decay ratio 5 |
| 5.8.29 | - | CWD_DRYBIO_ADJ | COND_DWM_CALC | Coarse woody debris biomass per acre, adjusted |
| 5.8.27 | - | CWD_DRYBIO_COND | COND_DWM_CALC | Coarse woody debris biomass per acre in the condition |
| 5.8.28 | - | CWD_DRYBIO_UNADJ | COND_DWM_CALC | Coarse woody debris biomass per acre, unadjusted |
| 5.8.23 | - | CWD_LPA_ADJ | COND_DWM_CALC | Number of coarse woody debris logs (pieces) per acre, adjusted |
| 5.8.21 | - | CWD_LPA_COND | COND_DWM_CALC | Number of coarse woody debris logs (pieces) per acre in the condition |
| 5.8.22 | - | CWD_LPA_UNADJ | COND_DWM_CALC | Number of coarse woody debris logs (pieces) per acre, unadjusted |
| 5.2.41 | - | CWD_SAMPLE_METHOD | DWM_COARSE_WOODY_DEBRIS | Coarse woody debris sample method |
| 5.1.19 | - | CWD_SAMPLE_METHOD | DWM_VISIT | Coarse woody debris sample method |
| 5.8.20 | - | CWD_TL_ADJ | COND_DWM_CALC | Coarse woody debris transect length, adjusted |
| 5.8.18 | - | CWD_TL_COND | COND_DWM_CALC | Coarse woody debris transect length in the condition |
| 5.8.19 | - | CWD_TL_UNADJ | COND_DWM_CALC | Coarse woody debris transect length, unadjusted |
| 5.8.26 | - | CWD_VOLCF_ADJ | COND_DWM_CALC | Coarse woody debris cubic-foot volume per acre, adjusted |
| 5.8.24 | - | CWD_VOLCF_COND | COND_DWM_CALC | Coarse woody debris cubic-foot volume per acre in the condition |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------------|--|
| 5.8.25 | - | CWD_VOLCF_UNADJ | COND_DWM_CALC | Coarse woody debris cubic-foot volume per acre, unadjusted |
| 5.2.21 | 10.4.3. 12 | CWDHSTCD | DWM_COARSE_WOODY_DEB_RIS | Coarse woody debris history code |
| 5.2.9 | - | CWDID | DWM_COARSE_WOODY_DEB_RIS | Coarse woody debris piece (log) number |
| 2.5.78 | - | CYCLE | COND | Inventory cycle number |
| 5.8.103 | - | CYCLE | COND_DWM_CALC | Inventory cycle number |
| 7.1.13 | - | CYCLE | GRND_CVR | Inventory cycle number |
| 7.2.8 | - | CYCLE | GRND_LYR_FNCTL_GRP | Inventory cycle number |
| 7.3.4 | - | CYCLE | GRND_LYR_MICROQUAD | Inventory cycle number |
| 4.1.20 | - | CYCLE | INVASIVE_SUBPLOT_SPP | Inventory cycle number |
| 4.3.19 | - | CYCLE | P2VEG_SUBP_STRUCTURE | Inventory cycle number |
| 4.2.22 | - | CYCLE | P2VEG_SUBPLOT_SPP | Inventory cycle number |
| 2.4.45 | - | CYCLE | PLOT | Inventory cycle number |
| 6.1.15 | - | CYCLE | PLOT_REGEN | Inventory cycle number |
| 10.2.47 | - | CYCLE | PLOTSNAP | Inventory cycle number |
| 3.9.23 | - | CYCLE | SEEDLING | Inventory cycle number |
| 6.3.23 | - | CYCLE | SEEDLING_REGEN | Inventory cycle number |
| 3.10.30 | - | CYCLE | SITETREE | Inventory cycle number |
| 2.7.21 | - | CYCLE | SUBP_COND | Inventory cycle number |
| 8.2.9 | - | CYCLE | SUBP_SOIL_SAMPLE_LAYER | Inventory cycle number |
| 8.1.8 | - | CYCLE | SUBP_SOIL_SAMPLE_LOC | Inventory cycle number |
| 2.6.26 | - | CYCLE | SUBPLOT | Inventory cycle number |
| 6.2.20 | - | CYCLE | SUBPLOT_REGEN | Inventory cycle number |
| 2.1.16 | - | CYCLE | SURVEY | Inventory cycle number |
| 3.1.98 | - | CYCLE | TREE | Inventory cycle number |
| 3.2.14 | - | CYCLE | TREE_WOODLAND_STEMS | Inventory cycle number |
| D | | | | |
| 3.7.38 | - | D | TREE_GRM_ESTN | Diversion |
| 11.25.11 | - | DAG_CODE | REF_DAMAGE_AGENT | Damage agent group code |
| 3.1.120 | 5.20.1 | DAMAGE_AGENT_CD1 | TREE | Damage agent code 1 |
| 3.9.25 | 6.6.1 (SRS) | DAMAGE_AGENT_CD1_SRS | SEEDLING | Damage agent code 1 (Caribbean Islands), Southern Research Station |
| 3.1.130 | 5.36.1 (SRS) | DAMAGE_AGENT_CD1_SRS | TREE | Damage agent code 1 (Caribbean Islands), Southern Research Station |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|----------------------------|--|
| 3.10.35 | - | DAMAGE_AGENT_CD1_RMRS | SITETREE | Damage agent code 1, Rocky Mountain Research Station |
| 3.1.121 | 5.20.2 | DAMAGE_AGENT_CD2 | TREE | Damage agent code 2 |
| 3.9.27 | 6.6.1 (SRS) | DAMAGE_AGENT_CD2_SRS | SEEDLING | Damage agent code 2 (Caribbean Islands), Southern Research Station |
| 3.1.131 | 5.36.1 (SRS) | DAMAGE_AGENT_CD2_SRS | TREE | Damage agent code 2 (Caribbean Islands), Southern Research Station |
| 3.10.36 | - | DAMAGE_AGENT_CD2_RMRS | SITETREE | Damage agent code 2, Rocky Mountain Research Station |
| 3.1.122 | 5.20.3 | DAMAGE_AGENT_CD3 | TREE | Damage agent code 3 |
| 3.9.29 | 6.6.1 (SRS) | DAMAGE_AGENT_CD3_SRS | SEEDLING | Damage agent code 3 (Caribbean Islands), Southern Research Station |
| 3.1.132 | 5.36.1 (SRS) | DAMAGE_AGENT_CD3_SRS | TREE | Damage agent code 3 (Caribbean Islands), Southern Research Station |
| 3.10.37 | - | DAMAGE_AGENT_CD3_RMRS | SITETREE | Damage agent code 3, Rocky Mountain Research Station |
| 3.1.29 | - | DAMLOC1 | TREE | Damage location 1 |
| 3.1.101 | - | DAMLOC1_PNWRS | TREE | Damage location 1, Pacific Northwest Research Station |
| 3.1.32 | - | DAMLOC2 | TREE | Damage location 2 |
| 3.1.102 | - | DAMLOC2_PNWRS | TREE | Damage location 2, Pacific Northwest Research Station |
| 3.1.31 | - | DAMSEV1 | TREE | Damage severity 1 |
| 3.1.34 | - | DAMSEV2 | TREE | Damage severity 2 |
| 3.1.30 | - | DAMTYP1 | TREE | Damage type 1 |
| 3.1.33 | - | DAMTYP2 | TREE | Damage type 2 |
| 5.2.15 | 10.4.2. 6 | DECAYCD | DWM_COARSE_WOODY_DEB RIS | Decay class code |
| 5.6.33 | 10.5.7 | DECAYCD | DWM_RESIDUALPILE | Decay class code of the residual pile |
| 11.35.3 | - | DECAYCD | REF_TREE_CARBON_RATIO_DEAD | Decay class code |
| 11.36.2 | - | DECAYCD | REF_TREE_DECAY_PROP | Decay class code |
| 3.1.35 | 5.23 | DECAYCD | TREE | Decay class code |
| 3.6.18 | - | DECAYCD | TREE_GRM_BEGIN | Decay class code |
| 3.5.18 | - | DECAYCD | TREE_GRM_MIDPT | Decay class code |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------------|--|
| 3.4.19 | - | DECAYCD | TREE_GRM_THRESHOLD | Decay class code |
| 2.4.39 | 1.14 | DECLINATION | PLOT | Declination |
| 10.2.41 | - | DECLINATION | PLOTSNAP | Declination |
| 5.6.13 | - | DENSITY | DWM_RESIDUAL_PILE | Density |
| 11.36.4 | - | DENSITY_PROP | REF_TREE_DECAY_PROP | Density proportion |
| 7.2.17 | - | DEPTH_CLASS_CD | GRND_LYR_FNCTL_GRP | Depth class code (Interior Alaska) |
| 11.12.3 | - | DESCR | REF_FIADB_VERSION | Version description |
| 11.26.2 | - | DESCRIPTION | REF_DAMAGE_AGENT_GROUP | Damage agent group description |
| 2.4.17 | - | DESIGNCD | PLOT | Design code |
| 10.2.17 | - | DESIGNCD | PLOTSNAP | Design code |
| 2.4.56 | - | DESIGNCD_P2A | PLOT | Design code periodic to annual |
| 5.5.12 | - | DHRBCD | DWM_MICROPLOT_FUEL | Dead herb code |
| 5.5.17 | - | DHRBHT | DWM_MICROPLOT_FUEL | Dead herb height |
| 3.10.12 | 7.2.3 | DIA | SITETREE | Diameter |
| 3.1.18 | 5.9.2 | DIA | TREE | Current diameter |
| 3.6.8 | - | DIA | TREE_GRM_BEGIN | Diameter at T1 |
| 3.5.8 | - | DIA | TREE_GRM_MIDPT | Midpoint diameter |
| 3.4.9 | - | DIA | TREE_GRM_THRESHOLD | Threshold diameter |
| 3.2.11 | - | DIA | TREE_WOODLAND_STEMS | Woodland stem diameter |
| 11.34.1 | - | DIA_2INCH_CLASS | REF_INTL_TO_DOYLE_FACTOR | Diameter class |
| 3.3.5 | - | DIA_BEGIN | TREE_GRM_COMPONENT | Beginning diameter |
| 3.7.24 | - | DIA_BEGIN | TREE_GRM_ESTN | Beginning diameter |
| 3.7.25 | - | DIA_BEGIN_RECALC | TREE_GRM_ESTN | Recalculated diameter |
| 3.3.7 | - | DIA_END | TREE_GRM_COMPONENT | Ending diameter |
| 3.7.26 | - | DIA_END | TREE_GRM_ESTN | Ending diameter |
| 3.1.165 | - | DIA_EST_PNWRS | TREE | Standing dead estimated diameter, Pacific Northwest Research Station |
| 3.3.6 | - | DIA_MIDPT | TREE_GRM_COMPONENT | Midpoint diameter |
| 3.7.27 | - | DIA_MIDPT | TREE_GRM_ESTN | Midpoint diameter |
| 3.7.28 | - | DIA_THRESHOLD | TREE_GRM_ESTN | Threshold diameter |
| 3.1.45 | 5.12 | DIACHECK | TREE | Diameter check code |
| 3.1.106 | - | DIACHECK_PNWRS | TREE | Diameter check, Pacific Northwest Research Station |
| 3.1.19 | - | DIAHTCD | TREE | Diameter height code |
| 3.6.13 | - | DIAHTCD | TREE_GRM_BEGIN | Diameter height code |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------------|---|
| 3.5.13 | - | DIAHTCD | TREE_GRM_MIDPT | Diameter height code |
| 3.4.14 | - | DIAHTCD | TREE_GRM_THRESHOLD | Diameter height code |
| 3.1.119 | - | DIEBACK_SEVERITY_SRS | TREE | Dieback severity, Southern Research Station |
| 3.1.118 | - | DISEASE_SRS | TREE | Disease, Southern Research Station |
| 3.10.20 | 7.2.9 | DIST | SITETREE | Horizontal distance |
| 3.1.13 | 5.5 | DIST | TREE | Horizontal distance |
| 5.3.28 | - | DL_STATUS_CD | DWM_DUFF_LITTER_FUEL | Duff and litter sample status code |
| 5.3.21 | - | DLF_SAMPLE_METHOD | DWM_DUFF_LITTER_FUEL | Duff, litter, fuelbed sample method |
| 5.1.22 | - | DLF_SAMPLE_METHOD | DWM_VISIT | Duff, litter, fuelbed sample method |
| 3.1.104 | - | DMG_AGENT1_CD_PNWRS | TREE | Damage agent 1, Pacific Northwest Research Station |
| 3.1.105 | - | DMG_AGENT2_CD_PNWRS | TREE | Damage agent 2, Pacific Northwest Research Station |
| 3.1.106 | - | DMG_AGENT3_CD_PNWRS | TREE | Damage agent 3, Pacific Northwest Research Station |
| 2.5.121 | - | DOMINANT_SPECIES1_PNWRS | COND | Dominant tree species 1 (Pacific Islands), Pacific Northwest Research Station |
| 2.5.122 | - | DOMINANT_SPECIES2_PNWRS | COND | Dominant tree species 2 (Pacific Islands), Pacific Northwest Research Station |
| 2.5.123 | - | DOMINANT_SPECIES3_PNWRS | COND | Dominant tree species 3 (Pacific Islands), Pacific Northwest Research Station |
| 5.2.23 | - | DRYBIO | DWM_COARSE_WOODY_DEB_RIS | Dry biomass of the piece |
| 5.6.21 | - | DRYBIO | DWM_RESIDUALPILE | Dry biomass of the residual pile |
| 5.2.52 | - | DRYBIO_AC_COND | DWM_COARSE_WOODY_DEB_RIS | Dry biomass per acre based on condition transect length actually measured, unadjusted |
| 5.2.51 | - | DRYBIO_AC_PLOT | DWM_COARSE_WOODY_DEB_RIS | Dry biomass per acre based on plot transect length actually measured, unadjusted |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------------|---|
| 5.2.50 | - | DRYBIO_AC_UNADJ | DWM_COARSE_WOODY_DEB RIS | Dry biomass per acre based on target plot transect length, unadjusted |
| 3.1.133 | - | DRYBIO_AG | TREE | Aboveground dry biomass of wood and bark |
| 3.6.61 | - | DRYBIO_AG | TREE_GRM_BEGIN | Aboveground dry biomass of wood and bark at T1 |
| 3.5.61 | - | DRYBIO_AG | TREE_GRM_MIDPT | Aboveground dry biomass of wood and bark at the midpoint |
| 3.4.62 | - | DRYBIO_AG | TREE_GRM_THRESHOLD | Aboveground dry biomass of wood and bark at the threshold |
| 3.1.95 | - | DRYBIO_BG | TREE | Belowground dry biomass |
| 3.6.62 | - | DRYBIO_BG | TREE_GRM_BEGIN | Belowground dry biomass at T1 |
| 3.5.62 | - | DRYBIO_BG | TREE_GRM_MIDPT | Belowground dry biomass at the midpoint |
| 3.4.63 | - | DRYBIO_BG | TREE_GRM_THRESHOLD | Belowground dry biomass at the threshold |
| 3.1.93 | - | DRYBIO_BOLE | TREE | Dry biomass of wood in the merchantable bole |
| 3.6.57 | - | DRYBIO_BOLE | TREE_GRM_BEGIN | Dry biomass of wood in the merchantable bole at T1 |
| 3.5.57 | - | DRYBIO_BOLE | TREE_GRM_MIDPT | Dry biomass of wood in the merchantable bole at the midpoint |
| 3.4.58 | - | DRYBIO_BOLE | TREE_GRM_THRESHOLD | Dry biomass of wood in the merchantable bole at the threshold |
| 3.1.198 | - | DRYBIO_BOLE_BARK | TREE | Dry biomass of bark in the merchantable bole |
| 3.6.58 | - | DRYBIO_BOLE_BARK | TREE_GRM_BEGIN | Dry biomass of bark in the merchantable bole at T1 |
| 3.5.58 | - | DRYBIO_BOLE_BARK | TREE_GRM_MIDPT | Dry biomass of bark in the merchantable bole at the midpoint |
| 3.4.59 | - | DRYBIO_BOLE_BARK | TREE_GRM_THRESHOLD | Dry biomass of bark in the merchantable bole at the threshold |
| 3.1.199 | - | DRYBIO_BRANCH | TREE | Dry biomass of branches |
| 3.6.59 | - | DRYBIO_BRANCH | TREE_GRM_BEGIN | Dry biomass of branches at T1 |
| 3.5.59 | - | DRYBIO_BRANCH | TREE_GRM_MIDPT | Dry biomass of branches at the midpoint |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------|--|
| 3.4.60 | - | DRYBIO_BRANCH | TREE_GRM_THRESHOLD | Dry biomass of branches at the threshold |
| 3.1.200 | - | DRYBIO_FOLIAGE | TREE | Dry biomass of foliage |
| 3.6.60 | - | DRYBIO_FOLIAGE | TREE_GRM_BEGIN | Dry biomass of foliage at T1 |
| 3.5.60 | - | DRYBIO_FOLIAGE | TREE_GRM_MIDPT | Dry biomass of foliage at the midpoint |
| 3.4.61 | - | DRYBIO_FOLIAGE | TREE_GRM_THRESHOLD | Dry biomass of foliage at the threshold |
| 3.1.129 | - | DRYBIO_SAWLOG | TREE | Dry biomass of wood in the sawlog portion of a sawtimber tree |
| 3.6.65 | - | DRYBIO_SAWLOG | TREE_GRM_BEGIN | Dry biomass of wood in the sawlog portion of a sawtimber tree at T1 |
| 3.5.65 | - | DRYBIO_SAWLOG | TREE_GRM_MIDPT | Dry biomass of wood in the sawlog portion of a sawtimber tree at the midpoint |
| 3.4.66 | - | DRYBIO_SAWLOG | TREE_GRM_THRESHOLD | Dry biomass of wood in the sawlog portion of a sawtimber tree at the threshold |
| 3.1.201 | - | DRYBIO_SAWLOG_BARK | TREE | Dry biomass of bark in the sawlog portion of a sawtimber tree |
| 3.6.66 | - | DRYBIO_SAWLOG_BARK | TREE_GRM_BEGIN | Dry biomass of bark in the sawlog portion of a sawtimber tree at T1 |
| 3.5.66 | - | DRYBIO_SAWLOG_BARK | TREE_GRM_MIDPT | Dry biomass of bark in the sawlog portion of a sawtimber tree at the midpoint |
| 3.4.67 | - | DRYBIO_SAWLOG_BARK | TREE_GRM_THRESHOLD | Dry biomass of bark in the sawlog portion of a sawtimber tree at the threshold |
| 3.1.195 | - | DRYBIO_STEM | TREE | Dry biomass of wood in the total stem |
| 3.6.53 | - | DRYBIO_STEM | TREE_GRM_BEGIN | Dry biomass of wood in the total stem at T1 |
| 3.5.53 | - | DRYBIO_STEM | TREE_GRM_MIDPT | Dry biomass of wood in the total stem at the midpoint |
| 3.4.54 | - | DRYBIO_STEM | TREE_GRM_THRESHOLD | Dry biomass of wood in the total stem at the threshold |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|--------------------------|--------------------|--|
| 3.1.196 | - | DRYBIO_STEM_BARK | TREE | Dry biomass of bark in the total stem |
| 3.6.54 | - | DRYBIO_STEM_BARK | TREE_GRM_BEGIN | Dry biomass of bark in the total stem at T1 |
| 3.5.54 | - | DRYBIO_STEM_BARK | TREE_GRM_MIDPT | Dry biomass of bark in the total stem at the midpoint |
| 3.4.55 | - | DRYBIO_STEM_BARK | TREE_GRM_THRESHOLD | Dry biomass of bark in the total stem at the threshold |
| 3.1.94 | - | DRYBIO_STUMP | TREE | Dry biomass of wood in the stump |
| 3.6.55 | - | DRYBIO_STUMP | TREE_GRM_BEGIN | Dry biomass of wood in the stump at T1 |
| 3.5.55 | - | DRYBIO_STUMP | TREE_GRM_MIDPT | Dry biomass of wood in the stump at the midpoint |
| 3.4.56 | - | DRYBIO_STUMP | TREE_GRM_THRESHOLD | Dry biomass of wood in the stump at the threshold |
| 3.1.197 | - | DRYBIO_STUMP_BARK | TREE | Dry biomass of bark in the stump |
| 3.6.56 | - | DRYBIO_STUMP_BARK | TREE_GRM_BEGIN | Dry biomass of bark in the stump at T1 |
| 3.5.56 | - | DRYBIO_STUMP_BARK | TREE_GRM_MIDPT | Dry biomass of bark in the total stem at the midpoint |
| 3.4.57 | - | DRYBIO_STUMP_BARK | TREE_GRM_THRESHOLD | Dry biomass of bark in the total stem at the threshold |
| 7.2.27 | - | DRYBIOT | GRND_LYR_FNCTL_GRP | Functional group biomass |
| 11.5.47 | - | WOOD_SPGR_GREENVOL_DRYWT | REF_SPECIES | Dry weight to green weight conversion |
| 5.5.10 | - | DSHRBCD | DWM_MICROPLOT_FUEL | Dead shrub code |
| 5.5.15 | - | DSHRBHT | DWM_MICROPLOT_FUEL | Dead shrub height |
| 2.5.38 | 2.5.15 | DSTRBCD1 | COND | Disturbance code 1 |
| 2.5.124 | - | DSTRBCD1_P2A | COND | Disturbance code 1, periodic to annual |
| 2.5.40 | 2.5.17 | DSTRBCD2 | COND | Disturbance code 2 |
| 2.5.125 | - | DSTRBCD2_P2A | COND | Disturbance code 2, periodic to annual |
| 2.5.42 | 2.5.19 | DSTRBCD3 | COND | Disturbance code 3 |
| 2.5.126 | - | DSTRBCD3_P2A | COND | Disturbance code 3, periodic to annual |
| 2.5.39 | 2.5.16 | DSTRBYR1 | COND | Disturbance year 1 |
| 2.5.127 | - | DSTRBYR1_P2A | COND | Disturbance year 1, periodic to annual |
| 2.5.41 | 2.5.18 | DSTRBYR2 | COND | Disturbance year 2 |
| 2.5.128 | - | DSTRBYR2_P2A | COND | Disturbance year 2, periodic to annual |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|--------------------------|------------------------|--|
| 2.5.43 | 2.5.20 | DSTRBYR3 | COND | Disturbance year 3 |
| 2.5.129 | - | DSTRBYR3_P2A | COND | Disturbance year 3, periodic to annual |
| 5.8.88 | - | DUFF_BIOMASS | COND_DWM_CALC | Average duff biomass per acre in the condition |
| 5.8.89 | - | DUFF_CARBON | COND_DWM_CALC | Average duff carbon density in the condition |
| 11.4.5 | - | DUFF_CARBON_RATIO | REF_FOREST_TYPE_GROUP | Duff carbon ratio |
| 11.4.4 | - | DUFF_DENSITY | REF_FOREST_TYPE_GROUP | Duff density |
| 5.8.87 | - | DUFF_DEPTH | COND_DWM_CALC | Average duff depth in the condition |
| 5.3.22 | - | DUFF_METHOD | DWM_DUFF_LITTER_FUEL | Duff measurement method |
| 5.3.23 | - | DUFF_NONSAMPLE_REASON_CD | DWM_DUFF_LITTER_FUEL | Duff nonsampled reason code |
| 5.8.95 | - | DUFF_TC_ADJ | COND_DWM_CALC | Number of duff, litter, and fuelbed sampling points on the entire plot, adjusted |
| 5.8.93 | - | DUFF_TC_COND | COND_DWM_CALC | Number of duff, litter, and fuelbed sampling points in the condition |
| 5.8.94 | - | DUFF_TC_UNADJ | COND_DWM_CALC | Number of duff, litter, and fuelbed sampling points on the entire plot, unadjusted |
| 5.3.12 | - | DUFFDEP | DWM_DUFF_LITTER_FUEL | Duff depth |
| 11.6.11 | - | DURATION | REF_PLANT_DICTIONARY | Duration |
| 11.5.68 | - | DWM_CARBON_RATIO | REF_SPECIES | Down woody debris carbon ratio |
| 2.5.108 | - | DWM_FUELBED_TYP_CD | COND | DWM condition fuelbed type code |
| 5.1.25 | 1.25.2 | DWM_NBR_SUBP | DWM_VISIT | DWM number of subplots |
| 5.1.26 | 1.25.3 | DWM_NBR_SUBP_TRANSECT | DWM_VISIT | DWM number of transects on subplot |
| 5.1.24 | 1.25.1 | DWM_SAMPLING_STATUS_CD | DWM_VISIT | DWM sampling status code |
| 5.1.27 | 1.25.5 | DWM_SUBPLIST | DWM_VISIT | DWM subplot list |
| 5.1.28 | - | DWM_TRANSECT_LENGTH | DWM_VISIT | DWM transect length |
| E | | | | |
| 11.5.10 | - | E_SPGRPCD | REF_SPECIES | Eastern species group code |
| 8.2.32 | - | ECEC | SUBP_SOIL_SAMPLE_LAYER | Effective cation exchange capacity |
| 2.4.47 | - | ECO_UNIT_PNW | PLOT | Ecological unit, Pacific Northwest Research Station |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|----------------------------|--|
| 10.2.49 | - | ECO_UNIT_PNW | PLOTSNAP | Ecological unit, Pacific Northwest Research Station |
| 11.37.2 | - | ECOPROV | REF_TREE_STND_DEAD_CR_PROP | Ecoregion province |
| 2.4.27 | - | ECOSUBCD | PLOT | Ecological subsection code |
| 10.1.10 | - | ECOSUBCD | PLOTGEOM | Ecological subsection code |
| 2.4.22 | - | ELEV | PLOT | Elevation |
| 10.2.22 | - | ELEV | PLOTSNAP | Elevation |
| 2.4.40 | - | EMAP_HEX | PLOT | EMAP hexagon |
| 10.1.12 | - | EMAP_HEX | PLOTGEOM | EMAP hexagon |
| 10.2.42 | - | EMAP_HEX | PLOTSNAP | EMAP hexagon |
| 11.8.7 | - | END_DATE | REF_INVASIVE_SPECIES | End date |
| 9.2.10 | - | END_INVYR | POP_EVAL | End inventory year |
| 11.33.5 | - | END_INVYR | REF_GRM_TYPE | End inventory year |
| 3.1.160 | - | EPIPHYTE_PNWRS | TREE | Epiphyte loading (Pacific Islands), Pacific Northwest Research Station |
| 3.7.19 | - | EST_BEGIN | TREE_GRM_ESTN | Beginning estimate |
| 3.7.20 | - | EST_BEGIN_RECALC | TREE_GRM_ESTN | Recalculated beginning estimate |
| 3.7.21 | - | EST_END | TREE_GRM_ESTN | Ending estimate |
| 3.7.22 | - | EST_MIDPT | TREE_GRM_ESTN | Midpoint estimate |
| 3.7.23 | - | EST_THRESHOLD | TREE_GRM_ESTN | Threshold estimate |
| 3.7.7 | - | ESTIMATE | TREE_GRM_ESTN | Base attribute that is being estimated |
| 9.2.14 | - | ESTN_METHOD | POP_EVAL | Estimation method |
| 3.7.8 | - | ESTN_TYPE | TREE_GRM_ESTN | Estimation type of the tree |
| 9.1.5 | - | ESTN_UNIT | POP_ESTN_UNIT | Estimation unit |
| 9.6.11 | - | ESTN_UNIT | POP_PLOT_STRATUM_ASSGN | Estimation unit |
| 9.7.5 | - | ESTN_UNIT | POP_STRATUM | Estimation unit |
| 9.7.2 | - | ESTN_UNIT_CN | POP_STRATUM | Estimation unit sequence number |
| 9.1.6 | - | ESTN_UNIT_DESCR | POP_ESTN_UNIT | Estimation unit description |
| 3.7.9 | - | ESTN_UNITS | TREE_GRM_ESTN | Estimation unit of measurement |
| 9.1.2 | - | EVAL_CN | POP_ESTN_UNIT | Evaluation sequence number |
| 9.3.2 | - | EVAL_CN | POP_EVAL_ATTRIBUTE | Evaluation sequence number |
| 9.5.3 | - | EVAL_CN | POP_EVAL_TYP | Evaluation sequence number |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|------------------------|---|
| 9.2.5 | - | EVAL_DESCR | POP_EVAL | Evaluation description |
| 10.2.52 | - | EVAL_GRP | PLOTSNAP | Evaluation group |
| 9.4.3 | - | EVAL_GRP | POP_EVAL_GRP | Evaluation group |
| 10.2.51 | - | EVAL_GRP_CN | PLOTSNAP | Evaluation group sequence number |
| 9.2.2 | - | EVAL_GRP_CN | POP_EVAL | Evaluation group sequence number |
| 9.5.2 | - | EVAL_GRP_CN | POP_EVAL_TYP | Evaluation group sequence number |
| 9.4.4 | - | EVAL_GRP_DESCR | POP_EVAL_GRP | Evaluation group description |
| 9.5.4 | - | EVAL_TYP | POP_EVAL_TYP | Evaluation type |
| 11.1.3 | - | EVAL_TYP | REF_POP_ATTRIBUTE | Evaluation type |
| 11.2.3 | - | EVAL_TYP | REF_POP_EVAL_TYP_DESCR | Evaluation type |
| 11.2.13 | - | EVAL_TYP_CD | REF_POP_EVAL_TYP_DESCR | Evaluation type code |
| 11.2.6 | - | EVAL_TYP_DESCR | REF_POP_EVAL_TYP_DESCR | Evaluation type descriptor |
| 11.2.4 | - | EVAL_TYP_LABEL | REF_POP_EVAL_TYP_DESCR | Evaluation type label |
| 5.8.8 | - | VALID | COND_DWM_CALC | Evaluation identifier |
| 9.1.4 | - | VALID | POP_ESTN_UNIT | Evaluation identifier |
| 9.2.4 | - | VALID | POP_EVAL | Evaluation identifier |
| 9.6.10 | - | VALID | POP_PLOT_STRATUM_ASSGN | Evaluation identifier |
| 9.7.4 | - | VALID | POP_STRATUM | Evaluation identifier |
| 8.2.33 | - | EXCHNG_AL | SUBP_SOIL_SAMPLE_LAYER | Exchangeable aluminum |
| 8.2.34 | - | EXCHNG_CA | SUBP_SOIL_SAMPLE_LAYER | Exchangeable calcium |
| 8.2.35 | - | EXCHNG_CD | SUBP_SOIL_SAMPLE_LAYER | Exchangeable cadmium |
| 8.2.36 | - | EXCHNG_CU | SUBP_SOIL_SAMPLE_LAYER | Exchangeable copper |
| 8.2.37 | - | EXCHNG_FE | SUBP_SOIL_SAMPLE_LAYER | Exchangeable iron |
| 8.2.38 | - | EXCHNG_K | SUBP_SOIL_SAMPLE_LAYER | Exchangeable potassium |
| 8.2.39 | - | EXCHNG_MG | SUBP_SOIL_SAMPLE_LAYER | Exchangeable magnesium |
| 8.2.40 | - | EXCHNG_MN | SUBP_SOIL_SAMPLE_LAYER | Exchangeable manganese |
| 8.2.41 | - | EXCHNG_NA | SUBP_SOIL_SAMPLE_LAYER | Exchangeable sodium |
| 8.2.42 | - | EXCHNG_NI | SUBP_SOIL_SAMPLE_LAYER | Exchangeable nickel |
| 8.2.43 | - | EXCHNG_PB | SUBP_SOIL_SAMPLE_LAYER | Exchangeable lead |
| 8.2.44 | - | EXCHNG_S | SUBP_SOIL_SAMPLE_LAYER | Exchangeable sulfur |
| 8.2.45 | - | EXCHNG_ZN | SUBP_SOIL_SAMPLE_LAYER | Exchangeable zinc |
| 10.2.53 | - | EXPALL | PLOTSNAP | Expansion factor for EXPALL evaluation |
| 10.2.59 | - | EXPCHNG | PLOTSNAP | Expansion factor for EXPCHNG evaluation |
| 10.2.65 | - | EXPCRWN | PLOTSNAP | Expansion factor for EXPCRWN evaluation |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------------|---------------------------|---|
| 10.2.54 | - | EXPCURR | PLOTSNAP | Expansion factor for EXPCURR evaluation |
| 10.2.60 | - | EXPDWIM | PLOTSNAP | Expansion factor for EXPDWIM evaluation |
| 10.2.66 | - | EXPGRNDLYR | PLOTSNAP | Expansion factor for EXPGRNDLYR evaluation |
| 10.2.56 | - | EXPGROW | PLOTSNAP | Expansion factor for EXPGROW evaluation |
| 10.2.62 | - | EXPINV | PLOTSNAP | Expansion for EXPINV evaluation. |
| 10.2.57 | - | EXPMORT | PLOTSNAP | Expansion factor for EXPMORT evaluation |
| 9.7.11 | - | EXPNS | POP_STRATUM | Expansion factor |
| 10.2.63 | - | EXPP2VEG | PLOTSNAP | Expansion factor for EXPP2VEG evaluation |
| 10.2.61 | - | EXPREGEN | PLOTSNAP | Expansion factor for EXPREGEN evaluation |
| 10.2.58 | - | EXPREMV | PLOTSNAP | Expansion factor for EXPREMV evaluation |
| 10.2.64 | - | EXPSOIL | PLOTSNAP | Expansion factor for EXPSOIL evaluation |
| 10.2.55 | - | EXPVOL | PLOTSNAP | Expansion factor for EXPVOL evaluation |
| | | F | | |
| 11.6.31 | - | F | REF_PLANT_DICTIONARY | Forma indicator |
| 11.34.3 | - | FACTOR | REF_INTL_TO_DOYLE_FACTO R | Factor |
| 11.6.9 | - | FAMILY | REF_PLANT_DICTIONARY | Family |
| 10.1.13 | - | FIPSCOUNTY | PLOTGEOM | FIPS county code |
| 2.5.86 | - | FIRE_SRS | COND | Fire, Southern Research Station |
| 2.5.52 | - | FLDAGE | COND | Field-recorded stand age |
| 2.5.21 | 2.5.4 | FLDSZCD | COND | Field stand-size class code |
| 2.5.17 | 2.5.3 | FLDTYPCD | COND | Field forest type code |
| 2.5.130 | - | FLDTYPCD_30 | COND | Field forest type code, version 3.0 |
| 2.5.131 | - | FOREST_COMMUNITY_PNWRS | COND | Forest type (Pacific Islands), Pacific Northwest Research Station |
| 2.5.158 | 2.4.3 | FOREST_COND_STATUS_CHANGE _CD | COND | Forest land condition class status code |
| 11.5.16 | - | FOREST_TYPE_SPGRPCD | REF_SPECIES | Forest type species group code |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-----------------------------|----------------------|---|
| 2.5.14 | - | FORINDCD | COND | Private owner industrial status code |
| 11.6.32 | - | FORMA | REF_PLANT_DICTIONARY | Forma |
| 3.1.67 | - | FORMCL | TREE | Form class |
| 2.5.16 | - | FORTYPCD | COND | Forest type code |
| 2.5.55 | - | FORTYPCDCALC | COND | Forest type code calculated |
| 5.8.85 | - | FUEL_BIOMASS | COND_DWM_CALC | Average fuelbed biomass per acre in the condition |
| 5.8.86 | - | FUEL_CARBON | COND_DWM_CALC | Average fuelbed carbon density in the condition |
| 5.8.84 | - | FUEL_DEPTH | COND_DWM_CALC | Average fuelbed depth in the condition |
| 5.3.26 | 10.7.10 | FUELBED_METHOD | DWM_DUFF_LITTER_FUEL | Fuelbed measurement method |
| 5.3.27 | 10.7.7 | FUELBED_NONSAMPLE_REASON_CD | DWM_DUFF_LITTER_FUEL | Fuelbed nonsampled reason code |
| 5.3.14 | - | FUELDEPTH | DWM_DUFF_LITTER_FUEL | Fuelbed depth |
| 7.2.14 | - | FUNCTIONAL_GROUP_CD | GRND_LYR_FNCTL_GRP | Functional group code (Interior Alaska) |
| 11.38.3 | - | FUNCTIONAL_GROUP_CD | REF_GRND_LYR | Functional group code |
| 7.2.15 | - | FUNCTIONAL_GROUP_UNCERTAIN | GRND_LYR_FNCTL_GRP | Functional group uncertain (Interior Alaska) |
| 2.4.61 | - | FUTFORCD_RMRS | PLOT | Future forest potential code, Rocky Mountain Research Station |
| 10.1.26 | - | FVS_DISTRICT | PLOTGEOM | Forest vegetation simulator district code |
| 10.1.25 | - | FVS_FOREST | PLOTGEOM | Forest vegetation simulator forest code |
| 10.1.23 | - | FVS_LOC_CD | PLOTGEOM | Forest vegetation simulator location code |
| 11.28.2 | - | FVS_LOC_CD | REF_FVS_LOC_NAME | Forest vegetation simulator location code |
| 11.28.3 | - | FVS_LOC_CD_NAME | REF_FVS_LOC_NAME | Forest vegetation simulator location code name |
| 10.1.24 | - | FVS_REGION | PLOTGEOM | Forest vegetation simulator region code |
| 11.27.3 | - | FVS_VAR_NAME | REF_FVS_VAR_NAME | Forest vegetation simulator variant name |
| 10.1.22 | - | FVS_VARIANT | PLOTGEOM | Forest vegetation simulator variant |
| 11.27.2 | - | FVS_VARIANT | REF_FVS_VAR_NAME | Forest vegetation simulator variant |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|-----------------------|--|
| 11.4.12 | - | FWD_CARBON_RATIO | REF_FOREST_TYPE_GROUP | Fine woody debris carbon ratio |
| 11.4.13 | - | FWD_DECAY_RATIO | REF_FOREST_TYPE_GROUP | Fine woody debris decay ratio |
| 11.4.11 | - | FWD_DENSITY | REF_FOREST_TYPE_GROUP | Fine woody debris density |
| 11.4.16 | - | FWD_LARGE_QMD | REF_FOREST_TYPE_GROUP | Large fine woody debris quadratic mean diameter |
| 5.8.71 | - | FWD_LG_CARBON_ADJ | COND_DWM_CALC | Large-size class fine woody debris carbon density, adjusted |
| 5.8.69 | - | FWD_LG_CARBON_COND | COND_DWM_CALC | Large-size class fine woody debris carbon density in the condition |
| 5.8.70 | - | FWD_LG_CARBON_UNADJ | COND_DWM_CALC | Large-size class fine woody debris carbon density, unadjusted |
| 5.8.62 | - | FWD_LG_CNT_COND | COND_DWM_CALC | Large-size class fine woody debris pieces count in the condition |
| 5.8.68 | - | FWD_LG_DRYBIO_ADJ | COND_DWM_CALC | Large-size class fine woody debris biomass per acre, adjusted |
| 5.8.66 | - | FWD_LG_DRYBIO_COND | COND_DWM_CALC | Large-size class fine woody debris biomass per acre in the condition |
| 5.8.67 | - | FWD_LG_DRYBIO_UNADJ | COND_DWM_CALC | Large-size class fine woody debris biomass per acre, unadjusted |
| 5.8.61 | - | FWD_LG_TL_ADJ | COND_DWM_CALC | Large-size class fine woody debris transect length, adjusted |
| 5.8.59 | - | FWD_LG_TL_COND | COND_DWM_CALC | Large-size class fine woody debris transect length in the condition |
| 5.8.60 | - | FWD_LG_TL_UNADJ | COND_DWM_CALC | Large-size class fine woody debris transect length, unadjusted |
| 5.8.65 | - | FWD_LG_VOLCF_ADJ | COND_DWM_CALC | Large-size class fine woody debris cubic-foot volume per acre, adjusted |
| 5.8.63 | - | FWD_LG_VOLCF_COND | COND_DWM_CALC | Large-size class fine woody debris cubic-foot volume per acre in the condition |
| 5.8.64 | - | FWD_LG_VOLCF_UNADJ | COND_DWM_CALC | Large-size class fine woody debris cubic-foot volume per acre, unadjusted |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|-----------------------|---|
| 5.8.58 | - | FWD_MD_CARBON_ADJ | COND_DWM_CALC | Medium-size class fine woody debris carbon density, adjusted |
| 5.8.56 | - | FWD_MD_CARBON_COND | COND_DWM_CALC | Medium-size class fine woody debris carbon density in the condition |
| 5.8.57 | - | FWD_MD_CARBON_UNADJ | COND_DWM_CALC | Medium-size class fine woody debris carbon density, unadjusted |
| 5.8.49 | - | FWD_MD_CNT_COND | COND_DWM_CALC | Medium-size class fine woody debris pieces count in the condition |
| 5.8.55 | - | FWD_MD_DRYBIO_ADJ | COND_DWM_CALC | Medium-size class fine woody debris biomass per acre, adjusted |
| 5.8.53 | - | FWD_MD_DRYBIO_COND | COND_DWM_CALC | Medium-size class fine woody debris biomass per acre in the condition |
| 5.8.54 | - | FWD_MD_DRYBIO_UNADJ | COND_DWM_CALC | Medium-size class fine woody debris biomass per acre, unadjusted |
| 5.8.48 | - | FWD_MD_TL_ADJ | COND_DWM_CALC | Medium-size class fine woody debris transect length, adjusted |
| 5.8.46 | - | FWD_MD_TL_COND | COND_DWM_CALC | Medium-size class fine woody debris transect length in the condition |
| 5.8.47 | - | FWD_MD_TL_UNADJ | COND_DWM_CALC | Medium-size class fine woody debris transect length, unadjusted |
| 5.8.52 | - | FWD_MD_VOLCF_ADJ | COND_DWM_CALC | Medium-size class fine woody debris cubic-foot volume per acre, adjusted |
| 5.8.50 | - | FWD_MD_VOLCF_COND | COND_DWM_CALC | Medium-size class fine woody debris cubic-foot volume per acre in the condition |
| 5.8.51 | - | FWD_MD_VOLCF_UNADJ | COND_DWM_CALC | Medium-size class fine woody debris cubic-foot volume per acre, unadjusted |
| 11.4.15 | - | FWD_MEDIUM_QMD | REF_FOREST_TYPE_GROUP | Medium fine woody debris quadratic mean diameter |
| 5.4.32 | 10.6.5 | FWD_NONSAMPLE_REASN_CD | DWM_FINE_WOODY_DEBRIS | Fine woody debris nonsampled reason code |
| 5.4.33 | - | FWD_SAMPLE_METHOD | DWM_FINE_WOODY_DEBRIS | Fine woody debris sample method |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|-----------------------|--|
| 5.1.20 | - | FWD_SAMPLE_METHOD | DWM_VISIT | Fine woody debris sample method |
| 5.8.45 | - | FWD_SM_CARBON_ADJ | COND_DWM_CALC | Small-size class fine woody debris carbon , adjusted |
| 5.8.43 | - | FWD_SM_CARBON_COND | COND_DWM_CALC | Small-size class fine woody debris carbon density in the condition |
| 5.8.44 | - | FWD_SM_CARBON_UNADJ | COND_DWM_CALC | Small-size class fine woody debris carbon density, unadjusted |
| 5.8.36 | - | FWD_SM_CNT_COND | COND_DWM_CALC | Small-size class fine woody debris pieces count in the condition |
| 5.8.42 | - | FWD_SM_DRYBIO_ADJ | COND_DWM_CALC | Small-size class fine woody debris biomass per acre, adjusted |
| 5.8.40 | - | FWD_SM_DRYBIO_COND | COND_DWM_CALC | Small-size class fine woody debris biomass per acre in the condition |
| 5.8.41 | - | FWD_SM_DRYBIO_UNADJ | COND_DWM_CALC | Small-size class fine woody debris biomass per acre, unadjusted |
| 5.8.35 | - | FWD_SM_TL_ADJ | COND_DWM_CALC | Small-size class fine woody debris transect length, adjusted |
| 5.8.33 | - | FWD_SM_TL_COND | COND_DWM_CALC | Small-size class fine woody debris transect length in the condition |
| 5.8.34 | - | FWD_SM_TL_UNADJ | COND_DWM_CALC | Small-size class fine woody debris transect length, unadjusted |
| 5.8.39 | - | FWD_SM_VOLCF_ADJ | COND_DWM_CALC | Small-size class fine woody debris cubic-foot volume per acre, adjusted |
| 5.8.37 | - | FWD_SM_VOLCF_COND | COND_DWM_CALC | Small-size class fine woody debris cubic-foot volume per acre in the condition |
| 5.8.38 | - | FWD_SM_VOLCF_UNADJ | COND_DWM_CALC | Small-size class fine woody debris cubic-foot volume per acre, unadjusted |
| 11.4.14 | - | FWD_SMALL_QMD | REF_FOREST_TYPE_GROUP | Small fine woody debris quadratic mean diameter |
| 5.4.31 | 10.6.4 | FWD_STATUS_CD | DWM_FINE_WOODY_DEBRIS | Fine woody debris sample status |
| | | G | | |
| 3.7.35 | - | G_C | TREE_GRM_ESTN | Cut growth |
| 3.7.41 | - | G_CD | TREE_GRM_ESTN | Cull decrement growth |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|------------------------------|----------------------|---|
| 3.7.43 | - | G_CI | TREE_GRM_ESTN | Cull increment growth |
| 3.7.39 | - | G_D | TREE_GRM_ESTN | Diversion growth |
| 3.7.31 | - | G_I | TREE_GRM_ESTN | Growth on ingrowth |
| 3.7.33 | - | G_M | TREE_GRM_ESTN | Mortality growth |
| 3.7.37 | - | G_R | TREE_GRM_ESTN | Reversion growth |
| 3.7.29 | - | G_S | TREE_GRM_ESTN | Survivor growth |
| 11.6.16 | - | GENERA_BINOMIAL_AUTHOR | REF_PLANT_DICTIONARY | Genera binomial author |
| 11.6.20 | - | GENUS | REF_PLANT_DICTIONARY | Genus |
| 11.5.4 | - | GENUS | REF_SPECIES | Genus |
| 2.5.87 | - | GRAZING_SRS | COND | Grazing, Southern Research Station |
| 11.33.17 | - | GRM_BUILD_LOCATION | REF_GRM_TYPE | Growth, removal, and mortality build location |
| 11.33.6 | - | GRM_TYP | REF_GRM_TYPE | Growth, removal, and mortality type |
| 7.1.11 | - | GRND_CVR_SEG | GRND_CVR | Ground cover segment number |
| 7.1.12 | - | GRND_CVR_TYP | GRND_CVR | Ground cover type |
| 7.2.24 | - | GRND_LYR_CONFIG | GRND_LYR_FNCTL_GRP | Ground layer configuration name |
| 11.38.2 | - | GRND_LYR_CONFIG | REF_GRND_LYR | Ground layer configuration name |
| 2.5.73 | - | GRND_LYR_SAMPLING_STATUS_CD | PLOT | Ground layer sampling status code |
| 2.5.74 | - | GRND_LYR_SAMPLING_METHOD_CD | PLOT | Ground layer sampling method code |
| 2.5.81 | - | GROUND_LAND_CLASS_PNW | COND | Present ground land class, Pacific Northwest Research Station |
| 2.6.36 | - | GROUND_TRAN PTS_BARE_RMRS | SUBPLOT | Ground surface cover transect points - bare ground, Rocky Mountain Research Station |
| 2.6.37 | - | GROUND_TRAN PTS_CRYP_RMRS | SUBPLOT | Ground surface cover transect points - cryptogamic crust, Rocky Mountain Research Station |
| 2.6.38 | - | GROUND_TRAN PTS_DEV_RMRS | SUBPLOT | Ground surface cover transect points - developed land, Rocky Mountain Research Station |
| 2.6.39 | - | GROUND_TRAN PTS_LICHEN_RM RS | SUBPLOT | Ground surface cover transect points - lichen, Rocky Mountain Research Station |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------------|-------------------|--|
| 2.6.40 | - | GROUND_TRAN PTS_LITTER_RM RS | SUBPLOT | Ground surface cover transect points - litter, Rocky Mountain Research Station |
| 2.6.41 | - | GROUND_TRAN PTS_MOSS_RM RS | SUBPLOT | Ground surface cover transect points - moss, Rocky Mountain Research Station |
| 2.6.42 | - | GROUND_TRAN PTS_NOTSAMP_RM RS | SUBPLOT | Ground surface cover transect points - not sampled, Rocky Mountain Research Station |
| 2.6.43 | - | GROUND_TRAN PTS_OTHER_RM RS | SUBPLOT | Ground surface cover transect points - other cover, Rocky Mountain Research Station |
| 2.6.44 | - | GROUND_TRAN PTS_PEIS_RM RS | SUBPLOT | Ground surface cover transect points - permanent ice and snow, Rocky Mountain Research Station |
| 2.6.45 | - | GROUND_TRAN PTS_ROAD_RM RS | SUBPLOT | Ground surface cover transect points - road, Rocky Mountain Research Station |
| 2.6.46 | - | GROUND_TRAN PTS_ROCK_RM RS | SUBPLOT | Ground surface cover transect points - rock, Rocky Mountain Research Station |
| 2.6.47 | - | GROUND_TRAN PTS_TRIS_RM RS | SUBPLOT | Ground surface cover transect points - transient ice and snow, Rocky Mountain Research Station |
| 2.6.48 | - | GROUND_TRAN PTS_VEG_RM RS | SUBPLOT | Ground surface cover transect points - basal vegetation, Rocky Mountain Research Station |
| 2.6.49 | - | GROUND_TRAN PTS_WATER_RM RS | SUBPLOT | Ground surface cover transect points - water, Rocky Mountain Research Station |
| 2.6.50 | - | GROUND_TRAN PTS_WOOD_RM RS | SUBPLOT | Ground surface cover transect points - wood, Rocky Mountain Research Station |
| 2.4.23 | - | GROW_TYP_CD | PLOT | Type of annual volume growth code |
| 10.2.23 | - | GROW_TYP_CD | PLOTSNAP | Type of annual volume growth code |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|----------------------|--|
| 11.33.7 | - | GROW_TYP_CD | REF_GRM_TYPE | Type of annual volume growth code |
| 3.3.56 | - | GROWBFSL_FOREST | TREE_GRM_COMPONENT | Net annual merchantable board-foot growth of a sawtimber tree on forest land |
| 3.3.68 | - | GROWBFSL_TIMBER | TREE_GRM_COMPONENT | Net annual merchantable board-foot growth of a sawtimber tree on timberland |
| 3.3.54 | - | GROWCFAL_FOREST | TREE_GRM_COMPONENT | Net annual sound cubic-foot growth of a live tree for the all live estimation type on forest land |
| 3.3.66 | - | GROWCFAL_TIMBER | TREE_GRM_COMPONENT | Net annual sound cubic-foot growth of a live tree for the all live estimation type on timberland |
| 3.3.55 | - | GROWCFGS_FOREST | TREE_GRM_COMPONENT | Net annual merchantable cubic-foot stem wood growth of a growing-stock tree on forest land |
| 3.3.67 | - | GROWCFGS_TIMBER | TREE_GRM_COMPONENT | Net annual merchantable cubic-foot stem wood growth of a growing-stock tree on timberland |
| 9.2.13 | - | GROWTH_ACCT | POP_EVAL | Growth accounting |
| 11.1.7 | - | GROWTH_ACCT | REF_POP_ATTRIBUTE | Growth accounting |
| 11.6.10 | - | GROWTH_HABIT | REF_PLANT_DICTIONARY | Growth habit |
| 4.3.10 | - | GROWTH_HABIT_CD | P2VEG_SUBP_STRUCTURE | Growth habit code (vegetation structure growth habit) |
| 4.2.13 | 8.5.1 | GROWTH_HABIT_CD | P2VEG_SUBPLOT_SPP | Growth habit code (species growth habit) |
| 3.3.53 | - | GROWTSAL_FOREST | TREE_GRM_COMPONENT | Net annual sound cubic-foot total-stem growth of a live tree for the all live estimation type on forest land |
| 3.3.65 | - | GROWTSAL_TIMBER | TREE_GRM_COMPONENT | Net annual sound cubic-foot total-stem wood growth of a live tree for the all live estimation type on timberland |
| 2.5.54 | - | GSSTK | COND | Growing-stock stocking percent |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name | |
|------------|---------------------|-------------------------|------------------------|--|--|
| 2.5.36 | - | GSSTKCD | COND | Growing-stock stocking code | |
| 3.1.166 | - | GST_PNWRS | TREE | Growth sample tree, Pacific Northwest Research Station | |
| | | H | | | |
| 11.9.2 | - | HABTYP_CD | REF_HABTYP_DESCRIPTION | Habitat type code | |
| 2.5.56 | - | HABTYP_CD1 | COND | Habitat type code 1 | |
| 2.5.58 | - | HABTYP_CD1_DESCR_PUB_CD | COND | Habitat type code 1 description publication code | |
| 2.5.57 | - | HABTYP_CD1_PUB_CD | COND | Habitat type code 1 publication code | |
| 2.5.59 | - | HABTYP_CD2 | COND | Habitat type code 2 | |
| 2.5.61 | - | HABTYP_CD2_DESCR_PUB_CD | COND | Habitat type code 2 description publication code | |
| 2.5.60 | - | HABTYP_CD2_PUB_CD | COND | Habitat type code 2 publication code | |
| 2.5.88 | - | HARVEST_TYPE1_SRS | COND | Harvest type code 1, Southern Research Station | |
| 2.5.89 | - | HARVEST_TYPE2_SRS | COND | Harvest type code 2, Southern Research Station | |
| 2.5.90 | - | HARVEST_TYPE3_SRS | COND | Harvest type code 3, Southern Research Station | |
| 5.6.14 | - | HEIGHT1 | DWM_RESIDUALPILE | Height first measurement | |
| 5.6.17 | - | HEIGHT2 | DWM_RESIDUALPILE | Height second measurement | |
| 11.17.3 | - | HIERARCHY_LEVEL | REF_NVCS_LEVEL_1_CODES | Hierarchy level | |
| 11.18.3 | - | HIERARCHY_LEVEL | REF_NVCS_LEVEL_2_CODES | Hierarchy level | |
| 11.19.3 | - | HIERARCHY_LEVEL | REF_NVCS_LEVEL_3_CODES | Hierarchy level | |
| 11.20.3 | - | HIERARCHY_LEVEL | REF_NVCS_LEVEL_4_CODES | Hierarchy level | |
| 11.21.3 | - | HIERARCHY_LEVEL | REF_NVCS_LEVEL_5_CODES | Hierarchy level | |
| 11.22.3 | - | HIERARCHY_LEVEL | REF_NVCS_LEVEL_6_CODES | Hierarchy level | |
| 11.23.3 | - | HIERARCHY_LEVEL | REF_NVCS_LEVEL_7_CODES | Hierarchy level | |
| 11.24.3 | - | HIERARCHY_LEVEL | REF_NVCS_LEVEL_8_CODES | Hierarchy level | |
| 11.17.4 | - | HIERARCHY_LEVEL_LABEL | REF_NVCS_LEVEL_1_CODES | Hierarchy level label | |
| 11.18.4 | - | HIERARCHY_LEVEL_LABEL | REF_NVCS_LEVEL_2_CODES | Hierarchy level label | |
| 11.19.4 | - | HIERARCHY_LEVEL_LABEL | REF_NVCS_LEVEL_3_CODES | Hierarchy level label | |
| 11.20.4 | - | HIERARCHY_LEVEL_LABEL | REF_NVCS_LEVEL_4_CODES | Hierarchy level label | |
| 11.21.4 | - | HIERARCHY_LEVEL_LABEL | REF_NVCS_LEVEL_5_CODES | Hierarchy level label | |
| 11.22.4 | - | HIERARCHY_LEVEL_LABEL | REF_NVCS_LEVEL_6_CODES | Hierarchy level label | |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|---------------------------|---|
| 11.23.4 | - | HIERARCHY_LEVEL_LABEL | REF_NVCS_LEVEL_7_CODES | Hierarchy level label |
| 11.24.4 | - | HIERARCHY_LEVEL_LABEL | REF_NVCS_LEVEL_8_CODES | Hierarchy level label |
| 11.16.1 | - | HIERARCHY_VERSION | REF_NVCS_HIERARCHY_STRICT | Hierarchy version |
| 11.13.5 | - | HIGHEST_POINT | REF_STATE_ELEV | Highest point |
| 8.1.19 | - | HOLE_DEPTH | SUBP_SOIL_SAMPLE_LOC | Hole depth |
| 5.2.42 | 10.4.3. 8.2 | HOLLOW_DIA | DWM_COARSE_WOODY_DEBRIS | Hollow diameter at the point of intersection |
| 5.2.20 | 10.4.3. 10 | HOLLOWCD | DWM_COARSE_WOODY_DEBRIS | Hollow code |
| 5.6.34 | 10.5.4 | HORIZ_BEGNDIST | DWM_RESIDUAL_PILE | Beginning horizontal distance of the residual pile |
| 5.7.16 | 10.3.4 | HORIZ_BEGNDIST | DWM_TRANSECT_SEGMENT | Beginning horizontal distance of the transect segment |
| 5.2.13 | 10.4.3. 5 | HORIZ_DIST | DWM_COARSE_WOODY_DEBRIS | Horizontal distance |
| 5.2.43 | - | HORIZ_DIST_CD | DWM_COARSE_WOODY_DEBRIS | Horizontal distance code |
| 5.6.35 | 10.5.5 | HORIZ_ENDDIST | DWM_RESIDUAL_PILE | Ending horizontal distance of the residual pile |
| 5.7.17 | 10.3.5 | HORIZ_ENDDIST | DWM_TRANSECT_SEGMENT | Ending horizontal distance of the transect segment |
| 5.7.15 | - | HORIZ_LENGTH | DWM_TRANSECT_SEGMENT | Horizontal length of the transect segment |
| 3.1.69 | - | HRDWD_CLUMP_CD | TREE | Hardwood clump code |
| 3.10.13 | 7.24 | HT | SITETREE | Total height |
| 3.1.20 | 5.14 | HT | TREE | Total height |
| 3.6.9 | - | HT | TREE_GRM_BEGIN | Total height |
| 3.5.9 | - | HT | TREE_GRM_MIDPT | Total height |
| 3.4.10 | - | HT | TREE_GRM_THRESHOLD | Total height |
| 3.1.68 | - | HTCALC | TREE | Current height calculated |
| 3.1.21 | 5.16 | HTCD | TREE | Height method code |
| 3.1.78 | 5.24 | HTDMP | TREE | Height to diameter measurement point |
| 3.6.20 | - | HTDMP | TREE_GRM_BEGIN | Height to diameter measurement point |
| 3.5.20 | - | HTDMP | TREE_GRM_MIDPT | Height to diameter measurement point |
| 3.4.21 | - | HTDMP | TREE_GRM_THRESHOLD | Height to diameter measurement point |
| 10.1.11 | - | HUC | PLOTGEOM | Hydrologic unit code |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name | | |
|------------|---------------------|------------------------------|--------------------------|--|--|--|
| | | I | I | | | |
| 3.7.30 | - | I | TREE_GRM_ESTN | Ingrowth | | |
| 3.1.167 | - | INC10YR_PNWRS | TREE | 10-year increment, Pacific Northwest Research Station | | |
| 3.1.169 | - | INC5YR_PNWRS | TREE | 5-year increment, Pacific Northwest Research Station | | |
| 3.1.168 | - | INC5YRHT_PNWRS | TREE | 5-year height growth, Pacific Northwest Research Station | | |
| 5.2.44 | 10.4.3. 11 | INCLINATION | DWM_COARSE_WOODY_DEB_RIS | Piece inclination | | |
| 2.5.101 | - | INDUSTRIALCD_FIADB | COND | Industrial code in FIADB | | |
| 11.12.2 | - | INSTALL_TYPE | REF_FIADB_VERSION | Install type | | |
| 2.4.44 | - | INTENSITY | PLOT | Intensity | | |
| 10.2.46 | - | INTENSITY | PLOTSNAP | Intensity | | |
| 11.8.4 | - | INV_GROUP_CD | REF_INVASIVE_SPECIES | Invasive group code | | |
| 7.2.7 | - | INV_VST_NBR | GRND_LYR_FNCTL_GRP | Inventory visit number | | |
| 7.3.7 | - | INV_VST_NBR | GRND_LYR_MICROQUAD | Inventory visit number | | |
| 8.2.8 | - | INV_VST_NBR | SUBP_SOIL_SAMPLE_LAYER | Inventory visit number | | |
| 8.1.6 | - | INV_VST_NBR | SUBP_SOIL_SAMPLE_LOC | Inventory visit number | | |
| 2.6.34 | - | INVASIVE_NONSAMPLE_REASON_CD | SUBPLOT | Invasive nonsampled reason code | | |
| 2.4.54 | - | INVASIVE_SAMPLING_STATUS_CD | PLOT | Invasive sampling status code | | |
| 2.4.55 | - | INVASIVE_SPECIMEN_RULE_CD | PLOT | Invasive specimen rule code | | |
| 2.6.33 | - | INVASIVE_SUBP_STATUS_CD | SUBPLOT | Invasive subplot status code | | |
| 2.5.3 | - | INVYR | COND | Inventory year | | |
| 5.8.6 | - | INVYR | COND_DWM_CALC | Inventory year | | |
| 5.2.3 | - | INVYR | DWM_COARSE_WOODY_DEB_RIS | Inventory year | | |
| 5.3.3 | - | INVYR | DWM_DUFF_LITTER_FUEL | Inventory year | | |
| 5.4.3 | - | INVYR | DWM_FINE_WOODY_DEBRIS | Inventory year | | |
| 5.5.3 | - | INVYR | DWM_MICROPLOT_FUEL | Inventory year | | |
| 5.6.3 | - | INVYR | DWM_RESIDUALPILE | Inventory year | | |
| 5.7.3 | - | INVYR | DWM_TRANSECT_SEGMENT | Inventory year | | |
| 5.1.3 | - | INVYR | DWM_VISIT | Inventory year | | |
| 7.1.3 | - | INVYR | GRND_CVR | Inventory year | | |
| 7.2.6 | - | INVYR | GRND_LYR_FNCTL_GRP | Inventory year | | |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|----------------------------|------------------------|-----------------------------------|
| 7.3.6 | - | INVYR | GRND_LYR_MICROQUAD | Inventory year |
| 4.1.3 | - | INVYR | INVASIVE_SUBPLOT_SPP | Inventory year |
| 4.3.7 | - | INVYR | P2VEG_SUBP_STRUCTURE | Inventory year |
| 4.2.3 | - | INVYR | P2VEG_SUBPLOT_SPP | Inventory year |
| 2.4.5 | - | INVYR | PLOT | Inventory year |
| 6.1.3 | - | INVYR | PLOT_REGEN | Inventory year |
| 10.1.3 | - | INVYR | PLOTGEOM | Inventory year |
| 10.2.5 | - | INVYR | PLOTSNAP | Inventory year |
| 9.6.5 | - | INVYR | POP_PLOT_STRATUM_ASSGN | Inventory year |
| 3.9.3 | - | INVYR | SEEDLING | Inventory year |
| 6.3.5 | - | INVYR | SEEDLING_REGEN | Inventory year |
| 3.10.4 | - | INVYR | SITETREE | Inventory year |
| 2.7.3 | - | INVYR | SUBP_COND | Inventory year |
| 8.2.7 | - | INVYR | SUBP_SOIL_SAMPLE_LAYER | Inventory year |
| 8.1.7 | - | INVYR | SUBP_SOIL_SAMPLE_LOC | Inventory year |
| 2.6.4 | - | INVYR | SUBPLOT | Inventory year |
| 6.2.4 | - | INVYR | SUBPLOT_REGEN | Inventory year |
| 2.1.2 | - | INVYR | SURVEY | Inventory year |
| 3.1.4 | - | INVYR | TREE | Inventory year |
| 3.7.3 | - | INVYR | TREE_GRM_ESTN | Inventory year |
| 3.2.3 | - | INVYR | TREE_WOODLAND_STEMS | Inventory year |
| | | J | | |
| 11.5.18 | - | JENKINS_SAPLING_ADJUSTMENT | REF_SPECIES | Jenkins sapling adjustment factor |
| 11.5.17 | - | JENKINS_SPGRPCD | REF_SPECIES | Jenkins species group code |
| | | K | | |
| 2.4.16 | 1.10 | KINDCD | PLOT | Sample kind code |
| 10.2.16 | - | KINDCD | PLOTSNAP | Sample kind code |
| 2.4.30 | - | KINDCD_NC | PLOT | Sample kind code, North Central |
| 10.2.32 | - | KINDCD_NC | PLOTSNAP | Sample kind code, North Central |
| | | L | | |
| 11.2.2 | - | LABEL_ORDER | REF_POP_EVAL_TYP_DESCR | Label order |
| 3.7.6 | - | LAND_BASIS | TREE_GRM_ESTN | Land basis for estimate |
| 11.1.8 | - | LAND_BASIS | REF_POP_ATTRIBUTE | Land basis |
| 2.5.150 | 2.5.28 | LAND_COVER_CLASS_CD | COND | Land cover class code |
| 2.5.105 | - | LAND_COVER_CLASS_CD_RET | COND | Land cover class, retired |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|-----------------------------|--|
| 9.2.11 | - | LAND_ONLY | POP_EVAL | Land only |
| 2.5.91 | - | LAND_USE_SRS | COND | Land use, Southern Research Station |
| 2.5.132 | - | LAND_USECD_RMRS | COND | Land use code, Rocky Mountain Research Station |
| 5.2.45 | 10.4.3. 14 | LARGE_END_DIA_CLASS | DWM_COARSE_WOODY_DEB RIS | Large end diameter class code |
| 5.4.22 | - | LARGE_TL_COND | DWM_FINE_WOODY_DEBRIS | Large-size class transect length in condition |
| 5.4.23 | - | LARGE_TL_PLOT | DWM_FINE_WOODY_DEBRIS | Large-size class transect length on plot |
| 5.4.24 | - | LARGE_TL_UNADJ | DWM_FINE_WOODY_DEBRIS | Large-size class transect length on plot, unadjusted |
| 5.4.13 | - | LARGECT | DWM_FINE_WOODY_DEBRIS | Large-size class count |
| 5.2.18 | - | LARGEDIA | DWM_COARSE_WOODY_DEB RIS | Large diameter |
| 2.4.20 | 1.19.8 | LAT | PLOT | Latitude |
| 10.1.7 | - | LAT | PLOTGEOM | Latitude |
| 10.2.20 | - | LAT | PLOTSNAP | Latitude |
| 4.3.11 | - | LAYER | P2VEG_SUBP_STRUCTURE | Layer (layer distribution of growth habits) |
| 4.2.14 | 8.5.5 | LAYER | P2VEG_SUBPLOT_SPP | Layer (species vegetation layer) |
| 8.2.18 | - | LAYER_COLLECTED_CD | SUBP_SOIL_SAMPLE_LAYER | Layer collected code |
| 8.2.17 | - | LAYER_THICKNESS | SUBP_SOIL_SAMPLE_LAYER | Layer thickness |
| 8.2.15 | - | LAYER_TYPE | SUBP_SOIL_SAMPLE_LAYER | Layer type |
| 5.2.19 | - | LENGTH | DWM_COARSE_WOODY_DEB RIS | Length of the piece |
| 5.2.46 | - | LENGTH_CD | DWM_COARSE_WOODY_DEB RIS | Coarse woody debris length code |
| 6.3.15 | - | LENGTH_CLASS_CD | SEEDLING_REGEN | Length class code |
| 5.6.16 | - | LENGTH1 | DWM_RESIDUALPILE | Length first measurement |
| 5.6.19 | - | LENGTH2 | DWM_RESIDUALPILE | Length second measurement |
| 5.3.13 | - | LITTDEP | DWM_DUFF_LITTER_FUEL | Litter depth |
| 5.8.91 | - | LITTER_BIOMASS | COND_DWM_CALC | Average litter biomass per acre in the condition |
| 5.8.92 | - | LITTER_CARBON | COND_DWM_CALC | Average litter carbon density in the condition |
| 11.4.7 | - | LITTER_CARBON_RATIO | REF_FOREST_TYPE_GROUP | Litter carbon ratio |
| 11.4.6 | - | LITTER_DENSITY | REF_FOREST_TYPE_GROUP | Litter density |
| 5.8.90 | - | LITTER_DEPTH | COND_DWM_CALC | Average litter depth in the condition |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-----------------------------|--------------------------|--|
| 5.3.24 | 10.7.10 | LITTER_METHOD | DWM_DUFF_LITTER_FUEL | Litter measurement method |
| 5.3.25 | 10.7.7 | LITTER_NONSAMPLE_REASN_CD | DWM_DUFF_LITTER_FUEL | Litter nonsampled reason code |
| 5.5.13 | - | LITTERCD | DWM_MICROPLOT_FUEL | Litter code |
| 2.5.97 | - | LIVE_CANOPY_CVR_PCT | COND | Live canopy cover percent |
| 2.5.98 | - | LIVE_MISSING_CANOPY_CVR_PCT | COND | Live plus missing canopy cover percent |
| 9.2.7 | - | LOCATION_NM | POP_EVAL | Location name |
| 2.4.21 | 1.19.9 | LON | PLOT | Longitude |
| 10.1.8 | - | LON | PLOTGEOM | Longitude |
| 10.2.21 | - | LON | PLOTSNAP | Longitude |
| 11.13.4 | - | LOWEST_POINT | REF_STATE_ELEV | Lowest point |
| 5.2.28 | - | LPA_COND | DWM_COARSE_WOODY_DEB_RIS | Number of logs (pieces) per acre in the condition, unadjusted |
| 5.2.31 | - | LPA_COND_RGN | DWM_COARSE_WOODY_DEB_RIS | Number of logs (pieces) per acre in the condition, unadjusted, regional protocol |
| 5.2.27 | - | LPA_PLOT | DWM_COARSE_WOODY_DEB_RIS | Number of logs (pieces) per acre on the plot, unadjusted |
| 5.2.30 | - | LPA_PLOT_RGN | DWM_COARSE_WOODY_DEB_RIS | Number of logs (pieces) per acre on the plot, unadjusted, regional protocol |
| 5.2.26 | - | LPA_UNADJ | DWM_COARSE_WOODY_DEB_RIS | Number of logs (pieces) per acre, unadjusted |
| 5.2.29 | - | LPA_UNADJ_RGN | DWM_COARSE_WOODY_DEB_RIS | Number of logs (pieces) per acre, unadjusted, regional protocol |
| 5.5.11 | - | LVHRBCD | DWM_MICROPLOT_FUEL | Live herb code |
| 5.5.16 | - | LVHRBHT | DWM_MICROPLOT_FUEL | Live herb height |
| 5.5.9 | - | LVSHRBCD | DWM_MICROPLOT_FUEL | Live shrub code |
| 5.5.14 | - | LVSHRBHT | DWM_MICROPLOT_FUEL | Live shrub height |
| M | | | | |
| 3.7.32 | - | M | TREE_GRM_ESTN | Mortality |
| 2.6.14 | - | MACRCOND | SUBPLOT | Macroplot center condition |
| 2.7.18 | - | MACRCOND_PROP | SUBP_COND | Macroplot-condition proportion |
| 2.4.43 | 1.20 | MACRO_BREAKPOINT_DIA | PLOT | Macroplot breakpoint diameter |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|----------------------|--|
| 10.2.45 | - | MACRO_BREAKPOINT_DIA | PLOTSNAP | Macroplot breakpoint diameter |
| 2.5.32 | - | MACRPROP_UNADJ | COND | Macroplot proportion unadjusted |
| 2.5.133 | - | MAICF | COND | Mean annual increment cubic feet |
| 11.5.14 | - | MAJOR_SPGRPCD | REF_SPECIES | Major species group code |
| 2.4.29 | 1.12 | MANUAL | PLOT | Manual (field guide) version number |
| 10.2.29 | - | MANUAL | PLOTSNAP | Manual (field guide) version number |
| 2.4.57 | - | MANUAL_DB | PLOT | Manual version of the data |
| 10.2.30 | - | MANUAL_DB | PLOTSNAP | Manual version of the data |
| 11.3.5 | - | MANUAL_END | REF_FOREST_TYPE | Manual end |
| 11.28.5 | - | MANUAL_END | REF_FVS_LOC_NAME | Manual end |
| 11.27.5 | - | MANUAL_END | REF_FVS_VAR_NAME | Manual end |
| 11.8.9 | - | MANUAL_END | REF_INVASIVE_SPECIES | Manual end |
| | | | | |
| 2.4.62 | - | MANUAL_NCRS | PLOT | Manual (field guide) version number, North Central Research Station |
| 2.4.63 | - | MANUAL_NERS | PLOT | Manual (field guide) version number, Northeastern Research Station |
| 2.4.64 | - | MANUAL_RMRS | PLOT | Manual (field guide) version number, Rocky Mountain Research Station |
| 11.3.4 | - | MANUAL_START | REF_FOREST_TYPE | Manual start |
| 11.28.4 | - | MANUAL_START | REF_FVS_LOC_NAME | Manual start |
| 11.27.4 | - | MANUAL_START | REF_FVS_VAR_NAME | Manual start |
| 11.8.8 | - | MANUAL_START | REF_INVASIVE_SPECIES | Manual start |
| | | | | |
| 2.5.18 | - | MAPDEN | COND | Mapping density |
| 3.1.176 | - | MASTCD | TREE | Mast code |
| 11.13.3 | - | MAX_ELEV | REF_STATE_ELEV | Maximum elevation |
| 11.5.28 | - | MC_PCT_GREEN_BARK | REF_SPECIES | Moisture content of green bark as a percent of oven-dry weight |
| 11.5.29 | - | MC_PCT_GREEN_BARK_CIT | REF_SPECIES | Citation for MC_PCT_GREEN_BARK |
| 11.5.26 | - | MC_PCT_GREEN_WOOD | REF_SPECIES | Moisture content of green wood as a percent of oven-dry weight |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|-------------------------|---|
| 11.5.27 | - | MC_PCT_GREEN_WOOD_CIT | REF_SPECIES | Citation for MC_PCT_GREEN_WOOD |
| 11.3.2 | - | MEANING | REF_FOREST_TYPE | Meaning |
| 11.4.2 | - | MEANING | REF_FOREST_TYPE_GROUP | Meaning |
| 11.17.6 | - | MEANING | REF_NVCS_LEVEL_1_CODES | Meaning |
| 11.18.6 | - | MEANING | REF_NVCS_LEVEL_2_CODES | Meaning |
| 11.19.6 | - | MEANING | REF_NVCS_LEVEL_3_CODES | Meaning |
| 11.20.6 | - | MEANING | REF_NVCS_LEVEL_4_CODES | Meaning |
| 11.21.6 | - | MEANING | REF_NVCS_LEVEL_5_CODES | Meaning |
| 11.22.6 | - | MEANING | REF_NVCS_LEVEL_6_CODES | Meaning |
| 11.23.6 | - | MEANING | REF_NVCS_LEVEL_7_CODES | Meaning |
| 11.24.6 | - | MEANING | REF_NVCS_LEVEL_8_CODES | Meaning |
| 11.29.2 | - | MEANING | REF_OWNGRPCD | Owner group code meaning |
| 11.14.3 | - | MEANING | REF_UNIT | Meaning |
| 5.1.7 | - | MEASDAY | DWM_VISIT | Measurement day |
| 2.4.14 | 1.13.3 | MEASDAY | PLOT | Measurement day |
| 10.2.14 | - | MEASDAY | PLOTSNAP | Measurement day |
| 5.1.8 | - | MEASMON | DWM_VISIT | Measurement month |
| 2.4.13 | 1.13.2 | MEASMON | PLOT | Measurement month |
| 10.2.13 | - | MEASMON | PLOTSNAP | Measurement month |
| 5.8.5 | - | MEASYEAR | COND_DWM_CALC | Measurement year |
| 5.2.10 | - | MEASYEAR | DWM_COARSE_WOODY_DEBRIS | Measurement year |
| 5.3.10 | - | MEASYEAR | DWM_DUFF_LITTER_FUEL | Measurement year |
| 5.4.10 | - | MEASYEAR | DWM_FINE_WOODY_DEBRIS | Measurement year |
| 5.5.8 | - | MEASYEAR | DWM_MICROPLOT_FUEL | Measurement year |
| 5.6.9 | - | MEASYEAR | DWM_RESIDUALPILE | Measurement year |
| 5.7.10 | - | MEASYEAR | DWM_TRANSECT_SEGMENT | Measurement year |
| 5.1.9 | - | MEASYEAR | DWM_VISIT | Measurement year |
| 2.4.12 | 1.13.1 | MEASYEAR | PLOT | Measurement year |
| 10.2.12 | - | MEASYEAR | PLOTSNAP | Measurement year |
| 5.4.19 | - | MEDIUM_TL_COND | DWM_FINE_WOODY_DEBRIS | Medium-size class transect length in condition |
| 5.4.20 | - | MEDIUM_TL_PLOT | DWM_FINE_WOODY_DEBRIS | Medium-size class transect length on plot |
| 5.4.21 | - | MEDIUM_TL_UNADJ | DWM_FINE_WOODY_DEBRIS | Medium-size class transect length on plot, unadjusted |
| 5.4.12 | - | MEDIUMCT | DWM_FINE_WOODY_DEBRIS | Medium-size class count |
| 3.10.21 | - | METHOD | SITETREE | Site tree method code |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------------|--------------------|---|
| 3.3.13 | - | MICR_COMPONENT_AL_FOREST | TREE_GRM_COMPONENT | Trees with DIA \geq 1.0 inch - growth component for the all live estimation type on forest land |
| 3.3.33 | - | MICR_COMPONENT_AL_TIMBER | TREE_GRM_COMPONENT | Trees with DIA \geq 1.0 inch - growth component for the all live estimation type on timberland |
| 5.5.24 | - | MICR_SAMPLE_METHOD | DWM_MICROPLOT_FUEL | Microplot sample method |
| 5.1.21 | - | MICR_SAMPLE_METHOD | DWM_VISIT | Microplot sample method |
| 3.3.14 | - | MICR_SUBTYP_GRM_AL_FOREST | TREE_GRM_COMPONENT | Trees with DIA \geq 1.0 inch - plot type for GRM for the all live estimation type on forest land |
| 3.3.34 | - | MICR_SUBPTYP_GRM_AL_TIMBER | TREE_GRM_COMPONENT | Trees with DIA \geq 1.0 inch - plot type for GRM for the all live estimation type on timberland |
| 3.3.15 | - | MICR_TPAGROW_UNADJ_AL_FOR EST | TREE_GRM_COMPONENT | Trees with DIA \geq 1.0 inch - unadjusted trees per acre for growth for the all live estimation type on forest land |
| 3.3.35 | - | MICR_TPAGROW_UNADJ_AL_TIM BER | TREE_GRM_COMPONENT | Trees with DIA \geq 1.0 inch - unadjusted trees per acre for growth for the all live estimation type on timberland |
| 3.3.17 | - | MICR_TPAMORT_UNADJ_AL_FORE ST | TREE_GRM_COMPONENT | Trees with DIA \geq 1.0 inch - unadjusted trees per acre per year for mortality for the all live estimation type on forest land |
| 3.3.37 | - | MICR_TPAMORT_UNADJ_AL_TIMB ER | TREE_GRM_COMPONENT | Trees with DIA \geq 1.0 inch - unadjusted trees per acre per year for mortality for the all live estimation type on timberland |
| 3.3.16 | - | MICR_TPAREMV_UNADJ_AL_FORE ST | TREE_GRM_COMPONENT | Trees with DIA \geq 1.0 inch - unadjusted trees per acre per year for removals for the all live estimation type on forest land |
| 3.3.36 | - | MICR_TPAREMV_UNADJ_AL_TIMB ER | TREE_GRM_COMPONENT | Trees with DIA \geq 1.0 inch - unadjusted trees per acre per year for removals for the all live estimation type on timberland |
| 2.6.12 | 3.7 | MICRCOND | SUBPLOT | Microplot center condition |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|----------------------------|--------------------------|--|
| 2.7.16 | - | MICRCOND_PROP | SUBP_COND | Microplot-condition proportion |
| 2.4.38 | - | MICROPLOT_LOC | PLOT | Microplot location |
| 10.2.40 | - | MICROPLOT_LOC | PLOTSNAP | Microplot location |
| 6.2.13 | - | MICROPLOT_SITE_LIMITATIONS | SUBPLOT_REGEN | Microplot site limitations |
| 2.5.30 | - | MICRPROP_UNADJ | COND | Microplot proportion unadjusted |
| 7.2.13 | - | MICROQUAD | GRND_LYR_FNCTL_GRP | Microquadrat number (Interior Alaska) |
| 7.3.13 | - | MICROQUAD | GRND_LYR_MICROQUAD | Microquadrat number (Interior Alaska) |
| 7.3.15 | - | MICROQUAD_STATUS_CD | GRND_LYR_MICROQUAD | Microquadrat status code (Interior Alaska) |
| 11.13.2 | - | MIN_ELEV | REF_STATE_ELEV | Minimum elevation |
| 3.1.80 | 5.26 | MIST_CL_CD | TREE | Mistletoe class code |
| 3.1.107 | - | MIST_CL_CD_PNWRS | TREE | Leafy mistletoe class code, Pacific Northwest Research Station |
| 2.5.62 | - | MIXEDCONFCD | COND | Mixed conifer code |
| 3.8.5 | - | MODIFIED_BY | BEGINEND | Modified by |
| 2.5.75 | - | MODIFIED_BY | COND | Modified by |
| 5.8.100 | - | MODIFIED_BY | COND_DWM_CALC | Modified by |
| 2.3.9 | - | MODIFIED_BY | COUNTY | Modified by |
| 5.2.38 | - | MODIFIED_BY | DWM_COARSE_WOODY_DEB_RIS | Modified by |
| 5.3.18 | - | MODIFIED_BY | DWM_DUFF_LITTER_FUEL | Modified by |
| 5.4.28 | - | MODIFIED_BY | DWM_FINE_WOODY_DEBRIS | Modified by |
| 5.5.21 | - | MODIFIED_BY | DWM_MICROPLOT_FUEL | Modified by |
| 5.6.29 | - | MODIFIED_BY | DWM_RESIDUALPILE | Modified by |
| 5.7.21 | - | MODIFIED_BY | DWM_TRANSECT_SEGMENT | Modified by |
| 5.1.16 | - | MODIFIED_BY | DWM_VISIT | Modified by |
| 7.1.18 | - | MODIFIED_BY | GRND_CVR | Modified by |
| 7.2.18 | - | MODIFIED_BY | GRND_LYR_FNCTL_GRP | Modified by |
| 7.3.18 | - | MODIFIED_BY | GRND_LYR_MICROQUAD | Modified by |
| 4.1.17 | - | MODIFIED_BY | INVASIVE_SUBPLOT_SPP | Modified by |
| 4.3.16 | - | MODIFIED_BY | P2VEG_SUBP_STRUCTURE | Modified by |
| 4.2.19 | - | MODIFIED_BY | P2VEG_SUBPLOT_SPP | Modified by |
| 2.4.35 | - | MODIFIED_BY | PLOT | Modified by |
| 6.1.12 | - | MODIFIED_BY | PLOT_REGEN | Modified by |
| 10.1.18 | - | MODIFIED_BY | PLOTGEOM | Modified by |
| 10.2.37 | - | MODIFIED_BY | PLOTSNAP | Modified by |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|------------------------------|------------------|
| 9.1.17 | - | MODIFIED_BY | POP_ESTN_UNIT | Modified by |
| 9.2.19 | - | MODIFIED_BY | POP_EVAL | Modified by |
| 9.3.8 | - | MODIFIED_BY | POP_EVAL_ATTRIBUTE | Modified by |
| 9.4.10 | - | MODIFIED_BY | POP_EVAL_GRP | Modified by |
| 9.5.8 | - | MODIFIED_BY | POP_EVAL_TYP | Modified by |
| 9.6.16 | - | MODIFIED_BY | POP_PLOT_STRATUM_ASSGN | Modified by |
| 9.7.22 | - | MODIFIED_BY | POP_STRATUM | Modified by |
| 2.2.7 | - | MODIFIED_BY | PROJECT | Modified by |
| 11.11.6 | - | MODIFIED_BY | REF_CITATION | Modified by |
| 11.25.8 | - | MODIFIED_BY | REF_DAMAGE_AGENT | Modified by |
| 11.26.6 | - | MODIFIED_BY | REF_DAMAGE_AGENT_GROUP | Modified by |
| 11.30.81 | - | MODIFIED_BY | REF_DIFFERENCE_TEST_PER_ACRE | Modified by |
| 11.31.61 | - | MODIFIED_BY | REF_DIFFERENCE_TEST_TOTALS | Modified by |
| 11.12.7 | - | MODIFIED_BY | REF_FIADB_VERSION | Modified by |
| 11.3.10 | - | MODIFIED_BY | REF_FOREST_TYPE | Modified by |
| 11.4.20 | - | MODIFIED_BY | REF_FOREST_TYPE_GROUP | Modified by |
| 11.28.10 | - | MODIFIED_BY | REF_FVS_LOC_NAME | Modified by |
| 11.27.10 | - | MODIFIED_BY | REF_FVS_VAR_NAME | Modified by |
| 11.33.13 | - | MODIFIED_BY | REF_GRM_TYPE | Modified by |
| 11.9.10 | - | MODIFIED_BY | REF_HABTYP_DESCRIPTION | Modified by |
| 11.10.10 | - | MODIFIED_BY | REF_HABTYP_PUBLICATION | Modified by |
| 11.34.7 | - | MODIFIED_BY | REF_INTL_TO_DOYLE_FACTOR | Modified by |
| 11.8.14 | - | MODIFIED_BY | REF_INVASIVE_SPECIES | Modified by |
| 11.16.39 | - | MODIFIED_BY | REF_NVCS_HIERARCHY_STRUCT | Modified by |
| 11.17.11 | - | MODIFIED_BY | REF_NVCS_LEVEL_1_CODES | Modified by |
| 11.18.11 | - | MODIFIED_BY | REF_NVCS_LEVEL_2_CODES | Modified by |
| 11.19.11 | - | MODIFIED_BY | REF_NVCS_LEVEL_3_CODES | Modified by |
| 11.20.11 | - | MODIFIED_BY | REF_NVCS_LEVEL_4_CODES | Modified by |
| 11.21.11 | - | MODIFIED_BY | REF_NVCS_LEVEL_5_CODES | Modified by |
| 11.22.11 | - | MODIFIED_BY | REF_NVCS_LEVEL_6_CODES | Modified by |
| 11.23.11 | - | MODIFIED_BY | REF_NVCS_LEVEL_7_CODES | Modified by |
| 11.24.11 | - | MODIFIED_BY | REF_NVCS_LEVEL_8_CODES | Modified by |
| 11.29.6 | - | MODIFIED_BY | REF_OWNGRPCD | Modified by |
| 11.6.37 | - | MODIFIED_BY | REF_PLANT_DICTIONARY | Modified by |
| 11.1.13 | - | MODIFIED_BY | REF_POP_ATTRIBUTE | Modified by |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------------|------------------|
| 11.2.10 | - | MODIFIED_BY | REF_POP_EVAL_TYP_DESCR | Modified by |
| 11.15.9 | - | MODIFIED_BY | REF_RESEARCH_STATION | Modified by |
| 11.32.9 | - | MODIFIED_BY | REF_SIEQN | Modified by |
| 11.13.9 | - | MODIFIED_BY | REF_STATE_ELEV | Modified by |
| 11.14.7 | - | MODIFIED_BY | REF_UNIT | Modified by |
| 3.9.18 | - | MODIFIED_BY | SEEDLING | Modified by |
| 6.3.20 | - | MODIFIED_BY | SEEDLING_REGEN | Modified by |
| 3.10.27 | - | MODIFIED_BY | SITETREE | Modified by |
| 2.7.13 | - | MODIFIED_BY | SUBP_COND | Modified by |
| 2.9.13 | - | MODIFIED_BY | SUBP_COND_CHNG_MTRX | Modified by |
| 8.2.59 | - | MODIFIED_BY | SUBP_SOIL_SAMPLE_LAYER | Modified by |
| 8.1.34 | - | MODIFIED_BY | SUBP_SOIL_SAMPLE_LOC | Modified by |
| 2.6.23 | - | MODIFIED_BY | SUBPLOT | Modified by |
| 6.2.17 | - | MODIFIED_BY | SUBPLOT_REGEN | Modified by |
| 2.1.13 | - | MODIFIED_BY | SURVEY | Modified by |
| 3.1.74 | - | MODIFIED_BY | TREE | Modified by |
| 3.6.70 | - | MODIFIED_BY | TREE_GRM_BEGIN | Modified by |
| 3.3.80 | - | MODIFIED_BY | TREE_GRM_COMPONENT | Modified by |
| 3.7.47 | - | MODIFIED_BY | TREE_GRM_ESTN | Modified by |
| 3.5.70 | - | MODIFIED_BY | TREE_GRM_MIDPT | Modified by |
| 3.4.71 | - | MODIFIED_BY | TREE_GRM_THRESHOLD | Modified by |
| 3.2.19 | - | MODIFIED_BY | TREE_WOODLAND_STEMS | Modified by |
| 3.8.6 | - | MODIFIED_DATE | BEGINEND | Modified date |
| 2.5.76 | - | MODIFIED_DATE | COND | Modified date |
| 5.8.101 | - | MODIFIED_DATE | COND_DWM_CALC | Modified date |
| 2.3.10 | - | MODIFIED_DATE | COUNTY | Modified date |
| 5.2.39 | - | MODIFIED_DATE | DWM_COARSE_WOODY_DEB_RIS | Modified date |
| 5.3.19 | - | MODIFIED_DATE | DWM_DUFF_LITTER_FUEL | Modified date |
| 5.4.29 | - | MODIFIED_DATE | DWM_FINE_WOODY_DEBRIS | Modified date |
| 5.5.22 | - | MODIFIED_DATE | DWM_MICROPLOT_FUEL | Modified date |
| 5.6.31 | - | MODIFIED_DATE | DWM_RESIDUAL_PILE | Modified date |
| 5.7.23 | - | MODIFIED_DATE | DWM_TRANSECT_SEGMENT | Modified date |
| 5.1.17 | - | MODIFIED_DATE | DWM_VISIT | Modified date |
| 7.1.19 | - | MODIFIED_DATE | GRND_CVR | Modified date |
| 7.2.19 | - | MODIFIED_DATE | GRND_LYR_FNCTL_GRP | Modified date |
| 7.3.19 | - | MODIFIED_DATE | GRND_LYR_MICROQUAD | Modified date |
| 4.1.18 | - | MODIFIED_DATE | INVASIVE_SUBPLOT_SPP | Modified date |
| 4.3.17 | - | MODIFIED_DATE | P2VEG_SUBP_STRUCTURE | Modified date |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|------------------------------|------------------|
| 4.2.20 | - | MODIFIED_DATE | P2VEG_SUBPLOT_SPP | Modified date |
| 2.4.36 | - | MODIFIED_DATE | PLOT | Modified date |
| 6.1.13 | - | MODIFIED_DATE | PLOT_REGEN | Modified date |
| 10.1.19 | - | MODIFIED_DATE | PLOTGEOM | Modified date |
| 10.2.38 | - | MODIFIED_DATE | PLOTSNAP | Modified date |
| 9.1.18 | - | MODIFIED_DATE | POP_ESTN_UNIT | Modified date |
| 9.2.20 | - | MODIFIED_DATE | POP_EVAL | Modified date |
| 9.3.9 | - | MODIFIED_DATE | POP_EVAL_ATTRIBUTE | Modified date |
| 9.4.11 | - | MODIFIED_DATE | POP_EVAL_GRP | Modified date |
| 9.5.9 | - | MODIFIED_DATE | POP_EVAL_TYP | Modified date |
| 9.6.17 | - | MODIFIED_DATE | POP_PLOT_STRATUM_ASSGN | Modified date |
| 9.7.23 | - | MODIFIED_DATE | POP_STRATUM | Modified date |
| 2.2.8 | - | MODIFIED_DATE | PROJECT | Modified date |
| 11.11.7 | - | MODIFIED_DATE | REF_CITATION | Modified date |
| 11.25.9 | - | MODIFIED_DATE | REF_DAMAGE_AGENT | Modified date |
| 11.26.7 | - | MODIFIED_DATE | REF_DAMAGE_AGENT_GROUP | Modified date |
| 11.30.82 | - | MODIFIED_DATE | REF_DIFFERENCE_TEST_PER_ACRE | Modified date |
| 11.31.62 | - | MODIFIED_DATE | REF_DIFFERENCE_TEST_TOTALS | Modified date |
| 11.12.8 | - | MODIFIED_DATE | REF_FIADB_VERSION | Modified date |
| 11.3.11 | - | MODIFIED_DATE | REF_FOREST_TYPE | Modified date |
| 11.4.21 | - | MODIFIED_DATE | REF_FOREST_TYPE_GROUP | Modified date |
| 11.28.11 | - | MODIFIED_DATE | REF_FVS_LOC_NAME | Modified date |
| 11.27.11 | - | MODIFIED_DATE | REF_FVS_VAR_NAME | Modified date |
| 11.33.14 | - | MODIFIED_DATE | REF_GRM_TYPE | Modified date |
| 11.38.10 | - | MODIFIED_DATE | REF_GRND_LYR | Modified date |
| 11.9.11 | - | MODIFIED_DATE | REF_HABTYP_DESCRIPTION | Modified date |
| 11.10.11 | - | MODIFIED_DATE | REF_HABTYP_PUBLICATION | Modified date |
| 11.34.8 | - | MODIFIED_DATE | REF_INTL_TO_DOYLE_FACTOR | Modified date |
| 11.8.15 | - | MODIFIED_DATE | REF_INVASIVE_SPECIES | Modified date |
| 11.16.40 | - | MODIFIED_DATE | REF_NVCS_HIERARCHY_STRUCT | Modified date |
| 11.17.12 | - | MODIFIED_DATE | REF_NVCS_LEVEL_1_CODES | Modified date |
| 11.18.12 | - | MODIFIED_DATE | REF_NVCS_LEVEL_2_CODES | Modified date |
| 11.19.12 | - | MODIFIED_DATE | REF_NVCS_LEVEL_3_CODES | Modified date |
| 11.20.12 | - | MODIFIED_DATE | REF_NVCS_LEVEL_4_CODES | Modified date |
| 11.21.12 | - | MODIFIED_DATE | REF_NVCS_LEVEL_5_CODES | Modified date |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------------|----------------------|
| 11.22.12 | - | MODIFIED_DATE | REF_NVCS_LEVEL_6_CODES | Modified date |
| 11.23.12 | - | MODIFIED_DATE | REF_NVCS_LEVEL_7_CODES | Modified date |
| 11.24.12 | - | MODIFIED_DATE | REF_NVCS_LEVEL_8_CODES | Modified date |
| 11.29.7 | - | MODIFIED_DATE | REF_OWNGRPCD | Modified date |
| 11.6.38 | - | MODIFIED_DATE | REF_PLANT_DICTIONARY | Modified date |
| 11.1.14 | - | MODIFIED_DATE | REF_POP_ATTRIBUTE | Modified date |
| 11.2.11 | - | MODIFIED_DATE | REF_POP_EVAL_TYP_DESCR | Modified date |
| 11.15.10 | - | MODIFIED_DATE | REF_RESEARCH_STATION | Modified date |
| 11.32.10 | - | MODIFIED_DATE | REF_SIEQN | Modified date |
| 11.5.81 | - | MODIFIED_DATE | REF_SPECIES | Modified date |
| 11.7.6 | - | MODIFIED_DATE | REF_SPECIES_GROUP | Modified date |
| 11.13.10 | - | MODIFIED_DATE | REF_STATE_ELEV | Modified date |
| 11.14.8 | - | MODIFIED_DATE | REF_UNIT | Modified date |
| 3.9.19 | - | MODIFIED_DATE | SEEDLING | Modified date |
| 6.3.21 | - | MODIFIED_DATE | SEEDLING_REGEN | Modified date |
| 3.10.28 | - | MODIFIED_DATE | SITETREE | Modified date |
| 2.7.14 | - | MODIFIED_DATE | SUBP_COND | Modified date |
| 2.9.14 | - | MODIFIED_DATE | SUBP_COND_CHNG_MTRX | Modified date |
| 8.2.60 | - | MODIFIED_DATE | SUBP_SOIL_SAMPLE_LAYER | Modified date |
| 8.1.35 | - | MODIFIED_DATE | SUBP_SOIL_SAMPLE_LOC | Modified date |
| 2.6.24 | - | MODIFIED_DATE | SUBPLOT | Modified date |
| 6.2.18 | - | MODIFIED_DATE | SUBPLOT_REGEN | Modified date |
| 2.1.14 | - | MODIFIED_DATE | SURVEY | Modified date |
| 3.1.75 | - | MODIFIED_DATE | TREE | Modified date |
| 3.6.71 | - | MODIFIED_DATE | TREE_GRM_BEGIN | Modified date |
| 3.3.81 | - | MODIFIED_DATE | TREE_GRM_COMPONENT | Modified date |
| 3.7.48 | - | MODIFIED_DATE | TREE_GRM_ESTN | Modified date |
| 3.5.71 | - | MODIFIED_DATE | TREE_GRM_MIDPT | Modified date |
| 3.4.72 | - | MODIFIED_DATE | TREE_GRM_THRESHOLD | Modified date |
| 3.2.20 | - | MODIFIED_DATE | TREE_WOODLAND_STEMS | Modified date |
| 3.8.7 | - | MODIFIED_IN_INSTANCE | BEGINEND | Modified in instance |
| 2.5.77 | - | MODIFIED_IN_INSTANCE | COND | Modified in instance |
| 5.8.102 | - | MODIFIED_IN_INSTANCE | COND_DWM_CALC | Modified in instance |
| 2.3.11 | - | MODIFIED_IN_INSTANCE | COUNTY | Modified in instance |
| 5.2.40 | - | MODIFIED_IN_INSTANCE | DWM_COARSE_WOODY_DEB_RIS | Modified in instance |
| 5.3.20 | - | MODIFIED_IN_INSTANCE | DWM_DUFF_LITTER_FUEL | Modified in instance |
| 5.4.30 | - | MODIFIED_IN_INSTANCE | DWM_FINE_WOODY_DEBRIS | Modified in instance |
| 5.5.23 | - | MODIFIED_IN_INSTANCE | DWM_MICROPLOT_FUEL | Modified in instance |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|------------------------------|----------------------|
| 5.6.30 | - | MODIFIED_IN_INSTANCE | DWM_RESIDUAL_PILE | Modified in instance |
| 5.7.22 | - | MODIFIED_IN_INSTANCE | DWM_TRANSECT_SEGMENT | Modified in instance |
| 5.1.18 | - | MODIFIED_IN_INSTANCE | DWM_VISIT | Modified in instance |
| 7.1.20 | - | MODIFIED_IN_INSTANCE | GRND_CVR | Modified in instance |
| 7.2.20 | - | MODIFIED_IN_INSTANCE | GRND_LYR_FNCTL_GRP | Modified in instance |
| 7.3.20 | - | MODIFIED_IN_INSTANCE | GRND_LYR_MICROQUAD | Modified in instance |
| 4.1.19 | - | MODIFIED_IN_INSTANCE | INVASIVE_SUBPLOT_SPP | Modified in instance |
| 4.3.18 | - | MODIFIED_IN_INSTANCE | P2VEG_SUBP_STRUCTURE | Modified in instance |
| 4.2.21 | - | MODIFIED_IN_INSTANCE | P2VEG_SUBPLOT_SPP | Modified in instance |
| 2.4.37 | - | MODIFIED_IN_INSTANCE | PLOT | Modified in instance |
| 6.1.14 | - | MODIFIED_IN_INSTANCE | PLOT_REGEN | Modified in instance |
| 10.1.20 | - | MODIFIED_IN_INSTANCE | PLOTGEOM | Modified in instance |
| 10.2.39 | - | MODIFIED_IN_INSTANCE | PLOTSNAP | Modified in instance |
| 9.1.19 | - | MODIFIED_IN_INSTANCE | POP_ESTN_UNIT | Modified in instance |
| 9.2.21 | - | MODIFIED_IN_INSTANCE | POP_EVAL | Modified in instance |
| 9.3.10 | - | MODIFIED_IN_INSTANCE | POP_EVAL_ATTRIBUTE | Modified in instance |
| 9.4.12 | - | MODIFIED_IN_INSTANCE | POP_EVAL_GRP | Modified in instance |
| 9.5.10 | - | MODIFIED_IN_INSTANCE | POP_EVAL_TYP | Modified in instance |
| 9.6.18 | - | MODIFIED_IN_INSTANCE | POP_PLOT_STRATUM_ASSGN | Modified in instance |
| 9.7.24 | - | MODIFIED_IN_INSTANCE | POP_STRATUM | Modified in instance |
| 2.2.9 | - | MODIFIED_IN_INSTANCE | PROJECT | Modified in instnace |
| 11.11.8 | - | MODIFIED_IN_INSTANCE | REF_CITATION | Modified in instance |
| 11.25.10 | - | MODIFIED_IN_INSTANCE | REF_DAMAGE_AGENT | Modified in instance |
| 11.26.8 | - | MODIFIED_IN_INSTANCE | REF_DAMAGE_AGENT_GROUP | Modified in instance |
| 11.30.83 | - | MODIFIED_IN_INSTANCE | REF_DIFFERENCE_TEST_PER_ACRE | Modified in instance |
| 11.31.63 | - | MODIFIED_IN_INSTANCE | REF_DIFFERENCE_TEST_TOTALS | Modified in instance |
| 11.12.9 | - | MODIFIED_IN_INSTANCE | REF_FIADB_VERSION | Modified in instance |
| 11.3.12 | - | MODIFIED_IN_INSTANCE | REF_FOREST_TYPE | Modified in instance |
| 11.4.22 | - | MODIFIED_IN_INSTANCE | REF_FOREST_TYPE_GROUP | Modified in instance |
| 11.28.12 | - | MODIFIED_IN_INSTANCE | REF_FVS_LOC_NAME | Modified in instance |
| 11.27.12 | - | MODIFIED_IN_INSTANCE | REF_FVS_VAR_NAME | Modified in instance |
| 11.33.15 | - | MODIFIED_IN_INSTANCE | REF_GRM_TYPE | Modified in instance |
| 11.9.12 | - | MODIFIED_IN_INSTANCE | REF_HABTYP_DESCRIPTION | Modified in instance |
| 11.10.12 | - | MODIFIED_IN_INSTANCE | REF_HABTYP_PUBLICATION | Modified in instance |
| 11.34.9 | - | MODIFIED_IN_INSTANCE | REF_INTL_TO_DOYLE_FACTO R | Modified in instance |
| 11.8.16 | - | MODIFIED_IN_INSTANCE | REF_INVASIVE_SPECIES | Modified in instance |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|---------------------------|--------------------------------------|
| 11.16.41 | - | MODIFIED_IN_INSTANCE | REF_NVCS_HIERARCHY_STRUCT | Modified in instance |
| 11.17.13 | - | MODIFIED_IN_INSTANCE | REF_NVCS_LEVEL_1_CODES | Modified in instance |
| 11.18.13 | - | MODIFIED_IN_INSTANCE | REF_NVCS_LEVEL_2_CODES | Modified in instance |
| 11.19.13 | - | MODIFIED_IN_INSTANCE | REF_NVCS_LEVEL_3_CODES | Modified in instance |
| 11.20.13 | - | MODIFIED_IN_INSTANCE | REF_NVCS_LEVEL_4_CODES | Modified in instance |
| 11.21.13 | - | MODIFIED_IN_INSTANCE | REF_NVCS_LEVEL_5_CODES | Modified in instance |
| 11.22.13 | - | MODIFIED_IN_INSTANCE | REF_NVCS_LEVEL_6_CODES | Modified in instance |
| 11.23.13 | - | MODIFIED_IN_INSTANCE | REF_NVCS_LEVEL_7_CODES | Modified in instance |
| 11.24.13 | - | MODIFIED_IN_INSTANCE | REF_NVCS_LEVEL_8_CODES | Modified in instance |
| 11.29.8 | - | MODIFIED_IN_INSTANCE | REF_OWNGRPCD | Modified in instance |
| 11.6.39 | - | MODIFIED_IN_INSTANCE | REF_PLANT_DICTIONARY | Modified in instance |
| 11.1.15 | - | MODIFIED_IN_INSTANCE | REF_POP_ATTRIBUTE | Modified in instance |
| 11.2.12 | - | MODIFIED_IN_INSTANCE | REF_POP_EVAL_TYP_DESCR | Modified in instance |
| 11.15.11 | - | MODIFIED_IN_INSTANCE | REF_RESEARCH_STATION | Modified in instance |
| 11.32.11 | - | MODIFIED_IN_INSTANCE | REF_SIEQN | Modified in instance |
| 11.13.11 | - | MODIFIED_IN_INSTANCE | REF_STATE_ELEV | Modified in instance |
| 11.14.9 | - | MODIFIED_IN_INSTANCE | REF_UNIT | Modified in instance |
| 3.9.20 | - | MODIFIED_IN_INSTANCE | SEEDLING | Modified in instance |
| 6.3.22 | - | MODIFIED_IN_INSTANCE | SEEDLING_REGEN | Modified in instance |
| 3.10.29 | - | MODIFIED_IN_INSTANCE | SITETREE | Modified in instance |
| 2.7.15 | - | MODIFIED_IN_INSTANCE | SUBP_COND | Modified in instance |
| 2.9.15 | - | MODIFIED_IN_INSTANCE | SUBP_COND_CHNG_MTRX | Modified in instance |
| 8.2.61 | - | MODIFIED_IN_INSTANCE | SUBP_SOIL_SAMPLE_LAYER | Modified in instance |
| 8.1.36 | - | MODIFIED_IN_INSTANCE | SUBP_SOIL_SAMPLE_LOC | Modified in instance |
| 2.6.25 | - | MODIFIED_IN_INSTANCE | SUBPLOT | Modified in instance |
| 6.2.19 | - | MODIFIED_IN_INSTANCE | SUBPLOT_REGEN | Modified in instance |
| 2.1.15 | - | MODIFIED_IN_INSTANCE | SURVEY | Modified in instance |
| 3.1.76 | - | MODIFIED_IN_INSTANCE | TREE | Modified in instance |
| 3.6.72 | - | MODIFIED_IN_INSTANCE | TREE_GRM_BEGIN | Modified in instance |
| 3.3.82 | - | MODIFIED_IN_INSTANCE | TREE_GRM_COMPONENT | Modified in instance |
| 3.7.49 | - | MODIFIED_IN_INSTANCE | TREE_GRM_ESTN | Modified in instance |
| 3.5.72 | - | MODIFIED_IN_INSTANCE | TREE_GRM_MIDPT | Modified in instance |
| 3.4.73 | - | MODIFIED_IN_INSTANCE | TREE_GRM_THRESHOLD | Modified in instance |
| 3.2.21 | - | MODIFIED_IN_INSTANCE | TREE_WOODLAND_STEMS | Modified in instance |
| 2.4.24 | - | MORT_TYP_CD | PLOT | Type of annual mortality volume code |
| 10.2.24 | - | MORT_TYP_CD | PLOTSNAP | Type of annual mortality volume code |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------|--|
| 11.33.8 | - | MORT_TYP_CD | REF_GRM_TYPE | Type of annual mortality volume code |
| 3.7.18 | - | MORTALITY | TREE_GRM_ESTN | Mortality estimate |
| 3.3.64 | - | MORTBFSL_FOREST | TREE_GRM_COMPONENT | Merchantable board-foot wood volume of a sawtimber tree for mortality purposes on forest land |
| 3.3.76 | - | MORTBFSL_TIMBER | TREE_GRM_COMPONENT | Merchantable board-foot wood volume of a sawtimber tree for mortality purposes on timberland |
| 3.1.77 | 5.7.3 | MORTCD | TREE | Mortality code |
| 3.3.62 | - | MORTCFAL_FOREST | TREE_GRM_COMPONENT | Sound cubic-foot stem wood volume of a tree for mortality purposes for the all live estimation type on forest land |
| 3.3.74 | - | MORTCFAL_TIMBER | TREE_GRM_COMPONENT | Sound cubic-foot stem wood volume of a tree for mortality purposes for the all live estimation type on timberland |
| 3.3.63 | - | MORTCFG_S_FOREST | TREE_GRM_COMPONENT | Merchantable cubic-foot stem wood volume of a growing-stock tree for mortality purposes on forest land |
| 3.3.75 | - | MORTCFG_S_TIMBER | TREE_GRM_COMPONENT | Merchantable cubic-foot stem wood volume of a growing-stock tree for mortality purposes on timberland |
| 3.3.61 | - | MORTTSAL_FOREST | TREE_GRM_COMPONENT | Sound cubic-foot total-stem wood volume of a tree for mortality purposes for the all live estimation type on forest land |
| 3.3.73 | - | MORTTSAL_TIMBER | TREE_GRM_COMPONENT | Sound cubic-foot total-stem wood volume of a tree for mortality purposes for the all live estimation type on timberland |
| 3.1.46 | 5.22 | MORTYR | TREE | Mortality year |
| 7.2.25 | - | MQUADPAC_UNADJ | GRND_LYR_FNCTL_GRP | Microquadrat area expansion to acre, unadjusted |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|----------------------------|------------------------|--|
| 2.5.156 | - | MQUADPROP_UNADJ | COND | Microquadrat proportion unadjusted |
| | | N | | |
| 8.2.54 | - | N_MG_AC | SUBP_SOIL_SAMPLE_LAYER | Nitrogen content per acre |
| 8.2.55 | - | N_MIN3_MG_AC | SUBP_SOIL_SAMPLE_LAYER | Nitrogen content 3-inch depth per acre |
| 8.1.29 | - | N_TOT_3IN_MG_AC | SUBP_SOIL_SAMPLE_LOC | Total nitrogen per acre, 3 inches depth |
| 8.2.53 | - | N_TOTAL_PCT | SUBP_SOIL_SAMPLE_LAYER | Total nitrogen percent |
| 2.2.3 | - | NAME | PROJECT | Project name |
| 11.7.2 | - | NAME | REF_SPECIES_GROUP | Name |
| 2.5.99 | - | NBR_LIVE_STEMS | COND | Number of live stems |
| 11.6.6 | - | NEW_SCIENTIFIC_NAME | REF_PLANT_DICTIONARY | New scientific name |
| 11.6.5 | - | NEW_SYMBOL | REF_PLANT_DICTIONARY | New symbol |
| 2.5.95 | - | NF_COND_NONSAMPLE_REASN_CD | COND | Nonforest condition nonsampled reason code |
| 2.5.94 | - | NF_COND_STATUS_CD | COND | Nonforest condition status code |
| 2.4.51 | - | NF_PLOT_NONSAMPLE_REASN_CD | PLOT | Nonforest plot nonsampled reason code |
| 2.4.50 | - | NF_PLOT_STATUS_CD | PLOT | Nonforest plot status code |
| 2.4.49 | - | NF_SAMPLING_STATUS_CD | PLOT | Nonforest sampling status code |
| 2.6.30 | - | NF_SUBP_NONSAMPLE_REASN_CD | SUBPLOT | Nonforest subplot/macroplot nonsampled reason code |
| 2.6.29 | - | NF_SUBP_STATUS_CD | SUBPLOT | Nonforest subplot/macroplot status code |
| 7.2.29 | - | NITROGEN | GRND_LYR_FNCTL_GRP | Functional group nitrogen |
| 11.38.5 | - | NITROGEN_PCT | REF_GRND_LYR | Nitrogen percent |
| 2.7.20 | - | NONFR_INCL_PCT_MACRO | SUBP_COND | Nonforest inclusions percentage of macroplot |
| 2.7.19 | - | NONFR_INCL_PCT_SUBP | SUBP_COND | Nonforest inclusions percentage of subplot |
| 11.17.7 | - | NOTE | REF_NVCS_LEVEL_1_CODES | Note |
| 11.18.7 | - | NOTE | REF_NVCS_LEVEL_2_CODES | Note |
| 11.19.7 | - | NOTE | REF_NVCS_LEVEL_3_CODES | Note |
| 11.20.7 | - | NOTE | REF_NVCS_LEVEL_4_CODES | Note |
| 11.21.7 | - | NOTE | REF_NVCS_LEVEL_5_CODES | Note |
| 11.22.7 | - | NOTE | REF_NVCS_LEVEL_6_CODES | Note |
| 11.23.7 | - | NOTE | REF_NVCS_LEVEL_7_CODES | Note |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|---------------------------|-----------------------------|
| 11.24.7 | - | NOTE | REF_NVCS_LEVEL_8_CODES | Note |
| 9.2.15 | - | NOTES | POP_EVAL | Notes |
| 9.4.6 | - | NOTES | POP_EVAL_GRP | Notes |
| 11.8.10 | - | NOTES | REF_INVASIVE_SPECIES | Notes |
| 11.6.33 | - | NOTES | REF_PLANT_DICTIONARY | Notes |
| 11.1.4 | - | NOTES | REF_POP_ATTRIBUTE | Notes |
| 2.1.9 | 1.21 | NOTES | SURVEY | Notes |
| 11.17.5 | - | NVCS_CODE | REF_NVCS_LEVEL_1_CODES | NVCS code |
| 11.18.5 | - | NVCS_CODE | REF_NVCS_LEVEL_2_CODES | NVCS code |
| 11.19.5 | - | NVCS_CODE | REF_NVCS_LEVEL_3_CODES | NVCS code |
| 11.20.5 | - | NVCS_CODE | REF_NVCS_LEVEL_4_CODES | NVCS code |
| 11.21.5 | - | NVCS_CODE | REF_NVCS_LEVEL_5_CODES | NVCS code |
| 11.22.5 | - | NVCS_CODE | REF_NVCS_LEVEL_6_CODES | NVCS code |
| 11.23.5 | - | NVCS_CODE | REF_NVCS_LEVEL_7_CODES | NVCS code |
| 11.24.5 | - | NVCS_CODE | REF_NVCS_LEVEL_8_CODES | NVCS code |
| 2.5.109 | - | NVCS_PRIMARY_CLASS | COND | Primary class |
| 2.5.110 | - | NVCS_LEVEL_1_CD | COND | Level 1 code of the NVCS |
| 11.16.4 | - | NVCS_LEVEL_1_CD | REF_NVCS_HIERARCHY_STRICT | Level 1 code of the NVCS |
| 11.16.3 | - | NVCS_LEVEL_1_LABEL | REF_NVCS_HIERARCHY_STRICT | Level 1 label of the NVCS |
| 11.16.19 | - | NVCS_LEVEL_1_MEANING | REF_NVCS_HIERARCHY_STRICT | Level 1 meaning of the NVCS |
| 11.16.27 | - | NVCS_LEVEL_1_NOTE | REF_NVCS_HIERARCHY_STRICT | Level 1 note of the NVCS |
| 2.5.111 | - | NVCS_LEVEL_2_CD | COND | Level 2 code of the NVCS |
| 11.16.6 | - | NVCS_LEVEL_2_CD | REF_NVCS_HIERARCHY_STRICT | Level 2 code of the NVCS |
| 11.16.5 | - | NVCS_LEVEL_2_LABEL | REF_NVCS_HIERARCHY_STRICT | Level 2 label of the NVCS |
| 11.16.20 | - | NVCS_LEVEL_2_MEANING | REF_NVCS_HIERARCHY_STRICT | Level 2 meaning of the NVCS |
| 11.16.28 | - | NVCS_LEVEL_2_NOTE | REF_NVCS_HIERARCHY_STRICT | Level 2 note of the NVCS |
| 2.5.112 | - | NVCS_LEVEL_3_CD | COND | Level 3 code of the NVCS |
| 11.16.8 | - | NVCS_LEVEL_3_CD | REF_NVCS_HIERARCHY_STRICT | Level 3 code of the NVCS |
| 11.16.7 | - | NVCS_LEVEL_3_LABEL | REF_NVCS_HIERARCHY_STRICT | Level 3 label of the NVCS |
| 11.16.21 | - | NVCS_LEVEL_3_MEANING | REF_NVCS_HIERARCHY_STRICT | Level 3 meaning of the NVCS |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|---------------------------|-----------------------------|
| 11.16.29 | - | NVCS_LEVEL_3_NOTE | REF_NVCS_HIERARCHY_STRICT | Level 3 note of the NVCS |
| 2.5.113 | - | NVCS_LEVEL_4_CD | COND | Level 4 code of the NVCS |
| 11.16.10 | - | NVCS_LEVEL_4_CD | REF_NVCS_HIERARCHY_STRICT | Level 4 code of the NVCS |
| 11.16.9 | - | NVCS_LEVEL_4_LABEL | REF_NVCS_HIERARCHY_STRICT | Level 4 label of the NVCS |
| 11.16.22 | - | NVCS_LEVEL_4_MEANING | REF_NVCS_HIERARCHY_STRICT | Level 4 meaning of the NVCS |
| 11.16.30 | - | NVCS_LEVEL_4_NOTE | REF_NVCS_HIERARCHY_STRICT | Level 4 note of the NVCS |
| 2.5.114 | - | NVCS_LEVEL_5_CD | COND | Level 5 code of the NVCS |
| 11.16.12 | - | NVCS_LEVEL_5_CD | REF_NVCS_HIERARCHY_STRICT | Level 5 code of the NVCS |
| 11.16.11 | - | NVCS_LEVEL_5_LABEL | REF_NVCS_HIERARCHY_STRICT | Level 5 label of the NVCS |
| 11.16.23 | - | NVCS_LEVEL_5_MEANING | REF_NVCS_HIERARCHY_STRICT | Level 5 meaning of the NVCS |
| 11.16.31 | - | NVCS_LEVEL_5_NOTE | REF_NVCS_HIERARCHY_STRICT | Level 5 note of the NVCS |
| 2.5.115 | - | NVCS_LEVEL_6_CD | COND | Level 6 code of the NVCS |
| 11.16.14 | - | NVCS_LEVEL_6_CD | REF_NVCS_HIERARCHY_STRICT | Level 6 code of the NVCS |
| 11.16.13 | - | NVCS_LEVEL_6_LABEL | REF_NVCS_HIERARCHY_STRICT | Level 6 label of the NVCS |
| 11.16.24 | - | NVCS_LEVEL_6_MEANING | REF_NVCS_HIERARCHY_STRICT | Level 6 meaning of the NVCS |
| 11.16.32 | - | NVCS_LEVEL_6_NOTE | REF_NVCS_HIERARCHY_STRICT | Level 6 note of the NVCS |
| 2.5.116 | - | NVCS_LEVEL_7_CD | COND | Level 7 code of the NVCS |
| 11.16.16 | - | NVCS_LEVEL_7_CD | REF_NVCS_HIERARCHY_STRICT | Level 7 code of the NVCS |
| 11.16.15 | - | NVCS_LEVEL_7_LABEL | REF_NVCS_HIERARCHY_STRICT | Level 7 label of the NVCS |
| 11.16.25 | - | NVCS_LEVEL_7_MEANING | REF_NVCS_HIERARCHY_STRICT | Level 7 meaning of the NVCS |
| 11.16.33 | - | NVCS_LEVEL_7_NOTE | REF_NVCS_HIERARCHY_STRICT | Level 7 note of the NVCS |
| 2.5.117 | - | NVCS_LEVEL_8_CD | COND | Level 8 code of the NVCS |
| 11.16.18 | - | NVCS_LEVEL_8_CD | REF_NVCS_HIERARCHY_STRICT | Level 8 code of the NVCS |
| 11.16.17 | - | NVCS_LEVEL_8_LABEL | REF_NVCS_HIERARCHY_STRICT | Level 8 label of the NVCS |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name | |
|------------|---------------------|--------------------------------|---------------------------|--|--|
| 11.16.26 | - | NVCS_LEVEL_8_MEANING | REF_NVCS_HIERARCHY_STRICT | Level 8 meaning of the NVCS | |
| 11.16.34 | - | NVCS_LEVEL_8_NOTE | REF_NVCS_HIERARCHY_STRICT | Level 8 note of the NVCS | |
| | | O | | | |
| 8.2.47 | - | OLSEN_P | SUBP_SOIL_SAMPLE_LAYER | Olsen phosphorus | |
| 3.8.1 | - | ONEORTWO | BEGINEND | One or two | |
| 2.5.92 | - | OPERABILITY_SRS | COND | Operability, Southern Research Station | |
| 5.2.34 | - | ORNTCD_PNWRS | DWM_COARSE_WOODY_DEBRIS | Orientation code, Pacific Northwest Research Station | |
| 2.5.12 | 2.5.7 | OWNCD | COND | Owner class code | |
| 2.5.13 | 2.5.2 | OWNGRPCD | COND | Owner group code | |
| 11.29.1 | - | OWNGRPCD | REF_OWNGRPCD | Owner group code | |
| 2.5.100 | 2.5.8 | OWNSUBCD | COND | Owner subclass code | |
| | | P | | | |
| 11.5.13 | - | P_SPGRPCD | REF_SPECIES | Pacific Islands species group code | |
| 9.1.12 | - | P1PNTCNT_EU | POP_ESTN_UNIT | Phase 1 point count for the estimation unit | |
| 9.7.9 | - | P1POINTCNT | POP_STRATUM | Phase 1 point count | |
| 9.1.13 | - | P1SOURCE | POP_ESTN_UNIT | Phase 1 source | |
| 2.6.19 | - | P2A_GRM_FLG | SUBPLOT | Periodic to annual growth, removal, and mortality flag | |
| 3.1.84 | - | P2A_GRM_FLG | TREE | Periodic to annual growth, removal, and mortality flag | |
| 2.4.25 | - | P2PANEL | PLOT | Phase 2 panel number | |
| 10.2.25 | - | P2PANEL | PLOTSNAP | Phase 2 panel number | |
| 9.7.10 | - | P2POINTCNT | POP_STRATUM | Phase 2 point count | |
| 2.4.53 | 1.22.2 | P2VEG_SAMPLING_LEVEL_DETAIL_CD | PLOT | P2 vegetation sampling level detail code | |
| 2.4.52 | 1.22.1 | P2VEG_SAMPLING_STATUS_CD | PLOT | P2 vegetation sampling status code | |
| 2.6.32 | 3.13 | P2VEG_SUBP_NONSAMPLE_REAS_N_CD | SUBPLOT | P2 vegetation subplot nonsampled reason code | |
| 2.6.31 | 3.12 | P2VEG_SUBP_STATUS_CD | SUBPLOT | P2 vegetation subplot status code | |
| 2.1.3 | - | P3_OZONE_IND | SURVEY | Phase 3 ozone indicator | |
| 2.4.26 | - | P3PANEL | PLOT | Phase 3 panel number | |
| 10.2.26 | - | P3PANEL | PLOTSNAP | Phase 3 panel number | |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|---------------------------------|------------------------|---|
| 2.4.65 | - | PAC_ISLAND_PNWRS | PLOT | Pacific Island name (Pacific Islands), Pacific Northwest Research Station |
| 3.9.26 | 6.6.2 (SRS) | PCT_AFFECTED_DAMAGE_AGENT_1_SRS | SEEDLING | Percent affected by damage agent 1 (Caribbean Islands), Southern Research Station |
| 3.9.28 | 6.6.2 (SRS) | PCT_AFFECTED_DAMAGE_AGENT_2_SRS | SEEDLING | Percent affected by damage agent 2 (Caribbean Islands), Southern Research Station |
| 3.9.30 | 6.6.2 (SRS) | PCT_AFFECTED_DAMAGE_AGENT_3_SRS | SEEDLING | Percent affected by damage agent 3 (Caribbean Islands), Southern Research Station |
| 2.5.134 | - | PCTBARE_RMRS | COND | Percent bare ground, Rocky Mountain Research Station |
| 8.2.31 | - | PH_CACL2 | SUBP_SOIL_SAMPLE_LAYER | pH in calcium chloride solution |
| 8.2.30 | - | PH_H2O | SUBP_SOIL_SAMPLE_LAYER | pH in water |
| 5.8.12 | - | PHASE | COND_DWM_CALC | Phase |
| 2.5.35 | 2.5.27 | PHYSCLCD | COND | Physiographic class code |
| 5.6.8 | - | PILE | DWM_RESIDUAL_PILE | Pile number |
| 5.8.83 | - | PILE_CARBON_ADJ | COND_DWM_CALC | Carbon density of piles, adjusted |
| 5.8.81 | - | PILE_CARBON_COND | COND_DWM_CALC | Carbon density of piles in the condition |
| 11.4.9 | - | PILE_CARBON_RATIO | REF_FOREST_TYPE_GROUP | Pile carbon ratio |
| 5.8.82 | - | PILE_CARBON_UNADJ | COND_DWM_CALC | Carbon density of piles, unadjusted |
| 11.4.10 | - | PILE_DECAY_RATIO | REF_FOREST_TYPE_GROUP | Pile decay ratio |
| 11.4.8 | - | PILE_DENSITY | REF_FOREST_TYPE_GROUP | Pile density |
| 5.8.80 | - | PILE_DRYBIO_ADJ | COND_DWM_CALC | Biomass per acre of piles, adjusted |
| 5.8.78 | - | PILE_DRYBIO_COND | COND_DWM_CALC | Biomass per acre of piles in the condition |
| 5.8.79 | - | PILE_DRYBIO_UNADJ | COND_DWM_CALC | Biomass per acre of piles, unadjusted |
| 5.8.74 | - | PILE_SAMPLE_AREA_ADJ | COND_DWM_CALC | Plot area sampled for piles in all conditions, adjusted |
| 5.8.72 | - | PILE_SAMPLE_AREA_COND | COND_DWM_CALC | Condition area sampled for piles |
| 5.8.73 | - | PILE_SAMPLE_AREA_UNADJ | COND_DWM_CALC | Plot area sampled for piles in all conditions, unadjusted |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------------|-------------------------|---|
| 5.6.36 | - | PILE_SAMPLE_METHOD | DWM_RESIDUAL_PILE | Pile sample method |
| 5.1.23 | - | PILE_SAMPLE_METHOD | DWM_VISIT | Pile sample method |
| 5.8.109 | - | PILE_TL_ADJ | COND_DWM_CALC | Piles transect length, adjusted |
| 5.8.107 | - | PILE_TL_COND | COND_DWM_CALC | Piles transect length in the condition |
| 5.8.108 | - | PILE_TL_UNADJ | COND_DWM_CALC | Piles transect length, unadjusted |
| 5.8.77 | - | PILE_VOLCF_ADJ | COND_DWM_CALC | Cubic-foot volume per acre of piles, adjusted |
| 5.8.75 | - | PILE_VOLCF_COND | COND_DWM_CALC | Cubic-foot volume per acre of piles in the condition |
| 5.8.76 | - | PILE_VOLCF_UNADJ | COND_DWM_CALC | Cubic-foot volume per acre of piles, unadjusted |
| 5.4.15 | - | PILESCD | DWM_FINE_WOODY_DEBRIS | Piles code |
| 2.5.82 | - | PLANT_STOCKABILITY_FACTOR_PNW | COND | Plant stockability factor, Pacific Northwest Research Station |
| 2.5.7 | - | PLOT | COND | Plot number |
| 5.8.4 | - | PLOT | COND_DWM_CALC | Plot number |
| 5.2.6 | - | PLOT | DWM_COARSE_WOODY_DEBRIS | Plot number |
| 5.3.6 | - | PLOT | DWM_DUFF_LITTER_FUEL | Plot number |
| 5.4.6 | - | PLOT | DWM_FINE_WOODY_DEBRIS | Plot number |
| 5.5.6 | - | PLOT | DWM_MICROPLOT_FUEL | Plot number |
| 5.6.6 | - | PLOT | DWM_RESIDUAL_PILE | Plot number |
| 5.7.6 | - | PLOT | DWM_TRANSECT_SEGMENT | Plot number |
| 5.1.6 | - | PLOT | DWM_VISIT | Plot number |
| 7.1.7 | - | PLOT | GRND_CVR | Plot number |
| 7.2.4 | - | PLOT | GRND_LYR_FNCTL_GRP | Plot number |
| 7.3.10 | - | PLOT | GRND_LYR_MICROQUAD | Plot number |
| 4.1.7 | - | PLOT | INVASIVE_SUBPLOT_SPP | Plot number |
| 4.3.6 | - | PLOT | P2VEG_SUBP_STRUCTURE | Plot number |
| 4.2.7 | - | PLOT | P2VEG_SUBPLOT_SPP | Plot number |
| 2.4.9 | 1.3 | PLOT | PLOT | Plot number |
| 6.1.7 | - | PLOT | PLOT_REGEN | Plot number |
| 10.1.6 | - | PLOT | PLOTGEOM | Plot number |
| 10.2.9 | - | PLOT | PLOTSNAP | Plot number |
| 9.6.8 | - | PLOT | POP_PLOT_STRATUM_ASSGN | Plot number |
| 3.9.7 | - | PLOT | SEEDLING | Plot number |
| 6.3.9 | - | PLOT | SEEDLING_REGEN | Plot number |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------------|---|
| 3.10.8 | - | PLOT | SITETREE | Plot number |
| 2.7.7 | - | PLOT | SUBP_COND | Plot number |
| 8.2.6 | - | PLOT | SUBP_SOIL_SAMPLE_LAYER | Plot number |
| 8.1.5 | - | PLOT | SUBP_SOIL_SAMPLE_LOC | Plot number |
| 2.6.8 | - | PLOT | SUBPLOT | Plot number |
| 6.2.8 | - | PLOT | SUBPLOT_REGEN | Plot number |
| 3.1.8 | - | PLOT | TREE | Plot number |
| 3.2.7 | - | PLOT | TREE_WOODLAND_STEMS | Plot number |
| 2.4.11 | 1.7 | PLOT_NONSAMPLE_REASN_CD | PLOT | Plot nonsampled reason code |
| 10.2.11 | - | PLOT_NONSAMPLE_REASN_CD | PLOTSNAP | Plot nonsampled reason code |
| 2.4.66 | - | PLOT_SEASON_NERS | PLOT | Plot accessible season, Northeastern Research Station |
| 2.4.10 | 1.4 | PLOT_STATUS_CD | PLOT | Plot status code |
| 10.2.10 | - | PLOT_STATUS_CD | PLOTSNAP | Plot status code |
| 2.5.2 | - | PLT_CN | COND | Plot sequence number |
| 5.8.9 | - | PLT_CN | COND_DWM_CALC | Plot sequence number |
| 5.2.2 | - | PLT_CN | DWM_COARSE_WOODY_DEB_RIS | Plot sequence number |
| 5.3.2 | - | PLT_CN | DWM_DUFF_LITTER_FUEL | Plot sequence number |
| 5.4.2 | - | PLT_CN | DWM_FINE_WOODY_DEBRIS | Plot sequence number |
| 5.5.2 | - | PLT_CN | DWM_MICROPLOT_FUEL | Plot sequence number |
| 5.6.2 | - | PLT_CN | DWM_RESIDUALPILE | Plot sequence number |
| 5.7.2 | - | PLT_CN | DWM_TRANSECT_SEGMENT | Plot sequence number |
| 5.1.2 | - | PLT_CN | DWM_VISIT | Plot sequence number |
| 7.1.2 | - | PLT_CN | GRND_CVR | Plot sequence number |
| 7.2.5 | - | PLT_CN | GRND_LYR_FNCTL_GRP | Plot sequence number |
| 7.3.2 | - | PLT_CN | GRND_LYR_MICROQUAD | Plot sequence number |
| 4.1.2 | - | PLT_CN | INVASIVE_SUBPLOT_SPP | Plot sequence number |
| 4.3.2 | - | PLT_CN | P2VEG_SUBP_STRUCTURE | Plot sequence number |
| 4.2.2 | - | PLT_CN | P2VEG_SUBPLOT_SPP | Plot sequence number |
| 6.1.2 | - | PLT_CN | PLOT_REGEN | Plot sequence number |
| 9.6.3 | - | PLT_CN | POP_PLOT_STRATUM_ASSGN | Plot sequence number |
| 3.9.2 | - | PLT_CN | SEEDLING | Plot sequence number |
| 6.3.2 | - | PLT_CN | SEEDLING_REGEN | Plot sequence number |
| 3.10.2 | - | PLT_CN | SITETREE | Plot sequence number |
| 2.7.2 | - | PLT_CN | SUBP_COND | Plot sequence number |
| 2.9.5 | - | PLT_CN | SUBP_COND_CHNG_MTRX | Plot sequence number |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|---------------------------|------------------------|---|
| 8.2.3 | - | PLT_CN | SUBP_SOIL_SAMPLE_LAYER | Plot sequence number |
| 8.1.2 | - | PLT_CN | SUBP_SOIL_SAMPLE_LOC | Plot sequence number |
| 2.6.2 | - | PLT_CN | SUBPLOT | Plot sequence number |
| 6.2.2 | - | PLT_CN | SUBPLOT_REGEN | Plot sequence number |
| 3.1.2 | - | PLT_CN | TREE | Plot sequence number |
| 3.6.3 | - | PLT_CN | TREE_GRM_BEGIN | Plot sequence number |
| 3.3.3 | - | PLT_CN | TREE_GRM_COMPONENT | Plot sequence number |
| 3.7.4 | - | PLT_CN | TREE_GRM_ESTN | Plot sequence number |
| 3.5.3 | - | PLT_CN | TREE_GRM_MIDPT | Plot sequence number |
| 3.4.3 | - | PLT_CN | TREE_GRM_THRESHOLD | Plot sequence number |
| 3.2.2 | - | PLT_CN | TREE_WOODLAND_STEMS | Plot sequence number |
| 2.6.11 | 3.3 | POINT_NONSAMPLE_REASON_CD | SUBPLOT | Point nonsampled reason code |
| 5.6.25 | - | PPA_COND | DWM_RESIDUAL_PILE | Piles per acre, unadjusted, for condition estimates |
| 5.6.24 | - | PPA_PLOT | DWM_RESIDUAL_PILE | Piles per acre, unadjusted, for plot estimates |
| 5.6.23 | - | PPA_UNADJ | DWM_RESIDUAL_PILE | Piles per acre, unadjusted, for population estimates |
| 2.4.67 | - | PRECIPITATION | PLOT | Precipitation |
| 2.5.50 | - | PRESNFCD | COND | Present nonforest code |
| 3.1.202 | - | PREV_ACTUALHT_FLD | TREE | Previous actual height |
| 3.1.149 | - | PREV_ACTUALHT_RMRS | TREE | Previous actual height, Rocky Mountain Research Station |
| 2.5.107 | 2.5.34 | PREV_AFFORESTATION_CD | COND | Previous afforestation code |
| 3.1.150 | - | PREV_AGECHKCD_RMRS | TREE | Previous radial growth and tree age check code, Rocky Mountain Research Station |
| 3.1.151 | - | PREV_BHAGE_RMRS | TREE | Previous breast height age, Rocky Mountain Research Station |
| 3.1.203 | - | PREV_HT_FLD | TREE | Previous total height |
| 3.1.152 | - | PREV_HT_RMRS | TREE | Previous total length, Rocky Mountain Research Station |
| 2.4.68 | - | PREV_MICROPLOT_LOC_RMRS | PLOT | Previous microplot location, Rocky Mountain Research Station |
| 2.4.69 | - | PREV_PLOT_STATUS_CD_RMRS | PLOT | Previous plot status code, Rocky Mountain Research Station |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|---------------------------|---|
| 2.4.4 | - | PREV_PLT_CN | PLOT | Previous plot sequence number |
| 10.2.4 | - | PREV_PLT_CN | PLOTSNAP | Previous plot sequence number |
| 2.9.7 | - | PREV_PLT_CN | SUBP_COND_CHNG_MTRX | Previous plot sequence number |
| 3.1.117 | - | PREV_PNTN_SRS | TREE | Previous periodic prism point, tree number, Southern Research Station |
| 2.6.3 | - | PREV_SBP_CN | SUBPLOT | Previous subplot sequence number |
| 3.10.3 | - | PREV_SIT_CN | SITETREE | Previous site tree sequence number |
| 3.1.90 | 5.6 | PREV_STATUS_CD | TREE | Previous tree status code |
| 2.6.51 | - | PREV_STATUSCD_RMRS | SUBPLOT | Previous subplot status code, Rocky Mountain Research Station |
| 3.1.153 | - | PREV_TOTAGE_RMRS | TREE | Previous total age, Rocky Mountain Research Station |
| 3.1.3 | - | PREV_TRE_CN | TREE | Previous tree sequence number |
| 3.6.2 | - | PREV_TRE_CN | TREE_GRM_BEGIN | Previous tree sequence number |
| 3.3.2 | - | PREV_TRE_CN | TREE_GRM_COMPONENT | Previous tree sequence number |
| 3.5.2 | - | PREV_TRE_CN | TREE_GRM_MIDPT | Previous tree sequence number |
| 3.4.2 | - | PREV_TRE_CN | TREE_GRM_THRESHOLD | Previous tree sequence number |
| 3.1.154 | - | PREV_TREECLCD_RMRS | TREE | Previous tree class code, Rocky Mountain Research Station |
| 3.1.91 | 5.10 | PREV_WLDSTEM | TREE | Previous woodland stem count |
| 2.9.8 | - | PREVCOND | SUBP_COND_CHNG_MTRX | Previous condition class number |
| 3.1.14 | - | PREVCOND | TREE | Previous condition class number |
| 3.1.83 | 5.9.1 | PREVDIA | TREE | Previous diameter |
| 3.1.140 | - | PREVDIA_FLD | TREE | Previous diameter, field |
| 11.16.2 | - | PRIMARY_CLASS | REF_NVCS_HIERARCHY_STRUCT | Primary class |
| 11.17.2 | - | PRIMARY_CLASS | REF_NVCS_LEVEL_1_CODES | Primary class |
| 11.18.2 | - | PRIMARY_CLASS | REF_NVCS_LEVEL_2_CODES | Primary class |
| 11.19.2 | - | PRIMARY_CLASS | REF_NVCS_LEVEL_3_CODES | Primary class |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|--------------------------|------------------------|---|
| 11.20.2 | - | PRIMARY_CLASS | REF_NVCS_LEVEL_4_CODES | Primary class |
| 11.21.2 | - | PRIMARY_CLASS | REF_NVCS_LEVEL_5_CODES | Primary class |
| 11.22.2 | - | PRIMARY_CLASS | REF_NVCS_LEVEL_6_CODES | Primary class |
| 11.23.2 | - | PRIMARY_CLASS | REF_NVCS_LEVEL_7_CODES | Primary class |
| 11.24.2 | - | PRIMARY_CLASS | REF_NVCS_LEVEL_8_CODES | Primary class |
| 2.1.18 | - | PRJ_CN | SURVEY | Project sequence number |
| 2.5.28 | - | PROP_BASIS | COND | Proportion basis |
| 11.9.3 | - | PUB_CD | REF_HABTYP_DESCRIPTION | Publication code |
| 11.10.2 | - | PUB_CD | REF_HABTYP_PUBLICATION | Publication code |
| | | Q | | |
| 5.1.29 | - | QA_STATUS | DWM_VISIT | Quality assurance status |
| 2.4.31 | 1.17 | QA_STATUS | PLOT | Quality assurance status |
| 10.2.33 | - | QA_STATUS | PLOTSNAP | Quality assurance status |
| 5.1.10 | - | QASTATCD | DWM_VISIT | Quality assurance status code |
| 2.5.135 | - | QMD_RMRS | COND | Quadratic mean diameter, Rocky Mountain Research Station |
| 11.6.18 | - | QUADRINOMIAL_AUTHOR | REF_PLANT_DICTIONARY | Quadrinomial author |
| | | R | | |
| 3.7.36 | - | R | TREE_GRM_ESTN | Reversion |
| 3.1.155 | - | RADAGECD_RMRS | TREE | Radial growth / age code, Rocky Mountain Research Station |
| 3.1.156 | - | RADGRW_RMRS | TREE | Radial growth, Rocky Mountain Research Station |
| 2.5.136 | - | RANGETYPCD_RMRS | COND | Range type code (existing vegetation classification), Rocky Mountain Research Station |
| 2.4.18 | 1.15 | RDDISTCD | PLOT | Horizontal distance to improved road code |
| 10.2.18 | - | RDDISTCD | PLOTSNAP | Horizontal distance to improved road code |
| 3.1.82 | 5.7.1 | RECONCILECD | TREE | Reconcile code |
| 6.2.22 | - | REGEN_MICR_STATUS_CD | SUBPLOT_REGEN | Regeneration microplot status code |
| 6.2.11 | - | REGEN_NONSAMPLE_REASN_CD | SUBPLOT_REGEN | Regeneration nonsampled reason code |
| 6.2.10 | - | REGEN_SUBP_STATUS_CD | SUBPLOT_REGEN | Regeneration subplot status code |
| 11.7.3 | - | REGION | REF_SPECIES_GROUP | Region |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------|---|
| 3.7.17 | - | REMOVALS | TREE_GRM_ESTN | Removal estimate |
| 2.4.15 | - | REMPER | PLOT | Remeasurement period |
| 10.2.15 | - | REMPER | PLOTSNAP | Remeasurement period |
| 3.7.12 | - | REMPER | TREE_GRM_ESTN | Remeasurement period |
| 11.33.9 | - | REMV_TYP_CD | REF_GRM_TYPE | Type of annual removals volume code |
| 3.3.60 | - | REMVBFSL_FOREST | TREE_GRM_COMPONENT | Merchantable board-foot wood volume of a sawtimber tree for removal purposes on forest land |
| 3.3.72 | - | REMVBFSL_TIMBER | TREE_GRM_COMPONENT | Merchantable board-foot wood volume of a sawtimber tree for removal purposes on timberland |
| 3.3.58 | - | REMVCFAL_FOREST | TREE_GRM_COMPONENT | Sound cubic-foot stem wood volume of a live tree for removal purposes for the all live estimation type on forest land |
| 3.3.70 | - | REMVCFAL_TIMBER | TREE_GRM_COMPONENT | Sound cubic-foot stem wood volume of a live tree for removal purposes for the all live estimation type on timberland |
| 3.3.59 | - | REMVCFGS_FOREST | TREE_GRM_COMPONENT | Merchantable cubic-foot stem wood volume of a growing-stock tree for removal purposes on forest land |
| 3.3.71 | - | REMVCFGS_TIMBER | TREE_GRM_COMPONENT | Merchantable cubic-foot stem wood volume of a growing-stock tree for removal purposes on timberland |
| 3.3.57 | - | REMVTSAI_FOREST | TREE_GRM_COMPONENT | Sound cubic-foot total-stem wood volume of a live tree for removal purposes for the all live estimation type on forest land |
| 3.3.69 | - | REMVTSAI_TIMBER | TREE_GRM_COMPONENT | Sound cubic-foot total-stem wood volume of a live tree for removal purposes for the all live estimation type on timberland |
| 9.2.8 | - | REPORT_YEAR_NM | POP_EVAL | Report year name |
| 2.5.11 | 2.5.1 | RESERVCD | COND | Reserved status code |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|--------------------------------|----------------------|--|
| 2.5.102 | - | RESERVCD_5 | COND | Reserved status code field, versions 1.0-5.0 |
| 8.1.24 | - | RESTRICTION_DEPTH_1 | SUBP_SOIL_SAMPLE_LOC | Restriction depth 1 |
| 8.1.25 | - | RESTRICTION_DEPTH_2 | SUBP_SOIL_SAMPLE_LOC | Restriction depth 2 |
| 8.1.26 | - | RESTRICTION_DEPTH_3 | SUBP_SOIL_SAMPLE_LOC | Restriction depth 3 |
| 8.1.27 | - | RESTRICTION_DEPTH_4 | SUBP_SOIL_SAMPLE_LOC | Restriction depth 4 |
| 8.1.20 | - | RESTRICTION_DEPTH_CD_1 | SUBP_SOIL_SAMPLE_LOC | Restriction depth code 1 |
| 8.1.21 | - | RESTRICTION_DEPTH_CD_2 | SUBP_SOIL_SAMPLE_LOC | Restriction depth code 2 |
| 8.1.22 | - | RESTRICTION_DEPTH_CD_3 | SUBP_SOIL_SAMPLE_LOC | Restriction depth code 3 |
| 8.1.23 | - | RESTRICTION_DEPTH_CD_4 | SUBP_SOIL_SAMPLE_LOC | Restriction depth code 4 |
| 2.4.70 | - | REUSECD1 | PLOT | Recreation use code 1 (Pacific Islands) |
| 2.4.71 | - | REUSECD2 | PLOT | Recreation use code 2 (Pacific Islands) |
| 2.4.72 | - | REUSECD3 | PLOT | Recreation use code 3 (Pacific Islands) |
| 3.1.170 | - | RING_COUNT_INNER_2INCHES_PNWRS | TREE | Number of rings in inner 2 inches, Pacific Northwest Research Station |
| 3.1.171 | - | RING_COUNT_PNWRS | TREE | Number of rings, Pacific Northwest Research Station |
| 10.1.14 | - | ROADLESSCD | PLOTGEOM | Roadless code |
| 2.6.28 | - | ROOT_DIS_SEV_CD_PNWRS | SUBPLOT | Root disease severity rating code, Pacific Northwest Research Station |
| 3.1.161 | - | ROOT_HT_PNWRS | TREE | Rooting height (Pacific Islands), Pacific Northwest Research Station |
| 2.6.52 | - | ROOTSEVCD_RMRS | SUBPLOT | Root disease severity rating code, Rocky Mountain Research Station |
| 3.1.79 | 5.25 | ROUGHCULL | TREE | Rough cull |
| 3.6.15 | - | ROUGHCULL | TREE_GRM_BEGIN | Rough cull |
| 3.5.15 | - | ROUGHCULL | TREE_GRM_MIDPT | Rough cull |
| 3.4.16 | - | ROUGHCULL | TREE_GRM_THRESHOLD | Rough cull |
| 11.15.3 | - | RS | REF_RESEARCH_STATION | Research station abbreviation |
| 5.8.106 | - | RSCD | COND_DWM_CALC | Region or Station code |
| 9.1.3 | - | RSCD | POP_ESTN_UNIT | Region or Station code |
| 9.2.3 | - | RSCD | POP_EVAL | Region or Station code |
| 9.4.2 | - | RSCD | POP_EVAL_GRP | Region or Station code |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|--------------------------|------------------------------|--|
| 9.6.9 | - | RSCD | POP_PLOT_STRATUM_ASSGN | Region or Station code |
| 9.7.3 | - | RSCD | POP_STRATUM | Region or Station code |
| 2.2.2 | - | RSCD | PROJECT | Region or Station code |
| 11.33.2 | - | RSCD | REF_GRM_TYPE | Region or Station code |
| 11.15.2 | - | RSCD | REF_RESEARCH_STATION | Region or Station code |
| 2.1.7 | - | RSCD | SURVEY | Region or Station code |
| 5.4.14 | - | RSNCTCD | DWM_FINE_WOODY_DEBRIS | Reason count code |
| | | S | | |
| 3.1.47 | - | SALVCD | TREE | Salvable dead code |
| 2.4.41 | - | SAMP_METHOD_CD | PLOT | Sample method code |
| 10.2.43 | - | SAMP_METHOD_CD | PLOTSNAP | Sample method code |
| 8.2.14 | - | SAMPLE_DIA | SUBP_SOIL_SAMPLE_LAYER | Sample diameter |
| 8.2.13 | - | SAMPLER_TYPE | SUBP_SOIL_SAMPLE_LAYER | Sampler type |
| 3.1.159 | - | SAPLING_FUSIFORM_SRS | TREE | Sapling fusiform, Southern Research Station |
| 3.1.65 | - | SAWHT | TREE | Sawlog height |
| 6.2.3 | - | SBP_CN | SUBPLOT_REGEN | Subplot sequence number |
| 6.3.4 | - | SCD_CN | SEEDLING_REGEN | Subplot condition sequence number |
| 11.25.3 | - | SCIENTIFIC_NAME | REF_DAMAGE_AGENT | Scientific name of damage agent |
| 11.9.4 | - | SCIENTIFIC_NAME | REF_HABTYP_DESCRIPTION | Scientific name |
| 11.5.8 | - | SCIENTIFIC_NAME | REF_SPECIES | Scientific name |
| 11.6.4 | - | SCIENTIFIC_NAME | REF_PLANT_DICTIONARY | Scientific name |
| 11.6.15 | - | SCIENTIFIC_NAME_W_AUTHOR | REF_PLANT_DICTIONARY | Scientific name with author |
| 11.30.5 | - | SCRIPT | REF_DIFFERENCE_TEST_PER_ACRE | Script |
| 11.31.5 | - | SCRIPT | REF_DIFFERENCE_TEST_TOTALS | Script |
| 2.5.139 | - | SDI_RMRS | COND | Stand density index for the condition, Rocky Mountain Research Station |
| 2.5.137 | - | SDIMAX_RMRS | COND | Stand density index maximum, Rocky Mountain Research Station |
| 2.5.138 | - | SDIPCT_RMRS | COND | Stand density index percent, Rocky Mountain Research Station |
| 6.3.14 | - | SEEDLING_SOURCE_CD | SEEDLING_REGEN | Seedling source code |
| 6.3.16 | - | SEEDLINGCOUNT | SEEDLING_REGEN | Count of qualifying seedlings |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|----------------------------|----------------------------|--|
| 5.7.9 | - | SEGMNT | DWM_TRANSECT_SEGMENT | Segment number |
| 5.7.25 | 10.3.7 | SEGMNT_NONSAMPLE_REASON_CD | DWM_TRANSECT_SEGMENT | Segment nonsampled reason code |
| 5.7.24 | 10.3.6 | SEGMNT_STATUS_CD | DWM_TRANSECT_SEGMENT | Segment sample status code |
| 3.1.108 | - | SEVERITY1_CD_PNWRS | TREE | Damage severity 1, Pacific Northwest Research Station |
| 3.1.109 | - | SEVERITY1A_CD_PNWRS | TREE | Damage severity 1A, Pacific Northwest Research Station |
| 3.1.110 | - | SEVERITY1B_CD_PNWRS | TREE | Damage severity 1B, Pacific Northwest Research Station |
| 3.1.111 | - | SEVERITY2_CD_PNWRS | TREE | Damage severity 2, Pacific Northwest Research Station |
| 3.1.112 | - | SEVERITY2A_CD_PNWRS | TREE | Damage severity 2A, Pacific Northwest Research Station |
| 3.1.113 | - | SEVERITY2B_CD_PNWRS | TREE | Damage severity 2B, Pacific Northwest Research Station |
| 3.1.114 | - | SEVERITY3_CD_PNWRS | TREE | Damage severity 3, Pacific Northwest Research Station |
| 11.5.20 | - | SFTWD_HRDWD | REF_SPECIES | Softwood or hardwood |
| 11.35.2 | - | SFTWD_HRDWD | REF_TREE_CARBON_RATIO_DEAD | Softwood or hardwood |
| 11.36.3 | - | SFTWD_HRDWD | REF_TREE_DECAY_PROP | Softwood or hardwood |
| 11.37.3 | - | SFTWD_HRDWD | REF_TREE_STND_DEAD_CR_PROP | Softwood or hardwood |
| 5.6.11 | - | SHAPECD | DWM_RESIDUALPILE | Shape code |
| 11.5.3 | - | SHARED_COMMON_NAME_IND | REF_SPECIES | Shared common name indicator |
| 2.5.24 | - | SIBASE | COND | Site index base age |
| 3.10.17 | - | SIBASE | SITETREE | Site index base age |
| 3.10.38 | - | SIBASE_AGE_PNWRS | SITETREE | Site index equation base age, Pacific Northwest Research Station |
| 2.5.153 | - | SIBASE_FVS | COND | Site index base age used by the Forest Vegetation Simulator |
| 3.10.49 | - | SIBASE_FVS | SITETREE | Site index base age used by the Forest Vegetation Simulator |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|----------------------------|-------------------|--|
| 2.5.23 | - | SICOND | COND | Site index for the condition |
| 2.5.152 | - | SICOND_FVS | COND | Site index for the condition, used by the Forest Vegetation Simulator |
| 11.32.5 | - | SIEQN_AGE_BASIS | REF_SIEQN | Base age basis |
| 11.32.4 | - | SIEQN_LOC_DESC_FSVEG | REF_SIEQN | Site index equation coverage area in FSVeg |
| 2.5.151 | - | SIEQN_REF_CD | COND | Site index equation reference code |
| 11.32.2 | - | SIEQN_REF_CD | REF_SIEQN | Site index equation reference code |
| 3.10.47 | - | SIEQN_REF_CD | SITETREE | Site index equation reference code |
| 11.32.3 | - | SIEQN_REF_NOTES | REF_SIEQN | Site index equation references and notes |
| 2.5.155 | - | SIEQN_REF_CD_FVS | COND | Site index equation reference code used by the Forest Vegetation Simulator |
| 3.10.50 | - | SIEQN_REF_CD_FVS | SITETREE | Site index equation reference code used by the Forest Vegetation Simulator |
| 2.5.25 | - | SISP | COND | Site index species code |
| 2.5.154 | - | SISP_FVS | COND | Site index species code used by the Forest Vegetation Simulator |
| 3.10.40 | - | SITE_AGE_TREE_STATUS_PNWRS | SITETREE | Site age tree status, Pacific Northwest Research Station |
| 3.10.41 | - | SITE_AGE_TREE_TYPE_PNWRS | SITETREE | Site age tree type, Pacific Northwest Research Station |
| 3.10.42 | - | SITE_TREE_METHOD_PNWRS | SITETREE | Site tree selection method, Pacific Northwest Research Station |
| 2.5.66 | - | SITECL_METHOD | COND | Site class method |
| 2.5.22 | - | SITECLCD | COND | Site productivity class code |
| 2.5.64 | - | SITECLCDEST | COND | Site productivity class code estimated |
| 3.10.39 | - | SITETRCD_RMRS | SITETREE | Site tree code, Rocky Mountain Research Station |
| 11.5.19 | - | SITETREE | REF_SPECIES | Site tree |
| 2.5.65 | - | SITETREE_TREE | COND | Site tree tree number |
| 3.10.16 | - | SITREE | SITETREE | Site index for the tree |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|---------------------------|--|
| 3.1.70 | - | SITREE | TREE | Calculated site index |
| 3.6.23 | - | SITREE | TREE_GRM_BEGIN | Calculated site index |
| 3.5.23 | - | SITREE | TREE_GRM_MIDPT | Calculated site index |
| 3.4.24 | - | SITREE | TREE_GRM_THRESHOLD | Calculated site index |
| 3.10.43 | - | SITREE_EQU_NO_PNWRS | SITETREE | Site index equation number, Pacific Northwest Research Station |
| 3.10.22 | - | SITREE_EST | SITETREE | Estimated site index for the tree |
| 3.10.48 | - | SITREE_FVS | SITETREE | Site index base age used by the Forest Vegetation Simulator |
| 5.2.12 | - | SLOPDIST | DWM_COARSE_WOODY_DEB RIS | Slope distance |
| 2.5.33 | - | SLOPE | COND | Condition percent slope |
| 5.4.34 | - | SLOPE | DWM_FINE_WOODY_DEBRIS | Transect percent slope |
| 5.7.14 | - | SLOPE | DWM_TRANSECT_SEGMENT | Transect percent slope |
| 2.6.16 | 3.8 | SLOPE | SUBPLOT | Subplot percent slope |
| 5.7.12 | - | SLOPE_BEGNDIST | DWM_TRANSECT_SEGMENT | Beginning slope distance of the transect segment |
| 5.7.13 | - | SLOPE_ENDDIST | DWM_TRANSECT_SEGMENT | Ending slope distance of the transect segment |
| 5.4.16 | - | SMALL_TL_COND | DWM_FINE_WOODY_DEBRIS | Small-size class transect length in condition |
| 5.4.17 | - | SMALL_TL_PLOT | DWM_FINE_WOODY_DEBRIS | Small-size class transect length on plot |
| 5.4.18 | - | SMALL_TL_UNADJ | DWM_FINE_WOODY_DEBRIS | Small-size class transect length on plot, unadjusted |
| 5.4.11 | 10.6.6 | SMALLCT | DWM_FINE_WOODY_DEBRIS | Small-size class count |
| 5.2.17 | 10.4.3. 8.3 | SMALLDIA | DWM_COARSE_WOODY_DEB RIS | Small diameter |
| 5.1.12 | - | SMPKNDCD | DWM_VISIT | Sample kind code |
| 5.3.9 | - | SMPLOCCD | DWM_DUFF_LITTER_FUEL | Sample location code |
| 3.1.172 | - | SNAG_DIS_CD_PNWRS | TREE | Snag reason for disappearance code, Pacific Northwest Research Station |
| 7.3.16 | - | SNOW_COVER_PCT | GRND_LYR_MICROQUAD | Percent snow cover (Interior Alaska) |
| 11.34.2 | - | SOFTWOOD | REF_INTL_TO_DOYLE_FACTO R | Softwood or hardwood |
| 2.5.80 | - | SOIL_ROOTING_DEPTH_PNW | COND | Soil rooting depth, Pacific Northwest Research Station |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|------------------------------|------------------------------------|
| 8.2.16 | - | SOIL_SAMP_PER_AC | SUBP_SOIL_SAMPLE_LAYER | Soil sample area expansion factor |
| 2.5.157 | - | SOILPROP_UNADJ | COND | Soil proportion unadjusted |
| 8.1.14 | - | SOILS_SAMPLE_METHOD_CD | SUBP_SOIL_SAMPLE_LOC | Soils sample method code |
| 8.1.15 | - | SOILS_SAMPLE_STATUS_CD | SUBP_SOIL_SAMPLE_LOC | Soils sample status code |
| 5.2.14 | 10.4.3. 7 | SPCD | DWM_COARSE_WOODY_DEB_RIS | Species code |
| 5.6.37 | 10.5.8 | SPCD | DWM_RESIDUAL_PILE | Species code for the residual pile |
| 11.5.1 | - | SPCD | REF_SPECIES | Species code |
| 3.9.10 | 6.2 | SPCD | SEEDLING | Species code |
| 6.3.12 | - | SPCD | SEEDLING_REGEN | Species code |
| 3.10.11 | 7.2.2 | SPCD | SITETREE | Species code |
| 3.1.16 | 5.8 | SPCD | TREE | Species code |
| 3.6.6 | - | SPCD | TREE_GRM_BEGIN | Species code |
| 3.5.6 | - | SPCD | TREE_GRM_MIDPT | Species code |
| 3.4.7 | - | SPCD | TREE_GRM_THRESHOLD | Species code |
| 11.6.22 | - | SPECIES | REF_PLANT_DICTIONARY | Species |
| 11.5.5 | - | SPECIES | REF_SPECIES | Species |
| 11.5.9 | - | SPECIES_SYMBOL | REF_SPECIES | Species symbol |
| 11.7.1 | - | SPGRPCD | REF_SPECIES_GROUP | Species group code |
| 3.9.11 | - | SPGRPCD | SEEDLING | Species group code |
| 6.3.13 | - | SPGRPCD | SEEDLING_REGEN | Species group code |
| 3.10.15 | - | SPGRPCD | SITETREE | Species group code |
| 3.1.17 | - | SPGRPCD | TREE | Species group code |
| 11.30.7 | - | SQL_COL_1 | REF_DIFFERENCE_TEST_PER_ACRE | SQL script section for column 1 |
| 11.31.7 | - | SQL_COL_1 | REF_DIFFERENCE_TEST_TOT_ALS | SQL script section for column 1 |
| 11.30.9 | - | SQL_COL_2 | REF_DIFFERENCE_TEST_PER_ACRE | SQL script section for column 2 |
| 11.31.9 | - | SQL_COL_2 | REF_DIFFERENCE_TEST_TOT_ALS | SQL script section for column 2 |
| 11.30.11 | - | SQL_COL_3 | REF_DIFFERENCE_TEST_PER_ACRE | SQL script section for column 3 |
| 11.31.11 | - | SQL_COL_3 | REF_DIFFERENCE_TEST_TOT_ALS | SQL script section for column 3 |
| 11.30.13 | - | SQL_COL_4 | REF_DIFFERENCE_TEST_PER_ACRE | SQL script section for column 4 |
| 11.31.13 | - | SQL_COL_4 | REF_DIFFERENCE_TEST_TOT_ALS | SQL script section for column 4 |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|-------------------------------|----------------------------------|
| 11.30.15 | - | SQL_COL_5 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 5 |
| 11.31.15 | - | SQL_COL_5 | REF_DIFFERENCE_TEST_TOTALS | SQL script section for column 5 |
| 11.30.17 | - | SQL_COL_6 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 6 |
| 11.31.17 | - | SQL_COL_6 | REF_DIFFERENCE_TEST_TOTALS | SQL script section for column 6 |
| 11.30.19 | - | SQL_COL_7 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 7 |
| 11.31.19 | - | SQL_COL_7 | REF_DIFFERENCE_TEST_TOTALS | SQL script section for column 7 |
| 11.30.21 | - | SQL_COL_8 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 8 |
| 11.31.21 | - | SQL_COL_8 | REF_DIFFERENCE_TEST_TOTALS | SQL script section for column 8 |
| 11.30.23 | - | SQL_COL_9 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 9 |
| 11.31.23 | - | SQL_COL_9 | REF_DIFFERENCE_TEST_TOTALS | SQL script section for column 9 |
| 11.30.25 | - | SQL_COL_10 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 10 |
| 11.31.25 | - | SQL_COL_10 | REF_DIFFERENCE_TEST_TOTALS | SQL script section for column 10 |
| 11.30.27 | - | SQL_COL_11 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 11 |
| 11.31.27 | - | SQL_COL_11 | REF_DIFFERENCE_TEST_TOTALS | SQL script section for column 11 |
| 11.30.29 | - | SQL_COL_12 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 12 |
| 11.31.29 | - | SQL_COL_12 | REF_DIFFERENCE_TEST_TOTALS | SQL script section for column 12 |
| 11.30.31 | - | SQL_COL_13 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 13 |
| 11.31.31 | - | SQL_COL_13 | REF_DIFFERENCE_TEST_TOTALS | SQL script section for column 13 |
| 11.30.33 | - | SQL_COL_14 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 14 |
| 11.31.33 | - | SQL_COL_14 | REF_DIFFERENCE_TEST_TOTALS | SQL script section for column 14 |
| 11.30.35 | - | SQL_COL_15 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 15 |
| 11.31.35 | - | SQL_COL_15 | REF_DIFFERENCE_TEST_TOTALS | SQL script section for column 15 |
| 11.30.37 | - | SQL_COL_16 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 16 |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|----------------------------|-------------------------------|----------------------------------|
| 11.31.37 | - | SQL_COL_16 | REF_DIFFERENCE_TEST_TOT_ALS | SQL script section for column 16 |
| 11.30.39 | - | SQL_COL_17 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 17 |
| 11.31.39 | - | SQL_COL_17 | REF_DIFFERENCE_TEST_TOT_ALS | SQL script section for column 17 |
| 11.30.41 | - | SQL_COL_18 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 18 |
| 11.31.41 | - | SQL_COL_18 | REF_DIFFERENCE_TEST_TOT_ALS | SQL script section for column 18 |
| 11.30.43 | - | SQL_COL_19 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 19 |
| 11.31.43 | - | SQL_COL_19 | REF_DIFFERENCE_TEST_TOT_ALS | SQL script section for column 19 |
| 11.30.45 | - | SQL_COL_20 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 20 |
| 11.31.45 | - | SQL_COL_20 | REF_DIFFERENCE_TEST_TOT_ALS | SQL script section for column 20 |
| 11.30.47 | - | SQL_COL_21 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 21 |
| 11.31.47 | - | SQL_COL_21 | REF_DIFFERENCE_TEST_TOT_ALS | SQL script section for column 21 |
| 11.30.49 | - | SQL_COL_22 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 22 |
| 11.31.49 | - | SQL_COL_22 | REF_DIFFERENCE_TEST_TOT_ALS | SQL script section for column 22 |
| 11.30.51 | - | SQL_COL_23 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 23 |
| 11.31.51 | - | SQL_COL_23 | REF_DIFFERENCE_TEST_TOT_ALS | SQL script section for column 23 |
| 11.30.53 | - | SQL_COL_24 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 24 |
| 11.31.53 | - | SQL_COL_24 | REF_DIFFERENCE_TEST_TOT_ALS | SQL script section for column 24 |
| 11.30.55 | - | SQL_COL_25 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 25 |
| 11.31.55 | - | SQL_COL_25 | REF_DIFFERENCE_TEST_TOT_ALS | SQL script section for column 25 |
| 11.30.57 | - | SQL_COL_26 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 26 |
| 11.31.57 | - | SQL_COL_26 | REF_DIFFERENCE_TEST_TOT_ALS | SQL script section for column 26 |
| 11.30.59 | - | SQL_COL_27 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 27 |
| 11.30.61 | - | SQL_COL_28 | REF_DIFFERENCE_TEST_PER_ACRES | SQL script section for column 28 |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|------------------------------|--|
| 11.30.63 | - | SQL_COL_29 | REF_DIFFERENCE_TEST_PER_ACRE | SQL script section for column 29 |
| 11.30.65 | - | SQL_COL_30 | REF_DIFFERENCE_TEST_PER_ACRE | SQL script section for column 30 |
| 11.30.67 | - | SQL_COL_31 | REF_DIFFERENCE_TEST_PER_ACRE | SQL script section for column 31 |
| 11.30.69 | - | SQL_COL_32 | REF_DIFFERENCE_TEST_PER_ACRE | SQL script section for column 32 |
| 11.30.71 | - | SQL_COL_33 | REF_DIFFERENCE_TEST_PER_ACRE | SQL script section for column 33 |
| 11.30.73 | - | SQL_COL_34 | REF_DIFFERENCE_TEST_PER_ACRE | SQL script section for column 34 |
| 11.30.75 | - | SQL_COL_35 | REF_DIFFERENCE_TEST_PER_ACRE | SQL script section for column 35 |
| 11.30.77 | - | SQL_COL_36 | REF_DIFFERENCE_TEST_PER_ACRE | SQL script section for column 36 |
| 11.1.5 | - | SQL_QUERY | REF_POP_ATTRIBUTE | SQL estimate script |
| 11.1.9 | - | SQL_QUERY_SE | REF_POP_ATTRIBUTE | SQL estimate script with sampling error |
| 2.4.2 | - | SRV_CN | PLOT | Survey sequence number |
| 10.2.2 | - | SRV_CN | PLOTSNAP | Survey sequence number |
| 11.6.23 | - | SSP | REF_PLANT_DICTIONARY | Subspecies indicator |
| 8.2.2 | - | SSSL_CN | SUBP_SOIL_SAMPLE_LAYER | Subplot soil sample location sequence number |
| 2.5.93 | - | STAND_STRUCTURE_SRS | COND | Stand structure, Southern Research Station |
| 2.5.140 | - | STAND_STRUCTURE_ME_NERS | COND | Stand structure (Maine), Northeastern Research Station |
| 3.1.89 | 5.7.2 | STANDING_DEAD_CD | TREE | Standing dead code |
| 3.6.12 | - | STANDING_DEAD_CD | TREE_GRM_BEGIN | Standing dead code |
| 3.5.12 | - | STANDING_DEAD_CD | TREE_GRM_MIDPT | Standing dead code |
| 3.4.13 | - | STANDING_DEAD_CD | TREE_GRM_THRESHOLD | Standing dead code |
| 11.8.6 | - | START_DATE | REF_INVASIVE_SPECIES | Start date |
| 9.2.9 | - | START_INVYR | POP_EVAL | Start inventory year |
| 11.33.4 | - | START_INVYR | REF_GRM_TYPE | Start inventory year |
| 11.15.5 | - | STATE_ABBR | REF_RESEARCH_STATION | State abbreviation |
| 11.6.14 | - | STATE_AND_PROVINCE | REF_PLANT_DICTIONARY | State and province |
| 11.6.13 | - | STATE_DISTRIBUTION | REF_PLANT_DICTIONARY | State distribution |
| 11.15.4 | - | STATE_NAME | REF_RESEARCH_STATION | State name |
| 2.1.5 | - | STATEAB | SURVEY | State abbreviation |
| 2.5.4 | - | STATECD | COND | State code |
| 5.8.2 | - | STATECD | COND_DWM_CALC | State code |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|-----------------------------|------------------|
| 2.3.1 | - | STATECD | COUNTY | State code |
| 5.2.4 | - | STATECD | DWM_COARSE_WOODY_DEB RIS | State code |
| 5.3.4 | - | STATECD | DWM_DUFF_LITTER_FUEL | State code |
| 5.4.4 | - | STATECD | DWM_FINE_WOODY_DEBRIS | State code |
| 5.5.4 | - | STATECD | DWM_MICROPLOT_FUEL | State code |
| 5.6.4 | - | STATECD | DWM_RESIDUAL_PILE | State code |
| 5.7.4 | - | STATECD | DWM_TRANSECT_SEGMENT | State code |
| 5.1.4 | - | STATECD | DWM_VISIT | State code |
| 7.1.4 | - | STATECD | GRND_CVR | State code |
| 7.2.2 | - | STATECD | GRND_LYR_FNCTL_GRP | State code |
| 7.3.3 | - | STATECD | GRND_LYR_MICROQUAD | State code |
| 4.1.4 | - | STATECD | INVASIVE_SUBPLOT_SPP | State code |
| 4.3.3 | - | STATECD | P2VEG_SUBP_STRUCTURE | State code |
| 4.2.4 | - | STATECD | P2VEG_SUBPLOT_SPP | State code |
| 2.4.6 | 1.1 | STATECD | PLOT | State code |
| 6.1.4 | - | STATECD | PLOT_REGEN | State code |
| 10.1.2 | - | STATECD | PLOTGEOM | State code |
| 10.2.6 | - | STATECD | PLOTSNAP | State code |
| 9.1.7 | - | STATECD | POP_ESTN_UNIT | State code |
| 9.2.6 | - | STATECD | POP_EVAL | State code |
| 9.3.4 | - | STATECD | POP_EVAL_ATTRIBUTE | State code |
| 9.4.5 | - | STATECD | POP_EVAL_GRP | State code |
| 9.6.4 | - | STATECD | POP_PLOT_STRATUM_ASSGN | State code |
| 9.7.8 | - | STATECD | POP_STRATUM | State code |
| 11.33.3 | - | STATECD | REF_GRM_TYPE | State code |
| 11.8.2 | - | STATECD | REF_INVASIVE_SPECIES | State code |
| 11.15.1 | - | STATECD | REF_RESEARCH_STATION | State code |
| 11.13.1 | - | STATECD | REF_STATE_ELEV | State code |
| 11.14.1 | - | STATECD | REF_UNIT | State code |
| 3.9.4 | - | STATECD | SEEDLING | State code |
| 6.3.6 | - | STATECD | SEEDLING_REGEN | State code |
| 3.10.5 | - | STATECD | SITETREE | State code |
| 2.7.4 | - | STATECD | SUBP_COND | State code |
| 2.9.2 | - | STATECD | SUBP_COND_CHNG_MTRX | State code |
| 8.2.4 | - | STATECD | SUBP_SOIL_SAMPLE_LAYER | State code |
| 8.1.3 | - | STATECD | SUBP_SOIL_SAMPLE_LOC | State code |
| 2.6.5 | - | STATECD | SUBPLOT | State code |
| 6.2.5 | - | STATECD | SUBPLOT_REGEN | State code |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|------------------------|--|
| 2.1.4 | - | STATECD | SURVEY | State code |
| 3.1.5 | - | STATECD | TREE | State code |
| 3.6.4 | - | STATECD | TREE_GRM_BEGIN | State code |
| 3.3.4 | - | STATECD | TREE_GRM_COMPONENT | State code |
| 3.7.2 | - | STATECD | TREE_GRM_ESTN | State code |
| 3.5.4 | - | STATECD | TREE_GRM_MIDPT | State code |
| 3.4.4 | - | STATECD | TREE_GRM_THRESHOLD | State code |
| 3.2.4 | - | STATECD | TREE_WOODLAND_STEMS | State code |
| 2.1.6 | - | STATENM | SURVEY | State name |
| 3.1.15 | - | STATUSCD | TREE | Status code |
| 3.6.7 | - | STATUSCD | TREE_GRM_BEGIN | Status code |
| 3.5.7 | - | STATUSCD | TREE_GRM_MIDPT | Status code |
| 3.4.8 | - | STATUSCD | TREE_GRM_THRESHOLD | Status code |
| 3.2.12 | - | STATUSCD | TREE_WOODLAND_STEMS | Woodland stem status code |
| 2.5.19 | 2.5.14 | STDAGE | COND | Stand age |
| 2.5.26 | - | STDORGCD | COND | Stand origin code |
| 3.6.22 | - | STDORGCD | TREE_GRM_BEGIN | Stand origin code |
| 3.5.22 | - | STDORGCD | TREE_GRM_MIDPT | Stand origin code |
| 3.4.23 | - | STDORGCD | TREE_GRM_THRESHOLD | Stand origin code |
| 2.5.27 | - | STDORGSP | COND | Stand origin species code |
| 2.5.20 | 2.5.4 | STDSZCD | COND | Stand-size class code |
| 3.2.13 | - | STEM_NBR | TREE_WOODLAND_STEMS | Woodland stem number |
| 2.5.83 | - | STND_COND_CD_PNWRS | COND | Stand condition code, Pacific Northwest Research Station |
| 2.5.84 | - | STND_STRUC_CD_PNWRS | COND | Stand structure code, Pacific Northwest Research Station |
| 3.9.12 | - | STOCKING | SEEDLING | Tree stocking |
| 3.1.36 | - | STOCKING | TREE | Tree stocking |
| 11.5.15 | - | STOCKING_SPGRPCD | REF_SPECIES | Stocking species group code |
| 5.8.11 | - | STRATUM_CN | COND_DWM_CALC | Stratum sequence number |
| 9.6.2 | - | STRATUM_CN | POP_PLOT_STRATUM_ASSGN | Stratum sequence number |
| 9.7.7 | - | STRATUM_DESCR | POP_STRATUM | Stratum description |
| 9.6.12 | - | STRATUMCD | POP_PLOT_STRATUM_ASSGN | Stratum code |
| 9.7.6 | - | STRATUMCD | POP_STRATUM | Stratum code |
| 2.5.85 | - | STUMP_CD_PNWRS | COND | Stump code, Pacific Northwest Research Station |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------------|---------------------------|
| 2.5.79 | - | SUBCYCLE | COND | Inventory subcycle number |
| 5.8.104 | - | SUBCYCLE | COND_DWM_CALC | Inventory subcycle number |
| 7.1.14 | - | SUBCYCLE | GRND_CVR | Inventory subcycle number |
| 7.2.9 | - | SUBCYCLE | GRND_LYR_FNCTL_GRP | Inventory subcycle number |
| 7.3.5 | - | SUBCYCLE | GRND_LYR_MICROQUAD | Inventory subcycle number |
| 4.1.21 | - | SUBCYCLE | INVASIVE_SUBPLOT_SPP | Inventory subcycle number |
| 4.3.20 | - | SUBCYCLE | P2VEG_SUBP_STRUCTURE | Inventory subcycle number |
| 4.2.23 | - | SUBCYCLE | P2VEG_SUBPLOT_SPP | Inventory subcycle number |
| 2.4.46 | - | SUBCYCLE | PLOT | Inventory subcycle number |
| 6.1.16 | - | SUBCYCLE | PLOT_REGEN | Inventory subcycle number |
| 10.2.48 | - | SUBCYCLE | PLOTSNAP | Inventory subcycle number |
| 3.9.24 | - | SUBCYCLE | SEEDLING | Inventory subcycle number |
| 6.3.24 | - | SUBCYCLE | SEEDLING_REGEN | Inventory subcycle number |
| 3.10.31 | - | SUBCYCLE | SITETREE | Inventory subcycle number |
| 2.7.22 | - | SUBCYCLE | SUBP_COND | Inventory subcycle number |
| 8.2.10 | - | SUBCYCLE | SUBP_SOIL_SAMPLE_LAYER | Inventory subcycle number |
| 8.1.9 | - | SUBCYCLE | SUBP_SOIL_SAMPLE_LOC | Inventory subcycle number |
| 2.6.27 | - | SUBCYCLE | SUBPLOT | Inventory subcycle number |
| 6.2.21 | - | SUBCYCLE | SUBPLOT_REGEN | Inventory subcycle number |
| 2.1.17 | - | SUBCYCLE | SURVEY | Inventory subcycle number |
| 3.1.99 | - | SUBCYCLE | TREE | Inventory subcycle number |
| 3.2.15 | - | SUBCYCLE | TREE_WOODLAND_STEMS | Inventory subcycle number |
| 5.2.7 | - | SUBP | DWM_COARSE_WOODY_DEB_RIS | Subplot number |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|--------------------------|------------------------|---|
| 5.3.8 | - | SUBP | DWM_DUFF_LITTER_FUEL | Subplot number |
| 5.4.8 | - | SUBP | DWM_FINE_WOODY_DEBRIS | Subplot number |
| 5.5.7 | - | SUBP | DWM_MICROPLOT_FUEL | Subplot number |
| 5.6.7 | - | SUBP | DWM_RESIDUALPILE | Subplot number |
| 5.7.7 | - | SUBP | DWM_TRANSECT_SEGMENT | Subplot number |
| 7.1.8 | - | SUBP | GRND_CVR | Subplot number |
| 7.2.11 | - | SUBP | GRND_LYR_FNCTL_GRP | Subplot number |
| 7.3.11 | - | SUBP | GRND_LYR_MICROQUAD | Subplot number |
| 4.1.8 | 9.3 | SUBP | INVASIVE_SUBPLOT_SPP | Subplot number |
| 4.3.8 | 8.3.1 | SUBP | P2VEG_SUBP_STRUCTURE | Subplot number |
| 4.2.8 | - | SUBP | P2VEG_SUBPLOT_SPP | Subplot number |
| 3.9.8 | 6.1 | SUBP | SEEDLING | Subplot number |
| 6.3.10 | - | SUBP | SEEDLING_REGEN | Subplot number |
| 3.10.18 | 7.2.7 | SUBP | SITETREE | Subplot number |
| 2.7.8 | - | SUBP | SUBP_COND | Subplot number |
| 2.9.3 | - | SUBP | SUBP_COND_CHNG_MTRX | Subplot number |
| 8.2.11 | - | SUBP | SUBP_SOIL_SAMPLE_LAYER | Subplot number |
| 8.1.11 | - | SUBP | SUBP_SOIL_SAMPLE_LOC | Subplot number |
| 2.6.9 | 3.1 | SUBP | SUBPLOT | Subplot number |
| 6.2.9 | - | SUBP | SUBPLOT_REGEN | Subplot number |
| 3.1.9 | 5.1 | SUBP | TREE | Subplot number |
| 3.2.8 | - | SUBP | TREE_WOODLAND_STEMS | Subplot number |
| 3.3.18 | - | SUBP_COMPONENT_AL_FOREST | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - growth component for the all live estimation type on forest land |
| 3.3.38 | - | SUBP_COMPONENT_AL_TIMBER | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - growth component for the all live estimation type on timberland |
| 3.3.23 | - | SUBP_COMPONENT_GS_FOREST | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - growth component for the growing-stock estimation type on forest land |
| 3.3.43 | - | SUBP_COMPONENT_GS_TIMBER | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - growth component for the growing-stock estimation type on timberland |
| 3.3.28 | - | SUBP_COMPONENT_SL_FOREST | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - growth component for the sawtimber estimation type on forest land |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------------|--------------------|--|
| 3.3.48 | - | SUBP_COMPONENT_SL_TIMBER | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - growth component for the sawtimber estimation type on timberland |
| 2.4.42 | 1.9 | SUBP_EXAMINE_CD | PLOT | Subplots examined code |
| 10.2.44 | - | SUBP_EXAMINE_CD | PLOTSNAP | Subplots examined code |
| 2.6.10 | 3.2 | SUBP_STATUS_CD | SUBPLOT | Subplot/macroplot status code |
| 3.3.19 | - | SUBP_SUBPTYP_GRM_AL_FOREST | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - plot type for GRM for the all live estimation type on forest land |
| 3.3.39 | - | SUBP_SUBPTYP_GRM_AL_TIMBER | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - plot type for GRM for the all live estimation type on timberland |
| 3.3.24 | - | SUBP_SUBPTYP_GRM_GS_FOREST | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - plot type for GRM for the growing-stock estimation type on forest land |
| 3.3.44 | - | SUBP_SUBPTYP_GRM_GS_TIMBER | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - plot type for GRM for the growing-stock estimation type on timberland |
| 3.3.29 | - | SUBP_SUBPTYP_GRM_SL_FOREST | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - plot type for GRM for the sawtimber estimation type on forest land |
| 3.3.49 | - | SUBP_SUBPTYP_GRM_SL_TIMBER | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - plot type for GRM for the sawtimber estimation type on timberland |
| 3.3.20 | - | SUBP_TPAGROW_UNADJ_AL_FOR EST | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - unadjusted trees per acre for growth for the all live estimation type on forest land |
| 3.3.40 | - | SUBP_TPAGROW_UNADJ_AL_TIM BER | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - unadjusted trees per acre for growth for the all live estimation type on timberland |
| 3.3.25 | - | SUBP_TPAGROW_UNADJ_GS_FOR EST | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - unadjusted trees per acre for growth for the growing-stock estimation type on forest land |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------------|--------------------|--|
| 3.3.45 | - | SUBP_TPAGROW_UNADJ_GS_TIMBER | TREE_GRM_COMPONENT | Trees with DIA \geq 5.0 inches - unadjusted trees per acre for growth for the growing-stock estimation type on timberland |
| 3.3.30 | - | SUBP_TPAGROW_UNADJ_SL_FOR EST | TREE_GRM_COMPONENT | Trees with DIA \geq 5.0 inches - unadjusted trees per acre for growth for the sawtimber estimation type on forest land |
| 3.3.50 | - | SUBP_TPAGROW_UNADJ_SL_TIM BER | TREE_GRM_COMPONENT | Trees with DIA \geq 5.0 inches - unadjusted trees per acre for growth for the sawtimber estimation type on timberland |
| 3.3.22 | - | SUBP_TPAMORT_UNADJ_AL_FORE ST | TREE_GRM_COMPONENT | Trees with DIA \geq 5.0 inches - unadjusted trees per acre per year for mortality for the all live estimation type on forest land |
| 3.3.42 | - | SUBP_TPAMORT_UNADJ_AL_TIMB ER | TREE_GRM_COMPONENT | Trees with DIA \geq 5.0 inches - unadjusted trees per acre per year for mortality for the all live estimation type on timberland |
| 3.3.27 | - | SUBP_TPAMORT_UNADJ_GS_FOR EST | TREE_GRM_COMPONENT | Trees with DIA \geq 5.0 inches - unadjusted trees per acre per year for mortality for the growing-stock estimation type on forest land |
| 3.3.47 | - | SUBP_TPAMORT_UNADJ_GS_TIMB ER | TREE_GRM_COMPONENT | Trees with DIA \geq 5.0 inches - unadjusted trees per acre per year for mortality for the growing-stock estimation type on timberland |
| 3.3.32 | - | SUBP_TPAMORT_UNADJ_SL_FORE ST | TREE_GRM_COMPONENT | Trees with DIA \geq 5.0 inches - unadjusted trees per acre per year for mortality for the sawtimber estimation type on forest land |
| 3.3.52 | - | SUBP_TPAMORT_UNADJ_SL_TIMB ER | TREE_GRM_COMPONENT | Trees with DIA \geq 5.0 inches - unadjusted trees per acre per year for mortality for the sawtimber estimation type on timberland |
| 3.3.21 | - | SUBP_TPAREMV_UNADJ_AL_FORE ST | TREE_GRM_COMPONENT | Trees with DIA \geq 5.0 inches - unadjusted trees per acre per year for removals for the all live estimation type on forest land |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|------------------------------|----------------------|---|
| 3.3.41 | - | SUBP_TPAREMV_UNADJ_AL_TIMBER | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for removals for the all live estimation type on timberland |
| 3.3.26 | - | SUBP_TPAREMV_UNADJ_GS_FOREST | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for removals for the growing-stock estimation type on forest land |
| 3.3.46 | - | SUBP_TPAREMV_UNADJ_GS_TIMBER | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for removals for the growing-stock estimation type on timberland |
| 3.3.31 | - | SUBP_TPAREMV_UNADJ_SL_FOREST | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for removals for the sawtimber estimation type on forest land |
| 3.3.51 | - | SUBP_TPAREMV_UNADJ_SL_TIMBER | TREE_GRM_COMPONENT | Trees with DIA ≥ 5.0 inches - unadjusted trees per acre per year for removals for the sawtimber estimation type on timberland |
| 2.4.58 | - | SUBPANEL | PLOT | Subpanel |
| 10.2.31 | - | SUBPANEL | PLOTSNAP | Subpanel |
| 2.6.13 | 3.6 | SUBPCOND | SUBPLOT | Subplot center condition |
| 2.7.17 | - | SUBPCOND_PROP | SUBP_COND | Subplot-condition proportion |
| 6.2.12 | - | SUBPLOT_SITE_LIMITATIONS | SUBPLOT_REGEN | Subplot site limitations |
| 2.5.31 | - | SUBPPROP_UNADJ | COND | Subplot proportion unadjusted |
| 2.9.4 | - | SUBPTYP | SUBP_COND_CHNG_MTRX | Plot type code |
| 3.6.5 | - | SUBPTYP | TREE_GRM_BEGIN | Plot type code |
| 3.5.5 | - | SUBPTYP | TREE_GRM_MIDPT | Plot type code |
| 3.4.6 | - | SUBPTYP | TREE_GRM_THRESHOLD | Plot type code |
| 3.3.10 | - | SUBPTYP_BEGIN | TREE_GRM_COMPONENT | Beginning plot type code |
| 3.3.12 | - | SUBPTYP_END | TREE_GRM_COMPONENT | Ending plot type code |
| 3.3.11 | - | SUBPTYP_MIDPT | TREE_GRM_COMPONENT | Midpoint plot type code |
| 2.9.9 | - | SUBPTYP_PROP_CHNG | SUBP_COND_CHNG_MTRX | Plot type proportion change |
| 11.6.25 | - | SUBSPECIES | REF_PLANT_DICTIONARY | Subspecies |
| 11.5.7 | - | SUBSPECIES | REF_SPECIES | Subspecies |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------------|--|
| 3.7.11 | - | SUBTYP_GRM | TREE_GRM_ESTN | Subplot type used for GRM estimation |
| 11.6.29 | - | SUBVAR | REF_PLANT_DICTIONARY | Subvariety indicator |
| 11.6.30 | - | SUBVARIETY | REF_PLANT_DICTIONARY | Subvariety |
| 11.8.3 | - | SYMBOL | REF_INVASIVE_SPECIES | Symbol |
| 11.6.3 | - | SYMBOL | REF_PLANT_DICTIONARY | Symbol |
| 11.6.2 | - | SYMBOL_TYPE | REF_PLANT_DICTIONARY | Symbol type |
| T | | | | |
| 8.2.29 | - | TEXTURE_CD | SUBP_SOIL_SAMPLE_LAYER | Texture code |
| 11.25.4 | - | THRESHOLD | REF_DAMAGE_AGENT | Threshold for damage agent |
| 3.4.5 | - | THRESHOLD_TYPE | TREE_GRM_THRESHOLD | Threshold type |
| 11.1.4 | - | EVAL_TYP | REF_POP_ATTRIBUTE | Timberland |
| 9.2.12 | - | TIMBERLAND_ONLY | POP_EVAL | Timberland only |
| 11.33.16 | - | TIMBERLAND_ONLY | REF_GRM_TYPE | Timberland only |
| 11.10.3 | - | TITLE | REF_HABTYP_PUBLICATION | Title of publication |
| 2.4.48 | - | TOPO_POSITION_PNW | PLOT | Topographic position, Pacific Northwest Research Station |
| 10.2.50 | - | TOPO_POSITION_PNW | PLOTSNAP | Topographic position, Pacific Northwest Research Station |
| 3.9.14 | - | TOTAGE | SEEDLING | Total age |
| 3.1.57 | - | TOTAGE | TREE | Total age |
| 3.9.22 | - | TPA_UNADJ | SEEDLING | Trees per acre unadjusted |
| 6.3.25 | - | TPA_UNADJ | SEEDLING_REGEN | Trees per acre unadjusted |
| 3.1.92 | - | TPA_UNADJ | TREE | Trees per acre unadjusted |
| 3.7.13 | - | TPAGROW_UNADJ | TREE_GRM_ESTN | Growth trees per acre unadjusted |
| 3.7.15 | - | TPAMORT_UNADJ | TREE_GRM_ESTN | Mortality trees per acre per year unadjusted |
| 3.7.14 | - | TPAREMV_UNADJ | TREE_GRM_ESTN | Removal trees per acre per year unadjusted |
| 7.3.17 | - | TRAMPLING | GRND_LYR_MICROQUAD | Trampling code (Interior Alaska) |
| 3.1.54 | 12.11 | TRANSCD | TREE | Foliage transparency code |
| 5.2.16 | - | TRANSdia | DWM_COARSE_WOODY_DEB_RIS | Transect diameter |
| 5.2.8 | - | TRANSECT | DWM_COARSE_WOODY_DEB_RIS | Transect |
| 5.3.7 | - | TRANSECT | DWM_DUFF_LITTER_FUEL | Transect |
| 5.4.7 | - | TRANSECT | DWM_FINE_WOODY_DEBRIS | Transect |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|----------------------|---|
| 5.6.38 | - | TRANSECT | DWM_RESIDUAL_PILE | Transect |
| 5.7.8 | - | TRANSECT | DWM_TRANSECT_SEGMENT | Transect |
| 7.1.9 | - | TRANSECT | GRND_CVR | Transect number |
| 7.2.12 | - | TRANSECT | GRND_LYR_FNCTL_GRP | Transect (Interior Alaska) |
| 7.3.12 | - | TRANSECT | GRND_LYR_MICROQUAD | Transect (Interior Alaska) |
| 5.7.26 | - | TRANSECT_LENGTH | DWM_TRANSECT_SEGMENT | Transect length |
| 3.3.1 | - | TRE_CN | TREE_GRM_COMPONENT | Tree sequence number |
| 3.6.1 | - | TRE_CN | TREE_GRM_BEGIN | Tree sequence number |
| 3.7.5 | - | TRE_CN | TREE_GRM_ESTN | Tree sequence number |
| 3.5.1 | - | TRE_CN | TREE_GRM_MIDPT | Tree sequence number |
| 3.4.1 | - | TRE_CN | TREE_GRM_THRESHOLD | Tree sequence number |
| 3.2.10 | - | TRE_CN | TREE_WOODLAND_STEMS | Tree sequence number |
| 3.10.10 | - | TREE | SITETREE | Site tree number |
| 3.1.10 | 5.2 | TREE | TREE | Tree number |
| 3.2.9 | - | TREE | TREE_WOODLAND_STEMS | Woodland tree number |
| 3.10.45 | - | TREE_ACT_RMRS | SITETREE | Actual tree number, Rocky Mountain Research Station |
| 3.1.142 | - | TREE_GRADE_NCRS | TREE | Tree grade, North Central Research Station |
| 3.1.23 | - | TREECLCD | TREE | Tree class code |
| 3.6.19 | - | TREECLCD | TREE_GRM_BEGIN | Tree class code |
| 3.5.19 | - | TREECLCD | TREE_GRM_MIDPT | Tree class code |
| 3.4.20 | - | TREECLCD | TREE_GRM_THRESHOLD | Tree class code |
| 3.1.141 | - | TREECLCD_31_NCRS | TREE | Tree class code (version 3.1), North Central Research Station |
| 3.1.145 | - | TREECLCD_31_NERS | TREE | Tree class code (version 3.1), Northeastern Research Station |
| 3.1.87 | - | TREECLCD_NCRS | TREE | Tree class code, North Central Research Station |
| 3.1.85 | - | TREECLCD_NERS | TREE | Tree class code, Northeastern Research Station |
| 3.10.44 | - | TREECLCD_RMRS | SITETREE | Tree class code, Rocky Mountain Research Station |
| 3.1.88 | - | TREECLCD_RMRS | TREE | Tree class code, Rocky Mountain Research Station |
| 3.1.86 | - | TREECLCD_SRS | TREE | Tree class code, Southern Research Station |
| 3.9.13 | 6.4 | TREECOUNT | SEEDLING | Tree count for seedlings |
| 3.9.21 | - | TREECOUNT_CALC | SEEDLING | Tree count used in calculations |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|------------------------|--|
| 3.1.26 | - | TREEGRCD | TREE | Tree grade code |
| 3.1.55 | - | TREEHISTCD | TREE | Tree history code |
| 2.5.141 | - | TREES_PRESENT_NCNS | COND | Trees present on nonforest, North Central Research Station |
| 2.5.142 | - | TREES_PRESENT_NERS | COND | Trees present on nonforest, Northeastern Research Station |
| 11.6.17 | - | TRINOMIAL_AUTHOR | REF_PLANT_DICTIONARY | Trinomial author |
| 2.5.44 | 2.5.21 | TRTCD1 | COND | Treatment code 1 |
| 2.5.143 | - | TRTCD1_P2A | COND | Treatment code 1, periodic to annual |
| 2.5.46 | 2.5.23 | TRTCD2 | COND | Treatment code 2 |
| 2.5.144 | - | TRTCD2_P2A | COND | Treatment code 2, periodic to annual |
| 2.5.48 | 2.5.25 | TRTCD3 | COND | Treatment code 3 |
| 2.5.145 | - | TRTCD3_P2A | COND | Treatment code 3, periodic to annual |
| 2.5.146 | - | TRTOPCD | COND | Treatment opportunity code |
| 2.5.45 | 2.5.22 | TRTYR1 | COND | Treatment year 1 |
| 2.5.147 | - | TRTYR1_P2A | COND | Treatment year 1, periodic to annual |
| 2.5.47 | 2.5.24 | TRTYR2 | COND | Treatment year 2 |
| 2.5.148 | - | TRTYR2_P2A | COND | Treatment year 2, periodic to annual |
| 2.5.49 | 2.5.26 | TRTYR3 | COND | Treatment year 3 |
| 2.5.149 | - | TRTYR3_P2A | COND | Treatment year 3, periodic to annual |
| 11.10.5 | - | TYPE | REF_HABTYP_PUBLICATION | Type of publication |
| 11.3.3 | - | TYPGRPCD | REF_FOREST_TYPE | Forest type group code |
| | | U | | |
| 3.1.48 | 5.18, 12.5 | UNCRCRD | TREE | Uncompacted live crown ratio |
| 4.1.11 | 9.6 | UNIQUE_SP_NBR | INVASIVE_SUBPLOT_SPP | Unique species number |
| 4.2.11 | 8.5.3 | UNIQUE_SP_NBR | P2VEG_SUBPLOT_SPP | Unique species number |
| 2.5.5 | - | UNITCD | COND | Survey unit code |
| 5.8.105 | - | UNITCD | COND_DWM_CALC | Survey unit code |
| 2.3.2 | - | UNITCD | COUNTY | Survey unit code |
| 7.1.5 | - | UNITCD | GRND_CVR | Survey unit code |
| 7.2.10 | - | UNITCD | GRND_LYR_FNCTL_GRP | Survey unit code |
| 7.3.8 | - | UNITCD | GRND_LYR_MICROQUAD | Survey unit code |
| 4.1.5 | - | UNITCD | INVASIVE_SUBPLOT_SPP | Survey unit code |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|------------------------|---|
| 4.3.4 | - | UNITCD | P2VEG_SUBP_STRUCTURE | Survey unit code |
| 4.2.5 | - | UNITCD | P2VEG_SUBPLOT_SPP | Survey unit code |
| 2.4.7 | - | UNITCD | PLOT | Survey unit code |
| 6.1.5 | - | UNITCD | PLOT_REGEN | Survey unit code |
| 10.1.4 | - | UNITCD | PLOTGEOM | Survey unit code |
| 10.2.7 | - | UNITCD | PLOTSNAP | Survey unit code |
| 9.6.6 | - | UNITCD | POP_PLOT_STRATUM_ASSGN | Survey unit code |
| 3.9.5 | - | UNITCD | SEEDLING | Survey unit code |
| 6.3.7 | - | UNITCD | SEEDLING_REGEN | Survey unit code |
| 3.10.6 | - | UNITCD | SITETREE | Survey unit code |
| 2.7.5 | - | UNITCD | SUBP_COND | Survey unit code |
| 8.1.10 | - | UNITCD | SUBP_SOIL_SAMPLE_LOC | Survey unit code |
| 2.6.6 | - | UNITCD | SUBPLOT | Survey unit code |
| 6.2.6 | - | UNITCD | SUBPLOT_REGEN | Survey unit code |
| 3.1.6 | - | UNITCD | TREE | Survey unit code |
| 3.2.5 | - | UNITCD | TREE_WOODLAND_STEMS | Survey unit code |
| 11.8.5 | - | UNITCD_LIST | REF_INVASIVE_SPECIES | Unit code list |
| 3.1.115 | - | UNKNOWN_DAMTYP1_PNWRS | TREE | Unknown damage type 1, Pacific Northwest Research Station |
| 3.1.116 | - | UNKNOWN_DAMTYP2_PNWRS | TREE | Unknown damage type 2, Pacific Northwest Research Station |
| 3.1.126 | - | UPPER_DIA | TREE | Upper stem diameter (Pacific Islands) |
| 3.1.127 | - | UPPER_DIA_HT | TREE | Upper stem diameter height (Pacific Islands) |
| 11.6.12 | - | US_NATIVITY | REF_PLANT_DICTIONARY | United States nativity |
| 8.1.30 | - | USED_IN_ESTIMATION_CD | SUBP_SOIL_SAMPLE_LOC | Used in estimation code |
| | | V | | |
| 11.9.6 | - | VALID | REF_HABTYP_DESCRIPTION | Valid |
| 11.10.6 | - | VALID | REF_HABTYP_PUBLICATION | Valid |
| 3.10.23 | - | VALIDCD | SITETREE | Validity code |
| 11.3.1 | - | VALUE | REF_FOREST_TYPE | Value |
| 11.4.1 | - | VALUE | REF_FOREST_TYPE_GROUP | Value |
| 11.14.2 | - | VALUE | REF_UNIT | Value |
| 11.6.26 | - | VAR | REF_PLANT_DICTIONARY | Variety indicator |
| 11.6.28 | - | VARIETY | REF_PLANT_DICTIONARY | Variety |
| 11.5.6 | - | VARIETY | REF_SPECIES | Variety |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|----------------------|--|
| 4.1.10 | - | VEG_FLDSPCD | INVASIVE_SUBPLOT_SPP | Vegetation field species code |
| 4.2.10 | - | VEG_FLDSPCD | P2VEG_SUBPLOT_SPP | Vegetation field species code |
| 4.1.12 | 9.5 | VEG_SPCD | INVASIVE_SUBPLOT_SPP | Vegetation species code |
| 4.2.12 | 8.5.2 | VEG_SPCD | P2VEG_SUBPLOT_SPP | Vegetation species code |
| 11.12.1 | - | VERSION | REF_FIADB_VERSION | Version identifier |
| 2.5.63 | - | VOL_LOC_GRP | COND | Volume location group |
| 3.1.43 | - | VOLBFRGS | TREE | Gross board-foot wood volume in the sawlog portion of a sawtimber tree |
| 3.6.49 | - | VOLBFRGS | TREE_GRM_BEGIN | Gross board-foot wood volume in the sawlog portion of a sawtimber tree at T1 |
| 3.5.49 | - | VOLBFRGS | TREE_GRM_MIDPT | Gross board-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint |
| 3.4.50 | - | VOLBFRGS | TREE_GRM_THRESHOLD | Gross board-foot wood volume in the sawlog portion of a sawtimber tree at the threshold |
| 3.1.42 | - | VOLBFNET | TREE | Net board-foot wood volume in the sawlog portion of a sawtimber tree |
| 3.6.50 | - | VOLBFNET | TREE_GRM_BEGIN | Net board-foot wood volume in the sawlog portion of a sawtimber tree at T1 |
| 3.5.50 | - | VOLBFNET | TREE_GRM_MIDPT | Net board-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint |
| 3.4.51 | - | VOLBFNET | TREE_GRM_THRESHOLD | Net board-foot wood volume in the sawlog portion of a sawtimber tree at the threshold |
| 3.1.157 | - | VOLBSGRS | TREE | Gross board-foot wood volume in the sawlog portion of a sawtimber tree (Scribner Rule) |
| 3.6.51 | - | VOLBSGRS | TREE_GRM_BEGIN | Gross board-foot wood volume in the sawlog portion of a sawtimber tree at T1 (Scribner Rule) |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------------|---|
| 3.5.51 | - | VOLBSGRS | TREE_GRM_MIDPT | Gross board-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint (Scribner Rule) |
| 3.4.52 | - | VOLBSGRS | TREE_GRM_THRESHOLD | Gross board-foot wood volume in the sawlog portion of a sawtimber tree at the threshold (Scribner Rule) |
| 3.1.158 | - | VOLBSNET | TREE | Net board-foot wood volume in the sawlog portion of a sawtimber tree (Scribner Rule) |
| 3.6.52 | - | VOLBSNET | TREE_GRM_BEGIN | Net board-foot wood volume in the sawlog portion of a sawtimber tree at T1 (Scribner Rule) |
| 3.5.52 | - | VOLBSNET | TREE_GRM_MIDPT | Net board-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint (Scribner Rule) |
| 3.4.53 | - | VOLBSNET | TREE_GRM_THRESHOLD | Net board-foot wood volume in the sawlog portion of a sawtimber tree at the threshold (Scribner Rule) |
| 5.2.22 | - | VOLCF | DWM_COARSE_WOODY_DEB_RIS | Gross cubic-foot volume of the piece |
| 5.6.20 | - | VOLCF | DWM_RESIDUALPILE | Gross cubic-foot volume of the residual pile |
| 5.2.49 | - | VOLCF_AC_COND | DWM_COARSE_WOODY_DEB_RIS | Gross cubic-foot volume per acre based on condition transect length actually measured, unadjusted |
| 5.2.48 | - | VOLCF_AC_PLOT | DWM_COARSE_WOODY_DEB_RIS | Gross cubic-foot volume per acre based on plot transect length actually measured, unadjusted |
| 5.2.47 | - | VOLCF_AC_UNADJ | DWM_COARSE_WOODY_DEB_RIS | Gross cubic-foot volume per acre based on target plot transect length, unadjusted |
| 3.1.39 | - | VOLCFGRS | TREE | Gross cubic-foot stem wood volume |
| 3.6.33 | - | VOLCFGRS | TREE_GRM_BEGIN | Gross cubic-foot stem wood volume at T1 |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------|--|
| 3.5.33 | - | VOLCFGRS | TREE_GRM_MIDPT | Gross cubic-foot stem wood volume at the midpoint |
| 3.4.34 | - | VOLCFGRS | TREE_GRM_THRESHOLD | Gross cubic-foot stem wood volume at the threshold |
| 3.1.185 | - | VOLCFGRS_BARK | TREE | Gross cubic-foot stem bark volume |
| 3.6.34 | - | VOLCFGRS_BARK | TREE_GRM_BEGIN | Gross cubic-foot stem bark volume at T1 |
| 3.5.34 | - | VOLCFGRS_BARK | TREE_GRM_MIDPT | Gross cubic-foot stem bark volume at the midpoint |
| 3.4.35 | - | VOLCFGRS_BARK | TREE_GRM_THRESHOLD | Gross cubic-foot stem bark volume at the threshold |
| 3.1.181 | - | VOLCFGRS_STUMP | TREE | Gross cubic-foot stump wood volume |
| 3.6.29 | - | VOLCFGRS_STUMP | TREE_GRM_BEGIN | Gross cubic-foot stump wood volume at T1 |
| 3.5.29 | - | VOLCFGRS_STUMP | TREE_GRM_MIDPT | Gross cubic-foot stump wood volume at the midpoint |
| 3.4.30 | - | VOLCFGRS_STUMP | TREE_GRM_THRESHOLD | Gross cubic-foot stump wood volume at the threshold |
| 3.1.182 | - | VOLCFGRS_STUMP_BARK | TREE | Gross cubic-foot stump bark volume |
| 3.6.30 | - | VOLCFGRS_STUMP_BARK | TREE_GRM_BEGIN | Gross cubic-foot stump bark volume at T1 |
| 3.5.30 | - | VOLCFGRS_STUMP_BARK | TREE_GRM_MIDPT | Gross cubic-foot stump bark volume at the midpoint |
| 3.4.31 | - | VOLCFGRS_STUMP_BARK | TREE_GRM_THRESHOLD | Gross cubic-foot stump bark volume at the threshold |
| 3.1.186 | - | VOLCFGRS_TOP | TREE | Gross cubic-foot stem-top wood volume |
| 3.6.35 | - | VOLCFGRS_TOP | TREE_GRM_BEGIN | Gross cubic-foot stem-top wood volume at T1 |
| 3.5.35 | - | VOLCFGRS_TOP | TREE_GRM_MIDPT | Gross cubic-foot stem-top wood volume at the midpoint |
| 3.4.36 | - | VOLCFGRS_TOP | TREE_GRM_THRESHOLD | Gross cubic-foot stem-top wood volume at the threshold |
| 3.1.187 | - | VOLCFGRS_TOP_BARK | TREE | Gross cubic-foot stem-top bark volume |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------|--|
| 3.6.36 | - | VOLCFG_RS_TOP_BARK | TREE_GRM_BEGIN | Gross cubic-foot stem-top bark volume at T1 |
| 3.5.36 | - | VOLCFG_RS_TOP_BARK | TREE_GRM_MIDPT | Gross cubic-foot stem-top bark volume at the midpoint |
| 3.4.37 | - | VOLCFG_RS_TOP_BARK | TREE_GRM_THRESHOLD | Gross cubic-foot stem-top bark volume at the threshold |
| 3.1.38 | - | VOLCFNET | TREE | Net cubic-foot stem wood volume |
| 3.6.41 | - | VOLCFNET | TREE_GRM_BEGIN | Net cubic-foot stem wood volume at T1 |
| 3.5.41 | - | VOLCFNET | TREE_GRM_MIDPT | Net cubic-foot stem wood volume at the midpoint |
| 3.4.42 | - | VOLCFNET | TREE_GRM_THRESHOLD | Net cubic-foot stem wood volume at the threshold |
| 3.1.191 | - | VOLCFNET_BARK | TREE | Net cubic-foot stem bark volume |
| 3.6.42 | - | VOLCFNET_BARK | TREE_GRM_BEGIN | Net cubic-foot stem bark volume at T1 |
| 3.5.42 | - | VOLCFNET_BARK | TREE_GRM_MIDPT | Net cubic-foot stem bark volume at the midpoint |
| 3.4.43 | - | VOLCFNET_BARK | TREE_GRM_THRESHOLD | Net cubic-foot stem bark volume at the threshold |
| 3.1.44 | - | VOLCFSND | TREE | Sound cubic-foot stem wood volume |
| 3.6.37 | - | VOLCFSND | TREE_GRM_BEGIN | Sound cubic-foot stem wood volume at T1 |
| 3.5.37 | - | VOLCFSND | TREE_GRM_MIDPT | Sound cubic-foot stem wood volume at the midpoint |
| 3.4.38 | - | VOLCFSND | TREE_GRM_THRESHOLD | Sound cubic-foot stem wood volume at the threshold |
| 3.1.188 | - | VOLCFSND_BARK | TREE | Sound cubic-foot stem bark volume |
| 3.6.38 | - | VOLCFSND_BARK | TREE_GRM_BEGIN | Sound cubic-foot stem bark volume at T1 |
| 3.5.38 | - | VOLCFSND_BARK | TREE_GRM_MIDPT | Sound cubic-foot stem bark volume at the midpoint |
| 3.4.39 | - | VOLCFSND_BARK | TREE_GRM_THRESHOLD | Sound cubic-foot stem bark volume at the threshold |
| 3.1.183 | - | VOLCFSND_STUMP | TREE | Sound cubic-foot stump wood volume |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------|--|
| 3.6.31 | - | VOLCFSND_STUMP | TREE_GRM_BEGIN | Sound cubic-foot stump wood volume at T1 |
| 3.5.31 | - | VOLCFSND_STUMP | TREE_GRM_MIDPT | Sound cubic-foot stump wood volume at the midpoint |
| 3.4.32 | - | VOLCFSND_STUMP | TREE_GRM_THRESHOLD | Sound cubic-foot stump wood volume at the threshold |
| 3.1.184 | - | VOLCFSND_STUMP_BARK | TREE | Sound cubic-foot stump bark volume |
| 3.6.32 | - | VOLCFSND_STUMP_BARK | TREE_GRM_BEGIN | Sound cubic-foot stump bark volume at T1 |
| 3.5.32 | - | VOLCFSND_STUMP_BARK | TREE_GRM_MIDPT | Sound cubic-foot stump bark volume at the midpoint |
| 3.4.33 | - | VOLCFSND_STUMP_BARK | TREE_GRM_THRESHOLD | Sound cubic-foot stump bark volume at the threshold |
| 3.1.189 | - | VOLCFSND_TOP | TREE | Sound cubic-foot stem-top wood volume |
| 3.6.39 | - | VOLCFSND_TOP | TREE_GRM_BEGIN | Sound cubic-foot stem-top wood volume at T1 |
| 3.5.39 | - | VOLCFSND_TOP | TREE_GRM_MIDPT | Sound cubic-foot stem-top wood volume at the midpoint |
| 3.4.40 | - | VOLCFSND_TOP | TREE_GRM_THRESHOLD | Sound cubic-foot stem-top wood volume at the threshold |
| 3.1.190 | - | VOLCFSND_TOP_BARK | TREE | Sound cubic-foot stem-top bark volume |
| 3.6.40 | - | VOLCFSND_TOP_BARK | TREE_GRM_BEGIN | Sound cubic-foot stem-top bark volume at T1 |
| 3.5.40 | - | VOLCFSND_TOP_BARK | TREE_GRM_MIDPT | Sound cubic-foot stem-top bark volume at the midpoint |
| 3.4.41 | - | VOLCFSND_TOP_BARK | TREE_GRM_THRESHOLD | Sound cubic-foot stem-top bark volume at the threshold |
| 3.1.41 | - | VOLCSGRS | TREE | Gross cubic-foot wood volume in the sawlog portion of a sawtimber tree |
| 3.6.43 | - | VOLCSGRS | TREE_GRM_BEGIN | Gross cubic-foot wood volume in the sawlog portion of a sawtimber tree at T1 |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------|---|
| 3.5.43 | - | VOLCSGRS | TREE_GRM_MIDPT | Gross cubic-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint |
| 3.4.44 | - | VOLCSGRS | TREE_GRM_THRESHOLD | Gross cubic-foot wood volume in the sawlog portion of a sawtimber tree at the threshold |
| 3.1.192 | - | VOLCSGRS_BARK | TREE | Gross cubic-foot bark volume in the sawlog portion of a sawtimber tree |
| 3.6.44 | - | VOLCSGRS_BARK | TREE_GRM_BEGIN | Gross cubic-foot bark volume in the sawlog portion of a sawtimber tree at T1 |
| 3.5.44 | - | VOLCSGRS_BARK | TREE_GRM_MIDPT | Gross cubic-foot bark volume in the sawlog portion of a sawtimber tree at the midpoint |
| 3.4.45 | - | VOLCSGRS_BARK | TREE_GRM_THRESHOLD | Gross cubic-foot bark volume in the sawlog portion of a sawtimber tree at the threshold |
| 3.1.40 | - | VOLCSNET | TREE | Net cubic-foot wood volume in the sawlog portion of a sawtimber tree |
| 3.6.47 | - | VOLCSNET | TREE_GRM_BEGIN | Net cubic-foot wood volume in the sawlog portion of a sawtimber tree at T1 |
| 3.5.47 | - | VOLCSNET | TREE_GRM_MIDPT | Net cubic-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint |
| 3.4.48 | - | VOLCSNET | TREE_GRM_THRESHOLD | Net cubic-foot wood volume in the sawlog portion of a sawtimber tree at the threshold |
| 3.1.194 | - | VOLCSNET_BARK | TREE | Net cubic-foot bark volume in the sawlog portion of a sawtimber tree |
| 3.6.48 | - | VOLCSNET_BARK | TREE_GRM_BEGIN | Net cubic-foot bark volume in the sawlog portion of a sawtimber tree at T1 |
| 3.5.48 | - | VOLCSNET_BARK | TREE_GRM_MIDPT | Net cubic-foot bark volume in the sawlog portion of a sawtimber tree at the midpoint |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------|--------------------|---|
| 3.4.49 | - | VOLCSNET_BARK | TREE_GRM_THRESHOLD | Net cubic-foot bark volume in the sawlog portion of a sawtimber tree at the threshold |
| 3.1.128 | - | VOLCSSND | TREE | Sound cubic-foot wood volume in the sawlog portion of a sawtimber tree |
| 3.6.45 | - | VOLCSSND | TREE_GRM_BEGIN | Sound cubic-foot wood volume in the sawlog portion of a sawtimber tree at T1 |
| 3.5.45 | - | VOLCSSND | TREE_GRM_MIDPT | Gross cubic-foot wood volume in the sawlog portion of a sawtimber tree at the midpoint |
| 3.4.46 | - | VOLCSSND | TREE_GRM_THRESHOLD | Gross cubic-foot wood volume in the sawlog portion of a sawtimber tree at the threshold |
| 3.1.193 | - | VOLCSSND_BARK | TREE | Sound cubic-foot bark volume in the sawlog portion of a sawtimber tree |
| 3.6.46 | - | VOLCSSND_BARK | TREE_GRM_BEGIN | Sound cubic-foot bark volume in the sawlog portion of a sawtimber tree at T1 |
| 3.5.46 | - | VOLCSSND_BARK | TREE_GRM_MIDPT | Sound cubic-foot bark volume in the sawlog portion of a sawtimber tree at the midpoint |
| 3.4.47 | - | VOLCSSND_BARK | TREE_GRM_THRESHOLD | Sound cubic-foot bark volume in the sawlog portion of a sawtimber tree at the threshold |
| 3.1.177 | - | VOLTSGRS | TREE | Gross cubic-foot total-stem wood volume |
| 3.6.25 | - | VOLTSGRS | TREE_GRM_BEGIN | Gross cubic-foot total-stem wood volume at T1 |
| 3.5.25 | - | VOLTSGRS | TREE_GRM_MIDPT | Gross cubic-foot total-stem wood volume at the midpoint |
| 3.4.26 | - | VOLTSGRS | TREE_GRM_THRESHOLD | Gross cubic-foot total-stem wood volume at the threshold |
| 3.1.178 | - | VOLTSGRS_BARK | TREE | Gross cubic-foot total-stem bark volume |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|-------------------------------|------------------------|--|
| 3.6.26 | - | VOLTSGRS_BARK | TREE_GRM_BEGIN | Gross cubic-foot total-stem bark volume at T1 |
| 3.5.26 | - | VOLTSGRS_BARK | TREE_GRM_MIDPT | Gross cubic-foot total-stem bark volume at the midpoint |
| 3.4.27 | - | VOLTSGRS_BARK | TREE_GRM_THRESHOLD | Gross cubic-foot total-stem bark volume at the threshold |
| 3.1.179 | - | VOLTSSND | TREE | Sound cubic-foot total-stem wood volume |
| 3.6.27 | - | VOLTSSND | TREE_GRM_BEGIN | Sound cubic-foot total-stem wood volume at T1 |
| 3.5.27 | - | VOLTSSND | TREE_GRM_MIDPT | Sound cubic-foot total-stem wood volume at the midpoint |
| 3.4.28 | - | VOLTSSND | TREE_GRM_THRESHOLD | Sound cubic-foot total-stem wood volume at the threshold |
| 3.1.180 | - | VOLTSSND_BARK | TREE | Sound cubic-foot total-stem bark volume |
| 3.6.28 | - | VOLTSSND_BARK | TREE_GRM_BEGIN | Sound cubic-foot total-stem bark volume at T1 |
| 3.5.28 | - | VOLTSSND_BARK | TREE_GRM_MIDPT | Sound cubic-foot total-stem bark volume at the midpoint |
| 3.4.29 | - | VOLTSSND_BARK | TREE_GRM_THRESHOLD | Sound cubic-foot total-stem bark volume at the midpoint |
| 8.2.12 | - | VSTNBR | SUBP_SOIL_SAMPLE_LAYER | Visit number |
| 8.1.12 | - | VSTNBR | SUBP_SOIL_SAMPLE_LOC | Visit number |
| | | W | | |
| 11.5.11 | - | W_SPGRPCD | REF_SPECIES | Western species group code |
| 8.2.23 | - | WATER_CONTENT_PCT_FIELD_MOIST | SUBP_SOIL_SAMPLE_LAYER | Field-moist water content percent |
| 8.2.24 | - | WATER_CONTENT_PCT_RESIDUAL | SUBP_SOIL_SAMPLE_LAYER | Residual water content percent |
| 8.2.25 | - | WATER_CONTENT_PCT_TOTAL | SUBP_SOIL_SAMPLE_LAYER | Total water content percent |
| 2.4.19 | 1.16 | WATERCD | PLOT | Water on plot code |
| 10.2.19 | - | WATERCD | PLOTSNAP | Water on plot code |
| 2.6.18 | 3.10 | WATERDEP | SUBPLOT | Snow/water depth |
| 3.1.37 | 5.11 | WDLDSSTEM | TREE | Woodland tree species stem count |

| Subsection | Field Guide section | Column name (attribute) | Oracle table name | Descriptive name |
|------------|---------------------|------------------------------|------------------------|---------------------------------------|
| 3.6.21 | - | WDLDSTEM | TREE_GRM_BEGIN | Woodland tree species stem count |
| 3.5.21 | - | WDLDSTEM | TREE_GRM_MIDPT | Woodland tree species stem count |
| 3.4.22 | - | WDLDSTEM | TREE_GRM_THRESHOLD | Woodland tree species stem count |
| 5.6.15 | - | WIDTH1 | DWM_RESIDUALPILE | Width first measurement |
| 5.6.18 | - | WIDTH2 | DWM_RESIDUALPILE | Width second measurement |
| 11.5.22 | - | WOOD_SPGR_GREENVOL_DRYWT | REF_SPECIES | Green specific gravity of wood |
| 11.5.23 | - | WOOD_SPGR_GREENVOL_DRYWT_CIT | REF_SPECIES | Citation for WOOD_SPGR_GREENVOL_DRYWT |
| 11.5.21 | - | WOODLAND | REF_SPECIES | Woodland species indicator |
| 8.2.20 | - | WT_AIR_DRY | SUBP_SOIL_SAMPLE_LAYER | Air-dry soil weight |
| 8.2.19 | - | WT_FIELD_MOIST | SUBP_SOIL_SAMPLE_LAYER | Field-moist soil weight |
| 8.2.21 | - | WT_OVEN_DRY | SUBP_SOIL_SAMPLE_LAYER | Oven-dry soil weight |
| 8.2.22 | - | WT_ROCK | SUBP_SOIL_SAMPLE_LAYER | Rock particle weight |
| | | X | | |
| 11.6.19 | - | XGENUS | REF_PLANT_DICTIONARY | Cross genus |
| 11.6.21 | - | XSPECIES | REF_PLANT_DICTIONARY | Cross species |
| 11.6.24 | - | XSUBSPECIES | REF_PLANT_DICTIONARY | Cross subspecies |
| 11.6.27 | - | XVARIETY | REF_PLANT_DICTIONARY | Cross variety |
| | | Y | | |
| 3.10.46 | - | YEAR AGE TAKEN | SITETREE | Year age taken |
| | | Z | | |

Section revision: 04.2024

Appendix A: Quick Links

Forest Inventory and Analysis (FIA) - National:

| Quick Link | Website (URL address) |
|---|---|
| FIA - National Program | https://www.fs.usda.gov/research/programs/fia |
| FIA - Nationwide Forest Inventory | https://www.fs.usda.gov/research/programs/nfi |
| FIA - Data and Tools | https://www.fs.usda.gov/research/programs/fia#data-and-tools |
| FIA - DataMart | https://apps.fs.usda.gov/fia/datamart/datamart.html |
| FIA - FIADB User Guides | https://www.fs.usda.gov/research/products/data-and-tools/tools/fia-datamart |
| FIA - Field Guides, Methods, and Procedures | https://www.fs.usda.gov/research/products/data-and-tools/tools/fia-datamart |

FIA - Research Stations:

| Quick Link | Website (URL address) |
|--|---|
| FIA - Northern Research Station | https://www.nrs.fs.usda.gov/fia/ |
| FIA - Southern Research Station | https://www.fs.usda.gov/srsfia/ |
| FIA - Rocky Mountain Research Station | https://www.fs.usda.gov/rm/ogden/ |
| FIA - Pacific Northwest Research Station | https://www.fs.usda.gov/pnw/program/rma |

USDA Forest Service:

| Quick Link | Website (URL address) |
|---|---|
| USDA Forest Service | https://www.fs.usda.gov/ |
| USDA Forest Service - FSGeodata Clearinghouse | https://data.fs.usda.gov/geodata/ |
| USDA Forest Service - National Programs and Offices | https://www.fs.usda.gov/about-agency/national-programs-offices |
| USDA Forest Service - Research & Development | https://www.fs.usda.gov/research/ |
| USDA Forest Service - Contact US | https://www.fs.usda.gov/about-agency/contact-us |
| USDA Forest Service - State, Private, and Tribal Forestry | https://www.fs.usda.gov/about-agency/state-private-forestry |
| USDA Forest Service - Understory (publications) | https://www.fs.usda.gov/research/understory |

Other:

| Quick Link | Website (URL address) |
|---|---|
| U.S. Geological Survey - National Water Information System (NWIS) | https://water.usgs.gov/GIS/huc.html |

Section revision: 01.2024

Appendix B: State, Survey Unit, and County Codes

Appendix Contents:

| Description |
|---------------------------------------|
| Ordered by State code |
| Pacific Islands |
| Caribbean Islands |

Ordered by State code

| State | State code | State abbreviation | Research station | Region or Station code |
|----------------------|------------|--------------------|------------------|------------------------|
| Alabama | 1 | AL | SRS | 33 |
| Alaska | 2 | AK | PNWRS-AK | 27 |
| Arizona | 4 | AZ | RMRS | 22 |
| Arkansas | 5 | AR | SRS | 33 |
| California | 6 | CA | PNWRS | 26 |
| Colorado | 8 | CO | RMRS | 22 |
| Connecticut | 9 | CT | NERS | 24 |
| Delaware | 10 | DE | NERS | 24 |
| Florida | 12 | FL | SRS | 33 |
| District of Columbia | 11 | DC | NERS | 24 |
| Georgia | 13 | GA | SRS | 33 |
| Hawaii | 15 | HI | PNWRS | 26 |
| Idaho | 16 | ID | RMRS | 22 |
| Illinois | 17 | IL | NCRS | 23 |
| Indiana | 18 | IN | NCRS | 23 |
| Iowa | 19 | IA | NCRS | 23 |
| Kansas | 20 | KS | NCRS | 23 |
| Kentucky | 21 | KY | SRS | 33 |
| Louisiana | 22 | LA | SRS | 33 |
| Maine | 23 | ME | NERS | 24 |
| Maryland | 24 | MD | NERS | 24 |
| Massachusetts | 25 | MA | NERS | 24 |
| Michigan | 26 | MI | NCRS | 23 |
| Minnesota | 27 | MN | NCRS | 23 |

| State | State code | State abbreviation | Research station | Region or Station code |
|--------------------------------|-------------------|---------------------------|-------------------------|-------------------------------|
| Mississippi | 28 | MS | SRS | 33 |
| Missouri | 29 | MO | NCRS | 23 |
| Montana | 30 | MT | RMRS | 22 |
| Nebraska | 31 | NE | NCRS | 23 |
| Nevada | 32 | NV | RMRS | 22 |
| New Hampshire | 33 | NH | NERS | 24 |
| New Jersey | 34 | NJ | NERS | 24 |
| New Mexico | 35 | NM | RMRS | 22 |
| New York | 36 | NY | NERS | 24 |
| North Carolina | 37 | NC | SRS | 33 |
| North Dakota | 38 | ND | NCRS | 23 |
| Ohio | 39 | OH | NERS | 24 |
| Oklahoma | 40 | OK | SRS | 33 |
| Oregon | 41 | OR | PNWRS | 26 |
| Pennsylvania | 42 | PA | NERS | 24 |
| Rhode Island | 44 | RI | NERS | 24 |
| South Carolina | 45 | SC | SRS | 33 |
| South Dakota | 46 | SD | NCRS | 23 |
| Tennessee | 47 | TN | SRS | 33 |
| Texas | 48 | TX | SRS | 33 |
| Utah | 49 | UT | RMRS | 22 |
| Vermont | 50 | VT | NERS | 24 |
| Virginia | 51 | VA | SRS | 33 |
| Washington | 53 | WA | PNWRS | 26 |
| West Virginia | 54 | WV | NERS | 24 |
| Wisconsin | 55 | WI | NCRS | 23 |
| Wyoming | 56 | WY | RMRS | 22 |
| American Samoa | 60 | AS | PNWRS | 26 |
| Federated States of Micronesia | 64 | FM | PNWRS | 26 |
| Guam | 66 | GU | PNWRS | 26 |
| Marshall Islands | 68 | MH | PNWRS | 26 |
| Northern Mariana Islands | 69 | MP | PNWRS | 26 |
| Palau | 70 | PW | PNWRS | 26 |
| Puerto Rico | 72 | PR | SRS | 33 |
| US Virgin Islands | 78 | VI | SRS | 33 |

Pacific Islands

The Pacific Islands group is defined based on the protocols and procedures used for data collection and compilation.

| STATE_NAME | STATECD | STATE_ABBR | RS | RSCD |
|--------------------------------|---------|------------|-------|------|
| Hawaii | 15 | HI | PNWRS | 26 |
| American Samoa | 60 | AS | PNWRS | 26 |
| Federated States of Micronesia | 64 | FM | PNWRS | 26 |
| Guam | 66 | GU | PNWRS | 26 |
| Marshall Islands | 68 | MH | PNWRS | 26 |
| Northern Mariana Islands | 69 | MP | PNWRS | 26 |
| Palau | 70 | PW | PNWRS | 26 |

Caribbean Islands

The Caribbean Islands group is defined based on the protocols and procedures used for data collection and compilation.

| STATE_NAME | STATECD | STATE_ABBR | RS | RSCD |
|-------------------|---------|------------|-----|------|
| Puerto Rico | 72 | PR | SRS | 33 |
| US Virgin Islands | 78 | VI | SRS | 33 |

Alabama

Alabama: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Alabama | 1 | AL | SRS | 33 |

Alabama: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 1 | 1 | Southwest-South | 3 | Baldwin |
| 1 | 1 | Southwest-South | 39 | Covington |
| 1 | 1 | Southwest-South | 53 | Escambia |
| 1 | 1 | Southwest-South | 97 | Mobile |
| 1 | 1 | Southwest-South | 129 | Washington |
| 1 | 2 | Southwest-North | 23 | Choctaw |
| 1 | 2 | Southwest-North | 25 | Clarke |
| 1 | 2 | Southwest-North | 35 | Conecuh |
| 1 | 2 | Southwest-North | 91 | Marengo |
| 1 | 2 | Southwest-North | 99 | Monroe |
| 1 | 2 | Southwest-North | 119 | Sumter |
| 1 | 2 | Southwest-North | 131 | Wilcox |
| 1 | 3 | Southeast | 1 | Autauga |
| 1 | 3 | Southeast | 5 | Barbour |
| 1 | 3 | Southeast | 11 | Bullock |
| 1 | 3 | Southeast | 13 | Butler |
| 1 | 3 | Southeast | 17 | Chambers |
| 1 | 3 | Southeast | 21 | Chilton |
| 1 | 3 | Southeast | 31 | Coffee |
| 1 | 3 | Southeast | 41 | Crenshaw |
| 1 | 3 | Southeast | 45 | Dale |
| 1 | 3 | Southeast | 47 | Dallas |
| 1 | 3 | Southeast | 51 | Elmore |
| 1 | 3 | Southeast | 61 | Geneva |
| 1 | 3 | Southeast | 67 | Henry |
| 1 | 3 | Southeast | 69 | Houston |
| 1 | 3 | Southeast | 81 | Lee |
| 1 | 3 | Southeast | 85 | Lowndes |
| 1 | 3 | Southeast | 87 | Macon |
| 1 | 3 | Southeast | 101 | Montgomery |
| 1 | 3 | Southeast | 109 | Pike |
| 1 | 3 | Southeast | 113 | Russell |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 1 | 3 | Southeast | 123 | Tallapoosa |
| 1 | 4 | West Central | 7 | Bibb |
| 1 | 4 | West Central | 57 | Fayette |
| 1 | 4 | West Central | 63 | Greene |
| 1 | 4 | West Central | 65 | Hale |
| 1 | 4 | West Central | 75 | Lamar |
| 1 | 4 | West Central | 93 | Marion |
| 1 | 4 | West Central | 105 | Perry |
| 1 | 4 | West Central | 107 | Pickens |
| 1 | 4 | West Central | 125 | Tuscaloosa |
| 1 | 5 | North Central | 9 | Blount |
| 1 | 5 | North Central | 15 | Calhoun |
| 1 | 5 | North Central | 19 | Cherokee |
| 1 | 5 | North Central | 27 | Clay |
| 1 | 5 | North Central | 29 | Cleburne |
| 1 | 5 | North Central | 37 | Coosa |
| 1 | 5 | North Central | 43 | Cullman |
| 1 | 5 | North Central | 55 | Etowah |
| 1 | 5 | North Central | 73 | Jefferson |
| 1 | 5 | North Central | 111 | Randolph |
| 1 | 5 | North Central | 115 | St. Clair |
| 1 | 5 | North Central | 117 | Shelby |
| 1 | 5 | North Central | 121 | Talladega |
| 1 | 5 | North Central | 127 | Walker |
| 1 | 5 | North Central | 133 | Winston |
| 1 | 6 | North | 33 | Colbert |
| 1 | 6 | North | 49 | DeKalb |
| 1 | 6 | North | 59 | Franklin |
| 1 | 6 | North | 71 | Jackson |
| 1 | 6 | North | 77 | Lauderdale |
| 1 | 6 | North | 79 | Lawrence |
| 1 | 6 | North | 83 | Limestone |
| 1 | 6 | North | 89 | Madison |
| 1 | 6 | North | 95 | Marshall |
| 1 | 6 | North | 103 | Morgan |

Alaska

Alaska: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Alaska | 2 | AK | PNWRS-AK | 27 |

Alaska: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---|
| 2 | 1 | Alaska | 13 | Aleutians East Borough |
| 2 | 1 | Alaska | 16 | Aleutians West Census Area |
| 2 | 1 | Alaska | 20 | Anchorage Borough |
| 2 | 1 | Alaska | 50 | Bethel Census Area |
| 2 | 1 | Alaska | 60 | Bristol Bay Borough |
| 2 | 1 | Alaska | 68 | Denali Borough |
| 2 | 1 | Alaska | 70 | Dillingham Census Area |
| 2 | 1 | Alaska | 90 | Fairbanks North Star Borough |
| 2 | 1 | Alaska | 100 | Haines Borough |
| 2 | 1 | Alaska | 110 | Juneau Borough |
| 2 | 1 | Alaska | 122 | Kenai Peninsula Borough |
| 2 | 1 | Alaska | 130 | Ketchikan Gateway Borough |
| 2 | 1 | Alaska | 150 | Kodiak Island Borough |
| 2 | 1 | Alaska | 164 | Lake and Peninsula Borough |
| 2 | 1 | Alaska | 170 | Matanuska-Susitna Borough |
| 2 | 1 | Alaska | 180 | Nome Census Area |
| 2 | 1 | Alaska | 185 | North Slope Borough |
| 2 | 1 | Alaska | 188 | Northwest Arctic Borough |
| 2 | 1 | Alaska | 201 | Prince of Wales-Outer Ketchikan Census Area |
| 2 | 1 | Alaska | 220 | Sitka Borough |
| 2 | 1 | Alaska | 232 | Skagway-Hoonah-Angoon Census Area |
| 2 | 1 | Alaska | 240 | Southeast Fairbanks Census Area |
| 2 | 1 | Alaska | 261 | Valdez-Cordova Census Area |
| 2 | 1 | Alaska | 270 | Wade Hampton Census Area |
| 2 | 1 | Alaska | 280 | Wrangell-Petersburg Census Area |
| 2 | 1 | Alaska | 282 | Yukon-Koyukuk Census Area |

Arizona

Arizona: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Arizona | 4 | AZ | RMRS | 22 |

Arizona: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 4 | 1 | Southern | 3 | Cochise |
| 4 | 1 | Southern | 9 | Graham |
| 4 | 1 | Southern | 11 | Greenlee |
| 4 | 1 | Southern | 12 | La Paz |
| 4 | 1 | Southern | 13 | Maricopa |
| 4 | 1 | Southern | 19 | Pima |
| 4 | 1 | Southern | 21 | Pinal |
| 4 | 1 | Southern | 23 | Santa Cruz |
| 4 | 1 | Southern | 27 | Yuma |
| 4 | 2 | Northern | 1 | Apache |
| 4 | 2 | Northern | 5 | Coconino |
| 4 | 2 | Northern | 7 | Gila |
| 4 | 2 | Northern | 15 | Mohave |
| 4 | 2 | Northern | 17 | Navajo |
| 4 | 2 | Northern | 25 | Yavapai |

Arkansas

Arkansas: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Arkansas | 5 | AR | SRS | 33 |

Arkansas: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 5 | 1 | South Delta | 1 | Arkansas |
| 5 | 1 | South Delta | 17 | Chicot |
| 5 | 1 | South Delta | 41 | Desho |
| 5 | 1 | South Delta | 69 | Jefferson |
| 5 | 1 | South Delta | 77 | Lee |
| 5 | 1 | South Delta | 79 | Lincoln |
| 5 | 1 | South Delta | 85 | Lonoke |
| 5 | 1 | South Delta | 95 | Monroe |
| 5 | 1 | South Delta | 107 | Phillips |
| 5 | 1 | South Delta | 117 | Prairie |
| 5 | 2 | North Delta | 21 | Clay |
| 5 | 2 | North Delta | 31 | Craighead |
| 5 | 2 | North Delta | 35 | Crittenden |
| 5 | 2 | North Delta | 37 | Cross |
| 5 | 2 | North Delta | 55 | Greene |
| 5 | 2 | North Delta | 67 | Jackson |
| 5 | 2 | North Delta | 75 | Lawrence |
| 5 | 2 | North Delta | 93 | Mississippi |
| 5 | 2 | North Delta | 111 | Poinsett |
| 5 | 2 | North Delta | 123 | St. Francis |
| 5 | 2 | North Delta | 147 | Woodruff |
| 5 | 3 | Southwest | 3 | Ashley |
| 5 | 3 | Southwest | 11 | Bradley |
| 5 | 3 | Southwest | 13 | Calhoun |
| 5 | 3 | Southwest | 19 | Clark |
| 5 | 3 | Southwest | 25 | Cleveland |
| 5 | 3 | Southwest | 27 | Columbia |
| 5 | 3 | Southwest | 39 | Dallas |
| 5 | 3 | Southwest | 43 | Drew |
| 5 | 3 | Southwest | 53 | Grant |
| 5 | 3 | Southwest | 57 | Hempstead |
| 5 | 3 | Southwest | 59 | Hot Spring |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 5 | 3 | Southwest | 61 | Howard |
| 5 | 3 | Southwest | 73 | Lafayette |
| 5 | 3 | Southwest | 81 | Little River |
| 5 | 3 | Southwest | 91 | Miller |
| 5 | 3 | Southwest | 99 | Nevada |
| 5 | 3 | Southwest | 103 | Ouachita |
| 5 | 3 | Southwest | 109 | Pike |
| 5 | 3 | Southwest | 133 | Sevier |
| 5 | 3 | Southwest | 139 | Union |
| 5 | 4 | Ouachita | 51 | Garland |
| 5 | 4 | Ouachita | 83 | Logan |
| 5 | 4 | Ouachita | 97 | Montgomery |
| 5 | 4 | Ouachita | 105 | Perry |
| 5 | 4 | Ouachita | 113 | Polk |
| 5 | 4 | Ouachita | 119 | Pulaski |
| 5 | 4 | Ouachita | 125 | Saline |
| 5 | 4 | Ouachita | 127 | Scott |
| 5 | 4 | Ouachita | 131 | Sebastian |
| 5 | 4 | Ouachita | 149 | Yell |
| 5 | 5 | Ozark | 5 | Baxter |
| 5 | 5 | Ozark | 7 | Benton |
| 5 | 5 | Ozark | 9 | Boone |
| 5 | 5 | Ozark | 15 | Carroll |
| 5 | 5 | Ozark | 23 | Cleburne |
| 5 | 5 | Ozark | 29 | Conway |
| 5 | 5 | Ozark | 33 | Crawford |
| 5 | 5 | Ozark | 45 | Faulkner |
| 5 | 5 | Ozark | 47 | Franklin |
| 5 | 5 | Ozark | 49 | Fulton |
| 5 | 5 | Ozark | 63 | Independence |
| 5 | 5 | Ozark | 65 | Izard |
| 5 | 5 | Ozark | 71 | Johnson |
| 5 | 5 | Ozark | 87 | Madison |
| 5 | 5 | Ozark | 89 | Marion |
| 5 | 5 | Ozark | 101 | Newton |
| 5 | 5 | Ozark | 115 | Pope |
| 5 | 5 | Ozark | 121 | Randolph |
| 5 | 5 | Ozark | 129 | Searcy |
| 5 | 5 | Ozark | 135 | Sharp |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 5 | 5 | Ozark | 137 | Stone |
| 5 | 5 | Ozark | 141 | Van Buren |
| 5 | 5 | Ozark | 143 | Washington |
| 5 | 5 | Ozark | 145 | White |

California

California: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| California | 6 | CA | PNWRS | 26 |

California: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 6 | 1 | North Coast | 15 | Del Norte |
| 6 | 1 | North Coast | 23 | Humboldt |
| 6 | 1 | North Coast | 45 | Mendocino |
| 6 | 1 | North Coast | 97 | Sonoma |
| 6 | 2 | North Interior | 35 | Lassen |
| 6 | 2 | North Interior | 49 | Modoc |
| 6 | 2 | North Interior | 89 | Shasta |
| 6 | 2 | North Interior | 93 | Siskiyou |
| 6 | 2 | North Interior | 105 | Trinity |
| 6 | 3 | Sacramento | 7 | Butte |
| 6 | 3 | Sacramento | 11 | Colusa |
| 6 | 3 | Sacramento | 17 | El Dorado |
| 6 | 3 | Sacramento | 21 | Glenn |
| 6 | 3 | Sacramento | 33 | Lake |
| 6 | 3 | Sacramento | 55 | Napa |
| 6 | 3 | Sacramento | 57 | Nevada |
| 6 | 3 | Sacramento | 61 | Placer |
| 6 | 3 | Sacramento | 63 | Plumas |
| 6 | 3 | Sacramento | 67 | Sacramento |
| 6 | 3 | Sacramento | 91 | Sierra |
| 6 | 3 | Sacramento | 101 | Sutter |
| 6 | 3 | Sacramento | 103 | Tehama |
| 6 | 3 | Sacramento | 113 | Yolo |
| 6 | 3 | Sacramento | 115 | Yuba |
| 6 | 4 | Central Coast | 1 | Alameda |
| 6 | 4 | Central Coast | 13 | Contra Costa |
| 6 | 4 | Central Coast | 41 | Marin |
| 6 | 4 | Central Coast | 53 | Monterey |
| 6 | 4 | Central Coast | 69 | San Benito |
| 6 | 4 | Central Coast | 75 | San Francisco |
| 6 | 4 | Central Coast | 79 | San Luis Obispo |
| 6 | 4 | Central Coast | 81 | San Mateo |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 6 | 4 | Central Coast | 83 | Santa Barbara |
| 6 | 4 | Central Coast | 85 | Santa Clara |
| 6 | 4 | Central Coast | 87 | Santa Cruz |
| 6 | 4 | Central Coast | 95 | Solano |
| 6 | 4 | Central Coast | 111 | Ventura |
| 6 | 5 | San Joaquin | 3 | Alpine |
| 6 | 5 | San Joaquin | 5 | Amador |
| 6 | 5 | San Joaquin | 9 | Calaveras |
| 6 | 5 | San Joaquin | 19 | Fresno |
| 6 | 5 | San Joaquin | 29 | Kern |
| 6 | 5 | San Joaquin | 31 | Kings |
| 6 | 5 | San Joaquin | 39 | Madera |
| 6 | 5 | San Joaquin | 43 | Mariposa |
| 6 | 5 | San Joaquin | 47 | Merced |
| 6 | 5 | San Joaquin | 51 | Mono |
| 6 | 5 | San Joaquin | 77 | San Joaquin |
| 6 | 5 | San Joaquin | 99 | Stanislaus |
| 6 | 5 | San Joaquin | 107 | Tulare |
| 6 | 5 | San Joaquin | 109 | Tuolumne |
| 6 | 6 | Southern | 25 | Imperial |
| 6 | 6 | Southern | 27 | Inyo |
| 6 | 6 | Southern | 37 | Los Angeles |
| 6 | 6 | Southern | 59 | Orange |
| 6 | 6 | Southern | 65 | Riverside |
| 6 | 6 | Southern | 71 | San Bernardino |
| 6 | 6 | Southern | 73 | San Diego |

Colorado

Colorado: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Colorado | 8 | CO | RMRS | 22 |

Colorado: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|----------------------|---------------------------|---------------------------|
| 8 | 1 | Northern Front Range | 13 | Boulder |
| 8 | 1 | Northern Front Range | 14 | Broomfield ^a |
| 8 | 1 | Northern Front Range | 19 | Clear Creek |
| 8 | 1 | Northern Front Range | 35 | Douglas |
| 8 | 1 | Northern Front Range | 39 | Elbert |
| 8 | 1 | Northern Front Range | 41 | El Paso |
| 8 | 1 | Northern Front Range | 47 | Gilpin |
| 8 | 1 | Northern Front Range | 59 | Jefferson |
| 8 | 1 | Northern Front Range | 65 | Lake |
| 8 | 1 | Northern Front Range | 69 | Larimer |
| 8 | 1 | Northern Front Range | 93 | Park |
| 8 | 1 | Northern Front Range | 119 | Teller |
| 8 | 2 | Southern Front Range | 15 | Chaffee |
| 8 | 2 | Southern Front Range | 23 | Costilla |
| 8 | 2 | Southern Front Range | 27 | Custer |
| 8 | 2 | Southern Front Range | 43 | Fremont |
| 8 | 2 | Southern Front Range | 55 | Huerfano |
| 8 | 2 | Southern Front Range | 71 | Las Animas |
| 8 | 2 | Southern Front Range | 101 | Pueblo |
| 8 | 3 | West Central | 3 | Alamosa |
| 8 | 3 | West Central | 21 | Conejos |
| 8 | 3 | West Central | 37 | Eagle |
| 8 | 3 | West Central | 49 | Grand |
| 8 | 3 | West Central | 51 | Gunnison |
| 8 | 3 | West Central | 53 | Hinsdale |
| 8 | 3 | West Central | 57 | Jackson |
| 8 | 3 | West Central | 79 | Mineral |
| 8 | 3 | West Central | 97 | Pitkin |
| 8 | 3 | West Central | 105 | Rio Grande |
| 8 | 3 | West Central | 107 | Routt |
| 8 | 3 | West Central | 109 | Saguache |
| 8 | 3 | West Central | 111 | San Juan |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 8 | 3 | West Central | 117 | Summit |
| 8 | 4 | Western | 7 | Archuleta |
| 8 | 4 | Western | 29 | Delta |
| 8 | 4 | Western | 33 | Dolores |
| 8 | 4 | Western | 45 | Garfield |
| 8 | 4 | Western | 67 | La Plata |
| 8 | 4 | Western | 77 | Mesa |
| 8 | 4 | Western | 81 | Moffat |
| 8 | 4 | Western | 83 | Montezuma |
| 8 | 4 | Western | 85 | Montrose |
| 8 | 4 | Western | 91 | Ouray |
| 8 | 4 | Western | 103 | Rio Blanco |
| 8 | 4 | Western | 113 | San Miguel |
| 8 | 5 | Eastern | 1 | Adams |
| 8 | 5 | Eastern | 5 | Arapahoe |
| 8 | 5 | Eastern | 9 | Baca |
| 8 | 5 | Eastern | 11 | Bent |
| 8 | 5 | Eastern | 17 | Cheyenne |
| 8 | 5 | Eastern | 25 | Crowley |
| 8 | 5 | Eastern | 31 | Denver |
| 8 | 5 | Eastern | 61 | Kiowa |
| 8 | 5 | Eastern | 63 | Kit Carson |
| 8 | 5 | Eastern | 73 | Lincoln |
| 8 | 5 | Eastern | 75 | Logan |
| 8 | 5 | Eastern | 87 | Morgan |
| 8 | 5 | Eastern | 89 | Otero |
| 8 | 5 | Eastern | 95 | Phillips |
| 8 | 5 | Eastern | 99 | Prowers |
| 8 | 5 | Eastern | 115 | Sedgwick |
| 8 | 5 | Eastern | 121 | Washington |
| 8 | 5 | Eastern | 123 | Weld |
| 8 | 5 | Eastern | 125 | Yuma |

^a Broomfield county is a new county in the 2010 census, but is not currently added to the REF_COUNTY table.

Connecticut

Connecticut: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|-------------|------------|--------------------|------------------|--------------------------|
| Connecticut | 9 | CT | NRS | 24 |

Connecticut: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 9 | 1 | Connecticut | 1 | Fairfield |
| 9 | 1 | Connecticut | 3 | Hartford |
| 9 | 1 | Connecticut | 5 | Litchfield |
| 9 | 1 | Connecticut | 7 | Middlesex |
| 9 | 1 | Connecticut | 9 | New Haven |
| 9 | 1 | Connecticut | 11 | New London |
| 9 | 1 | Connecticut | 13 | Tolland |
| 9 | 1 | Connecticut | 15 | Windham |

Delaware

Delaware: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Delaware | 10 | DE | NRS | 24 |

Delaware: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 10 | 1 | Delaware | 1 | Kent |
| 10 | 1 | Delaware | 3 | New Castle |
| 10 | 1 | Delaware | 5 | Sussex |

District of Columbia

District of Columbia: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|----------------------|------------|--------------------|------------------|--------------------------|
| District of Columbia | 11 | DC | NRS | 24 |

District of Columbia: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|----------------------|---------------------------|---------------------------|
| 11 | 1 | District of Columbia | 1 | District of Columbia |

Florida

Florida: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Florida | 12 | FL | SRS | 33 |

Florida: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 12 | 1 | Northeast | 1 | Alachua |
| 12 | 1 | Northeast | 3 | Baker |
| 12 | 1 | Northeast | 7 | Bradford |
| 12 | 1 | Northeast | 19 | Clay |
| 12 | 1 | Northeast | 23 | Columbia |
| 12 | 1 | Northeast | 29 | Dixie |
| 12 | 1 | Northeast | 31 | Duval |
| 12 | 1 | Northeast | 35 | Flagler |
| 12 | 1 | Northeast | 41 | Gilchrist |
| 12 | 1 | Northeast | 47 | Hamilton |
| 12 | 1 | Northeast | 67 | Lafayette |
| 12 | 1 | Northeast | 75 | Levy |
| 12 | 1 | Northeast | 79 | Madison |
| 12 | 1 | Northeast | 83 | Marion |
| 12 | 1 | Northeast | 89 | Nassau |
| 12 | 1 | Northeast | 107 | Putnam |
| 12 | 1 | Northeast | 109 | St. Johns |
| 12 | 1 | Northeast | 121 | Suwannee |
| 12 | 1 | Northeast | 123 | Taylor |
| 12 | 1 | Northeast | 125 | Union |
| 12 | 1 | Northeast | 127 | Volusia |
| 12 | 2 | Northwest | 5 | Bay |
| 12 | 2 | Northwest | 13 | Calhoun |
| 12 | 2 | Northwest | 33 | Escambia |
| 12 | 2 | Northwest | 37 | Franklin |
| 12 | 2 | Northwest | 39 | Gadsden |
| 12 | 2 | Northwest | 45 | Gulf |
| 12 | 2 | Northwest | 59 | Holmes |
| 12 | 2 | Northwest | 63 | Jackson |
| 12 | 2 | Northwest | 65 | Jefferson |
| 12 | 2 | Northwest | 73 | Leon |
| 12 | 2 | Northwest | 77 | Liberty |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 12 | 2 | Northwest | 91 | Okaloosa |
| 12 | 2 | Northwest | 113 | Santa Rosa |
| 12 | 2 | Northwest | 129 | Wakulla |
| 12 | 2 | Northwest | 131 | Walton |
| 12 | 2 | Northwest | 133 | Washington |
| 12 | 3 | Central | 9 | Brevard |
| 12 | 3 | Central | 17 | Citrus |
| 12 | 3 | Central | 27 | DeSoto |
| 12 | 3 | Central | 49 | Hardee |
| 12 | 3 | Central | 53 | Hernando |
| 12 | 3 | Central | 55 | Highlands |
| 12 | 3 | Central | 57 | Hillsborough |
| 12 | 3 | Central | 61 | Indian River |
| 12 | 3 | Central | 69 | Lake |
| 12 | 3 | Central | 81 | Manatee |
| 12 | 3 | Central | 93 | Okeechobee |
| 12 | 3 | Central | 95 | Orange |
| 12 | 3 | Central | 97 | Osceola |
| 12 | 3 | Central | 101 | Pasco |
| 12 | 3 | Central | 103 | Pinellas |
| 12 | 3 | Central | 105 | Polk |
| 12 | 3 | Central | 111 | St. Lucie |
| 12 | 3 | Central | 115 | Sarasota |
| 12 | 3 | Central | 117 | Seminole |
| 12 | 3 | Central | 119 | Sumter |
| 12 | 4 | South | 11 | Broward |
| 12 | 4 | South | 15 | Charlotte |
| 12 | 4 | South | 21 | Collier |
| 12 | 4 | South | 25 | Dade |
| 12 | 4 | South | 43 | Glades |
| 12 | 4 | South | 51 | Hendry |
| 12 | 4 | South | 71 | Lee |
| 12 | 4 | South | 85 | Martin |
| 12 | 4 | South | 87 | Monroe |
| 12 | 4 | South | 99 | Palm Beach |

Georgia

Georgia: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Georgia | 13 | GA | SRS | 33 |

Georgia: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 13 | 1 | Southeast | 1 | Appling |
| 13 | 1 | Southeast | 3 | Atkinson |
| 13 | 1 | Southeast | 5 | Bacon |
| 13 | 1 | Southeast | 25 | Brantley |
| 13 | 1 | Southeast | 29 | Bryan |
| 13 | 1 | Southeast | 31 | Bulloch |
| 13 | 1 | Southeast | 39 | Camden |
| 13 | 1 | Southeast | 43 | Candler |
| 13 | 1 | Southeast | 49 | Charlton |
| 13 | 1 | Southeast | 51 | Chatham |
| 13 | 1 | Southeast | 65 | Clinch |
| 13 | 1 | Southeast | 69 | Coffee |
| 13 | 1 | Southeast | 91 | Dodge |
| 13 | 1 | Southeast | 101 | Echols |
| 13 | 1 | Southeast | 103 | Effingham |
| 13 | 1 | Southeast | 107 | Emanuel |
| 13 | 1 | Southeast | 109 | Evans |
| 13 | 1 | Southeast | 127 | Glynn |
| 13 | 1 | Southeast | 161 | Jeff Davis |
| 13 | 1 | Southeast | 165 | Jenkins |
| 13 | 1 | Southeast | 167 | Johnson |
| 13 | 1 | Southeast | 175 | Laurens |
| 13 | 1 | Southeast | 179 | Liberty |
| 13 | 1 | Southeast | 183 | Long |
| 13 | 1 | Southeast | 191 | McIntosh |
| 13 | 1 | Southeast | 209 | Montgomery |
| 13 | 1 | Southeast | 229 | Pierce |
| 13 | 1 | Southeast | 251 | Screven |
| 13 | 1 | Southeast | 267 | Tattnall |
| 13 | 1 | Southeast | 271 | Telfair |
| 13 | 1 | Southeast | 279 | Toombs |
| 13 | 1 | Southeast | 283 | Treutlen |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 13 | 1 | Southeast | 299 | Ware |
| 13 | 1 | Southeast | 305 | Wayne |
| 13 | 1 | Southeast | 309 | Wheeler |
| 13 | 2 | Southwest | 7 | Baker |
| 13 | 2 | Southwest | 17 | Ben Hill |
| 13 | 2 | Southwest | 19 | Berrien |
| 13 | 2 | Southwest | 27 | Brooks |
| 13 | 2 | Southwest | 71 | Colquitt |
| 13 | 2 | Southwest | 75 | Cook |
| 13 | 2 | Southwest | 81 | Crisp |
| 13 | 2 | Southwest | 87 | Decatur |
| 13 | 2 | Southwest | 93 | Dooly |
| 13 | 2 | Southwest | 99 | Early |
| 13 | 2 | Southwest | 131 | Grady |
| 13 | 2 | Southwest | 155 | Irwin |
| 13 | 2 | Southwest | 173 | Lanier |
| 13 | 2 | Southwest | 185 | Lowndes |
| 13 | 2 | Southwest | 201 | Miller |
| 13 | 2 | Southwest | 205 | Mitchell |
| 13 | 2 | Southwest | 253 | Seminole |
| 13 | 2 | Southwest | 275 | Thomas |
| 13 | 2 | Southwest | 277 | Tift |
| 13 | 2 | Southwest | 287 | Turner |
| 13 | 2 | Southwest | 315 | Wilcox |
| 13 | 2 | Southwest | 321 | Worth |
| 13 | 3 | Central | 9 | Baldwin |
| 13 | 3 | Central | 21 | Bibb |
| 13 | 3 | Central | 23 | Bleckley |
| 13 | 3 | Central | 33 | Burke |
| 13 | 3 | Central | 35 | Butts |
| 13 | 3 | Central | 37 | Calhoun |
| 13 | 3 | Central | 53 | Chattahoochee |
| 13 | 3 | Central | 61 | Clay |
| 13 | 3 | Central | 73 | Columbia |
| 13 | 3 | Central | 79 | Crawford |
| 13 | 3 | Central | 95 | Dougherty |
| 13 | 3 | Central | 125 | Glascock |
| 13 | 3 | Central | 133 | Greene |
| 13 | 3 | Central | 141 | Hancock |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 13 | 3 | Central | 145 | Harris |
| 13 | 3 | Central | 153 | Houston |
| 13 | 3 | Central | 159 | Jasper |
| 13 | 3 | Central | 163 | Jefferson |
| 13 | 3 | Central | 169 | Jones |
| 13 | 3 | Central | 171 | Lamar |
| 13 | 3 | Central | 177 | Lee |
| 13 | 3 | Central | 181 | Lincoln |
| 13 | 3 | Central | 189 | McDuffie |
| 13 | 3 | Central | 193 | Macon |
| 13 | 3 | Central | 197 | Marion |
| 13 | 3 | Central | 207 | Monroe |
| 13 | 3 | Central | 211 | Morgan |
| 13 | 3 | Central | 215 | Muscogee |
| 13 | 3 | Central | 225 | Peach |
| 13 | 3 | Central | 231 | Pike |
| 13 | 3 | Central | 235 | Pulaski |
| 13 | 3 | Central | 237 | Putnam |
| 13 | 3 | Central | 239 | Quitman |
| 13 | 3 | Central | 243 | Randolph |
| 13 | 3 | Central | 245 | Richmond |
| 13 | 3 | Central | 249 | Schley |
| 13 | 3 | Central | 259 | Stewart |
| 13 | 3 | Central | 261 | Sumter |
| 13 | 3 | Central | 263 | Talbot |
| 13 | 3 | Central | 265 | Taliaferro |
| 13 | 3 | Central | 269 | Taylor |
| 13 | 3 | Central | 273 | Terrell |
| 13 | 3 | Central | 289 | Twiggs |
| 13 | 3 | Central | 293 | Upson |
| 13 | 3 | Central | 301 | Warren |
| 13 | 3 | Central | 303 | Washington |
| 13 | 3 | Central | 307 | Webster |
| 13 | 3 | Central | 317 | Wilkes |
| 13 | 3 | Central | 319 | Wilkinson |
| 13 | 4 | North Central | 11 | Banks |
| 13 | 4 | North Central | 13 | Barrow |
| 13 | 4 | North Central | 45 | Carroll |
| 13 | 4 | North Central | 59 | Clarke |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 13 | 4 | North Central | 63 | Clayton |
| 13 | 4 | North Central | 67 | Cobb |
| 13 | 4 | North Central | 77 | Coweta |
| 13 | 4 | North Central | 89 | DeKalb |
| 13 | 4 | North Central | 97 | Douglas |
| 13 | 4 | North Central | 105 | Elbert |
| 13 | 4 | North Central | 113 | Fayette |
| 13 | 4 | North Central | 117 | Forsyth |
| 13 | 4 | North Central | 119 | Franklin |
| 13 | 4 | North Central | 121 | Fulton |
| 13 | 4 | North Central | 135 | Gwinnett |
| 13 | 4 | North Central | 139 | Hall |
| 13 | 4 | North Central | 143 | Haralson |
| 13 | 4 | North Central | 147 | Hart |
| 13 | 4 | North Central | 149 | Heard |
| 13 | 4 | North Central | 151 | Henry |
| 13 | 4 | North Central | 157 | Jackson |
| 13 | 4 | North Central | 195 | Madison |
| 13 | 4 | North Central | 199 | Meriwether |
| 13 | 4 | North Central | 217 | Newton |
| 13 | 4 | North Central | 219 | Oconee |
| 13 | 4 | North Central | 221 | Oglethorpe |
| 13 | 4 | North Central | 223 | Paulding |
| 13 | 4 | North Central | 233 | Polk |
| 13 | 4 | North Central | 247 | Rockdale |
| 13 | 4 | North Central | 255 | Spalding |
| 13 | 4 | North Central | 285 | Troup |
| 13 | 4 | North Central | 297 | Walton |
| 13 | 5 | North | 15 | Bartow |
| 13 | 5 | North | 47 | Catoosa |
| 13 | 5 | North | 55 | Chattooga |
| 13 | 5 | North | 57 | Cherokee |
| 13 | 5 | North | 83 | Dade |
| 13 | 5 | North | 85 | Dawson |
| 13 | 5 | North | 111 | Fannin |
| 13 | 5 | North | 115 | Floyd |
| 13 | 5 | North | 123 | Gilmer |
| 13 | 5 | North | 129 | Gordon |
| 13 | 5 | North | 137 | Habersham |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 13 | 5 | North | 187 | Lumpkin |
| 13 | 5 | North | 213 | Murray |
| 13 | 5 | North | 227 | Pickens |
| 13 | 5 | North | 241 | Rabun |
| 13 | 5 | North | 257 | Stephens |
| 13 | 5 | North | 281 | Towns |
| 13 | 5 | North | 291 | Union |
| 13 | 5 | North | 295 | Walker |
| 13 | 5 | North | 311 | White |
| 13 | 5 | North | 313 | Whitfield |

Hawaii

Hawaii: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Hawaii | 15 | HI | PNWRS | 26 |

Hawaii: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 15 | 1 | Hawaii | 1 | Hawaii |
| 15 | 1 | Hawaii | 3 | Honolulu |
| 15 | 1 | Hawaii | 5 | Kalawao |
| 15 | 1 | Hawaii | 7 | Kauai |
| 15 | 1 | Hawaii | 9 | Maui |

Idaho

Idaho: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Idaho | 16 | ID | RMRS | 22 |

Idaho: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 16 | 1 | Northern | 9 | Benewah |
| 16 | 1 | Northern | 17 | Bonner |
| 16 | 1 | Northern | 21 | Boundary |
| 16 | 1 | Northern | 35 | Clearwater |
| 16 | 1 | Northern | 49 | Idaho |
| 16 | 1 | Northern | 55 | Kootenai |
| 16 | 1 | Northern | 57 | Latah |
| 16 | 1 | Northern | 61 | Lewis |
| 16 | 1 | Northern | 69 | Nez Perce |
| 16 | 1 | Northern | 79 | Shoshone |
| 16 | 2 | Southwestern | 1 | Ada |
| 16 | 2 | Southwestern | 3 | Adams |
| 16 | 2 | Southwestern | 15 | Boise |
| 16 | 2 | Southwestern | 27 | Canyon |
| 16 | 2 | Southwestern | 39 | Elmore |
| 16 | 2 | Southwestern | 45 | Gem |
| 16 | 2 | Southwestern | 73 | Owyhee |
| 16 | 2 | Southwestern | 75 | Payette |
| 16 | 2 | Southwestern | 85 | Valley |
| 16 | 2 | Southwestern | 87 | Washington |
| 16 | 3 | Southeastern | 5 | Bannock |
| 16 | 3 | Southeastern | 7 | Bear Lake |
| 16 | 3 | Southeastern | 11 | Bingham |
| 16 | 3 | Southeastern | 13 | Blaine |
| 16 | 3 | Southeastern | 19 | Bonneville |
| 16 | 3 | Southeastern | 23 | Butte |
| 16 | 3 | Southeastern | 25 | Camas |
| 16 | 3 | Southeastern | 29 | Caribou |
| 16 | 3 | Southeastern | 31 | Cassia |
| 16 | 3 | Southeastern | 33 | Clark |
| 16 | 3 | Southeastern | 37 | Custer |
| 16 | 3 | Southeastern | 41 | Franklin |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 16 | 3 | Southeastern | 43 | Fremont |
| 16 | 3 | Southeastern | 47 | Gooding |
| 16 | 3 | Southeastern | 51 | Jefferson |
| 16 | 3 | Southeastern | 53 | Jerome |
| 16 | 3 | Southeastern | 59 | Lemhi |
| 16 | 3 | Southeastern | 63 | Lincoln |
| 16 | 3 | Southeastern | 65 | Madison |
| 16 | 3 | Southeastern | 67 | Minidoka |
| 16 | 3 | Southeastern | 71 | Oneida |
| 16 | 3 | Southeastern | 77 | Power |
| 16 | 3 | Southeastern | 81 | Teton |
| 16 | 3 | Southeastern | 83 | Twin Falls |

Illinois

Illinois: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Illinois | 17 | IL | NRS | 24 |

Illinois: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 17 | 1 | Southern | 3 | Alexander |
| 17 | 1 | Southern | 55 | Franklin |
| 17 | 1 | Southern | 59 | Gallatin |
| 17 | 1 | Southern | 65 | Hamilton |
| 17 | 1 | Southern | 69 | Hardin |
| 17 | 1 | Southern | 77 | Jackson |
| 17 | 1 | Southern | 87 | Johnson |
| 17 | 1 | Southern | 127 | Massac |
| 17 | 1 | Southern | 145 | Perry |
| 17 | 1 | Southern | 151 | Pope |
| 17 | 1 | Southern | 153 | Pulaski |
| 17 | 1 | Southern | 157 | Randolph |
| 17 | 1 | Southern | 165 | Saline |
| 17 | 1 | Southern | 181 | Union |
| 17 | 1 | Southern | 193 | White |
| 17 | 1 | Southern | 199 | Williamson |
| 17 | 2 | Claypan | 5 | Bond |
| 17 | 2 | Claypan | 13 | Calhoun |
| 17 | 2 | Claypan | 23 | Clark |
| 17 | 2 | Claypan | 25 | Clay |
| 17 | 2 | Claypan | 27 | Clinton |
| 17 | 2 | Claypan | 33 | Crawford |
| 17 | 2 | Claypan | 35 | Cumberland |
| 17 | 2 | Claypan | 47 | Edwards |
| 17 | 2 | Claypan | 49 | Effingham |
| 17 | 2 | Claypan | 51 | Fayette |
| 17 | 2 | Claypan | 61 | Greene |
| 17 | 2 | Claypan | 79 | Jasper |
| 17 | 2 | Claypan | 81 | Jefferson |
| 17 | 2 | Claypan | 83 | Jersey |
| 17 | 2 | Claypan | 101 | Lawrence |
| 17 | 2 | Claypan | 117 | Macoupin |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 17 | 2 | Claypan | 119 | Madison |
| 17 | 2 | Claypan | 121 | Marion |
| 17 | 2 | Claypan | 133 | Monroe |
| 17 | 2 | Claypan | 135 | Montgomery |
| 17 | 2 | Claypan | 159 | Richland |
| 17 | 2 | Claypan | 163 | St. Clair |
| 17 | 2 | Claypan | 173 | Shelby |
| 17 | 2 | Claypan | 185 | Wabash |
| 17 | 2 | Claypan | 189 | Washington |
| 17 | 2 | Claypan | 191 | Wayne |
| 17 | 3 | Prairie | 1 | Adams |
| 17 | 3 | Prairie | 7 | Boone |
| 17 | 3 | Prairie | 9 | Brown |
| 17 | 3 | Prairie | 11 | Bureau |
| 17 | 3 | Prairie | 15 | Carroll |
| 17 | 3 | Prairie | 17 | Cass |
| 17 | 3 | Prairie | 19 | Champaign |
| 17 | 3 | Prairie | 21 | Christian |
| 17 | 3 | Prairie | 29 | Coles |
| 17 | 3 | Prairie | 31 | Cook |
| 17 | 3 | Prairie | 37 | DeKalb |
| 17 | 3 | Prairie | 39 | De Witt |
| 17 | 3 | Prairie | 41 | Douglas |
| 17 | 3 | Prairie | 43 | DuPage |
| 17 | 3 | Prairie | 45 | Edgar |
| 17 | 3 | Prairie | 53 | Ford |
| 17 | 3 | Prairie | 57 | Fulton |
| 17 | 3 | Prairie | 63 | Grundy |
| 17 | 3 | Prairie | 67 | Hancock |
| 17 | 3 | Prairie | 71 | Henderson |
| 17 | 3 | Prairie | 73 | Henry |
| 17 | 3 | Prairie | 75 | Iroquois |
| 17 | 3 | Prairie | 85 | Jo Daviess |
| 17 | 3 | Prairie | 89 | Kane |
| 17 | 3 | Prairie | 91 | Kankakee |
| 17 | 3 | Prairie | 93 | Kendall |
| 17 | 3 | Prairie | 95 | Knox |
| 17 | 3 | Prairie | 97 | Lake |
| 17 | 3 | Prairie | 99 | La Salle |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 17 | 3 | Prairie | 103 | Lee |
| 17 | 3 | Prairie | 105 | Livingston |
| 17 | 3 | Prairie | 107 | Logan |
| 17 | 3 | Prairie | 109 | McDonough |
| 17 | 3 | Prairie | 111 | McHenry |
| 17 | 3 | Prairie | 113 | McLean |
| 17 | 3 | Prairie | 115 | Macon |
| 17 | 3 | Prairie | 123 | Marshall |
| 17 | 3 | Prairie | 125 | Mason |
| 17 | 3 | Prairie | 129 | Menard |
| 17 | 3 | Prairie | 131 | Mercer |
| 17 | 3 | Prairie | 137 | Morgan |
| 17 | 3 | Prairie | 139 | Moultrie |
| 17 | 3 | Prairie | 141 | Ogle |
| 17 | 3 | Prairie | 143 | Peoria |
| 17 | 3 | Prairie | 147 | Piatt |
| 17 | 3 | Prairie | 149 | Pike |
| 17 | 3 | Prairie | 155 | Putnam |
| 17 | 3 | Prairie | 161 | Rock Island |
| 17 | 3 | Prairie | 167 | Sangamon |
| 17 | 3 | Prairie | 169 | Schuylerville |
| 17 | 3 | Prairie | 171 | Scott |
| 17 | 3 | Prairie | 175 | Stark |
| 17 | 3 | Prairie | 177 | Stephenson |
| 17 | 3 | Prairie | 179 | Tazewell |
| 17 | 3 | Prairie | 183 | Vermilion |
| 17 | 3 | Prairie | 187 | Warren |
| 17 | 3 | Prairie | 195 | Whiteside |
| 17 | 3 | Prairie | 197 | Will |
| 17 | 3 | Prairie | 201 | Winnebago |
| 17 | 3 | Prairie | 203 | Woodford |

Indiana

Indiana: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Indiana | 18 | IN | NRS | 24 |

Indiana: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 18 | 1 | Lower Wabash | 21 | Clay |
| 18 | 1 | Lower Wabash | 27 | Daviess |
| 18 | 1 | Lower Wabash | 51 | Gibson |
| 18 | 1 | Lower Wabash | 55 | Greene |
| 18 | 1 | Lower Wabash | 83 | Knox |
| 18 | 1 | Lower Wabash | 101 | Martin |
| 18 | 1 | Lower Wabash | 121 | Parke |
| 18 | 1 | Lower Wabash | 125 | Pike |
| 18 | 1 | Lower Wabash | 129 | Posey |
| 18 | 1 | Lower Wabash | 133 | Putnam |
| 18 | 1 | Lower Wabash | 153 | Sullivan |
| 18 | 1 | Lower Wabash | 163 | Vanderburgh |
| 18 | 1 | Lower Wabash | 165 | Vermillion |
| 18 | 1 | Lower Wabash | 167 | Vigo |
| 18 | 2 | Knobs | 13 | Brown |
| 18 | 2 | Knobs | 19 | Clark |
| 18 | 2 | Knobs | 25 | Crawford |
| 18 | 2 | Knobs | 37 | Dubois |
| 18 | 2 | Knobs | 43 | Floyd |
| 18 | 2 | Knobs | 61 | Harrison |
| 18 | 2 | Knobs | 71 | Jackson |
| 18 | 2 | Knobs | 93 | Lawrence |
| 18 | 2 | Knobs | 105 | Monroe |
| 18 | 2 | Knobs | 109 | Morgan |
| 18 | 2 | Knobs | 117 | Orange |
| 18 | 2 | Knobs | 119 | Owen |
| 18 | 2 | Knobs | 123 | Perry |
| 18 | 2 | Knobs | 143 | Scott |
| 18 | 2 | Knobs | 147 | Spencer |
| 18 | 2 | Knobs | 173 | Warrick |
| 18 | 2 | Knobs | 175 | Washington |
| 18 | 3 | Upland Flats | 29 | Dearborn |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 18 | 3 | Upland Flats | 41 | Fayette |
| 18 | 3 | Upland Flats | 47 | Franklin |
| 18 | 3 | Upland Flats | 77 | Jefferson |
| 18 | 3 | Upland Flats | 79 | Jennings |
| 18 | 3 | Upland Flats | 115 | Ohio |
| 18 | 3 | Upland Flats | 137 | Ripley |
| 18 | 3 | Upland Flats | 155 | Switzerland |
| 18 | 3 | Upland Flats | 161 | Union |
| 18 | 4 | Northern | 1 | Adams |
| 18 | 4 | Northern | 3 | Allen |
| 18 | 4 | Northern | 5 | Bartholomew |
| 18 | 4 | Northern | 7 | Benton |
| 18 | 4 | Northern | 9 | Blackford |
| 18 | 4 | Northern | 11 | Boone |
| 18 | 4 | Northern | 15 | Carroll |
| 18 | 4 | Northern | 17 | Cass |
| 18 | 4 | Northern | 23 | Clinton |
| 18 | 4 | Northern | 31 | Decatur |
| 18 | 4 | Northern | 33 | De Kalb |
| 18 | 4 | Northern | 35 | Delaware |
| 18 | 4 | Northern | 39 | Elkhart |
| 18 | 4 | Northern | 45 | Fountain |
| 18 | 4 | Northern | 49 | Fulton |
| 18 | 4 | Northern | 53 | Grant |
| 18 | 4 | Northern | 57 | Hamilton |
| 18 | 4 | Northern | 59 | Hancock |
| 18 | 4 | Northern | 63 | Hendricks |
| 18 | 4 | Northern | 65 | Henry |
| 18 | 4 | Northern | 67 | Howard |
| 18 | 4 | Northern | 69 | Huntington |
| 18 | 4 | Northern | 73 | Jasper |
| 18 | 4 | Northern | 75 | Jay |
| 18 | 4 | Northern | 81 | Johnson |
| 18 | 4 | Northern | 85 | Kosciusko |
| 18 | 4 | Northern | 87 | Lagrange |
| 18 | 4 | Northern | 89 | Lake |
| 18 | 4 | Northern | 91 | La Porte |
| 18 | 4 | Northern | 95 | Madison |
| 18 | 4 | Northern | 97 | Marion |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 18 | 4 | Northern | 99 | Marshall |
| 18 | 4 | Northern | 103 | Miami |
| 18 | 4 | Northern | 107 | Montgomery |
| 18 | 4 | Northern | 111 | Newton |
| 18 | 4 | Northern | 113 | Noble |
| 18 | 4 | Northern | 127 | Porter |
| 18 | 4 | Northern | 131 | Pulaski |
| 18 | 4 | Northern | 135 | Randolph |
| 18 | 4 | Northern | 139 | Rush |
| 18 | 4 | Northern | 141 | St. Joseph |
| 18 | 4 | Northern | 145 | Shelby |
| 18 | 4 | Northern | 149 | Starke |
| 18 | 4 | Northern | 151 | Steuben |
| 18 | 4 | Northern | 157 | Tippecanoe |
| 18 | 4 | Northern | 159 | Tipton |
| 18 | 4 | Northern | 169 | Wabash |
| 18 | 4 | Northern | 171 | Warren |
| 18 | 4 | Northern | 177 | Wayne |
| 18 | 4 | Northern | 179 | Wells |
| 18 | 4 | Northern | 181 | White |
| 18 | 4 | Northern | 183 | Whitley |

Iowa

Iowa: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Iowa | 19 | IA | NRS | 24 |

Iowa: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 19 | 1 | Northeastern | 5 | Allamakee |
| 19 | 1 | Northeastern | 11 | Benton |
| 19 | 1 | Northeastern | 13 | Black Hawk |
| 19 | 1 | Northeastern | 17 | Bremer |
| 19 | 1 | Northeastern | 19 | Buchanan |
| 19 | 1 | Northeastern | 23 | Butler |
| 19 | 1 | Northeastern | 31 | Cedar |
| 19 | 1 | Northeastern | 37 | Chickasaw |
| 19 | 1 | Northeastern | 43 | Clayton |
| 19 | 1 | Northeastern | 45 | Clinton |
| 19 | 1 | Northeastern | 55 | Delaware |
| 19 | 1 | Northeastern | 61 | Dubuque |
| 19 | 1 | Northeastern | 65 | Fayette |
| 19 | 1 | Northeastern | 67 | Floyd |
| 19 | 1 | Northeastern | 75 | Grundy |
| 19 | 1 | Northeastern | 89 | Howard |
| 19 | 1 | Northeastern | 97 | Jackson |
| 19 | 1 | Northeastern | 103 | Johnson |
| 19 | 1 | Northeastern | 105 | Jones |
| 19 | 1 | Northeastern | 113 | Linn |
| 19 | 1 | Northeastern | 131 | Mitchell |
| 19 | 1 | Northeastern | 163 | Scott |
| 19 | 1 | Northeastern | 171 | Tama |
| 19 | 1 | Northeastern | 191 | Winneshiek |
| 19 | 2 | Southeastern | 7 | Appanoose |
| 19 | 2 | Southeastern | 15 | Boone |
| 19 | 2 | Southeastern | 39 | Clarke |
| 19 | 2 | Southeastern | 49 | Dallas |
| 19 | 2 | Southeastern | 51 | Davis |
| 19 | 2 | Southeastern | 53 | Decatur |
| 19 | 2 | Southeastern | 57 | Des Moines |
| 19 | 2 | Southeastern | 77 | Guthrie |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 19 | 2 | Southeastern | 79 | Hamilton |
| 19 | 2 | Southeastern | 83 | Hardin |
| 19 | 2 | Southeastern | 87 | Henry |
| 19 | 2 | Southeastern | 95 | Iowa |
| 19 | 2 | Southeastern | 99 | Jasper |
| 19 | 2 | Southeastern | 101 | Jefferson |
| 19 | 2 | Southeastern | 107 | Keokuk |
| 19 | 2 | Southeastern | 111 | Lee |
| 19 | 2 | Southeastern | 115 | Louisa |
| 19 | 2 | Southeastern | 117 | Lucas |
| 19 | 2 | Southeastern | 121 | Madison |
| 19 | 2 | Southeastern | 123 | Mahaska |
| 19 | 2 | Southeastern | 125 | Marion |
| 19 | 2 | Southeastern | 127 | Marshall |
| 19 | 2 | Southeastern | 135 | Monroe |
| 19 | 2 | Southeastern | 139 | Muscatine |
| 19 | 2 | Southeastern | 153 | Polk |
| 19 | 2 | Southeastern | 157 | Poweshiek |
| 19 | 2 | Southeastern | 169 | Story |
| 19 | 2 | Southeastern | 177 | Van Buren |
| 19 | 2 | Southeastern | 179 | Wapello |
| 19 | 2 | Southeastern | 181 | Warren |
| 19 | 2 | Southeastern | 183 | Washington |
| 19 | 2 | Southeastern | 185 | Wayne |
| 19 | 2 | Southeastern | 187 | Webster |
| 19 | 3 | Southwestern | 1 | Adair |
| 19 | 3 | Southwestern | 3 | Adams |
| 19 | 3 | Southwestern | 9 | Audubon |
| 19 | 3 | Southwestern | 27 | Carroll |
| 19 | 3 | Southwestern | 29 | Cass |
| 19 | 3 | Southwestern | 47 | Crawford |
| 19 | 3 | Southwestern | 71 | Fremont |
| 19 | 3 | Southwestern | 73 | Greene |
| 19 | 3 | Southwestern | 85 | Harrison |
| 19 | 3 | Southwestern | 129 | Mills |
| 19 | 3 | Southwestern | 133 | Monona |
| 19 | 3 | Southwestern | 137 | Montgomery |
| 19 | 3 | Southwestern | 145 | Page |
| 19 | 3 | Southwestern | 155 | Pottawattamie |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 19 | 3 | Southwestern | 159 | Ringgold |
| 19 | 3 | Southwestern | 165 | Shelby |
| 19 | 3 | Southwestern | 173 | Taylor |
| 19 | 3 | Southwestern | 175 | Union |
| 19 | 3 | Southwestern | 193 | Woodbury |
| 19 | 4 | Northwestern | 21 | Buena Vista |
| 19 | 4 | Northwestern | 25 | Calhoun |
| 19 | 4 | Northwestern | 33 | Cerro Gordo |
| 19 | 4 | Northwestern | 35 | Cherokee |
| 19 | 4 | Northwestern | 41 | Clay |
| 19 | 4 | Northwestern | 59 | Dickinson |
| 19 | 4 | Northwestern | 63 | Emmet |
| 19 | 4 | Northwestern | 69 | Franklin |
| 19 | 4 | Northwestern | 81 | Hancock |
| 19 | 4 | Northwestern | 91 | Humboldt |
| 19 | 4 | Northwestern | 93 | Ida |
| 19 | 4 | Northwestern | 109 | Kossuth |
| 19 | 4 | Northwestern | 119 | Lyon |
| 19 | 4 | Northwestern | 141 | O'Brien |
| 19 | 4 | Northwestern | 143 | Osceola |
| 19 | 4 | Northwestern | 147 | Palo Alto |
| 19 | 4 | Northwestern | 149 | Plymouth |
| 19 | 4 | Northwestern | 151 | Pocahontas |
| 19 | 4 | Northwestern | 161 | Sac |
| 19 | 4 | Northwestern | 167 | Sioux |
| 19 | 4 | Northwestern | 189 | Winnebago |
| 19 | 4 | Northwestern | 195 | Worth |
| 19 | 4 | Northwestern | 197 | Wright |

Kansas

Kansas: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Kansas | 20 | KS | NRS | 24 |

Kansas: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 20 | 1 | Northeastern | 5 | Atchison |
| 20 | 1 | Northeastern | 13 | Brown |
| 20 | 1 | Northeastern | 27 | Clay |
| 20 | 1 | Northeastern | 41 | Dickinson |
| 20 | 1 | Northeastern | 43 | Doniphan |
| 20 | 1 | Northeastern | 45 | Douglas |
| 20 | 1 | Northeastern | 59 | Franklin |
| 20 | 1 | Northeastern | 61 | Geary |
| 20 | 1 | Northeastern | 85 | Jackson |
| 20 | 1 | Northeastern | 87 | Jefferson |
| 20 | 1 | Northeastern | 91 | Johnson |
| 20 | 1 | Northeastern | 103 | Leavenworth |
| 20 | 1 | Northeastern | 117 | Marshall |
| 20 | 1 | Northeastern | 121 | Miami |
| 20 | 1 | Northeastern | 131 | Nemaha |
| 20 | 1 | Northeastern | 139 | Osage |
| 20 | 1 | Northeastern | 149 | Pottawatomie |
| 20 | 1 | Northeastern | 161 | Riley |
| 20 | 1 | Northeastern | 177 | Shawnee |
| 20 | 1 | Northeastern | 197 | Wabaunsee |
| 20 | 1 | Northeastern | 201 | Washington |
| 20 | 1 | Northeastern | 209 | Wyandotte |
| 20 | 2 | Southeastern | 1 | Allen |
| 20 | 2 | Southeastern | 3 | Anderson |
| 20 | 2 | Southeastern | 11 | Bourbon |
| 20 | 2 | Southeastern | 15 | Butler |
| 20 | 2 | Southeastern | 17 | Chase |
| 20 | 2 | Southeastern | 19 | Chautauqua |
| 20 | 2 | Southeastern | 21 | Cherokee |
| 20 | 2 | Southeastern | 31 | Coffey |
| 20 | 2 | Southeastern | 35 | Cowley |
| 20 | 2 | Southeastern | 37 | Crawford |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 20 | 2 | Southeastern | 49 | Elk |
| 20 | 2 | Southeastern | 73 | Greenwood |
| 20 | 2 | Southeastern | 99 | Labette |
| 20 | 2 | Southeastern | 107 | Linn |
| 20 | 2 | Southeastern | 111 | Lyon |
| 20 | 2 | Southeastern | 115 | Marion |
| 20 | 2 | Southeastern | 125 | Montgomery |
| 20 | 2 | Southeastern | 127 | Morris |
| 20 | 2 | Southeastern | 133 | Neosho |
| 20 | 2 | Southeastern | 205 | Wilson |
| 20 | 2 | Southeastern | 207 | Woodson |
| 20 | 3 | Western | 7 | Barber |
| 20 | 3 | Western | 9 | Barton |
| 20 | 3 | Western | 23 | Cheyenne |
| 20 | 3 | Western | 25 | Clark |
| 20 | 3 | Western | 29 | Cloud |
| 20 | 3 | Western | 33 | Comanche |
| 20 | 3 | Western | 39 | Decatur |
| 20 | 3 | Western | 47 | Edwards |
| 20 | 3 | Western | 51 | Ellis |
| 20 | 3 | Western | 53 | Ellsworth |
| 20 | 3 | Western | 55 | Finney |
| 20 | 3 | Western | 57 | Ford |
| 20 | 3 | Western | 63 | Gove |
| 20 | 3 | Western | 65 | Graham |
| 20 | 3 | Western | 67 | Grant |
| 20 | 3 | Western | 69 | Gray |
| 20 | 3 | Western | 71 | Greeley |
| 20 | 3 | Western | 75 | Hamilton |
| 20 | 3 | Western | 77 | Harper |
| 20 | 3 | Western | 79 | Harvey |
| 20 | 3 | Western | 81 | Haskell |
| 20 | 3 | Western | 83 | Hodgeman |
| 20 | 3 | Western | 89 | Jewell |
| 20 | 3 | Western | 93 | Kearny |
| 20 | 3 | Western | 95 | Kingman |
| 20 | 3 | Western | 97 | Kiowa |
| 20 | 3 | Western | 101 | Lane |
| 20 | 3 | Western | 105 | Lincoln |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 20 | 3 | Western | 109 | Logan |
| 20 | 3 | Western | 113 | McPherson |
| 20 | 3 | Western | 119 | Meade |
| 20 | 3 | Western | 123 | Mitchell |
| 20 | 3 | Western | 129 | Morton |
| 20 | 3 | Western | 135 | Ness |
| 20 | 3 | Western | 137 | Norton |
| 20 | 3 | Western | 141 | Osborne |
| 20 | 3 | Western | 143 | Ottawa |
| 20 | 3 | Western | 145 | Pawnee |
| 20 | 3 | Western | 147 | Phillips |
| 20 | 3 | Western | 151 | Pratt |
| 20 | 3 | Western | 153 | Rawlins |
| 20 | 3 | Western | 155 | Reno |
| 20 | 3 | Western | 157 | Republic |
| 20 | 3 | Western | 159 | Rice |
| 20 | 3 | Western | 163 | Rooks |
| 20 | 3 | Western | 165 | Rush |
| 20 | 3 | Western | 167 | Russell |
| 20 | 3 | Western | 169 | Saline |
| 20 | 3 | Western | 171 | Scott |
| 20 | 3 | Western | 173 | Sedgwick |
| 20 | 3 | Western | 175 | Seward |
| 20 | 3 | Western | 179 | Sheridan |
| 20 | 3 | Western | 181 | Sherman |
| 20 | 3 | Western | 183 | Smith |
| 20 | 3 | Western | 185 | Stafford |
| 20 | 3 | Western | 187 | Stanton |
| 20 | 3 | Western | 189 | Stevens |
| 20 | 3 | Western | 191 | Sumner |
| 20 | 3 | Western | 193 | Thomas |
| 20 | 3 | Western | 195 | Trego |
| 20 | 3 | Western | 199 | Wallace |
| 20 | 3 | Western | 203 | Wichita |

Kentucky

Kentucky: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Kentucky | 21 | KY | SRS | 33 |

Kentucky: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|---------------------|---------------------------|---------------------------|
| 21 | 1 | Eastern | 71 | Floyd |
| 21 | 1 | Eastern | 95 | Harlan |
| 21 | 1 | Eastern | 119 | Knott |
| 21 | 1 | Eastern | 131 | Leslie |
| 21 | 1 | Eastern | 133 | Letcher |
| 21 | 1 | Eastern | 159 | Martin |
| 21 | 1 | Eastern | 193 | Perry |
| 21 | 1 | Eastern | 195 | Pike |
| 21 | 2 | Northern Cumberland | 19 | Boyd |
| 21 | 2 | Northern Cumberland | 43 | Carter |
| 21 | 2 | Northern Cumberland | 63 | Elliott |
| 21 | 2 | Northern Cumberland | 89 | Greenup |
| 21 | 2 | Northern Cumberland | 115 | Johnson |
| 21 | 2 | Northern Cumberland | 127 | Lawrence |
| 21 | 2 | Northern Cumberland | 135 | Lewis |
| 21 | 2 | Northern Cumberland | 153 | Magoffin |
| 21 | 2 | Northern Cumberland | 165 | Menifee |
| 21 | 2 | Northern Cumberland | 175 | Morgan |
| 21 | 2 | Northern Cumberland | 197 | Powell |
| 21 | 2 | Northern Cumberland | 205 | Rowan |
| 21 | 2 | Northern Cumberland | 237 | Wolfe |
| 21 | 3 | Southern Cumberland | 13 | Bell |
| 21 | 3 | Southern Cumberland | 25 | Breathitt |
| 21 | 3 | Southern Cumberland | 51 | Clay |
| 21 | 3 | Southern Cumberland | 65 | Estill |
| 21 | 3 | Southern Cumberland | 109 | Jackson |
| 21 | 3 | Southern Cumberland | 121 | Knox |
| 21 | 3 | Southern Cumberland | 125 | Laurel |
| 21 | 3 | Southern Cumberland | 129 | Lee |
| 21 | 3 | Southern Cumberland | 147 | McCreary |
| 21 | 3 | Southern Cumberland | 189 | Owsley |
| 21 | 3 | Southern Cumberland | 203 | Rockcastle |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 21 | 3 | Southern Cumberland | 235 | Whitley |
| 21 | 4 | Bluegrass | 5 | Anderson |
| 21 | 4 | Bluegrass | 11 | Bath |
| 21 | 4 | Bluegrass | 15 | Boone |
| 21 | 4 | Bluegrass | 17 | Bourbon |
| 21 | 4 | Bluegrass | 21 | Boyle |
| 21 | 4 | Bluegrass | 23 | Bracken |
| 21 | 4 | Bluegrass | 37 | Campbell |
| 21 | 4 | Bluegrass | 41 | Carroll |
| 21 | 4 | Bluegrass | 49 | Clark |
| 21 | 4 | Bluegrass | 67 | Fayette |
| 21 | 4 | Bluegrass | 69 | Fleming |
| 21 | 4 | Bluegrass | 73 | Franklin |
| 21 | 4 | Bluegrass | 77 | Gallatin |
| 21 | 4 | Bluegrass | 79 | Garrard |
| 21 | 4 | Bluegrass | 81 | Grant |
| 21 | 4 | Bluegrass | 97 | Harrison |
| 21 | 4 | Bluegrass | 103 | Henry |
| 21 | 4 | Bluegrass | 111 | Jefferson |
| 21 | 4 | Bluegrass | 113 | Jessamine |
| 21 | 4 | Bluegrass | 117 | Kenton |
| 21 | 4 | Bluegrass | 137 | Lincoln |
| 21 | 4 | Bluegrass | 151 | Madison |
| 21 | 4 | Bluegrass | 161 | Mason |
| 21 | 4 | Bluegrass | 167 | Mercer |
| 21 | 4 | Bluegrass | 173 | Montgomery |
| 21 | 4 | Bluegrass | 181 | Nicholas |
| 21 | 4 | Bluegrass | 185 | Oldham |
| 21 | 4 | Bluegrass | 187 | Owen |
| 21 | 4 | Bluegrass | 191 | Pendleton |
| 21 | 4 | Bluegrass | 201 | Robertson |
| 21 | 4 | Bluegrass | 209 | Scott |
| 21 | 4 | Bluegrass | 211 | Shelby |
| 21 | 4 | Bluegrass | 215 | Spencer |
| 21 | 4 | Bluegrass | 223 | Trimble |
| 21 | 4 | Bluegrass | 229 | Washington |
| 21 | 4 | Bluegrass | 239 | Woodford |
| 21 | 5 | Pennyroyal | 1 | Adair |
| 21 | 5 | Pennyroyal | 27 | Breckinridge |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 21 | 5 | Pennyroyal | 29 | Bullitt |
| 21 | 5 | Pennyroyal | 45 | Casey |
| 21 | 5 | Pennyroyal | 53 | Clinton |
| 21 | 5 | Pennyroyal | 57 | Cumberland |
| 21 | 5 | Pennyroyal | 85 | Grayson |
| 21 | 5 | Pennyroyal | 87 | Green |
| 21 | 5 | Pennyroyal | 91 | Hancock |
| 21 | 5 | Pennyroyal | 93 | Hardin |
| 21 | 5 | Pennyroyal | 99 | Hart |
| 21 | 5 | Pennyroyal | 123 | Larue |
| 21 | 5 | Pennyroyal | 155 | Marion |
| 21 | 5 | Pennyroyal | 163 | Meade |
| 21 | 5 | Pennyroyal | 169 | Metcalfe |
| 21 | 5 | Pennyroyal | 179 | Nelson |
| 21 | 5 | Pennyroyal | 199 | Pulaski |
| 21 | 5 | Pennyroyal | 207 | Russell |
| 21 | 5 | Pennyroyal | 217 | Taylor |
| 21 | 5 | Pennyroyal | 231 | Wayne |
| 21 | 6 | Western Coalfield | 3 | Allen |
| 21 | 6 | Western Coalfield | 9 | Barren |
| 21 | 6 | Western Coalfield | 31 | Butler |
| 21 | 6 | Western Coalfield | 33 | Caldwell |
| 21 | 6 | Western Coalfield | 47 | Christian |
| 21 | 6 | Western Coalfield | 55 | Crittenden |
| 21 | 6 | Western Coalfield | 59 | Daviess |
| 21 | 6 | Western Coalfield | 61 | Edmonson |
| 21 | 6 | Western Coalfield | 101 | Henderson |
| 21 | 6 | Western Coalfield | 107 | Hopkins |
| 21 | 6 | Western Coalfield | 141 | Logan |
| 21 | 6 | Western Coalfield | 149 | McLean |
| 21 | 6 | Western Coalfield | 171 | Monroe |
| 21 | 6 | Western Coalfield | 177 | Muhlenberg |
| 21 | 6 | Western Coalfield | 183 | Ohio |
| 21 | 6 | Western Coalfield | 213 | Simpson |
| 21 | 6 | Western Coalfield | 219 | Todd |
| 21 | 6 | Western Coalfield | 225 | Union |
| 21 | 6 | Western Coalfield | 227 | Warren |
| 21 | 6 | Western Coalfield | 233 | Webster |
| 21 | 7 | Western | 7 | Ballard |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 21 | 7 | Western | 35 | Calloway |
| 21 | 7 | Western | 39 | Carlisle |
| 21 | 7 | Western | 75 | Fulton |
| 21 | 7 | Western | 83 | Graves |
| 21 | 7 | Western | 105 | Hickman |
| 21 | 7 | Western | 139 | Livingston |
| 21 | 7 | Western | 143 | Lyon |
| 21 | 7 | Western | 145 | McCracken |
| 21 | 7 | Western | 157 | Marshall |
| 21 | 7 | Western | 221 | Trigg |

Louisiana

Louisiana: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Louisiana | 22 | LA | SRS | 33 |

Louisiana: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 22 | 1 | North Delta | 25 | Catahoula |
| 22 | 1 | North Delta | 29 | Concordia |
| 22 | 1 | North Delta | 35 | East Carroll |
| 22 | 1 | North Delta | 41 | Franklin |
| 22 | 1 | North Delta | 65 | Madison |
| 22 | 1 | North Delta | 67 | Morehouse |
| 22 | 1 | North Delta | 83 | Richland |
| 22 | 1 | North Delta | 107 | Tensas |
| 22 | 1 | North Delta | 123 | West Carroll |
| 22 | 2 | South Delta | 1 | Acadia |
| 22 | 2 | South Delta | 5 | Ascension |
| 22 | 2 | South Delta | 7 | Assumption |
| 22 | 2 | South Delta | 9 | Avoyelles |
| 22 | 2 | South Delta | 23 | Cameron |
| 22 | 2 | South Delta | 45 | Iberia |
| 22 | 2 | South Delta | 47 | Iberville |
| 22 | 2 | South Delta | 51 | Jefferson |
| 22 | 2 | South Delta | 55 | Lafayette |
| 22 | 2 | South Delta | 57 | Lafourche |
| 22 | 2 | South Delta | 71 | Orleans |
| 22 | 2 | South Delta | 75 | Plaquemines |
| 22 | 2 | South Delta | 77 | Pointe Coupee |
| 22 | 2 | South Delta | 87 | St. Bernard |
| 22 | 2 | South Delta | 89 | St. Charles |
| 22 | 2 | South Delta | 93 | St. James |
| 22 | 2 | South Delta | 95 | St. John the Baptist |
| 22 | 2 | South Delta | 97 | St. Landry |
| 22 | 2 | South Delta | 99 | St. Martin |
| 22 | 2 | South Delta | 101 | St. Mary |
| 22 | 2 | South Delta | 109 | Terrebonne |
| 22 | 2 | South Delta | 113 | Vermilion |
| 22 | 2 | South Delta | 121 | West Baton Rouge |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 22 | 2 | South Delta | 125 | West Feliciana |
| 22 | 3 | Southwest | 3 | Allen |
| 22 | 3 | Southwest | 11 | Beauregard |
| 22 | 3 | Southwest | 19 | Calcasieu |
| 22 | 3 | Southwest | 39 | Evangeline |
| 22 | 3 | Southwest | 43 | Grant |
| 22 | 3 | Southwest | 53 | Jefferson Davis |
| 22 | 3 | Southwest | 59 | La Salle |
| 22 | 3 | Southwest | 69 | Natchitoches |
| 22 | 3 | Southwest | 79 | Rapides |
| 22 | 3 | Southwest | 85 | Sabine |
| 22 | 3 | Southwest | 115 | Vernon |
| 22 | 4 | Southeast | 33 | East Baton Rouge |
| 22 | 4 | Southeast | 37 | East Feliciana |
| 22 | 4 | Southeast | 63 | Livingston |
| 22 | 4 | Southeast | 91 | St. Helena |
| 22 | 4 | Southeast | 103 | St. Tammany |
| 22 | 4 | Southeast | 105 | Tangipahoa |
| 22 | 4 | Southeast | 117 | Washington |
| 22 | 5 | Northwest | 13 | Bienville |
| 22 | 5 | Northwest | 15 | Bossier |
| 22 | 5 | Northwest | 17 | Caddo |
| 22 | 5 | Northwest | 21 | Caldwell |
| 22 | 5 | Northwest | 27 | Claiborne |
| 22 | 5 | Northwest | 31 | De Soto |
| 22 | 5 | Northwest | 49 | Jackson |
| 22 | 5 | Northwest | 61 | Lincoln |
| 22 | 5 | Northwest | 73 | Ouachita |
| 22 | 5 | Northwest | 81 | Red River |
| 22 | 5 | Northwest | 111 | Union |
| 22 | 5 | Northwest | 119 | Webster |
| 22 | 5 | Northwest | 127 | Winn |

Maine

Maine: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|-------------------|-------------------|---------------------------|-------------------------|---------------------------------|
| Maine | 23 | ME | NRS | 24 |

Maine: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 23 | 1 | Washington | 29 | Washington |
| 23 | 2 | Aroostook | 3 | Aroostook |
| 23 | 3 | Penobscot | 19 | Penobscot |
| 23 | 4 | Hancock | 9 | Hancock |
| 23 | 5 | Piscataquis | 21 | Piscataquis |
| 23 | 6 | Capitol Region | 11 | Kennebec |
| 23 | 6 | Capitol Region | 13 | Knox |
| 23 | 6 | Capitol Region | 15 | Lincoln |
| 23 | 6 | Capitol Region | 27 | Waldo |
| 23 | 7 | Somerset | 25 | Somerset |
| 23 | 8 | Casco Bay | 1 | Androscoggin |
| 23 | 8 | Casco Bay | 5 | Cumberland |
| 23 | 8 | Casco Bay | 23 | Sagadahoc |
| 23 | 8 | Casco Bay | 31 | York |
| 23 | 9 | Western Maine | 7 | Franklin |
| 23 | 9 | Western Maine | 17 | Oxford |

Maryland

Maryland: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Maryland | 24 | MD | NRS | 24 |

Maryland: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|---------------------|---------------------------|---------------------------|
| 24 | 2 | North Central | 3 | Anne Arundel |
| 24 | 2 | North Central | 5 | Baltimore |
| 24 | 2 | North Central | 11 | Caroline |
| 24 | 2 | North Central | 13 | Carroll |
| 24 | 2 | North Central | 15 | Cecil |
| 24 | 2 | North Central | 21 | Frederick |
| 24 | 2 | North Central | 25 | Harford |
| 24 | 2 | North Central | 27 | Howard |
| 24 | 2 | North Central | 29 | Kent |
| 24 | 2 | North Central | 31 | Montgomery |
| 24 | 2 | North Central | 33 | Prince George's |
| 24 | 2 | North Central | 35 | Queen Anne's |
| 24 | 2 | North Central | 41 | Talbot |
| 24 | 2 | North Central | 43 | Washington |
| 24 | 2 | North Central | 510 | Baltimore city |
| 24 | 3 | Southern | 9 | Calvert |
| 24 | 3 | Southern | 17 | Charles |
| 24 | 3 | Southern | 37 | St. Mary's |
| 24 | 4 | Lower Eastern Shore | 19 | Dorchester |
| 24 | 4 | Lower Eastern Shore | 39 | Somerset |
| 24 | 4 | Lower Eastern Shore | 45 | Wicomico |
| 24 | 4 | Lower Eastern Shore | 47 | Worcester |
| 24 | 5 | Western | 1 | Allegany |
| 24 | 5 | Western | 23 | Garrett |

Massachusetts

Massachusetts: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|---------------|------------|--------------------|------------------|--------------------------|
| Massachusetts | 25 | MA | NRS | 24 |

Massachusetts: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 25 | 1 | Massachusetts | 1 | Barnstable |
| 25 | 1 | Massachusetts | 3 | Berkshire |
| 25 | 1 | Massachusetts | 5 | Bristol |
| 25 | 1 | Massachusetts | 7 | Dukes |
| 25 | 1 | Massachusetts | 9 | Essex |
| 25 | 1 | Massachusetts | 11 | Franklin |
| 25 | 1 | Massachusetts | 13 | Hampden |
| 25 | 1 | Massachusetts | 15 | Hampshire |
| 25 | 1 | Massachusetts | 17 | Middlesex |
| 25 | 1 | Massachusetts | 19 | Nantucket |
| 25 | 1 | Massachusetts | 21 | Norfolk |
| 25 | 1 | Massachusetts | 23 | Plymouth |
| 25 | 1 | Massachusetts | 25 | Suffolk |
| 25 | 1 | Massachusetts | 27 | Worcester |

Michigan

Michigan: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Michigan | 26 | MI | NRS | 24 |

Michigan: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|--------------------------|---------------------------|---------------------------|
| 26 | 1 | Eastern Upper Peninsula | 3 | Alger |
| 26 | 1 | Eastern Upper Peninsula | 33 | Chippewa |
| 26 | 1 | Eastern Upper Peninsula | 41 | Delta |
| 26 | 1 | Eastern Upper Peninsula | 95 | Luce |
| 26 | 1 | Eastern Upper Peninsula | 97 | Mackinac |
| 26 | 1 | Eastern Upper Peninsula | 109 | Menominee |
| 26 | 1 | Eastern Upper Peninsula | 153 | Schoolcraft |
| 26 | 2 | Western Upper Peninsula | 13 | Baraga |
| 26 | 2 | Western Upper Peninsula | 43 | Dickinson |
| 26 | 2 | Western Upper Peninsula | 53 | Gogebic |
| 26 | 2 | Western Upper Peninsula | 61 | Houghton |
| 26 | 2 | Western Upper Peninsula | 71 | Iron |
| 26 | 2 | Western Upper Peninsula | 83 | Keweenaw |
| 26 | 2 | Western Upper Peninsula | 103 | Marquette |
| 26 | 2 | Western Upper Peninsula | 131 | Ontonagon |
| 26 | 3 | Northern Lower Peninsula | 1 | Alcona |
| 26 | 3 | Northern Lower Peninsula | 7 | Alpena |
| 26 | 3 | Northern Lower Peninsula | 9 | Antrim |
| 26 | 3 | Northern Lower Peninsula | 11 | Arenac |
| 26 | 3 | Northern Lower Peninsula | 17 | Bay |
| 26 | 3 | Northern Lower Peninsula | 19 | Benzie |
| 26 | 3 | Northern Lower Peninsula | 29 | Charlevoix |
| 26 | 3 | Northern Lower Peninsula | 31 | Cheboygan |
| 26 | 3 | Northern Lower Peninsula | 35 | Clare |
| 26 | 3 | Northern Lower Peninsula | 39 | Crawford |
| 26 | 3 | Northern Lower Peninsula | 47 | Emmet |
| 26 | 3 | Northern Lower Peninsula | 51 | Gladwin |
| 26 | 3 | Northern Lower Peninsula | 55 | Grand Traverse |
| 26 | 3 | Northern Lower Peninsula | 69 | Iosco |
| 26 | 3 | Northern Lower Peninsula | 73 | Isabella |
| 26 | 3 | Northern Lower Peninsula | 79 | Kalkaska |
| 26 | 3 | Northern Lower Peninsula | 85 | Lake |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|--------------------------|-----------------------------------|-----------------------------------|
| 26 | 3 | Northern Lower Peninsula | 89 | Leelanau |
| 26 | 3 | Northern Lower Peninsula | 101 | Manistee |
| 26 | 3 | Northern Lower Peninsula | 105 | Mason |
| 26 | 3 | Northern Lower Peninsula | 107 | Mecosta |
| 26 | 3 | Northern Lower Peninsula | 111 | Midland |
| 26 | 3 | Northern Lower Peninsula | 113 | Missaukee |
| 26 | 3 | Northern Lower Peninsula | 119 | Montmorency |
| 26 | 3 | Northern Lower Peninsula | 123 | Newaygo |
| 26 | 3 | Northern Lower Peninsula | 127 | Oceana |
| 26 | 3 | Northern Lower Peninsula | 129 | Ogemaw |
| 26 | 3 | Northern Lower Peninsula | 133 | Osceola |
| 26 | 3 | Northern Lower Peninsula | 135 | Oscoda |
| 26 | 3 | Northern Lower Peninsula | 137 | Otsego |
| 26 | 3 | Northern Lower Peninsula | 141 | Presque Isle |
| 26 | 3 | Northern Lower Peninsula | 143 | Roscommon |
| 26 | 3 | Northern Lower Peninsula | 165 | Wexford |
| 26 | 4 | Southern Lower Peninsula | 5 | Allegan |
| 26 | 4 | Southern Lower Peninsula | 15 | Barry |
| 26 | 4 | Southern Lower Peninsula | 21 | Berrien |
| 26 | 4 | Southern Lower Peninsula | 23 | Branch |
| 26 | 4 | Southern Lower Peninsula | 25 | Calhoun |
| 26 | 4 | Southern Lower Peninsula | 27 | Cass |
| 26 | 4 | Southern Lower Peninsula | 37 | Clinton |
| 26 | 4 | Southern Lower Peninsula | 45 | Eaton |
| 26 | 4 | Southern Lower Peninsula | 49 | Genesee |
| 26 | 4 | Southern Lower Peninsula | 57 | Gratiot |
| 26 | 4 | Southern Lower Peninsula | 59 | Hillsdale |
| 26 | 4 | Southern Lower Peninsula | 63 | Huron |
| 26 | 4 | Southern Lower Peninsula | 65 | Ingham |
| 26 | 4 | Southern Lower Peninsula | 67 | Ionia |
| 26 | 4 | Southern Lower Peninsula | 75 | Jackson |
| 26 | 4 | Southern Lower Peninsula | 77 | Kalamazoo |
| 26 | 4 | Southern Lower Peninsula | 81 | Kent |
| 26 | 4 | Southern Lower Peninsula | 87 | Lapeer |
| 26 | 4 | Southern Lower Peninsula | 91 | Lenawee |
| 26 | 4 | Southern Lower Peninsula | 93 | Livingston |
| 26 | 4 | Southern Lower Peninsula | 99 | Macomb |
| 26 | 4 | Southern Lower Peninsula | 115 | Monroe |
| 26 | 4 | Southern Lower Peninsula | 117 | Montcalm |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|--------------------------|-----------------------------------|-----------------------------------|
| 26 | 4 | Southern Lower Peninsula | 121 | Muskegon |
| 26 | 4 | Southern Lower Peninsula | 125 | Oakland |
| 26 | 4 | Southern Lower Peninsula | 139 | Ottawa |
| 26 | 4 | Southern Lower Peninsula | 145 | Saginaw |
| 26 | 4 | Southern Lower Peninsula | 147 | St. Clair |
| 26 | 4 | Southern Lower Peninsula | 149 | St. Joseph |
| 26 | 4 | Southern Lower Peninsula | 151 | Sanilac |
| 26 | 4 | Southern Lower Peninsula | 155 | Shiawassee |
| 26 | 4 | Southern Lower Peninsula | 157 | Tuscola |
| 26 | 4 | Southern Lower Peninsula | 159 | Van Buren |
| 26 | 4 | Southern Lower Peninsula | 161 | Washtenaw |
| 26 | 4 | Southern Lower Peninsula | 163 | Wayne |

Minnesota

Minnesota: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Minnesota | 27 | MN | NRS | 24 |

Minnesota: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 27 | 1 | Aspen-Birch | 17 | Carlton |
| 27 | 1 | Aspen-Birch | 31 | Cook |
| 27 | 1 | Aspen-Birch | 71 | Koochiching |
| 27 | 1 | Aspen-Birch | 75 | Lake |
| 27 | 1 | Aspen-Birch | 137 | St. Louis |
| 27 | 2 | Northern Pine | 1 | Aitkin |
| 27 | 2 | Northern Pine | 5 | Becker |
| 27 | 2 | Northern Pine | 7 | Beltrami |
| 27 | 2 | Northern Pine | 21 | Cass |
| 27 | 2 | Northern Pine | 29 | Clearwater |
| 27 | 2 | Northern Pine | 35 | Crow Wing |
| 27 | 2 | Northern Pine | 57 | Hubbard |
| 27 | 2 | Northern Pine | 61 | Itasca |
| 27 | 2 | Northern Pine | 77 | Lake of the Woods |
| 27 | 2 | Northern Pine | 87 | Mahnomen |
| 27 | 2 | Northern Pine | 135 | Roseau |
| 27 | 2 | Northern Pine | 159 | Wadena |
| 27 | 3 | Central Hardwood | 3 | Anoka |
| 27 | 3 | Central Hardwood | 9 | Benton |
| 27 | 3 | Central Hardwood | 19 | Carver |
| 27 | 3 | Central Hardwood | 25 | Chisago |
| 27 | 3 | Central Hardwood | 37 | Dakota |
| 27 | 3 | Central Hardwood | 41 | Douglas |
| 27 | 3 | Central Hardwood | 45 | Fillmore |
| 27 | 3 | Central Hardwood | 49 | Goodhue |
| 27 | 3 | Central Hardwood | 53 | Hennepin |
| 27 | 3 | Central Hardwood | 55 | Houston |
| 27 | 3 | Central Hardwood | 59 | Isanti |
| 27 | 3 | Central Hardwood | 65 | Kanabec |
| 27 | 3 | Central Hardwood | 79 | Le Sueur |
| 27 | 3 | Central Hardwood | 95 | Mille Lacs |
| 27 | 3 | Central Hardwood | 97 | Morrison |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 27 | 3 | Central Hardwood | 109 | Olmsted |
| 27 | 3 | Central Hardwood | 111 | Otter Tail |
| 27 | 3 | Central Hardwood | 115 | Pine |
| 27 | 3 | Central Hardwood | 123 | Ramsey |
| 27 | 3 | Central Hardwood | 131 | Rice |
| 27 | 3 | Central Hardwood | 139 | Scott |
| 27 | 3 | Central Hardwood | 141 | Sherburne |
| 27 | 3 | Central Hardwood | 145 | Stearns |
| 27 | 3 | Central Hardwood | 153 | Todd |
| 27 | 3 | Central Hardwood | 157 | Wabasha |
| 27 | 3 | Central Hardwood | 163 | Washington |
| 27 | 3 | Central Hardwood | 169 | Winona |
| 27 | 3 | Central Hardwood | 171 | Wright |
| 27 | 4 | Prairie | 11 | Big Stone |
| 27 | 4 | Prairie | 13 | Blue Earth |
| 27 | 4 | Prairie | 15 | Brown |
| 27 | 4 | Prairie | 23 | Chippewa |
| 27 | 4 | Prairie | 27 | Clay |
| 27 | 4 | Prairie | 33 | Cottonwood |
| 27 | 4 | Prairie | 39 | Dodge |
| 27 | 4 | Prairie | 43 | Faribault |
| 27 | 4 | Prairie | 47 | Freeborn |
| 27 | 4 | Prairie | 51 | Grant |
| 27 | 4 | Prairie | 63 | Jackson |
| 27 | 4 | Prairie | 67 | Kandiyohi |
| 27 | 4 | Prairie | 69 | Kittson |
| 27 | 4 | Prairie | 73 | Lac qui Parle |
| 27 | 4 | Prairie | 81 | Lincoln |
| 27 | 4 | Prairie | 83 | Lyon |
| 27 | 4 | Prairie | 85 | McLeod |
| 27 | 4 | Prairie | 89 | Marshall |
| 27 | 4 | Prairie | 91 | Martin |
| 27 | 4 | Prairie | 93 | Meeker |
| 27 | 4 | Prairie | 99 | Mower |
| 27 | 4 | Prairie | 101 | Murray |
| 27 | 4 | Prairie | 103 | Nicollet |
| 27 | 4 | Prairie | 105 | Nobles |
| 27 | 4 | Prairie | 107 | Norman |
| 27 | 4 | Prairie | 113 | Pennington |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 27 | 4 | Prairie | 117 | Pipestone |
| 27 | 4 | Prairie | 119 | Polk |
| 27 | 4 | Prairie | 121 | Pope |
| 27 | 4 | Prairie | 125 | Red Lake |
| 27 | 4 | Prairie | 127 | Redwood |
| 27 | 4 | Prairie | 129 | Renville |
| 27 | 4 | Prairie | 133 | Rock |
| 27 | 4 | Prairie | 143 | Sibley |
| 27 | 4 | Prairie | 147 | Steele |
| 27 | 4 | Prairie | 149 | Stevens |
| 27 | 4 | Prairie | 151 | Swift |
| 27 | 4 | Prairie | 155 | Traverse |
| 27 | 4 | Prairie | 161 | Waseca |
| 27 | 4 | Prairie | 165 | Watsonwan |
| 27 | 4 | Prairie | 167 | Wilkin |
| 27 | 4 | Prairie | 173 | Yellow Medicine |

Mississippi

Mississippi: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|-------------|------------|--------------------|------------------|--------------------------|
| Mississippi | 28 | MS | SRS | 33 |

Mississippi: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 28 | 1 | Delta | 11 | Bolivar |
| 28 | 1 | Delta | 27 | Coahoma |
| 28 | 1 | Delta | 51 | Holmes |
| 28 | 1 | Delta | 53 | Humphreys |
| 28 | 1 | Delta | 55 | Issaquena |
| 28 | 1 | Delta | 83 | Leflore |
| 28 | 1 | Delta | 119 | Quitman |
| 28 | 1 | Delta | 125 | Sharkey |
| 28 | 1 | Delta | 133 | Sunflower |
| 28 | 1 | Delta | 135 | Tallahatchie |
| 28 | 1 | Delta | 143 | Tunica |
| 28 | 1 | Delta | 149 | Warren |
| 28 | 1 | Delta | 151 | Washington |
| 28 | 1 | Delta | 163 | Yazoo |
| 28 | 2 | North | 3 | Alcorn |
| 28 | 2 | North | 9 | Benton |
| 28 | 2 | North | 13 | Calhoun |
| 28 | 2 | North | 15 | Carroll |
| 28 | 2 | North | 17 | Chickasaw |
| 28 | 2 | North | 19 | Choctaw |
| 28 | 2 | North | 25 | Clay |
| 28 | 2 | North | 33 | DeSoto |
| 28 | 2 | North | 43 | Grenada |
| 28 | 2 | North | 57 | Itawamba |
| 28 | 2 | North | 71 | Lafayette |
| 28 | 2 | North | 81 | Lee |
| 28 | 2 | North | 87 | Lowndes |
| 28 | 2 | North | 93 | Marshall |
| 28 | 2 | North | 95 | Monroe |
| 28 | 2 | North | 97 | Montgomery |
| 28 | 2 | North | 105 | Oktibbeha |
| 28 | 2 | North | 107 | Panola |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 28 | 2 | North | 115 | Pontotoc |
| 28 | 2 | North | 117 | Prentiss |
| 28 | 2 | North | 137 | Tate |
| 28 | 2 | North | 139 | Tippah |
| 28 | 2 | North | 141 | Tishomingo |
| 28 | 2 | North | 145 | Union |
| 28 | 2 | North | 155 | Webster |
| 28 | 2 | North | 161 | Yalobusha |
| 28 | 3 | Central | 7 | Attala |
| 28 | 3 | Central | 23 | Clarke |
| 28 | 3 | Central | 61 | Jasper |
| 28 | 3 | Central | 69 | Kemper |
| 28 | 3 | Central | 75 | Lauderdale |
| 28 | 3 | Central | 79 | Leake |
| 28 | 3 | Central | 99 | Neshoba |
| 28 | 3 | Central | 101 | Newton |
| 28 | 3 | Central | 103 | Noxubee |
| 28 | 3 | Central | 121 | Rankin |
| 28 | 3 | Central | 123 | Scott |
| 28 | 3 | Central | 127 | Simpson |
| 28 | 3 | Central | 129 | Smith |
| 28 | 3 | Central | 159 | Winston |
| 28 | 4 | South | 31 | Covington |
| 28 | 4 | South | 35 | Forrest |
| 28 | 4 | South | 39 | George |
| 28 | 4 | South | 41 | Greene |
| 28 | 4 | South | 45 | Hancock |
| 28 | 4 | South | 47 | Harrison |
| 28 | 4 | South | 59 | Jackson |
| 28 | 4 | South | 65 | Jefferson Davis |
| 28 | 4 | South | 67 | Jones |
| 28 | 4 | South | 73 | Lamar |
| 28 | 4 | South | 77 | Lawrence |
| 28 | 4 | South | 91 | Marion |
| 28 | 4 | South | 109 | Pearl River |
| 28 | 4 | South | 111 | Perry |
| 28 | 4 | South | 131 | Stone |
| 28 | 4 | South | 147 | Walthall |
| 28 | 4 | South | 153 | Wayne |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 28 | 5 | Southwest | 1 | Adams |
| 28 | 5 | Southwest | 5 | Amite |
| 28 | 5 | Southwest | 21 | Claiborne |
| 28 | 5 | Southwest | 29 | Copiah |
| 28 | 5 | Southwest | 37 | Franklin |
| 28 | 5 | Southwest | 49 | Hinds |
| 28 | 5 | Southwest | 63 | Jefferson |
| 28 | 5 | Southwest | 85 | Lincoln |
| 28 | 5 | Southwest | 89 | Madison |
| 28 | 5 | Southwest | 113 | Pike |
| 28 | 5 | Southwest | 157 | Wilkinson |

Missouri

Missouri: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Missouri | 29 | MO | NRS | 24 |

Missouri: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|---------------------|---------------------------|---------------------------|
| 29 | 1 | Eastern Ozarks | 17 | Bollinger |
| 29 | 1 | Eastern Ozarks | 23 | Butler |
| 29 | 1 | Eastern Ozarks | 35 | Carter |
| 29 | 1 | Eastern Ozarks | 55 | Crawford |
| 29 | 1 | Eastern Ozarks | 65 | Dent |
| 29 | 1 | Eastern Ozarks | 93 | Iron |
| 29 | 1 | Eastern Ozarks | 123 | Madison |
| 29 | 1 | Eastern Ozarks | 149 | Oregon |
| 29 | 1 | Eastern Ozarks | 179 | Reynolds |
| 29 | 1 | Eastern Ozarks | 181 | Ripley |
| 29 | 1 | Eastern Ozarks | 187 | St. Francois |
| 29 | 1 | Eastern Ozarks | 203 | Shannon |
| 29 | 1 | Eastern Ozarks | 221 | Washington |
| 29 | 1 | Eastern Ozarks | 223 | Wayne |
| 29 | 2 | Southwestern Ozarks | 9 | Barry |
| 29 | 2 | Southwestern Ozarks | 43 | Christian |
| 29 | 2 | Southwestern Ozarks | 67 | Douglas |
| 29 | 2 | Southwestern Ozarks | 91 | Howell |
| 29 | 2 | Southwestern Ozarks | 119 | McDonald |
| 29 | 2 | Southwestern Ozarks | 145 | Newton |
| 29 | 2 | Southwestern Ozarks | 153 | Ozark |
| 29 | 2 | Southwestern Ozarks | 209 | Stone |
| 29 | 2 | Southwestern Ozarks | 213 | Taney |
| 29 | 2 | Southwestern Ozarks | 215 | Texas |
| 29 | 2 | Southwestern Ozarks | 225 | Webster |
| 29 | 2 | Southwestern Ozarks | 229 | Wright |
| 29 | 3 | Northwestern Ozarks | 15 | Benton |
| 29 | 3 | Northwestern Ozarks | 29 | Camden |
| 29 | 3 | Northwestern Ozarks | 39 | Cedar |
| 29 | 3 | Northwestern Ozarks | 59 | Dallas |
| 29 | 3 | Northwestern Ozarks | 85 | Hickory |
| 29 | 3 | Northwestern Ozarks | 105 | Laclede |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 29 | 3 | Northwestern Ozarks | 125 | Maries |
| 29 | 3 | Northwestern Ozarks | 131 | Miller |
| 29 | 3 | Northwestern Ozarks | 141 | Morgan |
| 29 | 3 | Northwestern Ozarks | 161 | Phelps |
| 29 | 3 | Northwestern Ozarks | 167 | Polk |
| 29 | 3 | Northwestern Ozarks | 169 | Pulaski |
| 29 | 3 | Northwestern Ozarks | 185 | St. Clair |
| 29 | 4 | Prairie | 1 | Adair |
| 29 | 4 | Prairie | 3 | Andrew |
| 29 | 4 | Prairie | 5 | Atchison |
| 29 | 4 | Prairie | 7 | Audrain |
| 29 | 4 | Prairie | 11 | Barton |
| 29 | 4 | Prairie | 13 | Bates |
| 29 | 4 | Prairie | 21 | Buchanan |
| 29 | 4 | Prairie | 25 | Caldwell |
| 29 | 4 | Prairie | 33 | Carroll |
| 29 | 4 | Prairie | 37 | Cass |
| 29 | 4 | Prairie | 41 | Chariton |
| 29 | 4 | Prairie | 45 | Clark |
| 29 | 4 | Prairie | 47 | Clay |
| 29 | 4 | Prairie | 49 | Clinton |
| 29 | 4 | Prairie | 53 | Cooper |
| 29 | 4 | Prairie | 57 | Dade |
| 29 | 4 | Prairie | 61 | Daviess |
| 29 | 4 | Prairie | 63 | DeKalb |
| 29 | 4 | Prairie | 75 | Gentry |
| 29 | 4 | Prairie | 77 | Greene |
| 29 | 4 | Prairie | 79 | Grundy |
| 29 | 4 | Prairie | 81 | Harrison |
| 29 | 4 | Prairie | 83 | Henry |
| 29 | 4 | Prairie | 87 | Holt |
| 29 | 4 | Prairie | 95 | Jackson |
| 29 | 4 | Prairie | 97 | Jasper |
| 29 | 4 | Prairie | 101 | Johnson |
| 29 | 4 | Prairie | 103 | Knox |
| 29 | 4 | Prairie | 107 | Lafayette |
| 29 | 4 | Prairie | 109 | Lawrence |
| 29 | 4 | Prairie | 111 | Lewis |
| 29 | 4 | Prairie | 113 | Lincoln |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 29 | 4 | Prairie | 115 | Linn |
| 29 | 4 | Prairie | 117 | Livingston |
| 29 | 4 | Prairie | 121 | Macon |
| 29 | 4 | Prairie | 127 | Marion |
| 29 | 4 | Prairie | 129 | Mercer |
| 29 | 4 | Prairie | 137 | Monroe |
| 29 | 4 | Prairie | 147 | Nodaway |
| 29 | 4 | Prairie | 159 | Pettis |
| 29 | 4 | Prairie | 163 | Pike |
| 29 | 4 | Prairie | 165 | Platte |
| 29 | 4 | Prairie | 171 | Putnam |
| 29 | 4 | Prairie | 173 | Ralls |
| 29 | 4 | Prairie | 175 | Randolph |
| 29 | 4 | Prairie | 177 | Ray |
| 29 | 4 | Prairie | 195 | Saline |
| 29 | 4 | Prairie | 197 | Schuylerville |
| 29 | 4 | Prairie | 199 | Scotland |
| 29 | 4 | Prairie | 205 | Shelby |
| 29 | 4 | Prairie | 211 | Sullivan |
| 29 | 4 | Prairie | 217 | Vernon |
| 29 | 4 | Prairie | 227 | Worth |
| 29 | 5 | Riverborder | 19 | Boone |
| 29 | 5 | Riverborder | 27 | Callaway |
| 29 | 5 | Riverborder | 31 | Cape Girardeau |
| 29 | 5 | Riverborder | 51 | Cole |
| 29 | 5 | Riverborder | 69 | Dunklin |
| 29 | 5 | Riverborder | 71 | Franklin |
| 29 | 5 | Riverborder | 73 | Gasconade |
| 29 | 5 | Riverborder | 89 | Howard |
| 29 | 5 | Riverborder | 99 | Jefferson |
| 29 | 5 | Riverborder | 133 | Mississippi |
| 29 | 5 | Riverborder | 135 | Moniteau |
| 29 | 5 | Riverborder | 139 | Montgomery |
| 29 | 5 | Riverborder | 143 | New Madrid |
| 29 | 5 | Riverborder | 151 | Osage |
| 29 | 5 | Riverborder | 155 | Pemiscot |
| 29 | 5 | Riverborder | 157 | Perry |
| 29 | 5 | Riverborder | 183 | St. Charles |
| 29 | 5 | Riverborder | 186 | Ste. Genevieve |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 29 | 5 | Riverborder | 189 | St. Louis |
| 29 | 5 | Riverborder | 201 | Scott |
| 29 | 5 | Riverborder | 207 | Stoddard |
| 29 | 5 | Riverborder | 219 | Warren |
| 29 | 5 | Riverborder | 510 | St. Louis city |

Montana

Montana: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Montana | 30 | MT | RMRS | 22 |

Montana: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 30 | 1 | Northwestern | 29 | Flathead |
| 30 | 1 | Northwestern | 47 | Lake |
| 30 | 1 | Northwestern | 53 | Lincoln |
| 30 | 1 | Northwestern | 89 | Sanders |
| 30 | 2 | Eastern | 3 | Big Horn |
| 30 | 2 | Eastern | 5 | Blaine |
| 30 | 2 | Eastern | 9 | Carbon |
| 30 | 2 | Eastern | 11 | Carter |
| 30 | 2 | Eastern | 15 | Chouteau |
| 30 | 2 | Eastern | 17 | Custer |
| 30 | 2 | Eastern | 19 | Daniels |
| 30 | 2 | Eastern | 21 | Dawson |
| 30 | 2 | Eastern | 25 | Fallon |
| 30 | 2 | Eastern | 27 | Fergus |
| 30 | 2 | Eastern | 33 | Garfield |
| 30 | 2 | Eastern | 35 | Glacier |
| 30 | 2 | Eastern | 37 | Golden Valley |
| 30 | 2 | Eastern | 41 | Hill |
| 30 | 2 | Eastern | 51 | Liberty |
| 30 | 2 | Eastern | 55 | McCone |
| 30 | 2 | Eastern | 65 | Musselshell |
| 30 | 2 | Eastern | 69 | Petroleum |
| 30 | 2 | Eastern | 71 | Phillips |
| 30 | 2 | Eastern | 73 | Pondera |
| 30 | 2 | Eastern | 75 | Powder River |
| 30 | 2 | Eastern | 79 | Prairie |
| 30 | 2 | Eastern | 83 | Richland |
| 30 | 2 | Eastern | 85 | Roosevelt |
| 30 | 2 | Eastern | 87 | Rosebud |
| 30 | 2 | Eastern | 91 | Sheridan |
| 30 | 2 | Eastern | 95 | Stillwater |
| 30 | 2 | Eastern | 97 | Sweet Grass |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 30 | 2 | Eastern | 99 | Teton |
| 30 | 2 | Eastern | 101 | Toole |
| 30 | 2 | Eastern | 103 | Treasure |
| 30 | 2 | Eastern | 105 | Valley |
| 30 | 2 | Eastern | 109 | Wibaux |
| 30 | 2 | Eastern | 111 | Yellowstone |
| 30 | 2 | Eastern | 113 | Yellowstone National Park |
| 30 | 3 | Western | 39 | Granite |
| 30 | 3 | Western | 61 | Mineral |
| 30 | 3 | Western | 63 | Missoula |
| 30 | 3 | Western | 81 | Ravalli |
| 30 | 4 | West Central | 7 | Broadwater |
| 30 | 4 | West Central | 13 | Cascade |
| 30 | 4 | West Central | 43 | Jefferson |
| 30 | 4 | West Central | 45 | Judith Basin |
| 30 | 4 | West Central | 49 | Lewis and Clark |
| 30 | 4 | West Central | 59 | Meagher |
| 30 | 4 | West Central | 77 | Powell |
| 30 | 4 | West Central | 107 | Wheatland |
| 30 | 5 | Southwestern | 1 | Beaverhead |
| 30 | 5 | Southwestern | 23 | Deer Lodge |
| 30 | 5 | Southwestern | 31 | Gallatin |
| 30 | 5 | Southwestern | 57 | Madison |
| 30 | 5 | Southwestern | 67 | Park |
| 30 | 5 | Southwestern | 93 | Silver Bow |

Nebraska

Nebraska: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Nebraska | 31 | NE | NRS | 24 |

Nebraska: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 31 | 1 | Eastern | 1 | Adams |
| 31 | 1 | Eastern | 11 | Boone |
| 31 | 1 | Eastern | 19 | Buffalo |
| 31 | 1 | Eastern | 21 | Burt |
| 31 | 1 | Eastern | 23 | Butler |
| 31 | 1 | Eastern | 25 | Cass |
| 31 | 1 | Eastern | 27 | Cedar |
| 31 | 1 | Eastern | 35 | Clay |
| 31 | 1 | Eastern | 37 | Colfax |
| 31 | 1 | Eastern | 39 | Cuming |
| 31 | 1 | Eastern | 41 | Custer |
| 31 | 1 | Eastern | 43 | Dakota |
| 31 | 1 | Eastern | 47 | Dawson |
| 31 | 1 | Eastern | 51 | Dixon |
| 31 | 1 | Eastern | 53 | Dodge |
| 31 | 1 | Eastern | 55 | Douglas |
| 31 | 1 | Eastern | 59 | Fillmore |
| 31 | 1 | Eastern | 61 | Franklin |
| 31 | 1 | Eastern | 63 | Frontier |
| 31 | 1 | Eastern | 65 | Furnas |
| 31 | 1 | Eastern | 67 | Gage |
| 31 | 1 | Eastern | 73 | Gosper |
| 31 | 1 | Eastern | 77 | Greeley |
| 31 | 1 | Eastern | 79 | Hall |
| 31 | 1 | Eastern | 81 | Hamilton |
| 31 | 1 | Eastern | 83 | Harlan |
| 31 | 1 | Eastern | 87 | Hitchcock |
| 31 | 1 | Eastern | 93 | Howard |
| 31 | 1 | Eastern | 95 | Jefferson |
| 31 | 1 | Eastern | 97 | Johnson |
| 31 | 1 | Eastern | 99 | Kearney |
| 31 | 1 | Eastern | 109 | Lancaster |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 31 | 1 | Eastern | 119 | Madison |
| 31 | 1 | Eastern | 121 | Merrick |
| 31 | 1 | Eastern | 125 | Nance |
| 31 | 1 | Eastern | 127 | Nemaha |
| 31 | 1 | Eastern | 129 | Nuckolls |
| 31 | 1 | Eastern | 131 | Otoe |
| 31 | 1 | Eastern | 133 | Pawnee |
| 31 | 1 | Eastern | 137 | Phelps |
| 31 | 1 | Eastern | 139 | Pierce |
| 31 | 1 | Eastern | 141 | Platte |
| 31 | 1 | Eastern | 143 | Polk |
| 31 | 1 | Eastern | 145 | Red Willow |
| 31 | 1 | Eastern | 147 | Richardson |
| 31 | 1 | Eastern | 151 | Saline |
| 31 | 1 | Eastern | 153 | Sarpy |
| 31 | 1 | Eastern | 155 | Saunders |
| 31 | 1 | Eastern | 159 | Seward |
| 31 | 1 | Eastern | 163 | Sherman |
| 31 | 1 | Eastern | 167 | Stanton |
| 31 | 1 | Eastern | 169 | Thayer |
| 31 | 1 | Eastern | 173 | Thurston |
| 31 | 1 | Eastern | 175 | Valley |
| 31 | 1 | Eastern | 177 | Washington |
| 31 | 1 | Eastern | 179 | Wayne |
| 31 | 1 | Eastern | 181 | Webster |
| 31 | 1 | Eastern | 185 | York |
| 31 | 2 | Western | 3 | Antelope |
| 31 | 2 | Western | 5 | Arthur |
| 31 | 2 | Western | 7 | Banner |
| 31 | 2 | Western | 9 | Blaine |
| 31 | 2 | Western | 13 | Box Butte |
| 31 | 2 | Western | 15 | Boyd |
| 31 | 2 | Western | 17 | Brown |
| 31 | 2 | Western | 29 | Chase |
| 31 | 2 | Western | 31 | Cherry |
| 31 | 2 | Western | 33 | Cheyenne |
| 31 | 2 | Western | 45 | Dawes |
| 31 | 2 | Western | 49 | Deuel |
| 31 | 2 | Western | 57 | Dundy |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 31 | 2 | Western | 69 | Garden |
| 31 | 2 | Western | 71 | Garfield |
| 31 | 2 | Western | 75 | Grant |
| 31 | 2 | Western | 85 | Hayes |
| 31 | 2 | Western | 89 | Holt |
| 31 | 2 | Western | 91 | Hooker |
| 31 | 2 | Western | 101 | Keith |
| 31 | 2 | Western | 103 | Keya Paha |
| 31 | 2 | Western | 105 | Kimball |
| 31 | 2 | Western | 107 | Knox |
| 31 | 2 | Western | 111 | Lincoln |
| 31 | 2 | Western | 113 | Logan |
| 31 | 2 | Western | 115 | Loup |
| 31 | 2 | Western | 117 | McPherson |
| 31 | 2 | Western | 123 | Morrill |
| 31 | 2 | Western | 135 | Perkins |
| 31 | 2 | Western | 149 | Rock |
| 31 | 2 | Western | 157 | Scotts Bluff |
| 31 | 2 | Western | 161 | Sheridan |
| 31 | 2 | Western | 165 | Sioux |
| 31 | 2 | Western | 171 | Thomas |
| 31 | 2 | Western | 183 | Wheeler |

Nevada

Nevada: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Nevada | 32 | NV | RMRS | 22 |

Nevada: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 32 | 1 | Nevada | 1 | Churchill |
| 32 | 1 | Nevada | 3 | Clark |
| 32 | 1 | Nevada | 5 | Douglas |
| 32 | 1 | Nevada | 7 | Elko |
| 32 | 1 | Nevada | 9 | Esmeralda |
| 32 | 1 | Nevada | 11 | Eureka |
| 32 | 1 | Nevada | 13 | Humboldt |
| 32 | 1 | Nevada | 15 | Lander |
| 32 | 1 | Nevada | 17 | Lincoln |
| 32 | 1 | Nevada | 19 | Lyon |
| 32 | 1 | Nevada | 21 | Mineral |
| 32 | 1 | Nevada | 23 | Nye |
| 32 | 1 | Nevada | 27 | Pershing |
| 32 | 1 | Nevada | 29 | Storey |
| 32 | 1 | Nevada | 31 | Washoe |
| 32 | 1 | Nevada | 33 | White Pine |
| 32 | 1 | Nevada | 510 | Carson City |

New Hampshire

New Hampshire: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|---------------|------------|--------------------|------------------|--------------------------|
| New Hampshire | 33 | NH | NRS | 24 |

New Hampshire: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 33 | 2 | Northern | 3 | Carroll |
| 33 | 2 | Northern | 7 | Coos |
| 33 | 2 | Northern | 9 | Grafton |
| 33 | 3 | Southern | 1 | Belknap |
| 33 | 3 | Southern | 5 | Cheshire |
| 33 | 3 | Southern | 11 | Hillsborough |
| 33 | 3 | Southern | 13 | Merrimack |
| 33 | 3 | Southern | 15 | Rockingham |
| 33 | 3 | Southern | 17 | Strafford |
| 33 | 3 | Southern | 19 | Sullivan |

New Jersey

New Jersey: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| New Jersey | 34 | NJ | NRS | 24 |

New Jersey: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 34 | 1 | New Jersey | 1 | Atlantic |
| 34 | 1 | New Jersey | 3 | Bergen |
| 34 | 1 | New Jersey | 5 | Burlington |
| 34 | 1 | New Jersey | 7 | Camden |
| 34 | 1 | New Jersey | 9 | Cape May |
| 34 | 1 | New Jersey | 11 | Cumberland |
| 34 | 1 | New Jersey | 13 | Essex |
| 34 | 1 | New Jersey | 15 | Gloucester |
| 34 | 1 | New Jersey | 17 | Hudson |
| 34 | 1 | New Jersey | 19 | Hunterdon |
| 34 | 1 | New Jersey | 21 | Mercer |
| 34 | 1 | New Jersey | 23 | Middlesex |
| 34 | 1 | New Jersey | 25 | Monmouth |
| 34 | 1 | New Jersey | 27 | Morris |
| 34 | 1 | New Jersey | 29 | Ocean |
| 34 | 1 | New Jersey | 31 | Passaic |
| 34 | 1 | New Jersey | 33 | Salem |
| 34 | 1 | New Jersey | 35 | Somerset |
| 34 | 1 | New Jersey | 37 | Sussex |
| 34 | 1 | New Jersey | 39 | Union |
| 34 | 1 | New Jersey | 41 | Warren |

New Mexico

New Mexico: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| New Mexico | 35 | NM | RMRS | 22 |

New Mexico: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 35 | 1 | Northwestern | 1 | Bernalillo |
| 35 | 1 | Northwestern | 6 | Cibola |
| 35 | 1 | Northwestern | 28 | Los Alamos |
| 35 | 1 | Northwestern | 31 | McKinley |
| 35 | 1 | Northwestern | 39 | Rio Arriba |
| 35 | 1 | Northwestern | 43 | Sandoval |
| 35 | 1 | Northwestern | 45 | San Juan |
| 35 | 1 | Northwestern | 49 | Santa Fe |
| 35 | 1 | Northwestern | 55 | Taos |
| 35 | 1 | Northwestern | 61 | Valencia |
| 35 | 2 | Northeastern | 7 | Colfax |
| 35 | 2 | Northeastern | 19 | Guadalupe |
| 35 | 2 | Northeastern | 21 | Harding |
| 35 | 2 | Northeastern | 33 | Mora |
| 35 | 2 | Northeastern | 37 | Quay |
| 35 | 2 | Northeastern | 47 | San Miguel |
| 35 | 2 | Northeastern | 57 | Torrance |
| 35 | 2 | Northeastern | 59 | Union |
| 35 | 3 | Southwestern | 3 | Catron |
| 35 | 3 | Southwestern | 13 | Dona Ana |
| 35 | 3 | Southwestern | 17 | Grant |
| 35 | 3 | Southwestern | 23 | Hidalgo |
| 35 | 3 | Southwestern | 29 | Luna |
| 35 | 3 | Southwestern | 51 | Sierra |
| 35 | 3 | Southwestern | 53 | Socorro |
| 35 | 4 | Southeastern | 5 | Chaves |
| 35 | 4 | Southeastern | 9 | Curry |
| 35 | 4 | Southeastern | 11 | DeBaca |
| 35 | 4 | Southeastern | 15 | Eddy |
| 35 | 4 | Southeastern | 25 | Lea |
| 35 | 4 | Southeastern | 27 | Lincoln |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 35 | 4 | Southeastern | 35 | Otero |
| 35 | 4 | Southeastern | 41 | Roosevelt |

New York

New York: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| New York | 36 | NY | NRS | 24 |

New York: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|-------------------------|---------------------------|---------------------------|
| 36 | 1 | Adirondack | 19 | Clinton |
| 36 | 1 | Adirondack | 33 | Franklin |
| 36 | 1 | Adirondack | 45 | Jefferson |
| 36 | 1 | Adirondack | 89 | St. Lawrence |
| 36 | 2 | Lake Plain | 11 | Cayuga |
| 36 | 2 | Lake Plain | 29 | Erie |
| 36 | 2 | Lake Plain | 37 | Genesee |
| 36 | 2 | Lake Plain | 51 | Livingston |
| 36 | 2 | Lake Plain | 53 | Madison |
| 36 | 2 | Lake Plain | 55 | Monroe |
| 36 | 2 | Lake Plain | 63 | Niagara |
| 36 | 2 | Lake Plain | 67 | Onondaga |
| 36 | 2 | Lake Plain | 69 | Ontario |
| 36 | 2 | Lake Plain | 73 | Orleans |
| 36 | 2 | Lake Plain | 75 | Oswego |
| 36 | 2 | Lake Plain | 99 | Seneca |
| 36 | 2 | Lake Plain | 117 | Wayne |
| 36 | 2 | Lake Plain | 121 | Wyoming |
| 36 | 2 | Lake Plain | 123 | Yates |
| 36 | 3 | Western Adirondack | 35 | Fulton |
| 36 | 3 | Western Adirondack | 43 | Herkimer |
| 36 | 3 | Western Adirondack | 49 | Lewis |
| 36 | 3 | Western Adirondack | 65 | Oneida |
| 36 | 4 | Eastern Adirondack | 31 | Essex |
| 36 | 4 | Eastern Adirondack | 41 | Hamilton |
| 36 | 4 | Eastern Adirondack | 113 | Warren |
| 36 | 5 | Southwest Highlands | 3 | Allegany |
| 36 | 5 | Southwest Highlands | 9 | Cattaraugus |
| 36 | 5 | Southwest Highlands | 13 | Chautauqua |
| 36 | 5 | Southwest Highlands | 101 | Steuben |
| 36 | 6 | South-Central Highlands | 7 | Broome |
| 36 | 6 | South-Central Highlands | 15 | Chemung |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 36 | 6 | South-Central Highlands | 17 | Chenango |
| 36 | 6 | South-Central Highlands | 23 | Cortland |
| 36 | 6 | South-Central Highlands | 25 | Delaware |
| 36 | 6 | South-Central Highlands | 77 | Otsego |
| 36 | 6 | South-Central Highlands | 97 | Schuyler |
| 36 | 6 | South-Central Highlands | 107 | Tioga |
| 36 | 6 | South-Central Highlands | 109 | Tompkins |
| 36 | 7 | Capitol District | 1 | Albany |
| 36 | 7 | Capitol District | 21 | Columbia |
| 36 | 7 | Capitol District | 57 | Montgomery |
| 36 | 7 | Capitol District | 83 | Rensselaer |
| 36 | 7 | Capitol District | 91 | Saratoga |
| 36 | 7 | Capitol District | 93 | Schenectady |
| 36 | 7 | Capitol District | 115 | Washington |
| 36 | 8 | Catskill-Lower Hudson | 5 | Bronx |
| 36 | 8 | Catskill-Lower Hudson | 27 | Dutchess |
| 36 | 8 | Catskill-Lower Hudson | 39 | Greene |
| 36 | 8 | Catskill-Lower Hudson | 47 | Kings |
| 36 | 8 | Catskill-Lower Hudson | 59 | Nassau |
| 36 | 8 | Catskill-Lower Hudson | 61 | New York |
| 36 | 8 | Catskill-Lower Hudson | 71 | Orange |
| 36 | 8 | Catskill-Lower Hudson | 79 | Putnam |
| 36 | 8 | Catskill-Lower Hudson | 81 | Queens |
| 36 | 8 | Catskill-Lower Hudson | 85 | Richmond |
| 36 | 8 | Catskill-Lower Hudson | 87 | Rockland |
| 36 | 8 | Catskill-Lower Hudson | 95 | Schoharie |
| 36 | 8 | Catskill-Lower Hudson | 103 | Suffolk |
| 36 | 8 | Catskill-Lower Hudson | 105 | Sullivan |
| 36 | 8 | Catskill-Lower Hudson | 111 | Ulster |
| 36 | 8 | Catskill-Lower Hudson | 119 | Westchester |

North Carolina

North Carolina: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|----------------|------------|--------------------|------------------|--------------------------|
| North Carolina | 37 | NC | SRS | 33 |

North Carolina: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------------|---------------------------|---------------------------|
| 37 | 1 | Southern Coastal Plain | 17 | Bladen |
| 37 | 1 | Southern Coastal Plain | 19 | Brunswick |
| 37 | 1 | Southern Coastal Plain | 47 | Columbus |
| 37 | 1 | Southern Coastal Plain | 51 | Cumberland |
| 37 | 1 | Southern Coastal Plain | 61 | Duplin |
| 37 | 1 | Southern Coastal Plain | 79 | Greene |
| 37 | 1 | Southern Coastal Plain | 85 | Harnett |
| 37 | 1 | Southern Coastal Plain | 93 | Hoke |
| 37 | 1 | Southern Coastal Plain | 101 | Johnston |
| 37 | 1 | Southern Coastal Plain | 103 | Jones |
| 37 | 1 | Southern Coastal Plain | 105 | Lee |
| 37 | 1 | Southern Coastal Plain | 107 | Lenoir |
| 37 | 1 | Southern Coastal Plain | 125 | Moore |
| 37 | 1 | Southern Coastal Plain | 129 | New Hanover |
| 37 | 1 | Southern Coastal Plain | 133 | Onslow |
| 37 | 1 | Southern Coastal Plain | 141 | Pender |
| 37 | 1 | Southern Coastal Plain | 153 | Richmond |
| 37 | 1 | Southern Coastal Plain | 155 | Robeson |
| 37 | 1 | Southern Coastal Plain | 163 | Sampson |
| 37 | 1 | Southern Coastal Plain | 165 | Scotland |
| 37 | 1 | Southern Coastal Plain | 191 | Wayne |
| 37 | 2 | Northern Coastal Plain | 13 | Beaufort |
| 37 | 2 | Northern Coastal Plain | 15 | Bertie |
| 37 | 2 | Northern Coastal Plain | 29 | Camden |
| 37 | 2 | Northern Coastal Plain | 31 | Carteret |
| 37 | 2 | Northern Coastal Plain | 41 | Chowan |
| 37 | 2 | Northern Coastal Plain | 49 | Craven |
| 37 | 2 | Northern Coastal Plain | 53 | Currituck |
| 37 | 2 | Northern Coastal Plain | 55 | Dare |
| 37 | 2 | Northern Coastal Plain | 65 | Edgecombe |
| 37 | 2 | Northern Coastal Plain | 73 | Gates |
| 37 | 2 | Northern Coastal Plain | 83 | Halifax |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 37 | 2 | Northern Coastal Plain | 91 | Hertford |
| 37 | 2 | Northern Coastal Plain | 95 | Hyde |
| 37 | 2 | Northern Coastal Plain | 117 | Martin |
| 37 | 2 | Northern Coastal Plain | 127 | Nash |
| 37 | 2 | Northern Coastal Plain | 131 | Northampton |
| 37 | 2 | Northern Coastal Plain | 137 | Pamlico |
| 37 | 2 | Northern Coastal Plain | 139 | Pasquotank |
| 37 | 2 | Northern Coastal Plain | 143 | Perquimans |
| 37 | 2 | Northern Coastal Plain | 147 | Pitt |
| 37 | 2 | Northern Coastal Plain | 177 | Tyrrell |
| 37 | 2 | Northern Coastal Plain | 187 | Washington |
| 37 | 2 | Northern Coastal Plain | 195 | Wilson |
| 37 | 3 | Piedmont | 1 | Alamance |
| 37 | 3 | Piedmont | 3 | Alexander |
| 37 | 3 | Piedmont | 7 | Anson |
| 37 | 3 | Piedmont | 25 | Cabarrus |
| 37 | 3 | Piedmont | 33 | Caswell |
| 37 | 3 | Piedmont | 35 | Catawba |
| 37 | 3 | Piedmont | 37 | Chatham |
| 37 | 3 | Piedmont | 45 | Cleveland |
| 37 | 3 | Piedmont | 57 | Davidson |
| 37 | 3 | Piedmont | 59 | Davie |
| 37 | 3 | Piedmont | 63 | Durham |
| 37 | 3 | Piedmont | 67 | Forsyth |
| 37 | 3 | Piedmont | 69 | Franklin |
| 37 | 3 | Piedmont | 71 | Gaston |
| 37 | 3 | Piedmont | 77 | Granville |
| 37 | 3 | Piedmont | 81 | Guilford |
| 37 | 3 | Piedmont | 97 | Iredell |
| 37 | 3 | Piedmont | 109 | Lincoln |
| 37 | 3 | Piedmont | 119 | Mecklenburg |
| 37 | 3 | Piedmont | 123 | Montgomery |
| 37 | 3 | Piedmont | 135 | Orange |
| 37 | 3 | Piedmont | 145 | Person |
| 37 | 3 | Piedmont | 149 | Polk |
| 37 | 3 | Piedmont | 151 | Randolph |
| 37 | 3 | Piedmont | 157 | Rockingham |
| 37 | 3 | Piedmont | 159 | Rowan |
| 37 | 3 | Piedmont | 161 | Rutherford |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 37 | 3 | Piedmont | 167 | Stanly |
| 37 | 3 | Piedmont | 169 | Stokes |
| 37 | 3 | Piedmont | 171 | Surry |
| 37 | 3 | Piedmont | 179 | Union |
| 37 | 3 | Piedmont | 181 | Vance |
| 37 | 3 | Piedmont | 183 | Wake |
| 37 | 3 | Piedmont | 185 | Warren |
| 37 | 3 | Piedmont | 197 | Yadkin |
| 37 | 4 | Mountains | 5 | Alleghany |
| 37 | 4 | Mountains | 9 | Ashe |
| 37 | 4 | Mountains | 11 | Avery |
| 37 | 4 | Mountains | 21 | Buncombe |
| 37 | 4 | Mountains | 23 | Burke |
| 37 | 4 | Mountains | 27 | Caldwell |
| 37 | 4 | Mountains | 39 | Cherokee |
| 37 | 4 | Mountains | 43 | Clay |
| 37 | 4 | Mountains | 75 | Graham |
| 37 | 4 | Mountains | 87 | Haywood |
| 37 | 4 | Mountains | 89 | Henderson |
| 37 | 4 | Mountains | 99 | Jackson |
| 37 | 4 | Mountains | 111 | McDowell |
| 37 | 4 | Mountains | 113 | Macon |
| 37 | 4 | Mountains | 115 | Madison |
| 37 | 4 | Mountains | 121 | Mitchell |
| 37 | 4 | Mountains | 173 | Swain |
| 37 | 4 | Mountains | 175 | Transylvania |
| 37 | 4 | Mountains | 189 | Watauga |
| 37 | 4 | Mountains | 193 | Wilkes |
| 37 | 4 | Mountains | 199 | Yancey |

North Dakota

North Dakota: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|--------------|------------|--------------------|------------------|--------------------------|
| North Dakota | 38 | ND | NRS | 24 |

North Dakota: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 38 | 1 | Eastern | 1 | Adams |
| 38 | 1 | Eastern | 3 | Barnes |
| 38 | 1 | Eastern | 5 | Benson |
| 38 | 1 | Eastern | 7 | Billings |
| 38 | 1 | Eastern | 9 | Bottineau |
| 38 | 1 | Eastern | 11 | Bowman |
| 38 | 1 | Eastern | 13 | Burke |
| 38 | 1 | Eastern | 15 | Burleigh |
| 38 | 1 | Eastern | 17 | Cass |
| 38 | 1 | Eastern | 19 | Cavalier |
| 38 | 1 | Eastern | 21 | Dickey |
| 38 | 1 | Eastern | 23 | Divide |
| 38 | 1 | Eastern | 25 | Dunn |
| 38 | 1 | Eastern | 27 | Eddy |
| 38 | 1 | Eastern | 29 | Emmons |
| 38 | 1 | Eastern | 31 | Foster |
| 38 | 1 | Eastern | 33 | Golden Valley |
| 38 | 1 | Eastern | 35 | Grand Forks |
| 38 | 1 | Eastern | 37 | Grant |
| 38 | 1 | Eastern | 39 | Griggs |
| 38 | 1 | Eastern | 41 | Hettinger |
| 38 | 1 | Eastern | 43 | Kidder |
| 38 | 1 | Eastern | 45 | LaMoure |
| 38 | 1 | Eastern | 47 | Logan |
| 38 | 1 | Eastern | 49 | McHenry |
| 38 | 1 | Eastern | 51 | McIntosh |
| 38 | 1 | Eastern | 53 | McKenzie |
| 38 | 1 | Eastern | 55 | McLean |
| 38 | 1 | Eastern | 57 | Mercer |
| 38 | 1 | Eastern | 59 | Morton |
| 38 | 1 | Eastern | 61 | Mountrail |
| 38 | 1 | Eastern | 63 | Nelson |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 38 | 1 | Eastern | 65 | Oliver |
| 38 | 1 | Eastern | 67 | Pembina |
| 38 | 1 | Eastern | 69 | Pierce |
| 38 | 1 | Eastern | 71 | Ramsey |
| 38 | 1 | Eastern | 73 | Ransom |
| 38 | 1 | Eastern | 75 | Renville |
| 38 | 1 | Eastern | 77 | Richland |
| 38 | 1 | Eastern | 79 | Rolette |
| 38 | 1 | Eastern | 81 | Sargent |
| 38 | 1 | Eastern | 83 | Sheridan |
| 38 | 1 | Eastern | 85 | Sioux |
| 38 | 1 | Eastern | 87 | Slope |
| 38 | 1 | Eastern | 89 | Stark |
| 38 | 1 | Eastern | 91 | Steele |
| 38 | 1 | Eastern | 93 | Stutsman |
| 38 | 1 | Eastern | 95 | Towner |
| 38 | 1 | Eastern | 97 | Traill |
| 38 | 1 | Eastern | 99 | Walsh |
| 38 | 1 | Eastern | 101 | Ward |
| 38 | 1 | Eastern | 103 | Wells |
| 38 | 1 | Eastern | 105 | Williams |

Ohio

Ohio: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Ohio | 39 | OH | NRS | 24 |

Ohio: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 39 | 1 | South-Central | 1 | Adams |
| 39 | 1 | South-Central | 15 | Brown |
| 39 | 1 | South-Central | 25 | Clermont |
| 39 | 1 | South-Central | 53 | Gallia |
| 39 | 1 | South-Central | 71 | Highland |
| 39 | 1 | South-Central | 79 | Jackson |
| 39 | 1 | South-Central | 87 | Lawrence |
| 39 | 1 | South-Central | 131 | Pike |
| 39 | 1 | South-Central | 141 | Ross |
| 39 | 1 | South-Central | 145 | Scioto |
| 39 | 2 | Southeastern | 9 | Athens |
| 39 | 2 | Southeastern | 73 | Hocking |
| 39 | 2 | Southeastern | 105 | Meigs |
| 39 | 2 | Southeastern | 115 | Morgan |
| 39 | 2 | Southeastern | 127 | Perry |
| 39 | 2 | Southeastern | 163 | Vinton |
| 39 | 2 | Southeastern | 167 | Washington |
| 39 | 3 | East-Central | 13 | Belmont |
| 39 | 3 | East-Central | 19 | Carroll |
| 39 | 3 | East-Central | 31 | Coshcocton |
| 39 | 3 | East-Central | 59 | Guernsey |
| 39 | 3 | East-Central | 67 | Harrison |
| 39 | 3 | East-Central | 75 | Holmes |
| 39 | 3 | East-Central | 81 | Jefferson |
| 39 | 3 | East-Central | 111 | Monroe |
| 39 | 3 | East-Central | 119 | Muskingum |
| 39 | 3 | East-Central | 121 | Noble |
| 39 | 3 | East-Central | 157 | Tuscarawas |
| 39 | 4 | Northeastern | 5 | Ashland |
| 39 | 4 | Northeastern | 7 | Ashtabula |
| 39 | 4 | Northeastern | 29 | Columbiana |
| 39 | 4 | Northeastern | 35 | Cuyahoga |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 39 | 4 | Northeastern | 43 | Erie |
| 39 | 4 | Northeastern | 55 | Geauga |
| 39 | 4 | Northeastern | 77 | Huron |
| 39 | 4 | Northeastern | 85 | Lake |
| 39 | 4 | Northeastern | 93 | Lorain |
| 39 | 4 | Northeastern | 99 | Mahoning |
| 39 | 4 | Northeastern | 103 | Medina |
| 39 | 4 | Northeastern | 133 | Portage |
| 39 | 4 | Northeastern | 139 | Richland |
| 39 | 4 | Northeastern | 151 | Stark |
| 39 | 4 | Northeastern | 153 | Summit |
| 39 | 4 | Northeastern | 155 | Trumbull |
| 39 | 4 | Northeastern | 169 | Wayne |
| 39 | 5 | Southwestern | 17 | Butler |
| 39 | 5 | Southwestern | 23 | Clark |
| 39 | 5 | Southwestern | 27 | Clinton |
| 39 | 5 | Southwestern | 37 | Darke |
| 39 | 5 | Southwestern | 45 | Fairfield |
| 39 | 5 | Southwestern | 47 | Fayette |
| 39 | 5 | Southwestern | 49 | Franklin |
| 39 | 5 | Southwestern | 57 | Greene |
| 39 | 5 | Southwestern | 61 | Hamilton |
| 39 | 5 | Southwestern | 89 | Licking |
| 39 | 5 | Southwestern | 97 | Madison |
| 39 | 5 | Southwestern | 109 | Miami |
| 39 | 5 | Southwestern | 113 | Montgomery |
| 39 | 5 | Southwestern | 129 | Pickaway |
| 39 | 5 | Southwestern | 135 | Preble |
| 39 | 5 | Southwestern | 165 | Warren |
| 39 | 6 | Northwestern | 3 | Allen |
| 39 | 6 | Northwestern | 11 | Auglaize |
| 39 | 6 | Northwestern | 21 | Champaign |
| 39 | 6 | Northwestern | 33 | Crawford |
| 39 | 6 | Northwestern | 39 | Defiance |
| 39 | 6 | Northwestern | 41 | Delaware |
| 39 | 6 | Northwestern | 51 | Fulton |
| 39 | 6 | Northwestern | 63 | Hancock |
| 39 | 6 | Northwestern | 65 | Hardin |
| 39 | 6 | Northwestern | 69 | Henry |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 39 | 6 | Northwestern | 83 | Knox |
| 39 | 6 | Northwestern | 91 | Logan |
| 39 | 6 | Northwestern | 95 | Lucas |
| 39 | 6 | Northwestern | 101 | Marion |
| 39 | 6 | Northwestern | 107 | Mercer |
| 39 | 6 | Northwestern | 117 | Morrow |
| 39 | 6 | Northwestern | 123 | Ottawa |
| 39 | 6 | Northwestern | 125 | Paulding |
| 39 | 6 | Northwestern | 137 | Putnam |
| 39 | 6 | Northwestern | 143 | Sandusky |
| 39 | 6 | Northwestern | 147 | Seneca |
| 39 | 6 | Northwestern | 149 | Shelby |
| 39 | 6 | Northwestern | 159 | Union |
| 39 | 6 | Northwestern | 161 | Van Wert |
| 39 | 6 | Northwestern | 171 | Williams |
| 39 | 6 | Northwestern | 173 | Wood |
| 39 | 6 | Northwestern | 175 | Wyandot |

Oklahoma

Oklahoma: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Oklahoma | 40 | OK | SRS | 33 |

Oklahoma: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 40 | 1 | Southeast | 5 | Atoka |
| 40 | 1 | Southeast | 13 | Bryan |
| 40 | 1 | Southeast | 23 | Choctaw |
| 40 | 1 | Southeast | 29 | Coal |
| 40 | 1 | Southeast | 61 | Haskell |
| 40 | 1 | Southeast | 77 | Latimer |
| 40 | 1 | Southeast | 79 | Le Flore |
| 40 | 1 | Southeast | 89 | McCurtain |
| 40 | 1 | Southeast | 121 | Pittsburg |
| 40 | 1 | Southeast | 127 | Pushmataha |
| 40 | 2 | Northeast | 1 | Adair |
| 40 | 2 | Northeast | 21 | Cherokee |
| 40 | 2 | Northeast | 41 | Delaware |
| 40 | 2 | Northeast | 91 | McIntosh |
| 40 | 2 | Northeast | 97 | Mayes |
| 40 | 2 | Northeast | 101 | Muskogee |
| 40 | 2 | Northeast | 115 | Ottawa |
| 40 | 2 | Northeast | 135 | Sequoyah |
| 40 | 3 | North Central | 35 | Craig |
| 40 | 3 | North Central | 37 | Creek |
| 40 | 3 | North Central | 105 | Nowata |
| 40 | 3 | North Central | 113 | Osage |
| 40 | 3 | North Central | 117 | Pawnee |
| 40 | 3 | North Central | 119 | Payne |
| 40 | 3 | North Central | 131 | Rogers |
| 40 | 3 | North Central | 143 | Tulsa |
| 40 | 3 | North Central | 145 | Wagoner |
| 40 | 3 | North Central | 147 | Washington |
| 40 | 4 | South Central | 19 | Carter |
| 40 | 4 | South Central | 27 | Cleveland |
| 40 | 4 | South Central | 49 | Garvin |
| 40 | 4 | South Central | 63 | Hughes |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 40 | 4 | South Central | 69 | Johnston |
| 40 | 4 | South Central | 81 | Lincoln |
| 40 | 4 | South Central | 83 | Logan |
| 40 | 4 | South Central | 85 | Love |
| 40 | 4 | South Central | 87 | McClain |
| 40 | 4 | South Central | 95 | Marshall |
| 40 | 4 | South Central | 99 | Murray |
| 40 | 4 | South Central | 107 | Okluskee |
| 40 | 4 | South Central | 109 | Oklahoma |
| 40 | 4 | South Central | 111 | Okmulgee |
| 40 | 4 | South Central | 123 | Pontotoc |
| 40 | 4 | South Central | 125 | Pottawatomie |
| 40 | 4 | South Central | 133 | Seminole |
| 40 | 5 | Southwest | 9 | Beckham |
| 40 | 5 | Southwest | 11 | Blaine |
| 40 | 5 | Southwest | 15 | Caddo |
| 40 | 5 | Southwest | 17 | Canadian |
| 40 | 5 | Southwest | 31 | Comanche |
| 40 | 5 | Southwest | 33 | Cotton |
| 40 | 5 | Southwest | 39 | Custer |
| 40 | 5 | Southwest | 43 | Dewey |
| 40 | 5 | Southwest | 51 | Grady |
| 40 | 5 | Southwest | 55 | Greer |
| 40 | 5 | Southwest | 57 | Harmon |
| 40 | 5 | Southwest | 65 | Jackson |
| 40 | 5 | Southwest | 67 | Jefferson |
| 40 | 5 | Southwest | 73 | Kingfisher |
| 40 | 5 | Southwest | 75 | Kiowa |
| 40 | 5 | Southwest | 129 | Roger Mills |
| 40 | 5 | Southwest | 137 | Stephens |
| 40 | 5 | Southwest | 141 | Tillman |
| 40 | 5 | Southwest | 149 | Washita |
| 40 | 6 | High Plains | 7 | Beaver |
| 40 | 6 | High Plains | 25 | Cimarron |
| 40 | 6 | High Plains | 45 | Ellis |
| 40 | 6 | High Plains | 59 | Harper |
| 40 | 6 | High Plains | 139 | Texas |
| 40 | 7 | Great Plains | 3 | Alfalfa |
| 40 | 7 | Great Plains | 47 | Garfield |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 40 | 7 | Great Plains | 53 | Grant |
| 40 | 7 | Great Plains | 71 | Kay |
| 40 | 7 | Great Plains | 93 | Major |
| 40 | 7 | Great Plains | 103 | Noble |
| 40 | 7 | Great Plains | 151 | Woods |
| 40 | 7 | Great Plains | 153 | Woodward |

Oregon

Oregon: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Oregon | 41 | OR | PNWRS | 26 |

Oregon: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 41 | 0 | Northwest | 5 | Clackamas |
| 41 | 0 | Northwest | 7 | Clatsop |
| 41 | 0 | Northwest | 9 | Columbia |
| 41 | 0 | Northwest | 27 | Hood River |
| 41 | 0 | Northwest | 47 | Marion |
| 41 | 0 | Northwest | 51 | Multnomah |
| 41 | 0 | Northwest | 53 | Polk |
| 41 | 0 | Northwest | 57 | Tillamook |
| 41 | 0 | Northwest | 67 | Washington |
| 41 | 0 | Northwest | 71 | Yamhill |
| 41 | 1 | West Central | 3 | Benton |
| 41 | 1 | West Central | 39 | Lane |
| 41 | 1 | West Central | 41 | Lincoln |
| 41 | 1 | West Central | 43 | Linn |
| 41 | 2 | Southwest | 11 | Coos |
| 41 | 2 | Southwest | 15 | Curry |
| 41 | 2 | Southwest | 19 | Douglas |
| 41 | 2 | Southwest | 29 | Jackson |
| 41 | 2 | Southwest | 33 | Josephine |
| 41 | 3 | Central | 13 | Crook |
| 41 | 3 | Central | 17 | Deschutes |
| 41 | 3 | Central | 21 | Gilliam |
| 41 | 3 | Central | 31 | Jefferson |
| 41 | 3 | Central | 35 | Klamath |
| 41 | 3 | Central | 37 | Lake |
| 41 | 3 | Central | 55 | Sherman |
| 41 | 3 | Central | 65 | Wasco |
| 41 | 3 | Central | 69 | Wheeler |
| 41 | 4 | Blue Mountains | 1 | Baker |
| 41 | 4 | Blue Mountains | 23 | Grant |
| 41 | 4 | Blue Mountains | 25 | Harney |
| 41 | 4 | Blue Mountains | 45 | Malheur |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 41 | 4 | Blue Mountains | 49 | Morrow |
| 41 | 4 | Blue Mountains | 59 | Umatilla |
| 41 | 4 | Blue Mountains | 61 | Union |
| 41 | 4 | Blue Mountains | 63 | Wallowa |

Pennsylvania

Pennsylvania: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|--------------|------------|--------------------|------------------|--------------------------|
| Pennsylvania | 42 | PA | NRS | 24 |

Pennsylvania: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|-------------------------|---------------------------|---------------------------|
| 42 | 0 | South Central | 43 | Dauphin |
| 42 | 0 | South Central | 55 | Franklin |
| 42 | 0 | South Central | 57 | Fulton |
| 42 | 0 | South Central | 61 | Huntingdon |
| 42 | 0 | South Central | 67 | Juniata |
| 42 | 0 | South Central | 87 | Mifflin |
| 42 | 0 | South Central | 99 | Perry |
| 42 | 0 | South Central | 109 | Snyder |
| 42 | 0 | South Central | 119 | Union |
| 42 | 5 | Western | 3 | Allegheny |
| 42 | 5 | Western | 5 | Armstrong |
| 42 | 5 | Western | 7 | Beaver |
| 42 | 5 | Western | 19 | Butler |
| 42 | 5 | Western | 39 | Crawford |
| 42 | 5 | Western | 49 | Erie |
| 42 | 5 | Western | 59 | Greene |
| 42 | 5 | Western | 63 | Indiana |
| 42 | 5 | Western | 73 | Lawrence |
| 42 | 5 | Western | 85 | Mercer |
| 42 | 5 | Western | 125 | Washington |
| 42 | 5 | Western | 129 | Westmoreland |
| 42 | 6 | North Central/Allegheny | 23 | Cameron |
| 42 | 6 | North Central/Allegheny | 27 | Centre |
| 42 | 6 | North Central/Allegheny | 31 | Clarion |
| 42 | 6 | North Central/Allegheny | 33 | Clearfield |
| 42 | 6 | North Central/Allegheny | 35 | Clinton |
| 42 | 6 | North Central/Allegheny | 47 | Elk |
| 42 | 6 | North Central/Allegheny | 53 | Forest |
| 42 | 6 | North Central/Allegheny | 65 | Jefferson |
| 42 | 6 | North Central/Allegheny | 81 | Lycoming |
| 42 | 6 | North Central/Allegheny | 83 | McKean |
| 42 | 6 | North Central/Allegheny | 105 | Potter |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 42 | 6 | North Central/Allegheny | 113 | Sullivan |
| 42 | 6 | North Central/Allegheny | 117 | Tioga |
| 42 | 6 | North Central/Allegheny | 121 | Venango |
| 42 | 6 | North Central/Allegheny | 123 | Warren |
| 42 | 7 | Southwestern | 9 | Bedford |
| 42 | 7 | Southwestern | 13 | Blair |
| 42 | 7 | Southwestern | 21 | Cambria |
| 42 | 7 | Southwestern | 51 | Fayette |
| 42 | 7 | Southwestern | 111 | Somerset |
| 42 | 8 | Northeastern/Pocono | 15 | Bradford |
| 42 | 8 | Northeastern/Pocono | 25 | Carbon |
| 42 | 8 | Northeastern/Pocono | 37 | Columbia |
| 42 | 8 | Northeastern/Pocono | 69 | Lackawanna |
| 42 | 8 | Northeastern/Pocono | 79 | Luzerne |
| 42 | 8 | Northeastern/Pocono | 89 | Monroe |
| 42 | 8 | Northeastern/Pocono | 93 | Montour |
| 42 | 8 | Northeastern/Pocono | 97 | Northumberland |
| 42 | 8 | Northeastern/Pocono | 103 | Pike |
| 42 | 8 | Northeastern/Pocono | 107 | Schuylkill |
| 42 | 8 | Northeastern/Pocono | 115 | Susquehanna |
| 42 | 8 | Northeastern/Pocono | 127 | Wayne |
| 42 | 8 | Northeastern/Pocono | 131 | Wyoming |
| 42 | 9 | Southeastern | 1 | Adams |
| 42 | 9 | Southeastern | 11 | Berks |
| 42 | 9 | Southeastern | 17 | Bucks |
| 42 | 9 | Southeastern | 29 | Chester |
| 42 | 9 | Southeastern | 41 | Cumberland |
| 42 | 9 | Southeastern | 45 | Delaware |
| 42 | 9 | Southeastern | 71 | Lancaster |
| 42 | 9 | Southeastern | 75 | Lebanon |
| 42 | 9 | Southeastern | 77 | Lehigh |
| 42 | 9 | Southeastern | 91 | Montgomery |
| 42 | 9 | Southeastern | 95 | Northampton |
| 42 | 9 | Southeastern | 101 | Philadelphia |
| 42 | 9 | Southeastern | 133 | York |

Rhode Island

Rhode Island: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|--------------|------------|--------------------|------------------|--------------------------|
| Rhode Island | 44 | RI | NRS | 24 |

Rhode Island: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 44 | 1 | Rhode Island | 1 | Bristol |
| 44 | 1 | Rhode Island | 3 | Kent |
| 44 | 1 | Rhode Island | 5 | Newport |
| 44 | 1 | Rhode Island | 7 | Providence |
| 44 | 1 | Rhode Island | 9 | Washington |

South Carolina

South Carolina: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|----------------|------------|--------------------|------------------|--------------------------|
| South Carolina | 45 | SC | SRS | 33 |

South Carolina: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------------|---------------------------|---------------------------|
| 45 | 1 | Southern Coastal Plain | 3 | Aiken |
| 45 | 1 | Southern Coastal Plain | 5 | Allendale |
| 45 | 1 | Southern Coastal Plain | 9 | Bamberg |
| 45 | 1 | Southern Coastal Plain | 11 | Barnwell |
| 45 | 1 | Southern Coastal Plain | 13 | Beaufort |
| 45 | 1 | Southern Coastal Plain | 17 | Calhoun |
| 45 | 1 | Southern Coastal Plain | 29 | Colleton |
| 45 | 1 | Southern Coastal Plain | 35 | Dorchester |
| 45 | 1 | Southern Coastal Plain | 49 | Hampton |
| 45 | 1 | Southern Coastal Plain | 53 | Jasper |
| 45 | 1 | Southern Coastal Plain | 63 | Lexington |
| 45 | 1 | Southern Coastal Plain | 75 | Orangeburg |
| 45 | 2 | Northern Coastal Plain | 15 | Berkeley |
| 45 | 2 | Northern Coastal Plain | 19 | Charleston |
| 45 | 2 | Northern Coastal Plain | 25 | Chesterfield |
| 45 | 2 | Northern Coastal Plain | 27 | Clarendon |
| 45 | 2 | Northern Coastal Plain | 31 | Darlington |
| 45 | 2 | Northern Coastal Plain | 33 | Dillon |
| 45 | 2 | Northern Coastal Plain | 41 | Florence |
| 45 | 2 | Northern Coastal Plain | 43 | Georgetown |
| 45 | 2 | Northern Coastal Plain | 51 | Horry |
| 45 | 2 | Northern Coastal Plain | 55 | Kershaw |
| 45 | 2 | Northern Coastal Plain | 61 | Lee |
| 45 | 2 | Northern Coastal Plain | 67 | Marion |
| 45 | 2 | Northern Coastal Plain | 69 | Marlboro |
| 45 | 2 | Northern Coastal Plain | 79 | Richland |
| 45 | 2 | Northern Coastal Plain | 85 | Sumter |
| 45 | 2 | Northern Coastal Plain | 89 | Williamsburg |
| 45 | 3 | Piedmont | 1 | Abbeville |
| 45 | 3 | Piedmont | 7 | Anderson |
| 45 | 3 | Piedmont | 21 | Cherokee |
| 45 | 3 | Piedmont | 23 | Chester |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 45 | 3 | Piedmont | 37 | Edgefield |
| 45 | 3 | Piedmont | 39 | Fairfield |
| 45 | 3 | Piedmont | 45 | Greenville |
| 45 | 3 | Piedmont | 47 | Greenwood |
| 45 | 3 | Piedmont | 57 | Lancaster |
| 45 | 3 | Piedmont | 59 | Laurens |
| 45 | 3 | Piedmont | 65 | McCormick |
| 45 | 3 | Piedmont | 71 | Newberry |
| 45 | 3 | Piedmont | 73 | Oconee |
| 45 | 3 | Piedmont | 77 | Pickens |
| 45 | 3 | Piedmont | 81 | Saluda |
| 45 | 3 | Piedmont | 83 | Spartanburg |
| 45 | 3 | Piedmont | 87 | Union |
| 45 | 3 | Piedmont | 91 | York |

South Dakota

South Dakota: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|--------------|------------|--------------------|------------------|--------------------------|
| South Dakota | 46 | SD | NRS | 24 |

South Dakota: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 46 | 1 | Eastern | 3 | Aurora |
| 46 | 1 | Eastern | 5 | Beadle |
| 46 | 1 | Eastern | 7 | Bennett |
| 46 | 1 | Eastern | 9 | Bon Homme |
| 46 | 1 | Eastern | 11 | Brookings |
| 46 | 1 | Eastern | 13 | Brown |
| 46 | 1 | Eastern | 15 | Brule |
| 46 | 1 | Eastern | 17 | Buffalo |
| 46 | 1 | Eastern | 21 | Campbell |
| 46 | 1 | Eastern | 23 | Charles Mix |
| 46 | 1 | Eastern | 25 | Clark |
| 46 | 1 | Eastern | 27 | Clay |
| 46 | 1 | Eastern | 29 | Codington |
| 46 | 1 | Eastern | 31 | Corson |
| 46 | 1 | Eastern | 35 | Davison |
| 46 | 1 | Eastern | 37 | Day |
| 46 | 1 | Eastern | 39 | Deuel |
| 46 | 1 | Eastern | 41 | Dewey |
| 46 | 1 | Eastern | 43 | Douglas |
| 46 | 1 | Eastern | 45 | Edmunds |
| 46 | 1 | Eastern | 49 | Faulk |
| 46 | 1 | Eastern | 51 | Grant |
| 46 | 1 | Eastern | 53 | Gregory |
| 46 | 1 | Eastern | 55 | Haakon |
| 46 | 1 | Eastern | 57 | Hamlin |
| 46 | 1 | Eastern | 59 | Hand |
| 46 | 1 | Eastern | 61 | Hanson |
| 46 | 1 | Eastern | 65 | Hughes |
| 46 | 1 | Eastern | 67 | Hutchinson |
| 46 | 1 | Eastern | 69 | Hyde |
| 46 | 1 | Eastern | 71 | Jackson |
| 46 | 1 | Eastern | 73 | Jerauld |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 46 | 1 | Eastern | 75 | Jones |
| 46 | 1 | Eastern | 77 | Kingsbury |
| 46 | 1 | Eastern | 79 | Lake |
| 46 | 1 | Eastern | 83 | Lincoln |
| 46 | 1 | Eastern | 85 | Lyman |
| 46 | 1 | Eastern | 87 | McCook |
| 46 | 1 | Eastern | 89 | McPherson |
| 46 | 1 | Eastern | 91 | Marshall |
| 46 | 1 | Eastern | 95 | Mellette |
| 46 | 1 | Eastern | 97 | Miner |
| 46 | 1 | Eastern | 99 | Minnehaha |
| 46 | 1 | Eastern | 101 | Moody |
| 46 | 1 | Eastern | 105 | Perkins |
| 46 | 1 | Eastern | 107 | Potter |
| 46 | 1 | Eastern | 109 | Roberts |
| 46 | 1 | Eastern | 111 | Sanborn |
| 46 | 1 | Eastern | 115 | Spink |
| 46 | 1 | Eastern | 117 | Stanley |
| 46 | 1 | Eastern | 119 | Sully |
| 46 | 1 | Eastern | 121 | Todd |
| 46 | 1 | Eastern | 123 | Tripp |
| 46 | 1 | Eastern | 125 | Turner |
| 46 | 1 | Eastern | 127 | Union |
| 46 | 1 | Eastern | 129 | Walworth |
| 46 | 1 | Eastern | 135 | Yankton |
| 46 | 1 | Eastern | 137 | Ziebach |
| 46 | 2 | Western | 19 | Butte |
| 46 | 2 | Western | 33 | Custer |
| 46 | 2 | Western | 47 | Fall River |
| 46 | 2 | Western | 63 | Harding |
| 46 | 2 | Western | 81 | Lawrence |
| 46 | 2 | Western | 93 | Meade |
| 46 | 2 | Western | 103 | Pennington |
| 46 | 2 | Western | 113 | Shannon |

Tennessee

Tennessee: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Tennessee | 47 | TN | SRS | 33 |

Tennessee: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 47 | 1 | West | 17 | Carroll |
| 47 | 1 | West | 23 | Chester |
| 47 | 1 | West | 33 | Crockett |
| 47 | 1 | West | 45 | Dyer |
| 47 | 1 | West | 47 | Fayette |
| 47 | 1 | West | 53 | Gibson |
| 47 | 1 | West | 69 | Hardeman |
| 47 | 1 | West | 75 | Haywood |
| 47 | 1 | West | 77 | Henderson |
| 47 | 1 | West | 79 | Henry |
| 47 | 1 | West | 95 | Lake |
| 47 | 1 | West | 97 | Lauderdale |
| 47 | 1 | West | 109 | McNairy |
| 47 | 1 | West | 113 | Madison |
| 47 | 1 | West | 131 | Obion |
| 47 | 1 | West | 157 | Shelby |
| 47 | 1 | West | 167 | Tipton |
| 47 | 1 | West | 183 | Weakley |
| 47 | 2 | West Central | 5 | Benton |
| 47 | 2 | West Central | 39 | Decatur |
| 47 | 2 | West Central | 71 | Hardin |
| 47 | 2 | West Central | 81 | Hickman |
| 47 | 2 | West Central | 83 | Houston |
| 47 | 2 | West Central | 85 | Humphreys |
| 47 | 2 | West Central | 99 | Lawrence |
| 47 | 2 | West Central | 101 | Lewis |
| 47 | 2 | West Central | 135 | Perry |
| 47 | 2 | West Central | 161 | Stewart |
| 47 | 2 | West Central | 181 | Wayne |
| 47 | 3 | Central | 3 | Bedford |
| 47 | 3 | Central | 15 | Cannon |
| 47 | 3 | Central | 21 | Cheatham |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 47 | 3 | Central | 27 | Clay |
| 47 | 3 | Central | 31 | Coffee |
| 47 | 3 | Central | 37 | Davidson |
| 47 | 3 | Central | 41 | DeKalb |
| 47 | 3 | Central | 43 | Dickson |
| 47 | 3 | Central | 55 | Giles |
| 47 | 3 | Central | 87 | Jackson |
| 47 | 3 | Central | 103 | Lincoln |
| 47 | 3 | Central | 111 | Macon |
| 47 | 3 | Central | 117 | Marshall |
| 47 | 3 | Central | 119 | Maury |
| 47 | 3 | Central | 125 | Montgomery |
| 47 | 3 | Central | 127 | Moore |
| 47 | 3 | Central | 147 | Robertson |
| 47 | 3 | Central | 149 | Rutherford |
| 47 | 3 | Central | 159 | Smith |
| 47 | 3 | Central | 165 | Sumner |
| 47 | 3 | Central | 169 | Trousdale |
| 47 | 3 | Central | 187 | Williamson |
| 47 | 3 | Central | 189 | Wilson |
| 47 | 4 | Plateau | 7 | Bledsoe |
| 47 | 4 | Plateau | 13 | Campbell |
| 47 | 4 | Plateau | 35 | Cumberland |
| 47 | 4 | Plateau | 49 | Fentress |
| 47 | 4 | Plateau | 51 | Franklin |
| 47 | 4 | Plateau | 61 | Grundy |
| 47 | 4 | Plateau | 115 | Marion |
| 47 | 4 | Plateau | 129 | Morgan |
| 47 | 4 | Plateau | 133 | Overton |
| 47 | 4 | Plateau | 137 | Pickett |
| 47 | 4 | Plateau | 141 | Putnam |
| 47 | 4 | Plateau | 151 | Scott |
| 47 | 4 | Plateau | 153 | Sequatchie |
| 47 | 4 | Plateau | 175 | Van Buren |
| 47 | 4 | Plateau | 177 | Warren |
| 47 | 4 | Plateau | 185 | White |
| 47 | 5 | East | 1 | Anderson |
| 47 | 5 | East | 9 | Blount |
| 47 | 5 | East | 11 | Bradley |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 47 | 5 | East | 19 | Carter |
| 47 | 5 | East | 25 | Claiborne |
| 47 | 5 | East | 29 | Cocke |
| 47 | 5 | East | 57 | Grainger |
| 47 | 5 | East | 59 | Greene |
| 47 | 5 | East | 63 | Hamblen |
| 47 | 5 | East | 65 | Hamilton |
| 47 | 5 | East | 67 | Hancock |
| 47 | 5 | East | 73 | Hawkins |
| 47 | 5 | East | 89 | Jefferson |
| 47 | 5 | East | 91 | Johnson |
| 47 | 5 | East | 93 | Knox |
| 47 | 5 | East | 105 | Loudon |
| 47 | 5 | East | 107 | McMinn |
| 47 | 5 | East | 121 | Meigs |
| 47 | 5 | East | 123 | Monroe |
| 47 | 5 | East | 139 | Polk |
| 47 | 5 | East | 143 | Rhea |
| 47 | 5 | East | 145 | Roane |
| 47 | 5 | East | 155 | Sevier |
| 47 | 5 | East | 163 | Sullivan |
| 47 | 5 | East | 171 | Unicoi |
| 47 | 5 | East | 173 | Union |
| 47 | 5 | East | 179 | Washington |

Texas

Texas: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Texas | 48 | TX | SRS | 33 |

Texas: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 48 | 1 | Southeast | 5 | Angelina |
| 48 | 1 | Southeast | 71 | Chambers |
| 48 | 1 | Southeast | 185 | Grimes |
| 48 | 1 | Southeast | 199 | Hardin |
| 48 | 1 | Southeast | 201 | Harris |
| 48 | 1 | Southeast | 225 | Houston |
| 48 | 1 | Southeast | 241 | Jasper |
| 48 | 1 | Southeast | 245 | Jefferson |
| 48 | 1 | Southeast | 289 | Leon |
| 48 | 1 | Southeast | 291 | Liberty |
| 48 | 1 | Southeast | 313 | Madison |
| 48 | 1 | Southeast | 339 | Montgomery |
| 48 | 1 | Southeast | 351 | Newton |
| 48 | 1 | Southeast | 361 | Orange |
| 48 | 1 | Southeast | 373 | Polk |
| 48 | 1 | Southeast | 403 | Sabine |
| 48 | 1 | Southeast | 405 | San Augustine |
| 48 | 1 | Southeast | 407 | San Jacinto |
| 48 | 1 | Southeast | 455 | Trinity |
| 48 | 1 | Southeast | 457 | Tyler |
| 48 | 1 | Southeast | 471 | Walker |
| 48 | 1 | Southeast | 473 | Waller |
| 48 | 2 | Northeast | 1 | Anderson |
| 48 | 2 | Northeast | 37 | Bowie |
| 48 | 2 | Northeast | 63 | Camp |
| 48 | 2 | Northeast | 67 | Cass |
| 48 | 2 | Northeast | 73 | Cherokee |
| 48 | 2 | Northeast | 159 | Franklin |
| 48 | 2 | Northeast | 183 | Gregg |
| 48 | 2 | Northeast | 203 | Harrison |
| 48 | 2 | Northeast | 213 | Henderson |
| 48 | 2 | Northeast | 315 | Marion |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 48 | 2 | Northeast | 343 | Morris |
| 48 | 2 | Northeast | 347 | Nacogdoches |
| 48 | 2 | Northeast | 365 | Panola |
| 48 | 2 | Northeast | 387 | Red River |
| 48 | 2 | Northeast | 401 | Rusk |
| 48 | 2 | Northeast | 419 | Shelby |
| 48 | 2 | Northeast | 423 | Smith |
| 48 | 2 | Northeast | 449 | Titus |
| 48 | 2 | Northeast | 459 | Upshur |
| 48 | 2 | Northeast | 467 | Van Zandt |
| 48 | 2 | Northeast | 499 | Wood |
| 48 | 3 | North Central | 15 | Austin |
| 48 | 3 | North Central | 21 | Bastrop |
| 48 | 3 | North Central | 41 | Brazos |
| 48 | 3 | North Central | 51 | Burleson |
| 48 | 3 | North Central | 55 | Caldwell |
| 48 | 3 | North Central | 77 | Clay |
| 48 | 3 | North Central | 85 | Collin |
| 48 | 3 | North Central | 89 | Colorado |
| 48 | 3 | North Central | 97 | Cooke |
| 48 | 3 | North Central | 113 | Dallas |
| 48 | 3 | North Central | 119 | Delta |
| 48 | 3 | North Central | 121 | Denton |
| 48 | 3 | North Central | 123 | De Witt |
| 48 | 3 | North Central | 139 | Ellis |
| 48 | 3 | North Central | 145 | Falls |
| 48 | 3 | North Central | 147 | Fannin |
| 48 | 3 | North Central | 149 | Fayette |
| 48 | 3 | North Central | 161 | Freestone |
| 48 | 3 | North Central | 175 | Goliad |
| 48 | 3 | North Central | 177 | Gonzales |
| 48 | 3 | North Central | 181 | Grayson |
| 48 | 3 | North Central | 187 | Guadalupe |
| 48 | 3 | North Central | 217 | Hill |
| 48 | 3 | North Central | 223 | Hopkins |
| 48 | 3 | North Central | 231 | Hunt |
| 48 | 3 | North Central | 237 | Jack |
| 48 | 3 | North Central | 251 | Johnson |
| 48 | 3 | North Central | 257 | Kaufman |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 48 | 3 | North Central | 277 | Lamar |
| 48 | 3 | North Central | 285 | Lavaca |
| 48 | 3 | North Central | 287 | Lee |
| 48 | 3 | North Central | 293 | Limestone |
| 48 | 3 | North Central | 331 | Milam |
| 48 | 3 | North Central | 337 | Montague |
| 48 | 3 | North Central | 349 | Navarro |
| 48 | 3 | North Central | 367 | Parker |
| 48 | 3 | North Central | 379 | Rains |
| 48 | 3 | North Central | 395 | Robertson |
| 48 | 3 | North Central | 397 | Rockwall |
| 48 | 3 | North Central | 439 | Tarrant |
| 48 | 3 | North Central | 477 | Washington |
| 48 | 3 | North Central | 497 | Wise |
| 48 | 3 | North Central | 503 | Young |
| 48 | 4 | South | 7 | Aransas |
| 48 | 4 | South | 13 | Atascosa |
| 48 | 4 | South | 25 | Bee |
| 48 | 4 | South | 39 | Brazoria |
| 48 | 4 | South | 47 | Brooks |
| 48 | 4 | South | 57 | Calhoun |
| 48 | 4 | South | 61 | Cameron |
| 48 | 4 | South | 127 | Dimmit |
| 48 | 4 | South | 131 | Duval |
| 48 | 4 | South | 157 | Fort Bend |
| 48 | 4 | South | 163 | Frio |
| 48 | 4 | South | 167 | Galveston |
| 48 | 4 | South | 215 | Hidalgo |
| 48 | 4 | South | 239 | Jackson |
| 48 | 4 | South | 247 | Jim Hogg |
| 48 | 4 | South | 249 | Jim Wells |
| 48 | 4 | South | 255 | Karnes |
| 48 | 4 | South | 261 | Kenedy |
| 48 | 4 | South | 273 | Kleberg |
| 48 | 4 | South | 283 | La Salle |
| 48 | 4 | South | 297 | Live Oak |
| 48 | 4 | South | 311 | McMullen |
| 48 | 4 | South | 321 | Matagorda |
| 48 | 4 | South | 323 | Maverick |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 48 | 4 | South | 355 | Nueces |
| 48 | 4 | South | 391 | Refugio |
| 48 | 4 | South | 409 | San Patricio |
| 48 | 4 | South | 427 | Starr |
| 48 | 4 | South | 469 | Victoria |
| 48 | 4 | South | 479 | Webb |
| 48 | 4 | South | 481 | Wharton |
| 48 | 4 | South | 489 | Willacy |
| 48 | 4 | South | 493 | Wilson |
| 48 | 4 | South | 505 | Zapata |
| 48 | 4 | South | 507 | Zavala |
| 48 | 5 | West Central | 19 | Bandera |
| 48 | 5 | West Central | 27 | Bell |
| 48 | 5 | West Central | 29 | Bexar |
| 48 | 5 | West Central | 31 | Blanco |
| 48 | 5 | West Central | 35 | Bosque |
| 48 | 5 | West Central | 49 | Brown |
| 48 | 5 | West Central | 53 | Burnet |
| 48 | 5 | West Central | 59 | Callahan |
| 48 | 5 | West Central | 83 | Coleman |
| 48 | 5 | West Central | 91 | Comal |
| 48 | 5 | West Central | 93 | Comanche |
| 48 | 5 | West Central | 95 | Concho |
| 48 | 5 | West Central | 99 | Coryell |
| 48 | 5 | West Central | 105 | Crockett |
| 48 | 5 | West Central | 133 | Eastland |
| 48 | 5 | West Central | 137 | Edwards |
| 48 | 5 | West Central | 143 | Erath |
| 48 | 5 | West Central | 171 | Gillespie |
| 48 | 5 | West Central | 193 | Hamilton |
| 48 | 5 | West Central | 209 | Hays |
| 48 | 5 | West Central | 221 | Hood |
| 48 | 5 | West Central | 259 | Kendall |
| 48 | 5 | West Central | 265 | Kerr |
| 48 | 5 | West Central | 267 | Kimble |
| 48 | 5 | West Central | 271 | Kinney |
| 48 | 5 | West Central | 281 | Lampasas |
| 48 | 5 | West Central | 299 | Llano |
| 48 | 5 | West Central | 307 | McCulloch |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 48 | 5 | West Central | 309 | McLennan |
| 48 | 5 | West Central | 319 | Mason |
| 48 | 5 | West Central | 325 | Medina |
| 48 | 5 | West Central | 327 | Menard |
| 48 | 5 | West Central | 333 | Mills |
| 48 | 5 | West Central | 363 | Palo Pinto |
| 48 | 5 | West Central | 385 | Real |
| 48 | 5 | West Central | 399 | Runnels |
| 48 | 5 | West Central | 411 | San Saba |
| 48 | 5 | West Central | 413 | Schleicher |
| 48 | 5 | West Central | 425 | Somervell |
| 48 | 5 | West Central | 429 | Stephens |
| 48 | 5 | West Central | 435 | Sutton |
| 48 | 5 | West Central | 453 | Travis |
| 48 | 5 | West Central | 463 | Uvalde |
| 48 | 5 | West Central | 465 | Val Verde |
| 48 | 5 | West Central | 491 | Williamson |
| 48 | 6 | Northwest | 3 | Andrews |
| 48 | 6 | Northwest | 9 | Archer |
| 48 | 6 | Northwest | 11 | Armstrong |
| 48 | 6 | Northwest | 17 | Bailey |
| 48 | 6 | Northwest | 23 | Baylor |
| 48 | 6 | Northwest | 33 | Borden |
| 48 | 6 | Northwest | 45 | Briscoe |
| 48 | 6 | Northwest | 65 | Carson |
| 48 | 6 | Northwest | 69 | Castro |
| 48 | 6 | Northwest | 75 | Childress |
| 48 | 6 | Northwest | 79 | Cochran |
| 48 | 6 | Northwest | 81 | Coke |
| 48 | 6 | Northwest | 87 | Collingsworth |
| 48 | 6 | Northwest | 101 | Cottle |
| 48 | 6 | Northwest | 107 | Crosby |
| 48 | 6 | Northwest | 111 | Dallam |
| 48 | 6 | Northwest | 115 | Dawson |
| 48 | 6 | Northwest | 117 | Deaf Smith |
| 48 | 6 | Northwest | 125 | Dickens |
| 48 | 6 | Northwest | 129 | Donley |
| 48 | 6 | Northwest | 151 | Fisher |
| 48 | 6 | Northwest | 153 | Floyd |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 48 | 6 | Northwest | 155 | Foard |
| 48 | 6 | Northwest | 165 | Gaines |
| 48 | 6 | Northwest | 169 | Garza |
| 48 | 6 | Northwest | 173 | Glasscock |
| 48 | 6 | Northwest | 179 | Gray |
| 48 | 6 | Northwest | 189 | Hale |
| 48 | 6 | Northwest | 191 | Hall |
| 48 | 6 | Northwest | 195 | Hansford |
| 48 | 6 | Northwest | 197 | Hardeman |
| 48 | 6 | Northwest | 205 | Hartley |
| 48 | 6 | Northwest | 207 | Haskell |
| 48 | 6 | Northwest | 211 | Hemphill |
| 48 | 6 | Northwest | 219 | Hockley |
| 48 | 6 | Northwest | 227 | Howard |
| 48 | 6 | Northwest | 233 | Hutchinson |
| 48 | 6 | Northwest | 235 | Irion |
| 48 | 6 | Northwest | 253 | Jones |
| 48 | 6 | Northwest | 263 | Kent |
| 48 | 6 | Northwest | 269 | King |
| 48 | 6 | Northwest | 275 | Knox |
| 48 | 6 | Northwest | 279 | Lamb |
| 48 | 6 | Northwest | 295 | Lipscomb |
| 48 | 6 | Northwest | 303 | Lubbock |
| 48 | 6 | Northwest | 305 | Lynn |
| 48 | 6 | Northwest | 317 | Martin |
| 48 | 6 | Northwest | 329 | Midland |
| 48 | 6 | Northwest | 335 | Mitchell |
| 48 | 6 | Northwest | 341 | Moore |
| 48 | 6 | Northwest | 345 | Motley |
| 48 | 6 | Northwest | 353 | Nolan |
| 48 | 6 | Northwest | 357 | Ochiltree |
| 48 | 6 | Northwest | 359 | Oldham |
| 48 | 6 | Northwest | 369 | Parmer |
| 48 | 6 | Northwest | 375 | Potter |
| 48 | 6 | Northwest | 381 | Randall |
| 48 | 6 | Northwest | 383 | Reagan |
| 48 | 6 | Northwest | 393 | Roberts |
| 48 | 6 | Northwest | 415 | Scurry |
| 48 | 6 | Northwest | 417 | Shackelford |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 48 | 6 | Northwest | 421 | Sherman |
| 48 | 6 | Northwest | 431 | Sterling |
| 48 | 6 | Northwest | 433 | Stonewall |
| 48 | 6 | Northwest | 437 | Swisher |
| 48 | 6 | Northwest | 441 | Taylor |
| 48 | 6 | Northwest | 445 | Terry |
| 48 | 6 | Northwest | 447 | Throckmorton |
| 48 | 6 | Northwest | 451 | Tom Green |
| 48 | 6 | Northwest | 483 | Wheeler |
| 48 | 6 | Northwest | 485 | Wichita |
| 48 | 6 | Northwest | 487 | Wilbarger |
| 48 | 6 | Northwest | 501 | Yoakum |
| 48 | 7 | West | 43 | Brewster |
| 48 | 7 | West | 103 | Crane |
| 48 | 7 | West | 109 | Culberson |
| 48 | 7 | West | 135 | Ector |
| 48 | 7 | West | 141 | El Paso |
| 48 | 7 | West | 229 | Hudspeth |
| 48 | 7 | West | 243 | Jeff Davis |
| 48 | 7 | West | 301 | Loving |
| 48 | 7 | West | 371 | Pecos |
| 48 | 7 | West | 377 | Presidio |
| 48 | 7 | West | 389 | Reeves |
| 48 | 7 | West | 443 | Terrell |
| 48 | 7 | West | 461 | Upton |
| 48 | 7 | West | 475 | Ward |
| 48 | 7 | West | 495 | Winkler |

Utah

Utah: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Utah | 49 | UT | RMRS | 22 |

Utah: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 49 | 1 | Northern | 3 | Box Elder |
| 49 | 1 | Northern | 5 | Cache |
| 49 | 1 | Northern | 11 | Davis |
| 49 | 1 | Northern | 29 | Morgan |
| 49 | 1 | Northern | 33 | Rich |
| 49 | 1 | Northern | 35 | Salt Lake |
| 49 | 1 | Northern | 43 | Summit |
| 49 | 1 | Northern | 45 | Tooele |
| 49 | 1 | Northern | 49 | Utah |
| 49 | 1 | Northern | 51 | Wasatch |
| 49 | 1 | Northern | 57 | Weber |
| 49 | 2 | Uinta | 9 | Daggett |
| 49 | 2 | Uinta | 13 | Duchesne |
| 49 | 2 | Uinta | 47 | Uintah |
| 49 | 3 | Central | 23 | Juab |
| 49 | 3 | Central | 27 | Millard |
| 49 | 3 | Central | 31 | Piute |
| 49 | 3 | Central | 39 | Sanpete |
| 49 | 3 | Central | 41 | Sevier |
| 49 | 3 | Central | 55 | Wayne |
| 49 | 4 | Eastern | 7 | Carbon |
| 49 | 4 | Eastern | 15 | Emery |
| 49 | 4 | Eastern | 19 | Grand |
| 49 | 4 | Eastern | 37 | San Juan |
| 49 | 5 | Southwestern | 1 | Beaver |
| 49 | 5 | Southwestern | 17 | Garfield |
| 49 | 5 | Southwestern | 21 | Iron |
| 49 | 5 | Southwestern | 25 | Kane |
| 49 | 5 | Southwestern | 53 | Washington |

Vermont

Vermont: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Vermont | 50 | VT | NRS | 24 |

Vermont: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 50 | 2 | Northern | 5 | Caledonia |
| 50 | 2 | Northern | 9 | Essex |
| 50 | 2 | Northern | 11 | Franklin |
| 50 | 2 | Northern | 13 | Grand Isle |
| 50 | 2 | Northern | 15 | Lamoille |
| 50 | 2 | Northern | 17 | Orange |
| 50 | 2 | Northern | 19 | Orleans |
| 50 | 2 | Northern | 23 | Washington |
| 50 | 3 | Southern | 1 | Addison |
| 50 | 3 | Southern | 3 | Bennington |
| 50 | 3 | Southern | 7 | Chittenden |
| 50 | 3 | Southern | 21 | Rutland |
| 50 | 3 | Southern | 25 | Windham |
| 50 | 3 | Southern | 27 | Windsor |

Virginia

Virginia: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Virginia | 51 | VA | SRS | 33 |

Virginia: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 51 | 1 | Coastal Plain | 1 | Accomack |
| 51 | 1 | Coastal Plain | 25 | Brunswick |
| 51 | 1 | Coastal Plain | 33 | Caroline |
| 51 | 1 | Coastal Plain | 36 | Charles City |
| 51 | 1 | Coastal Plain | 41 | Chesterfield |
| 51 | 1 | Coastal Plain | 53 | Dinwiddie |
| 51 | 1 | Coastal Plain | 57 | Essex |
| 51 | 1 | Coastal Plain | 73 | Gloucester |
| 51 | 1 | Coastal Plain | 81 | Greenville |
| 51 | 1 | Coastal Plain | 85 | Hanover |
| 51 | 1 | Coastal Plain | 87 | Henrico |
| 51 | 1 | Coastal Plain | 93 | Isle Of Wight |
| 51 | 1 | Coastal Plain | 95 | James City |
| 51 | 1 | Coastal Plain | 97 | King And Queen |
| 51 | 1 | Coastal Plain | 99 | King George |
| 51 | 1 | Coastal Plain | 101 | King William |
| 51 | 1 | Coastal Plain | 103 | Lancaster |
| 51 | 1 | Coastal Plain | 115 | Mathews |
| 51 | 1 | Coastal Plain | 119 | Middlesex |
| 51 | 1 | Coastal Plain | 127 | New Kent |
| 51 | 1 | Coastal Plain | 131 | Northampton |
| 51 | 1 | Coastal Plain | 133 | Northumberland |
| 51 | 1 | Coastal Plain | 149 | Prince George |
| 51 | 1 | Coastal Plain | 159 | Richmond |
| 51 | 1 | Coastal Plain | 175 | Southampton |
| 51 | 1 | Coastal Plain | 181 | Surry |
| 51 | 1 | Coastal Plain | 183 | Sussex |
| 51 | 1 | Coastal Plain | 193 | Westmoreland |
| 51 | 1 | Coastal Plain | 199 | York |
| 51 | 1 | Coastal Plain | 550 | Chesapeake city |
| 51 | 1 | Coastal Plain | 650 | Hampton city |
| 51 | 1 | Coastal Plain | 700 | Newport News city |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 51 | 1 | Coastal Plain | 800 | Suffolk city |
| 51 | 1 | Coastal Plain | 810 | Virginia Beach city |
| 51 | 2 | Southern Piedmont | 7 | Amelia |
| 51 | 2 | Southern Piedmont | 11 | Appomattox |
| 51 | 2 | Southern Piedmont | 19 | Bedford |
| 51 | 2 | Southern Piedmont | 29 | Buckingham |
| 51 | 2 | Southern Piedmont | 31 | Campbell |
| 51 | 2 | Southern Piedmont | 37 | Charlotte |
| 51 | 2 | Southern Piedmont | 49 | Cumberland |
| 51 | 2 | Southern Piedmont | 67 | Franklin |
| 51 | 2 | Southern Piedmont | 83 | Halifax |
| 51 | 2 | Southern Piedmont | 89 | Henry |
| 51 | 2 | Southern Piedmont | 111 | Lunenburg |
| 51 | 2 | Southern Piedmont | 117 | Mecklenburg |
| 51 | 2 | Southern Piedmont | 135 | Nottoway |
| 51 | 2 | Southern Piedmont | 141 | Patrick |
| 51 | 2 | Southern Piedmont | 143 | Pittsylvania |
| 51 | 2 | Southern Piedmont | 145 | Powhatan |
| 51 | 2 | Southern Piedmont | 147 | Prince Edward |
| 51 | 3 | Northern Piedmont | 3 | Albemarle |
| 51 | 3 | Northern Piedmont | 9 | Amherst |
| 51 | 3 | Northern Piedmont | 13 | Arlington |
| 51 | 3 | Northern Piedmont | 47 | Culpeper |
| 51 | 3 | Northern Piedmont | 59 | Fairfax |
| 51 | 3 | Northern Piedmont | 61 | Fauquier |
| 51 | 3 | Northern Piedmont | 65 | Fluvanna |
| 51 | 3 | Northern Piedmont | 75 | Goochland |
| 51 | 3 | Northern Piedmont | 79 | Greene |
| 51 | 3 | Northern Piedmont | 107 | Loudoun |
| 51 | 3 | Northern Piedmont | 109 | Louisa |
| 51 | 3 | Northern Piedmont | 113 | Madison |
| 51 | 3 | Northern Piedmont | 125 | Nelson |
| 51 | 3 | Northern Piedmont | 137 | Orange |
| 51 | 3 | Northern Piedmont | 153 | Prince William |
| 51 | 3 | Northern Piedmont | 157 | Rappahannock |
| 51 | 3 | Northern Piedmont | 177 | Spotsylvania |
| 51 | 3 | Northern Piedmont | 179 | Stafford |
| 51 | 4 | Northern Mountains | 5 | Alleghany |
| 51 | 4 | Northern Mountains | 15 | Augusta |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 51 | 4 | Northern Mountains | 17 | Bath |
| 51 | 4 | Northern Mountains | 23 | Botetourt |
| 51 | 4 | Northern Mountains | 43 | Clarke |
| 51 | 4 | Northern Mountains | 45 | Craig |
| 51 | 4 | Northern Mountains | 69 | Frederick |
| 51 | 4 | Northern Mountains | 91 | Highland |
| 51 | 4 | Northern Mountains | 139 | Page |
| 51 | 4 | Northern Mountains | 161 | Roanoke |
| 51 | 4 | Northern Mountains | 163 | Rockbridge |
| 51 | 4 | Northern Mountains | 165 | Rockingham |
| 51 | 4 | Northern Mountains | 171 | Shenandoah |
| 51 | 4 | Northern Mountains | 187 | Warren |
| 51 | 5 | Southern Mountains | 21 | Bland |
| 51 | 5 | Southern Mountains | 27 | Buchanan |
| 51 | 5 | Southern Mountains | 35 | Carroll |
| 51 | 5 | Southern Mountains | 51 | Dickenson |
| 51 | 5 | Southern Mountains | 63 | Floyd |
| 51 | 5 | Southern Mountains | 71 | Giles |
| 51 | 5 | Southern Mountains | 77 | Grayson |
| 51 | 5 | Southern Mountains | 105 | Lee |
| 51 | 5 | Southern Mountains | 121 | Montgomery |
| 51 | 5 | Southern Mountains | 155 | Pulaski |
| 51 | 5 | Southern Mountains | 167 | Russell |
| 51 | 5 | Southern Mountains | 169 | Scott |
| 51 | 5 | Southern Mountains | 173 | Smyth |
| 51 | 5 | Southern Mountains | 185 | Tazewell |
| 51 | 5 | Southern Mountains | 191 | Washington |
| 51 | 5 | Southern Mountains | 195 | Wise |
| 51 | 5 | Southern Mountains | 197 | Wythe |

Virginia: Cities aggregated into other counties

| State code (STATECD) | City code | City name | Associated county code (COUNTYCD) | Associated county name (COUNTYNM) |
|---------------------------------|------------------|----------------------|--|--|
| 51 | 510 | Alexandria city | 59 | Fairfax |
| 51 | 515 | Bedford city | 19 | Bedford |
| 51 | 520 | Bristol city | 191 | Washington |
| 51 | 530 | Buena Vista city | 163 | Rockbridge |
| 51 | 540 | Charlottesville city | 3 | Albemarle |
| 51 | 560 | Clifton Forge city | 5 | Allegheny |

| State code (STATECD) | City code | City name | Associated county code (COUNTYCD) | Associated county name (COUNTYNM) |
|---------------------------------|------------------|-----------------------|--|--|
| 51 | 570 | Colonial Heights city | 41 | Chesterfield |
| 51 | 580 | Covington city | 5 | Allegheny |
| 51 | 590 | Danville city | 143 | Pittsylvania |
| 51 | 595 | Emporia city | 81 | Greenville |
| 51 | 600 | Fairfax city | 59 | Fairfax |
| 51 | 610 | Falls Church city | 59 | Fairfax |
| 51 | 620 | Franklin city | 175 | Southampton |
| 51 | 630 | Fredericksburg city | 177 | Spotsylvania |
| 51 | 640 | Galax city | 35 | Carroll |
| 51 | 640 | Galax city | 77 | Grayson |
| 51 | 660 | Harrisonburg city | 165 | Rockingham |
| 51 | 670 | Hopewell city | 149 | Prince George |
| 51 | 678 | Lexington city | 163 | Rockbridge |
| 51 | 680 | Lynchburg city | 31 | Campbell |
| 51 | 683 | Manassas city | 153 | Prince William |
| 51 | 685 | Manassas Park city | 153 | Prince William |
| 51 | 690 | Martinsville city | 89 | Henry |
| 51 | 710 | Norfolk city | 550 | Chesapeake City |
| 51 | 720 | Norton city | 195 | Wise |
| 51 | 730 | Petersburg city | 53 | Dinwiddie |
| 51 | 730 | Petersburg city | 149 | Prince George |
| 51 | 735 | Poquoson city | 199 | York |
| 51 | 740 | Portsmouth city | 550 | Chesapeake City |
| 51 | 750 | Radford city | 121 | Montgomery |
| 51 | 760 | Richmond city | 41 | Chesterfield |
| 51 | 760 | Richmond city | 87 | Henrico |
| 51 | 770 | Roanoke city | 161 | Roanoke |
| 51 | 775 | Salem city | 161 | Roanoke |
| 51 | 780 | South Boston city | 83 | Halifax |
| 51 | 790 | Staunton city | 15 | Augusta |
| 51 | 820 | Waynesboro city | 15 | Augusta |
| 51 | 830 | Williamsburg city | 95 | County of James City |
| 51 | 840 | Winchester city | 69 | Frederick |

Washington

Washington: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Washington | 53 | WA | PNWRS | 26 |

Washington: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|-------------------|---------------------------|---------------------------|
| 53 | 5 | Puget Sound | 29 | Island |
| 53 | 5 | Puget Sound | 33 | King |
| 53 | 5 | Puget Sound | 35 | Kitsap |
| 53 | 5 | Puget Sound | 53 | Pierce |
| 53 | 5 | Puget Sound | 55 | San Juan |
| 53 | 5 | Puget Sound | 57 | Skagit |
| 53 | 5 | Puget Sound | 61 | Snohomish |
| 53 | 5 | Puget Sound | 73 | Whatcom |
| 53 | 6 | Olympic Peninsula | 9 | Clallam |
| 53 | 6 | Olympic Peninsula | 27 | Grays Harbor |
| 53 | 6 | Olympic Peninsula | 31 | Jefferson |
| 53 | 6 | Olympic Peninsula | 45 | Mason |
| 53 | 6 | Olympic Peninsula | 67 | Thurston |
| 53 | 7 | Southwest | 11 | Clark |
| 53 | 7 | Southwest | 15 | Cowlitz |
| 53 | 7 | Southwest | 41 | Lewis |
| 53 | 7 | Southwest | 49 | Pacific |
| 53 | 7 | Southwest | 59 | Skamania |
| 53 | 7 | Southwest | 69 | Wahkiakum |
| 53 | 8 | Central | 7 | Chelan |
| 53 | 8 | Central | 17 | Douglas |
| 53 | 8 | Central | 37 | Kittitas |
| 53 | 8 | Central | 39 | Klickitat |
| 53 | 8 | Central | 47 | Okanogan |
| 53 | 8 | Central | 77 | Yakima |
| 53 | 9 | Inland Empire | 1 | Adams |
| 53 | 9 | Inland Empire | 3 | Asotin |
| 53 | 9 | Inland Empire | 5 | Benton |
| 53 | 9 | Inland Empire | 13 | Columbia |
| 53 | 9 | Inland Empire | 19 | Ferry |
| 53 | 9 | Inland Empire | 21 | Franklin |
| 53 | 9 | Inland Empire | 23 | Garfield |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 53 | 9 | Inland Empire | 25 | Grant |
| 53 | 9 | Inland Empire | 43 | Lincoln |
| 53 | 9 | Inland Empire | 51 | Pend Oreille |
| 53 | 9 | Inland Empire | 63 | Spokane |
| 53 | 9 | Inland Empire | 65 | Stevens |
| 53 | 9 | Inland Empire | 71 | Walla Walla |
| 53 | 9 | Inland Empire | 75 | Whitman |

West Virginia

West Virginia: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|---------------|------------|--------------------|------------------|--------------------------|
| West Virginia | 54 | WV | NRS | 24 |

West Virginia: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 54 | 2 | Northeastern | 1 | Barbour |
| 54 | 2 | Northeastern | 3 | Berkeley |
| 54 | 2 | Northeastern | 7 | Braxton |
| 54 | 2 | Northeastern | 23 | Grant |
| 54 | 2 | Northeastern | 27 | Hampshire |
| 54 | 2 | Northeastern | 31 | Hardy |
| 54 | 2 | Northeastern | 33 | Harrison |
| 54 | 2 | Northeastern | 37 | Jefferson |
| 54 | 2 | Northeastern | 41 | Lewis |
| 54 | 2 | Northeastern | 57 | Mineral |
| 54 | 2 | Northeastern | 65 | Morgan |
| 54 | 2 | Northeastern | 71 | Pendleton |
| 54 | 2 | Northeastern | 75 | Pocahontas |
| 54 | 2 | Northeastern | 77 | Preston |
| 54 | 2 | Northeastern | 83 | Randolph |
| 54 | 2 | Northeastern | 91 | Taylor |
| 54 | 2 | Northeastern | 93 | Tucker |
| 54 | 2 | Northeastern | 97 | Upshur |
| 54 | 2 | Northeastern | 101 | Webster |
| 54 | 3 | Southern | 5 | Boone |
| 54 | 3 | Southern | 15 | Clay |
| 54 | 3 | Southern | 19 | Fayette |
| 54 | 3 | Southern | 25 | Greenbrier |
| 54 | 3 | Southern | 39 | Kanawha |
| 54 | 3 | Southern | 45 | Logan |
| 54 | 3 | Southern | 47 | McDowell |
| 54 | 3 | Southern | 55 | Mercer |
| 54 | 3 | Southern | 59 | Mingo |
| 54 | 3 | Southern | 63 | Monroe |
| 54 | 3 | Southern | 67 | Nicholas |
| 54 | 3 | Southern | 81 | Raleigh |
| 54 | 3 | Southern | 89 | Summers |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 54 | 3 | Southern | 109 | Wyoming |
| 54 | 4 | Northwestern | 9 | Brooke |
| 54 | 4 | Northwestern | 11 | Cabell |
| 54 | 4 | Northwestern | 13 | Calhoun |
| 54 | 4 | Northwestern | 17 | Doddridge |
| 54 | 4 | Northwestern | 21 | Gilmer |
| 54 | 4 | Northwestern | 29 | Hancock |
| 54 | 4 | Northwestern | 35 | Jackson |
| 54 | 4 | Northwestern | 43 | Lincoln |
| 54 | 4 | Northwestern | 49 | Marion |
| 54 | 4 | Northwestern | 51 | Marshall |
| 54 | 4 | Northwestern | 53 | Mason |
| 54 | 4 | Northwestern | 61 | Monongalia |
| 54 | 4 | Northwestern | 69 | Ohio |
| 54 | 4 | Northwestern | 73 | Pleasants |
| 54 | 4 | Northwestern | 79 | Putnam |
| 54 | 4 | Northwestern | 85 | Ritchie |
| 54 | 4 | Northwestern | 87 | Roane |
| 54 | 4 | Northwestern | 95 | Tyler |
| 54 | 4 | Northwestern | 99 | Wayne |
| 54 | 4 | Northwestern | 103 | Wetzel |
| 54 | 4 | Northwestern | 105 | Wirt |
| 54 | 4 | Northwestern | 107 | Wood |

Wisconsin

Wisconsin: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Wisconsin | 55 | WI | NRS | 24 |

Wisconsin: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 55 | 1 | Northeastern | 37 | Florence |
| 55 | 1 | Northeastern | 41 | Forest |
| 55 | 1 | Northeastern | 67 | Langlade |
| 55 | 1 | Northeastern | 69 | Lincoln |
| 55 | 1 | Northeastern | 75 | Marinette |
| 55 | 1 | Northeastern | 78 | Menominee |
| 55 | 1 | Northeastern | 83 | Oconto |
| 55 | 1 | Northeastern | 85 | Oneida |
| 55 | 1 | Northeastern | 115 | Shawano |
| 55 | 1 | Northeastern | 125 | Vilas |
| 55 | 2 | Northwestern | 3 | Ashland |
| 55 | 2 | Northwestern | 5 | Barron |
| 55 | 2 | Northwestern | 7 | Bayfield |
| 55 | 2 | Northwestern | 13 | Burnett |
| 55 | 2 | Northwestern | 31 | Douglas |
| 55 | 2 | Northwestern | 51 | Iron |
| 55 | 2 | Northwestern | 95 | Polk |
| 55 | 2 | Northwestern | 99 | Price |
| 55 | 2 | Northwestern | 107 | Rusk |
| 55 | 2 | Northwestern | 113 | Sawyer |
| 55 | 2 | Northwestern | 119 | Taylor |
| 55 | 2 | Northwestern | 129 | Washburn |
| 55 | 3 | Central | 1 | Adams |
| 55 | 3 | Central | 17 | Chippewa |
| 55 | 3 | Central | 19 | Clark |
| 55 | 3 | Central | 35 | Eau Claire |
| 55 | 3 | Central | 53 | Jackson |
| 55 | 3 | Central | 57 | Juneau |
| 55 | 3 | Central | 73 | Marathon |
| 55 | 3 | Central | 77 | Marquette |
| 55 | 3 | Central | 81 | Monroe |
| 55 | 3 | Central | 97 | Portage |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 55 | 3 | Central | 135 | Waupaca |
| 55 | 3 | Central | 137 | Waushara |
| 55 | 3 | Central | 141 | Wood |
| 55 | 4 | Southwestern | 11 | Buffalo |
| 55 | 4 | Southwestern | 23 | Crawford |
| 55 | 4 | Southwestern | 33 | Dunn |
| 55 | 4 | Southwestern | 43 | Grant |
| 55 | 4 | Southwestern | 49 | Iowa |
| 55 | 4 | Southwestern | 63 | La Crosse |
| 55 | 4 | Southwestern | 65 | Lafayette |
| 55 | 4 | Southwestern | 91 | Pepin |
| 55 | 4 | Southwestern | 93 | Pierce |
| 55 | 4 | Southwestern | 103 | Richland |
| 55 | 4 | Southwestern | 109 | St. Croix |
| 55 | 4 | Southwestern | 111 | Sauk |
| 55 | 4 | Southwestern | 121 | Trempealeau |
| 55 | 4 | Southwestern | 123 | Vernon |
| 55 | 5 | Southeastern | 9 | Brown |
| 55 | 5 | Southeastern | 15 | Calumet |
| 55 | 5 | Southeastern | 21 | Columbia |
| 55 | 5 | Southeastern | 25 | Dane |
| 55 | 5 | Southeastern | 27 | Dodge |
| 55 | 5 | Southeastern | 29 | Door |
| 55 | 5 | Southeastern | 39 | Fond du Lac |
| 55 | 5 | Southeastern | 45 | Green |
| 55 | 5 | Southeastern | 47 | Green Lake |
| 55 | 5 | Southeastern | 55 | Jefferson |
| 55 | 5 | Southeastern | 59 | Kenosha |
| 55 | 5 | Southeastern | 61 | Kewaunee |
| 55 | 5 | Southeastern | 71 | Manitowoc |
| 55 | 5 | Southeastern | 79 | Milwaukee |
| 55 | 5 | Southeastern | 87 | Outagamie |
| 55 | 5 | Southeastern | 89 | Ozaukee |
| 55 | 5 | Southeastern | 101 | Racine |
| 55 | 5 | Southeastern | 105 | Rock |
| 55 | 5 | Southeastern | 117 | Sheboygan |
| 55 | 5 | Southeastern | 127 | Walworth |
| 55 | 5 | Southeastern | 131 | Washington |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 55 | 5 | Southeastern | 133 | Waukesha |
| 55 | 5 | Southeastern | 139 | Winnebago |

Wyoming

Wyoming: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Wyoming | 56 | WY | RMRS | 22 |

Wyoming: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|--------------------------|---------------------------|---------------------------|
| 56 | 1 | Western | 13 | Fremont |
| 56 | 1 | Western | 17 | Hot Springs |
| 56 | 1 | Western | 23 | Lincoln |
| 56 | 1 | Western | 29 | Park |
| 56 | 1 | Western | 35 | Sublette |
| 56 | 1 | Western | 37 | Sweetwater |
| 56 | 1 | Western | 39 | Teton |
| 56 | 1 | Western | 41 | Uinta |
| 56 | 2 | Central and Southeastern | 1 | Albany |
| 56 | 2 | Central and Southeastern | 3 | Big Horn |
| 56 | 2 | Central and Southeastern | 7 | Carbon |
| 56 | 2 | Central and Southeastern | 9 | Converse |
| 56 | 2 | Central and Southeastern | 15 | Goshen |
| 56 | 2 | Central and Southeastern | 19 | Johnson |
| 56 | 2 | Central and Southeastern | 21 | Laramie |
| 56 | 2 | Central and Southeastern | 25 | Natrona |
| 56 | 2 | Central and Southeastern | 27 | Niobrara |
| 56 | 2 | Central and Southeastern | 31 | Platte |
| 56 | 2 | Central and Southeastern | 33 | Sheridan |
| 56 | 2 | Central and Southeastern | 43 | Washakie |
| 56 | 3 | Northeastern | 5 | Campbell |
| 56 | 3 | Northeastern | 11 | Crook |
| 56 | 3 | Northeastern | 45 | Weston |

American Samoa

American Samoa: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|----------------|------------|--------------------|------------------|--------------------------|
| American Samoa | 60 | AS | PNWRS | 26 |

American Samoa: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|----------------------|---------------------------|------------------|------------------------|------------------------|
| 60 | 1 | American Samoa | 10 | Tutuila East |
| 60 | 1 | American Samoa | 20 | Manu'a |
| 60 | 1 | American Samoa | 30 | Rose |
| 60 | 1 | American Samoa | 40 | Swains |
| 60 | 1 | American Samoa | 50 | Tutuila West |

Federated States of Micronesia

Federated States of Micronesia: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|--------------------------------|------------|--------------------|------------------|--------------------------|
| Federated States of Micronesia | 64 | FM | PNWRS | 26 |

Federated States of Micronesia: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|----------------------|---------------------------|--------------------------------|------------------------|------------------------|
| 64 | 1 | Federated States of Micronesia | 2 | Chuuk |
| 64 | 1 | Federated States of Micronesia | 5 | Kosrae |
| 64 | 1 | Federated States of Micronesia | 40 | Pohnpei |
| 64 | 1 | Federated States of Micronesia | 60 | Yap |

Guam

Guam: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Guam | 66 | GU | PNWRS | 26 |

Guam: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|----------------------|---------------------------|------------------|------------------------|------------------------|
| 66 | 1 | Guam | 10 | Guam |

Marshall Islands

Marshall Islands: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------------|------------|--------------------|------------------|--------------------------|
| Marshall Islands | 68 | MH | PNWRS | 26 |

Marshall Islands: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|----------------------|---------------------------|------------------|------------------------|------------------------|
| 68 | 1 | Marshall Islands | 7 | Ailinginiae |
| 68 | 1 | Marshall Islands | 10 | Ailinglaplap |
| 68 | 1 | Marshall Islands | 30 | Ailuk |
| 68 | 1 | Marshall Islands | 40 | Arno |
| 68 | 1 | Marshall Islands | 50 | Aur |
| 68 | 1 | Marshall Islands | 60 | Bikar |
| 68 | 1 | Marshall Islands | 70 | Bikini |
| 68 | 1 | Marshall Islands | 73 | Bokak |
| 68 | 1 | Marshall Islands | 80 | Ebon |
| 68 | 1 | Marshall Islands | 90 | Enewetak |
| 68 | 1 | Marshall Islands | 100 | Erikub |
| 68 | 1 | Marshall Islands | 110 | Jabat |
| 68 | 1 | Marshall Islands | 120 | Jaluit |
| 68 | 1 | Marshall Islands | 130 | Jemo |
| 68 | 1 | Marshall Islands | 140 | Kili |
| 68 | 1 | Marshall Islands | 150 | Kwajalein |
| 68 | 1 | Marshall Islands | 160 | Lae |
| 68 | 1 | Marshall Islands | 170 | Lib |
| 68 | 1 | Marshall Islands | 180 | Likiep |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 68 | 1 | Marshall Islands | 190 | Majuro |
| 68 | 1 | Marshall Islands | 300 | Maloelap |
| 68 | 1 | Marshall Islands | 310 | Mejit |
| 68 | 1 | Marshall Islands | 320 | Mili |
| 68 | 1 | Marshall Islands | 330 | Namorik |
| 68 | 1 | Marshall Islands | 340 | Namu |
| 68 | 1 | Marshall Islands | 350 | Rongelap |
| 68 | 1 | Marshall Islands | 360 | Rongrik |
| 68 | 1 | Marshall Islands | 385 | Toke |
| 68 | 1 | Marshall Islands | 390 | Ujae |
| 68 | 1 | Marshall Islands | 400 | Ujelang |
| 68 | 1 | Marshall Islands | 410 | Utrik |
| 68 | 1 | Marshall Islands | 420 | Wotho |
| 68 | 1 | Marshall Islands | 430 | Wotje |

Northern Mariana Islands

Northern Mariana Islands: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|--------------------------|-------------------|---------------------------|-------------------------|---------------------------------|
| Northern Mariana Islands | 69 | MP | PNWRS | 26 |

Northern Mariana Islands: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|--------------------------|-----------------------------------|-----------------------------------|
| 69 | 1 | Northern Mariana Islands | 85 | Northern Islands |
| 69 | 1 | Northern Mariana Islands | 100 | Rota |
| 69 | 1 | Northern Mariana Islands | 110 | Saipan |
| 69 | 1 | Northern Mariana Islands | 120 | Tinian |

Palau

Palau: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|------------|------------|--------------------|------------------|--------------------------|
| Palau | 70 | PW | PNWRS | 26 |

Palau: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|------------------|---------------------------|---------------------------|
| 70 | 1 | Palau | 2 | Aimeliik |
| 70 | 1 | Palau | 4 | Airai |
| 70 | 1 | Palau | 10 | Angaur |
| 70 | 1 | Palau | 50 | Hatoboheit |
| 70 | 1 | Palau | 100 | Kayangel |
| 70 | 1 | Palau | 150 | Koror |
| 70 | 1 | Palau | 212 | Melekeok |
| 70 | 1 | Palau | 214 | Ngaraard |
| 70 | 1 | Palau | 218 | Ngarchelong |
| 70 | 1 | Palau | 222 | Ngardmau |
| 70 | 1 | Palau | 224 | Ngatpang |
| 70 | 1 | Palau | 226 | Ngchesar |
| 70 | 1 | Palau | 227 | Ngernmlengui |
| 70 | 1 | Palau | 228 | Ngiwal |
| 70 | 1 | Palau | 350 | Peleliu |
| 70 | 1 | Palau | 370 | Sonsorol |

Puerto Rico

Puerto Rico: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|--------------------------|------------|--------------------|------------------|--------------------------|
| Puerto Rico ^a | 72 | PR | SRS | 33 |

^a FIA estimates of Puerto Rico do not include the small outlying islands such as Desecheo, Caja de Muertos, etc.

Puerto Rico: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|-------------------------|------------------------------|----------------------|---------------------------|---------------------------|
| 72 | 1 | Mainland Puerto Rico | 1 | Adjuntas |
| 72 | 1 | Mainland Puerto Rico | 3 | Aguada |
| 72 | 1 | Mainland Puerto Rico | 5 | Aguadilla |
| 72 | 1 | Mainland Puerto Rico | 7 | Aguas Buenas |
| 72 | 1 | Mainland Puerto Rico | 9 | Albonito |
| 72 | 1 | Mainland Puerto Rico | 11 | Añasco |
| 72 | 1 | Mainland Puerto Rico | 13 | Arecibo |
| 72 | 1 | Mainland Puerto Rico | 15 | Arroyo |
| 72 | 1 | Mainland Puerto Rico | 17 | Barceloneta |
| 72 | 1 | Mainland Puerto Rico | 19 | Barranquitas |
| 72 | 1 | Mainland Puerto Rico | 21 | Bayamón |
| 72 | 1 | Mainland Puerto Rico | 23 | Cabo Rojo |
| 72 | 1 | Mainland Puerto Rico | 25 | Caguas |
| 72 | 1 | Mainland Puerto Rico | 27 | Camuy |
| 72 | 1 | Mainland Puerto Rico | 29 | Canóvanas |
| 72 | 1 | Mainland Puerto Rico | 31 | Carolina |
| 72 | 1 | Mainland Puerto Rico | 33 | Cataño |
| 72 | 1 | Mainland Puerto Rico | 35 | Cayey |
| 72 | 1 | Mainland Puerto Rico | 37 | Ceiba |
| 72 | 1 | Mainland Puerto Rico | 39 | Ciales |
| 72 | 1 | Mainland Puerto Rico | 41 | Cidra |
| 72 | 1 | Mainland Puerto Rico | 43 | Coamo |
| 72 | 1 | Mainland Puerto Rico | 45 | Comerío |
| 72 | 1 | Mainland Puerto Rico | 47 | Corozal |
| 72 | 1 | Mainland Puerto Rico | 51 | Dorado |
| 72 | 1 | Mainland Puerto Rico | 53 | Fajardo |
| 72 | 1 | Mainland Puerto Rico | 54 | Florida |
| 72 | 1 | Mainland Puerto Rico | 55 | Guánica |
| 72 | 1 | Mainland Puerto Rico | 57 | Guayama |
| 72 | 1 | Mainland Puerto Rico | 59 | Guayanilla |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 72 | 1 | Mainland Puerto Rico | 61 | Guaynabo |
| 72 | 1 | Mainland Puerto Rico | 63 | Gurabo |
| 72 | 1 | Mainland Puerto Rico | 65 | Hatillo |
| 72 | 1 | Mainland Puerto Rico | 67 | Hormigueros |
| 72 | 1 | Mainland Puerto Rico | 69 | Humacao |
| 72 | 1 | Mainland Puerto Rico | 71 | Isabela Municipio |
| 72 | 1 | Mainland Puerto Rico | 73 | Jayuya |
| 72 | 1 | Mainland Puerto Rico | 75 | Juana Diaz |
| 72 | 1 | Mainland Puerto Rico | 77 | Juncos |
| 72 | 1 | Mainland Puerto Rico | 79 | Lajas |
| 72 | 1 | Mainland Puerto Rico | 81 | Lares |
| 72 | 1 | Mainland Puerto Rico | 83 | Las Marías |
| 72 | 1 | Mainland Puerto Rico | 85 | Las Piedras |
| 72 | 1 | Mainland Puerto Rico | 87 | Loiza |
| 72 | 1 | Mainland Puerto Rico | 89 | Luquillo |
| 72 | 1 | Mainland Puerto Rico | 91 | Manatí |
| 72 | 1 | Mainland Puerto Rico | 93 | Maricao |
| 72 | 1 | Mainland Puerto Rico | 95 | Maunabo |
| 72 | 1 | Mainland Puerto Rico | 97 | Mayagüez ^a |
| 72 | 1 | Mainland Puerto Rico | 99 | Moca |
| 72 | 1 | Mainland Puerto Rico | 101 | Morovis |
| 72 | 1 | Mainland Puerto Rico | 103 | Naguabo |
| 72 | 1 | Mainland Puerto Rico | 105 | Naranjito |
| 72 | 1 | Mainland Puerto Rico | 107 | Orocovis |
| 72 | 1 | Mainland Puerto Rico | 109 | Patillas |
| 72 | 1 | Mainland Puerto Rico | 111 | Peñuelas |
| 72 | 1 | Mainland Puerto Rico | 113 | Ponce |
| 72 | 1 | Mainland Puerto Rico | 115 | Quebradillas |
| 72 | 1 | Mainland Puerto Rico | 117 | Rincón |
| 72 | 1 | Mainland Puerto Rico | 119 | Río Grande |
| 72 | 1 | Mainland Puerto Rico | 121 | Sabana Grande |
| 72 | 1 | Mainland Puerto Rico | 123 | Salinas |
| 72 | 1 | Mainland Puerto Rico | 125 | San Germán |
| 72 | 1 | Mainland Puerto Rico | 127 | San Juan |
| 72 | 1 | Mainland Puerto Rico | 129 | San Lorenzo |
| 72 | 1 | Mainland Puerto Rico | 131 | San Sebastián |
| 72 | 1 | Mainland Puerto Rico | 133 | Santa Isabel |
| 72 | 1 | Mainland Puerto Rico | 135 | Toa Alta |
| 72 | 1 | Mainland Puerto Rico | 137 | Toa Baja |

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 72 | 1 | Mainland Puerto Rico | 139 | Trujillo Alto |
| 72 | 1 | Mainland Puerto Rico | 141 | Utuado |
| 72 | 1 | Mainland Puerto Rico | 143 | Vega Alta |
| 72 | 1 | Mainland Puerto Rico | 145 | Vega Baja |
| 72 | 1 | Mainland Puerto Rico | 149 | Villalba |
| 72 | 1 | Mainland Puerto Rico | 151 | Yabucoa |
| 72 | 1 | Mainland Puerto Rico | 153 | Yuaco |
| 72 | 2 | Vieques | 147 | Vieques |
| 72 | 3 | Culebra | 49 | Culebra |

^a Mona Island is split from Mayagüez County (97) as a separate estimation unit for stratification. However, Mona Island is not a separate FIA survey unit because it is not a separate county (municipio); it is part of Mayagüez County.

US Virgin Islands

U.S. Virgin Islands: State information

| State name | State code | State abbreviation | Research station | Research or Station code |
|---------------------|-------------------|---------------------------|-------------------------|---------------------------------|
| U.S. Virgin Islands | 78 | VI | SRS | 33 |

U.S. Virgin Islands: Survey unit and county information

| State code (STATECD) | Survey unit code (UNITCD) | Survey unit name | County code (COUNTYCD) | County name (COUNTYNM) |
|---------------------------------|--------------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| 78 | 1 | St. Croix Island | 10 | St. Croix |
| 78 | 2 | St. John Island | 20 | St. John |
| 78 | 3 | St. Thomas Island | 30 | St. Thomas |

Section revision: 06.2021

Appendix C: Administrative National Forest Codes and Names

Appendix Contents:

| Region |
|---|
| Region 1 (Northern) |
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| Region 9 (Eastern) |
| Region 10 (Alaska) |
| For Any Region (Other Forest Service) |

Region 1 (Northern)

| Region | Code | National Forest / Grassland / Area |
|---------|------|-------------------------------------|
| Region1 | 102 | Beaverhead |
| Region1 | 102 | Beaverhead-Deerlodge [now combined] |
| Region1 | 103 | Bitterroot |
| Region1 | 104 | Idaho Panhandle |
| Region1 | 105 | Clearwater |
| Region1 | 108 | Custer |
| Region1 | 109 | Deerlodge |
| Region1 | 110 | Flathead |
| Region1 | 111 | Gallatin |
| Region1 | 112 | Helena |
| Region1 | 114 | Kootenai |
| Region1 | 115 | Lewis and Clark |
| Region1 | 116 | Lolo |
| Region1 | 117 | Nez Perce |
| Region1 | 118 | Dakota Prairie Grassland |
| Region1 | 120 | Cedar River National Grassland |
| Region1 | 121 | Little Missouri National Grassland |
| Region1 | 122 | Sheyenne National Grassland |
| Region1 | 124 | Grand River National Grassland |
| Region1 | 199 | Other NFS Areas |

Region 2 (Rocky Mountain)

| Region | Code | National Forest / Grassland / Area |
|---------------|-------------|---|
| Region2 | 202 | Bighorn |
| Region2 | 203 | Black Hills |
| Region2 | 204 | Grand Mesa-Uncompahgre-Gunnison |
| Region2 | 206 | Medicine Bow |
| Region2 | 206 | Medicine Bow-Routt [now combined] |
| Region2 | 207 | Nebraska |
| Region2 | 209 | Rio Grande |
| Region2 | 210 | Arapaho-Roosevelt |
| Region2 | 211 | Routt |
| Region2 | 212 | Pike and San Isabel |
| Region2 | 213 | San Juan |
| Region2 | 214 | Shoshone |
| Region2 | 215 | White River |
| Region2 | 216 | Samuel R Mckelvie |
| Region2 | 217 | Cimarron National Grassland |
| Region2 | 218 | Comanche National Grassland |
| Region2 | 219 | Pawnee National Grassland |
| Region2 | 220 | Oglala National Grassland |
| Region2 | 221 | Buffalo Gap National Grassland |
| Region2 | 222 | Fort Pierre National Grassland |
| Region2 | 223 | Thunder Basin National Grassland |
| Region2 | 299 | Other NFS Areas |

Region 3 (Southwestern)

| Region | Code | National Forest / Grassland / Area |
|---------|------|------------------------------------|
| Region3 | 301 | Apache-Sitgreaves |
| Region3 | 302 | Carson |
| Region3 | 303 | Cibola |
| Region3 | 304 | Coconino |
| Region3 | 305 | Coronado |
| Region3 | 306 | Gila |
| Region3 | 307 | Kaibab |
| Region3 | 308 | Lincoln |
| Region3 | 309 | Prescott |
| Region3 | 310 | Santa Fe |
| Region3 | 312 | Tonto |
| Region3 | 399 | Other NFS Areas |

Region 4 (Intermountain)

| Region | Code | National Forest / Grassland / Area |
|---------------|-------------|---|
| Region4 | 401 | Ashley |
| Region4 | 402 | Boise |
| Region4 | 403 | Bridger-Teton |
| Region4 | 405 | Caribou |
| Region4 | 406 | Challis |
| Region4 | 407 | Dixie |
| Region4 | 408 | Fishlake |
| Region4 | 409 | Humboldt |
| Region4 | 410 | Manti-La Sal |
| Region4 | 412 | Payette |
| Region4 | 413 | Salmon |
| Region4 | 413 | Salmon-Challis [now combined] |
| Region4 | 414 | Sawtooth |
| Region4 | 415 | Targhee |
| Region4 | 415 | Caribou-Targhee [now combined] |
| Region4 | 417 | Toiyabe |
| Region4 | 417 | Humboldt-Toiyabe [now combined] |
| Region4 | 418 | Uinta |
| Region4 | 419 | Wasatch-Cache-Uinta [now combined] |
| Region4 | 420 | Desert Range Experiment Station |
| Region4 | 499 | Other NFS Areas |

Region 5 (Pacific Southwest)

| Region | Code | National Forest / Grassland / Area |
|---------|------|------------------------------------|
| Region5 | 501 | Angeles |
| Region5 | 502 | Cleveland |
| Region5 | 503 | Eldorado |
| Region5 | 504 | Inyo |
| Region5 | 505 | Klamath |
| Region5 | 506 | Lassen |
| Region5 | 507 | Los Padres |
| Region5 | 508 | Mendocino |
| Region5 | 509 | Modoc |
| Region5 | 510 | Six Rivers |
| Region5 | 511 | Plumas |
| Region5 | 512 | San Bernardino |
| Region5 | 513 | Sequoia |
| Region5 | 514 | Shasta-Trinity |
| Region5 | 515 | Sierra |
| Region5 | 516 | Stanislaus |
| Region5 | 517 | Tahoe |
| Region5 | 519 | Lake Tahoe Basin |
| Region5 | 599 | Other NFS Areas |

Region 6 (Pacific Northwest)

| Region | Code | National Forest / Grassland / Area |
|---------------|-------------|---|
| Region6 | 601 | Deschutes |
| Region6 | 602 | Fremont |
| Region6 | 603 | Gifford Pinchot |
| Region6 | 604 | Malheur |
| Region6 | 605 | Mt. Baker-Snoqualmie |
| Region6 | 606 | Mt. Hood |
| Region6 | 607 | Ochoco |
| Region6 | 608 | Okanogan |
| Region6 | 609 | Olympic |
| Region6 | 610 | Rogue River |
| Region6 | 611 | Siskiyou |
| Region6 | 612 | Siuslaw |
| Region6 | 614 | Umatilla |
| Region6 | 615 | Umpqua |
| Region6 | 616 | Wallowa-Whitman |
| Region6 | 617 | Wenatchee |
| Region6 | 618 | Willamette |
| Region6 | 620 | Winema |
| Region6 | 621 | Colville |
| Region6 | 622 | Columbia River Gorge NSA |
| Region6 | 650 | Crooked River National Grassland |
| Region6 | 699 | Other NFS Areas |

Region 8 (Southern)

| Region | Code | National Forest / Grassland / Area |
|---------|------|--|
| Region8 | 801 | NFS in Alabama |
| Region8 | 802 | Daniel Boone |
| Region8 | 803 | Chattahoochee-Oconee |
| Region8 | 804 | Cherokee |
| Region8 | 805 | NFS in Florida |
| Region8 | 806 | Kisatchie |
| Region8 | 807 | NFS in Mississippi |
| Region8 | 808 | George Washington |
| Region8 | 808 | George Washington-Jefferson [combined in 1995] |
| Region8 | 809 | Ouachita |
| Region8 | 810 | Ozark and St. Francis |
| Region8 | 811 | NFS in North Carolina |
| Region8 | 812 | Francis Marion-Sumter |
| Region8 | 813 | NFS in Texas |
| Region8 | 814 | Jefferson |
| Region8 | 816 | El Yunque |
| Region8 | 836 | Savannah River Site |
| Region8 | 860 | Land Between the Lakes |
| Region8 | 899 | Other NFS areas |

Region 9 (Eastern)

| Region | Code | National Forest / Grassland / Area |
|---------------|-------------|---|
| Region9 | 902 | Chequamegon |
| Region9 | 903 | Chippewa |
| Region9 | 904 | Huron-Manistee |
| Region9 | 905 | Mark Twain |
| Region9 | 906 | Nicolet |
| Region9 | 907 | Ottawa |
| Region9 | 908 | Shawnee |
| Region9 | 909 | Superior |
| Region9 | 910 | Hiawatha |
| Region9 | 912 | Hoosier |
| Region9 | 913 | Chequamegon-Nicolet |
| Region9 | 914 | Wayne |
| Region9 | 915 | Midewin Tallgrass Prairie |
| Region9 | 918 | Wayne |
| Region9 | 919 | Allegheny |
| Region9 | 920 | Green Mountain |
| Region9 | 921 | Monongahela |
| Region9 | 922 | White Mountain |
| Region9 | 999 | Other NFS areas |

Region 10 (Alaska)

| Region | Code | National Forest / Grassland / Area |
|---------------|-------------|---|
| Region10 | 1004 | Chugach |
| Region10 | 1005 | Tongass |
| Region10 | 1099 | Other NFS Areas |

For Any Region (Other Forest Service)

| Region | Code | National Forest / Grassland / Area |
|---------------|-------------|---|
| - | 9999 | Other Forest Service |

Section revision: 01. 2024

Appendix D: Forest Type Codes and Names

Note: The forest type names used by FIA do not come from a single published reference. The current list of forest type names has been developed over time using sources such as historical FIA lists, lists from the Society of American Foresters, and FIA analysts who developed names to meet current analysis and reporting needs.

Appendix Contents:

| Code | Forest type group |
|------|---------------------------------------|
| 100 | White / red / jack pine group |
| 120 | Spruce / fir group |
| 140 | Longleaf / slash pine group |
| 150 | Tropical softwoods group |
| 160 | Loblolly / shortleaf pine group |
| 170 | Other eastern softwoods group |
| 180 | Pinyon / juniper group |
| 200 | Douglas-fir group |
| 220 | Ponderosa pine group |
| 240 | Western white pine group |
| 260 | Fir / spruce / mountain hemlock group |
| 280 | Lodgepole pine group |
| 300 | Hemlock / Sitka spruce group |
| 320 | Western larch group |
| 340 | Redwood group |
| 360 | Other western softwoods group |
| 370 | California mixed conifer group |
| 380 | Exotic softwoods group |
| 390 | Other softwoods group |
| 400 | Oak / pine group |
| 500 | Oak / hickory group |
| 600 | Oak / gum / cypress group |
| 700 | Elm / ash / cottonwood group |
| 800 | Maple / beech / birch group |
| 900 | Aspen / birch group |
| 910 | Alder / maple group |
| 920 | Western oak group |

| Code | Forest type group |
|-------------|--------------------------|
| 940 | Tanoak / laurel group |
| 960 | Other hardwoods group |
| 970 | Woodland hardwoods group |
| 980 | Tropical hardwoods group |
| 990 | Exotic hardwoods group |
| 999 | Nonstocked |

The following list includes classifications for forest types in the Continental U.S. and Alaska. The types designated East (E) West (W) are commonly found in those regions, however, types designated for one region may occasionally be found in another.

Forest Types

| East | West | Code | Forest type / type group |
|-------------|-------------|---------------------|--|
| - | - | 100 | White / red / jack pine group |
| E | - | 101 | Jack pine |
| E | - | 102 | Red pine |
| E | - | 103 | Eastern white pine |
| E | - | 104 | Eastern white pine / eastern hemlock |
| E | - | 105 | Eastern hemlock |
| - | - | 120 | Spruce / fir group |
| E | - | 121 | Balsam fir |
| E | W | 122 | White spruce |
| E | - | 123 | Red spruce |
| E | - | 124 | Red spruce / balsam fir |
| E | W | 125 | Black spruce |
| E | - | 126 | Tamarack |
| E | - | 127 | Northern white-cedar |
| E | - | 128 | Fraser fir |
| E | - | 129 | Red spruce / Fraser fir |
| - | - | 140 | Longleaf / slash pine group |
| E | - | 141 | Longleaf pine |
| E | - | 142 | Slash pine |
| - | - | 150 | Tropical softwoods group |
| E | - | 151 | Tropical pines |
| - | - | 160 | Loblolly / shortleaf pine group |
| E | - | 161 | Loblolly pine |
| E | - | 162 | Shortleaf pine |
| E | - | 163 | Virginia pine |
| E | - | 164 | Sand pine |
| E | - | 165 | Table mountain pine |
| E | - | 166 | Pond pine |
| E | - | 167 | Pitch pine |
| E | - | 168 | Spruce pine |
| - | - | 170 | Other eastern softwoods group |
| E | - | 171 | Eastern redcedar |

| East | West | Code | Forest type / type group |
|-------------|-------------|-------------|--|
| E | - | 172 | Florida softwoods |
| - | - | 180 | Pinyon / juniper group |
| E | W | 182 | Rocky Mountain juniper |
| E | W | 184 | Juniper woodland |
| E | W | 185 | Pinyon / juniper woodland |
| - | - | 200 | Douglas-fir group |
| E | W | 201 | Douglas-fir |
| - | W | 202 | Port-Orford-cedar |
| - | W | 203 | Bigcone Douglas-fir |
| - | - | 220 | Ponderosa pine group |
| E | W | 221 | Ponderosa pine |
| - | W | 222 | Incense-cedar |
| - | W | 224 | Sugar pine |
| - | W | 225 | Jeffrey pine |
| - | W | 226 | Coulter pine |
| - | - | 240 | Western white pine group |
| - | W | 241 | Western white pine |
| - | - | 260 | Fir / spruce / mountain hemlock group |
| - | W | 261 | White fir |
| - | W | 262 | Red fir |
| - | W | 263 | Noble fir |
| - | W | 264 | Pacific silver fir |
| - | W | 265 | Engelmann spruce |
| - | W | 266 | Engelmann spruce / subalpine fir |
| - | W | 267 | Grand fir |
| - | W | 268 | Subalpine fir |
| - | W | 269 | Blue spruce |
| - | W | 270 | Mountain hemlock |
| - | W | 271 | Alaska-yellow-cedar |
| - | - | 280 | Lodgepole pine group |
| - | W | 281 | Lodgepole pine |
| - | - | 300 | Hemlock / Sitka spruce group |
| - | W | 301 | Western hemlock |
| - | W | 304 | Western redcedar |
| - | W | 305 | Sitka spruce |
| - | - | 320 | Western larch group |
| - | W | 321 | Western larch |

| East | West | Code | Forest type / type group |
|-------------|-------------|-------------|---|
| - | - | 340 | Redwood group |
| - | W | 341 | Redwood |
| - | W | 342 | Giant sequoia |
| - | - | 360 | Other western softwoods group |
| - | W | 361 | Knobcone pine |
| - | W | 362 | Southwestern white pine |
| - | W | 363 | Bishop pine |
| - | W | 364 | Monterey pine |
| - | W | 365 | Foxtail pine / bristlecone pine |
| - | W | 366 | Limber pine |
| - | W | 367 | Whitebark pine |
| - | W | 368 | Miscellaneous western softwoods |
| - | W | 369 | Western juniper |
| - | - | 370 | California mixed conifer group |
| - | W | 371 | California mixed conifer |
| - | - | 380 | Exotic softwoods group |
| E | - | 381 | Scotch pine |
| E | W | 383 | Other exotic softwoods |
| E | - | 384 | Norway spruce |
| E | - | 385 | Introduced larch |
| - | - | 390 | Other softwoods group |
| E | - | 391 | Other softwoods |
| - | - | 400 | Oak / pine group |
| E | - | 401 | Eastern white pine / northern red oak / white ash |
| E | - | 402 | Eastern redcedar / hardwood |
| E | - | 403 | Longleaf pine / oak |
| E | - | 404 | Shortleaf pine / oak |
| E | - | 405 | Virginia pine / southern red oak |
| E | - | 406 | Loblolly pine / hardwood |
| E | - | 407 | Slash pine / hardwood |
| E | - | 409 | Other pine / hardwood |
| - | - | 500 | Oak / hickory group |
| E | - | 501 | Post oak / blackjack oak |
| E | - | 502 | Chestnut oak |
| E | - | 503 | White oak / red oak / hickory |
| E | - | 504 | White oak |
| E | - | 505 | Northern red oak |

| East | West | Code | Forest type / type group |
|-------------|-------------|-------------|--|
| E | - | 506 | Yellow-poplar / white oak / northern red oak |
| E | - | 507 | Sassafras / persimmon |
| E | - | 508 | Sweetgum / yellow-poplar |
| E | - | 509 | Bur oak |
| E | - | 510 | Scarlet oak |
| E | - | 511 | Yellow-poplar |
| E | - | 512 | Black walnut |
| E | - | 513 | Black locust |
| E | - | 514 | Southern scrub oak |
| E | - | 515 | Chestnut oak / black oak / scarlet oak |
| E | - | 516 | Cherry / white ash / yellow-poplar |
| E | - | 517 | Elm / ash / black locust |
| E | - | 519 | Red maple / oak |
| E | - | 520 | Mixed upland hardwoods |
| - | - | 600 | Oak / gum / cypress group |
| E | - | 601 | Swamp chestnut oak / cherrybark oak |
| E | - | 602 | Sweetgum / Nuttall oak / willow oak |
| E | - | 605 | Overcup oak / water hickory |
| E | - | 606 | Atlantic white-cedar |
| E | - | 607 | Baldcypress / water tupelo |
| E | - | 608 | Sweetbay / swamp tupelo / red maple |
| E | - | 609 | Baldcypress / pondcypress |
| - | - | 700 | Elm / ash / cottonwood group |
| E | - | 701 | Black ash / American elm / red maple |
| E | - | 702 | River birch / sycamore |
| E | W | 703 | Cottonwood |
| E | W | 704 | Willow |
| E | - | 705 | Sycamore / pecan / American elm |
| E | - | 706 | Sugarberry / hackberry / elm / green ash |
| E | - | 707 | Silver maple / American elm |
| E | - | 708 | Red maple / lowland |
| E | W | 709 | Cottonwood / willow |
| - | W | 722 | Oregon ash |
| - | - | 800 | Maple / beech / birch group |
| E | - | 801 | Sugar maple / beech / yellow birch |
| E | - | 802 | Black cherry |
| E | - | 805 | Hard maple / basswood |

| East | West | Code | Forest type / type group |
|-------------|-------------|-------------|---------------------------------------|
| E | - | 809 | Red maple / upland |
| - | - | 900 | Aspen / birch group |
| E | W | 901 | Aspen |
| E | W | 902 | Paper birch |
| E | - | 903 | Gray birch |
| E | W | 904 | Balsam poplar |
| E | W | 905 | Pin cherry |
| - | - | 910 | Alder / maple group |
| - | W | 911 | Red alder |
| - | W | 912 | Bigleaf maple |
| - | - | 920 | Western oak group |
| - | W | 921 | Gray pine |
| - | W | 922 | California black oak |
| - | W | 923 | Oregon white oak |
| - | W | 924 | Blue oak |
| - | W | 931 | Coast live oak |
| - | W | 933 | Canyon live oak |
| - | W | 934 | Interior live oak |
| - | W | 935 | California white oak (valley oak) |
| - | - | 940 | Tanoak / laurel group |
| - | W | 941 | Tanoak |
| - | W | 942 | California laurel |
| - | W | 943 | Giant chinkapin |
| - | - | 960 | Other hardwoods group |
| - | W | 961 | Pacific madrone |
| - | W | 962 | Other hardwoods |
| - | - | 970 | Woodland hardwoods group |
| - | W | 971 | Deciduous oak woodland |
| - | W | 972 | Evergreen oak woodland |
| - | W | 973 | Mesquite woodland |
| - | W | 974 | Cercocarpus (mountain brush) woodland |
| - | W | 975 | Intermountain maple woodland |
| - | W | 976 | Miscellaneous woodland hardwoods |
| - | - | 980 | Tropical hardwoods group |
| E | - | 982 | Mangrove |
| E | W | 983 | Palms |
| - | W | 984 | Dry forest |

| East | West | Code | Forest type / type group |
|-------------|-------------|-------------|-----------------------------------|
| - | W | 985 | Moist forest |
| - | W | 986 | Wet and rain forest |
| - | W | 987 | Lower montane wet and rain forest |
| - | W | 988 | Cloud forest |
| - | W | 989 | Other tropical hardwoods |
| - | - | 990 | Exotic hardwoods group |
| E | - | 991 | Paulownia |
| E | - | 992 | Melaleuca |
| E | W | 993 | Eucalyptus |
| E | W | 995 | Other exotic hardwoods |
| - | - | 999 | Nonstocked |

Forest types are named for the predominant species (or group of species) on the condition. If softwoods predominate (50 percent or more of tree stocking), then the forest type will be one of the softwood types (codes 101 through 391) and vice versa for hardwoods (codes 401 through 995).

For the Eastern United States, there are mixed hardwood-pine forest types (codes 401 through 409) when the pine and/or redcedar (either eastern or southern) component is between 25 and 49 percent of the stocking. If the pine/redcedar component is less than 25 percent of the stocking, then one of the hardwood forest types is assigned.

WHITE/RED/JACK PINE GROUP

In these pure pine forest types, stocking of the pine component needs to be at least 50 percent. Otherwise, forest types listed under the Oak / Pine Group are used (codes 401 through 409).

101

Jack pine: Associates - northern pin oak, bur oak, red pine, bigtooth aspen, paper birch, northern red oak, eastern white pine, red maple, balsam fir, white spruce, black spruce, and tamarack. Sites - Dry to mesic sites.

102

Red pine: Associates - eastern white pine, jack pine, red maple, northern red oak, white spruce, balsam fir, quaking aspen, bigtooth aspen, paper birch, and northern pin oak. Sites - common on sandy soils, but reaches best development on well-drained sandy loam to loam soils.

103

Eastern white pine: Associates - pitch pine, gray birch, aspen, red maple, pin cherry, white oak, paper birch, sweet birch, yellow birch, black cherry, white ash, northern red oak, sugar maple, basswood, hemlock, northern white cedar, yellow poplar, white oak, chestnut oak, scarlet oak, and shortleaf pine. Sites - wide variety, but best development on well drained sands and sandy loams.

104

Eastern white pine/ eastern hemlock (includes Carolina hemlock): Associates - beech, sugar maple, basswood, red maple, yellow birch, gray birch, red spruce, balsam fir, black cherry, white ash, paper birch, sweet birch, northern red oak, white oak, chestnut oak, yellow poplar, and cucumber tree. Sites - wide variety but favors cool locations, moist ravines, and north slopes.

105

Eastern hemlock (includes Carolina hemlock): Associates - white pine, balsam fir, red spruce, beech, sugar maple, yellow birch, basswood, red maple, black cherry, white ash, paper birch, sweet birch, northern red oak, and white oak. Sites - cool locations, moist ravines, and north and east slopes.

SPRUCE/FIR GROUP

These types are mostly in the Eastern United States. See FIR/SPRUCE/MOUNTAIN HEMLOCK for Western United States.

121

Balsam fir: Associates - black, white, or red spruce; paper or yellow birch; quaking or bigtooth aspen, beech; red maple; hemlock; tamarack; black ash; or northern white cedar. Sites - upland sites on low-lying moist flats and in swamps.

122

White spruce: Associates - black spruce, paper birch, quaking aspen, red spruce, balsam fir, and balsam poplar. Sites - transcontinental; grows well on calcareous and well-drained soils, but is found on acidic rocky and sandy sites, and sometimes in fen peatlands along the maritime coast.

123

Red spruce: Associates - vary widely and may include red maple, yellow birch, eastern hemlock, eastern white pine, white spruce, northern white cedar, paper birch, pin cherry, gray birch, mountain-ash, beech, striped maple, sugar maple, northern red oak, red pine, and aspen. Sites - include moderately well-drained to poorly drained flats and thin slopes and on varying acidic soils in abandoned fields and pastures. This code should be used where red spruce comprises a plurality or majority of the stand's stocking but where balsam fir is either nonexistent or has very little stocking (<5 percent of total). Otherwise the plot would be coded 124, red spruce/balsam fir.

124

Red spruce/balsam fir: Associates - red maple, paper birch, white pine, hemlock, white spruce, and northern white cedar. Sites - moderately drained to poorly drained flats or on thin soiled upper slopes.

125

Black spruce: Associates - white spruce, quaking aspen, balsam fir, paper birch, tamarack, northern white cedar, black ash, and red maple. Sites - wide variety from moderately dry to very wet.

126

Tamarack: Associates - black spruce, balsam fir, white spruce, northern white-cedar, and quaking aspen. Sites - found on wetlands and poorly drained sites.

127

Northern white cedar: Associates - balsam fir, tamarack, black spruce, white spruce, red spruce, black ash, and red maple. Sites - mainly occurs in swamps, but also in seepage areas, limestone uplands and old fields.

128

Fraser fir: Associates - red spruce, hemlock, yellow birch, less frequently, beech, sugar maple, yellow buckeye, mountain-ash, and mountain maple. Sites - mainly occurs in the Appalachian Mountains of North Carolina and Tennessee. This type is used if the stocking of Fraser fir is at least 50 percent of the total stocking.

129

Red spruce/Fraser fir: Associates - hemlock, yellow birch, and less frequently, beech, sugar maple, yellow buckeye, mountain-ash, and mountain maple. Sites - mainly occurs in the Appalachian Mountains of North Carolina and Tennessee. For this type to be used, the sum of the stocking of red spruce and Fraser fir must be at least 50 percent of the total stocking and red spruce stocking must be between 5 and 49 percent of total and Fraser fir stocking must be between 5 and 49 percent of total.

LONGLEAF/SLASH PINE GROUP**141**

Longleaf pine: Longleaf pine occurs as a pure type or comprises a majority of the trees in the overstory. Associates - slash, loblolly and shortleaf pine, southern red oak, blackjack oak, water oak, persimmon, and sweetgum. Sites - those areas that can and do burn on a periodic basis; usually occurs on middle and upper slopes with a low severity of hardwood and brush competition. Southern distribution coastal plain and piedmont units.

142

Slash pine: Slash pine is pure or provides a majority of the stocking. Associates on moist sites; a wide variety of moist site hardwoods, pond pine, and pondcypress. On dry sites; a wide variety of dry site hardwoods, longleaf, loblolly, and sand pine. Sites both moist and well drained flatwoods, and bays. Southern distribution coastal plain and piedmont units from North Carolina to Florida.

TROPICAL SOFTWOODS GROUP**151**

Tropical pines: Tropical pine forests and plantations composed of Caribbean pine (*Pinus caribea*). Associates are *P. oocarpa*, *P. patula* and other pine species native to the Florida Keys, Caribbean, Central America and Mexico. Pines are not native to Puerto Rico or the U.S. Virgin Islands but can be found in plantations or naturally regenerating to a limited extent on sites that were formerly plantations. *P. caribea* was once rare on the South Florida mainland, but practically non-existent there now and it is not used in plantations in Florida.

LOBLOLLY/SHORTLEAF PINE GROUP**161**

Loblolly pine: Associates - sweetgum, southern red oak, post oak, blackjack oak, blackgum, yellow poplar, and pond pine. Sites - upland soils with abundant moisture but good drainage, and on poorly drained depressions.

162

Shortleaf pine: Associates - white oak, southern red oak, scarlet oak, black oak, hickory, post oak, blackjack oak, blackgum, red maple, pitch pine, and Virginia pine. Sites - low, well drained ridges to rocky, dry, south slopes and the better drained spur ridges on north slopes and also on old fields.

163

Virginia pine: Associates - shortleaf pine, white oak, chestnut oak, southern red oak, black oak, sweetgum, red maple, blackgum, and pitch pine. Sites - dry sites, often abandoned fields.

164

Sand pine: Sand pine occurs in pure stands or provides a majority of the stocking. Associates - dwarf live oak, dwarf post oak, turkey oak, persimmon, and longleaf pine. Sites - dry, acidic, infertile sands. Southern distribution found chiefly in the central peninsula and panhandle of Florida, although planted stands extend into the sandhills of Georgia and South Carolina.

165

Table mountain pine: Associates - chestnut oak, scarlet oak, pitch pine, and black oak. Sites - poor, dry, often rocky slopes.

166

Pond pine: Associates - loblolly pine, sweetgum, baldcypress, and Atlantic white cedar. Sites - rare, but found in southern New Jersey, Delaware, and Maryland in low, poorly drained areas, swamps, and marshes.

167

Pitch pine: Associates - chestnut oak, scarlet oak, table mountain pine, black oak, and blackgum. Sites - relatively infertile ridges, dry flats, and slopes.

168

Spruce pine: Spruce pine comprises a majority of the stocking. Associates - any of the moist site softwood or hardwood species. Sites - moist or poorly drained areas. Southern distribution of this type is rarely encountered and is found almost exclusively in the coastal plain.

OTHER EASTERN SOFTWOODS GROUP**171**

Eastern redcedar (includes southern redcedar): Associates - gray birch, red maple, sweet birch, Virginia Pine, shortleaf pine, and oak. Sites - usually dry uplands and abandoned fields on limestone outcrops and other shallow soils but can grow well on good sites.

172

Florida softwoods (includes either Florida yew or Florida torreya): Either of these two species comprises the majority of stocking. Sites - Along bluffs and ravines of the Apalachicola River and its tributaries in north Florida and South Georgia.

PINYON / JUNIPER GROUP**182**

Rocky Mountain juniper: Rocky Mountain juniper comprises the majority of stocking. Associates - ponderosa pine, Douglas-fir, other junipers, pinyons, and oaks. Sites - often found on calcareous and somewhat alkaline soils.

184

Juniper woodland: Includes Pinchot juniper, redberry juniper, Ashe juniper, California juniper, alligator juniper, Utah juniper, oneseed juniper and pinyon is NOT present. Associates - various woodland oaks and cercocarpus, ponderosa pine, Arizona cypress, and Douglas-fir. Sites - lower elevation with low annual precipitation.

185

Pinyon-juniper woodland: Includes all pinyons and all junipers except Rocky Mountain and western juniper. Must have pinyon present. Associates - various woodland oaks and cercocarpus, ponderosa pine, Arizona cypress, and Douglas-fir. Sites - occurs at lower elevations with low annual precipitation.

DOUGLAS-FIR GROUP**201**

Douglas-fir: Associates - western hemlock, grand fir, Pacific silver fir, white fir, noble fir, California red fir, western redcedar, bigleaf maple, red alder, ponderosa pine, western white pine, western hemlock, and Sitka spruce. Sites - throughout the western U.S.

202

Port-Orford-cedar: Associates - Douglas-fir, western hemlock, Sitka spruce, grand fir, lodgepole pine, western redcedar, redwood, tanoak, red alder, bigleaf maple and California laurel. Sites - higher elevations tending to occur on northerly aspects.

203

Bigcone Douglas-fir: Associates - Canyon live oak, ponderosa, Jeffrey, sugar, knobcone, and Coulter pines, incense-cedar, white fir, California black oak, California laurel, and bigleaf maple. Sites - Mainly confined to the Transverse and Peninsular Ranges of southern California. Stands are found on many combinations of slope, aspect, soil, but as elevations increase, the preferred aspect shifts from cooler to warmer slopes.

PONDEROSA PINE GROUP**221**

Ponderosa pine (includes Arizona pine): Associates - Douglas-fir, lodgepole pine, grand fir, Jeffrey pine, western larch, quaking aspen, Utah juniper, and Gambel oak. Sites - this forest type is distributed over vast areas in the West and therefore can have great differences in environmental conditions.

222

Incense-cedar: Associates - Douglas-fir, ponderosa pine, sugar pine, western white pine, Jeffrey pine, white and grand fir, western hemlock, western redcedar, Port-Orford-cedar, giant sequoia, Oregon white oak, California black oak, tanoak, giant chinkapin, and Pacific madrone; it is rarely found in pure stands. Sites - Grows from the coastal fog belt to the dry inland slopes of eastern California and central Oregon. Once established, incense-cedar is a good competitor on hot, dry sites and commonly shares an upper canopy position on southwestern slopes. On cooler, moister aspects, it is usually subdominant to other species.

224

Sugar pine: Associates - In the northern part of its range: Douglas-fir, ponderosa pine, grand fir, incense-cedar, western hemlock, western redcedar, Port-Orford-cedar, tanoak, and madrone. In the central part of its range: ponderosa pine, Jeffrey pine, white fir, incense-cedar, California red fir, giant sequoia, and California black oak. Farther south: Jeffrey pine, ponderosa pine, Coulter pine, incense-cedar, white fir, and bigcone Douglas-fir. Sites - grows in areas that have warm, dry summers and cool, wet, mild winters. Terrain is commonly steep and rugged, favoring warm exposures as the elevation increases. Found in Oregon and California, but is most abundant in the mixed conifer forests on the west slope of the Sierra Nevada.

225

Jeffrey pine: Associates - Incense-cedar, ponderosa pine, sugar pine, Douglas-fir, Port-Orford-cedar, western white pine, knobcone pine, gray or California foothill pine, red and white fir. Sites - thrives in fairly harsh environments throughout most of its range, and is cold hardy, drought tolerant, adapted to short growing seasons, and tolerant of infertile sites. The majority of trees in this forest type are found in California, although its range extends into southwest Oregon and western Nevada.

226

Coulter pine: Associates - blue oak, California black oak, interior live oak, coast live oak, California white oak, California scrub oak, buckeye, and ponderosa pine. Sites - grows singly or in small stands primarily on dry, rocky slopes of southern California coastal ranges, between 3,000 and 6,000 feet. Occurs from Mt. Diablo and the Santa Lucia Mountains down to the San Bernardino, San Jacinto, and Cuyamaca Mountains in the south.

WESTERN WHITE PINE GROUP**241**

Western white pine: Associates - western larch, grand fir, western redcedar, and western hemlock. Sites - occurs primarily on moist, mid-elevation sites from 1,500 to 4,000 feet.

FIR/SPRUCE/MOUNTAIN HEMLOCK GROUP**261**

White fir: Associates - Douglas-fir, sugar pine, ponderosa pine, Jeffrey pine, incense-cedar, California red fir, blue spruce, limber pine, and aspen. Sites - deep well-drained sandy loam-covered slopes and benches with a northerly exposure.

262

Red fir (includes California and Shasta red fir): Associates - Jeffrey pine, western white pine, lodgepole pine, mountain hemlock, and sugar pine. Sites - found at elevations ranging from 5,400 to 7,500 feet.

263

Noble fir: Associates - Douglas-fir, Pacific silver fir, western and mountain hemlocks, lodgepole pine, western redcedar, and Alaska-yellow-cedar. Sites - found on a variety of sites where precipitation is high and snowpacks are common, generally above 3,000 feet in elevation in the Cascade and Coast ranges.

264

Pacific silver fir: Associates - western and mountain hemlocks, western redcedar, Alaska-yellow-cedar, grand fir, Sitka spruce, lodgepole pine, subalpine fir, and Engelmann spruce. Sites - most abundant on sites where summer drought is minimal and snowpacks are common, such as areas of heavy rainfall, seepage, or prolonged snowmelt.

265

Engelmann spruce: Associates - western white pine, western redcedar, western hemlock, Douglas-fir, western larch, grand fir, subalpine fir, and lodgepole pine. For this type to be used, the total stocking of Engelmann spruce must be at least 75 percent of the total stocking.

266

Engelmann spruce-subalpine fir: Associates - western white pine, western redcedar, western hemlock, Douglas-fir, western larch, grand fir, and lodgepole pine. Sites - this type is widespread in the Western U.S. For this

type to be used, the sum of the stocking of Engelmann spruce and subalpine fir must be at least 75 percent of the total stocking and Engelmann spruce stocking must be between 5 and 74 percent of total and subalpine fir stocking must be between 5 and 74 percent of total.

267

Grand fir: Associates - ponderosa pine, Douglas-fir, western hemlock, western redcedar, western white pine, Pacific yew, lodgepole pine, and western larch. Sites - in Idaho, found on moist slopes from 1,500 to 5,200-foot elevations; in Oregon, it occupies moist low-elevation sites, but also extends up to mid-elevations to as high as 6,000 feet.

268

Subalpine fir: Associates - western white pine, western redcedar, western hemlock, Douglas-fir, western larch, grand fir, Engelmann spruce, and lodgepole pine. For this type to be used, the total stocking of subalpine fir must be at least 75 percent of the total stocking. Sites - found at high elevations, near timberline.

269

Blue spruce: Associates - Douglas-fir, ponderosa pine, white fir, lodgepole pine, and Rocky Mountain juniper. Sites - restricted to the southern Rocky Mountains, typically located in the montane zone.

270

Mountain hemlock: Associates - Alaska-yellow-cedar, Pacific silver fir, western white pine, lodgepole pine, noble fir, and subalpine fir. Sites - occurs in cold, moist regions and growing conditions are poor.

271

Alaska-yellow-cedar: Associates - In California, California red fir, Brewer spruce, incense-cedar, Pacific yew, and western white pine; in Oregon and Washington, found with mountain hemlock, subalpine fir, Pacific silver fir, noble fir, western white pine, and western hemlock. Sites - Cool and humid climate, most stands grow within 100 miles of the Pacific coast.

LODGEPOLE PINE GROUP**281**

Lodgepole pine: Associates - subalpine fir, Engelmann spruce, white spruce, Douglas-fir, western redcedar, red alder, and western hemlock. Sites - one of the most widespread types in the Western U.S. tolerating a broad range of temperature and moisture regimes.

HEMLOCK/SITKA SPRUCE GROUP**301**

Western hemlock: Associates - Sitka spruce, western redcedar, Douglas-fir, Alaska-yellow-cedar, grand fir, Engelmann spruce, bigleaf maple, and red alder. Sites - nearly any soil provides a seedbed but requires abundant moisture. Often associated with cut-over or burned-over areas.

304

Western redcedar: Associates - western white pine, western hemlock, western larch, grand fir, Douglas-fir, and Pacific silver fir. Sites - inhabits moist flats and slopes, the banks of rivers and swamps and can be found in bogs.

305

Sitka spruce: Associates - western hemlock, Douglas-fir, western redcedar, Port-Orford-cedar, red alder, bigleaf maple, and black cottonwood. Sites - limited to a relatively narrow oceanside strip characterized by mild winters, cool summers, and abundant moisture throughout the growing season.

WESTERN LARCH GROUP**321**

Western larch: Associates - Douglas-fir, subalpine fir, lodgepole pine, Engelmann spruce, western hemlock, and western redcedar. Sites - best growth on deep, moist, porous soils in high valleys and on mountain slopes of northern and western exposure.

REDWOOD GROUP**341**

Redwood: Associates - Douglas-fir, grand fir, western hemlock, California torreya, Pacific yew, and western redcedar. Sites - largely confined to coastal topography between 35 degrees 41 minutes and 42 degrees 9 minutes north latitude.

342

Giant sequoia: Associates- California white fir, sugar pine, incense-cedar, California red fir, white fir, ponderosa pine and California black oak. Sites - Deep, well-drained soils with high soil moisture available during dry summers. Most stands found above 4,000 feet elevation, rarely forming pure stands.

OTHER WESTERN SOFTWOODS GROUP**361**

Knobcone pine: Associates - Gray or California foothill pine, canyon live oak and many western oaks, Douglas-fir, and Port-Orford-cedar. Sites - found on soils that are shallow, dry, stony or high in magnesium.

362

Southwestern white pine: Associates - Douglas-fir, white fir, ponderosa pine, Gambel oak, and aspen. Sites - higher elevations in Arizona and New Mexico.

363

Bishop pine: Grows singly or in small stands along the coast of California.

364

Monterey pine: Grows singly or in small stands. Sites - Native stands are found in the high humidity and summer fogs of the central-coast area of California in San Mateo, Santa Cruz, Monterey, and San Luis Obispo Counties.

365

Foxtail pine/bristlecone pine: Associates - limber pine, white fir, Engelmann spruce, ponderosa pine, and pinyon. Sites - found on rocky outcrops, usually on southern or southwestern exposures and can range in elevation from 8,000 to 11,000 feet.

366

Limber pine: Associates - low to mid elevations: Douglas-fir, ponderosa pine, and Rocky Mountain juniper; mid to high elevations: lodgepole pine and aspen; high elevations: Engelmann spruce, subalpine fir, bristlecone pine, and whitebark pine. Sites - a very wide range of elevations and latitudes across the Rocky Mountains; can be the majority species as an early seral stage under a variety of harsh establishment conditions, as climax in dry, high elevation sites in the central and southern Rockies.

367

Whitebark pine: Associates - subalpine fir, subalpine larch, Engelmann spruce, and lodgepole pine. Sites - poor, high elevation.

368

Miscellaneous western softwoods: A "catch-all" group for such species as all cypress (*Cupressus*) species, subalpine larch, Brewer spruce, Apache pine, Chihuahua pine, Washoe pine, Torrey pine, Pacific yew, and California torreya.

369

Western juniper: Associates - ponderosa pine and Jeffrey pine. Sites - found on dry sites and ranges in elevation from just above sea level to 6,500 feet.

CALIFORNIA MIXED CONIFER GROUP**371**

California mixed conifer: Associates - defined only for plots in California (STATECD = 06), typically a mixture of several conifer species occurring as single trees or small groups, sometimes with a broad range of heights, in which any of ponderosa pine, Jeffrey pine, sugar pine, Douglas-fir, white fir, red fir, Shasta red fir and incense-cedar may predominate. In some cases, only one species is present (as implied by rules 1 and 2 below). The type is often found on, but not limited to, east-facing slopes of the Coast Range and on the west-facing and higher elevation east-facing slopes of the Cascades and Sierra Nevada.

Formal rules - to classify as a mixed- conifer forest type, the condition class must be capable of being stocked with 70 percent or greater in conifers and one of the following must be true:

1. Douglas-fir predominates and the county code (COUNTYCD) is not Del Norte (015), Humboldt (023), Marin (041), Mendocino (045), Napa (055), San Mateo (081), Santa Clara (085), Santa Cruz (087), or Sonoma (097).
2. Sugar pine (SPCD = 117) or incense cedar (SPCD = 081) predominates.
3. Ponderosa pine (SPCD = 122) and/or Jeffrey pine (SPCD = 116), either singly or in combination, predominate but make up less than 80 percent of the conifer stocking.
4. White fir (SPCD = 015), and/or red fir (SPCD = 020), and/or Shasta red fir (SPCD = 021) either singly or in combination predominate, but make up less than 80 percent of the conifer stocking.

EXOTIC SOFTWOODS GROUP**381****Scotch pine:** Plantation type, not naturally occurring.**383****Other exotic softwoods:** Austrian pine.**384****Norway spruce:** Plantation type, not naturally occurring.**385****Introduced larch:** Introduced larch (species code 0070).**OTHER SOFTWOODS GROUP****391****Other softwoods:** All softwood species identified to genus level only, except cypress, baldcypress, and larch.**OAK/PINE GROUP**

In these oak/pine forest types, stocking of the pine component needs to be 25-49 percent.

401**Eastern white pine/northern red oak/white ash:** Associates - red maple, basswood, yellow birch, bigtooth aspen, sugar maple, beech, paper birch, black cherry, hemlock, and sweet birch. Sites - deep, fertile, well-drained soil.**402****Eastern redcedar/hardwood:** Associates - oak, hickory, walnut, ash, locust, dogwood, blackgum, hackberry, winged elm, shortleaf pine, and Virginia pine. Sites - usually dry uplands and abandoned fields.**403****Longleaf pine/oak:** Longleaf pine and scrub oaks primarily turkey, bluejack, blackjack, and dwarf post oak comprise the type. Associates - southern scrub oaks in the understory. Sites - common on sandhills where soils are dry, infertile, and coarse textured. Southern distribution coastal plain and piedmont units.**404****Shortleaf pine/oak:** Associates - (oaks generally include white, scarlet, blackjack, black, post, and southern red), hickory, blackgum, sweetgum, Virginia pine, and pitch pine. Sites - generally in dry, low ridges, flats, and south slopes.**405****Virginia pine/southern red oak:** Associates - black oak, scarlet oak, white oak, post oak, blackjack oak, shortleaf pine, blackgum, hickory, pitch pine, table mountain pine, and chestnut oak. Sites - dry slopes and ridges.**406****Loblolly pine/hardwood:** Associates - wide variety of moist and wet site hardwoods including blackgum, sweetgum, yellow poplar, red maple, white and green ash, and American elm; on drier sites associates include

southern and northern red oak, white oak, post oak, scarlet oak, persimmon, and hickory. Sites - usually moist to very moist though not wet all year, but also on drier sites.

407

Slash pine/hardwood: Slash pine and a variable mixture of hardwoods comprise the type. Associates codominant with the slash pine component are sweetbay, blackgum, loblolly bay, pondcypress, pond pine, Atlantic white-cedar, red maple, ash, and water oak. Sites - undrained or poorly drained depressions such as bays or pocosins and along pond margins. Southern distribution primarily coastal plain units.

409

Other pine/hardwood: A type used for those unnamed pine-hardwood combinations that meet the requirements for oak-pine. These are stands where hardwoods (usually oaks) comprise the plurality of the stocking with at least a 25 to 49 percent pine, eastern redcedar, or southern redcedar component.

OAK/HICKORY GROUP

501

Post oak/blackjack oak (includes dwarf post oak): Associates - black oak, hickory, southern red oak, white oak, scarlet oak, shingle oak, live oak, shortleaf pine, Virginia pine, blackgum, sourwood, red maple, winged elm, hackberry, chinkapin oak, shumard oak, dogwood, and eastern redcedar. Sites - dry uplands and ridges.

502

Chestnut oak: Associates - scarlet oak, white oak, black oak, post oak, pitch pine, blackgum, sweetgum, red maple, red oak, shortleaf pine, and Virginia pine. Sites - rocky outcrops with thin soil, ridge tops.

503

White oak/red oak/hickory (includes all hickories except water and shellbark hickory): Associates - pin oak, northern pin oak, chinkapin oak, black oak, dwarf chinkapin oak, American elm, scarlet oak, bur oak, white ash, sugar maple, red maple, walnut, basswood, locust, beech, sweetgum, blackgum, yellow-poplar, and dogwood. Sites - wide variety of well-drained upland soils.

504

White oak: Associates - black oak, northern red oak, bur oak, hickory, white ash, and yellow-poplar. Sites - scattered patches on upland, loamy soils but on drier sites than type 503.

505

Northern red oak: Associates - black oak, scarlet oak, chestnut oak, and yellow-poplar. Sites - spotty distribution on ridge crests and north slopes in mountains but also found on rolling land, slopes, and benches on loamy soil.

506

Yellow-poplar/white oak/northern red oak: Associates - black oak, hemlock, blackgum, and hickory. Sites - northern slopes, coves, and moist flats.

507

Sassafras/persimmon: Associates - elm, eastern redcedar, hickory, ash, sugar maple, yellow-poplar, Texas sassafras, and oaks. Sites - abandoned farmlands and old fields.

508

Sweetgum/yellow-poplar: Associates - red maple, white ash, green ash, and other moist site hardwoods. Sites - generally occupies moist, lower slopes.

509

Bur oak: Associates - northern pin oak, black oak, chinkapin oak, and eastern redcedar in northern and dry upland sites; shagbark hickory, black walnut, eastern cottonwood, white ash, American elm, swamp white oak, honey locust, and American basswood in southern and lowland sites. Sites - drier uplands to moist bottomlands with the drier uplands more common in the northern part of the range and the moist bottomlands more common in the southern part of the range.

510

Scarlet oak: Associates - black oak, southern red oak, chestnut oak, white oak, post oak, hickory, pitch pine, blackgum, sweetgum, black locust, sourwood, dogwood, shortleaf pine, and Virginia pine. Sites - dry ridges, south or west facing slopes and flats but often moister situations probably as a result of logging or fire.

511

Yellow poplar: Associates - black locust, red maple, sweet birch, cucumbertree, and other moist site hardwoods (except sweetgum, see type 508) and white oak and northern red oak (see type 503). Sites - lower slopes, northerly slopes, moist coves, flats, and old fields.

512

Black walnut: Associates - yellow-poplar, white ash, black cherry, basswood, beech, sugar maple, oaks, and hickory. Sites - coves and well-drained bottoms.

513

Black locust: Associates - many species of hardwoods and hard pines may occur with it in mixture, either having been planted or from natural seeding. Sites - may occur on any well-drained soil but best on dry sites, often in old fields.

514

Southern scrub oak: This forest cover type consists of a mixture of scrub oaks that may include several of the following species: turkey oak, bluejack oak, dwarf live oak, Durand oak, and bear oak (otherwise known as scrub oak). Also includes anacahuita. Sites - dry sandy ridges the type frequently develops on areas formerly occupied by longleaf pine. Southern distribution common throughout all coastal plain units and into the lower Piedmont.

515

Chestnut oak/black oak/scarlet oak: Associates - northern and southern red oaks, post oak, white oak, sourwood, shagbark hickory, pignut hickory, yellow-poplar, blackgum, sweetgum, red maple, eastern white pine, pitch pine, Table Mountain pine, shortleaf pine, and Virginia pine. Sites - dry upland sites on thin-soiled rocky outcrops on dry ridges and slopes.

516

Cherry/white ash/yellow-poplar: Associates - sugar maple, American beech, northern red oak, white oak, blackgum, hickory, cucumbertree, and yellow birch. Sites - fertile, moist, well-drained sites.

517

Elm/ash/black locust: Associates - Black locust, silver maple, boxelder, blackbead ebony, American elm, slippery elm, rock elm, red maple, and green ash predominate. Found in North Central region, unknown in the Northeast. Sparse in the West. Sites - upland.

519

Red maple/oak: Associates - the type is dominated by red maple and some of the wide variety of central hardwood associates include upland oak, hickory, yellow-poplar, black locust, sassafras as well as some central softwoods like Virginia and shortleaf pines. Sites - uplands.

520

Mixed upland hardwoods: Includes Ohio buckeye, yellow buckeye, Texas buckeye, red buckeye, painted buckeye, American hornbeam, American chestnut, eastern redbud, flowering dogwood, hawthorn spp., cockspur hawthorn, downy hawthorn, Washington hawthorn, fleshy hawthorn, dwarf hawthorn, honeylocust, Kentucky coffeetree, Osage-orange, all mulberries, blackgum, sourwood, southern red oak, shingle oak, laurel oak, water oak, live oak, willow oak, black locust, blackbead ebony, anacahuita, and September elm. Associates - Any mixture of hardwoods of species typical of the upland central hardwood region, should include at least some oak. Sites - wide variety of upland sites.

OAK/GUM/CYPRESS GROUP**601**

Swamp chestnut oak/cherrybark oak: Associates - Shumard oak, Delta post oak, white ash, hickory, white oak, blackgum, sweetgum, southern red oak, post oak, American elm, winged elm, yellow poplar, and beech. Sites - within alluvial floodplains of major rivers, on all ridges in the terraces, and on the best fine sandy loam soils on the highest first bottom ridges.

602

Sweetgum/Nuttall oak/willow oak: Associates - American holly, green ash, American elm, pecan, cottonwood, red maple, honeylocust, persimmon, and anacahuita. Sites very wet.

605

Overcup oak/water hickory (includes shellbark hickory): Associates - pin oak, willow oak, American elm, green ash, hackberry, persimmon, and red maple. Sites - in South within alluvial floodplains in low, poorly drained flats with clay soils; also in sloughs and lowest backwater basins and low ridges with heavy soils that are subject to late spring inundation.

606

Atlantic white cedar: Associates - The northern region includes gray birch, pitch pine, hemlock, blackgum, and red maple. The southern region includes pond pine, baldcypress, and red maple. Sites - usually confined to sandy bottomed, peaty, interior, and river swamps, wet depressions, and stream banks.

607

Baldcypress/water tupelo: 25-50 percent stocking of baldcypress (either baldcypress or Montezuma baldcypress). Associates - blackgum, willow, red maple, American elm, persimmon, overcup oak, and sweetgum. Sites - very low, poorly drained flats, deep sloughs, and swamps; wet most all the year. Also, floodplains and stream margins.

608

Sweetbay/swamp tupelo/red maple: Associates - blackgum, Florida maple, water birch, gum bumelia, waterlocust, loblolly bay, all magnolias, red maple, Ogeechee tupelo, red bay, water-elm, Oglethorpe oak, loblolly

and pond pines, American elm, and other moist site hardwoods. Sites - very moist but seldom wet all year shallow ponds, muck swamps, along smaller creeks in Coastal Plain (rare in Northeast).

609

Baldcypress/pondcypress: >50 percent stocking of baldcypress and/or pondcypress. Associates - blackgum, willow, red maple, American elm, persimmon, overcup oak, and sweetgum. Sites - very low, poorly drained flats, deep sloughs, and swamps; wet most all the year. Also, floodplains and stream margins.

ELM/ASH/COTTONWOOD GROUP

701

Black ash/American elm/red maple (includes slippery and rock elm): Associates - swamp white oak, silver maple, sycamore, pin oak, blackgum, white ash, and cottonwood. Sites - moist to wet areas, swamps, gullies, and poorly drained flats.

702

River birch/sycamore: Associates - red maple, black willow, and other moist site hardwoods. Sites - moist soils at edges of creeks and rivers.

703

Cottonwood: Associates - willow, white ash, green ash, and sycamore. Sites - streambanks where bare, moist soil is available.

704

Willow (includes peachleaf and black willow): Associates - cottonwood, green ash, sycamore, pecan, American elm, red maple, and boxelder. Sites - streambanks where bare, moist soil is available.

705

Sycamore/pecan/American elm (includes slippery and rock elm): Associates - sweetgum, green ash, hackberry, silver maple, cottonwood, willow, boxelder, and river birch. Sites - bottomlands, alluvial floodplains of major rivers.

706

Sugarberry/hackberry/elm/green ash (includes American, winged, cedar, slippery and rock elm): Associates - boxelder, pecan, blackgum, persimmon, honeylocust, red maple, and hackberry. Sites - low ridges and flats in floodplains.

707

Silver maple/American elm: Silver maple and American elm are the majority species in this type. Associates - chalk maple, sweetgum, pin oak, swamp white oak, eastern cottonwood, sycamore, green ash, and other moist-site hardwoods, according to the region. Sites - primarily on well-drained moist sites along river bottoms and floodplains, and beside lakes and larger streams.

708

Red maple/lowland: Red maple comprises a majority of the stocking. Because this type grows on a wide variety of sites over an extensive range, associates are diverse. Associates include yellow-poplar, blackgum, sweetgum, and loblolly pine. Site - generally restricted to very moist to wet sites with poorly drained soils, and on swamp borders.

709

Cottonwood/willow (includes peachleaf, black and Bebb willow): Associates - white ash, green ash, sycamore, American elm, red maple and boxelder. Sites - stream banks where bare, moist soil is available.

722

Oregon ash: Associates - red alder, bigleaf maple, black cottonwood, and willow. Sites - riparian areas, prefers damp, loose soils, below 3000 feet.

MAPLE/BEECH/BIRCH GROUP**801**

Sugar maple/beech/yellow birch: Associates - butternut, basswood, red maple, hemlock, northern red oak, white ash, white pine, black cherry, sweet birch, American elm, rock elm, and eastern hophornbeam. Sites - fertile, moist, well-drained sites.

802

Black cherry: Associates - sugar maple, northern red oak, red maple, white ash, basswood, sweet birch, butternut, American elm, and hemlock. Sites - fertile, moist, well-drained sites.

805

Hard maple/basswood (includes American, Carolina, and white basswood): Associates - black maple, white ash, northern red oak, eastern hophornbeam, American elm, red maple, eastern white pine, and eastern hemlock. Sugar maple and basswood occur in different proportions but together comprise the majority of the stocking. Sites - fertile, moist, well-drained sites.

809

Red maple/upland: Associates - the type is dominated by red maple and some of the wide variety of northern hardwood associates include sugar maple, beech, birch, aspen, as well as some northern softwoods like white pine, red pine, and hemlock; this type is often the result of repeated disturbance or cutting. Sites - uplands. (see Type 519 under oak/hickory group.)

ASPEN/BIRCH GROUP**901**

Aspen: Associates - Engelmann spruce, lodgepole pine, ponderosa pine, Douglas-fir, subalpine fir, white fir, white spruce, balsam poplar, and paper birch. Sites - aspen has the capacity to grow on a variety of sites and soils, ranging from shallow stony soils and loamy sands to heavy clays.

902

Paper birch (includes northern paper birch): Associates - aspen, white spruce, black spruce, and lodgepole pine. Sites - can be found on a range of soils, but best developed on well-drained sandy loam and silt loam soils.

903

Gray birch: Associates - oaks, red maple, white pine, and others. Sites - poor soils of abandoned farms and burns.

904

Balsam poplar: Associates - paper birch, white spruce, black spruce, and tamarack. Sites - occurs on rich floodplains where erosion and folding are active.

905

Pin cherry: Associates - quaking and bigtooth aspen; paper and yellow birch; striped, red and sugar maple; beech; northern red oak; balsam fir; and red spruce. In the Appalachians, Fraser fir and mountain-ash are additional associates. In the central and Lake States, chokecherry and black cherry are common. Sites - Occurs over a wide range of soils and drainage classes, found on sites varying from dry rocky ledges and sandy plains to moist loamy soils.

ALDER/MAPLE GROUP**911**

Red alder: Associates - Douglas-fir, western hemlock, western redcedar, grand fir, Sitka spruce, black cottonwood, bigleaf maple, and willow. Sites - stream bottoms and lower slopes, west of the Cascades, usually within 125 miles of the coast, below 2,400 feet.

912

Bigleaf maple: Associates - Douglas-fir, western hemlock, western redcedar, black cottonwood, Pacific madrone, Pacific dogwood, and red alder. Sites - Flat interior valleys, gently sloping stream bottoms, and moderate to steep slopes; favors moist, well-drained soils of river terraces and floodplains, but also grows on drier rocky, south-facing slopes in the Coast Ranges of northwestern Oregon.

WESTERN OAK GROUP**921**

Gray pine: Associates - Blue oak, California black oak, interior live oak, coast live oak, California white oak, California scrub oak, buckeye, western juniper, and Coulter pine. Sites - dry foothill woodland communities of California's Central Valley, on rocky slopes and steep canyon walls below 3,000 feet. Prefers areas with hot, dry summers and absence of summer fog. Tolerates infertile, low moisture soils.

922

California black oak: Associates - ponderosa pine, Douglas-fir, incense-cedar, knobcone pine, Pacific madrone, tanoak, and Oregon white oak.

923

Oregon white oak: Associates - Douglas-fir, bigleaf maple, and Oregon ash. Sites - commonly occurs in very moist locations, in mixture with Oregon ash on floodplains of the Willamette Valley, and on poorly drained heavy clay soils.

924

Blue oak: Associates - Gray pine, interior live oak, canyon live oak, valley oak, and California buckeye. Sites - low valleys and foothills of the Coast Ranges and Sierras in California.

931

Coast live oak: Associates - knobcone pine, Monterey pine, interior live oak, valley oak, blue oak, tanoak, Pacific madrone, and California laurel. Sites - usually occupies well-drained soils.

933

Canyon live oak: Associates - Douglas-fir, bigcone Douglas-fir, ponderosa pine, Jeffrey pine, bigleaf maple, Pacific madrone, and California laurel. Sites - found on steep rocky canyon slopes and boulder-filled bottoms.

934

Interior live oak: Associates - Blue oak, coast live oak, valley oak, canyon live oak, gray pine, ponderosa pine, and Douglas-fir. Sites - from valleys to foothills, below 5,000 feet; grows on moister sites than blue oak.

935

California white oak (valley oak): Associates - Canyon live oak, coast live oak, California black oak, blue oak, California buckeye, gray pine, and ponderosa pine. Sites - hot interior valleys and slopes below 2,000 feet; tolerates cool wet winters and hot dry summers; prefers fertile soils of valley floors.

TANOAK/LAUREL GROUP**941**

Tanoak: Associates - Douglas-fir, Pacific madrone, and canyon live oak. Sites - sea level to 5,000 feet elevation from southern Oregon south along the Coast Ranges to the Santa Ynez Mountains in California.

942

California laurel: Associates - usually found in mixed stands with a wide variety of associated species. Sites - from the cool, humid conditions of dense coastal forests to hot, dry sites found inland in open woodlands and chaparral, below 4,000 feet.

943

Giant chinkapin: Associates - rarely grows in pure stands, usually a component of other types. Found with Douglas-fir, western hemlock, incense-cedar, white fir, western white pine, sugar pine, ponderosa pine, Pacific madrone, tanoak, and California black oak. Sites - from valley bottoms to ridgetops, in the coast and cascade ranges, below 5,000 feet. Tolerates infertile and droughty sites.

OTHER HARDWOODS GROUP**961**

Pacific madrone: Associates - a wide variety of species, but most common with Douglas-fir and tanoak. Sites - grows on all aspects but is found most often on those facing south and west, and tolerates low soil moisture in summer.

962

Other hardwoods: A "catch-all" group for hardwood species identified only to the genus level, with the exception of the following species (Note: This code primarily applies to a mapped subplot, where only one or two "uncommon" tree species are tallied): hackberry spp., hawthorn spp., eucalyptus spp., persimmon spp., magnolia spp., mulberry spp., mesquite spp., citrus spp., royal palm spp., willow spp., and saltcedar spp., striped maple, mountain maple, California buckeye, Arizona alder, serviceberry, Arizona madrone, pawpaw, sweet birch, Virginia roundleaf birch, Allegany chinkapin, Ozark chinkapin, southern catalpa, northern catalpa, yellowwood, Pacific dogwood, pumpkin ash, blue ash, velvet ash, Carolina ash, Texas ash, all silverbells, California black walnut, southern California black walnut, Texas walnut, Arizona walnut, all apple species, eastern hop hornbeam, California sycamore, Arizona sycamore, chokecherry, peach, Canada plum, wild plum, bitter cherry, Allegheny plum,

Chickasaw plum, sweet cherry, sour cherry, European plum, Mahaleb plum, western soapberry, American mountain-ash, northern mountain-ash, Joshua tree, smoketree, great leucaena, and Berlandier ash.

WOODLAND HARDWOODS GROUP

971

Deciduous oak woodland: Areas with predominantly Gambel oak, which is often associated with ponderosa pine, white fir, Douglas-fir, alligator juniper, bigtooth maple, and chokecherry. Sites - most soils, on elevations generally ranging from 4,000 to 8,000 feet.

972

Evergreen oak woodland: Areas with predominantly evergreen oaks, such as Arizona white oak, Emory oak, Engelmann oak, Mexican blue oak, silverleaf oak, gray oak and/or netleaf oak. Other associates - various pinyons and junipers. Sites - alluvial soils, from 4,000 to 7,500 feet elevation.

973

Mesquite woodland: Honey mesquite and screwbean mesquite comprise the majority of the stocking of this cover type. Honey mesquite associates, which are many, vary with climate and soils. Sites - occurs on a wide variety of soils at elevations mostly below 5,000 feet.

974

Cercocarpus (Mountain brush) woodland (includes curlleaf mountain-mahogany): Associates - Rocky Mountain juniper, big sagebrush, and snowberry. Sites - dry, course-textured soils.

975

Intermountain maple woodland (includes Rocky Mountain and/or bigtooth maple): Associates - chokecherry, boxelder, birchleaf mountain-mahogany, and Gambel oak. Sites - most soils but does not tolerate long flooding periods. Found growing between 4,500 and 7,500 feet elevation.

976

Miscellaneous woodland hardwoods [includes acacia, New Mexico locust, and/or Arizona ironwood (tesota)]: Sites - occurs on a wide variety of soils at elevations mostly below 5,000 feet.

TROPICAL HARDWOODS GROUP

982

Mangrove: Forests in which mangrove comprises a majority of the stocking. Associates cabbage palm on some of the higher sites in the area. Sites - predominantly salt marshes; mangrove frequently develops its own island or shoreline made up of a dense mat of root structures. Southern distribution restricted to South Florida and the Keys.

983

Palms: Includes paurotia-palm, silver palm, coconut palm, royal palm spp., cabbage palmetto, Mexican palmetto, key thatch palm, Florida thatch palm, and other palms. Associates - Sand live oak, slash pine, live oak, laurel oak, water oak, baldcypress, southern magnolia, red maple, redbay, swamp tupelo, sweetgum, southern redcedar, and loblolly pine. In extreme southern Florida, tropical hardwoods replace temperate hardwoods as associates. Sites - can tolerate a broad range of soil pH, salinity, and drainage.

984

Dry forest (FGDC - Lowland to Submontane Drought Deciduous, Semi-deciduous and Semi-evergreen Forest; Holdridge life zone - Subtropical Dry Forest): *Bursera simaruba* (L.) Sarg., *Bucida buceras* L., *Cephalocereus rostenii* (L.) Britton, and *Guaiacum officinale* L. are species commonly associated with Puerto Rican dry forest. The more heavily-disturbed dry forest areas have numerous, smaller stemmed *Leucaena leucocephala* (Lam.) deWit, *Prosopis juliflora* (Sw.) DC., *Acacia macracantha* Humb. & Bonpl. and *Acacia farnesiana* (L.) Willd. individuals. Some of the native tree species that are common in subtropical dry forest in the U.S. Virgin Islands are *Bursera simaruba* (L.) Sarg., *Amyris elemifera* L., *Capparis cynophallophora* L., *Cordia rickseckeri* Millsp., *Pisonia subcordata* Sw., *Guaiacum officinale* L., *Plumeria alba* L., and *Pictetia aculeata* (Vahl) Urban. The more heavily-disturbed dry forest areas have numerous, smaller stemmed *Leucaena leucocephala* (Lam.) deWit, *Prosopis juliflora* (Sw.) DC., *Acacia macracantha* Humb. & Bonpl., and *Acacia farnesiana* (L.) Willd. individuals.

985

Moist forest (FGDC - Lowland and Submontane Seasonal Evergreen; Holdridge life zone - Subtropical Moist Forest): In the Caribbean, subtropical moist forests are found in areas with 1000 to 2200 mm of annual precipitation. The subtropical moist life zone is the most extensive on Puerto Rico and covers a wide variety of soil parent materials, topographic classes and land uses resulting in highly diverse mixes that typically include *Tabebuia heterophylla* (DC.) Britton, *Spathodea campanulata* Beauv., *Guarea guidonia* (L.) Sleumer, *Andira inermis* (W. Wright) Kunth ex DC., *Roystonea borinquena* O. F. Cook, *Mangifera indica* L., *Cecropia peltata* L., *Schefflera morototoni* (Aubl.) Maguire, Steyermark and species of the Nectandra, Ocotea, and Coccoloba genera. Some of the many natural indicator species of subtropical moist forest in the U.S. Virgin Islands include the *Andira inermis* (W. Wright) Kunth ex DC., *Guapira fragrans* (Dum.-Cours.) Little, *Spondias mombin* L., *Bucida buceras* L., *Hura crepitans* L., *Ceiba pentandra* (L.) Gaertn., *Cedrela odorata* L., *Pimenta racemosa* var. *racemosa*, *Roystonea borinquena* O.F. Cook (on St. Croix only), *Hymanea courbaril* L., *Cecropia schreberiana* Miq., and *Tabebuia heterophylla* (DC.) Britt. While subtropical moist forests have some of the same introduced species found in subtropical dry forest, *Tamarindus indica* L. and *Melicoccus bijugatus* Jacq. are also common.

986

Wet and rain forest (FGDC - Submontane Evergreen Forest; Holdridge life zone - Subtropical Wet and Rain Forest): In the Caribbean, subtropical wet and rain forests are found in areas with 2000 to 4000 mm of annual precipitation. *Dacryodes excelsa* Vahl., *Sloanea berteriana* Choisy, *Manilkara bidentata* (A.DC.) are species indicative of the tabonuco forest type. *Cecropia peltata* L., *Schefflera morototoni* (Aubl.) Maguire and *Ochroma lagopus* Sw. are also common in wet forest stands at early stages of succession or recovery from disturbance. Wet forest shade coffee plantations hold species such as *Guarea guidonia* (L.) Sleumer, *Inga laurina* (Sw.) Willd., *Inga vera* Willd., and *Erythrina poeppigiana* (Walp.) O.F. Cook.

987

Lower montane wet and rain forest (FGDC - Montane Evergreen Forest; Holdridge life zone - Lower Montane Wet and Rain Forest): In the Caribbean, lower montane wet and rain forests are found in areas with elevations between 700-1000 meters. Forest types and their typical species include the palo colorado forest type (*Cyrilla racemiflora* L., *Ocotea spathulata* Mez., *Micropholis guyanensis* (A. DC.) Pierre and *Micropholis garciniiifolia* Pierre), elfin forest type (*Eugenia borinquensis* Britton, *Tabebuia rigida* Urban, *Weinmannia pinnata* L. and *Calycogonium squamulosum* Cogn.) and the palm brake forest type (*Prestoea montana* (Graham) Nichols.).

988

Cloud forest: These forests are covered with clouds or fog much of the time. The trees have low canopies and are often dripping with moisture. The trees are typically small-leaved and covered with masses of epiphytic mosses and liverworts, which also form a deep ground cover.

989

Other tropical hardwoods: This type consists of dense forests of hardwood trees and palms. Includes gumbo-limbo, tamarind, poisonwood, pigeon-plum, torchwood, willow bustic, false mastic, pond apple, sheoak, gray sheoak, river sheoak, camphor tree, fiddlewood, citrus spp., soldierwood, Geiger tree, carrotwood, red stopper, inkwood, strangler fig, shortleaf fig, blolly, manchineel, paradise tree, Java plum, false tamarind, mango, fishpoison tree, and octopus tree. Associates -black ironwood (leadwood), lancewood, and mastic as well as more temperate live oak and red bay. Sites - Occurs on land slightly higher than surrounding fresh and saltwater marshes or on pine land.

EXOTIC HARDWOODS GROUP**991**

Paulownia: Stands with the majority of stocking composed of *Paulownia tomentosa*, commonly known as Princess tree, royal paulownia or empress tree. Sites - can be found along roadsides, streambanks, and forest edges. It tolerates infertile and acid soils and drought conditions. It easily adapts to disturbed habitats, including previously burned areas, forests defoliated by pests (such as the gypsy moth) and landslides and can colonize rocky cliffs and scoured riparian zones. Paulownia can also be found in plantations.

992

Melaleuca: Stands with the majority of stocking composed of melaleuca (*Melaleuca quinquenervia*). Melaleuca trees, also known as punk trees or paperbark tea trees, are native to Australia. Sites - In the gulf-coastal plain, it is found in swamps and glades, often eliminating all other forms of vegetation.

993

Eucalyptus: Associates - As an introduced and naturalized species, it has few common associates. Usually planted as an ornamental, in plantations for firewood, or along roads and parks for cover. Sites - good drainage, low salinity, mild temperate climates.

995

Other exotic hardwoods: Includes any of the following species: Norway maple, ailanthus, mimosa, European alder, Chinese chestnut, ginkgo, Lombardy poplar, European mountain-ash, West Indian mahogany, Siberian elm, saltcedar spp., chinaberry, Chinese tallowtree, tung-oil-tree, Russian-olive, and avocado.

Section revision: 01.2024

Appendix E: Tree Species Group Codes

Appendix Contents:

| Tree Species Group |
|---|
| Softwood species groups |
| Hardwood species groups |
| Tropical and subtropical species groups |
| Urban species groups |

Softwood species groups

| Code | Species group name | Region |
|------|------------------------------|---------|
| 1 | Longleaf and slash pines | Eastern |
| 2 | Loblolly and shortleaf pines | Eastern |
| 3 | Other yellow pines | Eastern |
| 4 | Eastern white and red pines | Eastern |
| 5 | Jack pine | Eastern |
| 6 | Spruce and balsam fir | Eastern |
| 7 | Eastern hemlock | Eastern |
| 8 | Cypress | Eastern |
| 9 | Other eastern softwoods | Eastern |
| 10 | Douglas-fir | Western |
| 11 | Ponderosa and Jeffrey pines | Western |
| 12 | True fir | Western |
| 13 | Western hemlock | Western |
| 14 | Sugar pine | Western |
| 15 | Western white pine | Western |
| 16 | Redwood | Western |
| 17 | Sitka spruce | Western |
| 18 | Engelmann and other spruces | Western |
| 19 | Western larch | Western |
| 20 | Incense-cedar | Western |
| 21 | Lodgepole pine | Western |
| 22 | Western redcedar | Western |

| Code | Species group name | Region |
|-------------|---------------------------|---------------|
| 23 | Woodland softwoods | All |
| 24 | Other western softwoods | Western |

Hardwood species groups

| Code | Species group name | Region |
|------|---------------------------------|---------|
| 25 | Select white oaks | Eastern |
| 26 | Select red oaks | Eastern |
| 27 | Other white oaks | Eastern |
| 28 | Other red oaks | Eastern |
| 29 | Hickory | Eastern |
| 30 | Yellow birch | Eastern |
| 31 | Hard maple | Eastern |
| 32 | Soft maple | Eastern |
| 33 | Beech | Eastern |
| 34 | Sweetgum | Eastern |
| 35 | Tupelo and blackgum | Eastern |
| 36 | Ash | Eastern |
| 37 | Cottonwood and aspen | Eastern |
| 38 | Basswood | Eastern |
| 39 | Yellow-poplar | Eastern |
| 40 | Black walnut | Eastern |
| 41 | Other eastern soft hardwoods | Eastern |
| 42 | Other eastern hard hardwoods | Eastern |
| 43 | Eastern noncommercial hardwoods | Eastern |
| 44 | Cottonwood and aspen | Western |
| 45 | Red alder | Western |
| 46 | Oak | Western |
| 47 | Other western hardwoods | Western |
| 48 | Woodland hardwoods | All |

Tropical and subtropical species groups

| Code | Species group name | Region |
|------|--|-----------------------|
| 51 | Tropical and subtropical pines | Tropical-/Subtropical |
| 52 | Other tropical and subtropical softwoods | Tropical-/Subtropical |
| 53 | Tropical and subtropical palms | Tropical-/Subtropical |
| 54 | Tropical and subtropical hardwoods | Tropical-/Subtropical |

Urban species groups

| Code | Species group name | Region |
|------|--------------------------|--------|
| 55 | Urban-specific hardwoods | All |
| 56 | Urban-specific softwoods | All |

Section revision: 04.2024

Appendix F: Tree Species Codes, Names, and Occurrences

The FIA tree species code list and other information regarding names and occurrences are available at the following links:

Supplemental documents:

- [FIA Master Tree Species List \(Excel format\)](https://usfs-public.app.box.com/v/FIA-TreeSpeciesList) (refer to public box folder available at web address: <https://usfs-public.app.box.com/v/FIA-TreeSpeciesList>) - This list contains all tree species tallied in the continental U.S. as well as both the Caribbean and Pacific Islands, including Hawaii. These are the species used to define FIA forest land. Species not listed are considered shrubs and do not factor into defining FIA forest land.
- [Changes to FIA Master Tree Species List](https://www.fs.usda.gov/research/products/dataandtools/tools/fia-datamart) (<https://www.fs.usda.gov/research/products/dataandtools/tools/fia-datamart>) - This list, located in the FIA National Field Guide for Phase 2 Plots (appendix 14), contains changes (dropped, added, or modified) to the FIA Master Tree Species list. This list began in October 2019 with the FIA National Field Guide, version 9.0.

Table downloads:

- [FIA DataMart](https://www.fs.usda.gov/research/products/dataandtools/tools/fia-datamartl) (<https://www.fs.usda.gov/research/products/dataandtools/tools/fia-datamartl>) - The **REF_SPECIES** table, which is downloadable from the FIA DataMart, contains the species code, species group code, descriptive common name, scientific name, and many other attributes for each species.

Section revision: 06.2021

Appendix G: Forest Inventory and Analysis (FIA) Plot Design Codes and Definitions by FIA Work Unit

FIA Plot Design Codes:

| FIA Work Unit | Plot Design code (DESIGNCD) | Definition |
|---|------------------------------------|---|
| ^a NRS-NE, ^b NRS-NC, ^c SRS, ^d RMRS, ^e PNWRS | 1 | National plot design consists of four 24-foot fixed-radius subplots for trees ≥ 5 inches d.b.h., and four 6.8-foot fixed-radius microplots for seedlings and trees ≥ 1 and < 5 inches d.b.h. Subplot 1 is the center plot, and subplots 2, 3, and 4 are located 120.0 feet, horizontal, at azimuths of 360, 120, and 240, respectively. The microplot center is 12 feet east of the subplot center. Four 58.9-foot fixed-radius macroplots are optional. A plot may sample more than one condition. When multiple conditions are encountered, condition boundaries are delineated (mapped). |
| ^a NRS-NE | 101 | Various plot designs. Converted from Eastwide Database format, some fields may be null. |
| ^a NRS-NE | 111 | Four-subplot design similar to DESIGNCD 1, except the microplot for seedlings is 1/1000 acre (3.7-foot radius). If the plot is used for growth estimates, it is overlaid on a 5 subplot design, where remeasurement of trees (≥ 5 inches) is on subplot 1 only. Poletimber-sized trees remeasured on a 24-foot radius plot, sawtimber-sized trees remeasured on a 49-foot radius plot. If the plot is not used for growth estimates, it is an initial plot establishment. |
| ^a NRS-NE | 112 | DESIGNCD 111, except that if the plot is used for growth estimates, the remeasurement of trees (≥ 5 inches) is on the 24-foot-radius subplot 1 only, regardless of tree size or previous plot size or type (varied). |
| ^a NRS-NE | 113 | DESIGNCD 111, except that if the plot is used for growth estimates, the remeasurement of trees (≥ 5 inches) is on the 24-foot-radius subplot 1 only, regardless of tree size or previous plot size or type (single subplot 1/5 acre). |
| ^a NRS-NE | 115 | DESIGNCD 1. Overlaid on a FHM 4-subplot plot design. These plots are not used in change estimates. |
| ^a NRS-NE | 116 | DESIGNCD 1. Overlaid on 1/5 acre plot for all trees ≥ 5 inches d.b.h. (1/5 acre plot was an initial measurement). Remeasurement of subplot 1 is only on the 24-foot-radius plot for all trees (≥ 5 inches), regardless of tree size or previous plot size. |
| ^a NRS-NE | 117 | DESIGNCD 1. Overlaid on 1/5 acre plot for all trees ≥ 5 inches d.b.h. (1/5 acre plot was remeasurement). Remeasurement of subplot 1 is only on the 24-foot-radius plot for all trees (≥ 5 inches), regardless of tree size or previous plot size. |

| FIA Work Unit | Plot Design code (DESIGNCD) | Definition |
|---------------------|-----------------------------|--|
| ^a NRS-NE | 118 | DESIGNCD 1. Overlaid on 10-subplot, variable-radius design. Remeasurement of trees (≥ 5 inches) on 5 of the 10 subplots; ingrowth based on trees (≥ 5 inches) that grew onto five 6.8-foot radius subplots. |
| ^b NRS-NC | 301 | Various plot designs. Converted from Eastwide Database format, some fields may be null. |
| ^b NRS-NC | 311 | Four-subplot design similar to DESIGNCD 1, except the 1/24 acre and 1/300 acre plots have common centers. Conditions are mapped and boundaries may be within the plots. |
| ^b NRS-NC | 312 | DESIGNCD 1. Initial plot establishment. |
| ^b NRS-NC | 313 | DESIGNCD 311. Overlaid on previous plots, no remeasurements. |
| ^b NRS-NC | 314 | DESIGNCD 1. Overlaid on previous plots, no remeasurements |
| ^b NRS-NC | 315 | DESIGNCD 311. Overlaid on same design. Only trees ≥ 5 inches d.b.h. are remeasured. |
| ^b NRS-NC | 316 | DESIGNCD 1. Overlaid on DESIGNCD 311. Only trees ≥ 5 inches d.b.h. are remeasured. |
| ^b NRS-NC | 317 | DESIGNCD 1. Overlaid on DESIGNCD 326. Only the first 5 points (trees ≥ 5 inches d.b.h.) and first 3, 1/300 acre plots (trees ≥ 1 and < 5 inches d.b.h.) are remeasured, but conditions were not re-mapped. |
| ^b NRS-NC | 318 | DESIGNCD 311. Overlaid on DESIGNCD 325. Only the first 5 points (trees ≥ 5 inches d.b.h.) and first 3, 1/300 acre plots (trees ≥ 1 and < 5 inches d.b.h.) are remeasured. |
| ^b NRS-NC | 319 | DESIGNCD 1. Overlaid on DESIGNCD 325. Only the first 5 points (trees ≥ 5 inches d.b.h.) and first 3, 1/300 acre plots (trees ≥ 1 and < 5 inches d.b.h.) are remeasured. |
| ^b NRS-NC | 320 | DESIGNCD 311. Overlaid on modified DESIGNCD 325. Only the first 5 points (trees ≥ 5 inches d.b.h.) and first 3 1/300 acre plots (trees ≥ 1 and < 5 inches d.b.h.) are remeasured. |
| ^b NRS-NC | 321 | DESIGNCD 1. Overlaid on modified DESIGNCD 325. Only the first 5 points (trees ≥ 5 inches d.b.h.) and first 3 1/300 acre plots (trees ≥ 1 and < 5 inches d.b.h.) are remeasured. |
| ^b NRS-NC | 322 | DESIGNCD 311. Overlaid on DESIGNCD 327. Only the first 5 points (trees ≥ 5 inches d.b.h.) and first 3, 1/300 acre plots (trees ≥ 1 and < 5 inches d.b.h.) are remeasured. |
| ^b NRS-NC | 323 | DESIGNCD 1. Overlaid on DESIGNCD 327. Only the first 5 points (trees ≥ 5 inches d.b.h.) and first 3 1/300 acre plots (trees ≥ 1 and < 5 inches d.b.h.) are remeasured. |
| ^b NRS-NC | 325 | Ten variable-radius, 37.5 BAF points, 70 feet apart, for trees ≥ 5 inches d.b.h. and 10, 1/300 acre plots for seedlings and trees ≥ 1 and < 5 inches d.b.h. Point and plot center were coincident. Conditions were not mapped. Instead, points were rotated into forest or nonforest based on the condition at point center. |
| ^b NRS-NC | 326 | Ten variable-radius, 37.5 BAF points, 70 feet apart, for trees ≥ 5 and < 17.0 inches d.b.h., 10 1/24 acre plots for trees ≥ 17.0 inches d.b.h., and 10, 1/300 acre plots for seedlings and trees ≥ 1 and < 5 inches d.b.h. Point and plot center were coincident. Conditions were mapped. |

| FIA Work Unit | Plot Design code (DESIGNCD) | Definition |
|----------------------|--|--|
| ^b NRS-NC | 327 | Ten variable-radius, 37.5 BAF points, 70 feet apart, for trees ≥5 inches d.b.h. and 10, 1/300 acre plots for seedlings and trees ≥1 and <5 inches d.b.h. Point and plot center were coincident. Conditions were not mapped. Instead, points were rotated into forest or nonforest based on the condition at point center. Diameters were estimated with a model, but all dead and cut trees were recorded. |
| ^b NRS-NC | 328 | DESIGNCD 1. Overlaid on DESIGNCD 311. All trees and saplings are remeasured. |
| ^c SRS | 210 | Other plot design installed by previous research stations within the 13-State Southern area not described by DESIGNCD 211-219. |
| ^c SRS | 211 | Ten variable-radius, 37.5 BAF points, 70 feet apart. Remeasure first 3 points of same design or new/replacement plot. |
| ^c SRS | 212 | Five variable-radius, 37.5 BAF points, 70 feet apart. Remeasure first 5 points of DESIGNCD 211 or new/replacement plot. |
| ^c SRS | 213 | Five variable-radius, 37.5 BAF points, 70 feet apart. Remeasure DESIGNCD 212. |
| ^c SRS | 214 | Ten variable-radius, 37.5 BAF points, 66 feet apart. Remeasure same design or new/replacement plot. |
| ^c SRS | 215 | Five variable-radius, 37.5 BAF points, 66 feet apart. Remeasure first 5 points of DESIGNCD 214 or new/replacement plot. |
| ^c SRS | 216 | Ten variable-radius, 37.5 BAF points, 66 feet apart. Remeasure DESIGNCD 215. |
| ^c SRS | 217 | Five point cluster plot, point 1 is 1/5th acre sawtimber plot and 1/10th acre poletimber plot, points 2-5 are 37.5 BAF prism points. No remeasurement. |
| ^c SRS | 218 | Remeasurement of DESIGNCD 217, point 1 only. Used only for change estimates. |
| ^c SRS | 219 | Three point, 2.5 BAF metric prism plot, points 25 meters apart. Remeasure same design or new/replacement plot. |
| ^c SRS | 220 | Four 1/24 acre plots for trees ≥5 inches d.b.h. and 4, 1/300 acre plots for seedlings and trees ≥1 and <5 inches d.b.h. The 1/24 acre and 1/300 acre plots have common centers. Conditions are mapped and boundaries may be within the plots. Remeasurement plot not described by 221-229. |
| ^c SRS | 221 | DESIGNCD 220. Remeasure same design or new/replacement plot. |
| ^c SRS | 222 | DESIGNCD 220. Overlaid on and remeasurement of DESIGNCD 212 or 213. |
| ^c SRS | 223 | DESIGNCD 220. Overlaid on and remeasurement of first 5 points of DESIGNCD 214 or 216. |
| ^c SRS | 230 | DESIGNCD 1. Remeasurement plot not described by DESIGNCD 231-239. |
| ^c SRS | 231 | DESIGNCD 1. Overlaid on and remeasurement of DESIGNCD 212 or DESIGNCD 213. |
| ^c SRS | 232 | DESIGNCD 1. Overlaid on and remeasurement of first 5 points of DESIGNCD 214 or 216. |

| FIA Work Unit | Plot Design code (DESIGNCD) | Definition |
|---------------|-----------------------------|---|
| cSRS | 233 | DESIGNCD 1. Overlaid on and remeasurement of DESIGNCD 220, 221, 222, or 223. |
| cSRS | 240 | DESIGNCD 1. Collected in metric and converted to English in the database. Remeasurement not described by 241-249. |
| cSRS | 241 | DESIGNCD 1. Collected in metric and converted to English in the database. Remeasure same design or new/replacement plot. |
| cSRS | 242 | DESIGNCD 1. Overlaid on and remeasurement of DESIGNCD 219. Collected in metric and converted to English in the database. |
| cSRS | 299 | Other plot design not described in DESIGNCD 200-298. |
| dRMRS | 403 | One 1/10th acre fixed-radius plot divided into 4 quadrants and four 1/300th acre fixed-radius microplots. Timber and woodland tree species <5.0 inches d.r.c. tallied on microplot. |
| dRMRS | 404 | One 1/20th acre fixed-radius plot divided into 4 quadrants and four 1/300th acre fixed-radius microplots. Timber and woodland tree species <5.0 inches d.r.c. tallied on microplot. |
| dRMRS | 405 | One 1/5th acre fixed-radius plot divided into 4 quadrants and four 1/300th acre fixed-radius microplots. Timber and woodland tree species <5.0 inches d.r.c. tallied on microplot. |
| dRMRS | 410 | 40 BAF variable-radius plots and 1/300th acre fixed-radius microplots; number of microplots = number of points installed. Timber tree species <5.0 inches d.b.h.; woodland tree species <3.0 inches d.r.c. measured on microplot. |
| dRMRS | 411 | 40 BAF variable-radius plots and 1/300th acre fixed-radius microplots; 3 microplots installed on points 1, 2, and 3. Timber tree species <5.0 inches d.b.h.; woodland tree species <3.0 inches d.r.c. measured on microplot. |
| dRMRS | 412 | 40 BAF variable-radius plots and 1/300th acre fixed-radius microplots; 3 microplots installed on points 1, 2, and 5. Timber tree species <5.0 inches d.b.h.; woodland tree species <3.0 inches d.r.c. measured on microplot. |
| dRMRS | 413 | 20 BAF variable-radius plots and 1/300th acre fixed-radius microplots; number of microplots = number of points installed. Timber tree species <5.0 inches d.b.h.; woodland tree species <3.0 inches d.r.c. measured on microplot. |
| dRMRS | 414 | 20 BAF variable-radius plots and 1/300th acre fixed-radius microplots; 3 microplots installed on points 1, 2, and 3. Timber tree species <5.0 inches d.b.h.; woodland tree species <3.0 inches d.r.c. measured on microplot. |
| dRMRS | 415 | 20 BAF variable-radius plots and 1/300th acre fixed-radius microplots; 3 microplots installed on points 1, 2, and 5. Timber tree species <5.0 inches d.b.h.; woodland tree species <3.0 inches d.r.c. measured on microplot. |
| dRMRS | 420 | One 1/10th acre fixed-radius plot and one centered 1/100th acre microplot. Timber tree species <5.0 inches d.b.h.; woodland tree species <3.0 inches d.r.c. measured on microplot. |

| FIA Work Unit | Plot Design code (DESIGNCD) | Definition |
|---------------|-----------------------------|---|
| dRMRS | 421 | One 1/20th acre fixed-radius plot and one centered 1/100th acre microplot. Timber tree species <5.0 inches d.b.h.; woodland tree species <3.0 inches d.r.c. measured on microplot. |
| dRMRS | 422 | One 1/5th acre fixed-radius plot and one centered 1/100th acre microplot. Timber tree species <5.0 inches d.b.h.; woodland tree species <3.0 inches d.r.c. measured on microplot. |
| dRMRS | 423 | One 1/10th acre fixed-radius plot divided into 4 quadrants and four 1/300th acre fixed-radius microplots. Timber tree species <5.0 inches d.b.h.; woodland tree species <3.0 inches d.r.c. measured on microplot. |
| dRMRS | 424 | One 1/20th acre fixed-radius plot divided into 4 quadrants and four 1/300th acre fixed-radius microplots. Timber tree species <5.0 inches d.b.h.; woodland tree species <3.0 inches d.r.c. measured on microplot. |
| dRMRS | 425 | One 1/5th acre fixed-radius plot divided into 4 quadrants and four 1/300th acre fixed-radius microplots. Timber tree species <5.0 inches d.b.h.; woodland tree species <3.0 inches d.r.c. measured on microplot. |
| ePNWRS | 501 | DESIGNCD 1 with optional macroplot. Trees ≥24 inches d.b.h. are tallied on macroplot. |
| ePNWRS | 502 | DESIGNCD 1 with optional macroplot. Trees ≥30 inches d.b.h. are tallied on macroplot. |
| ePNWRS | 503 | DESIGNCD 1 with optional macroplot. Trees ≥24 inches d.b.h. are tallied on macroplot. Trees ≥32 inches d.b.h. are tallied on one 1-hectare plot. |
| ePNWRS | 504 | DESIGNCD 1 with optional macroplot. Trees ≥24 inches d.b.h. are tallied on macroplot. Trees ≥48 inches d.b.h. are tallied on one 1-hectare plot. |
| ePNWRS | 505 | DESIGNCD 1 with optional macroplot. Trees ≥30 inches d.b.h. are tallied on macroplot. Trees ≥48 inches d.b.h. are tallied on one 1-hectare plot. |
| ePNWRS | 506 | DESIGNCD 1 using larger microplots. Each microplot has a radius of 9.6 feet. Eight 20x50cm microquadrats are established on each subplot for ground layer protocols. |
| ePNWRS | 550 | Five 30.5 BAF points for trees ≥5 inches and <35.4 inches d.b.h.; five 55.8 foot fixed-radius plots for trees ≥35.4 inches d.b.h.; and five 7.7-foot fixed-radius plots for seedlings and saplings <5 inches d.b.h. Point and plot centers are coincident. Conditions are mapped. |
| ePNWRS | 551 | Five 20 BAF points for trees ≥5 inches and <35.4 inches d.b.h.; five 55.6 foot fixed-radius plots for trees ≥35.4 inches d.b.h.; and five 9.7-foot fixed-radius plots for seedlings and saplings <5 inches d.b.h. Point and plot centers are coincident. Conditions are mapped. |
| ePNWRS | 552 | Five 30 BAF points for trees ≥5 inches and <35.4 inches d.b.h.; five 55.6-foot fixed-radius plots for trees ≥35.4 inches d.b.h.; and five 7.9-foot fixed-radius plots for seedlings and saplings <5 inches d.b.h. Point and plot centers are coincident. Conditions are mapped. |
| ePNWRS | 553 | Four 1/24 acre plots for live trees and four 58.9-foot fixed-radius plots for trees ≥11.8 inches d.b.h. Plot centers are coincident. Conditions are mapped. |

| FIA Work Unit | Plot Design code (DESIGNCD) | Definition |
|---|-----------------------------|---|
| ePNWRS | 554 | Four 1/24 acre plots for live trees and four 58.9-foot fixed-radius plots for trees ≥19.7 inches d.b.h. Plot centers are coincident. Conditions are mapped. |
| ePNWRS | 555 | Five 30.5 BAF points for trees ≥6.9 inches and <35.4 inches d.b.h.; five 55.8-foot fixed-radius plots for trees ≥35.4 inches d.b.h.; and five 10.8-foot fixed-radius plots for seedlings and saplings <6.9 inches d.b.h. Point and plot centers are coincident. Conditions are mapped. |
| ePNWRS | 556 | Five 30.5 BAF points for trees ≥6.9 inches and <35.4 inches d.b.h.; five 55.8-foot fixed-radius plots for trees ≥35.4 inches d.b.h.; five 10.8-foot fixed-radius plots for saplings ≥5 inches and <6.9 inches d.b.h.; and the northeast quadrant of each of the five 10.8-foot fixed-radius plots for trees <5 inches d.b.h. Point and plot centers are coincident. Conditions are not mapped. |
| ePNWRS | 557 | Five 40 BAF points for trees ≥5 inches d.b.h.; and five 6.9-foot fixed-radius plots for saplings ≥1 and <5 inches d.b.h. Point and plot centers are coincident. Conditions are not mapped. |
| ePNWRS | 558 | Three 30.5 BAF points for trees ≥6.9 inches and <35.4 inches d.b.h.; three 55.8-foot fixed-radius plots for trees ≥35.4 inches d.b.h.; three 10.8-foot fixed-radius plots for saplings ≥5 inches and <6.9 inches d.b.h.; and the northeast quadrant of each of the three 10.8-foot fixed-radius plots for trees <5 inches d.b.h. Point and plot centers are coincident. Conditions are mapped, only condition class 1 measured. Overlaid on and remeasurement of same design. |
| ePNWRS | 559 | Four 40 BAF points for trees ≥5 inches d.b.h.; and four 6.9-foot fixed-radius plots for saplings ≥1 and <5 inches d.b.h. Point and plot centers are coincident. Conditions are mapped, only condition class 1 measured. Overlaid on and remeasurement of same design. |
| ePNWRS | 601 | South East Coastal Alaska periodic grid plot design. Similar to DESIGNCD 1 with exceptions including: subplots are 7.3 m (23.95 foot) fixed-radius; the four microplots are 2.0 m (6.56 foot) fixed-radius and are centered on each subplot; subplots 2, 3, and 4 are spaced 36.6 m (120.08 feet) from subplot 1, at azimuths of 360, 120, and 240, respectively; condition classes are based on forest stand origin, forest stand size, and forest density in 10% classes; not all annual attributes were collected and additional non-annual attributes were collected. |
| ePNWRS | 602 | South Central Coastal Alaska periodic grid plot design, similar to DESIGNCD 601 except for variations in annual and non-annual attributes collected. |
| ePNWRS | 603 | South Central Coastal Alaska periodic grid plot design for Kodiak and Afognak islands. Similar to DESIGNCD 602 except for reduced (one quarter) sampling intensity. |
| aNRS-NE, aNRS-NC, cSRS, dRMRS, ePNWRS | 999 | A plot record created to represent reserved or other nonsampled or undersampled areas where there were no ground plots; the plot has no design type; rather, it is a placeholder for area estimates. In all cases where DESIGNCD 999 plots are present, they are only used for estimates of area; they are not used in estimates of numbers of trees, volume or change (e.g., tree-level estimates). |

^aNorthern Research Station - previously Northeastern

^bNorthern Research Station - previously North Central

^cSouthern Research Station

^dRocky Mountain Research Station

^ePacific Northwest Research Station

Other acronyms and definitions:

BAF - basal area factor

d.b.h. - diameter at breast height

d.r.c. - diameter at root collar

FHM - U.S. Forest Service Forest Health Monitoring Program

Sawtimber-sized trees - softwoods ≥ 9 inches d.b.h., hardwoods ≥ 11 inches d.b.h.

Poletimber-sized trees - softwoods ≥ 5 inches and < 9 inches d.b.h., hardwoods ≥ 5 inches and < 11 inches d.b.h.

Section revision: 04.2024

Appendix H: Damage Agent Codes and Thresholds

Appendix Contents:

| Code | Damage (common name) |
|-------------|---------------------------------|
| 00000 | No Damage |
| 10000 | General Insects |
| 11000 | Bark Beetles |
| 12000 | Defoliators |
| 13000 | Chewing Insects |
| 14000 | Sucking Insects |
| 15000 | Boring Insects |
| 16000 | Seed/Cone/Flower/Fruit Insects |
| 17000 | Gallmaker Insects |
| 18000 | Insect Predators |
| 19000 | General Diseases |
| 20000 | Biotic Damage |
| 21000 | Root/Butt Diseases |
| 22000 | Cankers |
| 22500 | Stem Decay |
| 23000 | Parasitic/Epiphytic Plants |
| 24000 | Decline Complexes/Dieback/Wilts |
| 25000 | Foliage Diseases |
| 26000 | Stem Rusts |
| 27000 | Broom Rusts |
| 30000 | Fire |
| 41000 | Wild Animals |
| 42000 | Domestic Animals |
| 50000 | Abiotic Damage |
| 60000 | Competition |
| 70000 | Human Activities |
| 71000 | Harvest |
| 80000 | Multi-Damage (Insect/Disease) |
| 85000 | Invasive Plants |
| 90000 | Other Damages and Symptoms |
| 99000 | Unknown |

Damage Agent Codes and Thresholds (Note: PNWRS= All of the Pacific Northwest Research Station region including Alaska.
PNWRS-AK = Alaska only.)

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------|------------|----------------------------|--------------------------------|---|--------|
| 00000 | - | - | No Damage | - | - | All |
| 10000 | 10 | 000 | General Insects | - | Any damage to the terminal leader; damage \geq 20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage \geq 20% of the foliage with \geq 50% of the leaf/needle affected. | All |
| 10001 | 10 | 001 | thrips | - | - | - |
| 10002 | 10 | 002 | Pine tip moth | - | - | - |
| 10003 | 10 | 003 | wasp | - | - | - |
| 10004 | 10 | 004 | Chinese rose beetle | <i>Adoretus sinicus</i> | - | - |
| 10005 | 10 | 005 | rose beetle | <i>Adoretus versutus</i> | - | - |
| 10006 | 10 | 006 | coconut hispid beetle | <i>Brontispa longissima</i> | - | - |
| 10007 | 10 | 007 | clerid beetle | <i>Cleridae</i> | - | - |
| 10008 | 10 | 008 | weevil | <i>Curculionidae</i> | - | - |
| 10009 | 10 | 009 | green rose chafer | <i>Dichelonyx backi</i> | - | - |
| 10010 | 10 | 010 | Allegheny mound ant | <i>Formica exsectoides</i> | - | - |
| 10011 | 10 | 011 | ant | <i>Formicidae</i> | - | - |
| 10012 | 10 | 012 | stick insect | <i>Graeffea crovani</i> | - | - |
| 10013 | 10 | 013 | Hulodes cranea | <i>Hulodes cranea</i> | - | - |
| 10014 | 10 | 014 | conifer swift moth | <i>Korscheltellus gracilis</i> | - | - |
| 10015 | 10 | 015 | Caroline shortnosed weevil | <i>Lophothetes spp.</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------|------------|---------------------------|----------------------------------|---|--------------------|
| 10016 | 10 | 016 | coconut rhinoceros beetle | <i>Oryctes rhinoceros</i> | Any damage to the terminal leader; damage \geq 20% of the roots or boles with $>$ 20% of the circumference affected; damage $>$ 20% of the multiple-stems (on multi-stemmed woodland species) with $>$ 20% of the circumference affected; $>$ 20% of the branches affected; damage \geq 20% of the foliage with \geq 50% of the leaf/needle affected. | PNWRS |
| 10017 | 10 | 017 | bagworm moth | <i>Psychidae</i> | Any damage to the terminal leader; damage \geq 20% of the foliage with \geq 50% of the leaf/needle affected. | NRS |
| 10018 | 10 | 018 | coconut palm weevil | <i>Rhobdoscelus asperipennis</i> | - | - |
| 10019 | 10 | 019 | scarab | <i>Scarabaeidae</i> | - | - |
| 10020 | 10 | 020 | ash white fly | <i>Siphoninus phillyreae</i> | - | - |
| 10021 | 10 | 021 | conifer seedling weevil | <i>Steremnius carinatus</i> | - | - |
| 10022 | 10 | 022 | pyralid moth | <i>Thliptoceras octoquattale</i> | - | - |
| 10023 | 10 | 023 | wood wasps | <i>Siricidae</i> spp. | - | - |
| 11000 | 11 | 000 | Bark Beetles | - | Any evidence of a successful attack (successful attacks generally exhibit boring dust, many pitch tubes and/or fading crowns). | All |
| 11001 | 11 | 001 | roundheaded pine beetle | <i>Dendroctonus adjunctus</i> | - | - |
| 11002 | 11 | 002 | western pine beetle | <i>Dendroctonus brevicomis</i> | - | - |
| 11003 | 11 | 003 | southern pine beetle | <i>Dendroctonus frontalis</i> | - | - |
| 11004 | 11 | 004 | Jeffrey pine beetle | <i>Dendroctonus jeffreyi</i> | - | - |
| 11005 | 11 | 005 | lodgepole pine beetle | <i>Dendroctonus murrayanae</i> | - | - |
| 11006 | 11 | 006 | mountain pine beetle | <i>Dendroctonus ponderosae</i> | Any evidence of a successful attack. | NRS; RMRS |
| 11007 | 11 | 007 | Douglas-fir beetle | <i>Dendroctonus pseudotsugae</i> | - | - |
| 11008 | 11 | 008 | Allegheny spruce beetle | <i>Dendroctonus punctatus</i> | - | - |
| 11009 | 11 | 009 | spruce beetle | <i>Dendroctonus rufipennis</i> | Any evidence of a successful attack. | PNWRS; RMRS |
| 11010 | 11 | 010 | eastern larch beetle | <i>Dendroctonus simplex</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------------|-----------------|--------------|---------------------------------|-----------------------------------|--------------------------------------|----------------------------|
| 11011 | 11 | 011 | black turpentine beetle | <i>Dendroctonus terebrans</i> | - | - |
| 11012 | 11 | 012 | red turpentine beetle | <i>Dendroctonus valens</i> | Any evidence of a successful attack. | NRS |
| 11013 | 11 | 013 | Dryocoetes affaber | <i>Dryocoetes affaber</i> | - | - |
| 11014 | 11 | 014 | Dryocoetes autographus | <i>Dryocoetes autographus</i> | - | - |
| 11015 | 11 | 015 | western balsam bark beetle | <i>Dryocoetes confusus</i> | - | - |
| 11016 | 11 | 016 | Dryocoetes sechelti | <i>Dryocoetes sechelti</i> | - | - |
| 11017 | 11 | 017 | ash bark beetles | <i>Hylesinus</i> spp. | - | - |
| 11018 | 11 | 018 | native elm bark beetle | <i>Hylurgopinus rufipes</i> | - | - |
| 11019 | 11 | 019 | pinon ips | <i>Ips confusus</i> | - | - |
| 11020 | 11 | 020 | small southern pine engraver | <i>Ips avulsus</i> | - | - |
| 11021 | 11 | 021 | sixspined ips | <i>Ips calligraphus</i> | - | - |
| 11022 | 11 | 022 | emarginate ips | <i>Ips emarginatus</i> | - | - |
| 11023 | 11 | 023 | southern pine engraver beetle | <i>Ips grandicollis</i> | - | - |
| 11024 | 11 | 024 | Orthotomicus latidens | <i>Orthotomicus latidens</i> | - | - |
| 11025 | 11 | 025 | Arizona five-spined ips | <i>Ips lecontei</i> | - | - |
| 11026 | 11 | 026 | Monterey pine ips | <i>Ips mexicanus</i> | - | - |
| 11027 | 11 | 027 | California fivespined ips | <i>Ips paraconfusus</i> | - | - |
| 11028 | 11 | 028 | northern spruce engraver beetle | <i>Ips perturbatus</i> | - | - |
| 11029 | 11 | 029 | pine engraver | <i>Ips pini</i> | - | - |
| 11030 | 11 | 030 | Ips engraver beetles | <i>Ips</i> spp. | Any evidence of a successful attack. | NRS; PNWRS-AK; RMRS |
| 11031 | 11 | 031 | <i>Ips tridens</i> | <i>Ips tridens</i> | - | - |
| 11032 | 11 | 032 | western ash bark beetle | <i>Leperisinus californicus</i> | - | - |
| 11033 | 11 | 033 | Oregon ash bark beetle | <i>Leperisinus oregonus</i> | - | - |
| 11034 | 11 | 034 | Orthotomicus caelatus | <i>Orthotomicus caelatus</i> | - | - |
| 11035 | 11 | 035 | cedar bark beetles | <i>Phloeosinus</i> spp. | - | - |
| 11036 | 11 | 036 | western cedar bark beetle | <i>Phloeosinus punctatus</i> | - | - |
| 11037 | 11 | 037 | tip beetles | <i>Pityogenes</i> spp. | - | - |
| 11038 | 11 | 038 | Douglas-fir twig beetle | <i>Pityophthorus pseudotsugae</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------------|--------------|--------------------------------|-----------------------------------|---|---------------|
| 11039 | 11 | 039 | twig beetles | <i>Pityophthorus</i> spp. | - | - |
| 11040 | 11 | 040 | four-eyed spruce bark beetle | <i>Polygraphus rufipennis</i> | - | - |
| 11041 | 11 | 041 | fir root bark beetle | <i>Pseudohylesinus granulatus</i> | - | - |
| 11042 | 11 | 042 | <i>Pseudohylesinus dispar</i> | <i>Pseudohylesinus dispar</i> | - | - |
| 11043 | 11 | 043 | Douglas-fir pole beetle | <i>Pseudohylesinus nebulosus</i> | - | - |
| 11044 | 11 | 044 | silver fir beetle | <i>Pseudohylesinus sericeus</i> | - | - |
| 11045 | 11 | 045 | small European elm bark beetle | <i>Scolytus multistriatus</i> | - | - |
| 11046 | 11 | 046 | spruce engraver | <i>Scolytus piceae</i> | - | - |
| 11047 | 11 | 047 | hickory bark beetle | <i>Scolytus quadrispinosus</i> | - | - |
| 11048 | 11 | 048 | true fir bark beetles | <i>Scolytus</i> spp. | - | - |
| 11049 | 11 | 049 | Douglas-fir engraver | <i>Scolytus unispinosus</i> | - | - |
| 11050 | 11 | 050 | fir engraver | <i>Scolytus ventralis</i> | - | - |
| 11051 | 11 | 051 | striped ambrosia beetle | <i>Tryachykele lineatum</i> | - | - |
| 11052 | 11 | 052 | Sitka spruce engraver beetle | <i>Ips connecinus</i> | - | - |
| 11053 | 11 | 053 | four-eyed bark beetle | <i>Polygraphus</i> spp. | - | - |
| 11054 | 11 | 054 | hemlock beetle | <i>Pseudohylesinus tsugae</i> | - | - |
| 11055 | 11 | 055 | spruce ips | <i>Ips pilifrons</i> | - | - |
| 11056 | 11 | 056 | (smaller) Mexican pine beetle | <i>Dendroctonus mexicanus</i> | - | - |
| 11057 | 11 | 057 | banded elm bark beetle | <i>Scolytus schevyrewi</i> | - | - |
| 11058 | 11 | 058 | redbay ambrosia beetle | <i>Xyleborus glabratus</i> | - | - |
| 11059 | 11 | 059 | southern cypress beetle | <i>Phloeosinus taxodii</i> | - | - |
| 11060 | 11 | 060 | Mediterranean pine engraver | <i>Orthotomicus erosus</i> | - | - |
| 11800 | 11 | 800 | other bark beetle (known) | other bark beetle (known) | - | - |
| 11900 | 11 | 900 | unknown bark beetle | unknown bark beetle | - | - |
| 11999 | 11 | 999 | western bark beetle complex | western bark beetle complex | - | - |
| 12000 | 12 | 000 | Defoliators | - | Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | All |
| 12001 | 12 | 001 | casebearer | - | - | - |
| 12002 | 12 | 002 | leaf tier | - | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------|----------|-------|-----------------------------|--|--|--------|
| 12003 | 12 | 003 | loopers | - | - | - |
| 12004 | 12 | 004 | needleminers | - | - | - |
| 12005 | 12 | 005 | sawflies | - | Any damage to the terminal leader; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | NRS |
| 12006 | 12 | 006 | skeletonizer | - | - | - |
| 12007 | 12 | 007 | larger elm leaf beetle | <i>Monocesta coryli</i> | - | - |
| 12008 | 12 | 008 | spanworm | - | - | - |
| 12009 | 12 | 009 | webworm | - | - | - |
| 12010 | 12 | 010 | pine false webworm | <i>Acantholyda erythrocephala</i> | - | - |
| 12011 | 12 | 011 | western blackheaded budworm | <i>Acleris gloverana</i> | - | - |
| 12012 | 12 | 012 | eastern blackheaded budworm | <i>Acleris variana</i> | - | - |
| 12013 | 12 | 013 | whitefly | <i>Aleyrodidae</i> | - | - |
| 12014 | 12 | 014 | fall cankerworm | <i>Alsophila pometaria</i> | - | - |
| 12015 | 12 | 015 | alder flea beetle | <i>Altica ambiens</i> | - | - |
| 12016 | 12 | 016 | mountain mahogany looper | <i>Anacamptodes clivinaria profanata</i> | - | - |
| 12017 | 12 | 017 | birch leaffolder | <i>Ancylis disigerana</i> | - | - |
| 12018 | 12 | 018 | oak worms | <i>Anisota</i> spp. | - | - |
| 12019 | 12 | 019 | orange-striped oakworm | <i>Anisota senatoria</i> | - | - |
| 12020 | 12 | 020 | western larch sawfly | <i>Anoplonyx occidens</i> | - | - |
| 12021 | 12 | 021 | fruittree leafroller | <i>Archips argyrospila</i> | - | - |
| 12022 | 12 | 022 | uglynest caterpillar | <i>Archips cerasivorana</i> | - | - |
| 12023 | 12 | 023 | boxelder defoliator | <i>Archips negundanus</i> | - | - |
| 12024 | 12 | 024 | oak leafroller | <i>Archips semiferana</i> | - | - |
| 12025 | 12 | 025 | birch sawfly | <i>Arge pectoralis</i> | - | - |
| 12026 | 12 | 026 | arborvitae leafminer | <i>Argyresthia thuiella</i> | - | - |
| 12027 | 12 | 027 | coconut scale | <i>Aspidiotus destructor</i> | - | - |
| 12028 | 12 | 028 | texas leafcutting ant | <i>Atta texana</i> | - | - |
| 12029 | 12 | 029 | oak skeletonizer | <i>Bucculatrix ainsliella</i> | Any damage to the terminal leader; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | NRS |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------------|-----------------|--------------|--------------------------------|-----------------------------------|--|------------------------------|
| 12030 | 12 | 030 | pear sawfly | <i>Caliroa cerasi</i> | - | - |
| 12031 | 12 | 031 | scarlet oak sawfly | <i>Caliroa quercuscoccineae</i> | - | - |
| 12032 | 12 | 032 | elm calligrapha | <i>Calligrapha scalaris</i> | - | - |
| 12033 | 12 | 033 | boxelder leafroller | <i>Caloptilia negundella</i> | - | - |
| 12034 | 12 | 034 | maple petiole borer | <i>Caulocampus acericaulis</i> | - | - |
| 12035 | 12 | 035 | spruce webspinning sawfly | <i>Cephalcia fascipennis</i> | - | - |
| 12036 | 12 | 036 | two-year budworm | <i>Choristoneura biennis</i> | - | - |
| 12037 | 12 | 037 | large aspen tortrix | <i>Choristoneura conflictana</i> | - | - |
| 12038 | 12 | 038 | spruce budworm | <i>Choristoneura fumiferana</i> | Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | NRS |
| 12039 | 12 | 039 | western pine budworm | <i>Choristoneura lambertiana</i> | - | - |
| 12040 | 12 | 040 | western spruce budworm | <i>Choristoneura occidentalis</i> | Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | PNWRS; RMRS |
| 12041 | 12 | 041 | jack pine budworm | <i>Choristoneura pinus</i> | Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | NRS |
| 12042 | 12 | 042 | Modoc budworm | <i>Choristoneura retiniana</i> | - | - |
| 12043 | 12 | 043 | aspen leaf beetle | <i>Chrysomela crotchi</i> | - | - |
| 12044 | 12 | 044 | cottonwood leaf beetle | <i>Chrysomela scripta</i> | - | - |
| 12045 | 12 | 045 | leafhopper | <i>Cicadellidae</i> | - | - |
| 12046 | 12 | 046 | poplar tentmaker | <i>Closteria inclusa</i> | - | - |
| 12047 | 12 | 047 | larch casebearer | <i>Coleophora laricella</i> | Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | NRS |
| 12048 | 12 | 048 | birch casebearer | <i>Coleophora serratella</i> | Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | NRS |
| 12049 | 12 | 049 | lodgepole needleminer | <i>Coleotechnites milleri</i> | - | - |
| 12050 | 12 | 050 | Gelechiid moths / needleminers | <i>Coleotechnites</i> spp. | - | - |
| 12051 | 12 | 051 | Black Hills pandora moth | <i>Coloradia doris</i> | - | - |
| 12052 | 12 | 052 | pandora moth | <i>Coloradia pandora</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------|----------|-------|------------------------------|-----------------------------------|--|--------|
| 12053 | 12 | 053 | sycamore lace bug | <i>Corythucha ciliata</i> | - | - |
| 12054 | 12 | 054 | lace bugs | <i>Corythucha</i> spp. | - | - |
| 12055 | 12 | 055 | oak leaf tier | <i>Croesia semipurpurana</i> | - | - |
| 12056 | 12 | 056 | dusky birch sawfly | <i>Croesus latitarsus</i> | - | - |
| 12057 | 12 | 057 | walnut caterpillar | <i>Datana integerrima</i> | - | - |
| 12058 | 12 | 058 | yellownecked caterpillar | <i>Datana ministra</i> | - | - |
| 12059 | 12 | 059 | walkingstick | <i>Diapheromera femorata</i> | - | - |
| 12060 | 12 | 060 | spruce coneworm | <i>Dioryctria reniculelloides</i> | - | - |
| 12061 | 12 | 061 | introduced pine sawfly | <i>Diprion similis</i> | - | - |
| 12062 | 12 | 062 | greenstriped mapleworm | <i>Dryocampa rubicunda</i> | - | - |
| 12063 | 12 | 063 | spruce needleminer (east) | <i>Endothenia albolineana</i> | - | - |
| 12064 | 12 | 064 | elm spanworm | <i>Ennomos subsignaris</i> | Any damage to the terminal leader; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | NRS |
| 12065 | 12 | 065 | maple trumpet skeletonizer | <i>Epinotia aceriella</i> | - | - |
| 12066 | 12 | 066 | white fir needleminer | <i>Epinotia meritana</i> | - | - |
| 12067 | 12 | 067 | linden looper | <i>Erannis tiliaria</i> | - | - |
| 12068 | 12 | 068 | brown tail moth | <i>Euproctis chrysorrhoea</i> | Any occurrence. | NRS |
| 12069 | 12 | 069 | pine needleminer | <i>Exoteleia pinifoliella</i> | - | - |
| 12070 | 12 | 070 | birch leafminer | <i>Fenus a pusilla</i> | - | - |
| 12071 | 12 | 071 | elm leafminer | <i>Fenus a ulmi</i> | - | - |
| 12072 | 12 | 072 | geometrid moth | <i>Geometridae</i> | - | - |
| 12073 | 12 | 073 | leafblotch miner | <i>Gracillariidae</i> | - | - |
| 12074 | 12 | 074 | spotted tussock moth | <i>Halisidota maculata</i> | - | - |
| 12075 | 12 | 075 | pale tussock moth | <i>Halisidota tessellaris</i> | - | - |
| 12076 | 12 | 076 | hesperiid moth | <i>Hasora choromus</i> | - | - |
| 12077 | 12 | 077 | brown day moth | <i>Hemileuca eglanterina</i> | - | - |
| 12078 | 12 | 078 | buck moth | <i>Hemileuca maia</i> | - | - |
| 12079 | 12 | 079 | saddled prominent | <i>Heterocampa guttivitta</i> | - | - |
| 12080 | 12 | 080 | variable oakleaf caterpillar | <i>Heterocampa manteo</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------------|-----------------|--------------|-------------------------------|-------------------------------------|--|---------------|
| 12081 | 12 | 081 | cherry scallop shell moth | <i>Hydria prunivora</i> | Any damage to the terminal leader; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | NRS |
| 12082 | 12 | 082 | fall webworm | <i>Hyphantria cunea</i> | - | - |
| 12083 | 12 | 083 | hemlock looper | <i>Lambdina fiscellaria</i> | - | - |
| 12084 | 12 | 084 | oak looper | <i>Lambdina punctat</i> | - | - |
| 12085 | 12 | 085 | tent caterpillar moth | <i>Lasiocampidae</i> | - | - |
| 12086 | 12 | 086 | satin moth | <i>Leucoma salicis</i> | Any damage to the terminal leader; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | NRS |
| 12087 | 12 | 087 | willow leafblotch miner | <i>Lithocolletis</i> spp. | - | - |
| 12088 | 12 | 088 | aspen blotchminer | <i>Lithocolletis tremuloidiella</i> | - | - |
| 12089 | 12 | 089 | gypsy moth | <i>Lymantria dispar</i> | Any occurrence. | NRS |
| 12090 | 12 | 090 | cottonwood leafminers | <i>Lyonetia</i> spp. | - | - |
| 12091 | 12 | 091 | dogwood sawfly | <i>Macremphytus tarsatus</i> | - | - |
| 12092 | 12 | 092 | rose chafer | <i>Macroderactylus subspinosus</i> | - | - |
| 12093 | 12 | 093 | eastern tent caterpillar | <i>Malacosoma americanum</i> | Any damage to the terminal leader; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | NRS |
| 12094 | 12 | 094 | western tent caterpillar | <i>Malacosoma californicum</i> | - | - |
| 12095 | 12 | 095 | Pacific tent caterpillar | <i>Malacosoma constrictum</i> | - | - |
| 12096 | 12 | 096 | forest tent caterpillar | <i>Malacosoma disstria</i> | Any damage to the terminal leader; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | NRS |
| 12097 | 12 | 097 | southwestern tent caterpillar | <i>Malacosoma incurvum</i> | - | - |
| 12098 | 12 | 098 | leafcutting bees | <i>Megachilidae</i> | - | - |
| 12099 | 12 | 099 | blister beetle | <i>Meloidae</i> | - | - |
| 12100 | 12 | 100 | early birch leaf edgeminer | <i>Messa nana</i> | - | - |
| 12101 | 12 | 101 | juniper sawfly | <i>Monocetus fulvus</i> | - | - |
| 12102 | 12 | 102 | common sawflies | <i>Nematus</i> spp. | - | - |
| 12103 | 12 | 103 | balsam fir sawfly | <i>Neodiprion abietis</i> | - | - |
| 12104 | 12 | 104 | lodgepole sawfly | <i>Neodiprion burkei</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------------|-----------------|--------------|------------------------------------|-------------------------------------|------------------|---------------|
| 12105 | 12 | 105 | blackheaded pine sawfly | <i>Neodiprion excitans</i> | - | - |
| 12106 | 12 | 106 | pine infesting sawflies | <i>Neodiprion fulviceps</i> | - | - |
| 12107 | 12 | 107 | redheaded pine sawfly | <i>Neodiprion lecontei</i> | - | - |
| 12109 | 12 | 109 | ponderosa pine sawfly | <i>Neodiprion mundus</i> | - | - |
| 12110 | 12 | 110 | white pine sawfly | <i>Neodiprion pinetum</i> | - | - |
| 12111 | 12 | 111 | jack pine sawfly | <i>Neodiprion pratti banksianae</i> | - | - |
| 12112 | 12 | 112 | Virginia pine sawfly | <i>Neodiprion pratti pratti</i> | - | - |
| 12113 | 12 | 113 | European pine sawfly | <i>Neodiprion sertifer</i> | - | - |
| 12114 | 12 | 114 | loblolly pine sawfly | <i>Neodiprion taedae linearis</i> | - | - |
| 12115 | 12 | 115 | hemlock sawfly | <i>Neodiprion tsugae</i> | - | - |
| 12116 | 12 | 116 | pine butterfly | <i>Neophasia menapia</i> | - | - |
| 12117 | 12 | 117 | false hemlock looper | <i>Nepytiacanosaria</i> | - | - |
| 12118 | 12 | 118 | California tortoiseshell | <i>Nymphalis californica</i> | - | - |
| 12119 | 12 | 119 | locust leafminer | <i>Odontota dorsalis</i> | - | - |
| 12120 | 12 | 120 | Bruce spanworm | <i>Operophtera bruceata</i> | - | - |
| 12121 | 12 | 121 | rusty tussock moth | <i>Orgyia antiqua</i> | - | - |
| 12122 | 12 | 122 | whitemarked tussock moth | <i>Orgyia leucostigma</i> | - | - |
| 12123 | 12 | 123 | Douglas-fir tussock moth | <i>Orgyia pseudotsugata</i> | - | - |
| 12124 | 12 | 124 | western tussock moth | <i>Orgyia vetusta</i> | - | - |
| 12125 | 12 | 125 | spring cankerworm | <i>Paleacrita vernata</i> | - | - |
| 12126 | 12 | 126 | black citrus swallowtail butterfly | <i>Papilio polytes</i> | - | - |
| 12127 | 12 | 127 | maple leafcutter | <i>Paraclemensia acerifoliella</i> | - | - |
| 12128 | 12 | 128 | pine tussock moth | <i>Parorgyia grisefacta</i> | - | - |
| 12129 | 12 | 129 | poinciana looper | <i>Pericyma cruegeri</i> | - | - |
| 12130 | 12 | 130 | half-wing geometer | <i>Phigalia titea</i> | - | - |
| 12131 | 12 | 131 | Phoberia moth | <i>Phoberia atomaris</i> | - | - |
| 12132 | 12 | 132 | California oakworm | <i>Phryganidia californica</i> | - | - |
| 12133 | 12 | 133 | European snout beetle | <i>Phyllobius oblongus</i> | - | - |
| 12134 | 12 | 134 | citrus leafminer | <i>Phyllocoptis citrella</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------------|-----------------|--------------|----------------------------|--------------------------------------|--|-----------------|
| 12135 | 12 | 135 | aspen leafminer | <i>Phyllocnistis populiella</i> | Any damage to the terminal leader; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | PNWRS-AK |
| 12136 | 12 | 136 | yellowheaded spruce sawfly | <i>Pikonema alaskensis</i> | Any damage to the terminal leader; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | NRS |
| 12137 | 12 | 137 | tenlined June beetle | <i>Polyphylla decemlineata</i> | - | - |
| 12138 | 12 | 138 | Japanese beetle | <i>Popillia japonica</i> | - | - |
| 12139 | 12 | 139 | larch sawfly | <i>Pristiphora erichsonii</i> | - | - |
| 12140 | 12 | 140 | mountain-ash sawfly | <i>Pristiphora geniculata</i> | - | - |
| 12141 | 12 | 141 | elm leaf beetle | <i>Pyrrhalta luteola</i> | - | - |
| 12142 | 12 | 142 | spearmarked black moth | <i>Rheumaptera hastata</i> | - | - |
| 12143 | 12 | 143 | giant silkworm moth | <i>Saturniidae</i> | - | - |
| 12144 | 12 | 144 | redhumped caterpillar | <i>Schizura concinna</i> | - | - |
| 12145 | 12 | 145 | redbanded thrips | <i>Selenothrips rubrocinctus</i> | - | - |
| 12146 | 12 | 146 | green larch looper | <i>Semiothisa sexmaculata</i> | - | - |
| 12147 | 12 | 147 | maple leafroller | <i>Sparganothis acerivorana</i> | - | - |
| 12148 | 12 | 148 | redhumped oakworm | <i>Symmerista canicosta</i> | - | - |
| 12149 | 12 | 149 | orangehumped mapleworm | <i>Symmerista leucitys</i> | - | - |
| 12150 | 12 | 150 | spruce needleminer (west) | <i>Taniva albolineana</i> | - | - |
| 12151 | 12 | 151 | maple webworm | <i>Tetralopha asperatella</i> | - | - |
| 12152 | 12 | 152 | pine webworm | <i>Tetralopha robustella</i> | - | - |
| 12153 | 12 | 153 | introduced basswood thrips | <i>Thrips calcaratus</i> | - | - |
| 12154 | 12 | 154 | bagworm | <i>Thyridopteryx ephemeraeformis</i> | - | - |
| 12155 | 12 | 155 | leafroller/seed moth | <i>Tortricidae</i> | - | - |
| 12156 | 12 | 156 | willow defoliation | <i>Tortricidae</i> | - | - |
| 12157 | 12 | 157 | euonymus caterpillar | <i>Yponomeuta spp.</i> | - | - |
| 12158 | 12 | 158 | spruce bud moth | <i>Zeiraphera canadensis</i> | - | - |
| 12159 | 12 | 159 | larch bud moth | <i>Zeiraphera improbana</i> | - | - |
| 12160 | 12 | 160 | pine needle sheathminer | <i>Zelleria haimbachii</i> | - | - |
| 12161 | 12 | 161 | cypress looper | <i>Anacamptodes pergracilis</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------|----------|-------|-------------------------|---------------------------------------|--|----------|
| 12162 | 12 | 162 | Chrysomela leaf beetle | <i>Chrysomela</i> spp. | - | - |
| 12163 | 12 | 163 | pine colaspis | <i>Colaspis pini</i> | - | - |
| 12164 | 12 | 164 | saddleback looper | <i>Ectropis crepuscularia</i> | - | - |
| 12165 | 12 | 165 | birch leaf roller | <i>Epinotia solandriana</i> | Any damage to the terminal leader; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | PNWRS-AK |
| 12166 | 12 | 166 | New Mexico fir looper | <i>Galenara consimilis</i> | - | - |
| 12167 | 12 | 167 | striped alder sawfly | <i>Hemicroca crocea</i> | - | - |
| 12168 | 12 | 168 | greenstriped looper | <i>Melanoplophia imitata</i> | - | - |
| 12169 | 12 | 169 | willow leaf blotchminer | <i>Micrurapteryx salicifoliella</i> | - | - |
| 12170 | 12 | 170 | pine sawfly | <i>Neodiprion autmnalis</i> | - | - |
| 12171 | 12 | 171 | pinon sawfly | <i>Neodiprion edulicolus</i> | - | - |
| 12172 | 12 | 172 | Neodiprion gilletti | <i>Neodiprion gilletti</i> | - | - |
| 12173 | 12 | 173 | Neodiprion ventralis | <i>Neodiprion ventralis</i> | - | - |
| 12174 | 12 | 174 | pine looper | <i>Phaeoura mexicanaria</i> | - | - |
| 12175 | 12 | 175 | Zadiprion rohweri | <i>Zadiprion rohweri</i> | - | - |
| 12176 | 12 | 176 | bull pine sawfly | <i>Zadiprion townsendi</i> | - | - |
| 12177 | 12 | 177 | Douglas-fir budmoth | <i>Zeiraphera hesperiana</i> | - | - |
| 12178 | 12 | 178 | western oak looper | <i>Lambdina fiscellaria somniaria</i> | - | - |
| 12179 | 12 | 179 | phantom hemlock looper | <i>Nepytia phantasmaria</i> | - | - |
| 12180 | 12 | 180 | tent caterpillar | <i>Malacosoma</i> spp. | - | - |
| 12181 | 12 | 181 | Abbot's sawfly | <i>Neodiprion abbotii</i> | - | - |
| 12182 | 12 | 182 | slash pine sawfly | <i>Neodiprion merkeli</i> | - | - |
| 12183 | 12 | 183 | sand pine sawfly | <i>Neodiprion pratti</i> | - | - |
| 12184 | 12 | 184 | melalueca leaf weevil | <i>Oxyops vitiosa</i> | - | - |
| 12185 | 12 | 185 | cypress leaf beetle | <i>Systema marginalis</i> | - | - |
| 12186 | 12 | 186 | Nepytia janetae | <i>Nepytia janetae</i> | - | - |
| 12187 | 12 | 187 | agromyzid fly | <i>Agromyza viridula</i> | - | - |
| 12188 | 12 | 188 | elm sawfly | <i>Cimbex americana</i> | - | - |
| 12189 | 12 | 189 | june beetle | <i>Phyllophaga</i> spp. | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------------|--------------|-----------------------------|--|--|------------------|
| 12190 | 12 | 190 | hickory tussock moth | <i>Halisidota caryae</i> | - | - |
| 12191 | 12 | 191 | pin oak sawfly | <i>Caliroa lineata</i> | - | - |
| 12192 | 12 | 192 | palmerworm | <i>Dichomeris ligulella</i> | - | - |
| 12193 | 12 | 193 | pitch pine looper | <i>Lambdina athasaria pellucidaria</i> | - | - |
| 12194 | 12 | 194 | red pine sawfly | <i>Neodiprion nanulus nanulus</i> | - | - |
| 12195 | 12 | 195 | pine tube moth | <i>Argyrotaenia pinatubana</i> | - | - |
| 12196 | 12 | 196 | baldcypress leafroller | <i>Archips goyerana</i> | - | - |
| 12197 | 12 | 197 | winter moth | <i>Operophtera brumata</i> | Any occurrence. | NRS |
| 12198 | 12 | 198 | basswood thrips | <i>Neohydatothrips tiliae</i> | - | - |
| 12199 | 12 | 199 | noctuid moth | <i>Xylomyges simplex</i> (Walker) | - | - |
| 12200 | 12 | 200 | pyralid moth | <i>Palpita magniferalis</i> | Any damage to the terminal leader; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | NRS |
| 12201 | 12 | 201 | pacific silver fir budmoth | <i>Zeiraphera</i> spp. | - | - |
| 12202 | 12 | 202 | red pine needle midge | <i>Thecodiplosis piniresinosae</i> | - | - |
| 12203 | 12 | 203 | western hemlock looper | <i>Lambdina fiscellaria lugubrosa</i> | - | - |
| 12204 | 12 | 204 | lodgepole pine sawfly | <i>Neodiprion nanulus contortae</i> | - | - |
| 12205 | 12 | 205 | silverspotted tiger moth | <i>Lophocampa argentata</i> | - | - |
| 12206 | 12 | 206 | green alder sawfly | <i>Monsoma pulveratum</i> | - | - |
| 12207 | 12 | 207 | conifer sawflies | conifer sawflies | - | - |
| 12208 | 12 | 208 | ambermarked birch leafminer | <i>Profenusia thomsoni</i> | - | - |
| 12209 | 12 | 209 | cycad blue butterfly | <i>Chilades pandava</i> | - | - |
| 12300 | 12 | 300 | budworm | budworms | Any damage to the terminal leader; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | PNWRS |
| 12800 | 12 | 800 | other defoliater (known) | other defoliater (known) | - | - |
| 12900 | 12 | 900 | unknown defoliator | unknown defoliator | - | - |
| 13000 | 13 | 000 | CheWing Insects | - | Any damage to the terminal leader; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | RMRS; SRS |
| 13001 | 13 | 001 | grasshopper | - | - | - |
| 13002 | 13 | 002 | shorthorn grasshoppers | <i>Acrididae</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------|----------|-------|--------------------------------|-------------------------------|-----------|--------|
| 13003 | 13 | 003 | black cutworm | <i>Agrotis ipsilon</i> | - | - |
| 13004 | 13 | 004 | Palau coconut beetle | <i>Brontispa palauenis</i> | - | - |
| 13005 | 13 | 005 | clearwinged grasshopper | <i>Camnula pellucida</i> | - | - |
| 13006 | 13 | 006 | cicadas | <i>Cicadidae</i> | - | - |
| 13007 | 13 | 007 | eurytomids | <i>Eurytoma</i> spp. | - | - |
| 13008 | 13 | 008 | cutworms | <i>Euxoa excellens</i> | - | - |
| 13009 | 13 | 009 | whitefringed beetles | <i>Graphognathus</i> spp. | - | - |
| 13010 | 13 | 010 | pales weevil | <i>Hylobius pales</i> | - | - |
| 13011 | 13 | 011 | vegetable weevil | <i>Listroderes difficilis</i> | - | - |
| 13012 | 13 | 012 | periodical cicada | <i>Magicicada septendecim</i> | - | - |
| 13013 | 13 | 013 | migratory grasshopper | <i>Melanoplus sanguinipes</i> | - | - |
| 13014 | 13 | 014 | valley grasshopper | <i>Oedaleonotus enigma</i> | - | - |
| 13015 | 13 | 015 | strawberry root weevil | <i>Otiorhyynchus ovatus</i> | - | - |
| 13016 | 13 | 016 | black vine weevil | <i>Otiorhynchus sulcatus</i> | - | - |
| 13017 | 13 | 017 | pandanus beetle | <i>Oxycephala pandani</i> | - | - |
| 13018 | 13 | 018 | spaeth pandanus | <i>Oxycephala spaethi</i> | - | - |
| 13019 | 13 | 019 | agamemnon butterfly | <i>Papilio agememnon</i> | - | - |
| 13020 | 13 | 020 | northern pitch twig moth | <i>Petrova albicapitana</i> | - | - |
| 13021 | 13 | 021 | ponderosa pine tip moth | <i>Rhyacionia zozana</i> | - | - |
| 13022 | 13 | 022 | pine needle weevil | <i>Scythropus</i> spp. | - | - |
| 13023 | 13 | 023 | coconut longhorned grasshopper | <i>Segestes unicolor</i> | - | - |
| 13024 | 13 | 024 | clover root curculio | <i>Sitona hispidulus</i> | - | - |
| 13025 | 13 | 025 | Madron thrips | <i>Thrips madronii</i> | - | - |
| 13026 | 13 | 026 | ash plant bug | <i>Tropidosteptes amoenus</i> | - | - |
| 13027 | 13 | 027 | shorthorned grasshopper | <i>Valanga nigricornis</i> | - | - |
| 13028 | 13 | 028 | pitch-eating weevil | <i>Pachylobius picivorus</i> | - | - |
| 13029 | 13 | 029 | eastern pine weevil | <i>Pissodes nemorensis</i> | - | - |
| 13030 | 13 | 030 | adana tip moth | <i>Rhyacionia adana</i> | - | - |
| 13800 | 13 | 800 | other chewing insect (known) | other chewing insect (known) | - | - |
| 13900 | 13 | 900 | unknown chewing insect | unknown chewing insect | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------|----------|-------|----------------------------|--------------------------------|--|------------------|
| 14000 | 14 | 000 | Sucking Insects | - | Any damage to the terminal leader; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | All |
| 14001 | 14 | 001 | scale insects | - | Any damage to the terminal leader; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | NRS |
| 14002 | 14 | 002 | western larch woolly aphid | <i>Adelges oregonensis</i> | - | - |
| 14003 | 14 | 003 | balsam woolly adelgid | <i>Adelges piceae</i> | Any occurrence. | NRS; PNWRS; RMRS |
| 14004 | 14 | 004 | hemlock woolly adelgid | <i>Adelges tsugae</i> | Any occurrence. | NRS; RMRS |
| 14005 | 14 | 005 | spiraling whitefly | <i>Aleurodicus dispersus</i> | - | - |
| 14006 | 14 | 006 | aphid | <i>Aphididae</i> | - | - |
| 14007 | 14 | 007 | pine spittlebug | <i>Aphrophora parallelia</i> | - | - |
| 14008 | 14 | 008 | western pine spittlebug | <i>Aphrophora permutata</i> | - | - |
| 14009 | 14 | 009 | Saratoga spittlebug | <i>Aphrophora saratogensis</i> | - | - |
| 14010 | 14 | 010 | spittlebug | <i>Cercopidae</i> | - | - |
| 14011 | 14 | 011 | wax scale | <i>Ceroplastes</i> spp. | - | - |
| 14012 | 14 | 012 | pine needle scale | <i>Chionaspis pinifoliae</i> | - | - |
| 14014 | 14 | 014 | giant conifer aphids | <i>Cinara</i> spp. | - | - |
| 14015 | 14 | 015 | white pine aphid | <i>Cinara strobi</i> | - | - |
| 14016 | 14 | 016 | beech scale | <i>Cryptococcus fagisuga</i> | Any occurrence. | NRS |
| 14017 | 14 | 017 | spruce aphid | <i>Elatobium abietinum</i> | - | - |
| 14018 | 14 | 018 | woolly apple aphid | <i>Eriosoma lanigerum</i> | - | - |
| 14019 | 14 | 019 | striped mealybug | <i>Ferrisia vergata</i> | - | - |
| 14020 | 14 | 020 | elongate hemlock scale | <i>Fiorinia externa</i> | Any damage to the terminal leader; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | NRS |
| 14021 | 14 | 021 | coconut red scale | <i>Furcaspis oceanica</i> | - | - |
| 14022 | 14 | 022 | pine thrips | <i>Gnophothrips</i> spp. | - | - |
| 14023 | 14 | 023 | leucaena psyllid | <i>Heteropsylla cubana</i> | - | - |
| 14024 | 14 | 024 | honeysuckle aphids | <i>Hyadaphis tataricae</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------|----------|-------|---------------------------|------------------------------------|-----------------|------------|
| 14025 | 14 | 025 | Egyptian fluted scale | <i>Icerya aegyptiaca</i> | - | - |
| 14026 | 14 | 026 | Lecanium scale | <i>Lecanium spp.</i> | - | - |
| 14027 | 14 | 027 | common falsepit scale | <i>Lecanodiaspis prosopidis</i> | - | - |
| 14028 | 14 | 028 | oystershell scale | <i>Lepidosaphes ulmi</i> | - | - |
| 14029 | 14 | 029 | pinyon needle scale | <i>Matsucoccus acalyptus</i> | - | - |
| 14030 | 14 | 030 | ponderosa pine twig scale | <i>Matsucoccus bisetosus</i> | - | - |
| 14031 | 14 | 031 | pine twig scale | <i>Matsucoccus californicus</i> | - | - |
| 14032 | 14 | 032 | ponderosa pine scale | <i>Matsucoccus degeneratus</i> | - | - |
| 14033 | 14 | 033 | red pine scale | <i>Matsucoccus resinosae</i> | Any occurrence. | NRS |
| 14034 | 14 | 034 | Prescott scale | <i>Matsucoccus vexillorum</i> | - | - |
| 14035 | 14 | 035 | treehoopers | <i>Membracidae</i> | - | - |
| 14036 | 14 | 036 | hibiscus psyllid | <i>Mesohomotoma hibisci</i> | - | - |
| 14037 | 14 | 037 | balsam twig aphid | <i>Mindarus abietinus</i> | - | - |
| 14038 | 14 | 038 | hibiscus mealybug | <i>Nipaecoccus vastator</i> | - | - |
| 14039 | 14 | 039 | black pineleaf scale | <i>Nuculaspis californica</i> | - | - |
| 14040 | 14 | 040 | spruce spider mite | <i>Oligonychus ununquis</i> | - | - |
| 14041 | 14 | 041 | twig girdler | <i>Oncideres cingulata</i> | - | - |
| 14042 | 14 | 042 | woolly alder aphid | <i>Paraprociphilus tessellatus</i> | - | - |
| 14043 | 14 | 043 | maple aphids | <i>Periphyllus spp.</i> | - | - |
| 14044 | 14 | 044 | spruce bud scale | <i>Physokermes piceae</i> | - | - |
| 14045 | 14 | 045 | red pine adelgid | <i>Pineus borneri</i> | - | - |
| 14046 | 14 | 046 | pine leaf adelgid | <i>Pineus pinifoliae</i> | - | - |
| 14047 | 14 | 047 | white pine adelgid | <i>Pineus spp.</i> | - | - |
| 14048 | 14 | 048 | pine bark adelgid | <i>Pineus strobi</i> | - | - |
| 14049 | 14 | 049 | root aphid | <i>Prociphilus americanus</i> | - | - |
| 14050 | 14 | 050 | mealybug | <i>Pseudococcidae</i> | - | - |
| 14051 | 14 | 051 | cottony maple scale | <i>Pulvinaria innumerabilis</i> | - | - |
| 14052 | 14 | 052 | fir mealybug | <i>Puto cupressi</i> | - | - |
| 14053 | 14 | 053 | Douglas-fir mealybug | <i>Puto profusus</i> | - | - |
| 14054 | 14 | 054 | spruce mealybug | <i>Puto sandini</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------|------------|-------------------------------|-------------------------------------|--|--------------|
| 14055 | 14 | 055 | hemispherical scale | <i>Saissetia coffeae</i> | - | - |
| 14056 | 14 | 056 | woolly pine needle aphid | <i>Schizolachnus piniradiatae</i> | - | - |
| 14057 | 14 | 057 | steatococcus scale | <i>Steatococcus samaraius</i> | - | - |
| 14058 | 14 | 058 | pear thrips | <i>Taeniothrips inconsequens</i> | - | - |
| 14059 | 14 | 059 | mulberry whitefly | <i>Tetraleurodes mori</i> | - | - |
| 14060 | 14 | 060 | tuliptree scale | <i>Toumeyella liriodendri</i> | - | - |
| 14061 | 14 | 061 | pine tortoise scale | <i>Toumeyella parvicornis</i> | - | - |
| 14062 | 14 | 062 | citrus snow scale | <i>Unaspis citri</i> | - | - |
| 14063 | 14 | 063 | birch aphid | <i>Eucraphis betulae</i> | - | - |
| 14064 | 14 | 064 | Kermes scale | <i>Allokermes spp.</i> | - | - |
| 14065 | 14 | 065 | Casuarina spittlebug | <i>Clastoptera undulata</i> | - | - |
| 14066 | 14 | 066 | giant bark aphid | <i>Longistigma caryae</i> | - | - |
| 14067 | 14 | 067 | woolly pine scale | <i>Pseudophilippia quaintancii</i> | - | - |
| 14068 | 14 | 068 | european elm scale | <i>Gossyparia spuria</i> | - | - |
| 14069 | 14 | 069 | elm scurfy scale | <i>Chionaspis americana</i> | - | - |
| 14070 | 14 | 070 | magnolia scale | <i>Neolecanium cornuparvum</i> | - | - |
| 14071 | 14 | 071 | beech blight aphid | <i>Glylloprociphilus imbricator</i> | - | - |
| 14072 | 14 | 072 | beech woolly aphid | <i>Phyllaphis fagi</i> | - | - |
| 14073 | 14 | 073 | Asian cycad scale | <i>Aulacaspis yasumatsui</i> | Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | PNWRS |
| 14074 | 14 | 074 | European fruit lecanium scale | <i>Parthenolecanium corni</i> | - | - |
| 14075 | 14 | 075 | lobate lac scale | <i>Paratachardina lobata</i> | - | - |
| 14800 | 14 | 800 | other sucking insect (known) | other sucking insect (known) | - | - |
| 14900 | 14 | 900 | unknown sucking insect | unknown sucking insect | - | - |
| 15000 | 15 | 000 | Boring Insects | - | Any damage to the terminal leader; damage $\geq 20\%$ of the roots, stems, or branches. | All |
| 15001 | 15 | 001 | shoot borer | - | Any damage to the terminal leader; damage $\geq 20\%$ of the roots, stems, or branches. | NRS |
| 15002 | 15 | 002 | termite | - | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------|----------|-------|-----------------------------|----------------------------------|---|------------|
| 15003 | 15 | 003 | ponderosa pine bark borer | <i>Acanthocinus princeps</i> | - | - |
| 15004 | 15 | 004 | bronze birch borer | <i>Agrilus anxius</i> | Any damage to the terminal leader; damage $\geq 20\%$ of the roots, stems, or branches. | NRS |
| 15005 | 15 | 005 | twolined chestnut borers | <i>Agrilus bilineatus</i> | - | - |
| 15006 | 15 | 006 | bronze poplar borer | <i>Agrilus liragus</i> | - | - |
| 15007 | 15 | 007 | carpenter bees | <i>Apidae</i> | - | - |
| 15008 | 15 | 008 | flatheaded borer | <i>Buprestidae</i> | - | - |
| 15009 | 15 | 009 | golden buprestid | <i>Buprestis aurulenta</i> | - | - |
| 15010 | 15 | 010 | carpenter ants | <i>Camponotus</i> spp. | - | - |
| 15011 | 15 | 011 | gouty pitch midge | <i>Cecidomyia piniinopis</i> | - | - |
| 15012 | 15 | 012 | shootboring sawflies | <i>Cephidae</i> | - | - |
| 15013 | 15 | 013 | roundheaded borer | <i>Cerambycidae</i> | - | - |
| 15014 | 15 | 014 | flatheaded apple tree borer | <i>Chrysobothris femorata</i> | - | - |
| 15015 | 15 | 015 | cranberry girdler | <i>Chrysoteuchia topiaria</i> | - | - |
| 15016 | 15 | 016 | Columbian timber beetle | <i>Corthylus columbianus</i> | - | - |
| 15017 | 15 | 017 | pitted ambrosia beetle | <i>Corthylus punctatissimus</i> | - | - |
| 15018 | 15 | 018 | carpenterworm moths | <i>Cossidae</i> | - | - |
| 15019 | 15 | 019 | poplar and willow borer | <i>Cryptorhynchus lapathi</i> | - | - |
| 15020 | 15 | 020 | pine reproduction weevil | <i>Cylindrocopturus eatoni</i> | - | - |
| 15021 | 15 | 021 | Douglas-fir twig weevil | <i>Cylindrocopturus furnissi</i> | - | - |
| 15022 | 15 | 022 | Zimmerman pine moth | <i>Dioryctria zimmermani</i> | - | - |
| 15023 | 15 | 023 | oak twig borers | <i>Elaphidionoides</i> spp. | - | - |
| 15024 | 15 | 024 | twig pruner | <i>Elaphidionoides villosus</i> | - | - |
| 15025 | 15 | 025 | lesser cornstalk borer | <i>Elasmopalpus lignosellus</i> | - | - |
| 15026 | 15 | 026 | red oak borer | <i>Enaphalodes rufulus</i> | Damage to $\geq 10\%$ of the bole circumference. | NRS |
| 15027 | 15 | 027 | ponderous borer | <i>Ergates spiculatus</i> | - | - |
| 15028 | 15 | 028 | eastern pine shoot borer | <i>Eucosma gloriola</i> | - | - |
| 15029 | 15 | 029 | western pine shoot borer | <i>Eucosma sonomana</i> | - | - |
| 15030 | 15 | 030 | Eucosma shoot borers | <i>Eucosma</i> spp. | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------|----------|-------|-----------------------------|-----------------------------------|--|------------|
| 15031 | 15 | 031 | sugar maple borer | <i>Glycobius speciosus</i> | Any damage to the terminal leader; damage ≥20% of the roots, stems, or branches. | NRS |
| 15032 | 15 | 032 | Goes borers | <i>Goes</i> spp. | - | - |
| 15033 | 15 | 033 | pine root collar weevil | <i>Hylobius radicis</i> | - | - |
| 15034 | 15 | 034 | Warren root collar weevil | <i>Hylobius warreni</i> | - | - |
| 15035 | 15 | 035 | powderpost beetle | <i>Lyctidae</i> | - | - |
| 15036 | 15 | 036 | tarnished plant bug | <i>Lygus lineolaris</i> | - | - |
| 15037 | 15 | 037 | bark weevils | <i>Magdalais</i> spp. | - | - |
| 15038 | 15 | 038 | white pine barkminer moth | <i>Marmara fasciella</i> | - | - |
| 15039 | 15 | 039 | locust borer | <i>Megacyllene robiniae</i> | - | - |
| 15040 | 15 | 040 | California flathead borer | <i>Melanophila californica</i> | - | - |
| 15041 | 15 | 041 | flatheaded fir borer | <i>Melanophila drummondi</i> | - | - |
| 15042 | 15 | 042 | whitespotted sawyer | <i>Monochamus scutellatus</i> | - | - |
| 15043 | 15 | 043 | redheaded ash borer | <i>Neoclytus acuminatus</i> | - | - |
| 15044 | 15 | 044 | western ash borer | <i>Neoclytus conjunctus</i> | - | - |
| 15045 | 15 | 045 | oberea shoot borers | <i>Oberea</i> spp. | - | - |
| 15046 | 15 | 046 | eucalyptus longhorned borer | <i>Phoracantha semipunctata</i> | - | - |
| 15047 | 15 | 047 | northern pine weevil | <i>Pissodes approximatus</i> | - | - |
| 15048 | 15 | 048 | balsam bark weevil | <i>Pissodes dubius</i> | - | - |
| 15049 | 15 | 049 | Monterey pine weevil | <i>Pissodes radiatae</i> | - | - |
| 15050 | 15 | 050 | Engelmann spruce weevil | <i>Pissodes strobi</i> | - | - |
| 15051 | 15 | 051 | lodgepole terminal weevil | <i>Pissodes terminalis</i> | - | - |
| 15052 | 15 | 052 | ambrosia beetles | <i>Platypus</i> spp. | - | - |
| 15053 | 15 | 053 | cottonwood borer | <i>Plectrodera scalator</i> | - | - |
| 15054 | 15 | 054 | balsam shootboring sawfly | <i>Pleroneura brunneicornis</i> | - | - |
| 15055 | 15 | 055 | pine gall weevil | <i>Podapion gallicola</i> | - | - |
| 15056 | 15 | 056 | ash borer | <i>Podesesia syringae fraxini</i> | - | - |
| 15057 | 15 | 057 | lilac borer | <i>Podosesia syringae</i> | - | - |
| 15058 | 15 | 058 | carpenterworm | <i>Prionoxystus robiniae</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------------|-----------------|--------------|------------------------------|-----------------------------------|------------------|---------------|
| 15059 | 15 | 059 | maple shoot borers | <i>Proterteras</i> spp. | - | - |
| 15060 | 15 | 060 | western subterranean termite | <i>Reticulitermes hesperus</i> | - | - |
| 15061 | 15 | 061 | coconut trunk weevil | <i>Rhabdoscelus asperipennis</i> | - | - |
| 15062 | 15 | 062 | New Guinea sugarcane weevil | <i>Rhabdoscelus obscurus</i> | - | - |
| 15063 | 15 | 063 | European pine shoot moth | <i>Rhyacionia buoliana</i> | - | - |
| 15064 | 15 | 064 | western pine tip moth | <i>Rhyacionia bushnelli</i> | - | - |
| 15065 | 15 | 065 | Nantucket pine tip moth | <i>Rhyacionia frustrana</i> | - | - |
| 15066 | 15 | 066 | lodgepole pine tip moth | <i>Rhyacionia montana</i> | - | - |
| 15067 | 15 | 067 | southwestern pine tip moth | <i>Rhyacionia neomexicana</i> | - | - |
| 15068 | 15 | 068 | poplar borer | <i>Saperda calcarata</i> | - | - |
| 15069 | 15 | 069 | roundheaded appletree borer | <i>Saperda candida</i> | - | - |
| 15070 | 15 | 070 | Saperda shoot borer | <i>Saperda</i> spp. | - | - |
| 15071 | 15 | 071 | clearwing moths | <i>Sesiidae</i> | - | - |
| 15072 | 15 | 072 | dogwood borer | <i>Synanthedon scitula</i> | - | - |
| 15073 | 15 | 073 | roundheaded fir borer | <i>Tetropium abietis</i> | - | - |
| 15074 | 15 | 074 | western larch borer | <i>Tetropium velutinum</i> | - | - |
| 15075 | 15 | 075 | western cedar borer | <i>Trachykele blondeli</i> | - | - |
| 15076 | 15 | 076 | Douglas-fir pitch moth | <i>Vesparimma novaroensis</i> | - | - |
| 15077 | 15 | 077 | sequoia pitch moth | <i>Vesparimma sequoia</i> | - | - |
| 15078 | 15 | 078 | black twig borer | <i>Xylosandrus compactus</i> | - | - |
| 15079 | 15 | 079 | Pacific dampwood termite | <i>Zootermopsis angusticollis</i> | - | - |
| 15080 | 15 | 080 | subtropical pine tip moth | <i>Rhyacionia subtropica</i> | - | - |
| 15081 | 15 | 081 | Asian ambrosia beetle | <i>Xylosandrus crassiusculus</i> | - | - |
| 15082 | 15 | 082 | Asian longhorned beetle | <i>Anoplophora glabripennis</i> | - | - |
| 15083 | 15 | 083 | cottonwood twig borer | <i>Gypsonoma haimbachiana</i> | - | - |
| 15084 | 15 | 084 | southern pine sawyer | <i>Monochamus titillator</i> | - | - |
| 15085 | 15 | 085 | banded ash borer | <i>Neoclytus capraea</i> | - | - |
| 15086 | 15 | 086 | sitka spruce weevil | <i>Pissodes sitchensis</i> | - | - |
| 15087 | 15 | 087 | emerald ash borer | <i>Agrilus planipennis</i> | Any occurrence. | NRS |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------------|--------------|---------------------------------------|---|--|---------------|
| 15088 | 15 | 088 | hemlock borer | <i>Melanophila fulvoguttata</i> | Any damage to the terminal leader; damage ≥20% of the roots, stems, or branches. | NRS |
| 15089 | 15 | 089 | Formosan subterranean termite | <i>Coptotermes formosanus</i> | - | - |
| 15090 | 15 | 090 | sirex woodwasp | <i>Sirex noctilio</i> | - | - |
| 15091 | 15 | 091 | Oregon fir sawyer | <i>Monochamus scutellatus oregonensis</i> | - | - |
| 15092 | 15 | 092 | cypress weevil | <i>Eudocimus mannerheimii</i> | - | - |
| 15093 | 15 | 093 | camphor shot borer | <i>Xylosandrus multilatus</i> | - | - |
| 15094 | 15 | 094 | goldenspotted oak borer | <i>Agrilus coxalis</i> | - | - |
| 15095 | 15 | 095 | European oak borer | <i>Agrilus sulcicollis</i> | - | - |
| 15096 | 15 | 096 | X. germanus ambrosia beetle | <i>Xylosandrus germanus</i> | - | - |
| 15097 | 15 | 097 | Icosium tomentosum | <i>Icosium tomentosum</i> | - | - |
| 15800 | 15 | 800 | other boring insect (known) | other boring insect (known) | - | - |
| 15900 | 15 | 900 | unknown boring insect | unknown boring insect | - | - |
| 16000 | 16 | 000 | Seed/Cone/Flower/Fruit Insects | - | - | - |
| 16001 | 16 | 001 | Douglas-fir cone moth | <i>Barbara colfaxiana</i> | - | - |
| 16002 | 16 | 002 | lodgepole cone beetle | <i>Conophthorus contortae</i> | - | - |
| 16003 | 16 | 003 | limber pine cone beetle | <i>Conophthorus flexilis</i> | - | - |
| 16004 | 16 | 004 | mountain pine cone beetle | <i>Conophthorus monticolae</i> | - | - |
| 16005 | 16 | 005 | ponderosa pine cone beetle | <i>Conophthorus ponderosae</i> | - | - |
| 16006 | 16 | 006 | Monterey pine cone beetle | <i>Conophthorus radiatae</i> | - | - |
| 16007 | 16 | 007 | red pine cone beetle | <i>Conophthorus resinosae</i> | - | - |
| 16008 | 16 | 008 | white pine cone beetle | <i>Conophthorus coniperda</i> | - | - |
| 16009 | 16 | 009 | black walnut curculio | <i>Conotrachelus retentus</i> | - | - |
| 16010 | 16 | 010 | Douglas-fir cone gall midge | <i>Contarinia oregonensis</i> | - | - |
| 16011 | 16 | 011 | Douglas-fir cone scale midge | <i>Contarinia washingtonensis</i> | - | - |
| 16012 | 16 | 012 | acorn/nut weevils | <i>Curculio spp.</i> | - | - |
| 16013 | 16 | 013 | Caroline fruitfly | <i>Dacus frauenfeldi</i> | - | - |
| 16014 | 16 | 014 | spruce bud midge | <i>Dasineura swainei</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------------|-----------------|--------------|---------------------------------|----------------------------------|------------------|---------------|
| 16015 | 16 | 015 | fir coneworm | <i>Dioryctria abietivorella</i> | - | - |
| 16016 | 16 | 016 | southern pine cone worm | <i>Dioryctria amatella</i> | - | - |
| 16017 | 16 | 017 | ponderosa pine coneworm | <i>Dioryctria auranticella</i> | - | - |
| 16018 | 16 | 018 | loblolly pine cone worm | <i>Dioryctria merkeli</i> | - | - |
| 16019 | 16 | 019 | ponderosa twig moth | <i>Dioryctria ponderosae</i> | - | - |
| 16020 | 16 | 020 | Dioryctria pseudotsugella | <i>Dioryctria pseudotsugella</i> | - | - |
| 16021 | 16 | 021 | Dioryctria moths | <i>Dioryctria</i> spp. | - | - |
| 16022 | 16 | 022 | lodgepole cone moth | <i>Eucosma resissoriana</i> | - | - |
| 16023 | 16 | 023 | seed chalcid | <i>Eurytomidae</i> | - | - |
| 16024 | 16 | 024 | slash pine flower thrips | <i>Gnaphothrips fuscus</i> | - | - |
| 16025 | 16 | 025 | spruce cone maggot | <i>Hylemya anthracina</i> | - | - |
| 16026 | 16 | 026 | longleaf pine seed worm or moth | <i>Laspeyresia ingens</i> | - | - |
| 16027 | 16 | 027 | ponderosa pine seed moth | <i>Laspeyresia piperana</i> | - | - |
| 16028 | 16 | 028 | spruce seed moth | <i>Laspeyresia youngana</i> | - | - |
| 16029 | 16 | 029 | boxelder bug | <i>Leptocoris trivittatus</i> | - | - |
| 16030 | 16 | 030 | leaffooted pine seed bug | <i>Leptoglossus corculus</i> | - | - |
| 16031 | 16 | 031 | western conifer seed bug | <i>Leptoglossus occidentalis</i> | - | - |
| 16032 | 16 | 032 | hollyhock thrips | <i>Liothrips varicornis</i> | - | - |
| 16033 | 16 | 033 | Magastigmus lasiocarparae | <i>Magastigmus lasiocarparae</i> | - | - |
| 16034 | 16 | 034 | spruce seed chalcid | <i>Magastigmus piceae</i> | - | - |
| 16035 | 16 | 035 | ponderosa pine seed chalcid | <i>Megastigmus albifrons</i> | - | - |
| 16036 | 16 | 036 | fir seed chalcid | <i>Megastigmus pinus</i> | - | - |
| 16037 | 16 | 037 | Douglas-fir seed chalcid | <i>Megastigmus spermotrophs</i> | - | - |
| 16038 | 16 | 038 | yellow poplar weevil | <i>Odontopus calceatus</i> | - | - |
| 16039 | 16 | 039 | fruitpiercing moth | <i>Othreis fullonia</i> | - | - |
| 16040 | 16 | 040 | roundheaded cone borer | <i>Paratimia conicola</i> | - | - |
| 16041 | 16 | 041 | mango shoot caterpillar | <i>Penicillaria jocosatrix</i> | - | - |
| 16042 | 16 | 042 | coneworm | <i>Phycitidae</i> | - | - |
| 16043 | 16 | 043 | harvester ants | <i>Pogonomyrmex</i> spp. | - | - |
| 16044 | 16 | 044 | citrus flower moth | <i>Prays citri</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------------|--------------|---------------------------------------|---------------------------------------|--|---------------|
| 16045 | 16 | 045 | fir cone maggot | <i>Strobilomyia abietis</i> | - | - |
| 16046 | 16 | 046 | spruce cone maggot | <i>Strobilomyia anthracina</i> | - | - |
| 16047 | 16 | 047 | shieldbacked pine seed bug | <i>Tetyra bipunctata</i> | - | - |
| 16048 | 16 | 048 | coneworm | <i>Hylemia</i> spp. | - | - |
| 16049 | 16 | 049 | prairie tent caterpillar | <i>Malacosoma lutescens</i> | - | - |
| 16050 | 16 | 050 | jack pine tip beetle | <i>Conophthorus banksianae</i> | - | - |
| 16051 | 16 | 051 | webbing coneworm | <i>Dioryctria disclusa</i> | - | - |
| 16052 | 16 | 052 | blister coneworm | <i>Dioryctria clarioralis</i> | - | - |
| 16053 | 16 | 053 | southern cone gall midge | <i>Cecidomyia bisetosa</i> | - | - |
| 16054 | 16 | 054 | seed bugs | <i>Lygaeidae</i> spp. | - | - |
| 16800 | 16 | 800 | other seed/cone/flower insect (known) | other seed/cone/flower insect (known) | - | - |
| 16900 | 16 | 900 | unknown seed/cone/ flower insects | unknown seed/cone/ flower insects | - | - |
| 17000 | 17 | 000 | Gallmaker Insects | - | - | - |
| 17001 | 17 | 001 | birch budgall mite | <i>Aceria rudis</i> | - | - |
| 17002 | 17 | 002 | eastern spruce gall adelgid | <i>Adelges abietis</i> | - | - |
| 17003 | 17 | 003 | Cooley spruce gall adelgid | <i>Adelges cooleyi</i> | - | - |
| 17004 | 17 | 004 | horned oak gall | <i>Callirhytis cornigera</i> | - | - |
| 17005 | 17 | 005 | oak gall wasp | <i>Callirhytis quercuspunctata</i> | - | - |
| 17006 | 17 | 006 | gall midge | <i>Cecidomyiidae</i> | - | - |
| 17007 | 17 | 007 | Douglas-fir needle gall midge | <i>Contarinia pseudotsugae</i> | - | - |
| 17008 | 17 | 008 | gall mite | <i>Eriophyidae</i> | - | - |
| 17009 | 17 | 009 | spruce gall midge | <i>Mayetiola piceae</i> | - | - |
| 17010 | 17 | 010 | hackberry nipplegall maker | <i>Pachypsylla celtidismamma</i> | - | - |
| 17011 | 17 | 011 | balsam gall midge | <i>Paradiplosis tumifex</i> | Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | NRS |
| 17012 | 17 | 012 | hickory gall Phylloxera | <i>Phylloxera caryaecaulis</i> | - | - |
| 17013 | 17 | 013 | gall aphid | <i>Phylloxeridae</i> | - | - |
| 17014 | 17 | 014 | alder gall mite | <i>Phytoptus laevis</i> | - | - |
| 17015 | 17 | 015 | psyllid | <i>Psyllidae</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------------|--------------|---------------------------------|---------------------------------|--|---------------|
| 17016 | 17 | 016 | sugarberry psyllid | <i>Tetragonocephela flava</i> | - | - |
| 17017 | 17 | 017 | mountain apple psyllid | <i>Trioza vitiensis</i> | - | - |
| 17018 | 17 | 018 | gouty pitch midge | <i>Cedidomyia piniinopsis</i> | - | - |
| 17019 | 17 | 019 | spider mites | <i>Oligonychus</i> spp. | - | - |
| 17020 | 17 | 020 | cypress gall midges | <i>Taxodiomyia</i> spp. | - | - |
| 17021 | 17 | 021 | jumping oak gall wasp | <i>Neuroterus saltatorius</i> | - | - |
| 17022 | 17 | 022 | erythrina gall wasp | <i>Quadrastichus erythrinae</i> | - | - |
| 17800 | 17 | 800 | other gallmaking insect (known) | other gallmaking insect (known) | - | - |
| 17900 | 17 | 900 | unknown gallmaking insect | unknown gallmaking insect | - | - |
| 18000 | 18 | 000 | Insect Predators | - | - | - |
| 18001 | 18 | 001 | lacewing | - | - | - |
| 18002 | 18 | 002 | blackbellied clerid | <i>Enoclerus lecontei</i> | - | - |
| 18003 | 18 | 003 | redbellied clerid | <i>Enoclerus sphegeus</i> | - | - |
| 18004 | 18 | 004 | red wood ant | <i>Formica rufa</i> | - | - |
| 18005 | 18 | 005 | western yellowjacket | <i>Vespula pennsylvanica</i> | - | - |
| 19000 | 19 | 000 | General Diseases | - | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | All |
| 20000 | 20 | 000 | Biotic Damage | - | - | - |
| 20001 | 20 | 001 | damping off | - | - | - |
| 20002 | 20 | 002 | gray mold | <i>Botrytis cinerea</i> | - | - |
| 20003 | 20 | 003 | Cassytha | <i>Cassytha filiformis</i> | - | - |
| 20004 | 20 | 004 | hemlock fluting | - | - | - |
| 21000 | 21 | 000 | Root/Butt Diseases | - | Any occurrence. | All |
| 21001 | 21 | 001 | Armillaria root disease | <i>Armillaria</i> spp. | Any occurrence. | NRS; PNWRS |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------------|-----------------|--------------|---|----------------------------------|----------------------|-------------------|
| 21002 | 21 | 002 | yellow stringy rot | <i>Corticium galactinum</i> | - | - |
| 21003 | 21 | 003 | Cylindrocladium root disease | <i>Cylindrocladium</i> spp. | - | - |
| 21004 | 21 | 004 | brown crumbly rot | <i>Fomitopsis pinicola</i> | - | - |
| 21005 | 21 | 005 | black root rot of pine | <i>Fusarium oxysporum</i> | - | - |
| 21006 | 21 | 006 | Fusarium root rot | <i>Fusarium</i> spp. | - | - |
| 21007 | 21 | 007 | white mottled rot | <i>Ganoderma applanatum</i> | Any visual evidence. | PNWRS-AK |
| 21008 | 21 | 008 | Ganoderma rot of hardwoods | <i>Ganoderma lucidum</i> | Any occurrence. | PNWRS |
| 21009 | 21 | 009 | Ganoderma rot of conifers | <i>Ganoderma tsugae</i> | Any visual evidence. | PNWRS-AK |
| 21010 | 21 | 010 | Heterobasidion root disease | <i>Heterobasidion annosum</i> | Any occurrence. | NRS; PNWRS |
| 21011 | 21 | 011 | circinatus root rot | <i>Inonotus circinatus</i> | - | - |
| 21012 | 21 | 012 | tomentosus root rot / false velvet top fungus | <i>Inonotus tomentosus</i> | - | - |
| 21013 | 21 | 013 | charcoal root rot | <i>Macrophomina phaseolina</i> | - | - |
| 21014 | 21 | 014 | black stain root disease | <i>Ophiostoma wageneri</i> | Any occurrence. | PNWRS |
| 21015 | 21 | 015 | Schweinitzii root and butt rot | <i>Phaeolus schweinitzii</i> | Any occurrence. | PNWRS |
| 21016 | 21 | 016 | flame tree root disease | <i>Phellinus noxious</i> | Any occurrence. | PNWRS |
| 21017 | 21 | 017 | laminated root rot | <i>Phellinus weiri</i> | Any occurrence. | PNWRS |
| 21019 | 21 | 019 | littleleaf disease / Phytophthora root rot | <i>Phytophthora cinnamomi</i> | - | - |
| 21020 | 21 | 020 | Port-Orford-Cedar root disease | <i>Phytophthora lateralis</i> | Any occurrence. | PNWRS |
| 21022 | 21 | 022 | Pythium root rot | <i>Pythium</i> spp. | - | - |
| 21023 | 21 | 023 | procera root disease of conifers | <i>Verticildiella procera</i> | - | - |
| 21024 | 21 | 024 | crown gall | <i>Agrobacterium tumefaciens</i> | - | - |
| 21025 | 21 | 025 | borealis conk | <i>Climacocystis borealis</i> | - | - |
| 21026 | 21 | 026 | yellow pitted rot | <i>Hericium abietis</i> | - | - |
| 21027 | 21 | 027 | brown cubical rot | <i>Laetiporus sulphureus</i> | Any occurrence. | PNWRS |
| 21028 | 21 | 028 | sudden oak death | <i>Phytophthora ramorum</i> | Any occurrence. | PNWRS |
| 21029 | 21 | 029 | Rhizina root disease | <i>Rhizina undulata</i> | - | - |
| 21030 | 21 | 030 | yellow root rot | <i>Perenniporia subacida</i> | - | - |
| 21031 | 21 | 031 | brown top rot | <i>Fomitopsis cajanderi</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------------|--------------|---|---|--|---------------|
| 21033 | 21 | 033 | pocket dry rot | <i>Tyromyces amarus</i> | - | - |
| 21700 | 21 | 700 | root or butt decay (indicators present) | root or butt decay (indicators present) | - | - |
| 21800 | 21 | 800 | other root or butt disease (known) | other root or butt disease (known) | - | - |
| 21900 | 21 | 900 | unknown root or butt disease | unknown root or butt disease | - | - |
| 22000 | 22 | 000 | Cankers | - | Any occurrence. | All |
| 22005 | 22 | 005 | viruses | - | - | - |
| 22006 | 22 | 006 | black knot of cherry | <i>Apiosporina morbosa</i> | Any occurrence on the bole or on branches \leq 1 foot from bole; damage to \geq 50% of branches. | NRS |
| 22007 | 22 | 007 | Atropellis canker | <i>Atropellis piniphila</i> | - | - |
| 22008 | 22 | 008 | Siberian elm canker | <i>Botryodiplodia hypoderma</i> | - | - |
| 22009 | 22 | 009 | Botryosphaeria canker | <i>Botryosphaeria ribis</i> | - | - |
| 22011 | 22 | 011 | Caliciopsis canker | <i>Caliciopsis pinea</i> | Any occurrence. | NRS |
| 22012 | 22 | 012 | black canker of aspen | <i>Ceratocystis fimbriata</i> | - | - |
| 22013 | 22 | 013 | sycamore canker stain | <i>Ceratocystis fimbriata f.sp. platanini</i> | - | - |
| 22023 | 22 | 023 | chestnut blight | <i>Cryphonectria parasitica</i> | Any occurrence. | NRS |
| 22025 | 22 | 025 | Cryptosphaeria canker of aspen | <i>Cryptosphaeria populin</i> | - | - |
| 22026 | 22 | 026 | Cytospora canker of fir | <i>Cytospora abietis</i> | - | - |
| 22029 | 22 | 029 | sooty-bark canker | <i>Encoelia pruinosa</i> | - | - |
| 22030 | 22 | 030 | Eutypella canker | <i>Eutypella parasitica</i> | Any occurrence. | NRS |
| 22032 | 22 | 032 | pitch canker of pines | <i>Fusarium subglutinans</i> | Any occurrence. | PNWRS |
| 22033 | 22 | 033 | Fusicoccum canker | <i>Fusicoccum spp.</i> | - | - |
| 22034 | 22 | 034 | Scleroderris canker | <i>Gremmeniella abietina</i> | - | - |
| 22035 | 22 | 035 | amelanchier rust | <i>Gymnosporangium harknessianum</i> | - | - |
| 22036 | 22 | 036 | cedar apple rust | <i>Gymnosporangium juniperi-virginianae</i> | - | - |
| 22037 | 22 | 037 | Hypoxylon canker of oak | <i>Hypoxylon atropunctatum</i> | - | - |
| 22038 | 22 | 038 | Hypoxylon canker of aspen | <i>Hypoxylon mammatum</i> | Any occurrence. | NRS |
| 22041 | 22 | 041 | European larch canker | <i>Lachnellula willkommii</i> | - | - |
| 22042 | 22 | 042 | beech bark disease | <i>Nectria coccinea</i> | Any occurrence. | NRS |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------------|--------------|-------------------------------------|--|--|---------------|
| 22043 | 22 | 043 | Nectria canker | <i>Nectria galligena</i> | Any occurrence. | NRS |
| 22050 | 22 | 050 | Phomopsis canker | <i>Phomopsis occulta</i> | - | - |
| 22051 | 22 | 051 | Phomopsis canker | <i>Phomopsis spp.</i> | - | - |
| 22052 | 22 | 052 | cypress canker | <i>Seiridium cardinalis</i> | - | - |
| 22053 | 22 | 053 | butternut canker | <i>Sirococcus clavigignenti-jugl.</i> | Any occurrence. | NRS |
| 22054 | 22 | 054 | maple canker | <i>Steganosporium spp.</i> | - | - |
| 22055 | 22 | 055 | Thyronectria canker | <i>Thyronectria austro-americana</i> | - | - |
| 22056 | 22 | 056 | citrus canker | <i>Xanthomonas citri</i> | - | - |
| 22057 | 22 | 057 | Cytospora canker of aspen | <i>Cytospora chrysosperma</i> | - | - |
| 22058 | 22 | 058 | Dothichiza canker | <i>Dothichiza populae</i> | - | - |
| 22060 | 22 | 060 | Leucocytospora canker of spruce | <i>Leucocytospora kunzei</i> | - | - |
| 22073 | 22 | 073 | hemlock canker | <i>Xenomeris abietis</i> | - | - |
| 22075 | 22 | 075 | Lachnellula canker | <i>Lachnellula flavovirens</i> | Any occurrence. | NRS |
| 22076 | 22 | 076 | strumella canker | <i>Strumella coryneoidea</i> | Any occurrence. | NRS |
| 22077 | 22 | 077 | phomopsis blight | <i>Phomopsis juniperovora</i> | - | - |
| 22078 | 22 | 078 | fusarium canker of yellow poplar | <i>Fusarium solani</i> | - | - |
| 22079 | 22 | 079 | sterile conk of maple and beech | <i>Inonotus glomeratus</i> | - | - |
| 22080 | 22 | 080 | canker of spruce | <i>Aleurodiscus spp.</i> | - | - |
| 22082 | 22 | 082 | Discocainia canker | <i>Discocainia treleasei</i> | - | - |
| 22083 | 22 | 083 | red ring rot canker | <i>Phellinus pini var. cancriformans</i> | - | - |
| 22084 | 22 | 084 | Douglas-fir cankers | Douglas-fir cankers | - | - |
| 22085 | 22 | 085 | Scleroderris canker of western firs | <i>Grovesiella abieticola</i> | - | - |
| 22086 | 22 | 086 | Thousand cankers disease | <i>Geosmithia morbida</i> | - | - |
| 22087 | 22 | 087 | nonrust canker | unknown | Damage ≥20% of bole circumference (in a running 3-foot section) at point of occurrence. | PNWRS |
| 22089 | 22 | 099 | aspen running canker | <i>Neodothiora populin</i> | Any occurrence | PNW-AK |
| 22300 | 22 | 300 | other canker disease (known) | other canker disease (known) | - | - |
| 22400 | 22 | 400 | unknown canker disease | unknown canker disease | - | - |
| 22500 | 22 | 500 | Stem Decay | - | Any visual evidence (conks; fruiting bodies; rotten wood). | All |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------------|-----------------|--------------|--|---------------------------------|----------------------|-----------------|
| 22001 | 22 | 001 | heart rot | - | Any visual evidence. | SRS |
| 22002 | 22 | 002 | stem rot | - | - | - |
| 22003 | 22 | 003 | sap rot | - | - | - |
| 22004 | 22 | 004 | slime flux | - | - | - |
| 22010 | 22 | 010 | black rot fungus | <i>Botryosphaeria stevensii</i> | - | - |
| 22024 | 22 | 024 | gray-brown sap rot | <i>Cryptoporus volvatus</i> | - | - |
| 22027 | 22 | 027 | western red rot | <i>Dichomitus squalens</i> | - | - |
| 22028 | 22 | 028 | Indian paint fungus | <i>Echinodontium tinctorium</i> | Any occurrence. | PNWRS |
| 22031 | 22 | 031 | Fusarium cortical stem rot | <i>Fusarium avenaceum</i> | - | - |
| 22039 | 22 | 039 | canker rot of oak | <i>Inonotus hispidus</i> | - | - |
| 22040 | 22 | 040 | sterile conk trunk rot of birch, chaga | <i>Inonotus obliquus</i> | Any visual evidence. | PNWRS-AK |
| 22044 | 22 | 044 | ash heart rot | <i>Pereniporia fraxinophila</i> | - | - |
| 22047 | 22 | 047 | red heart rot | <i>Phellinus pini</i> | Any occurrence. | PNWRS |
| 22048 | 22 | 048 | aspen trunk rot | <i>Phellinus tremulae</i> | Any visual evidence. | PNWRS-AK |
| 22049 | 22 | 049 | stem decay of black walnut | <i>Phellinus weiri</i> | - | - |
| 22059 | 22 | 059 | red belt fungus / brown crumbly rot | <i>Fomitopsis pinicola</i> | Any visual evidence. | PNWRS-AK |
| 22062 | 22 | 062 | quinine fungus / brown trunk rot | <i>Fomitopsis officinalis</i> | Any visual evidence. | PNWRS-AK |
| 22063 | 22 | 063 | brown cubical decay | <i>Coniophora puteana</i> | - | - |
| 22064 | 22 | 064 | tinder fungus | <i>Fomes fomentarius</i> | Any visual evidence. | PNWRS-AK |
| 22065 | 22 | 065 | purple conk | <i>Hirschioporus abietinus</i> | - | - |
| 22066 | 22 | 066 | pinyon black stain | <i>Leptographium wagnerii</i> | - | - |
| 22067 | 22 | 067 | Phellinus hartigii | <i>Phellinus hartigii</i> | Any visual evidence. | PNWRS-AK |
| 22068 | 22 | 068 | false tinder fungus | <i>Phellinus igniarius</i> | Any visual evidence. | PNWRS-AK |
| 22069 | 22 | 069 | robustus conk | <i>Phellinus robustus</i> | - | - |
| 22070 | 22 | 070 | yellow cap fungus | <i>Pholiota</i> spp. | Any visual evidence. | PNWRS-AK |
| 22071 | 22 | 071 | oyster mushroom | <i>Pleurotus ostreatus</i> | - | - |
| 22072 | 22 | 072 | white ring rot | <i>Poria albipellucida</i> | - | - |
| 22074 | 22 | 074 | cedar brown pocket rot | <i>Poria sericeomollis</i> | - | - |
| 22081 | 22 | 081 | birch conk | <i>Piptoporus betulinus</i> | Any visual evidence. | PNWRS-AK |
| 22800 | 22 | 800 | other stem decay (known) | other stem decay (known) | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------|------------|------------------------------------|--|---|--------------------|
| 22900 | 22 | 900 | unknown stem decay | unknown stem decay | - | - |
| 23000 | 23 | 000 | Parasitic/ Epiphytic Plants | - | Dwarf mistletoes with Hawksworth rating of ≥ 3 ; true mistletoes or vines covering $\geq 50\%$ of crown. | All |
| 23001 | 23 | 001 | mistletoe | mistletoe | - | - |
| 23002 | 23 | 002 | parasitic plants | parasitic plants | - | - |
| 23003 | 23 | 003 | vine damage | vine damage | Vines covering $\geq 50\%$ of crown. | NRS; PNWRS |
| 23005 | 23 | 005 | white fir dwarf mistletoe | <i>Arceuthobium abietinum f. sp. concoloris</i> | - | - |
| 23006 | 23 | 006 | lodgepole pine dwarf mistletoe | <i>Arceuthobium americanum</i> | - | - |
| 23007 | 23 | 007 | Apache dwarf mistletoe | <i>Arceuthobium apachecum</i> | - | - |
| 23008 | 23 | 008 | western dwarf mistletoe | <i>Arceuthobium campylopodium</i> | - | - |
| 23009 | 23 | 009 | limber pine dwarf mistletoe | <i>Arceuthobium cyanocarpum</i> | - | - |
| 23010 | 23 | 010 | pinyon dwarf mistletoe | <i>Arceuthobium divaricatum</i> | - | - |
| 23011 | 23 | 011 | Douglas-fir dwarf mistletoe | <i>Arceuthobium douglasii</i> | - | - |
| 23012 | 23 | 012 | Chihuahua pine dwarf mistletoe | <i>Arceuthobium gillii</i> | - | - |
| 23013 | 23 | 013 | larch dwarf mistletoe | <i>Arceuthobium laricis</i> | - | - |
| 23014 | 23 | 014 | western spruce dwarf mistletoe | <i>Arceuthobium microcarpum</i> | - | - |
| 23015 | 23 | 015 | eastern dwarf mistletoe | <i>Arceuthobium pusillum</i> | Any occurrence. | NRS |
| 23016 | 23 | 016 | hemlock dwarf mistletoe | <i>Arceuthobium tsugense</i> | Dwarf mistletoes with Hawksworth rating of ≥ 3 ; true mistletoes or vines covering $\geq 50\%$ of crown. | PNWRS-AK |
| 23017 | 23 | 017 | southwestern dwarf mistletoe | <i>Arceuthobium vaginatum subsp. crytopodium</i> | - | - |
| 23018 | 23 | 018 | dodder | <i>Cuscuta</i> spp. | - | - |
| 23019 | 23 | 019 | white fir mistletoe | <i>Phoradendron bolleanum subsp. pauciflorum</i> | - | - |
| 23020 | 23 | 020 | true mistletoe (other) | - | True mistletoe covering $\geq 50\%$ of crown. | PNWRS; RMRS |
| 23021 | 23 | 021 | red fir dwarf mistletoe | <i>Arceuthobium abietinum f. sp. magnifica</i> | - | - |
| 23022 | 23 | 022 | juniper true mistletoe | <i>Phoradendron juniperum</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------------|--------------|--|---|------------------------------------|------------------------|
| 23023 | 23 | 023 | dwarf mistletoe | <i>Arceuthobium</i> spp. | Hawksworth rating of ≥3. | PNWRS; RMRS |
| 23024 | 23 | 024 | Weins dwarf mistletoe | <i>Arceuthobium abietinum f. sp magnifica</i> | - | - |
| 24000 | 24 | 000 | Decline Complexes/Dieback/Wilts | - | Damage ≥20% dieback of crown area. | All |
| 24001 | 24 | 001 | Alaska-yellow cedar decline | Alaska-yellow cedar decline | - | - |
| 24002 | 24 | 002 | Norfolk Island pine decline | Norfolk Island pine decline | - | - |
| 24003 | 24 | 003 | Stillwell's syndrome | Stillwell's syndrome | - | - |
| 24004 | 24 | 004 | ash decline/yellows | ash decline/yellows | Damage ≥20% dieback of crown area. | NRS |
| 24005 | 24 | 005 | birch dieback | birch dieback | - | - |
| 24006 | 24 | 006 | coconut cadang-cadang viroid | <i>Cocadviroid coconut cadang-cadang viroid</i> | Damage ≥20% dieback of crown area. | PNWRS |
| 24007 | 24 | 007 | complex | complex | - | - |
| 24008 | 24 | 008 | decline | decline | - | - |
| 24009 | 24 | 009 | fall hardwood defoliator complex | fall hardwood defoliator complex | - | - |
| 24010 | 24 | 010 | joga decline | joga decline | Damage ≥20% dieback of crown area. | PNWRS |
| 24011 | 24 | 011 | larch decline | larch decline | - | - |
| 24012 | 24 | 012 | looper abiotic complex | looper abiotic complex | - | - |
| 24013 | 24 | 013 | maple decline | maple decline | - | - |
| 24014 | 24 | 014 | oak decline | <i>Hypoxylon</i> spp. | - | - |
| 24015 | 24 | 015 | pingelap disease | pingelap disease | - | - |
| 24016 | 24 | 016 | sprout dieback | sprout dieback | - | - |
| 24017 | 24 | 017 | true fir pest complex | true fir pest complex | - | - |
| 24018 | 24 | 018 | western X disease | western X disease | - | - |
| 24019 | 24 | 019 | pinewood nematode | <i>Bursaphelenchus xylophilus</i> | - | - |
| 24020 | 24 | 020 | sapstreak disease of sugar maple | <i>Ceratocystis coerulescens</i> | - | - |
| 24021 | 24 | 021 | oak wilt | <i>Ceratocystis fagacearum</i> | Damage ≥20% dieback of crown area. | NRS |
| 24022 | 24 | 022 | Dutch elm disease | <i>Ceratocystis ulmi</i> | Damage ≥20% dieback of crown area. | NRS |
| 24023 | 24 | 023 | bacterial wetwood | <i>Erwinia nimipressuralis</i> | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------------|--------------|--|--|--|-----------------|
| 24024 | 24 | 024 | mimosa wilt | <i>Fusarium oxysporum f. sp. perniciosum</i> | - | - |
| 24025 | 24 | 025 | Verticillium wilt | <i>Verticilium albo-atrum</i> | - | - |
| 24026 | 24 | 026 | bacterial leaf scorch | <i>Xylella fastidiosa</i> | - | - |
| 24027 | 24 | 027 | wetwood | wetwood | - | - |
| 24028 | 24 | 028 | hemlock decline | hemlock decline | - | - |
| 24029 | 24 | 029 | Pacific madrone decline | Pacific madrone decline | - | - |
| 24030 | 24 | 030 | elm phloem necrosis | <i>Mycoplasma</i> spp. | - | - |
| 24031 | 24 | 031 | laurel wilt | <i>Raffaelea</i> spp. | - | - |
| 24032 | 24 | 032 | sudden aspen decline | sudden aspen decline | - | - |
| 24800 | 24 | 800 | other decline/complex/wilt (known) | other decline/complex/ wilt (known) | - | - |
| 24900 | 24 | 900 | unknown decline/complex/ wilt | unknown decline/complex/ wilt | - | - |
| 25000 | 25 | 000 | Foliage Diseases | - | Damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | All |
| 25001 | 25 | 001 | blight | blight | - | - |
| 25003 | 25 | 003 | juniper blights | juniper blights | - | - |
| 25004 | 25 | 004 | leaf spots | leaf spots | - | - |
| 25005 | 25 | 005 | needlecast | needlecast | - | - |
| 25006 | 25 | 006 | powdery mildew | powdery mildew | - | - |
| 25007 | 25 | 007 | tobacco mosaic virus | tobacco mosaic virus | - | - |
| 25008 | 25 | 008 | tobacco ringspot virus of ash | <i>Nepovirus TRSV</i> | - | - |
| 25009 | 25 | 009 | true fir needlecast | true fir needlecast | - | - |
| 25010 | 25 | 010 | sycamore anthracnose | <i>Apiognomonia veneta</i> | - | - |
| 25011 | 25 | 011 | Cercospora blight of juniper | <i>Cercospora sequoiae</i> | - | - |
| 25013 | 25 | 013 | large-spored spruce-laborador tea rust | <i>Chrysomyxa ledicola</i> | Damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | PNWRS-AK |
| 25014 | 25 | 014 | ink spot of aspen | <i>Ciborinia whetzelii</i> | - | - |
| 25015 | 25 | 015 | pine needle rust | <i>Coleosporium</i> spp. | - | - |
| 25016 | 25 | 016 | anthracnose on Russian olive | <i>Colletotrichum</i> spp. | - | - |
| 25017 | 25 | 017 | Coronado limb rust | <i>Cronartium arizonicum</i> | - | - |
| 25018 | 25 | 018 | leaf shothole | <i>Cylindrosporium</i> spp. | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------------|-----------------|--------------|------------------------------|---------------------------------|--|---------------|
| 25019 | 25 | 019 | cedar leaf blight | <i>Didymascella thujina</i> | - | - |
| 25020 | 25 | 020 | dogwood anthracnose | <i>Discula</i> spp. | - | - |
| 25021 | 25 | 021 | mango scab | <i>Elsinoe magiferae</i> | - | - |
| 25022 | 25 | 022 | Elytroderma needle blight | <i>Elytroderma deformans</i> | Damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | PNWRS |
| 25023 | 25 | 023 | fire blight | <i>Erwinia amylovora</i> | - | - |
| 25024 | 25 | 024 | walnut anthracnose | <i>Gnomonia leptostyla</i> | - | - |
| 25025 | 25 | 025 | anthracnose | <i>Gnomonia</i> spp. | - | - |
| 25027 | 25 | 027 | brown felt blight | <i>Herpotrichia juniperi</i> | - | - |
| 25028 | 25 | 028 | larch needle blight | <i>Hypodermella laricis</i> | - | - |
| 25029 | 25 | 029 | hardwood anthracnose | <i>Kabatiella apocrypta</i> | - | - |
| 25030 | 25 | 030 | Lasiodiplodia cone damage | <i>Lasiodiplodia</i> spp. | - | - |
| 25031 | 25 | 031 | spruce needle cast | <i>Lirula macrospora</i> | - | - |
| 25032 | 25 | 032 | fir needle cast | <i>Lirula</i> spp. | - | - |
| 25033 | 25 | 033 | white pine needle cast | <i>Lophodermella arcuata</i> | - | - |
| 25034 | 25 | 034 | Lophodermella needle cast | <i>Lophodermella</i> spp. | - | - |
| 25036 | 25 | 036 | Marssonina blight | <i>Marssonina populi</i> | - | - |
| 25037 | 25 | 037 | Douglas-fir rust | <i>Melampsora medusae</i> | - | - |
| 25039 | 25 | 039 | larch needle cast | <i>Meria laricis</i> | - | - |
| 25040 | 25 | 040 | Dothistroma needle blight | <i>Mycosphaerella pini</i> | - | - |
| 25041 | 25 | 041 | brown felt blight of pines | <i>Neopeckia coulteri</i> | - | - |
| 25042 | 25 | 042 | snow blight | <i>Phacidium abietis</i> | - | - |
| 25043 | 25 | 043 | Swiss needle cast | <i>Phaeocryptopus gaumannii</i> | - | - |
| 25044 | 25 | 044 | Phoma blight | <i>Phoma</i> spp. | - | - |
| 25045 | 25 | 045 | Phyllosticta leaf spot | <i>Phyllosticta</i> spp. | - | - |
| 25046 | 25 | 046 | bud rot | <i>Phytophthora palmivora</i> | - | - |
| 25047 | 25 | 047 | Ploioderma needle cast | <i>Ploioderma</i> spp. | - | - |
| 25048 | 25 | 048 | ash rust | <i>Puccinia sparganioides</i> | - | - |
| 25049 | 25 | 049 | fir and hemlock needle rusts | <i>Pucciniastrum</i> spp. | - | - |
| 25050 | 25 | 050 | Rhabdocline needle cast | <i>Rhabdocline</i> spp. | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------------|-----------------|--------------|-------------------------------|------------------------------------|--|-----------------|
| 25051 | 25 | 051 | Rhizoctonia needle blight | <i>Rhizoctonia</i> spp. | - | - |
| 25052 | 25 | 052 | Rhizophaeria needle cast | <i>Rhizophaeria</i> spp. | - | - |
| 25053 | 25 | 053 | Rhizopus rot | <i>Rhizopus artocarpi</i> | - | - |
| 25054 | 25 | 054 | brown spot needle blight | <i>Scirrhia acicola</i> | - | - |
| 25055 | 25 | 055 | Septoria leaf spot | <i>Septoria alnifolia</i> | - | - |
| 25056 | 25 | 056 | Septoria leaf spot and canker | <i>Septoria musiva</i> | - | - |
| 25057 | 25 | 057 | Sirococcus tip blight | <i>Sirococcus conigenus</i> | Damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | NRS |
| 25058 | 25 | 058 | Diplodia canker | <i>Sphaeropsis sapinea</i> | - | - |
| 25059 | 25 | 059 | leaf blister of oak | <i>Taphrina caerulescens</i> | - | - |
| 25060 | 25 | 060 | Venturia leaf blight of maple | <i>Venturia acerina</i> | - | - |
| 25061 | 25 | 061 | shepherd's crook | <i>Venturia tremulae</i> | - | - |
| 25062 | 25 | 062 | Dothistroma needle blight | <i>Dothistroma septospora</i> | - | - |
| 25063 | 25 | 063 | yellow-cedar shoot blight | <i>Apostrasseria</i> spp. | - | - |
| 25065 | 25 | 065 | spruce needle rust | <i>Chrysomyxa weiri</i> | - | - |
| 25066 | 25 | 066 | cedar leaf blight | <i>Gymnosporangium nootkatense</i> | - | - |
| 25067 | 25 | 067 | spruce needle cast | <i>Lophodermium picea</i> | - | - |
| 25068 | 25 | 068 | hardwood leaf rusts | <i>Melampsora</i> spp. | - | - |
| 25070 | 25 | 070 | hemlock needle rust | <i>Pucciniastrum vaccinii</i> | Damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | PNWRS-AK |
| 25071 | 25 | 071 | spruce needle cast | <i>Rhizosphaera pini</i> | - | - |
| 25072 | 25 | 072 | sirococcus shoot blight | <i>Sirococcus strobilinus</i> | Damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | NRS |
| 25073 | 25 | 073 | shepherds crook | <i>Venturia populina</i> | - | - |
| 25074 | 25 | 074 | Delphinella shoot blight | <i>Delphinella abietis</i> | - | - |
| 25075 | 25 | 075 | tar spot | <i>Rhytisma acerinum</i> | - | - |
| 25076 | 25 | 076 | birch leaf fungus | <i>Septoria betulae</i> | - | - |
| 25077 | 25 | 077 | Septoria leaf spot of maple | <i>Septoria aceris</i> | - | - |
| 25800 | 25 | 800 | other / shoot disease (known) | other /shoot disease (known) | - | - |
| 25900 | 25 | 900 | unknown foliage/shoot disease | Unknown foliage /shoot disease | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------|----------|-------|-----------------------------|---|---|---------------|
| 26000 | 26 | 000 | Stem Rusts | - | Any occurrence on the bole or stems (on multi-stemmed woodland species), or on branches ≤1 foot from boles or stems; damage to ≥20% of branches. | All |
| 26001 | 26 | 001 | white pine blister rust | <i>Cronartium ribicola</i> | Any occurrence on the bole or stems (on multi-stemmed woodland species), or on branches ≤1 foot from boles or stems; damage to ≥ 20% of branches. | PNWRS; SRS |
| 26002 | 26 | 002 | western gall rust | <i>Peridermium harknessii</i> | Any occurrence on the bole or stems (on multi-stemmed woodland species), or on branches ≤1 foot from boles or stems; damage to ≥ 20% of branches. | PNWRS |
| 26003 | 26 | 003 | stalactiform blister rust | <i>Cronartium coleosporioides</i> | - | - |
| 26004 | 26 | 004 | comandra blister rust | <i>Cronartium comandrae</i> | Any occurrence on the bole or stems (on multi-stemmed woodland species), or on branches ≤1 foot from boles or stems; damage to ≥20% of branches. | SRS |
| 26005 | 26 | 005 | pinyon rust | <i>Cronartium occidentale</i> | - | - |
| 26006 | 26 | 006 | eastern gall rust | <i>Cronartium quercuum</i> | Any occurrence on the bole or stems (on multi-stemmed woodland species), or on branches ≤1 foot from boles or stems; damage to ≥20% of branches. | SRS |
| 26007 | 26 | 007 | gall rust of jack pine | <i>Cronartium quercuum f. sp. banksignae</i> | - | - |
| 26008 | 26 | 008 | gall rust of shortleaf pine | <i>Cronartium quercuum f. sp. echinatae</i> | - | - |
| 26009 | 26 | 009 | fusiform rust | <i>Cronartium quercuum f. sp. fusiforme</i> | Any occurrence on the bole or stems (on multi-stemmed woodland species), or on branches ≤1 foot from boles or stems; damage to ≥20% of branches. | SRS |
| 26010 | 26 | 010 | gall rust of virginia pine | <i>Cronartium quercuum f. sp. virginianae</i> | - | - |
| 26011 | 26 | 011 | Bethuli rust | <i>Peridermium bethuli</i> | - | - |
| 26012 | 26 | 012 | limb rust | <i>Peridermium filamentosum</i> | - | - |
| 26013 | 26 | 013 | southern cone rust | <i>Cronartium strobilinum</i> | - | - |
| 26800 | 26 | 800 | other stem rust (known) | other stem rust (known) | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------|------------|--------------------------|--|---|----------|
| 26900 | 26 | 900 | unknown stem rust | unknown stem rust | - | - |
| 27000 | 27 | 000 | Broom Rusts | - | ≥50% of crown area affected. | All |
| 27001 | 27 | 001 | spruce broom rust | <i>Chrysomyxa arctostaphyli</i> | ≥50% of crown area affected. | PNWRS-AK |
| 27002 | 27 | 002 | Incense cedar broom rust | <i>Gymnosporangium libocedri</i> | - | - |
| 27003 | 27 | 003 | juniper broom rust | <i>Gymnosporangium nidus-avis</i> | - | - |
| 27004 | 27 | 004 | fir broom rust | <i>Melampsorella caryophyllacearum</i> | - | - |
| 27800 | 27 | 800 | other broom rust (known) | other broom rust (known) | - | - |
| 27900 | 27 | 900 | unknown broom rust | unknown broom rust | - | - |
| 30000 | 30 | 000 | Fire | - | Damage ≥20% of bole circumference; >20% of stems on multi-stemmed woodland species affected; ≥20% of crown affected. | All |
| 30001 | 30 | 001 | wild fire | - | - | - |
| 30002 | 30 | 002 | human caused fire | - | - | - |
| 30003 | 30 | 003 | crown fire damage | - | - | - |
| 30004 | 30 | 004 | ground fire damage | - | - | - |
| 41000 | 41 | 000 | Wild Animals | - | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | All |
| 41001 | 41 | 001 | bears | <i>Ursus</i> spp. | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | PNWRS |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------------|-----------------|--------------|--------------------|--------------------------|--|------------------------|
| 41002 | 41 | 002 | beavers | <i>Castor canadensis</i> | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | PNWRS; SRS |
| 41003 | 41 | 003 | big game | big game | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | PNWRS; RMRS |
| 41004 | 41 | 004 | mice or voles | mice or voles | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | PNWRS |
| 41005 | 41 | 005 | pocket gophers | <i>Geomysidae</i> spp. | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | PNWRS; RMRS |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------|----------|-------|------------------|---------------------------|---|--------------------------------|
| 41006 | 41 | 006 | porcupines | <i>Erethizon dorsatum</i> | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | PNWRS; RMRS |
| 41007 | 41 | 007 | rabbits or hares | <i>Sylvilagus</i> spp. | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | PNWRS |
| 41008 | 41 | 008 | sapsuckers | <i>Sphyrapicus</i> spp. | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | PNWRS-AK; RMRS; SRS |
| 41009 | 41 | 009 | squirrels | <i>Sciuridae</i> spp. | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | PNWRS |
| 41010 | 41 | 010 | woodpeckers | <i>Piciformes</i> spp. | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------|----------|-------|-----------------|------------------------|---|----------|
| 41011 | 41 | 011 | moose | <i>Alces alces</i> | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | PNWRS-AK |
| 41012 | 41 | 012 | elk | <i>Cervus elaphus</i> | - | - |
| 41013 | 41 | 013 | deer | <i>Odocoileus spp.</i> | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | PNWRS |
| 41014 | 41 | 014 | feral pigs | <i>Sus scrofa</i> | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | PNWRS |
| 41015 | 41 | 015 | mountain beaver | <i>Aplodontia rufa</i> | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | PNWRS |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------------|--------------|---------------------------------|---------------------------------|--|---------------|
| 41017 | 41 | 017 | earthworms | <i>Lumbricidae</i> | - | - |
| 41800 | 41 | 800 | other wild animals (known) | other wild animals (known) | - | - |
| 41900 | 41 | 900 | unknown wild animals | unknown wild animals | - | - |
| 42000 | 42 | 000 | Domestic Animals | - | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | All |
| 42001 | 42 | 001 | cattle | <i>Bos taurus</i> | - | - |
| 42002 | 42 | 002 | goats | <i>Capra hircus</i> | - | - |
| 42003 | 42 | 003 | horses | <i>Equus caballus</i> | - | - |
| 42004 | 42 | 004 | sheep | <i>Ovis aries</i> | - | - |
| 42800 | 42 | 800 | other domestic animal (unknown) | other domestic animal (unknown) | - | - |
| 42900 | 42 | 900 | unknown domestic animals | unknown domestic animals | - | - |
| 50000 | 50 | 000 | Abiotic Damage | - | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | All |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------------|-----------------|--------------|-----------------------|------------------------|---|---------------------------------|
| 50001 | 50 | 001 | air pollutants | - | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | RMRS |
| 50002 | 50 | 002 | chemical | - | Any damage to the terminal leader; damage ≥20% of the roots, stems, or branches; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | NRS |
| 50003 | 50 | 003 | drought | - | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | NRS; RMRS |
| 50004 | 50 | 004 | flooding / high water | - | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | NRS; PNWRS-AK; RMRS; SRS |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------------|-----------------|--------------|---------------------|------------------------|--|---------------|
| 50005 | 50 | 005 | frost | - | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | RMRS |
| 50006 | 50 | 006 | hail | - | - | - |
| 50007 | 50 | 007 | heat | - | - | - |
| 50008 | 50 | 008 | lightning | - | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | All |
| 50009 | 50 | 009 | nutrient imbalances | - | - | - |
| 50010 | 50 | 010 | radiation | - | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | RMRS |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------------|-----------------|--------------|--------------------|------------------------|---|-------------------|
| 50011 | 50 | 011 | snow/ice | - | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | All |
| 50013 | 50 | 013 | wind | - | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | All |
| 50014 | 50 | 014 | winter injury | - | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | RMRS |
| 50015 | 50 | 015 | avalanche | - | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | PNWRS-AK; RMRS |
| 50016 | 50 | 016 | mud-land slide | - | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------------|--------------|---------------------------------------|------------------------------|--|---------------|
| 50017 | 50 | 017 | volcano | - | - | - |
| 50018 | 50 | 018 | other geologic event | - | - | - |
| 50019 | 50 | 019 | mechanical (non-human caused) | - | - | - |
| 50020 | 50 | 020 | saltwater injury - flooding/hurricane | - | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | PNWRS |
| 50800 | 50 | 800 | other abiotic damage (known) | other abiotic damage (known) | - | - |
| 50900 | 50 | 900 | unknown abiotic damage | unknown abiotic damage | - | - |
| 60000 | 60 | 000 | Competition | - | Overtopped shade-intolerant trees that are not expected to survive for 5 years or saplings not expected to reach tree size (5.0 inches d.b.h./d.r.c.). | All |
| 60001 | 60 | 001 | Suppression | - | Overtopped shade-intolerant trees that are not expected to survive for 5 years or saplings not expected to reach tree size (5.0 inches d.b.h./d.r.c.). | RMRS |
| 70000 | 70 | 000 | Human Activities | - | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | All |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|-------------|-----------------|--------------|-----------------------------|------------------------|---|-----------------|
| 70001 | 70 | 001 | herbicides | - | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | SRS |
| 70003 | 70 | 003 | imbedded objects | - | Any occurrence on the bole. | NRS; SRS |
| 70004 | 70 | 004 | improper planting technique | - | - | - |
| 70005 | 70 | 005 | land clearing | - | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | SRS |
| 70006 | 70 | 006 | land use conversion | - | - | - |
| 70007 | 70 | 007 | logging damage | - | Any damage to the terminal leader; damage ≥20% of the roots or boles with >20% of the circumference affected; damage >20% of the multiple-stems (on multi-stemmed woodland species) with >20% of the circumference affected; >20% of the branches affected; damage ≥20% of the foliage with ≥50% of the leaf/needle affected. | All |
| 70008 | 70 | 008 | mechanical | - | - | - |
| 70009 | 70 | 009 | pesticides | - | - | - |
| 70010 | 70 | 010 | roads | - | - | - |
| 70011 | 70 | 011 | soil compaction | - | - | - |
| 70013 | 70 | 013 | vehicle damage | - | - | - |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------------|--------------|--|--------------------------------------|--|------------------------|
| 70014 | 70 | 014 | road salt | - | - | - |
| 71000 | 71 | 000 | Harvest | - | Removal of $\geq 10\%$ cubic volume. | All |
| 71001 | 71 | 001 | Woodland cutting | - | Removal of $\geq 10\%$ cubic volume. | RMRS |
| 80000 | 80 | 000 | Multi-Damage (Insect/Disease) | - | - | - |
| 80001 | 80 | 001 | aspen defoliation (caused by 12037, 12096, 25036, and 25037) | - | - | - |
| 80002 | 80 | 002 | subalpine fir mortality | - | - | - |
| 80003 | 80 | 003 | five-needle pine decline | - | - | - |
| 80004 | 80 | 004 | pinyon pine mortality | - | - | - |
| 85000 | 85 | 000 | Invasive Plants | - | - | - |
| 90000 | 90 | 000 | Other Damages and Symptoms | - | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | All |
| 90001 | 90 | 001 | broken top | Not recorded for multi-stemmed trees | When actual length is less than total length. | NRS; PNWRS; RMRS |
| 90002 | 90 | 002 | dead top | | Any occurrence. | NRS; PNWRS; RMRS |
| 90003 | 90 | 003 | limby-wolf tree | Not recorded for non-sawlog trees | Damage when board-foot defect is $\geq 10\%$. | RMRS |
| 90004 | 90 | 004 | forked top | Not recorded for non-sawlog trees | Any occurrence. | PNWRS |
| 90005 | 90 | 005 | forked below merch top | Not recorded for non-sawlog trees | Damage when board-foot defect is $\geq 10\%$. | PNWRS; RMRS |
| 90006 | 90 | 006 | crook or sweep | Not recorded for non-sawlog trees | Damage when board-foot defect is $\geq 10\%$. | PNWRS; RMRS |

| Code | Category | Agent | Common Name | Scientific Name | Threshold | Region |
|--------------|-----------------|--------------|-----------------------|-----------------------------------|--|-------------------------|
| 90007 | 90 | 007 | checks, bole cracks | Not recorded for non-sawlog trees | Damage when board-foot defect is $\geq 10\%$. | PNWRS |
| 90008 | 90 | 008 | foliage discoloration | - | Damage $\geq 20\%$ of crown affected. | NRS; PNWRS; RMRS |
| 90010 | 90 | 010 | dieback | - | Damage $\geq 20\%$ of crown affected. | NRS; PNWRS; RMRS |
| 90011 | 90 | 011 | open wound | - | Damage $\geq 20\%$ of bole circumference (in a running 3-foot section) at point of occurrence. | PNWRS; RMRS |
| 90012 | 90 | 012 | resinosis | - | Damage $\geq 20\%$ of bole circumference (in a running 3-foot section) at point of origin; $\geq 20\%$ of branches affected. | PNWRS |
| 90013 | 90 | 013 | broken branches | - | Damage $\geq 20\%$ of branches affected. | PNWRS |
| 99000 | 99 | 000 | Unknown | - | Any damage to the terminal leader; damage $\geq 20\%$ of the roots or boles with $>20\%$ of the circumference affected; damage $>20\%$ of the multiple-stems (on multi-stemmed woodland species) with $>20\%$ of the circumference affected; $>20\%$ of the branches affected; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected. | All |

Section revision: 05.2015

Appendix I: Damage Agent Codes for PNWRS

Damage Agent is a 2-digit code with values 01 to 91. For Agent and Severity 1, 2 and 3: the agent and severity codes indicate the type of agents that were present on a tree and describe their severity. Several damaging agents are automatically of highest importance and should be coded before any other agents; these agents are grouped as Class I Agents. Class I insects, diseases, or physical injuries can seriously affect vegetation. Failure to account for these agents can result in large differences in predicted outcomes for tree growth, survival, vegetative composition and structure. Class II agents can be important in local situations; recording their incidence and severity provides valuable information for those situations. Class II agents are recorded when present but only after all Class I agents.

Agents and their severity ratings are grouped by broad category. Each category has a general agent and specific agents listed. The general codes should be used if there is any question as to the identity of the specific damaging agent.

Appendix Contents (Class I Damage Agents):

| Agent |
|--|
| Bark beetles |
| Defoliators |
| Root diseases |
| White pine blister rust |
| Sudden oak death (tanoak, coast live oak, black oak) |

Appendix Contents (Class II Damage Agents):

| Agent |
|---------------------|
| Other insects |
| Stem-branch cankers |
| Pitch canker |
| Stem decays |
| Special agents |
| Foliar pathogens |
| Animal agents |
| Weather agents |
| Physical injury |
| Physical defect |

Class I Damage Agents and Severity Codes for PNWRS:

Agent: Bark beetles

| Code | Agent |
|-------------|-----------------------------|
| 01 | General /other bark beetle. |
| 02 | Mountain pine beetle. |
| 03 | Douglas-fir beetle. |
| 04 | Spruce beetle. |
| 05 | Western pine beetle. |
| 06 | Pine engraver beetle. |
| 07 | Fir engraver beetle. |
| 08 | Silver fir beetle. |
| 09 | Red turpentine beetle. |
| 26 | Jeffrey pine beetle. |

Severity: Bark beetles

| Code | Severity |
|-------------|--------------------------------|
| 1 | Unsuccessful current attack. |
| 2 | Successful current attack. |
| 3 | Last year's successful attack. |
| 4 | Older dead. |
| 5 | Top kill. |

Agent: Defoliators

| Code | Agent |
|-------------|----------------------------------|
| 10 | General/other. |
| 11 | Western blackheaded budworm. |
| 12 | Pine butterfly. |
| 13 | Douglas-fir tussock moth. |
| 14 | Larch casebearer. |
| 15 | Western spruce or Modoc budworm. |
| 16 | Western hemlock looper. |
| 17 | Sawflies. |
| 18 | Needles and sheath miners. |
| 19 | Gypsy moth. |

Severity: Defoliators

| Code | Severity |
|-------------|--|
| 0 | No detectable defoliation. |
| 1 | Up to 33% of foliage (old and new missing/affected). |
| 2 | 34 to 66% of foliage missing/affected. |
| 3 | 67 to 100% of foliage missing/affected. |

Agent: Root diseases

| Code | Agent |
|-------------|---------------------------------|
| 60 | General/other. |
| 61 | Annous root disease. |
| 62 | Armillaria root disease. |
| 63 | Black stain root disease. |
| 65 | Laminated root rot. |
| 66 | Port-Orford-cedar root disease. |

Severity: Root diseases

| Code | Severity |
|-------------|--|
| 1 | Tree is a live tally tree within 30 feet of a tree or stump that has a root disease to which the tally tree is susceptible. |
| 2 | Live tally tree with signs or symptoms diagnostic for root disease such as characteristic decay, stain, ectotrophic mycelia, mycelial fans, conks or excessive resin flow at the root collar. No visible crown deterioration. |
| 3 | Live tally tree with signs or symptoms diagnostic for root disease such as characteristic decay, stain, ectotrophic mycelia, mycelial fans, conks, or excessive resin flow at the root collar. Visible crown deterioration such as thinning chlorotic foliage, reduced terminal growth, and/or stress cones. |

Agent: White pine blister rust

| Code | Agent |
|-------------|--------------------------|
| 36 | White pine blister rust. |

Severity: White pine blister rust

| Code | Severity |
|-------------|--|
| 1 | Branch infections located more than 2.0 feet from tree bole. |
| 2 | Branch infections located 0.5 to 2.0 feet from bole. |
| 3 | Bole infections present, or branch infections within 0.5 feet of bole. |

Agent: Sudden oak death (tanoak, coast live oak, black oak)

| Code | Agent |
|-------------|----------------------------|
| 31 | Sudden oak death symptoms. |

Severity: Sudden oak death (tanoak, coast live oak, black oak)

| Code | Severity |
|-------------|--|
| 1 | Bleeding present on bole. |
| 2 | Bleeding present on bole and adjacent mortality present. |
| 3 | Laboratory confirmed sudden oak death. |

Class II Damage Agents and Severity Codes for PNWRS:

Agent: Other insects

| Code | Agent |
|------|-------------------------------|
| 20 | General. |
| 21 | Shoot moths. |
| 22 | Weevils. |
| 23 | Wood borers. |
| 24 | Balsam wooly adelgid (aphid). |
| 25 | Sitka spruce terminal weevil. |

Severity: Other insects

| Code | Severity |
|------|---|
| 1 | Bottlebrush or shortened leaders, 0-2 forks on the tree's stem, Or: <20% of the branches affected, Or: <50% of the bole has visible larval galleries. |
| 2 | 3 or more forks on the tree's bole, Or: 20% or more of the branches are affected, Or: the terminal leader is dead, Or: ≥50% of the bole has visible larval galleries. |

Agent: Stem-branch cankers

| Code | Agent |
|------|--|
| 33 | Diplodia blight. |
| 40 | General/other. |
| 41 | Western gall rust (<i>Pinus ponderosa</i> , <i>Pinus contorta</i>). |
| 42 | Comandra blister rust (<i>Pinus ponderosa</i>). |
| 43 | Stalactiform rust (<i>Pinus contorta</i>). |
| 44 | Atropellis canker (<i>Pinus</i> spp.). |
| 45 | Cytospoa or Phomopsis (<i>Pseudotsuga menziesii</i> , <i>Abies</i> spp.). |

Severity: Stem-branch cankers

| Code | Severity |
|------|---|
| 1 | Branch infections present. <50% of the crown affected. |
| 2 | Branch infections present. ≥50% of the crown affected, Or: any infection on the bole. |

Agent: Pitch canker

| Code | Agent |
|-------------|--------------------------------------|
| 32 | Pitch canker (CA <i>Pinus</i> spp.). |

Severity: Pitch canker

| Code | Severity |
|-------------|--|
| 1 | No bole canker + <10 infected branch tips. |
| 2 | No bole canker + ≥10 infected branch tips. |
| 3 | 1 or more bole cankers + <10 infected branch tips. |
| 4 | 1 or more bole cankers + ≥10 infected branch tips. |

Agent: Stem decays

| Code | Agent |
|-------------|---|
| 46 | General/other. |
| 47 | Red ring rot (<i>Phellinus pini</i>). |
| 48 | Indian paint rot (<i>Echinodontium tinctorium</i>). |
| 49 | Brown cubical rot (<i>Phaeolus schweinitzii</i>). |

Severity: Stem decays

| Code | Severity |
|-------------|--|
| 1 | 1 conk on the stem or present at ground level. |
| 2 | 2 or more conks separated by <16 feet on bole. |
| 3 | 2 or more conks separated by ≥16 feet on bole. |
| 4 | No conks. Visible decay in the interior of the bole. |

Agent: Special agents

| Code | Agent |
|-------------|-------------------------------|
| 50 | Suppression. |
| 51 | Excessively deformed sapling. |

Severity: Special agents

| Code | Severity |
|-------------|------------------------|
| 0 | Severity is not rated. |

Agent: Foliar pathogens

| Code | Agent |
|-------------|---|
| 55 | General/other. |
| 56 | Rhabdocline (only on <i>Pseudotsuga menziesii</i>). |
| 57 | Elytroderma (only on <i>Pinus ponderosa</i>). |
| 58 | Broom rusts (only on <i>Abies</i> , <i>Picea</i> , and <i>Juniperus occidentalis</i>). |
| 59 | Swiss needle cast (only on <i>Pseudotsuga menziesii</i>). |

Severity: Foliar pathogens

| Code | Severity |
|-------------|---|
| 1 | <20% of foliage affected, or <20% of the crown contains brooms. |
| 2 | ≥20% of foliage affected, or ≥20% of the crown contains brooms. |

Agent: Animal agents

| Code | Agent |
|-------------|---|
| 70 | Animal; general/unknown. |
| 71 | Mountain beaver. |
| 72 | Livestock. |
| 73 | Deer or elk. |
| 74 | Porcupines. |
| 75 | Pocket gophers, squirrels, mice, voles, rabbits, hares. |
| 76 | Beaver. |
| 77 | Bear. |
| 78 | Human (not logging). |

Severity: Animal agents

| Code | Severity |
|-------------|--|
| 1 | <20% of the crown is affected. Bole damage is restricted to less than half of circumference. |
| 2 | ≥20% of the crown is affected. Bole damage to half or more of circumference. |

Agent: Weather agents

| Code | Agent |
|-------------|-------------------------------|
| 80 | Weather; general/unknown. |
| 81 | Windthrow or wind breakage. |
| 82 | Snow/ice bending or breakage. |
| 83 | Frost damage on shoots. |
| 84 | Winter desiccation. |
| 85 | Drought/moisture deficiency. |
| 86 | Sun scald. |
| 87 | Lightning. |

Severity: Weather agents

| Code | Severity |
|-------------|--|
| 1 | <20% of the crown is affected. |
| 2 | ≥20% of the crown is affected or any damage to the bole. |

Agent: Physical injury

| Code | Agent |
|-------------|---|
| 90 | Other; general/unknown. |
| 91 | Logging damage. |
| 92 | Fire; basal scars or scorch. |
| 93 | Improper planting. |
| 94 | Air pollution or other chemical damage. |

Severity: Physical injury

| Code | Severity |
|-------------|--|
| 1 | <20% of the crown is affected. |
| 2 | ≥20% of the crown is affected or any damage to the bole. |

Agent: Physical defect

| Code | Agent |
|------|---|
| 95 | Unspecified physical defect. |
| 96 | Broken/missing top. |
| 97 | Dead top. |
| 98 | Forks and crooks (only if caused by old top out or dead top). |
| 99 | Checks/bole cracks. |

Severity: Physical defect

| Code | Severity |
|------|------------------------|
| 0 | Severity is not rated. |

Section revision: 06.2021

Appendix J: FIA Inventories by State, Year, and Type

FIA Inventories:

| State code | State name | Date(s) of available periodic inventory data | Initiation of annual inventory |
|------------|---------------|--|--------------------------------|
| 1 | Alabama | 1972, 1982, 1990 | 2000 |
| 2 | Alaska | 1998, 2003 | 2004 |
| 4 | Arizona | 1985, 1999 | 2001 |
| 5 | Arkansas | 1978, 1988, 1995 | 2000 |
| 6 | California | 1994 | 2001 |
| 8 | Colorado | 1984 | 2002 |
| 9 | Connecticut | 1985, 1998 | 2003 |
| 10 | Delaware | 1986, 1999 | 2004 |
| 12 | Florida | 1970, 1980, 1987, 1995 | 2002 |
| 13 | Georgia | 1972, 1982, 1989 | 1997 |
| 15 | Hawaii | -1 | 2010 |
| 16 | Idaho | 1991 | 2004 |
| 17 | Illinois | 1985, 1998 | 2001 |
| 18 | Indiana | 1986, 1998 | 1999 |
| 19 | Iowa | 1990 | 1999 |
| 20 | Kansas | 1981, 1994 | 2001 |
| 21 | Kentucky | 1988 | 2000 |
| 22 | Louisiana | 1974, 1984, 1991 | 2001 |
| 23 | Maine | 1995 | 1999 |
| 24 | Maryland | 1986, 1999 | 2004 |
| 25 | Massachusetts | 1985, 1998 | 2003 |
| 26 | Michigan | 1980, 1993 | 2000 |
| 27 | Minnesota | 1977, 1990 | 1999 |
| 28 | Mississippi | 1977, 1987, 1994 | 2006 |
| 29 | Missouri | 1989 | 1999 |
| 30 | Montana | 1989 | 2003 |
| 31 | Nebraska | 1983, 1994 | 2001 |
| 32 | Nevada | 1989 | 2004 ² |
| 33 | New Hampshire | 1983, 1997 | 2002 |
| 34 | New Jersey | 1987, 1999 | 2004 |
| 35 | New Mexico | 1987, 1999 | 2005 ³ |

| State code | State name | Date(s) of available periodic inventory data | Initiation of annual inventory |
|-------------------|-------------------|---|---------------------------------------|
| 36 | New York | 1993 | 2002 |
| 37 | North Carolina | 1984, 1990 | 2002 |
| 38 | North Dakota | 1980, 1995 | 2001 |
| 39 | Ohio | 1991 | 2001 |
| 40 | Oklahoma | 1989 (central/west), 1976, 1986, 1993 (east) | 2008 (east) 2009 (west) |
| 41 | Oregon | 1999 | 2001 |
| 42 | Pennsylvania | 1989 | 2000 |
| 44 | Rhode Island | 1985, 1998 | 2003 |
| 45 | South Carolina | 1968, 1978, 1986, 1993 | 1999 |
| 46 | South Dakota | 1980, 1995 | 2001 |
| 47 | Tennessee | 1980, 1989 | 1999 |
| 48 | Texas | 1975, 1986, 1992 | 2001 (east) 2004 (west) |
| 49 | Utah | 1993 | 2000 |
| 50 | Vermont | 1983, 1997 | 2003 |
| 51 | Virginia | 1977, 1985, 1992 | 1998 |
| 53 | Washington | 1991, 2001 | 2002 |
| 54 | West Virginia | 1989, 2000 | 2004 |
| 55 | Wisconsin | 1983, 1996 | 2000 |
| 56 | Wyoming | 1984, 2000 | 2011 |
| 60 | American Samoa | -1 | 2001 |
| 66 | Guam | -1 | 2002 |
| 70 | Palau | -1 | 2003 |
| 72 | Puerto Rico | -1 | 2001 |
| 78 | US Virgin Islands | -1 | 2004 |

¹Periodic inventories were not conducted.

²Due to insufficient funding, annual inventory ceased after 2005. Sampling resumed in 2010 including plots that would have been measured in inventory years (INVYR) 2006-2009. Therefore, measurement year (PLOT.MEASYEAR) is frequently different from INVYR.

³Annual inventory sampling began in 2008. Due to the State of New Mexico receiving The American Recovery and Reinvestment Act of 2009 (ARRA) money, sampling was accelerated beginning in 2010 and broadened to include plots that would have been surveyed had the inventory started in 2005. Therefore, measurement year (PLOT.MEASYEAR) is frequently different from inventory year (INVYR).

Section revision: 01.2024

Appendix K: FIA Volume, Biomass, and Carbon Estimation

Appendix Contents:

| Description |
|---|
| Overview: FIA Volume, Biomass, and Carbon Estimation |
| Steps for estimating volume, biomass, and carbon using NSVB |
| Accounting for structural loss and standing dead trees using NSVB |

Overview: FIA Volume, Biomass, and Carbon Estimation

The National Scale Volume and Biomass (NSVB) system is the primary approach used by FIA to estimate cubic-foot volume, biomass, and carbon in trees. This system was designed to generate optimal estimates of total stem wood volume and total aboveground biomass while simultaneously providing compatible estimates of individual components (for example, total stem wood biomass + total stem bark biomass = total stem biomass). NSVB is applied to all timber tree species (trees where diameter is measured at breast height [d.b.h.]) growing in the continental United States measured under the annual inventory design (SURVEY.ANN_INVENTORY = 'Y'). Belowground biomass (DRYBIO_BG) is estimated using the Component Ratio Method (CRM). See Heath and others (2009) for further details on belowground biomass estimation.

Volume, biomass, and carbon estimates for periodic data (SURVEY.ANN_INVENTORY = 'N'), woodland species (trees where diameter is measured at root collar [d.r.c.]; identified by REF_SPECIES.WOODLAND = 'Y') and trees growing in the Pacific Islands, including Hawaii, and the Caribbean Islands (STATECD = 15, 64, 66, 68, 69, 70, 72, 78) are calculated using regional or CRM equations. See Woodall and others (2011) for details on methods and equations for estimating aboveground volume, biomass, and carbon using the CRM approach. Users seeking more regional-specific information should contact the appropriate FIA work unit (table 1-1).

The following is a brief guide on the NSVB steps for estimation. For further details on how the NSVB system was developed, along with model coefficients and detailed examples, see Westfall and others [In preparation].

Steps for estimating volume, biomass, and carbon using NSVB

The NSVB approach for timber species (trees where diameter is measured at breast height [d.b.h.]) involves the following steps:

1. Predict total stem wood volume as a function of the following attributes: species (SPCD), diameter (DIA), and total height (HT).
2. Predict total stem bark volume as a function of DIA and HT.
3. Estimate stem component volumes (stump, merchantable, sawlog, stem-top) using a volume ratio model.

4. Convert total stem wood volume to biomass using published wood density values (Miles and Smith 2009).
5. Predict total stem bark biomass as a function of DIA and HT.
6. Predict total branch biomass as a function of DIA and HT.
7. Predict total aboveground biomass as a function of DIA and HT.
8. Sum total stem wood biomass, total stem bark biomass, and total branch biomass to obtain a secondary total aboveground biomass.
9. Determine the difference between the predicted total biomass (step 7) and the total from the component estimates (step 8).
10. Proportionally distribute the difference across total stem wood, total stem bark, and total branch weights to create an adjusted total stem wood weight, an adjusted total stem bark weight, and an adjusted total branch weight.
11. Calculate a 'derived' wood density by dividing the adjusted total stem wood weight by the predicted total stem wood volume. This 'derived' wood density can be used to convert any subsection of the main stem wood volume to biomass.
12. Calculate a 'derived' bark density by dividing the adjusted total stem bark weight by the predicted total stem bark volume. This value can be used to convert any subsection of the main stem bark volume to biomass.
13. Predict total foliage dry weight as a function of DIA and HT.
14. Estimate aboveground carbon using aboveground biomass and species-specific carbon fractions (REF_SPECIES.CARBON_RATIO_LIVE).

Steps 11 and 12 ensure that the main stem can be broken into any sub-components (e.g., stump, merchantable bole, top) and still be additive with the adjusted total stem weight.

Accounting for structural loss and standing dead trees using NSVB

The NSVB system was designed to estimate the volume, biomass, and carbon of live trees with minimal structural loss (e.g., significant rot, broken tops, crown loss). Often, attributes that attempt to quantify structural loss are measured or estimated in forest inventory systems with the purpose of deducting an amount of volume or biomass from the estimate of a healthy/intact tree. This section briefly highlights how estimates of structural loss are incorporated in the NSVB system. The underlying methodology behind NSVB is to have optimal estimates of total stem wood volume and total aboveground biomass (AGB), while also having compatible component biomass estimates. To maintain additivity and consistency between the components and the optimal AGB, any deductions for cull/rot/loss from a component must also be taken out of the independently predicted AGB. This is accomplished by applying a component-weighted 'reduction factor' to the optimal AGB. This is achieved by determining the ratio between the sum of the components with reduction and the sum of the components without reductions.

Currently, FIA accounts for biomass reductions in the following ways:

- Amount of stem wood and bark lost due to broken tops (*value not stored in the database*).
- Amount of branches lost due to broken tops (*value not stored in the database*).
- Amount of foliage lost due to broken tops (*value not stored in the database*).
- Percentage of rot/missing cull in stem wood (TREE.CULL).

- Amount of mass lost due to decay proportion in standing dead trees (*value not stored in the database*; calculated using the following attributes: REF_TREE_DECAY_PROP.DENSITY_PROP, REF_TREE_DECAY_PROP.BARK_LOSS_PROP, REF_TREE_DECAY_PROP.BRANCH_LOSS_PROP).

Broken tops

Trees with broken tops are identified by TREE.ACTUALHT < TREE.HT. The volume ratio model mentioned above is used to estimate the amount of volume remaining in the tree below the broken top. Broken tops reduce the amount of volume and biomass in both wood and bark and always affect the total stem values of these components. If the broken top is observed to be below the estimated merchantable height (4.0-inch top diameter outside bark, DOB), the merchantable volume and biomass are appropriately reduced. Similarly, if the broken top is below the estimated sawlog top height (7.0-inch top DOB for softwoods; 9.0-inch top DOB for hardwoods), the corresponding volume and biomass are reduced.

If part of the main stem is missing, then some of the branch and foliage biomass of an intact tree must be missing as well. To estimate the amount of biomass missing, the crown ratio of the tree without a broken top must be estimated. This is determined using the field-estimated compacted crown ratio (CR).

- $CRprop_HT = (HT - ACTUALHT * (1 - CR/100)) / HT$

CRpropHT value not stored in the database.

For standing dead trees, the mean crown ratio (REF_TREE_STND_DEAD_CR_PROP.CR_MEAN) for intact trees by ecoregion province (REF_TREE_STND_DEAD_CR_PROP.ECOPROV) and softwood/hardwood classification is used to calculate CrpropHT.

The proportion of the expected total crown remaining after accounting for broken tops is then calculated as follows:

- $Broken\ crn_prop = max(0, (ACTUALHT - (1 - Crprop_HT) * HT) / (Crprop_HT * HT))$

Broken crn_prop value not stored in the database.

This broken crown proportion is then multiplied by the original biomass equation result for an intact top to estimate remaining branch biomass and foliage biomass.

Cull

For live tree biomass, stem wood (e.g., total stem, merchantable stem) biomass is proportionally reduced to account for cull. The density reduction (REF_TREE_DECAY_PROP.DENSITY_PROP) for a REF_TREE_DECAY_PROP.DECAYCD = 3 standing dead tree is used to account for wood decay in living trees as follows:

- $(1 - (1 - DENSITY_PROP) * CULL / 100) * Stem\ Wood$

Cull does not affect the biomass of bark, branches, or foliage. For dead tree biomass, no adjustments for TREE.CULL or other types of cull are made.

Standing dead

The TREE.DECAYCD attribute classifies standing dead trees by the stage of decay and fragmentation. For the wood and bark material remaining in a standing dead tree, density reduction factors are used to estimate the loss of mass of a decayed standing dead tree compared to a live tree. Table REF_TREE_DECAY_PROP contains density reduction factors by decay class and softwood/hardwood classification that are applied to stem wood, stem bark, and branch biomass:

- REF_TREE_DECAY_PROP.DENSITY_PROP * Wood
- REF_TREE_DECAY_PROP.BARK_LOSS_PROP * Bark
- REF_TREE_DECAY_PROP.BRANCH_LOSS_PROP * Branch

To determine the aboveground carbon in standing dead trees, aboveground biomass is multiplied by the mean carbon ratio (REF_TREE_CARBON_RATIO_DEAD.CARBON_RATIO) by decay class and softwood/hardwood classification.

Section revision: 10.2019

Appendix L: Reserved and Administratively Withdrawn Status by Owner and Land Designation

The following table provides a basic summary of reserved and administratively withdrawn status by owner and land designation. For State-specific information, please contact the individual FIA work units listed in chapter 1, table 1-1.

Attributes are defined as follows (refer to the "Index of Column Names" to link to a detailed description and/or code list for each attribute):

- **OWNGRPCD: Owner group code.** Ownership (or the managing agency for public lands) of the land in the condition class; a broader group of landowner classes than OWNCD. See COND.OWNGRPCD for code descriptions.
- **OWNCD: Owner class code.** The class in which the landowner (at the time of the inventory) belongs. See COND.OWNCD for code descriptions.
- **RESERVCD: Reserved status code.** The reserved status of a condition on publicly owned land. Reserved land is permanently prohibited from timber productions. Timber harvest may still be allowed for other land management objectives. See COND.RESERVCD for code descriptions.
- **ADMIN_WITHDRAWN_CD: Administratively withdrawn code.** The administrative status of a condition on publicly owned land indicating if the land has been withdrawn from timber production. Timber harvest may still be allowed for other land management objectives. See COND.ADMIN_WITHDRAWN_CD for code descriptions.

Note: Ordered by owner code, national to local, and reserved status, with actual and candidate areas grouped.

Reserved and Administratively Withdrawn Status

L-2

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| OWNGRPCD | OWNCD | Land designation (and example) | RESERVCD | ADMIN_WITH DRAWN_CD | Designated by | Comments |
|----------|-------|---|----------|------------------------|---|---|
| 10,20 | all | Wilderness (Cohutta Wilderness, GA/TN) | 1 | -a | Congress | Some of these are within national parks, and are reserved either way. |
| 10,20 | all | Wilderness Study Area (WSA) (Browns Canyon WSA, CO) | 0 | 1 | Congress, proposed | These are areas that were established by Congress during the RARE II process or in other bills. They can be/have been "released" by Congress at a future date, but until then are managed by the agency as wilderness. |
| 10,20 | all | Recommended Wilderness (Lionhead recommended wilderness, MT) | 0 | 1 | Federal unit, recommended | Areas recommended as wilderness through land management planning are managed as wilderness until Congressional action or revised forest plan direction. |
| 10 | all | Primitive Area (Blue Range Primitive Area, AZ) | 0 | 1 | Federal unit, recommended | Managed as wilderness pending possible designation. |
| 10,20 | all | Proposed Wilderness | 0 | 0 | Not designated; recommended by legislators, interest groups, etc. | These can be proposed by anybody anywhere and the size and borders are very fluid up until the time the bill is passed (or not). No apparent impact on current management. |
| 10,20 | all | National Monument/National Volcanic Monument (Grand Staircase-Escalante, UT) | 1 | - | Executive Order or Congress | Agencies have treated these executive orders as having the force of law, with modifications requiring an act of Congress. |
| 10,20 | all | National Recreation Area (NRA) (Hell's Canyon NRA, OR/ID) | 1 | - | Congress | Although the legislation of some NRAs do not preclude wood production, most do and given the emphasis is likely to be minor, so default to reserved. |
| 10,20 | all | Wild and Scenic Rivers (wild, scenic or recreational classification) (Au Sable River, MI) | 1 | - | Congress | Wood production is not an objective for any wild and scenic river (FSM 2354.42d). Harvest in segments classified as wild is excluded except under emergency conditions; harvest in segments classified as scenic or recreational is only allowed to further river management objectives. If a map of the area or other information is unavailable, use 1/4 mile on either side of the river on Federal land (1/2 mile in Alaska). |

| OWNGRPCD | OWNCD | Land designation (and example) | RESERVCD | ADMIN_WITH DRAWN_CD | Designated by | Comments |
|----------|-------|---|----------|------------------------|---|---|
| 10,20 | all | Wild and Scenic Study Rivers (wild, scenic or recreational classification) (White Salmon River, WA) | 0 | 1 | Federal admin. unit or Congress, proposed | Includes "eligible" or "suitable" study rivers. Wood production is not allowed and harvest restrictions are similar to designated rivers (FSH 199.12 82.51). Study rivers have a default area of 1/4 mile from either side of the river on Federal lands. |
| 10 | all | National Scenic Area (NSA) (Mt. Pleasant, VA) | 1 | - | Congress | Although the legislation of some NSAs does not preclude wood production, most do and given the emphasis is likely to be minor, so default to reserved. |
| 10 | all | Experimental Forest (Hubbard Brook, NH) | 0 | 0 | Congress/U.S. Forest Service Washington Office (WO) | Purpose includes research and management. |
| 10 | all | Experimental Range (Santa Rita, AZ) | 0 | 0 | Congress/WO | Purpose includes research and management. |
| 10 | all | Research Natural Area (RNA) (Limestone Jags, AK) | 0 | 1 | National Forest Sysytem (NFS) unit | RNAs may be established through coordination with WO, but land planning done at national forest level. |
| 10 | all | Roadless Area (Caribbean National Forest, PR) | 0 | 1 | NFS unit | Roadless Rule was established through coordination with WO, but land planning and future changes are done at national forest level. |
| 10 | all | Special Interest Area (Cape Perpetua, OR) | 0 | 1 | NFS unit | - |
| 10 | all | Special Recreation Area (Bell Smith Springs, IL) | 0 | 1 | NFS unit | - |
| 10 | all | Suitable for Timber Harvest | 0 | 1 | NFS unit | Areas designated in forest plans as suitable for harvest for a variety of purposes, but not in the timber base. |
| 10 | all | Suitable for Timber Production | 0 | 0 | NFS unit | Areas designated in forest plans as in the timber base, and managed for multiple use. |
| 20 | 21 | All National Park Service (NPS) Designations on Federal Land | 1 | - | Executive Order/ Congress | Some NPS units/designations are on private land: Canyon de Chelly, parts of Lake Roosevelt, Ebey's Landing, and National Historic Sites; these are NOT reserved. |

| OWNGRPCD | OWNCD | Land designation (and example) | RESERVCD | ADMIN_WITH DRAWN_CD | Designated by | Comments |
|----------|-------|---|----------|------------------------|--|---|
| 20 | 22 | Areas of Critical Environmental Concern (High Rock Canyon, NV) | 0 | 1 | Bureau of Land Management unit | Authorized by Congress in Federal Land Policy and Management Act (FLPMA) to protect significant areas, designated by management units. |
| 20 | 22 | National Conservation Areas (NCA) (Kings River, CA) | 0 | 0 | Congress | NCAs are focused on limited resources for protection, many have "multiple use" as a goal. |
| 20 | 23 | All Fish and Wildlife Service (FWS) Designations on Federal Land | 1 | - | Executive Order/ Congress | Not clear if all FWS refuges are designated by Congress or not, but timber production is not goal of the agency. |
| 10,20,30 | all | National Natural Landmark (Caledon Natural Area, VA) | 0 | 0 | United States Department of the Interior | Designated by USDI but managed/owned by various public entities for a wide range of conservation purposes. Ignore the landmark status and use the designation given by the landowner to determine status. |
| 20 | 25 | National Estuarine Research Reserve System | 1 | - | Congress | Established in Coastal Zone Management Act of 1972 for research and protection; managed by the National Oceanic and Atmospheric Administration (NOAA). |
| 30 | all | State or Local Parks | 1 | - | State or local Parks Dept | Rarely specifically designated by law, but laws defining agency goals preclude management for timber production. |
| 30 | all | State or Local Wilderness | 1 | - | State or local Parks Dept | Specific areas may or may not be designated by law, but laws governing agency mandate or defining wilderness preclude management for timber production. |
| 30 | 31 | State Wild River | 1 | - | State Parks Dept | Specific areas may or may not be designated by law, but laws governing agency mandate or defining wild rivers preclude management for timber production. |

| OWNGRPCD | OWNCD | Land designation (and example) | RESERVCD | ADMIN_WITH DRAWN_CD | Designated by | Comments |
|----------|-------|-----------------------------------|----------|------------------------|---------------------------|---|
| 30 | all | State or Local Reserve | 1 | - | State or local Parks Dept | Specific areas may or may not be designated by law, but laws governing agency mandate or defining reserves preclude management for timber production. |
| 30 | 31 | State Forests | 0 | 0 | State Forestry Dept | Usually managed by State agencies for multiple values, including production of timber products. |
| 40 | all | All Private Lands | 0 | 0 | - | All private lands, including those owned by some conservation groups, those with conservation easements, and tribal protected areas, are considered unreserved. |

^aNo information entered.

Section revision: 01.2024

Appendix M: Forest Vegetation Simulator Codes and Names

| FVS Location Code NAME (FVS_LOC_CD_NAME) | FVS Region Code (FVS_REGION) | FVS Forest Code (FVS_FOREST) | FVS District Code (FVS_DISTRICT) | FVS Location Code (FVS_LOC_CD) |
|---|---------------------------------|---------------------------------|-------------------------------------|-----------------------------------|
| Allegheny National Forest | 9 | 19 | - | 919 |
| Angeles National Forest | 5 | 1 | - | 501 |
| Apache National Forest | 3 | 1 | - | 301 |
| Arapaho National Forest | 2 | 1 | - | 201 |
| Ashley National Forest | 4 | 1 | - | 401 |
| Beaverhead National Forest | 1 | 2 | - | 102 |
| Bighorn National Forest | 2 | 2 | - | 202 |
| Bitterroot National Forest | 1 | 3 | - | 103 |
| Black Hills National Forest | 2 | 3 | - | 203 |
| BLM - Coos Bay District | 7 | 12 | - | 712 |
| BLM - Eugene District | 7 | 9 | - | 709 |
| BLM - Medford District. | 7 | 11 | - | 711 |
| BLM - Roseburg District | 7 | 10 | - | 710 |
| BLM - Salem District | 7 | 8 | - | 708 |
| Boise National Forest | 4 | 2 | - | 402 |
| Bridger National Forest | 4 | 3 | - | 403 |
| Cache National Forest | 4 | 4 | - | 404 |
| Caribou National Forest | 4 | 5 | - | 405 |
| Carson National Forest | 3 | 2 | - | 302 |
| Challis National Forest | 4 | 6 | - | 406 |
| Chattahooche National Forest - Armuchee | 8 | 3 | 1 | 80301 |
| Chattahooche National Forest - Brasstown District | 8 | 3 | 4 | 80304 |
| Chattahooche National Forest - Chattooga River District | 8 | 3 | 6 | 80306 |
| Chattahooche National Forest - Cohutta District | 8 | 3 | 7 | 80307 |
| Chattahooche National Forest - Tallulah District | 8 | 3 | 5 | 80305 |
| Chattahooche National Forest - Toccoa District | 8 | 3 | 2 | 80302 |
| Cherokee National Forest - Hiwassee District | 8 | 4 | 1 | 80401 |

| FVS Location Code NAME (FVS_LOC_CD_NAME) | FVS Region Code (FVS_REGION) | FVS Forest Code (FVS_FOREST) | FVS District Code (FVS_DISTRICT) | FVS Location Code (FVS_LOC_CD) |
|--|---------------------------------|---------------------------------|-------------------------------------|-----------------------------------|
| Cherokee National Forest -Nolichucky District | 8 | 4 | 2 | 80402 |
| Cherokee National Forest - Ocoee District | 8 | 4 | 3 | 80403 |
| Cherokee National Forest - Tellico District | 8 | 4 | 4 | 80404 |
| Cherokee National Forest - Unaka | 8 | 4 | 5 | 80405 |
| Cherokee National Forest - Watauga District | 8 | 4 | 6 | 80406 |
| Chequamegon National Forest | 9 | 2 | - | 902 |
| Chippewa National Forest | 9 | 3 | - | 903 |
| Chugach National Forest | 10 | 4 | - | 1004 |
| Cibola National Forest | 3 | 3 | - | 303 |
| Clearwater National Forest | 1 | 5 | - | 105 |
| Cleveland National Forest | 5 | 2 | - | 502 |
| Coconino National Forest | 3 | 4 | - | 304 |
| Coeur d'Alene National Forest | 1 | 6 | - | 106 |
| Colville National Forest | 6 | 21 | - | 621 |
| Coronado National Forest | 3 | 5 | - | 305 |
| Custer National Forest | 1 | 8 | - | 108 |
| Daniel Boone National Forest - Berea District | 8 | 2 | 13 | 89213 |
| Daniel Boone National Forest - London District | 8 | 2 | 14 | 80214 |
| Daniel Boone National Forest - Morehead District | 8 | 2 | 11 | 80211 |
| Daniel Boone National Forest - Red Bird District | 8 | 2 | 17 | 80217 |
| Daniel Boone National Forest - Somerset District | 8 | 2 | 15 | 80215 |
| Daniel Boone National Forest - Stanton District | 8 | 2 | 12 | 80212 |
| Daniel Boone National Forest - Stearns District | 8 | 2 | 16 | 80216 |
| Deerlodge National Forest | 1 | 9 | - | 109 |
| Deschutes National Forest | 6 | 1 | - | 601 |
| Dixie National Forrest | 4 | 7 | - | 407 |
| Eldorado National Forest | 5 | 3 | - | 503 |
| Finger Lakes National Forest | 9 | 30 | - | 930 |
| Fishlake National Forest | 4 | 8 | - | 408 |
| Flathead National Forest | 1 | 10 | - | 110 |
| Fort Bragg | 7 | 1 | - | 701 |

| FVS Location Code NAME (FVS_LOC_CD_NAME) | FVS Region Code (FVS_REGION) | FVS Forest Code (FVS_FOREST) | FVS District Code (FVS_DISTRICT) | FVS Location Code (FVS_LOC_CD) |
|---|---|---|---|---|
| Francis Marion National Forest | 8 | 12 | 5 | 81205 |
| Fremont National Forest | 6 | 2 | - | 602 |
| Gallatin National Forest | 1 | 11 | - | 111 |
| George Washington National Forest - Glenwood District | 8 | 8 | 13 | 80813 |
| George Washington National Forest - James River District | 8 | 8 | 3 | 80803 |
| George Washington National Forest - Lee District | 8 | 8 | 4 | 80804 |
| George Washington National Forest - North River District | 8 | 8 | 2 | 80802 |
| George Washington National Forest - Warm Springs District | 8 | 8 | 6 | 80806 |
| Gifford Pinchot National Forest | 6 | 3 | - | 603 |
| Gila National Forest | 3 | 6 | - | 306 |
| Grand Mesa National Forest | 2 | 24 | - | 224 |
| Green Mountain National Forest | 9 | 20 | - | 920 |
| Gunnison National Forest | 2 | 5 | - | 205 |
| Helena National Forest | 1 | 12 | - | 112 |
| Hiawatha National Forest | 9 | 10 | - | 910 |
| Hoosier National Forest | 9 | 12 | - | 912 |
| Humboldt National Forest | 4 | 9 | - | 409 |
| Huron National Forest | 9 | 4 | - | 904 |
| Inyo National Forest | 5 | 4 | - | 504 |
| Jefferson National Forest - Clinch District | 8 | 8 | 12 | 80812 |
| Jefferson National Forest - Eastern Divide District | 8 | 8 | 11 | 80811 |
| Jefferson National Forest - Mount Rogers National Recreation Area | 8 | 8 | 14 | 80814 |
| Jefferson National Forest - Pedlar District | 8 | 8 | 5 | 80805 |
| Kaibab National Forest | 3 | 7 | - | 307 |
| Kaniksu National Forest | 1 | 13 | - | 113 |
| Kisatchie National Forest - Calcasieu District | 8 | 6 | 2 | 80602 |
| Kisatchie National Forest - Caney District | 8 | 6 | 5 | 80605 |
| Kisatchie National Forest - Catahoula District | 8 | 6 | 1 | 80601 |

| FVS Location Code NAME (FVS_LOC_CD_NAME) | FVS Region Code (FVS_REGION) | FVS Forest Code (FVS_FOREST) | FVS District Code (FVS_DISTRICT) | FVS Location Code (FVS_LOC_CD) |
|--|---------------------------------|---------------------------------|-------------------------------------|-----------------------------------|
| Kisatchie National Forest - Kisatchie District | 8 | 6 | 3 | 80603 |
| Kisatchie National Forest - Winn District | 8 | 6 | 4 | 80604 |
| Klamath National Forest | 5 | 5 | - | 505 |
| Kootenai National Forest | 1 | 14 | - | 114 |
| Lassen National Forest | 5 | 6 | - | 506 |
| Lewis and Clark National Forest | 1 | 15 | - | 115 |
| Lincoln National Forest | 3 | 8 | - | 308 |
| Lolo National Forest | 1 | 16 | - | 116 |
| Los Padres National Forest | 5 | 7 | - | 507 |
| Malheur National Forest | 6 | 4 | - | 604 |
| Manatee National Forest | 9 | 24 | - | 924 |
| Manti-La Sal National Forest | 4 | 10 | - | 410 |
| Mark Twain National Forest | 9 | 5 | - | 905 |
| Medicine Bow National Forest | 2 | 6 | - | 206 |
| Mendocino National Forest | 5 | 8 | - | 508 |
| Modoc National Forest | 5 | 9 | - | 509 |
| Monongahela National Forest | 9 | 21 | - | 921 |
| Mt. Baker National Forest | 6 | 5 | - | 605 |
| Mt. Hood National Forest | 6 | 6 | - | 606 |
| National Forests in Alabama - Conecuh District | 8 | 1 | 3 | 80103 |
| National Forests in Alabama - Oakmulgee District | 8 | 1 | 4 | 80104 |
| National Forests in Alabama - Shoal Creek District | 8 | 1 | 5 | 80105 |
| National Forests in Alabama - Talladega District | 8 | 1 | 6 | 80106 |
| National Forests in Alabama - Tuskegee District | 8 | 1 | 7 | 80107 |
| National Forests in Alabama - William B. Bankhead District | 8 | 1 | 1 | 80101 |
| National Forests in Florida - Apalachicola District | 8 | 5 | 1 | 80501 |
| National Forests in Florida - Lake George District | 8 | 5 | 2 | 80502 |
| National Forests in Florida - Osceola District | 8 | 5 | 4 | 80504 |
| National Forests in Florida - Seminole District | 8 | 5 | 5 | 80505 |

| FVS Location Code NAME (FVS_LOC_CD_NAME) | FVS Region Code (FVS_REGION) | FVS Forest Code (FVS_FOREST) | FVS District Code (FVS_DISTRICT) | FVS Location Code (FVS_LOC_CD) |
|---|---------------------------------|---------------------------------|-------------------------------------|-----------------------------------|
| National Forests in Florida - Wakulla District | 8 | 5 | 6 | 80506 |
| National Forests in Mississippi - Bienville District | 8 | 7 | 1 | 80701 |
| National Forests in Mississippi - Chickasawhay District | 8 | 7 | 5 | 80705 |
| National Forests in Mississippi - De Soto District | 8 | 7 | 2 | 80702 |
| National Forests in Mississippi - Delta District | 8 | 7 | 6 | 80706 |
| National Forests in Mississippi - Holly Springs District | 8 | 7 | 7 | 80707 |
| National Forests in Mississippi - Homochitto District | 8 | 7 | 4 | 80704 |
| National Forests in Mississippi - Tombigbee District | 8 | 7 | 17 | 80717 |
| National Forests in North Carolina - Appalachian District | 8 | 11 | 8 | 81108 |
| National Forests in North Carolina - Cheoah District | 8 | 11 | 2 | 81102 |
| National Forests in North Carolina - Croatan District | 8 | 11 | 3 | 81103 |
| National Forests in North Carolina - Grandfather District | 8 | 11 | 5 | 81105 |
| National Forests in North Carolina - Nantahala District | 8 | 11 | 11 | 81111 |
| National Forests in North Carolina - Pisgah District | 8 | 11 | 7 | 81107 |
| National Forests in North Carolina - Tusquitee District | 8 | 11 | 9 | 81109 |
| National Forests in North Carolina - Uwharrie District | 8 | 11 | 10 | 81110 |
| National Forests in Texas - Angelina District | 8 | 13 | 1 | 81301 |
| National Forests in Texas - Cado District and LBJ National Grasslands | 8 | 13 | 8 | 81308 |
| National Forests in Texas - Davy Crockett District | 8 | 13 | 3 | 81303 |
| National Forests in Texas - Sabine District | 8 | 13 | 7 | 81307 |
| National Forests in Texas - Sam Houston District | 8 | 13 | 4 | 81304 |
| Nebraska National Forest | 2 | 7 | - | 207 |
| Nez Perce National Forest | 1 | 17 | - | 117 |
| Nicolet National Forest | 9 | 6 | - | 906 |

| FVS Location Code NAME (FVS_LOC_CD_NAME) | FVS Region Code (FVS_REGION) | FVS Forest Code (FVS_FOREST) | FVS District Code (FVS_DISTRICT) | FVS Location Code (FVS_LOC_CD) |
|--|---------------------------------|---------------------------------|-------------------------------------|-----------------------------------|
| Ochoco National Forest | 6 | 7 | - | 607 |
| Oconee National Forest | 8 | 3 | 8 | 80308 |
| Okanogan National Forest | 6 | 8 | - | 608 |
| Okanogan National Forest - Tonasket District | 6 | 99 | - | 699 |
| Olympic National Forest | 6 | 9 | - | 609 |
| Ottowa National Forest | 9 | 7 | - | 907 |
| Ouachita National Forest - Choctaw District | 8 | 9 | 1 | 80901 |
| Ouachita National Forest - Caddo District | 8 | 9 | 2 | 80902 |
| Ouachita National Forest - Cold Springs District | 8 | 9 | 3 | 80903 |
| Ouachita National Forest - Fourche District | 8 | 9 | 4 | 80904 |
| Ouachita National Forest - Jessieville District | 8 | 9 | 5 | 80905 |
| Ouachita National Forest - Kiamichi District | 8 | 9 | 6 | 80906 |
| Ouachita National Forest - Mena District | 8 | 9 | 7 | 80907 |
| Ouachita National Forest - Oden District | 8 | 9 | 8 | 80908 |
| Ouachita National Forest - Poteau District | 8 | 9 | 9 | 80909 |
| Ouachita National Forest - Tiak District | 8 | 9 | 12 | 80912 |
| Ouachita National Forest - Winona District | 8 | 9 | 11 | 80911 |
| Ouachita National Forest - Womble District | 8 | 9 | 10 | 80910 |
| Ozark National Forest - Bayou District | 8 | 10 | 3 | 81003 |
| Ozark National Forest - Boston Mountain District | 8 | 10 | 5 | 81005 |
| Ozark National Forest - Buffalo District | 8 | 10 | 2 | 81002 |
| Ozark National Forest - Magazine District | 8 | 10 | 6 | 81006 |
| Ozark National Forest - Pleasant Hill District | 8 | 10 | 4 | 81004 |
| Ozark National Forest - St. Francis District | 8 | 10 | 7 | 81007 |
| Ozark National Forest - Sylamore District | 8 | 10 | 1 | 81001 |

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|---|---|---|---|---|
| Payette National Forest | 4 | 12 | - | 412 |
| Pike National Forest | 2 | 8 | - | 208 |
| Plumas National Forest | 5 | 11 | - | 511 |
| Prescott National Forest | 3 | 9 | - | 309 |
| Private | 7 | 2 | - | 702 |
| Private | 7 | 3 | - | 703 |
| Private | 7 | 5 | - | 705 |
| Private | 7 | 15 | - | 715 |
| Private | 8 | 0 | - | 800 |
| Rio Grande National Forest | 2 | 9 | - | 209 |
| Roosevelt National Forest | 2 | 10 | - | 210 |
| Rogue River National Forest | 6 | 10 | - | 610 |
| Routt National Forest | 2 | 11 | - | 211 |
| Salmon National Forest | 4 | 13 | - | 413 |
| Samuel R. McElvie National Forest | 2 | 16 | - | 216 |
| San Bernadino National Forest | 5 | 12 | - | 512 |
| San Isabel National Forest | 2 | 12 | - | 212 |
| San Juan National Forest | 2 | 13 | - | 213 |
| Santa Fe National Forest | 3 | 10 | - | 310 |
| Savannah River Site | 8 | 24 | - | 824 |
| Sawtooth National Forest | 4 | 14 | - | 414 |
| Sequoia National Forest | 5 | 13 | - | 513 |
| Shasta National Forest | 5 | 14 | - | 514 |
| Shawnee National Forest | 9 | 8 | - | 908 |
| Shoshone National Forest | 2 | 14 | - | 214 |
| Sierra National Forest | 5 | 15 | - | 515 |
| Siskiyou National Forest | 6 | 11 | - | 611 |
| Sitgreaves National Forest | 3 | 11 | - | 311 |
| Siuslaw National Forest | 6 | 12 | - | 612 |
| Six Rivers National Park | 5 | 10 | - | 510 |
| Snoqualmie National Forest | 6 | 13 | - | 613 |
| St. Joe National Forest | 1 | 18 | - | 118 |
| Stanislaus National Forest | 5 | 16 | - | 516 |
| Sumter National Forest - Andrew Pickens District | 8 | 12 | 2 | 81202 |
| Sumter National Forest - Long Cane District | 8 | 12 | 3 | 81203 |
| Sumter National Forest - Enoree District | 8 | 12 | 1 | 81201 |

| FVS Location Code NAME (FVS_LOC_CD_NAME) | FVS Region Code (FVS_REGION) | FVS Forest Code (FVS_FOREST) | FVS District Code (FVS_DISTRICT) | FVS Location Code (FVS_LOC_CD) |
|---|---|---|---|---|
| Superior National Forest | 9 | 9 | - | 909 |
| Tahoe National Forest | 5 | 17 | - | 517 |
| Targhee National Forest | 4 | 15 | - | 415 |
| Teton National Forest | 4 | 16 | - | 416 |
| Toiyabe National Forest | 4 | 17 | - | 417 |
| Tongass National Forest - Chatham Area | 10 | 3 | - | 1003 |
| Tongass National Forest - Ketchikan Area | 10 | 5 | - | 1005 |
| Tongass National Forest - Stikine Area | 10 | 2 | - | 1002 |
| Tonto National Forest | 3 | 12 | - | 312 |
| Trinity National Forest | 5 | 18 | - | 518 |
| Uinta National Forest | 4 | 18 | - | 418 |
| Umatilla National Forest | 6 | 14 | - | 614 |
| Umpqua National Forest | 6 | 15 | - | 615 |
| Uncompahgre National Forest | 2 | 4 | - | 204 |
| Wallowa National Forest | 6 | 16 | - | 616 |
| Wasatch National Forest | 4 | 19 | - | 419 |
| Wayne National Forest | 9 | 14 | - | 914 |
| Wenatchee National Forest | 6 | 17 | - | 617 |
| White Mountain National Forest | 9 | 22 | - | 922 |
| White River National Forest | 2 | 15 | - | 215 |
| Whitman National Forest | 6 | 19 | - | 619 |
| Willamette National Forest | 6 | 18 | - | 618 |
| Winema National Forest | 6 | 20 | - | 620 |