

# **The Forest Inventory and Analysis Database:**

## **Database Description and User Guide for Phase 2 (version 7.0.1)**

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# Preface

## Preface Contents:

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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. These data are available to the public.

### Keywords:

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

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## Background

The Forest Inventory and Analysis (FIA) research program has been in existence since mandated by Congress in 1928. FIA's primary objective is to determine the extent, condition, volume, growth, and use of trees on the Nation's forest land. 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.

## Acknowledgments

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# User Guide Updates

## Changes from the Previous Database Version

### Example citation for this electronic publication (ePub):

Burrill, Elizabeth A.; Wilson, Andrea M.; Turner, Jeffery A.; Pugh, Scott A.; Menlove, James; Christiansen, Glenn; Conkling, Barbara L.; David, Winnie. 2017. [The Forest Inventory and Analysis Database: Database description and user guide version 7.0.1 for Phase 2](#). U.S. Department of Agriculture, Forest Service. 942 p. [Online]. Available at web address: <http://www.fia.fs.fed.us/library/database-documentation/>.

### 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 7.0, tables A, B, and C summarize major modifications to FIADB 6.1.1.

**Table A:** Database table attribute additions in FIADB 7.0

Name of table affected	Name of column added to table
SEEDLING_REGEN	TPA_UNADJ
REF_SPECIES	DRYWT_TO_GREENWT_CONVERSION
REF_FIADB_VERSION	INSTALL_TYPE (this attribute was moved in the table from 9.12.10 to 9.12.2 and the attributes following were all renumbered)

**Table B:** Database table attributes with updates to the descriptive name in FIADB 7.0

Name of table affected	Name of attribute affected
COND	FORTYPCD
COND	STDSZCD

Name of table affected	Name of attribute affected
COND	DSTRBCD1
COND	DSTRBCD2
COND	DSTRBCD3
COND	TRTCD1
COND	TRTCD2
COND	TRTCD3
COND	BALIVE
COND	CARBON_UNDERSTORY_AG
COND	CARBON_UNDERSTORY_BG
COND	INDUSTRIAL_CD_FIADB
COND	MIXEDCONFCD
COND	CARBON_SOIL_ORG
COND	CARBON_STANDING_DEAD
SUBPLOT	NF_SUBP_STATUS_CD
SUBPLOT	NF_SUBP_NONSAMPLE_REASN_CD
TREE	MORTCFGS
TREE	MORTBFSL
TREE	REMVCFGS
TREE	REMVBFSL
TREE	REMVCFAL
TREE	FMORTCFGS
TREE	FMORTBFSL
TREE	FMORTCFAL
TREE	FREMVCFGS
TREE	FREMVBFSL
TREE	FREMVCFAL
REF_SPECIES	COMMON_NAME
REF_SPECIES	SPECIES
REF_SPECIES	SUBSPECIES
REF_SPECIES	E_SPGRPCD
REF_SPECIES	W_SPGRPCD
REF_SPECIES	C_SPGRPCD
REF_SPECIES	P_SPGRPCD
REF_SPECIES	EXISTS_IN_NCNS
REF_SPECIES	EXISTS_IN_NERS
REF_SPECIES	EXISTS_IN_PNWRS
REF_SPECIES	EXISTS_IN_RMRS

Name of table affected	Name of attribute affected
REF_SPECIES	EXISTS_IN_SRS
REF_SPECIES	EAST
REF_SPECIES	WEST
REF_SPECIES	CARIBBEAN
REF_SPECIES	PACIFIC
REF_SPECIES	WOOD_SPGR_GREENVOL_DRYWT
REF_SPECIES	WOOD_SPGR_GREENVOL_DRYWT_CIT
REF_SPECIES	BARK_SPGR_GREENVOL_DRYWT
REF_SPECIES	BARK_SPGR_GREENVOL_DRYWT_CIT
REF_SPECIES	MC_PCT_GREEN_BARK_CIT
REF_SPECIES	MC_PCT_GREEN_WOOD_CIT
REF_SPECIES	WOOD_SPGR_MC12VOL_DRYWT_CIT
REF_SPECIES	BARK_VOL_PCT_CIT
REF_SPECIES	SFTWD_HRDWD
REF_SPECIES	WOODLAND
REF_SPECIES	BARK_SPGR_GREENVOL_DRYWT

**Table C:** Database table attributes with updates to the attribute description text in FIADB 7.0

Name of table affected	Name of column with updated text
SURVEY	CREATED_DATE
SURVEY	MODIFIED_DATE
PLOT	WATERCD
PLOT	P2VEG_SAMPLING_STATUS_CD
COND	OWNCD
COND	DSTRBCD1
COND	DSTRBYR1
COND	DSTRBYR2
COND	DSTRBYR3
COND	TRTCD1
COND	TRTYR1
COND	TRTCD2
COND	TRTYR2
COND	TRTCD3
COND	TRTYR3
COND	VOL_LOC_GRP
SUBPLOT	NF_SUBP_STATUS_CD
SUBPLOT	NF_SUBP_NONSAMPLE_REASN_CD

Name of table affected	Name of column with updated text
TREE	AZIMUTH
TREE	DIST
TREE	HT
TREE	HTCD
TREE	ACTUALHT
TREE	DECAYCD
TREE	MORTCD
TREE	RECONCILECD
TREE	STANDING_DEAD_CD
TREE	TPA_UNADJ
TREE	TPAMORT_UNADJ
TREE	TPAREMV_UNADJ
TREE	TPAGROW_UNADJ
TREE	DAMAGE_AGENT_CD1
TREE_REGIONALBIOMASS	REGIONAL_DRYBIOM
TREE_REGIONALBIOMASS	REGIONAL_DRYBIOSL
TREE_GRM_MIDPT	REGIONAL_DRYBIOSL
TREE_GRM_BEGIN	REGIONAL_DRYBIOM
TREE_GRM_BEGIN	REGIONAL_DRYBIOSL
TREE_GRM_ESTN	TPAGROW_UNADJ
TREE_GRM_ESTN	TPAREMV_UNADJ
TREE_GRM_ESTN	TPAMORT_UNADJ
BEGINEND	ONEORTWO
SEEDLING	TPA_UNADJ
P2VEG_SUBPLOT_SPP	GROWTH_HABIT_CD
POP_EVAL	GROWTH_ACCT
POP_STRATUM	EXPNS
POP_STRATUM	ADJ_FACTOR_MACR
POP_STRATUM	ADJ_FACTOR_SUBP
POP_STRATUM	ADJ_FACTOR_MICR
PLOTSNAP	WATERCD
REF_POP_ATTRIBUTE	ATTRIBUTE_DESCR
REF_POP_ATTRIBUTE	EXPRESSION
REF_POP_ATTRIBUTE	WHERE_CLAUSE
REF_FOREST_TYPE_GRP	FWD_SMALL_QMD
REF_FOREST_TYPE_GRP	FWD_MEDIUM_QMD
REF_FOREST_TYPE_GRP	FWD_LARGE_QMD

Name of table affected	Name of column with updated text
REF_SPECIES	C_SPGRCD
REF_SPECIES	P_SPGRCD
REF_SPECIES	MAJOR_SPGRPCD
REF_SPECIES	EXISTS_IN_NCRS
REF_SPECIES	EXISTS_IN_NERS
REF_SPECIES	EXISTS_IN_PNWRS
REF_SPECIES	EXISTS_IN_RMRS
REF_SPECIES	EXISTS_IN_SRS
REF_SPECIES	SFTWD_HRDWD
REF_SPECIES	ST_EXISTS_IN_NCRS
REF_SPECIES	ST_EXISTS_IN_NERS
REF_SPECIES	ST_EXISTS_IN_PNWRS
REF_SPECIES	ST_EXISTS_IN_RMRS
REF_SPECIES	ST_EXISTS_IN_SRS
REF_SPECIES	EAST
REF_SPECIES	WEST
REF_SPECIES	CARIBBEAN
REF_SPECIES	PACIFIC
REF_SPECIES	JENKINS_SAPLING_ADJUSTMENT
REF_SPECIES	WOOD_SPGR_GREENVOL_DRYWT_CIT
REF_SPECIES	BARK_SPGR_GREENVOL_DRYWT_CIT
REF_SPECIES	MC_PCT_GREEN_BARK_CIT
REF_SPECIES	MC_PCT_GREEN_WOOD_CIT
REF_SPECIES	WOOD_SPGR_MC12VOL_DRYWT_CIT
REF_SPECIES	BARK_VOL_PCT_CIT

Other major changes in version 7.0 of the user guide are listed below.

- In the introductory information at the beginning of each chapter, under the Oracle Data Types table, the format for Date was deleted.
- Chapter 1: Introduction. Text was updated.
- POP\_EVAL\_GRP table: a new index was added to the table of keys: PEG\_EVAL\_I.
- Chapter 10 was deleted from this document and the information is now in a separate document, *The Forest Inventory and Analysis Database: Population Estimation User Guide (Edition: March, 2017)*, which will be put on the FIA web site as an accompanying document. All references to chapter in the FIADB user guide have been changed to reference the new document.
- Literature Cited. Citation added for *Forest Inventory and Analysis Database: Population Estimation User Guide (Edition: March, 2017)*.

- Index of Tables. Introductory text updated; heading of first column corrected; section numbers in column one updated for several tables.
- Index of Column names. Introductory text updated. Multiple entries to the appendix added or updated to match the changes in the attribute tables.
- Appendix C: Administrative National Forest Codes and Names. In Region 8, the George Washington and Jefferson National Forest were combined under one code, 808.
- Appendix D: Forest Type Codes and Names. Two columns (East and West) were added to the forest types table. Descriptions of the forest types were also added after the table.
- Appendix E: Tree Species Group Codes. Two new species groups were added, code 55 and code 56.
- Appendix F: Tree Species Codes, Names, and Occurrences. Code 8420 was added.
- Appendix H: Pacific Tree Species Codes and Names. Code 0211 was added.
- Appendix J: Damage Codes and Thresholds. The table was updated to match the information in the FIA National Field Guide version 7.0. The region acronyms in the Region column were alphabetized when more than one region collects the damage data.
- Appendix M: Biomass Estimation in the FIADB. In Appendix table M-2, the definition was updated for sapling biomass adjustment.
- Appendix O: Values and Descriptions in REF\_POP\_ATTRIBUTE. The following ATTRIBUTE\_NBR values were deleted: 95, and 951-956. The following ATTRIBUTE\_NBR values were added: 510-513, 533-534, 556-558, 560, 570-572, 574-578, and 594.

In release 7.0.1, tables D-G summarize major modifications to FIADB 7.0.

**Table D:** Database table additions in FIADB 7.0.1

Table number	Table name
3.2	TREE_WOODLAND_STEMS
4.4	GRND_CVR
9.16	REF_NVCS_HIEARCHY_STRCT
9.17	REF_NVCS_LEVEL_1_CODES
9.18	REF_NVCS_LEVEL_2_CODES
9.19	REF_NVCS_LEVEL_3_CODES
9.20	REF_NVCS_LEVEL_4_CODES
9.21	REF_NVCS_LEVEL_5_CODES
9.22	REF_NVCS_LEVEL_6_CODES
9.23	REF_NVCS_LEVEL_7_CODES
9.24	REF_NVCS_LEVEL_8_CODES

**Table E:** Database table attribute additions in FIADB 7.0.1

Name of table affected	Name of column added to table
PLOT	COLOCATED_CD_RMRS
PLOT	CONDCHNGCD_RMRS
PLOT	FUTFORCD_RMRS
PLOT	MANUAL_NCRS
PLOT	MANUAL_NERS
PLOT	MANUAL_RMRS
PLOT	PAC_ISLAND_PNWRS
PLOT	PLOT_SEASON_NERS
PLOT	PRECIPITATION
PLOT	PREV_MICROPLOT_LOC_RMRS
PLOT	PREV_PLOT_STATUS_CD_RMRS
PLOT	REUSECD1
PLOT	REUSECD2
PLOT	REUSECD3
COND	NVCS_PRIMARY_CLASS
COND	NCVS_LEVEL_1_CD
COND	NCVS_LEVEL_2_CD
COND	NCVS_LEVEL_3_CD
COND	NCVS_LEVEL_4_CD
COND	NCVS_LEVEL_5_CD
COND	NCVS_LEVEL_6_CD
COND	NCVS_LEVEL_7_CD
COND	NCVS_LEVEL_8_CD
COND	AGE_BASIS_CD_PNWRS
COND	COND_STATUS_CHNG_CD_RMRS
COND	CRCOVPCD_RMRS
COND	DOMINANT_SPECIES1_PNWRS
COND	DOMINANT_SPECIES2_PNWRS
COND	DOMINANT_SPECIES3_PNWRS
COND	DSTRBCD1_P2A
COND	DSTRBCD2_P2A
COND	DSTRBCD3_P2A
COND	DSTRBYR1_P2A
COND	DSTRBYR2_P2A
COND	DSTRBYR3_P2A
COND	FLDTYP_CD_30

Name of table affected	Name of column added to table
COND	FOREST_COMMUNITY_PNWRS
COND	LAND_USECD_RMRS
COND	MAICF_RMRS
COND	PCTBARE_RMRS
COND	QMD_RMRS
COND	RANGETYPCD_RMRS
COND	SDIMAX_RMRS
COND	SDIPCT_RMRS
COND	STAND_STRUCTURE_ME_NERS
COND	TREES_PRESENT_NCNS
COND	TREES_PRESENT_NERS
COND	TRTCD1_P2A
COND	TRTCD2_P2A
COND	TRTCD3_P2A
COND	TRTOPCD
COND	TRTYR1_P2A
COND	TRTYR2_P2A
COND	TRTYR3_P2A
SUBPLOT	CROWN_CLOSURE_ME_NERS
SUBPLOT	GROUND_TRAN PTS_BARE_RMRS
SUBPLOT	GROUND_TRAN PTS_CRYP_RMRS
SUBPLOT	GROUND_TRAN PTS_DEV_RMRS
SUBPLOT	GROUND_TRAN PTS_LICHEN_RMRS
SUBPLOT	GROUND_TRAN PTS_LITTER_RMRS
SUBPLOT	GROUND_TRAN PTS_MOSS_RMRS
SUBPLOT	GROUND_TRAN PTS_NOTSAMP_RMRS
SUBPLOT	GROUND_TRAN PTS_OTHER_RMRS
SUBPLOT	GROUND_TRAN PTS_PEIS_RMRS
SUBPLOT	GROUND_TRAN PTS_ROAD_RMRS
SUBPLOT	GROUND_TRAN PTS_ROCK_RMRS
SUBPLOT	GROUND_TRAN PTS_TRIS_RMRS
SUBPLOT	GROUND_TRAN PTS_VEG_RMRS
SUBPLOT	GROUND_TRAN PTS_WATER_RMRS
SUBPLOT	GROUND_TRAN PTS_WOOD_RMRS
SUBPLOT	PREV_STATUSCD_RMRS
SUBPLOT	ROOTSEVCD_RMRS
TREE	ACTUALHT_CALC

Name of table affected	Name of column added to table
TREE	ACTUALHT_CALC_CD
TREE	CULL_BF_ROTTEN
TREE	CULL_BF_ROTTEN_CD
TREE	CULL_BF_ROUGH
TREE	CULL_BF_ROUGH_CD
TREE	PREVDIA_FLD
TREE	TREECLCD_31_NCRS
TREE	TREE_GRADE_NCRS
TREE	BOUGHS_AVAILABLE_NCRS
TREE	BOUGHS_HRVST_NCRS
TREE	TREECLCD_31_NERS
TREE	AGENTCD_NERS
TREE	BFSNDCD_NERS
TREE	AGECKCD_RMRS
TREE	DIA_1YRAGO_RMRS
TREE	GROWBFSCR_RMRS
TREE	GROWCFSAWLOG_RMRS
TREE	HT_1YRAGO_RMRS
TREE	PREV_ACTUALHT_RMRS
TREE	PREV_AGECKCD_RMRS
TREE	PREV_BHAGE_RMRS
TREE	PREV_HT_RMRS
TREE	PREV_TOTAGE_RMRS
TREE	PREV_TREECLCD_RMRS
TREE	RADAGECD_RMRS
TREE	RADGRW_RMRS
TREE	VOLBFSCRGRS_RMRS
TREE	VOLBFSCRNET_RMRS
TREE	VOLCFDEADGRS_RMRS
TREE	VOLCFSAWGRS_RMRS
TREE	VOLCFSAWNNET_RMRS
TREE	VOLCFTOTNET_RMRS
TREE	VOLCFUPPGRS_RMRS
TREE	VOLCFUPPNET_RMRS
TREE	SAPLING_FUSIFORM_SRS
TREE	EPIPHYTE_PNWRS
TREE	ROOT_HT_PNWRS

Name of table affected	Name of column added to table
TREE	CAVITY_USE_PNWRS
TREE	CORE_LENGTH_PNWRS
TREE	CULTURALLY_KILLED_PNWRS
TREE	DIA_EST_PNWRS
TREE	GST_PNWRS
TREE	INC10YR_PNWRS
TREE	INC5YRHT_PNWRS
TREE	INC5YR_PNWRS
TREE	RING_COUNT_INNER_2INCHES_PNWRS
TREE	RING_COUNT_PNWRS
TREE	SNAG_DIS_CD_PNWRS
SEEDLING	AGECD_RMRS
SEEDLING	COUNTCHKCD_RMRS
SITETREE	AGECKCD_RMRS
SITETREE	AGE_DETERMINATION_METHOD_PNWRS
SITETREE	CCLCD_RMRS
SITETREE	DAMAGE_AGENT_CD1_RMRS
SITETREE	DAMAGE_AGENT_CD2_RMRS
SITETREE	DAMAGE_AGENT_CD3_RMRS
SITETREE	SIBASE_AGE_PNWRS
SITETREE	SITETRCD_RMRS
SITETREE	SITE_AGE_TREE_STATUS_PNWRS
SITETREE	SITE_AGE_TREE_TYPE_PNWRS
SITETREE	SITE_TREE_METHOD_PNWRS
SITETREE	SITREE_EQU_NO_PNWRS
SITETREE	TREECLCD_RMRS
SITETREE	TREE_ACT_RMRS
SITETREE	YEAR_AGE_TAKEN
DWM_VISIT	QA_STATUS
DWM_DUFF_LITTER_FUEL	DL_STATUS_CD
DWM_TRANSECT_SEGMENT	TRANSECT_LENGTH
REF_POP_ATTRIBUTE	SQL_QUERY
REF_POP_EVAL_TYP_DESCR	EVAL_TYP_CD

**Table F:** Database table attributes with updates to the descriptive name in FIADB 7.0.1

Name of table affected	Name of attribute affected
COND	SLOPE
SUBP_COND_CHNG_MTRX	SUBPTYP
SUBP_COND_CHNG_MTRX	SUBTYP_PROP_CHNG
TREE	PREVCOND
TREE	DRYBIO_STUMP
TREE_GRM_COMPONENT	MICR_TPAGROW_UNADJ_AL_FOREST
TREE_GRM_COMPONENT	MICR_SUBPTYP_GRM_AL_TIMBER
TREE_GRM_COMPONENT	MICR_TPAGROW_UNADJ_GRM_AL_TIMBER
TREE_GRM_COMPONENT	SUBP_TPAMORT_UNADJ_GS_TIMBER
TREE_GRM_COMPONENT	REMVCFGS_FOREST
TREE_GRM_COMPONENT	REMVBFSL_FOREST
TREE_GRM_COMPONENT	MORTCFGS_FOREST
TREE_GRM_COMPONENT	MORTBFSL_FOREST
TREE_GRM_COMPONENT	REMVCFGS_TIMBER
TREE_GRM_COMPONENT	MORTCFGS_TIMBER
TREE_GRM_COMPONENT	MORTBFSL_TIMBER
TREE_GRM_MIDPT	SUBPTYP
TREE_GRM_BEGIN	SUBPTYP
SEEDLING	UNITCD
P2VEG_SUBPLOT_SPP	GROWTH_HABIT_CD
P2VEG_SUBPLOT_SPP	LAYER
P2VEG_SUBPLOT_SPP	COVER_PCT
P2VEG_SUBP_STRUCTURE	GROWTH_HABIT_CD
P2VEG_SUBP_STRUCTURE	LAYER
P2VEG_SUBP_STRUCTURE	COVER_PCT
DWM_VISIT	DWM_NBR_SUBP_TRANSECT
DWM_COARSE_WOODY_DEBRIS	COVER_PCT
DWM_COARSE_WOODY_DEBRIS	LPA_UNADJ
DWM_COARSE_WOODY_DEBRIS	LPA_PLOT
DWM_COARSE_WOODY_DEBRIS	LPA_COND
DWM_COARSE_WOODY_DEBRIS	LPA_UNADJ_RGN
DWM_COARSE_WOODY_DEBRIS	LPA_PLOT_RGN
DWM_COARSE_WOODY_DEBRIS	LPA_COND_RGN
DWM_COARSE_WOODY_DEBRIS	CARBON_AC_COND
DWM_COARSE_WOODY_DEBRIS	CARBON_AC_PLOT

Name of table affected	Name of attribute affected
DWM_COARSE_WOODY_DEBRIS	DRYBIO_AC_COND
DWM_COARSE_WOODY_DEBRIS	DRYBIO_AC_PLOT
DWM_COARSE_WOODY_DEBRIS	DRYBIO_AC_UNADJ
DWM_COARSE_WOODY_DEBRIS	VOLCF_AC_COND
DWM_COARSE_WOODY_DEBRIS	VOLCF_AC_PLOT
DWM_RESIDUALPILE	DENSITY
DWM_RESIDUALPILE	DRYBIO
DWM_TRANSECT_SEGMENT	SLOPE_BEGNDIST
DWM_TRANSECT_SEGMENT	SLOPE_ENDDIST
COND_DWM_CALC	UNITCD
POP_STRATUM	ADJ_FACTOR_DUFF
SUBPLOT_REGEN	REGEN_NONSAMPLE_REASN_CD
PLOTGEOM	UNITCD
PLOTSNAP	UNITCD
PLOTSNAP	RDDISTCD
PLOTSNAP	MORT_TYP_CD
PLOTSNAP	KINDCD_NC
REF_SPECIES	SPECIES
REF_PLANT_DICTIONARY	SSP
REF_PLANT_DICTIONARY	VAR
REF_PLANT_DICTIONARY	SUBVAR
REF_PLANT_DICTIONARY	F

**Table G:** Database table attributes with updates to the attribute description text in FIADB 7.0.1

Name of table affected	Name of column with updated text
PLOT	REMPER
COND	FLDTYP_CD
COND	GSSTK_CD
COND	ALSTK_CD
COND	ALSTIK
COND	GSSTK
COND	VOL_LOC_GRP (third code from bottom in code table)
SUBP_COND	SUBP
BOUNDARY	SUBPTYP
SUBP_COND_CHNG_MTRX	SUBPTYP

Name of table affected	Name of column with updated text
TREE	SUBP
TREE	CONDID
TREE	SPGRPCD
TREE	DIA
TREE	AGENTCD
TREE	CVIGORCD
TREE	CDENCD
TREE	CDIEBKCD
TREE	TRANSCD
TREE	BHAGE
TREE	CULLMSTOP
TREE	STANDING_DEAD_CD
TREE	DRYBIO_SAPLING
TREE	DRYBIO_BG
TREE	CARBON_AG
TREE	CARBON_BG
TREE	DISEASE_SRS
TREE	DIEBACK_SEVERITY_SRS
TREE	DAMAGE_AGENT_CD1
TREE	DAMAGE_AGENT_CD1_SRS
TREE	DRYBIO_AG
TREE_GRM_COMPONENT	SUBPTYP_BEGIN
TREE_GRM_COMPONENT	SUBPTYP_MIDPT
TREE_GRM_COMPONENT	SUBPTYP_END
TREE_GRM_MIDPT	TREECLCD
TREE_GRM_MIDPT	SUBPTYP
TREE_GRM_BEGIN	TREECLCD
TREE_GRM_BEGIN	SUBPTYP
TREE_GRM_ESTN	REMPER
BEGINEND	ONEORTWO
SEEDLING	CONDID
SEEDLING	DAMAGE_AGENT_CD1_SRS
SITETREE	PREV_SIT_CN
SITETREE	CONDID
SITETREE	TREE
SITETREE	DIST
INVASIVE_SUBPLOT_SPP	UNITCD

Name of table affected	Name of column with updated text
INVASIVE_SUBPLOT_SPP	SUBP
INVASIVE_SUBPLOT_SPP	CONDID
INVASIVE_SUBPLOT_SPP	UNIQUE_SP_NBR
INVASIVE_SUBPLOT_SPP	VEG_SPCD
INVASIVE_SUBPLOT_SPP	COVER_PCT
P2VEG_SUBPLOT_SPP	CN
P2VEG_SUBPLOT_SPP	PLT_CD
P2VEG_SUBPLOT_SPP	UNITCD
P2VEG_SUBPLOT_SPP	SUBP
P2VEG_SUBPLOT_SPP	CONDID
P2VEG_SUBPLOT_SPP	VEG_FLDSPCD
P2VEG_SUBPLOT_SPP	UNIQUE_SP_NBR
P2VEG_SUBPLOT_SPP	GROWTH_HABIT_CD
P2VEG_SUBPLOT_SPP	LAYER
P2VEG_SUBPLOT_SPP	COVER_PCT
P2VEG_SUBP_STRUCTURE	CN
P2VEG_SUBP_STRUCTURE	PLT_CN
P2VEG_SUBP_STRUCTURE	UNITCD
P2VEG_SUBP_STRUCTURE	SUBP
P2VEG_SUBP_STRUCTURE	GROWTH_HABIT_CD
P2VEG_SUBP_STRUCTURE	LAYER
P2VEG_SUBP_STRUCTURE	COVER_PCT
DWM_VISIT	CWD_SAMPLE_METHOD
DWM_VISIT	FWD_SAMPLE_METHOD
DWM_VISIT	MICR_SAMPLE_METHOD
DWM_VISIT	DLF_SAMPLE_METHOD
DWM_VISIT	PILE_SAMPLE_METHOD
DWM_COARSE_WOODY_DEBRIS	CONDID
DWM_COARSE_WOODY_DEBRIS	LPA_UNADJ_RGN
DWM_COARSE_WOODY_DEBRIS	LPA_PLOT_RGN
DWM_COARSE_WOODY_DEBRIS	LPA_COND_RGN
DWM_DUFF_LITTER_FUEL	CONDID
DWM_DUFF_LITTER_FUEL	DUFFDEP
DWM_DUFF_LITTER_FUEL	LITTDEP
DWM_DUFF_LITTER_FUEL	FUELDEP
DWM_FINE_WOODY_DEBRIS	CONDID
DWM_RESIDUAL_PILE	CONDID

Name of table affected	Name of column with updated text
DWM_RESIDUALPILE	PILE_SAMPLE_METHOD
DWM_TRANSECT_SEGMENT	CONDID
DWM_TRANSECT_SEGMENT	SLOPE_BEGNDIST
COND_DWM_CALC	VALID
SEEDLING_REGEN	CONDID
POP_ESTN_UNIT	VALID
POP_EVAL	VALID
POP_PLOT_STRATUM_ASSGN	EVLALID
POP_PLOT_STRATUM_ASSGN	ESTN_UNIT
POP_STRATUM	VALID
POP_STRATUM	ESTN_UNIT
PLOTGEOM	CONGCD
PLOTGEOM	ECOSUBCD
PLOTSNAP	ECOSUBCD
PLOTSNAP	CONGCD
REF_FOREST_TYPE	MEANING
REF_FOREST_TYPE_GROUP	MEANING
REF_SPECIES	EXISTS_IN_NCRS
REF_SPECIES	EXISTS_IN_NERS
REF_SPECIES	EXISTS_IN_PNWRS
REF_SPECIES	EXISTS_IN_RMRS
REF_SPECIES	EXISTS_IN_SRS
REF_SPECIES	ST_EXISTS_IN_NCRS
REF_SPECIES	ST_EXISTS_IN_NERS
REF_SPECIES	ST_EXISTS_IN_PNWRS
REF_SPECIES	ST_EXISTS_IN_RMRS
REF_SPECIES	ST_EXISTS_IN_SRS
REF_PLANT_DICTIONARY	SYMBOL
REF_PLANT_DICTIONARY	SCIENTIFIC_NAME
REF_PLANT_DICTIONARY	NEW_SYMBOL
REF_PLANT_DICTIONARY	NEW_SCIENTIFIC_NAME
REF_PLANT_DICTIONARY	COMMON_NAME
REF_PLANT_DICTIONARY	CATEGORY
REF_PLANT_DICTIONARY	GROWTH_HABIT
REF_PLANT_DICTIONARY	DURATION
REF_PLANT_DICTIONARY	US_NATIVITY
REF_PLANT_DICTIONARY	GENUS

Name of table affected	Name of column with updated text
REF_PLANT_DICTIONARY	SPECIES
REF_PLANT_DICTIONARY	SSP
REF_PLANT_DICTIONARY	SUBSPECIES
REF_PLANT_DICTIONARY	VARIETY
REF_PLANT_DICTIONARY	SUBVAR
REF_PLANT_DICTIONARY	F
REF_SPECIES_GROUP	SPGRPCD
REF_SPECIES_GROUP	NAME
REF_FIADB_VERSION	VERSION
REF_FIADB_VERSION	INSTALL_TYPE

Other major changes in version 7.0.1 of the user guide are listed below.

- DBH and DRC were changed to d.b.h. and d.r.c., respectively, throughout the document.
- Hypertext links were added to text that refer the reader to a different location in the text.
- The acronym for the Pacific Northwest Research Station was changed from PNW to PNWRS throughout the document.
- Unnecessary text was deleted from the User Guide Updates section.
- Section 1.3.2 Keys Presented with the Tables: Added the table abbreviations for new tables added in versions 7.0 and 7.0.1.
- PLOT: Added introductory text immediately following the table of keys.
- TREE: Added introductory text immediately following the table of keys.
- Added a new table 3.2 and renumbered the rest of the tables in chapter 3.
- TREE\_REGIONAL BIOMASS: Modified the introductory text immediately following the table of keys.
- TREE\_GRM\_COMPONENT: Modified the introductory text immediately following the table of keys.
- TREE\_GRM\_MIDPT: Modified the introductory text immediately following the table of keys. TREE\_GRM\_BEGIN: Corrected typo in the primary key.
- BEGINEND: Added a unique key.
- REF\_POP\_ATTRIBUTE: Added introductory text immediately following the table of keys.
- REF\_PLANT\_DICTIONARY: Modified the introductory text immediately following the table of keys.
- REF\_INVASIVE\_SPECIES: Modified the introductory text immediately following the table of keys.
- Literature cited: Added several citations to the list.
- Index of Tables: Updates were made as needed.

- Index FIADB: Corrections made to match changes in the tables and in the FIA National Field Guide version 7.1.
- Appendix C: Administrative National Forest Codes and Names. Updated information in code 808.
- Appendix D: Forest Type Codes and Names. Updated code 391 to East. Also updated several forest type descriptions.
- Appendix F: Tree Species Codes, Names, and Occurrences. Added a note at the beginning of the table, and added code 376. Added occurrence in PNWRS for code 741.
- Appendix H: Pacific Tree Species Codes and Names. Added code 6445.
- Appendix I: FIA Plot Design Codes. Corrected type in code 503, and added footnotes to the table for d.b.h. and FHM.
- Appendix O: Values and Descriptions in REF\_POP\_ATTRIBUTE. Updated the table entries to match entries actually in the REF\_POP\_ATTRIBUTE table.

### **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 H 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 H:** Page range for individual document sections (for hard-copy printing).

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Appendix I: Forest Inventory and Analysis (FIA) Plot Design Codes and Definitions by FIA Work Unit	825	832
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# Chapter 1: Overview

## Chapter Contents:

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

## 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). This document replaces the previous FIADB user guide numbered 7.0, and General Technical Report RMRS-245, which covered version 4.0 of the FIADB. Although it is used widely within the Forest Inventory and Analysis (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.

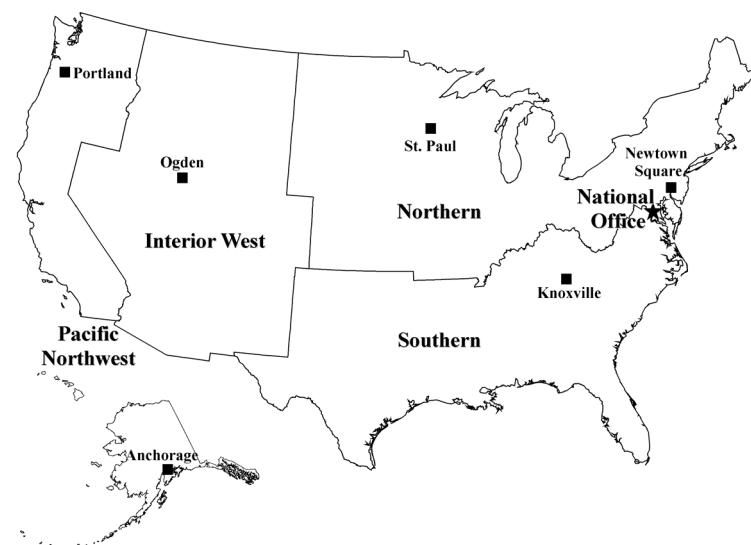
This guide has nine chapters. The remainder of chapter 1 includes general introductions to the FIA program and the FIA database, including brief histories of both. It provides a convenient overview for those who have an interest in using FIA data, but have not yet become familiar with the FIA program. 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 9 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 to 9) 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 (Edition: March, 2017)* explains the standard methods used to compile population-level estimates from FIADB, and applies the new 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 new 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 9, 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 of timber 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 L 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 L](#)). At the time of publication of this document, annual inventory has not yet been started in Interior Alaska. 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](http://fia.fs.fed.us/tools-data/) (<http://fia.fs.fed.us/tools-data/>), follow the format described in this document. Also available at this site are tools to make population estimates. The web-based [EVALIDator tool](#) or the [Forest Inventory Data Online \(FIDO\) tool](#) provides 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. This is the seventh version of the single national FIA database to be released. 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 L](#)). 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 (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. 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 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 are designated as Phase 3 (P3) plots (formerly known as Forest Health Monitoring [FHM] plots) where additional health indicator attributes are collected. Phases 1 and 2 are described in this chapter, but Phase 3 is described in a separate user guide (U.S. Forest Service 2014, online). The exception is P3 crown attributes, which are described in the TREE table of this document.

### 1.2.1 Sampling and Stratification Methodology

#### Remote Sensing (P1)

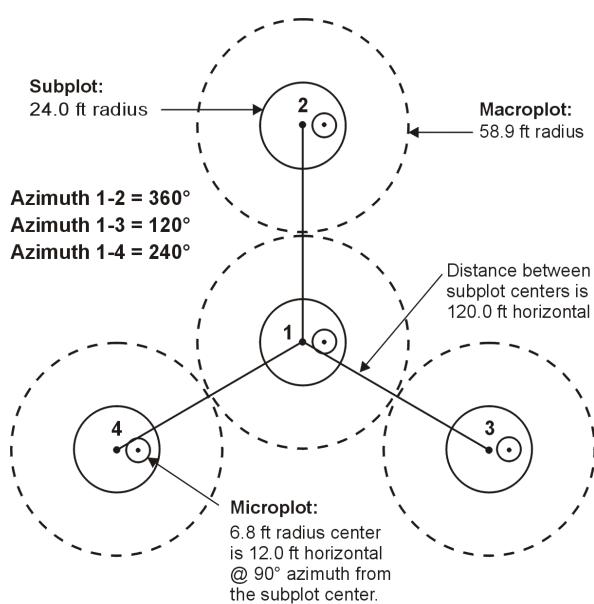
The basic level of inventory in the FIA program is the State, which begins with the interpretation of a remotely sensed sample, referred to as Phase 1 (P1). The intent of P1 is to classify the land into various classes for the purpose of developing meaningful strata. A stratum is a group of plots that 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

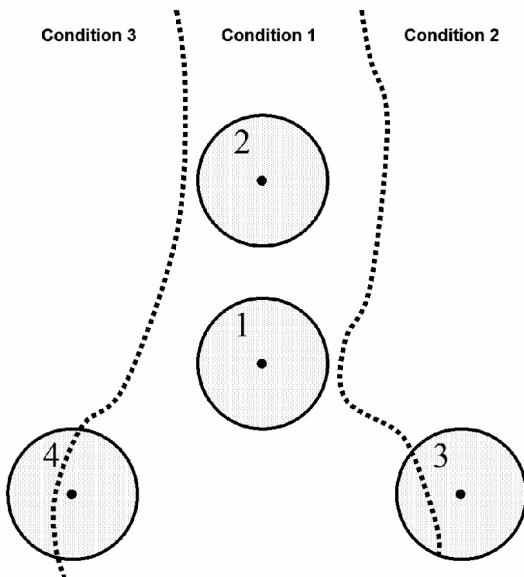
#### Plot Designs

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 I](#) (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  $360^\circ$ ,  $120^\circ$ , and  $240^\circ$ , 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 (see <http://www.fia.fs.fed.us/library/field-guides-methods-proc/>). 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 collected 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 Wilson	801-625-5397	John Shaw	801-625-5673
North Central (NCRS)*	23	IL, IN, IA, KS, MI, MN, MO, NE, ND, SD, WI	Mark Hatfield	651-649-5169	Scott Pugh	906-482-6303 x17
Northeastern (NERS)*	24	CT, DE, ME, MD, MA, NH, NJ, NY, OH, PA, RI, VT, WV	Mark Hatfield	651-649-5169	Randy Morin	610-557-4054
Pacific Northwest (PNWRS)	26,27	AK, CA, HI, OR, WA	Ron Wanek	503-808-2048	Sharon Stanton	503-808-2019
Southern (SRS)	33	AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, VA, PR, VI	Jeff Turner	865-862-2053	Tom Brandeis	865-862-2030

\* 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 I 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  $\geq 5.0$  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

$$[2] \quad TPA \text{ per 24-foot fixed-radius subplot}$$

$$\begin{aligned} \text{Radius of a subplot} &= 24 \text{ feet} \\ \text{Area of subplot} &= \pi \cdot \text{radius}^2 \\ \text{Area of subplot} &= 3.141592654 \cdot 24^2 \\ \text{Area of subplot} &= 1809.557368 \text{ square feet} \end{aligned}$$

$$\text{Acres in a subplot} = \text{area of subplot in square feet} / (43560 \text{ square feet / acre})$$

$$\text{Acres in a subplot} = 1809.557368 \text{ square feet} / (43560 \text{ square feet / acre})$$

$$\text{Acres in a subplot} = 0.04154172 \text{ acres per subplot}$$

$$\text{Acres in a plot} = 4 \text{ subplots per plot}$$

$$\begin{aligned}\text{Acres per plot} &= 4 * 0.04154172 \\ &= 0.166166884 \text{ acres per plot}\end{aligned}$$

$$\text{TPA} = 1 / (0.166166884) = 6.018046$$

The TPA expansion factor of each sapling 1.0 to 5.0 inches d.b.h./d.r.c. occurring on the current microplot design would be calculated using equation [3]:

$$\begin{aligned}[3] \quad \text{TPA per 6.8-foot fixed-radius microplot} \\ \text{Radius of a microplot} &= 6.8 \text{ feet} \\ \text{Area of microplot} &= \pi * \text{radius}^2 \\ \text{Area of microplot} &= 3.141592654 * 6.8^2 \\ \text{Area of microplot} &= 145.2672443 \text{ square feet} \\ \text{Acres in a microplot} &= \text{area of microplot in square feet} / \\ &\quad (43560 \text{ square feet / acre}) \\ \text{Acres in a microplot} &= 145.2672443 \text{ square feet} / (43560 \text{ square feet / acre}) \\ \text{Acres in a microplot} &= 0.003334877 \text{ acres per subplot} \\ \text{Acres in a plot} &= 4 \text{ microplots per plot} \\ \text{Acres per plot} &= 4 * 0.003334877 \\ &= 0.013339508 \text{ acres per plot} \\ \text{TPA} &= 1 / (0.013339508) = 74.965282\end{aligned}$$

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

$$\begin{aligned}[4] \quad \text{TPA per 58.9-foot fixed-radius macroplot} \\ \text{Radius of a macroplot} &= 58.9 \text{ feet} \\ \text{Area of macroplot} &= \pi * \text{radius}^2 \\ \text{Area of macroplot} &= 3.141592654 * 58.9^2 \\ \text{Area of macroplot} &= 10898.84465 \text{ square feet} \\ \text{Acres in a macroplot} &= \text{area of macroplot in square feet} / \\ &\quad (43560 \text{ square feet / acre}) \\ \text{Acres in a macroplot} &= 10898.84465 \text{ square feet} / (43560 \text{ square feet / acre}) \\ \text{Acres in a macroplot} &= 0.250203045 \text{ acres per subplot} \\ \text{Acres in a plot} &= 4 \text{ macroplots per plot} \\ \text{Acres per plot} &= 4 * 0.250203045 \\ &= 1.000812181 \text{ acres per plot} \\ \text{TPA} &= 1 / (1.000812181) = 0.999188\end{aligned}$$

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]:

$$\begin{aligned}[5] \quad \text{TPA} &= (\text{BAF} / 0.005454 * \text{DIA}^2) / N \\ \text{Where BAF} &\text{ is the variable-radius basal area factor in square feet,} \\ \text{DIA} &\text{ is diameter of the tally tree in inches, and} \\ N &\text{ is the number of points in the plot design.}\end{aligned}$$

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 I.

### **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).

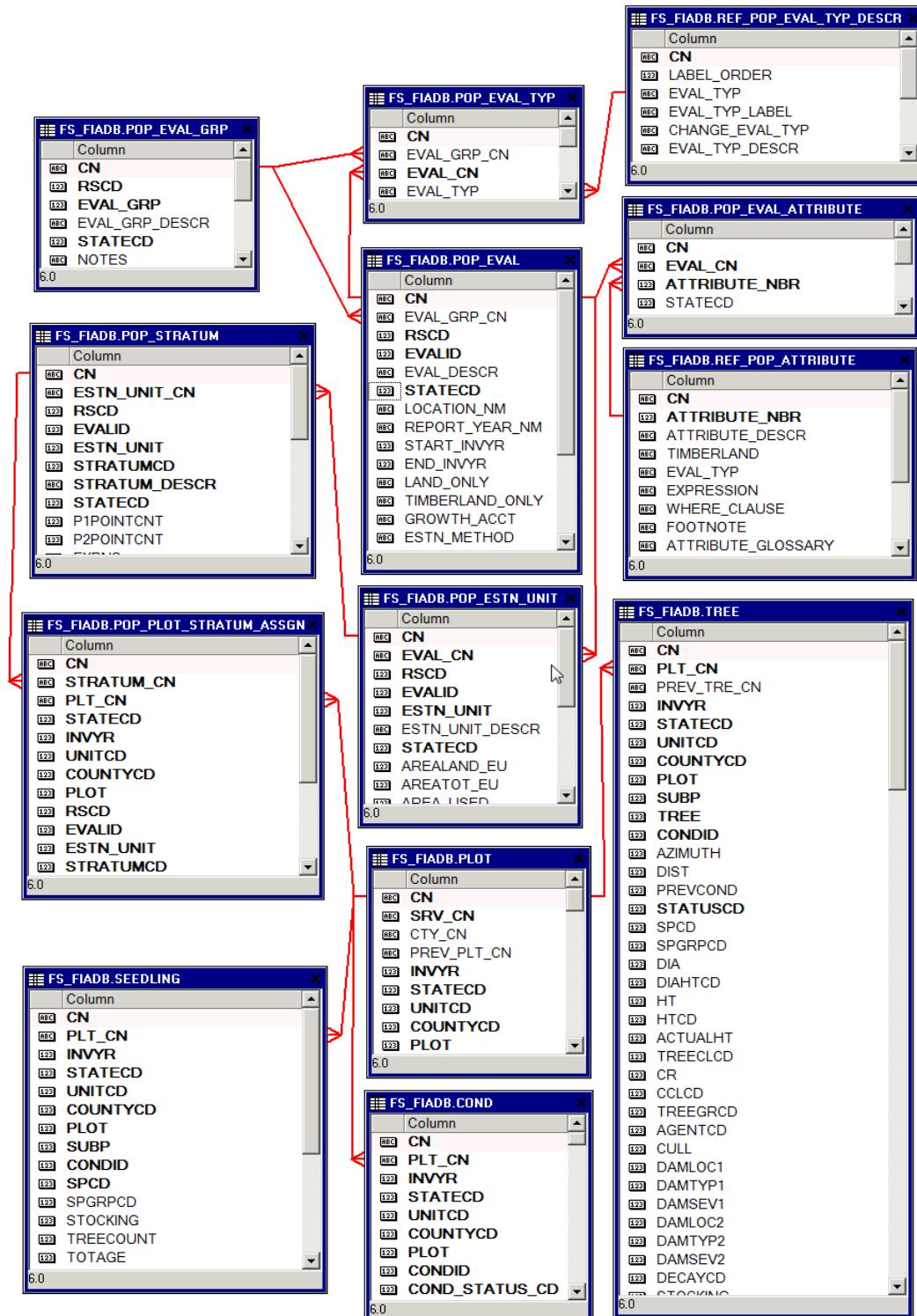
## 1.3 Database Structure

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:

Table name	Table abbreviation
SURVEY	SRV
COUNTY	CTY
PLOT	PLT
COND	CND
SUBPLOT	SBP
SUBP_COND	SCD
BOUNDARY	BND
SUBP_COND_CHNG_MTRX	CMX
TREE	TRE
TREE_WOODLAND_STEMS	WOODS
TREE_REGIONAL_BIOMASS	TRB
TREE_GRM_COMPONENT	TRE_GRM_CMP
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
GRND_CVR	GRND_CVR
DWM_VISIT	DVT
DWM_COARSE_WOODY_DEBRIS	DCW
DWM_DUFF_LITTER_FUEL	DDL
DWM_FINE_WOODY_DEBRIS	DFW
DWM_MICROPLOT_FUEL	DMF
DWM_RESIDUAL_PILE	DRP

<b>Table name</b>	<b>Table abbreviation</b>
DWM_TRANSECT_SEGMENT	DTS
COND_DWM_CALC	CDC
PLOT_REGEN	PLTREGEN
SUBPLOT_REGEN	SBPREGEN
SEEDLING_REGEN	SDLREGEN
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	SPC
REF_PLANT_DICTIONARY	RPD
REF_SPECIES_GROUP	SGP
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
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

**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 two digits (<i>for example</i>, "11" or "5"), however, none of the digits are decimals. An attribute with a data type specified as "NUMBER(3,1)" may contain a maximum of three digits, however, the last digit is a fixed decimal (<i>for example</i>, "4.0" or "12.7"). Likewise, "NUMBER(6,4)" would indicate that an attribute may contain a maximum of six digits, however, the last four digits are part of a fixed decimal (<i>for example</i>, "18.7200"). <b>Note:</b> 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>



# Chapter 2: Database Tables - Location Level

## Chapter Contents:

Section	Database table
2.1	<a href="#">Survey Table</a>
2.2	<a href="#">County Table</a>
2.3	<a href="#">Plot Table</a>
2.4	<a href="#">Condition Table</a>
2.5	<a href="#">Subplot Table</a>
2.6	<a href="#">Subplot Condition Table</a>
2.7	<a href="#">Boundary Table</a>
2.8	<a href="#">Subplot Condition Change Matrix</a>

## 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)

Key Type	Column(s) order	Tables to link	Abbreviated notation
Primary	CN	N/A	SRV_PK
Unique	STATECD, INVYR, P3_OZONE_IND, CYCLE	N/A	SRV_UK

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

**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.

### **2.1.4 STATECD**

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

### **2.1.5 STATEAB**

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

### **2.1.6 STATEGM**

**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**

<b>Code</b>	<b>Description</b>
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)-Alaska.
33	Southern Research Station (SRS).

### **2.1.8 ANN\_INVENTORY**

**Annual Inventory.** An indicator to show if a particular inventory was collected as an annual inventory or a periodic inventory. Values are Y or N, and Y means that the inventory is 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 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.



## 2.2 County Table

(Oracle table name: COUNTY)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
2.2.1	STATECD	State code	NUMBER(4)
2.2.2	UNITCD	Survey unit code	NUMBER(2)
2.2.3	COUNTYCD	County code	NUMBER(3)
2.2.4	COUNTYNM	County name	VARCHAR2(50)
2.2.5	CN	Sequence number	VARCHAR2(34)
2.2.6	CREATED_BY	Created by	VARCHAR2(30)
2.2.7	CREATED_DATE	Created date	DATE
2.2.8	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
2.2.9	MODIFIED_BY	Modified by	VARCHAR2(30)
2.2.10	MODIFIED_DATE	Modified date	DATE
2.2.11	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

### 2.2.1 STATECD

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

### 2.2.2 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.

### 2.2.3 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.

### 2.2.4 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.

### 2.2.5 CN

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

**2.2.6 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**2.2.7 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**2.2.8 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**2.2.9 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**2.2.10 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**2.2.11 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

## 2.3 Plot Table

(Oracle table name: PLOT)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
2.3.1	CN	Sequence number	VARCHAR2(34)
2.3.2	SRV_CN	Survey sequence number	VARCHAR2(34)
2.3.3	CTY_CN	County sequence number	VARCHAR2(34)
2.3.4	PREV_PLT_CN	Previous plot sequence number	VARCHAR2(34)
2.3.5	INVYR	Inventory year	NUMBER(4)
2.3.6	STATECD	State code	NUMBER(4)
2.3.7	UNITCD	Survey unit code	NUMBER(2)
2.3.8	COUNTYCD	County code	NUMBER(3)
2.3.9	PLOT	Phase 2 plot number	NUMBER(5)
2.3.10	PLOT_STATUS_CD	Plot status code	NUMBER(1)
2.3.11	PLOT_NONSAMPLE_REASON_CD	Plot nonsampled reason code	NUMBER(2)
2.3.12	MEASYEAR	Measurement year	NUMBER(4)
2.3.13	MEASMON	Measurement month	NUMBER(2)
2.3.14	MEASDAY	Measurement day	NUMBER(2)
2.3.15	REMPER	Remeasurement period	NUMBER(3,1)
2.3.16	KINDCD	Sample kind code	NUMBER(2)
2.3.17	DESIGNCD	Plot design code	NUMBER(4)
2.3.18	RDDISTCD	Horizontal distance to improved road code	NUMBER(2)
2.3.19	WATERCD	Water on plot code	NUMBER(2)
2.3.20	LAT	Latitude	NUMBER(8,6)
2.3.21	LON	Longitude	NUMBER(9,6)
2.3.22	ELEV	Elevation	NUMBER(5)
2.3.23	GROW_TYP_CD	Type of annual volume growth code	NUMBER(2)
2.3.24	MORT_TYP_CD	Type of annual mortality volume code	NUMBER(2)
2.3.25	P2PANEL	Phase 2 panel number	NUMBER(2)
2.3.26	P3PANEL	Phase 3 panel number	NUMBER(2)
2.3.27	ECOSUBCD	Ecological subsection code	VARCHAR2(7)
2.3.28	CONGCD	Congressional district code	NUMBER(4)
2.3.29	MANUAL	Manual (field guide) version number	NUMBER(3,1)
2.3.30	KINDCD_NC	Sample kind code, North Central	NUMBER(2)
2.3.31	QA_STATUS	Quality assurance status	NUMBER(1)
2.3.32	CREATED_BY	Created by	VARCHAR2(30)
2.3.33	CREATED_DATE	Created date	DATE

Subsection	Column name (attribute)	Descriptive name	Oracle data type
2.3.34	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
2.3.35	MODIFIED_BY	Modified by	VARCHAR2(30)
2.3.36	MODIFIED_DATE	Modified date	DATE
2.3.37	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)
2.3.38	MICROPLOT_LOC	Microplot location	VARCHAR2(12)
2.3.39	DECLINATION	Declination	NUMBER(4,1)
2.3.40	EMAP_HEX	EMAP hexagon	NUMBER(7)
2.3.41	SAMP_METHOD_CD	Sample method code	NUMBER(1)
2.3.42	SUBP_EXAMINE_CD	Subplots examined code	NUMBER(1)
2.3.43	MACRO_BREAKPOINT_DIA	Macroplot breakpoint diameter	NUMBER(2)
2.3.44	INTENSITY	Intensity	VARCHAR2(3)
2.3.45	CYCLE	Inventory cycle number	NUMBER(2)
2.3.46	SUBCYCLE	Inventory subcycle number	NUMBER(2)
2.3.47	ECO_UNIT_PNW	Ecological unit, Pacific Northwest Research Station	VARCHAR2(10)
2.3.48	TOPO_POSITION_PNW	Topographic position, Pacific Northwest Research Station	VARCHAR2(2)
2.3.49	NF_SAMPLING_STATUS_CD	Nonforest sampling status code	NUMBER(1)
2.3.50	NF_PLOT_STATUS_CD	Nonforest plot status code	NUMBER(1)
2.3.51	NF_PLOT_NONSAMPLE_REASN_CD	Nonforest plot nonsampled reason code	NUMBER(2)
2.3.52	P2VEG_SAMPLING_STATUS_CD	P2 vegetation sampling status code	NUMBER(1)
2.3.53	P2VEG_SAMPLING_LEVEL_DETAIL_CD	P2 vegetation sampling level detail code	NUMBER(1)
2.3.54	INVASIVE_SAMPLING_STATUS_CD	Invasive sampling status code	NUMBER(1)
2.3.55	INVASIVE_SPECIMEN_RULE_CD	Invasive specimen rule code	NUMBER(1)
2.3.56	DESIGNCD_P2A	Design code periodic to annual	NUMBER(4)
2.3.57	SUBPANEL	Subpanel	NUMBER(2)
2.3.58	COLOCATED_CD_RMRS	Accounting co-located code, Rocky Mountain Research Station	NUMBER(1)
2.3.59	CONDCHNGCD_RMRS	Condition class change code, Rocky Mountain Research Station	NUMBER(1)
2.3.60	FUTFORCD_RMRS	Future forest potential code, Rocky Mountain Research Station	NUMBER(1)
2.3.61	MANUAL_DB	Manual version of the data	NUMBER(3,1)
2.3.62	MANUAL_NCRS	Manual (field guide) version number, North Central Research Station	NUMBER(4,2)
2.3.63	MANUAL_NERS	Manual (field guide) version number, Northeastern Research Station	NUMBER(4,2)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
2.3.64	MANUAL_RMRS	Manual (field guide) version number, Rocky Mountain Research Station	NUMBER(4,2)
2.3.65	PAC_ISLAND_PNWRS	Pacific Island name, Pacific Northwest Research Station	VARCHAR2(20)
2.3.66	PLOT_SEASON_NERS	Plot accessible season, Northeastern Research Station	NUMBER(1)
2.3.67	PRECIPITATION	Precipitation	NUMBER
2.3.68	PREV_MICROPLOT_LOC_RMRS	Previous microplot location, Rocky Mountain Research Station	VARCHAR2(12)
2.3.69	PREV_PLOT_STATUS_CD_RMRS	Previous plot status code, Rocky Mountain Research Station	NUMBER(1)
2.3.70	REUSECD1	Recreation use code 1 (Pacific Islands)	NUMBER(2)
2.3.71	REUSECD2	Recreation use code 2 (Pacific Islands)	NUMBER(2)
2.3.72	REUSECD3	Recreation use code 3 (Pacific Islands)	NUMBER(2)

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 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 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.

**2.3.1 CN**

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

**2.3.2 SRV\_CN**

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

**2.3.3 CTY\_CN**

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

**2.3.4 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.

**2.3.5 INVYR**

**Inventory year.** See SURVEY.INVYR description for definition.

**2.3.6 STATECD**

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

**2.3.7 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.

**2.3.8 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.

**2.3.9 PLOT**

**Phase 2 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.

**2.3.10 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.

**2.3.11 PLOT\_NONSAMPLE\_REASON\_CD**

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

**Codes: PLOT\_NONSAMPLE\_REASN\_CD**

<b>Code</b>	<b>Description</b>
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.

**2.3.12 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.

**2.3.13 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**

<b>Code</b>	<b>Description</b>
01	January.
02	February.
03	March.
04	April.
05	May.
06	June.
07	July.
08	August.
09	September.
10	October.
11	November.
12	December.

**2.3.14 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.

**2.3.15 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.

**Note:** It is **not** valid to use REMPER to estimate change.

**2.3.16 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).

**2.3.17 DESIGNCD**

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

**2.3.18 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. Populated for all forested plots using the National Field Guide protocols (MANUAL  $\geq 1.0$ ) and populated by some FIA work units for inventory plots collected where 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.

Code	Description
6	1/2 to 1 mile.
7	1 to 3 miles.
8	3 to 5 miles.
9	Greater than 5 miles.

### 2.3.19 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 forest land portion of the four subplots. The coding hierarchy is listed in order from large permanent water to temporary water. Populated for all forested plots using the National Field Guide protocols (MANUAL ≥1.0) and populated by some FIA work units for inventory plots collected where MANUAL <1.0.

#### Codes: WATERCD

Code	Description
0	None - no water sources within the accessible forest land condition class.
1	Permanent streams or ponds too small to qualify as noncensus water.
2	Permanent water in the form of deep swamps, bogs, marshes without standing trees present and less than 1.0 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.

### 2.3.20 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.

### 2.3.21 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.

**2.3.22 ELEV**

**Elevation.** The distance the plot is located above sea level. Rounded to the nearest 10-foot category for certain FIA work units (SURVEY.RSCD = 23 or 24), and rounded to the nearest 100-foot category for other FIA work units (SURVEY.RSCD = 22, 26, 27, or 33). Negative values indicate distance below sea level.

**2.3.23 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.

**2.3.24 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.

**2.3.25 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.

**2.3.26 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).

### 2.3.27 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) (<http://www.treesearch.fs.fed.us/pubs/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. See the webpage for [Alaska Ecoregions Mapping](#) for more information (<http://agdc.usgs.gov/data/usgs/erosaf0/ecoreg/index.html>).

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](#)" ([http://www.nsf.gov/pubs/2003/nsf03021/nsf03021\\_2.pdf](http://www.nsf.gov/pubs/2003/nsf03021/nsf03021_2.pdf)). In: Arctic Research of the United States. 2002. Volume 16:6-17. The ECOSUBCD is based on fuzzed and swapped plot coordinates. This attribute is coded for the coterminous United States, southeast and south coastal Alaska, and is left blank (null) in all other instances.

### 2.3.28 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; the assignment is made based on the plot's approximate coordinates. CONGCD is a four-digit number. The first two digits are the State FIPS code and the last two digits are the congressional district number. If a State has only one congressional district, the congressional district number is 00. If a plot's congressional district assignment falls in a State other than the plot's actual State due to using the approximate coordinates, the congressional district code 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).

### 2.3.29 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.

### 2.3.30 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: KINCD\_CD\_NC**

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

**2.3.31 QA\_STATUS**

**Quality assurance status.** A code indicating the type of plot data collected. Populated for all forested subplots using the National Field Guide protocols (MANUAL ≥1.0). Codes 2-6 indicate additional quality assurance data that are not included in the FIADB.

**Codes: QA\_STATUS**

<b>Code</b>	<b>Description</b>
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 - the same as a production plot but the measurement is taken under the supervision of a quality assurance crew.

**2.3.32 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**2.3.33 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**2.3.34 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**2.3.35 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**2.3.36 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**2.3.37 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

**2.3.38 MICROPLOT\_LOC**

**Microplot location.** Values are 'OFFSET' or 'CENTER.' The offset microplot center is located 12 feet due east (90 degrees) of subplot center. The current standard 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.

### 2.3.39 DECLINATION

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

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

### 2.3.40 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. Populated for annual inventory and may be populated for periodic inventory.

### 2.3.41 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.

### 2.3.42 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).

### 2.3.43 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 (Interior West). 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).

#### **2.3.44 INTENSITY**

**Intensity.** A code used to identify federal base grid annual inventory plots and plots that have been added to intensify a particular sample. Under the federal base grid, one plot is collected in each theoretical hexagonal polygon, which is slightly more than 5,900 acres in size. Plots with INTENSITY = 1 are part of the federal base grid. In some instances, States and/or agencies have provided additional support to increase the sampling intensity for an area. Supplemental plots have INTENSITY set to higher numbers depending on the amount of plot intensification chosen for the particular estimation unit. Populated for annual inventory data only.

#### **2.3.45 CYCLE**

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

#### **2.3.46 SUBCYCLE**

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

#### **2.3.47 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 collected by certain FIA work units (SURVEY.RSCD = 26 or 27).

#### **2.3.48 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](#) (<http://www.fs.fed.us/pnw/fia/publications/fieldmanuals.shtml>). Adapted from information found in Wilson (1900). Only collected by certain FIA work units (SURVEY.RSCD = 26).

**Codes: TOPO\_POSITION\_PNW**

<b>Code</b>	<b>Topographic Position</b>	<b>Common shape of slope</b>
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.

**2.3.49 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 the entire suite of attributes that are measured on forest lands were measured.

**Codes: NF\_SAMPLING\_STATUS\_CD**

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

**2.3.50 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.

**2.3.51 NF\_PLOT\_NONSAMPLE\_REASN\_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. A field note is required to describe the situation.

**2.3.52 P2VEG\_SAMPLING\_STATUS\_CD**

**P2 vegetation sampling status code.** A code indicating whether vegetation data were recorded on the plot and the land class(es) on which the data were recorded.

**Codes: P2VEG\_SAMPLING\_STATUS\_CD**

<b>Code</b>	<b>Description</b>
0	Not sampling P2 vegetation.
1	P2 vegetation data collected only on accessible forest land conditions (COND_STATUS_CD = 1 and NF_SAMPLING_STATUS_CD = 0).
2	P2 vegetation data collected on all accessible land conditions (COND_STATUS_CD = 1 or NF_SAMPLING_STATUS_CD = 2).

**2.3.53 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**

<b>Code</b>	<b>Description</b>
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) <b>plus</b> 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), <b>plus</b> 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.

**2.3.54 INVASIVE\_SAMPLING\_STATUS\_CD**

**Invasive sampling status code.** A code indicating whether Invasive plant data were recorded on the plot and the land class(es) on which the data were recorded.

**Codes: INVASIVE\_SAMPLING\_STATUS\_CD|INVASIVE\_SPECIMEN\_RULE\_CD**

<b>Code</b>	<b>Description</b>
0	Not collecting invasive plant data.
1	Invasive plant data collected only on accessible forest land conditions (COND_STATUS_CD = 1).
2	Invasive plant data collected on all accessible land conditions (COND_STATUS_CD = 1 or NF_COND_STATUS_CD = 2).

**2.3.55 INVASIVE\_SPECIMEN\_RULE\_CD**

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

**Codes: INVASIVE\_SPECIMEN\_RULE\_CD**

<b>Code</b>	<b>Description</b>
0	FIA work unit does not require specimen collection for invasive plants.
1	FIA work unit requires specimen collection for invasive plants.

**2.3.56 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 I](#) for a list of codes and descriptions.

**2.3.57 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 or 27); SRS (SURVEY.RSCD = 33, only for Oklahoma where UNITCD  $\geq 3$ ). Populated for all plots using the National Field Guide protocols (MANUAL  $\geq 1.0$ ).

**Codes: SUBPANEL**

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

**2.3.58 COLOCATED\_CD\_RMRS**

**Accounting co-located code, Rocky Mountain Research Station.** A code indicating whether or not the current annual plot (using the national plot design) is co-located with an old design or periodic mapped design plot. Only collected by certain FIA work units (SURVEY.RSCD = 22)

**Codes: COLOCATED\_CD\_RMRS**

Code	Description
0	No, plot is not co-located with an old design or periodic mapped design plot.
1	Yes, plot is co-located with an old design or periodic mapped design plot.

**2.3.59 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 collected 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 compute-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.

Code	Description
2	There are no true condition changes. The previous crew mapped or failed to map a condition(s) in obvious error. Explain error in notes.
3	There are no true condition changes. Change is due to procedural or definition changes.

### 2.3.60 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 collected 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"> <li>• 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.).</li> <li>• Located in a large reservoir.</li> <li>• 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.</li> <li>• Located on barren rock, sand dunes, etc.</li> </ul>
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). <b>Note:</b> Where code 2 is selected, note the dominant tree or shrub species on the site in the condition notes.

### 2.3.61 MANUAL\_DB

**Manual version of the data.** The 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 web site](http://www.fia.fs.fed.us/library/field-guides-methods-proc/index.php) (<http://www.fia.fs.fed.us/library/field-guides-methods-proc/index.php>).

### 2.3.62 MANUAL\_NCRS

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

### 2.3.63 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 collected by certain FIA work units (SURVEY.RSCD = 24).

### 2.3.64 MANUAL\_RMRS

**Manual version, Rocky Mountain Research Station.** The version number of the RMRS Field Guide (Interior West FIA P2 Field Procedures) used to describe procedures for collecting data on the plot. Only collected by certain FIA work units (SURVEY.RSCD = 22).

**2.3.65 PAC\_ISLAND\_PNWRS**

**Pacific Island name, Pacific Northwest Research Station.** The name of the Pacific Island the plot is located on (for applicable plots). Only collected by certain FIA work units (SURVEY.RSCD = 26).

**2.3.66 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.

**2.3.67 PRECIPITATION**

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

**2.3.68 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 collected 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.

**2.3.69 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 collected 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.

**2.3.70 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 collected 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.
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.

### 2.3.71 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.

### 2.3.72 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 Condition Table

(Oracle table name: COND)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
2.4.1	CN	Sequence number	VARCHAR2(34)
2.4.2	PLT_CN	Plot sequence number	VARCHAR2(34)
2.4.3	INVYR	Inventory year	NUMBER(4)
2.4.4	STATECD	State code	NUMBER(4)
2.4.5	UNITCD	Survey unit code	NUMBER(2)
2.4.6	COUNTYCD	County code	NUMBER(3)
2.4.7	PLOT	Phase 2 plot number	NUMBER(5)
2.4.8	CONDID	Condition class number	NUMBER(1)
2.4.9	COND_STATUS_CD	Condition status code	NUMBER(1)
2.4.10	COND_NONSAMPLE_REASN_CD	Condition nonsampled reason code	NUMBER(2)
2.4.11	RESERVCD	Reserved status code	NUMBER(2)
2.4.12	OWNCD	Owner class code	NUMBER(2)
2.4.13	OWNGRPCD	Owner group code	NUMBER(2)
2.4.14	FORINDCD	Private owner industrial status code	NUMBER(2)
2.4.15	ADFORCD	Administrative forest code	NUMBER(4)
2.4.16	FORTYPCD	Forest type code	NUMBER(3)
2.4.17	FLDTYPCD	Field forest type code	NUMBER(3)
2.4.18	MAPDEN	Mapping density	NUMBER(1)
2.4.19	STDAGE	Stand age	NUMBER(4)
2.4.20	STDSZCD	Stand-size class code	NUMBER(2)
2.4.21	FLDSZCD	Field stand-size class code	NUMBER(2)
2.4.22	SITECLCD	Site productivity class code	NUMBER(2)
2.4.23	SICOND	Site index for the condition	NUMBER(3)
2.4.24	SIBASE	Site index base age	NUMBER(3)
2.4.25	SISP	Site index species code	NUMBER(4)
2.4.26	STDORGCD	Stand origin code	NUMBER(2)
2.4.27	STDORGSP	Stand origin species code	NUMBER
2.4.28	PROP_BASIS	Proportion basis	VARCHAR2(12)
2.4.29	CONDPROP_UNADJ	Condition proportion unadjusted	NUMBER
2.4.30	MICRPROP_UNADJ	Microplot proportion unadjusted	NUMBER
2.4.31	SUBPPROP_UNADJ	Subplot proportion unadjusted	NUMBER
2.4.32	MACRPROP_UNADJ	Macroplot proportion unadjusted	NUMBER
2.4.33	SLOPE	Percent slope	NUMBER(3)
2.4.34	ASPECT	Aspect	NUMBER(3)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
2.4.35	PHYSCLCD	Physiographic class code	NUMBER(2)
2.4.36	GSSTKCD	Growing-stock stocking code	NUMBER(2)
2.4.37	ALSTKCD	All live stocking code	NUMBER(2)
2.4.38	DSTRBCD1	Disturbance code 1	NUMBER(2)
2.4.39	DSTRBYR1	Disturbance year 1	NUMBER(4)
2.4.40	DSTRBCD2	Disturbance code 2	NUMBER(2)
2.4.41	DSTRBYR2	Disturbance year 2	NUMBER(4)
2.4.42	DSTRBCD3	Disturbance code 3	NUMBER(2)
2.4.43	DSTRBYR3	Disturbance year 3	NUMBER(4)
2.4.44	TRTCD1	Treatment code 1	NUMBER(2)
2.4.45	TRTYR1	Treatment year 1	NUMBER(4)
2.4.46	TRTCD2	Treatment code 2	NUMBER(2)
2.4.47	TRTYR2	Treatment year 2	NUMBER(4)
2.4.48	TRTCD3	Treatment code 3	NUMBER(2)
2.4.49	TRTYR3	Treatment year 3	NUMBER(4)
2.4.50	PRESNFCD	Present nonforest code	NUMBER(2)
2.4.51	BALIVE	Basal area per acre of live trees	NUMBER(9,4)
2.4.52	FLDAGE	Field-recorded stand age	NUMBER(4)
2.4.53	ALSTK	All-live-tree stocking percent	NUMBER(7,4)
2.4.54	GSSTK	Growing-stock stocking percent	NUMBER(7,4)
2.4.55	FORTYPCDCALC	Forest type code calculated	NUMBER(3)
2.4.56	HABTPCD1	Habitat type code 1	VARCHAR2(10)
2.4.57	HABTPCD1_PUB_CD	Habitat type code 1 publication code	VARCHAR2(10)
2.4.58	HABTPCD1_DESCR_PUB_CD	Habitat type code 1 description publication code	VARCHAR2(10)
2.4.59	HABTPCD2	Habitat type code 2	VARCHAR2(10)
2.4.60	HABTPCD2_PUB_CD	Habitat type code 2 publication code	VARCHAR2(10)
2.4.61	HABTPCD2_DESCR_PUB_CD	Habitat type code 2 description publication code	VARCHAR2(10)
2.4.62	MIXEDCONFCD	Mixed conifer code	VARCHAR2(1)
2.4.63	VOL_LOC_GRP	Volume location group	VARCHAR2(200)
2.4.64	SITECLCDEST	Site productivity class code estimated	NUMBER(2)
2.4.65	SITETREE_TREE	Site tree tree number	NUMBER(4)
2.4.66	SITECL_METHOD	Site class method	NUMBER(2)
2.4.67	CARBON_DOWN_DEAD	Carbon in down dead	NUMBER(13,6)
2.4.68	CARBON_LITTER	Carbon in litter	NUMBER(13,6)
2.4.69	CARBON_SOIL_ORG	Carbon in soil organic material	NUMBER(13,6)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
2.4.70	CARBON_STANDING_DEAD	Carbon in standing dead trees	NUMBER(13,6)
2.4.71	CARBON_UNDERSTORY_AG	Carbon in understory aboveground	NUMBER(13,6)
2.4.72	CARBON_UNDERSTORY_BG	Carbon in understory belowground	NUMBER(13,6)
2.4.73	CREATED_BY	Created by	VARCHAR2(30)
2.4.74	CREATED_DATE	Created date	DATE
2.4.75	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
2.4.76	MODIFIED_BY	Modified by	VARCHAR2(30)
2.4.77	MODIFIED_DATE	Modified date	DATE
2.4.78	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)
2.4.79	CYCLE	Inventory cycle number	NUMBER(2)
2.4.80	SUBCYCLE	Inventory subcycle number	NUMBER(2)
2.4.81	SOIL_ROOTING_DEPTH_PNW	Soil rooting depth, Pacific Northwest Research Station	VARCHAR2(1)
2.4.82	GROUND_LAND_CLASS_PNW	Present ground land class, Pacific Northwest Research Station	VARCHAR2(3)
2.4.83	PLANT_STOCKABILITY_FACTOR_P NW	Plant stockability factor, Pacific Northwest Research Station	NUMBER
2.4.84	STND_COND_CD_PNWRS	Stand condition code, Pacific Northwest Research Station	NUMBER(1)
2.4.85	STND_STRUC_CD_PNWRS	Stand structure code, Pacific Northwest Research Station	NUMBER(1)
2.4.86	STUMP_CD_PNWRS	Stump code, Pacific Northwest Research Station	VARCHAR2(1)
2.4.87	FIRE_SRS	Fire, Southern Research Station	NUMBER(1)
2.4.88	GRAZING_SRS	Grazing, Southern Research Station	NUMBER(1)
2.4.89	HARVEST_TYPE1_SRS	Harvest type code 1, Southern Research Station	NUMBER(2)
2.4.90	HARVEST_TYPE2_SRS	Harvest type code 2, Southern Research Station	NUMBER(2)
2.4.91	HARVEST_TYPE3_SRS	Harvest type code 3, Southern Research Station	NUMBER(2)
2.4.92	LAND_USE_SRS	Land use, Southern Research Station	NUMBER(2)
2.4.93	OPERABILITY_SRS	Operability, Southern Research Station	NUMBER(2)
2.4.94	STAND_STRUCTURE_SRS	Stand structure, Southern Research Station	NUMBER(2)
2.4.95	NF_COND_STATUS_CD	Nonforest condition status code	NUMBER(1)
2.4.96	NF_COND_NONSAMPLE_REASON_CD	Nonforest condition nonsampled reason code	NUMBER(2)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
2.4.97	CANOPY_CVR_SAMPLE_METHOD_CD	Canopy cover sample method code	NUMBER(2)
2.4.98	LIVE_CANOPY_CVR_PCT	Live canopy cover percent	NUMBER(3)
2.4.99	LIVE_MISSING_CANOPY_CVR_PCT	Live plus missing canopy cover percent	NUMBER(3)
2.4.100	NBR_LIVE_STEMS	Number of live stems	NUMBER(5)
2.4.101	OWNSUBCD	Owner subclass code	NUMBER(1)
2.4.102	INDUSTRIALCD_FIADB	Industrial code in FIADB	NUMBER(1)
2.4.103	RESERVCD_5	Reserve code field	NUMBER(1)
2.4.104	ADMIN_WITHDRAWN_CD	Administratively withdrawn code	NUMBER(1)
2.4.105	CHAINING_CD	Chaining code	NUMBER(1)
2.4.106	LAND_COVER_CLASS_CD	Land cover class	NUMBER(2)
2.4.107	AFFORESTATION_CD	Current afforestation code	NUMBER(1)
2.4.108	PREV_AFFORESTATION_CD	Previous afforestation code	NUMBER(1)
2.4.109	DWM_FUELBED_TYP_CD	DWM condition fuelbed type code	VARCHAR2(3)
2.4.110	NVCS_PRIMARY_CLASS	Primary class of the National Vegetation Classification Standard (NVCS)	VARCHAR2(8)
2.4.111	NVCS_LEVEL_1_CD	Level 1 code of the NVCS	VARCHAR2(25)
2.4.112	NVCS_LEVEL_2_CD	Level 2 code of the NVCS	VARCHAR2(25)
2.4.113	NVCS_LEVEL_3_CD	Level 3 code of the NVCS	VARCHAR2(25)
2.4.114	NVCS_LEVEL_4_CD	Level 4 code of the NVCS	VARCHAR2(25)
2.4.115	NVCS_LEVEL_5_CD	Level 5 code of the NVCS	VARCHAR2(25)
2.4.116	NVCS_LEVEL_6_CD	Level 6 code of the NVCS	VARCHAR2(25)
2.4.117	NVCS_LEVEL_7_CD	Level 7 code of the NVCS	VARCHAR2(25)
2.4.118	NVCS_LEVEL_8_CD	Level 8 code of the NVCS	VARCHAR2(25)
2.4.119	AGE_BASIS_CD_PNWRS	Age basis code, Pacific Northwest Research Station	NUMBER(2)
2.4.120	COND_STATUS_CHNG_CD_RMRS	Condition class status change code, Rocky Mountain Research Station	NUMBER(1)
2.4.121	CRCOV_PCT_RMRS	Live crown cover percent, Rocky Mountain Research Station	NUMBER(3)
2.4.122	DOMINANT_SPECIES1_PNWRS	Dominant tree species 1 (Pacific Islands), Pacific Northwest Research Station	NUMBER(4)
2.4.123	DOMINANT_SPECIES2_PNWRS	Dominant tree species 2 (Pacific Islands), Pacific Northwest Research Station	NUMBER(4)
2.4.124	DOMINANT_SPECIES3_PNWRS	Dominant tree species 3 (Pacific Islands), Pacific Northwest Research Station	NUMBER(4)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
2.4.125	DSTRBCD1_P2A	Disturbance code 1, periodic to annual	NUMBER(2)
2.4.126	DSTRBCD2_P2A	Disturbance code 2, periodic to annual	NUMBER(2)
2.4.127	DSTRBCD3_P2A	Disturbance code 3, periodic to annual	NUMBER(2)
2.4.128	DSTRBYR1_P2A	Disturbance year 1, periodic to annual	NUMBER(4)
2.4.129	DSTRBYR2_P2A	Disturbance year 2, periodic to annual	NUMBER(4)
2.4.130	DSTRBYR3_P2A	Disturbance year 3, periodic to annual	NUMBER(4)
2.4.131	FLDTYPCD_30	Field forest type code, version 3.0	NUMBER(3)
2.4.132	FOREST_COMMUNITY_PNWRS	Forest type (Pacific Islands), Pacific Northwest Research Station	Number(3)
2.4.133	LAND_USECD_RMRS	Land use code, Rocky Mountain Research Station	NUMBER(1)
2.4.134	MAICF_RMRS	Mean annual increment cubic feet, Rocky Mountain Research Station	NUMBER(5,2)
2.4.135	PCTBARE_RMRS	Percent bare ground, Rocky Mountain Research Station	NUMBER(3)
2.4.136	QMD_RMRS	Quadratic mean diameter, Rocky Mountain Research Station	NUMBER(5,1)
2.4.137	RANGETYPCD_RMRS	Range type code (existing vegetation classification), Rocky Mountain Research Station	NUMBER(3)
2.4.138	SDIMAX_RMRS	Stand density index maximum, Rocky Mountain Research Station	NUMBER(4)
2.4.139	SDIPCT_RMRS	Stand density index percent, Rocky Mountain Research Station	NUMBER(4,1)
2.4.140	SDI_RMRS	Stand density index for the condition, Rocky Mountain Research Station	NUMBER(8,4)
2.4.141	STAND_STRUCTURE_ME_NERS	Stand structure (Maine), Northeastern Research Station	NUMBER(1)
2.4.142	TREES_PRESENT_NCNS	Trees present on nonforest, North Central Research Station	NUMBER(1)
2.4.143	TREES_PRESENT_NERS	Trees present on nonforest, Northeastern Research Station	NUMBER(1)
2.4.144	TRTCD1_P2A	Treatment code 1, periodic to annual	NUMBER(2)
2.4.145	TRTCD2_P2A	Treatment code 2, periodic to annual	NUMBER(2)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
2.4.146	TRTCD3_P2A	Treatment code 3, periodic to annual	NUMBER(2)
2.4.147	TRTOPCD	Treatment opportunity	NUMBER(2)
2.4.148	TRTYR1_P2A	Treatment year 1, periodic to annual	NUMBER(4)
2.4.149	TRTYR2_P2A	Treatment year 2, periodic to annual	NUMBER(4)
2.4.150	TRTYR3_P2A	Treatment year 3, periodic to annual	NUMBER(4)

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

**2.4.1 CN**

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

**2.4.2 PLT\_CN**

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

**2.4.3 INVYR**

**Inventory year.** See SURVEY.INVYR description for definition.

**2.4.4 STATECD**

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

**2.4.5 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.

**2.4.6 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.

**2.4.7 PLOT**

**Phase 2 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.

## 2.4.8 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.



## 2.4.9 COND\_STATUS\_CD

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

**Note:** Starting with FIADB version 6.0 (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 criteria in classification. This criteria applies to any tally tree species, including woodland tree species.

**Codes: COND\_STATUS\_CD**

Code	Description
1	<p><b>Accessible forest land</b> - 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.</p>
2	<p><b>Nonforest land</b> - 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.</p> <p>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 &gt;5 percent and &lt;10 percent canopy cover at present, or evidence of such in the past, and PRESNFCD = 20, 40, 42, 43 or 45.</p>

Code	Description
3	<b>Noncensus water</b> - 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 noncensus water differently.
4	<b>Census water</b> - 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	<b>Nonsampled, possibility of forest land</b> - 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_REASN_CD.

#### 2.4.10 COND\_NONSAMPLE\_REASN\_CD

**Condition nonsampled reason code.** For condition classes that cannot be sampled, one of the following reasons is recorded.

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.

#### 2.4.11 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 FIADB version 6.0 (PLOT.MANUAL  $\geq$  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 N for applications of RESERVCD by FIA region and State.

**Codes: RESERVCD**

Code	Description
0	Not reserved.
1	Reserved.

#### 2.4.12 OWNCD

**Owner class code.** (*Core for all accessible forest land; Core optional for other sampled land*) A code indicating the class in which the landowner (at the time of the inventory) belongs. When PLOT.DESIGNCD = 999, OWNCD may be blank (null).

**Codes: OWNCD**

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: <http://www.fia.fs.fed.us/tools-data/spatial/>.

**Codes: OWNCND**

<b>Code</b>	<b>Description</b>
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.

**2.4.13 OWNGRPCD**

**Owner group code.** (*Core for all accessible forest land; Core optional for other sampled land*) A broader group of landowner classes. When PLOT.DESIGNCD = 999, OWNGRPCD may be blank (null).

**Codes: OWNGRPCD**

<b>Code</b>	<b>Description</b>
10	Forest Service (OWNCND 11, 12, 13).
20	Other federal (OWNCND 21, 22, 23, 24, 25).
30	State and local government (OWNCND 31, 32, 33).
40	Private and Native American (OWNCND 41, 42, 43, 44, 45, 46).

**2.4.14 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: <http://www.fia.fs.fed.us/tools-data/spatial/>.

**Codes: FORINDCD**

<b>Code</b>	<b>Description</b>
0	Land is not owned by industrial owner with wood-processing plant.
1	Land is owned by industrial owner with wood-processing plant.

**2.4.15 ADFORCD**

**Administrative forest code.** Identifies the administrative unit (Forest Service Region and National Forest) in which the condition is located. The first two digits of the four digit code are for the region number and the last two digits are for the 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.

#### **2.4.16 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 GSSTKCD for information on estimates of nonstocked areas.

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

#### **2.4.17 FLDTYPCD**

**Field forest type code.** 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. Beginning with manual version 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.

#### **2.4.18 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.

## 2.4.19 STDAGE

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

- 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 unit ([table 1-1](#)) for details.

## 2.4.20 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 ( $\text{CONDPROP\_UNADJ} < 0.25$ ), this attribute is set to the equivalent field-recorded stand-size class (FLDSZCD). Populated for all forest annual plots, all forest periodic plots, and all NCRS periodic plots that were measured as "nonforest with trees" (e.g., wooded pasture, windbreaks). 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.

## 2.4.21 FLDSZCD

**Field stand-size class code.** Field-assigned classification of the predominant (based on stocking) diameter class of live trees within the condition. Blank (null) values may be present for periodic inventories.

**Codes: FLDSZCD**

<b>Code</b>	<b>Description</b>
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 (2) for several woodland species where stocking standards are not available, <10 percent canopy cover of trees, seedlings, and saplings.
1	≤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)/ 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 for woodland trees 5.0 - 8.9 inches d.r.c.
3	9.0 - 19.9 inches (softwoods)/ 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 for woodland trees 9.0 - 19.9 inches d.r.c.
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.

**2.4.22****SITECLCD**

**Site productivity class code.** A classification of forest land in terms of inherent capacity to grow crops of industrial wood. Identifies the potential growth in cubic feet/acre/year and is based on the culmination of mean annual increment of fully stocked natural stands. For data stored in the database that were processed outside of NIMS, this attribute may be assigned based on the site productivity determined with the site trees, or from some other source, but the actual source of the site productivity class code is not known. For data processed with NIMS, this attribute may either 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**

<b>Code</b>	<b>Description</b>
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.

**2.4.23 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. This attribute is blank (null) when no site index data are available.

**2.4.24 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.

**2.4.25 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.

**2.4.26 STDORGCD**

**Stand origin code.** Method of stand regeneration for the trees in the condition. An artificially regenerated stand is established by planting or artificial seeding. Populated for all forest annual plots, all forest periodic plots, and all NCFS periodic plots that were measured as "nonforest with trees" (e.g., wooded pasture, windbreaks).

**Codes: STDORGCD**

<b>Code</b>	<b>Description</b>
0	Natural stands.
1	Clear evidence of artificial regeneration.

**2.4.27 STDORGSP**

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

**2.4.28 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.) Usually 24-foot radius subplots are installed and in this case, the value for PROP\_BASIS is 'SUBP'. However, when 58.9-foot radius macroplots are installed, the value is 'MACR'. This attribute may not be populated for periodic inventories.

**2.4.29 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).

**2.4.30 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.

**2.4.31 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.

**2.4.32 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).

**2.4.33 SLOPE**

**Percent slope.** The angle of slope, in percent, of the condition. Valid values are 000 through 155 for data collected when PLOT.MANUAL  $\geq$  1.0, and 000 through 200 on data collected when PLOT.MANUAL <1.0. When PLOT.MANUAL <1.0, the field crew measured condition slope by sighting along the average incline or decline of the condition. When PLOT.MANUAL  $\geq$  1.0, slope is collected on subplots but no longer collected for conditions. When PLOT.MANUAL  $\geq$  1.0, the slope from the subplot representing the greatest percentage of the condition is assigned as a surrogate. In the event that two or more subplots represent the same amount of area in the condition, the slope from the lower numbered subplot is used. Populated for all forest annual plots, all forest periodic plots, and all NCFS periodic plots that were measured as "nonforest with trees" (e.g., wooded pasture, windbreaks).

## 2.4.34 ASPECT

**Aspect.** The direction of slope, to the nearest degree, for most of the condition. North is recorded as 360. When slope is <5 percent, there is no aspect and this item is set to zero. When PLOT.MANUAL <1.0, the field crew measured condition aspect. When PLOT.MANUAL ≥1.0, aspect is collected on subplots but no longer collected for conditions.

**Note:** When PLOT.MANUAL ≥1.0, the aspect from the subplot representing the greatest percentage of the condition is assigned as a surrogate. In the event that two or more subplots represent the same percentage of area in the condition, the slope from the lower numbered subplot is used. Populated for all forest annual plots, all forest periodic plots, and all NCFS periodic plots that were measured as "nonforest with trees" (e.g., wooded pasture, windbreaks).

## 2.4.35 PHYSCLCD

**Physiographic class code.** The general effect of land form, topographical position, and soil on moisture available to trees. These codes are new in annual inventory; older inventories have been updated to these codes when possible. Also populated for the NCFS periodic plots that were measured as "nonforest with trees" (e.g., wooded pasture, windbreaks).

### Codes: PHYSCLCD

Code	Description
-	<b>Xeric</b> sites (normally low or deficient in available moisture)
11	Dry Tops - Ridge tops with thin rock outcrops and considerable exposure to sun and wind.
12	Dry Slopes - Slopes with thin rock outcrops and considerable exposure to sun and wind. Includes most mountain/steep slopes with a southern or western exposure.
13	Deep Sands - Sites with a deep, sandy surface subject to rapid loss of moisture following precipitation. Typical examples include sand hills, ridges, and flats in the South, sites along the beach and shores of lakes and streams.
19	Other Xeric - All dry physiographic sites not described above.
-	<b>Mesic</b> sites (normally moderate but adequate available moisture)
21	Flatwoods - Flat or fairly level sites outside of flood plains. Excludes deep sands and wet, swampy sites.
22	Rolling Uplands - Hills and gently rolling, undulating terrain and associated small streams. Excludes deep sands, all hydric sites, and streams with associated flood plains.
23	Moist Slopes and Coves - Moist slopes and coves with relatively deep, fertile soils. Often these sites have a northern or eastern exposure and are partially shielded from wind and sun. Includes moist mountain tops and saddles.
24	Narrow flood plains/Bottomlands - Flood plains and bottomlands less than 1/4-mile in width along rivers and streams. These sites are normally well drained but are subjected to occasional flooding during periods of heavy or extended precipitation. Includes associated levees, benches, and terraces within a 1/4 mile limit. Excludes swamps, sloughs, and bogs.
25	Broad Floodplains/Bottomlands - Floodplains and bottomlands 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.

Code	Description
29	Other Mesic - All moderately moist physiographic sites not described above.
-	<b>Hydric</b> 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.
39	Other hydric - All other hydric physiographic sites.

#### 2.4.36 GSSTKCD

**Growing-stock stocking code.** A code indicating the stocking of the condition by growing-stock trees, including seedlings. Growing-stock trees are those where tree class (TREE.TREECLCD) equals 2, or for seedlings that do not have tree class assigned where species group (TREE.SPGRPCD) is not equal to 23 (woodland softwoods), 43 (eastern noncommercial hardwoods), and 48 (woodland hardwoods). Populated for all forest plots, and all NCFS periodic plots that were measured as "nonforest with trees" (e.g., wooded pasture, windbreaks). 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.

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](#)" at [http://fia.fs.fed.us/library/sampling/docs/supplement4\\_121704.pdf](http://fia.fs.fed.us/library/sampling/docs/supplement4_121704.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.

**Codes: GSSTKCD**

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

**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](#)).

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

<b>Code</b>	<b>Description</b>
1	Overstocked (130+%).
2	Fully stocked (100 - 129.9%).
3	Medium stocked (60 - 99.9%).
4	Poorly stocked (16.7 - 59.9%).
5	Nonstocked (<16.7%).

**2.4.37 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. May not be populated for some FIA work units when PLOT.MANUAL <1.0. Populated for all forest annual plots, all forest periodic plots, and all NCFS periodic plots that were measured as "nonforest with trees" (e.g., wooded pasture, windbreaks).

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](#)" at [http://fia.fs.fed.us/library/sampling/docs/supplement4\\_121704.pdf](http://fia.fs.fed.us/library/sampling/docs/supplement4_121704.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](#)).

### 2.4.38 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. Populated for all forested conditions using the National Field Guide protocols (PLOT.MANUAL  $\geq 1.0$ ) and populated by some FIA work units where PLOT.MANUAL  $< 1.0$ . Codes 11, 12, 21, and 22 are valid where PLOT.MANUAL  $\geq 2.0$ . Up to three different disturbances per condition can be recorded, from most important to least important (DSTRBCD1, DSTRBCD2, and DSTRBCD1).

**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.
21	Disease damage to understory vegetation.
22	Disease damage to trees, including seedlings and saplings.
30	Fire damage (from crown and ground fire, either prescribed or natural).
31	Ground fire damage.
32	Crown fire damage.
40	Animal damage.
41	Beaver (includes flooding caused by beaver).
42	Porcupine.
43	Deer/ungulate.
44	Bear (CORE OPTIONAL).
45	Rabbit (CORE OPTIONAL).
46	Domestic animal/livestock (includes grazing).
50	Weather damage.
51	Ice.
52	Wind (includes hurricane, tornado).
53	Flooding (weather induced).
54	Drought.
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.

Code	Description
92	Avalanche track.
93	Volcanic blast zone.
94	Other geologic event.
95	Earth movement / avalanches.

#### 2.4.39 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. Populated for all forested conditions that have some disturbance using the National Field Guide protocols (PLOT.MANUAL  $\geq 1.0$ ) and populated by some FIA work units where PLOT.MANUAL <1.0. If DSTRBCD1 = 0 then DSTRBYR1 = blank (null) or 0.

#### 2.4.40 DSTRBCD2

**Disturbance code 2.** The second disturbance code, if the stand has experienced more than one disturbance. See DSTRBCD1 for more information. This attribute is new in annual inventory.

#### 2.4.41 DSTRBYR2

**Disturbance year 2.** The year in which disturbance 2 (DSTRBCD2) occurred. See DSTRBYR1 for more information. This attribute is new in annual inventory.

#### 2.4.42 DSTRBCD3

**Disturbance code 3.** The third disturbance code, if the stand has experienced more than two disturbances. See DSTRBCD1 for more information. This attribute is new in annual inventory.

#### 2.4.43 DSTRBYR3

**Disturbance year 3.** The year in which disturbance 3 (DSTRBCD3) occurred. See DSTRBYR1 for more information. This attribute is new in annual inventory.

#### 2.4.44 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  $\geq 1.0$ ) 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**

<b>Code</b>	<b>Description</b>
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.

**2.4.45 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  $\geq 1.0$ ) and populated by some FIA work units where PLOT.MANUAL  $< 1.0$ . If TRTCD1 = 00 then TRTYR1 = blank (null) or 0.

**2.4.46 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.

**2.4.47 TRTYR2**

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

**2.4.48 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.

**2.4.49 TRTYR3**

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

**2.4.50 PRESNFCD**

**Present nonforest code.** A code indicating the current nonforest land use for conditions that were previously classified as forest but are now classified as nonforest.

**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: PRESNFC**

Code	Description
10	Agricultural land.
11	Cropland.
12	Pasture (improved through cultural practices).
13	Idle farmland.
14	Orchard.
15	Christmas tree plantation.
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).
33	Recreation (park, golf course, ski run).
34	Mining.
40	Other (undeveloped beach, marsh, bog, snow, ice).
41	Nonvegetated.
42	Wetland.
43	Beach.
45	Nonforest-Chaparral.

#### 2.4.51 **BALIVE**

**Basal area per acre of live trees.** Basal area in square feet per acre of all live trees  $\geq 1.0$  inch d.b.h./d.r.c. sampled in the condition. Populated for all forested annual plots, all forested periodic plots, and all NCRS periodic plots that were measured as "nonforest with trees" (e.g., wooded pasture, windbreaks). Not used in population estimates.

#### 2.4.52 **FLDAGE**

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

#### 2.4.53 **ALSTK**

**All-live-tree stocking percent.** The sum of stocking percent values of all live trees on the condition. The percent is then assigned to a stocking class, which is found in ALSTKCD. 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](#)).

#### 2.4.54 GSSTK

**Growing-stock stocking percent.** The sum of stocking percent values of all growing-stock trees on the condition. The percent is then assigned to a stocking class, which is found in GSSTKCD. 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](#)).

#### 2.4.55 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.

#### 2.4.56 HABTYP觅1

**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 (HABTYP觅1 and HABTYP觅1\_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 [HABTYP觅1\\_PUB\\_CD](#) and [HABTYP觅1\\_DESCR\\_PUB\\_CD](#)). Only collected by certain FIA work units (SURVEY.RSCD = 22, 23, or 26).

#### 2.4.57 HABTYP觅1\_PUB\_CD

**Habitat type code 1 publication code.** A code indicating the publication that lists the name for habitat type code 1 (HABTYP觅1). Publication information is documented in the REF\_HABTYP\_PUBLICATION table. Only used by certain FIA work units (SURVEY.RSCD = 22, 23, or 26).

**2.4.58 HABTYP\_CD1\_DESCR\_PUB\_CD**

**Habitat type code 1 description publication code.** A code indicating the publication that gives a description for habitat type code 1 (HABTYP\_CD1). This publication may or may not be the same publication that lists the name of the habitat type (HABTYP\_CD1\_PUB\_CD). Publication information is documented in REF\_HABTYP\_PUBLICATION table. Only used by certain FIA work units (SURVEY.RSCD = 22, 23, or 26).

**2.4.59 HABTYP\_CD2**

**Habitat type code 2.** A code indicating the secondary habitat type (or community type) for this condition. See [HABTYP\\_CD1](#) for description.

**2.4.60 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.

**2.4.61 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.

**2.4.62 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 collected 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.

**2.4.63 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.
S22LNMM	Northern New Mexico Ecosystems.

<b>Code</b>	<b>Description</b>
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).
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.
S26LPPI	Pacific Islands.
S26LWACF	Washington Silver Fir Zone.
S26LWOR	Western Oregon.
S26LWWA	Western Washington.
S27LAK	Coastal Alaska Southeast.
S27LAK1AB	Coastal Alaska Southeast and Central.
S27LAK1C	Coastal Alaska Kodiak and Afognak Islands.
S33	Southern Research 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.

#### 2.4.64 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. Populated for annual inventory and may not be populated for periodic inventory. Only collected by certain FIA work units (SURVEY.RSCD = 23, 24, 26, 27 or 33).

**Codes: SITECLCDEST**

<b>Code</b>	<b>Description</b>
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.

**2.4.65 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 collected by certain FIA work units (SURVEY.RSCD = 23 or 33).

**2.4.66 SITECL\_METHOD**

**Site class method.** A code identifying the method for determining site index or estimated site productivity class. Populated for annual inventory and may be populated for periodic inventory.

**Codes: SITECL\_METHOD**

<b>Code</b>	<b>Description</b>
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.

**2.4.67 CARBON\_DOWN\_DEAD**

**Carbon in down dead.** Carbon (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 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 COND.CONDPROP\_UNADJ and the appropriate expansion and adjustment factor located in the POP\_STRATUM table.

**2.4.68 CARBON\_LITTER**

**Carbon in litter.** Carbon (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 models based on geographic area, forest type, and (except for nonstocked and pinyon-juniper stands) stand age (Smith and Heath 2002). 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 COND.CONDPROP\_UNADJ and the appropriate expansion and adjustment factor located in the POP\_STRATUM table.

#### **2.4.69 CARBON\_SOIL\_ORG**

**Carbon in soil organic material.** Carbon (tons per acre) in fine organic material below the soil surface to a depth of 1 meter. Does not include roots. Estimated from models based on geographic area and forest type (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 COND.CONDPROP\_UNADJ and the appropriate expansion and adjustment factor located in the POP\_STRATUM table.

#### **2.4.70 CARBON\_STANDING\_DEAD**

**Carbon in standing dead trees.** Carbon (tons per acre) in standing dead trees  $\geq 1.0$  inch diameter, including coarse roots, is estimated from models based on geographic area, forest type, and (except for nonstocked stands) growing-stock volume (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. For most users it is preferable to calculate carbon (tons per acre) for annual inventories from the Phase 2 tree data. This is a per acre estimate and must be multiplied by COND.CONDPROP\_UNADJ and the appropriate expansion and adjustment factor located in the POP\_STRATUM table.

#### **2.4.71 CARBON\_UNDERSTORY\_AG**

**Carbon in understory aboveground.** Carbon (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 COND.CONDPROP\_UNADJ and the appropriate expansion and adjustment factor located in the POP\_STRATUM table.

#### **2.4.72 CARBON\_UNDERSTORY\_BG**

**Carbon in understory belowground.** Carbon (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 COND.CONDPROP\_UNADJ and the appropriate expansion and adjustment factor located in the POP\_STRATUM table.

#### **2.4.73 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

#### **2.4.74 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

#### **2.4.75 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**2.4.76 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**2.4.77 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**2.4.78 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

**2.4.79 CYCLE**

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

**2.4.80 SUBCYCLE**

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

**2.4.81 SOIL\_ROOTING\_DEPTH\_PNW**

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

**Codes: SOIL\_ROOTING\_DEPTH\_PNW**

Code	Description
1	$\leq 20$ inches.
2	$> 20$ inches.

**2.4.82 GROUND\_LAND\_CLASS\_PNW**

**Present ground land class, Pacific Northwest Research Station.** A refinement of forest land that distinguishes timberland and a variety of forest land types. Each code, and corresponding ground land class (GLC) name and description are listed. Only collected 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.

Code	Description
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.
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.

#### 2.4.83 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 collected by certain FIA work units (SURVEY.RSCD = 26).

## 2.4.84

**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 collected 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.
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).

## 2.4.85

**STND\_STRUC\_CD\_PNWRS**

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

**Codes: STND\_STRUC\_CD\_PNWRS**

<b>Code</b>	<b>Stand Condition</b>	<b>Description</b>
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.
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.

**2.4.86 STUMP\_CD\_PNWRS**

**Stump code, Pacific Northwest Research Station.** A yes/no attribute indicating whether or not stumps are present on a condition. Only collected by certain FIA work units (SURVEY.RSCD = 26).

**Codes: STUMP\_CD\_PNWRS**

<b>Code</b>	<b>Description</b>
Y	Yes, evidence of cutting or management exists; stumps are present.
N	No, evidence of cutting was not observed; stumps are not present.

**2.4.87 FIRE\_SRS**

**Fire, Southern Research Station.** 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 collected by certain FIA work units (SURVEY.RSCD = 33).

**Codes: FIRE\_SRS**

<b>Code</b>	<b>Description</b>
0	No evidence of fire since last survey.
1	Evidence of burning (either prescribed or wildfire).

**2.4.88 GRAZING\_SRS**

**Grazing, Southern Research Station.** 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 collected by certain FIA work units (SURVEY.RSCD = 33).

**Codes: GRAZING\_SRS**

<b>Code</b>	<b>Description</b>
0	No evidence of livestock use (by domestic animals).
1	Evidence of grazing (including dung, tracks, trails, etc.).

**2.4.89 HARVEST\_TYPE1\_SRS**

**Harvest type code 1, Southern Research Station.** This variable is populated when the corresponding variable TRTCD = 10. Only collected by certain FIA work units (SURVEY.RSCD = 33).

**Codes: HARVEST\_TYPE1\_SRS**

<b>Code</b>	<b>Description</b>
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.

**2.4.90 HARVEST\_TYPE2\_SRS**

**Harvest type code 2, Southern Research Station.** See [HARVEST\\_TYPE1\\_SRS](#).

**2.4.91 HARVEST\_TYPE3\_SRS**

**Harvest type code 3, Southern Research Station.** See [HARVEST\\_TYPE1\\_SRS](#).

**2.4.92 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, and were processed in NIMS. It may not be populated for other SRS plot designs or for SRS data that have not been processed in NIMS. Only collected by certain FIA work units (SURVEY.RSCD = 33).

**Codes: LAND\_USE\_SRS**

Code	Description
01	Timberland (COND.SITECLCD = 1, 2, 3, 4, 5, or 6).
02	Other forest land (COND.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 $\geq 1$ . 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. Such plantings are used to reduce wind erosion, protect growing plants (crops and forage), manage snow, and improve irrigation efficiency. Windbreaks also protect structures and livestock, provide wildlife habitat, improve aesthetics, and provide tree or shrub products. Also, when used as a living screen, windbreaks control views and lessen noise. [Source: USDA NRCS, <i>Windbreak/Shelterbelt Conservation Practice Job Sheet 380</i> , April 1997] 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 (CONDITION CLASS STATUS 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 $\geq 1$ .
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.

Code	Description
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.COND_NONSAMPLE_REASON_CD for exact reason).

#### 2.4.93 OPERABILITY\_SRS

**Operability, Southern Research Station.** 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 collected 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.

#### 2.4.94 STAND\_STRUCTURE\_SRS

**Stand structure, Southern Research Station.** 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 collected by certain FIA work units (SURVEY.RSCD = 33).

**Codes: STAND\_STRUCTURE\_SRS**

Code	Description
0	Non-stocked - 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).

Code	Description
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.

**2.4.95 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.

**2.4.96 NF\_COND\_NONSAMPLE\_REASN\_CD**

**Nonforest condition nonsampled reason code.** For portions of plots that are nonforest and cannot be sampled, one of the following reasons is recorded.

**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. A field note is required to describe the situation.

**2.4.97 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**

<b>Code</b>	<b>Method Name</b>	<b>Description</b>
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.
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.

**2.4.98 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.

**2.4.99 LIVE\_MISSING\_CANOPY\_CVR\_PCT**

**Live plus missing canopy cover percent.** This percentage for the condition is determined in the field by adding LIVE\_CANOPY\_CVR\_PCT plus the estimated missing canopy cover that existed prior to disturbance (harvesting, fire, chaining, etc.). Included are live and

dead and removed tally trees, saplings, and seedlings. Dead trees and dead portions of live trees are not considered as missing unless it is part of the condition disturbance. The estimate is based on field observations, aerial photos, historical aerial imagery, and similar evidence of undisturbed conditions. The total of LIVE\_MISSING\_CANOPY\_CVR\_PCT cannot exceed 100 percent.

#### **2.4.100 NBR\_LIVE\_STEMS**

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

#### **2.4.101 OWNSUBCD**

**Owner subclass code.** (*Core optional for accessible forest land*) A code that further subdivides the owner class into detailed subcategories. Currently, this attribute only has subcategories for the 'State' owner class.

**Codes: OWNSUBCD**

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

#### **2.4.102 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.

#### **2.4.103 RESERVCD\_5**

**Reserve code field.** 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.

**2.4.104 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.

**2.4.105 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.

**2.4.106 LAND\_COVER\_CLASS\_CD**

**Land cover class.** 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.

**Codes: LAND\_COVER\_CLASS\_CD (codes are >10% vegetative cover)**

<b>Code</b>	<b>Description</b>
01	<b>Treeland:</b> 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 ≥10% tree canopy cover, clearcuts with ≥10% tree canopy cover. This category includes cypress swamps and mangroves.
02	<b>Shrubland:</b> 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.
03	<b>Grassland:</b> 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	<b>Non-vascular Vegetation:</b> 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	<b>Mixed Vegetation:</b> 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	<b>Agricultural Vegetation:</b> 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	<b>Developed, Vegetated:</b> 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 (codes are <10% cover)**

<b>Code</b>	<b>Description</b>
08	<b>Barren:</b> 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.
09	<b>Developed:</b> 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	<b>Water:</b> 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.

**2.4.107 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**

<b>Code</b>	<b>Description</b>
0	No.
1	Yes.

**2.4.108 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**

<b>Code</b>	<b>Description</b>
0	No.
1	Yes.

**2.4.109 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**

<b>Code</b>	<b>Description</b>
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.
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.

Code	Description
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.

#### 2.4.110 NVCS\_PRIMARY\_CLASS

**Primary class of the National Vegetation Classification Standard (NVCS).** The primary classification determined by the NVCS classification algorithm. Valid values are 'NATURAL' or 'CULTURAL'. 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. It may also remain NULL if the algorithm failed to produce a valid classification.

#### 2.4.111 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;
```

#### 2.4.112 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;

```

#### **2.4.113 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;

```

#### **2.4.114 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;

```

#### **2.4.115 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;

```

#### 2.4.116 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 both the 'NATURAL' and 'CULTURAL' primary classifications. 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;

```

#### 2.4.117 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 both the 'NATURAL' and 'CULTURAL' primary classifications. 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;

```

#### 2.4.118 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 both the 'NATURAL' and 'CULTURAL' primary classifications. 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;

```

#### 2.4.119 AGE\_BASIS\_CD\_PNWRS

**Age basis code, Pacific Northwest Research Station.** A code that indicates the method used to determine stand age. Only collected 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.
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.

#### 2.4.120 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 collected 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).

**2.4.121 CRCOVPC\_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 collected by certain FIA work units (SURVEY.RSCD = 22).

**Note:** The CRCOVPC\_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 CRCOVPC\_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.

**2.4.122 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 overtopped. Recorded for all accessible forest land condition classes. Only collected by certain FIA work units (SURVEY.RSCD = 26).

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

**2.4.123 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 1 for further detail. If a second species does not exist, a code of '0000' is recorded. Only collected by certain FIA work units (SURVEY.RSCD = 26).

**2.4.124 DOMINANT\_SPECIES3\_PNWRS**

**Dominant tree species 2 (Pacific Islands), Pacific Northwest Research Station.** A code for the third most abundant tree species in each condition class. See DOMINANT\_SPECIES1\_PNWRS 1 for further detail. If a third species does not exist, a code of '0000' is recorded. Only collected by certain FIA work units (SURVEY.RSCD = 26).

**2.4.125 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**

<b>Code</b>	<b>Description</b>
0	No visible disturbance.
10	Insect damage.
11	Insect damage to understory vegetation.
12	Insect damage to trees, including seedlings and saplings.
20	Disease damage.
21	Disease damage to understory vegetation.
22	Disease damage to trees, including seedlings and saplings.
30	Fire damage (from crown and ground fire, either prescribed or natural).
31	Ground fire damage.
32	Crown fire damage.
40	Animal damage.
41	Beaver (includes flooding caused by beaver).
42	Porcupine.
43	Deer/ungulate.
44	Bear (CORE OPTIONAL).
45	Rabbit (CORE OPTIONAL).
46	Domestic animal/livestock (includes grazing).
50	Weather damage.
51	Ice.
52	Wind (includes hurricane, tornado).
53	Flooding (weather induced).
54	Drought.
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.

**2.4.126 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.

**2.4.127 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.

**2.4.128 DSTRBYR1\_P2A**

**Disturbance year 1, periodic to annual.** The year in which disturbance 1 (DISTRBCD1\_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.

**2.4.129 DSTRBYR2\_P2A**

**Disturbance year 2, periodic to annual.** The year in which disturbance 2 (DISTRBCD2\_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.

**2.4.130 DSTRBYR3\_P2A**

**Disturbance year 3, periodic to annual.** The year in which disturbance 3 (DISTRBCD3\_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.

**2.4.131 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 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. 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 an estimated 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:**

<b>Forest type group or forest type</b>	<b>Code</b>	<b>Description</b>
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. <b>Note:</b> 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	955	Miscellaneous western hardwoods <b>Note:</b> 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. <b>Note:</b> Sable palm no longer tallied as a tree; any 981 recoded to either 983 (palms) or 962 (other hardwoods).

**Code changes or additions:**

<b>Forest type group or forest type</b>	<b>Old code</b>	<b>New code</b>	<b>Description</b>
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. <b>Note:</b> 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.

<b>Forest type group or forest type</b>	<b>Old code</b>	<b>New code</b>	<b>Description</b>
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	955	962	Other hardwoods.
Forest type	925	971	Deciduous oak woodland. <b>Note:</b> 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.

#### 2.4.132 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 overtapped. Recorded for all accessible forest land condition classes in the Pacific Islands. Only collected 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.**

<b>Code</b>	<b>Description</b>
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.
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.

**2.4.133 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 collected by certain FIA work units (SURVEY.RSCD = 22).

**Codes: LAND\_USECD\_RMRS**

<b>Code</b>	<b>Description</b>
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.

**2.4.134 MAICF\_RMRS**

**Mean annual increment cubic feet, Rocky Mountain Research Station.** A measure of the productivity of forest land for the condition expressed as the average increase in cubic feet

of wood volume per acre per year. MAICF\_RMRS is based on the site index for the condition, and is the mean annual increment of growing stock attainable in fully stocked natural stands at the age of mean annual increment culmination. For conditions with a woodland forest type (FORTYPCD), a default value of 10 is assigned. Only collected by certain FIA work units (SURVEY.RSCD = 22).

#### **2.4.135 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 collected by certain FIA work units (SURVEY.RSCD = 22).

#### **2.4.136 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 collected by certain FIA work units (SURVEY.RSCD = 22).

#### **2.4.137 RANGETYPCD\_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 collected 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: RANGETYPCD\_RMRS**

<b>Code</b>	<b>Range type (existing vegetation classification)</b>
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.

<b>Code</b>	<b>Range type (existing vegetation classification)</b>
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.
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.

<b>Code</b>	<b>Range type (existing vegetation classification)</b>
601	Bluestem prarie.
602	Bluestem / prarie sandreed.
603	Prairie 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.
615	Wheatgrass / saltgrass / grama.
999	Undefined.

**2.4.138****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 (FLDTYPED) is used in place of a calculated forest type (FORTYPED). Refer to SDI\_RMRS for further detail. Only collected by certain FIA work units (SURVEY.RSCD = 22).

**2.4.139****SDIPCT\_RMRS**

**Stand density index percent, Rocky Mountain Research Station.** A relative measure of stand density for live trees ( $\geq 1.0$  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 collected by certain FIA work units (SURVEY.RSCD = 22).

**2.4.140****SDI\_RMRS**

**Stand density index for the condition, Rocky Mountain Research Station.** An index that expresses the stand density for live trees ( $\geq 1.0$  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 ( $\geq 1.0$  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 collected by certain FIA work units (SURVEY.RSCD = 22).

**2.4.141 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 collected 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.

**2.4.142 TREES\_PRESENT\_NCNS**

**Trees present on nonforest, North Central Research Station.** A code indicating the presence or absence of live trees  $\geq 5.0$  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 collected 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 $\geq 5.0$ inches d.b.h.
2	Nonforest land with live trees $\geq 5.0$ inches d.b.h.

**2.4.143 TREES\_PRESENT\_NERS**

**Trees present on nonforest, Northeastern Research Station.** A code indicating the presence or absence of live trees  $\geq 5.0$  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 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.

**2.4.144 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, disking, 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.

**2.4.145 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.

**2.4.146 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.

**2.4.147 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.

**2.4.148 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.

**2.4.149 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.

**2.4.150 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 Subplot Table

(Oracle table name: SUBPLOT)

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	PREV_SBP_CN	Previous subplot sequence number	VARCHAR2(34)
2.5.4	INVYR	Inventory year	NUMBER(4)
2.5.5	STATECD	State code	NUMBER(4)
2.5.6	UNITCD	Survey unit code	NUMBER(2)
2.5.7	COUNTYCD	County code	NUMBER(3)
2.5.8	PLOT	Phase 2 plot number	NUMBER(5)
2.5.9	SUBP	Subplot number	NUMBER(3)
2.5.10	SUBP_STATUS_CD	Subplot/macroplot status code	NUMBER(1)
2.5.11	POINT_NONSAMPLE_REASN_CD	Point nonsampled reason code	NUMBER(2)
2.5.12	MICRCOND	Microplot center condition	NUMBER(1)
2.5.13	SUBPCOND	Subplot center condition	NUMBER(1)
2.5.14	MACRCOND	Macroplot center condition	NUMBER(1)
2.5.15	CONDLIST	Subplot/macroplot condition list	NUMBER(4)
2.5.16	SLOPE	Subplot slope	NUMBER(3)
2.5.17	ASPECT	Subplot aspect	NUMBER(3)
2.5.18	WATERDEP	Snow/water depth	NUMBER(2,1)
2.5.19	P2A_GRM_FLG	Periodic to annual growth, removal, and mortality flag	VARCHAR2(1)
2.5.20	CREATED_BY	Created by	VARCHAR2(30)
2.5.21	CREATED_DATE	Created date	DATE
2.5.22	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
2.5.23	MODIFIED_BY	Modified by	VARCHAR2(30)
2.5.24	MODIFIED_DATE	Modified date	DATE
2.5.25	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)
2.5.26	CYCLE	Inventory cycle number	NUMBER(2)
2.5.27	SUBCYCLE	Inventory subcycle number	NUMBER(2)
2.5.28	ROOT_DIS_SEV_CD_PNWRS	Root disease severity rating code, Pacific Northwest Research Station	NUMBER(1)
2.5.29	NF_SUBP_STATUS_CD	Nonforest subplot/macroplot status code	NUMBER(1)
2.5.30	NF_SUBP_NONSAMPLE_REASN_CD	Nonforest subplot/macroplot nonsampled reason code	NUMBER(2)
2.5.31	P2VEG_SUBP_STATUS_CD	P2 vegetation subplot status code	NUMBER(1)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
2.5.32	P2VEG_SUBP_NONSAMPLE_REASN_CD	P2 vegetation subplot nonsampled reason code	NUMBER(2)
2.5.33	INVASIVE_SUBP_STATUS_CD	Invasive subplot status code	NUMBER(1)
2.5.34	INVASIVE_NONSAMPLE_REASN_CD	Invasive nonsampled reason code	NUMBER(2)
2.5.35	CROWN_CLOSURE_ME_NERS	Crown closure (Maine), Northeastern Research Station	NUMBER(1)
2.5.36	GROUND_TRAN PTS_BARE_RMRS	Ground surface cover transect points - bare ground, Rocky Mountain Research Station	NUMBER(3)
2.5.37	GROUND_TRAN PTS_CRYP_RMRS	Ground surface cover transect points - cryptogamic crust, Rocky Mountain Research Station	NUMBER(3)
2.5.38	GROUND_TRAN PTS_DEV_RMRS	Ground surface cover transect points - developed land, Rocky Mountain Research Station	NUMBER(3)
2.5.39	GROUND_TRAN PTS_LICHEN_RMRS	Ground surface cover transect points - lichen, Rocky Mountain Research Station	NUMBER(3)
2.5.40	GROUND_TRAN PTS_LITTER_RMRS	Ground surface cover transect points - litter, Rocky Mountain Research Station	NUMBER(3)
2.5.41	GROUND_TRAN PTS_MOSS_RMRS	Ground surface cover transect points - moss, Rocky Mountain Research Station	NUMBER(3)
2.5.42	GROUND_TRAN PTS_NOTSAMP_RMRS	Ground surface cover transect points - not sampled, Rocky Mountain Research Station	NUMBER(3)
2.5.43	GROUND_TRAN PTS_OTHER_RMRS	Ground surface cover transect points - other cover, Rocky Mountain Research Station	NUMBER(3)
2.5.44	GROUND_TRAN PTS_PEIS_RMRS	Ground surface cover transect points - permanent ice and snow, Rocky Mountain Research Station	NUMBER(3)
2.5.45	GROUND_TRAN PTS_ROAD_RMRS	Ground surface cover transect points - road, Rocky Mountain Research Station	NUMBER(3)
2.5.46	GROUND_TRAN PTS_ROCK_RMRS	Ground surface cover transect points - rock, Rocky Mountain Research Station	NUMBER(3)
2.5.47	GROUND_TRAN PTS_TRIS_RMRS	Ground surface cover transect points - transient ice and snow, Rocky Mountain Research Station	NUMBER(3)
2.5.48	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
2.5.49	GROUND_TRAN PTS_WATER_RMR S	Ground surface cover transect points - water, Rocky Mountain Research Station	NUMBER(3)
2.5.50	GROUND_TRAN PTS_WOOD_RMR S	Ground surface cover transect points - wood, Rocky Mountain Research Station	NUMBER(3)
2.5.51	PREV_STATUSCD_RMRS	Previous subplot status code, Rocky Mountain Research Station	NUMBER(1)
2.5.52	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, MICRCOND	SUBPLOT to COND	SBP_CND_FK2
Foreign	PLT_CN, MACRCOND	SUBPLOT to COND	SBP_CND_FK3
Foreign	PLT_CN, SUBPCOND	SUBPLOT to COND	SBP_CND_FK
Foreign	PLT_CN	SUBPLOT to PLOT	SBP_PLT_FK

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

### 2.5.1 CN

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

### 2.5.2 PLT\_CN

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

### 2.5.3 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.

### 2.5.4 INVYR

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

### 2.5.5 STATECD

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

**2.5.6 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.

**2.5.7 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.

**2.5.8 PLOT**

**Phase 2 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.

**2.5.9 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 I](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

**2.5.10 SUBP\_STATUS\_CD**

**Subplot/macroplot status code.** A code indicating whether forest land was sampled on the subplot/macroplot or not. 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.

**2.5.11 POINT\_NONSAMPLE\_REASN\_CD**

**Point nonsampled reason code.** For entire subplots (or macroplots) that cannot be sampled, one of the following reasons is recorded.

**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).
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.

<b>Code</b>	<b>Description</b>
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.

**2.5.12 MICRCOND**

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

**2.5.13 SUBPCOND**

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

**2.5.14 MACRCOND**

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

**2.5.15 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: 2300 means these conditions (conditions 2 and 3) are on the subplot/macroplot.

**2.5.16 SLOPE**

**Subplot slope.** The angle of slope, in percent, of the subplot, determined by sighting along the average incline or decline of the subplot. If the slope changes gradually, an average slope is recorded. If the slope changes across the subplot but is predominantly of one direction, the predominant slope is recorded. Valid values are 0 through 155.

**2.5.17 ASPECT**

**Subplot aspect.** The direction of slope, to the nearest degree, of the subplot, determined along the direction of slope. If the aspect changes gradually, an average aspect is

recorded. If the aspect changes across the subplot but is predominantly of one direction, the predominant aspect is recorded. North is recorded as 360. When slope is <5 percent, there is no aspect and it is recorded as 000.

### 2.5.18 WATERDEP

**Snow/water depth.** The approximate depth in feet of water or snow covering the subplot. Populated for all forested subplots using the National Field Guide protocols (PLOT.MANUAL ≥1.0) and populated by some FIA work units where PLOT.MANUAL <1.0. Not collected for certain FIA work units in 1999 (SURVEY.RSCD = 23 and 24).

### 2.5.19 P2A\_GRM\_FLG

**Periodic to annual growth, removal, and mortality flag.** A code indicating if this subplot is part of a periodic inventory (usually from a variable-radius plot design) that is only included for the purposes of computing growth, removals and/or mortality estimates. Tree data associated with this subplot does not contribute to current estimates of such attributes as volume, biomass or number of trees. The flag is set to Y for those subplots that are needed for estimation and otherwise is left blank (null).

### 2.5.20 CREATED\_BY

**Created by.** See SURVEY.CREATED\_BY description for definition.

### 2.5.21 CREATED\_DATE

**Created date.** See SURVEY.CREATED\_DATE description for definition.

### 2.5.22 CREATED\_IN\_INSTANCE

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

### 2.5.23 MODIFIED\_BY

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

### 2.5.24 MODIFIED\_DATE

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

### 2.5.25 MODIFIED\_IN\_INSTANCE

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

### 2.5.26 CYCLE

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

### 2.5.27 SUBCYCLE

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

### 2.5.28 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 collected by certain FIA work units (SURVEY.RSCD = 26).

**Codes: ROOT\_DIS\_SEV\_CD\_PNWRS**

<b>Code</b>	<b>Description</b>
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.

**2.5.29 NF\_SUBP\_STATUS\_CD**

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

**Codes: NF\_SUBP\_STATUS\_CD**

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

**2.5.30 NF\_SUBP\_NONSAMPLE\_REASON\_CD**

**Nonforest subplot/macroplot nonsampled reason code.** For entire nonforest subplots/macroplots that cannot be sampled, one of the following codes is recorded.

**Codes: NF\_SUBP\_NONSAMPLE\_REASN\_CD**

<b>Code</b>	<b>Description</b>
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.

**2.5.31 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**

<b>Code</b>	<b>Description</b>
1	Subplot sampled for P2 vegetation.
2	Subplot not sampled for P2 vegetation.

**2.5.32 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**

<b>Code</b>	<b>Description</b>
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).

**2.5.33 INVASIVE\_SUBP\_STATUS\_CD**

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

**Codes: INVASIVE\_SUBP\_STATUS\_CD**

<b>Code</b>	<b>Description</b>
1	Subplot sampled, invasive plants present.

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

### 2.5.34 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).

### 2.5.35 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 collected by certain FIA work units (SURVEY.RSCD = 24).

Codes: CROWN\_CLOSURE\_ME\_NERS

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

### 2.5.36 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 collected by certain FIA work units (SURVEY.RSCD = 22).

### 2.5.37 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 collected by certain FIA work units (SURVEY.RSCD = 22).

#### 2.5.38 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 collected by certain FIA work units (SURVEY.RSCD = 22).

#### 2.5.39 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 collected by certain FIA work units (SURVEY.RSCD = 22).

#### 2.5.40 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 collected by certain FIA work units (SURVEY.RSCD = 22).

#### 2.5.41 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 collected by certain FIA work units (SURVEY.RSCD = 22).

#### **2.5.42 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 collected by certain FIA work units (SURVEY.RSCD = 22).

#### **2.5.43 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 collected by certain FIA work units (SURVEY.RSCD = 22).

#### **2.5.44 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 collected by certain FIA work units (SURVEY.RSCD = 22).

#### **2.5.45 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 collected by certain FIA work units (SURVEY.RSCD = 22).

#### **2.5.46 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 collected by certain FIA work units (SURVEY.RSCD = 22).

#### **2.5.47 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 collected by certain FIA work units (SURVEY.RSCD = 22).

#### **2.5.48 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 collected by certain FIA work units (SURVEY.RSCD = 22).

#### **2.5.49 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 collected by certain FIA work units (SURVEY.RSCD = 22).

#### **2.5.50 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 collected by certain FIA work units (SURVEY.RSCD = 22).

#### **2.5.51 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 collected 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.

#### **2.5.52 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 collected 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.

<b>Code</b>	<b>Description</b>
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.

## 2.6 Subplot Condition Table

(Oracle table name: SUBP\_COND)

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	INVYR	Inventory year	NUMBER(4)
2.6.4	STATECD	State code	NUMBER(4)
2.6.5	UNITCD	Survey unit code	NUMBER(2)
2.6.6	COUNTYCD	County code	NUMBER(3)
2.6.7	PLOT	Phase 2 plot number	NUMBER(5)
2.6.8	SUBP	Subplot number	NUMBER(3)
2.6.9	CONDID	Condition class number	NUMBER(1)
2.6.10	CREATED_BY	Created by	VARCHAR2(30)
2.6.11	CREATED_DATE	Created date	DATE
2.6.12	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
2.6.13	MODIFIED_BY	Modified by	VARCHAR2(30)
2.6.14	MODIFIED_DATE	Modified date	DATE
2.6.15	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)
2.6.16	MICRCOND_PROP	Microplot-condition proportion	NUMBER
2.6.17	SUBPCOND_PROP	Subplot-condition proportion	NUMBER
2.6.18	MACRCOND_PROP	Macroplot-condition proportion	NUMBER
2.6.19	NONFR_INCL_PCT_SUBP	Nonforest inclusions percentage of subplot	NUMBER(3)
2.6.20	NONFR_INCL_PCT_MACRO	Nonforest inclusions percentage of macroplot	NUMBER(3)
2.6.21	CYCLE	Inventory cycle number	NUMBER(2)
2.6.22	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.

#### 2.6.1 **CN**

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

#### 2.6.2 **PLT\_CN**

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

#### 2.6.3 **INVYR**

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

#### 2.6.4 **STATECD**

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

#### 2.6.5 **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.

#### 2.6.6 **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.

#### 2.6.7 **PLOT**

**Phase 2 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.

#### 2.6.8 **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 I](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

#### 2.6.9 **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.

#### 2.6.10 **CREATED\_BY**

**Created by.** See SURVEY.[CREATED\\_BY](#) description for definition.

#### 2.6.11 **CREATED\_DATE**

**Created date.** See SURVEY.[CREATED\\_DATE](#) description for definition.

**2.6.12 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**2.6.13 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**2.6.14 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**2.6.15 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

**2.6.16 MICRCOND\_PROP**

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

**2.6.17 SUBPCOND\_PROP**

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

**2.6.18 MACRCOND\_PROP**

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

**2.6.19 NONFR\_INCL\_PCT\_SUBP**

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

**2.6.20 NONFR\_INCL\_PCT\_MACRO**

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

**2.6.21 CYCLE**

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

**2.6.22 SUBCYCLE**

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



## 2.7 Boundary Table

(Oracle table name: BOUNDARY)

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	Phase 2 plot number	NUMBER(5)
2.7.8	SUBP	Subplot number	NUMBER(3)
2.7.9	SUBPTYP	Plot type code	NUMBER(1)
2.7.10	BNDCHG	Boundary change code	NUMBER(1)
2.7.11	CONTRAST	Contrasting condition	NUMBER(1)
2.7.12	AZMLEFT	Left azimuth	NUMBER(3)
2.7.13	AZMCORN	Corner azimuth	NUMBER(3)
2.7.14	DISTCORN	Corner distance	NUMBER(3)
2.7.15	AZMRIGHT	Right azimuth	NUMBER(3)
2.7.16	CYCLE	Inventory cycle number	NUMBER(2)
2.7.17	SUBCYCLE	Inventory subcycle number	NUMBER(2)
2.7.18	CREATED_BY	Created by	VARCHAR2(30)
2.7.19	CREATED_DATE	Created date	DATE
2.7.20	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
2.7.21	MODIFIED_BY	Modified by	VARCHAR2(30)
2.7.22	MODIFIED_DATE	Modified date	DATE
2.7.23	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)

Key Type	Column(s) order	Tables to link	Abbreviated notation
Primary	CN	N/A	BND_PK
Unique	PLT_CN, SUBP, SUBPTYP, AZMLEFT, AZMRIGHT	N/A	BND_UK
Natural	STATECD, INVYR, UNITCD, COUNTYCD, PLOT, SUBP, SUBPTYP, AZMLEFT, AZMRIGHT	N/A	BND_NAT_I
Foreign	PLT_CN	BOUNDARY to PLOT	BND_PLT_FK

**Note:** The BOUNDARY record may not exist for some periodic data.

**2.7.1 CN**

**Sequence number.** A unique sequence number used to identify a boundary record.

**2.7.2 PLT\_CN**

**Plot sequence number.** Foreign key linking the boundary 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) two-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.

**2.7.7 PLOT**

**Phase 2 plot number.** An identifier for a plot. Along with STATECD, UNITCD, INVYR, COUNTYCD and/or some other combinations 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 I](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

**2.7.9 SUBPTYP**

**Plot type code.** A code indicating whether the boundary data are for a subplot, microplot, or macroplot.

**Codes: SUBPTYP**

Code	Description
1	Subplot boundary.
2	Microplot boundary.
3	Macroplot boundary.

**2.7.10 BNDCHG**

**Boundary change code.** A code indicating the relationship between previously recorded and current boundary information. Set to blank (null) for new plots (PLOT.KINDCD = 1 or 3).

**Codes: BNDCHG**

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

**2.7.11 CONTRAST**

**Contrasting condition.** The condition class number of the condition class that contrasts with the condition class located at the subplot center (for boundaries on the subplot or macroplot) or at the microplot center (for boundaries on the microplot), e.g., the condition class present on the other side of the boundary.

**2.7.12 AZMLEFT**

**Left azimuth.** The azimuth, to the nearest degree, from the subplot, microplot, or macroplot plot center to the farthest left point (facing the contrasting condition class) where the boundary intersects the subplot, microplot, or macroplot plot circumference.

**2.7.13 AZMCORN**

**Corner azimuth.** The azimuth, to the nearest degree, from the subplot, microplot, or macroplot plot center to a corner or curve in a boundary. If a boundary is best described by a straight line between the two circumference points, then 000 is recorded for AZMCORN.

**2.7.14 DISTCORN**

**Corner distance.** The horizontal distance, to the nearest 1 foot, from the subplot, microplot, or macroplot plot center to the boundary corner point. Blank (null) when AZMCORN = 000; populated when BOUNDARY.AZMCORN >000.

**2.7.15 AZMRIGHT**

**Right azimuth.** The azimuth, to the nearest degree, from subplot, microplot, or macroplot plot center to the farthest right point (facing the contrasting condition) where the boundary intersects the subplot, microplot, or macroplot plot circumference.

**2.7.16 CYCLE**

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

**2.7.17 SUBCYCLE**

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

**2.7.18 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**2.7.19 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**2.7.20 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**2.7.21 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**2.7.22 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**2.7.23 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

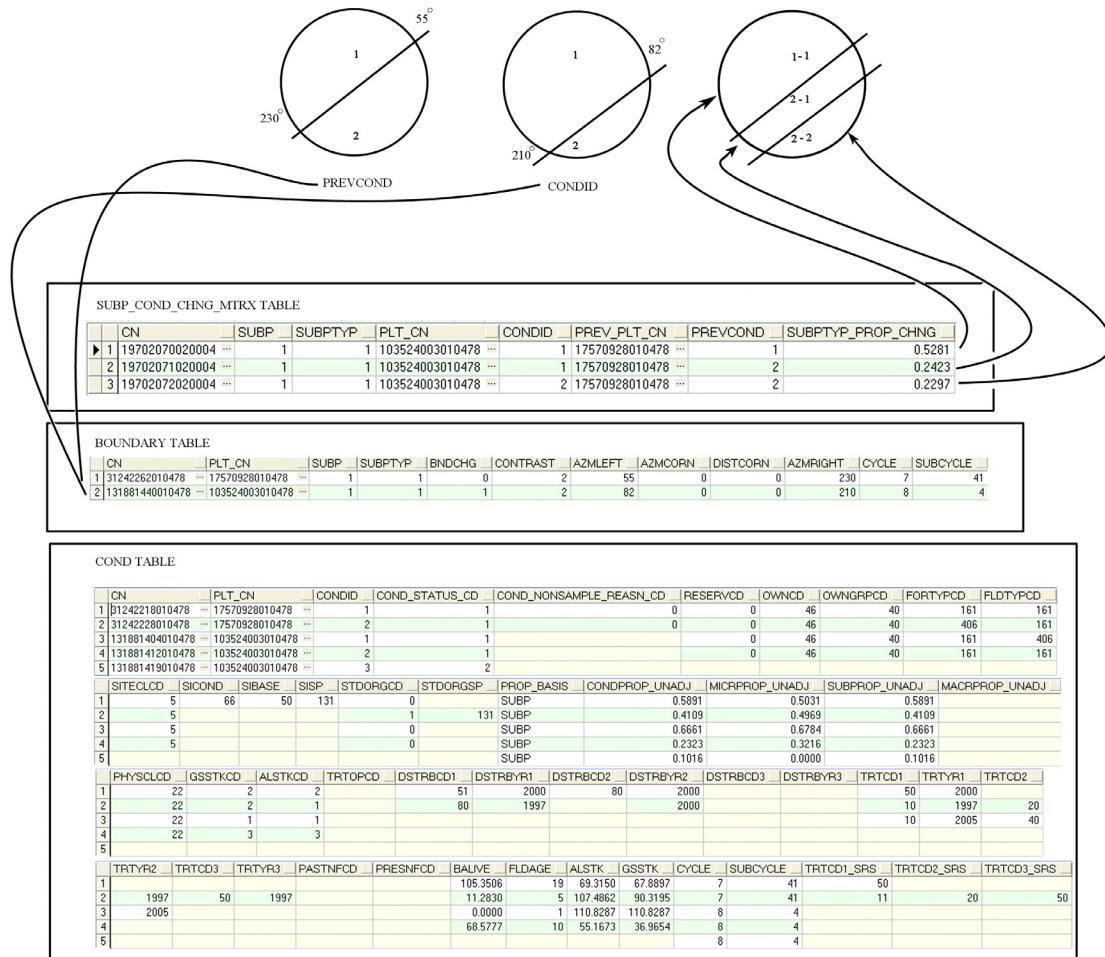
## 2.8 Subplot Condition Change Matrix

(Oracle table name: SUBP\_COND\_CHNG\_MTRX)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
2.8.1	CN	Sequence number	VARCHAR2(34)
2.8.2	STATECD	State code	NUMBER(4)
2.8.3	SUBP	Subplot number	NUMBER(1)
2.8.4	SUBPTYP	Plot type code	NUMBER(1)
2.8.5	PLT_CN	Plot sequence number	VARCHAR2(34)
2.8.6	CONDID	Condition class number	NUMBER(1)
2.8.7	PREV_PLT_CN	Previous plot sequence number	VARCHAR2(34)
2.8.8	PREVCOND	Previous condition class number	NUMBER(1)
2.8.9	SUBPTYP_PROP_CHNG	Subplot type proportion change	NUMBER(5,4)
2.8.10	CREATED_BY	Created by	VARCHAR2(30)
2.8.11	CREATED_DATE	Created date	DATE
2.8.12	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
2.8.13	MODIFIED_BY	Modified by	VARCHAR2(30)
2.8.14	MODIFIED_DATE	Modified date	DATE
2.8.15	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.

### 2.8.1 CN

**Sequence number.** A unique sequence number used to identify a change matrix table record.

### 2.8.2 STATECD

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

### 2.8.3 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.

**2.8.4 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.

**2.8.5 PLT\_CN**

**Plot sequence number.** The foreign key linking the SUBP\_COND\_CHNG\_MTRX record to the PLOT record for the current inventory.

**2.8.6 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.

**2.8.7 PREV\_PLT\_CN**

**Previous plot sequence number.** The foreign key linking the SUBP\_COND\_CHNG\_MTRX record to the PLOT record from the previous inventory.

**2.8.8 PREVCOND**

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

**2.8.9 SUBPTYP\_PROP\_CHNG**

**Subplot type proportion change.** The unadjusted proportion of the subplot that is in the same geographic area condition for both the previous and current inventory. The sum of all subplot type change proportions for an individual plot equals 4 for each plot type (microplot, subplot, and/or macroplot). Divide the result by 4 to obtain change at the plot level.

**2.8.10 CREATED\_BY**

**Created by.** See SURVEY.[CREATED\\_BY](#) description for definition.

**2.8.11 CREATED\_DATE**

**Created date.** See SURVEY.[CREATED\\_DATE](#) description for definition.

**2.8.12 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.[CREATED\\_IN\\_INSTANCE](#) description for definition.

**2.8.13 MODIFIED\_BY**

**Modified by.** See SURVEY.[MODIFIED\\_BY](#) description for definition.

**2.8.14 MODIFIED\_DATE**

**Modified date.** See SURVEY.[MODIFIED\\_DATE](#) description for definition.

**2.8.15 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.[MODIFIED\\_IN\\_INSTANCE](#) description for definition.

# Chapter 3: Database Tables - Tree Level

## Chapter Contents:

Section	Database table
3.1	Tree Table
3.2	Tree Woodland Stems Table
3.3	Tree Regional Biomass Table
3.4	Tree Net Growth, Removal, and Mortality Component Table
3.5	Tree Net Growth, Removal, and Mortality Midpoint Table
3.6	Tree Net Growth, Removal, and Mortality Begin Table
3.7	Tree Net Growth, Removal, and Mortality Estimation Table
3.8	Begin and End Table
3.9	Seedling Table
3.10	Site Tree Table

## 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	Phase 2 plot number	NUMBER(5)
3.1.9	SUBP	Subplot number	NUMBER(3)
3.1.10	TREE	Tree record 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 volume	NUMBER(11,6)
3.1.39	VOLCFGRS	Gross cubic-foot volume	NUMBER(11,6)
3.1.40	VOLCSNET	Net cubic-foot volume in the sawlog portion of a sawtimber tree	NUMBER(11,6)
3.1.41	VOLCSGRS	Gross cubic-foot volume in the sawlog portion of a sawtimber tree	NUMBER(11,6)
3.1.42	VOLBFNET	Net board-foot volume in the sawlog portion of a sawtimber tree	NUMBER(11,6)
3.1.43	VOLBFGRS	Gross board-foot volume in the sawlog portion of a sawtimber tree	NUMBER(11,6)
3.1.44	VOLCFSND	Sound cubic-foot volume	NUMBER(11,6)
3.1.45	GROWCFGS	Net annual merchantable cubic-foot growth of a growing-stock tree on timberland	NUMBER(11,6)
3.1.46	GROWBFSL	Net annual merchantable board-foot growth of a sawtimber tree on timberland	NUMBER(11,6)
3.1.47	GROWCFAL	Net annual sound cubic-foot growth of a live tree on timberland	NUMBER(11,6)
3.1.48	MORTCFGS	Merchantable cubic-foot volume of a growing-stock tree on timberland for mortality purposes	NUMBER(11,6)
3.1.49	MORTBFSL	Merchantable board-foot volume of a sawtimber tree on timberland for mortality purposes	NUMBER(11,6)
3.1.50	MORTCFAL	Sound cubic-foot volume of a tree on timberland for mortality purposes	NUMBER(11,6)
3.1.51	REMVCFGS	Merchantable cubic-foot volume of a growing-stock tree on timberland for removal purposes	NUMBER(11,6)
3.1.52	REMVBFSL	Merchantable board-foot volume of a sawtimber tree on timberland for removal purposes	NUMBER(11,6)
3.1.53	REMVCFAL	Sound cubic-foot volume of a live tree on timberland for removal purposes	NUMBER(11,6)
3.1.54	DIACHECK	Diameter check code	NUMBER(2)
3.1.55	MORTYR	Mortality year	NUMBER(4)
3.1.56	SALVCD	Salvable dead code	NUMBER(2)
3.1.57	UNCRCRD	Uncompacted live crown ratio	NUMBER(3)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
3.1.58	CPOSCD	Crown position code	NUMBER(2)
3.1.59	CLIGHTCD	Crown light exposure code	NUMBER(2)
3.1.60	CVIGORCD	Crown vigor code (sapling)	NUMBER(2)
3.1.61	CDENCD	Crown density code	NUMBER(3)
3.1.62	CDIEBKCD	Crown dieback code	NUMBER(3)
3.1.63	TRANSCD	Foliage transparency code	NUMBER(3)
3.1.64	TREEHISTCD	Tree history code	NUMBER(3)
3.1.65	DIACALC	Current diameter calculated	NUMBER(5,2)
3.1.66	BHAGE	Breast height age	NUMBER(4)
3.1.67	TOTAGE	Total age	NUMBER(4)
3.1.68	CULLDEAD	Dead cull	NUMBER(3)
3.1.69	CULLFORM	Form cull	NUMBER(3)
3.1.70	CULLMSTOP	Missing top cull, field recorded	NUMBER(3)
3.1.71	CULLBF	Board-foot cull	NUMBER(3)
3.1.72	CULLCF	Cubic-foot cull	NUMBER(3)
3.1.73	BFSND	Board-foot-cull soundness	NUMBER(3)
3.1.74	CFSND	Cubic-foot-cull soundness	NUMBER(3)
3.1.75	SAWHT	Sawlog height	NUMBER(2)
3.1.76	BOLEHT	Bole height	NUMBER(3)
3.1.77	FORMCL	Form class	NUMBER(1)
3.1.78	HTCALC	Current height calculated	NUMBER(3)
3.1.79	HRDWD_CLUMP_CD	Hardwood clump code	NUMBER(1)
3.1.80	SITREE	Calculated site index	NUMBER(3)
3.1.81	CREATED_BY	Created by	VARCHAR2(30)
3.1.82	CREATED_DATE	Created date	DATE
3.1.83	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
3.1.84	MODIFIED_BY	Modified by	VARCHAR2(30)
3.1.85	MODIFIED_DATE	Modified date	DATE
3.1.86	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)
3.1.87	MORTCD	Mortality code	NUMBER(1)
3.1.88	HTDMP	Height to diameter measurement point	NUMBER(3,1)
3.1.89	ROUGHCULL	Rough cull	NUMBER(2)
3.1.90	MIST_CL_CD	Mistletoe class code	NUMBER(1)
3.1.91	CULL_FLD	Rotten/missing cull, field recorded	NUMBER(2)
3.1.92	RECONCILECD	Reconcile code	NUMBER(1)
3.1.93	PREVDIA	Previous diameter	NUMBER(5,2)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
3.1.94	FGROWCFG	Net annual merchantable cubic-foot growth of a growing-stock tree on forest land	NUMBER(11,6)
3.1.95	FGROWBFSL	Net annual merchantable board-foot growth of a sawtimber tree on forest land	NUMBER(11,6)
3.1.96	FGROWCFAL	Net annual sound cubic-foot growth of a live tree on forest land	NUMBER(11,6)
3.1.97	FMORTCFG	Merchantable cubic-foot volume of a growing-stock tree on forest land for mortality purposes	NUMBER(11,6)
3.1.98	FMORTBFSL	Merchantable board-foot volume of a sawtimber tree on forest land for mortality purposes	NUMBER(11,6)
3.1.99	FMORTCFAL	Sound cubic-foot volume of a tree on forest land for mortality purposes	NUMBER(11,6)
3.1.100	FREMVCFG	Merchantable cubic-foot volume of a growing-stock tree on forest land for removal purposes	NUMBER(11,6)
3.1.101	FREMVBFSL	Merchantable board-foot volume of a sawtimber tree on forest land for removal purposes	NUMBER(11,6)
3.1.102	FREMVCFAL	Sound cubic-foot volume of a live tree on forest land for removal purposes	NUMBER(11,6)
3.1.103	P2A_GRM_FLG	Periodic to annual growth, removal, and mortality flag	VARCHAR2(1)
3.1.104	TREECLCD_NERS	Tree class code, Northeastern Research Station	NUMBER(2)
3.1.105	TREECLCD_SRS	Tree class code, Southern Research Station	NUMBER(2)
3.1.106	TREECLCD_NCNS	Tree class code, North Central Research Station	NUMBER(2)
3.1.107	TREECLCD_RMRS	Tree class code, Rocky Mountain Research Station	NUMBER(2)
3.1.108	STANDING_DEAD_CD	Standing dead code	NUMBER(2)
3.1.109	PREV_STATUS_CD	Previous tree status code	NUMBER(1)
3.1.110	PREV_WDLDSTEM	Previous woodland stem count	NUMBER(3)
3.1.111	TPA_UNADJ	Trees per acre unadjusted	NUMBER(11,6)
3.1.112	TPAMORT_UNADJ	Mortality trees per acre per year unadjusted	NUMBER(11,6)
3.1.113	TPAREMV_UNADJ	Removal trees per acre per year unadjusted	NUMBER(11,6)
3.1.114	TPAGROW_UNADJ	Growth trees per acre unadjusted	NUMBER(11,6)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
3.1.115	DRYBIO_BOLE	Dry biomass in the merchantable bole	NUMBER(13,6)
3.1.116	DRYBIO_TOP	Dry biomass in the top and limbs of the tree	NUMBER(13,6)
3.1.117	DRYBIO_STUMP	Dry biomass in the tree stump	NUMBER(13,6)
3.1.118	DRYBIO_SAPLING	Aboveground dry biomass of saplings	NUMBER(13,6)
3.1.119	DRYBIO_WDLD_SPP	Aboveground dry biomass of woodland tree species	NUMBER(13,6)
3.1.120	DRYBIO_BG	Belowground dry biomass	NUMBER(13,6)
3.1.121	CARBON_AG	Aboveground carbon	NUMBER(13,6)
3.1.122	CARBON_BG	Belowground carbon	NUMBER(13,6)
3.1.123	CYCLE	Inventory cycle number	NUMBER(2)
3.1.124	SUBCYCLE	Inventory subcycle number	NUMBER(2)
3.1.125	BORED_CD_PNWRS	Tree bored code, Pacific Northwest Research Station	NUMBER(1)
3.1.126	DAMLOC1_PNWRS	Damage location 1, Pacific Northwest Research Station	NUMBER(2)
3.1.127	DAMLOC2_PNWRS	Damage location 2, Pacific Northwest Research Station	NUMBER(2)
3.1.128	DIACHECK_PNWRS	Diameter check, Pacific Northwest Research Station	NUMBER(1)
3.1.129	DMG_AGENT1_CD_PNWRS	Damage agent 1, Pacific Northwest Research Station	NUMBER(2)
3.1.130	DMG_AGENT2_CD_PNWRS	Damage agent 2, Pacific Northwest Research Station	NUMBER(2)
3.1.131	DMG_AGENT3_CD_PNWRS	Damage agent 3, Pacific Northwest Research Station	NUMBER(2)
3.1.132	MIST_CL_CD_PNWRS	Leafy mistletoe class code, Pacific Northwest Research Station	NUMBER(1)
3.1.133	SEVERITY1_CD_PNWRS	Damage severity 1, Pacific Northwest Research Station for years 2001-2004	NUMBER(1)
3.1.134	SEVERITY1A_CD_PNWRS	Damage severity 1A, Pacific Northwest Research Station	NUMBER(2)
3.1.135	SEVERITY1B_CD_PNWRS	Damage severity 1B, Pacific Northwest Research Station	NUMBER(1)
3.1.136	SEVERITY2_CD_PNWRS	Damage severity 2, Pacific Northwest Research Station for years 2001-2004	NUMBER(1)
3.1.137	SEVERITY2A_CD_PNWRS	Damage severity 2A, Pacific Northwest Research Station starting in 2005	NUMBER(2)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
3.1.138	SEVERITY2B_CD_PNWRS	Damage severity 2B, Pacific Northwest Research Station starting in 2005	NUMBER(1)
3.1.139	SEVERITY3_CD_PNWRS	Damage severity 3, Pacific Northwest Research Station for years 2001-2004	NUMBER(1)
3.1.140	UNKNOWN_DAMTYP1_PNWRS	Unknown damage type 1, Pacific Northwest Research Station	NUMBER(1)
3.1.141	UNKNOWN_DAMTYP2_PNWRS	Unknown damage type 2, Pacific Northwest Research Station	NUMBER(1)
3.1.142	PREV_PNTN_SRS	Previous periodic prism point, tree number, Southern Research Station	NUMBER(4)
3.1.143	DISEASE_SRS	Disease, Southern Research Station	NUMBER(1)
3.1.144	DIEBACK_SEVERITY_SRS	Dieback severity, Southern Research Station	NUMBER(2)
3.1.145	DAMAGE_AGENT_CD1	Damage agent code 1	NUMBER(5)
3.1.146	DAMAGE_AGENT_CD2	Damage agent code 2	NUMBER(5)
3.1.147	DAMAGE_AGENT_CD3	Damage agent code 3	NUMBER(5)
3.1.148	CENTROID_DIA	Centroid diameter	NUMBER(4,1)
3.1.149	CENTROID_DIA_HT	Calculated centroid diameter height	NUMBER(4,1)
3.1.150	CENTROID_DIA_HT_ACTUAL	Actual centroid diameter height	NUMBER(4,1)
3.1.151	UPPER_DIA	Upper stem diameter	NUMBER(4,1)
3.1.152	UPPER_DIA_HT	Upper stem diameter height	NUMBER(4,1)
3.1.153	VOLCSSND	Sound cubic-foot volume in the sawlog portion	NUMBER(11,6)
3.1.154	DRYBIO_SAWLOG	Dry biomass in the sawlog portion of a sawtimber tree	NUMBER(13,6)
3.1.155	DAMAGE_AGENT_CD1_SRS	Damage agent code 1, Southern Research Station	NUMBER(5)
3.1.156	DAMAGE_AGENT_CD2_SRS	Damage agent code 2, Southern Research Station	NUMBER(5)
3.1.157	DAMAGE_AGENT_CD3_SRS	Damage agent code 3, Southern Research Station	NUMBER(5)
3.1.158	DRYBIO_AG	Aboveground dry biomass	NUMBER(13,6)
3.1.159	ACTUALHT_CALC	Actual height, calculated	NUMBER(3)
3.1.160	ACTUALHT_CALC_CD	Actual height, calculated, code	NUMBER(1)
3.1.161	CULL_BF_ROTTEN	Rotten/missing board-foot cull of the sawlog (used by Northeastern Research Station)	NUMBER(12,9)
3.1.162	CULL_BF_ROTTEN_CD	Rotten/missing board-foot cull of the sawlog code (used by Northeastern Research Station)	NUMBER(2)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
3.1.163	CULL_BF_ROUGH	Rough board-foot cull of the sawlog (used by Northeastern Research Station)	NUMBER(12,9)
3.1.164	CULL_BF_ROUGH_CD	Rough board-foot cull of the sawlog code (used by Northeastern Research Station)	NUMBER(2)
3.1.165	PREVDIA_FLD	Previous diameter, field	NUMBER
3.1.166	TREECLCD_31_NCRS	Tree class code (version 3.1), North Central Research Station	NUMBER(1)
3.1.167	TREE_GRADE_NCRS	Tree grade, North Central Research Station	NUMBER(3)
3.1.168	BOUGHS_AVAILABLE_NCRS	Balsam fir boughs available, North Central Research Station	NUMBER(1)
3.1.169	BOUGHS_HRVST_NCRS	Balsam fir boughs harvested, North Central Research Station	NUMBER(1)
3.1.170	TREECLCD_31_NERS	Tree class code (field guide version 3.1), Northeastern Research Station	NUMBER(1)
3.1.171	AGENTCD_NERS	General damage / cause of death (agent) code, Northeastern Research Station	NUMBER(2)
3.1.172	BFSNDCD_NERS	Board-foot soundness code, Northeastern Research Station	NUMBER(1)
3.1.173	AGECKCD_RMRS	Radial growth and tree age check code, Rocky Mountain Research Station	NUMBER(1)
3.1.174	DIA_1YRAGO_RMRS	Diameter one year ago, Rocky Mountain Research Station	NUMBER(5,2)
3.1.175	GROWBFSCR_RMRS	Net annual merchantable board-foot (Scribner rule) growth of a sawtimber tree on forest land, Rocky Mountain Research Station	NUMBER(11,6)
3.1.176	GROWCFSAWLOG_RMRS	Net annual merchantable cubic-foot growth in the sawlog/utilization portion of a tree, Rocky Mountain Research Station	NUMBER(11,6)
3.1.177	HT_1YRAGO_RMRS	Height one year ago, Rocky Mountain Research Station	NUMBER(3)
3.1.178	PREV_ACTUALHT_RMRS	Previous actual height, Rocky Mountain Research Station	NUMBER(3)
3.1.179	PREV_AGECHKCD_RMRS	Previous radial growth and tree age check code, Rocky Mountain Research Station	NUMBER(1)
3.1.180	PREV_BHAGE_RMRS	Previous breast height age, Rocky Mountain Research Station	NUMBER(4)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
3.1.181	PREV_HT_RMRS	Previous total length, Rocky Mountain Research Station	NUMBER(3)
3.1.182	PREV_TOTAGE_RMRS	Previous total age, Rocky Mountain Research Station	NUMBER(4)
3.1.183	PREV_TREECLCD_RMRS	Previous tree class code, Rocky Mountain Research Station	NUMBER(2)
3.1.184	RADAGECD_RMRS	Radial growth / age code, Rocky Mountain Research Station	NUMBER(1)
3.1.185	RADGRW_RMRS	Radial growth, Rocky Mountain Research Station	NUMBER(2)
3.1.186	VOLBFSCRGRS_RMRS	Gross board-foot (Scribner rule) volume in the sawlog portion of a sawtimber tree, Rocky Mountain Research Station	NUMBER(11,6)
3.1.187	VOLBFSCRNET_RMRS	Net board-foot (Scribner rule) volume in the sawlog portion of a sawtimber tree, Rocky Mountain Research Station	NUMBER(11,6)
3.1.188	VOLCFDEADGRS_RMRS	Gross cubic-foot volume of dead wood, Rocky Mountain Research Station	NUMBER(11,6)
3.1.189	VOLCFSAWGRS_RMRS	Gross cubic-foot volume in the sawlog/utilization portion, Rocky Mountain Research Station	NUMBER(11,6)
3.1.190	VOLCFSAWNENET_RMRS	Net cubic-foot volume in the sawlog/utilization portion, Rocky Mountain Research Station	NUMBER(11,6)
3.1.191	VOLCFTOTNET_RMRS	Net cubic-foot volume in the total stem, Rocky Mountain Research Station	NUMBER(11,6)
3.1.192	VOLCFUPPGRS_RMRS	Gross cubic-foot volume in the upper stem, Rocky Mountain Research Station	NUMBER(11,6)
3.1.193	VOLCFUPPNET_RMRS	Net cubic-foot volume in the upper stem, Rocky Mountain Research Station	NUMBER(11,6)
3.1.194	SAPLING_FUSIFORM_SRS	Sapling fusiform, Southern Research Station	NUMBER(1)
3.1.195	EPIPHYTE_PNWRS	Epiphyte loading (Pacific Islands), Pacific Northwest Research Station	NUMBER(1)
3.1.196	ROOT_HT_PNWRS	Rooting height (Pacific Islands), Pacific Northwest Research Station	NUMBER(2)
3.1.197	CAVITY_USE_PNWRS	Cavity presence, Pacific Northwest Research Station	VARCHAR2(1)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
3.1.198	CORE_LENGTH_PNWRS	Length of measured core, Pacific Northwest Research Station	NUMBER(4,1)
3.1.199	CULTURALLY_KILLED_PNWRS	Culturally killed code, Pacific Northwest Research Station	NUMBER(1)
3.1.200	DIA_EST_PNWRS	Snag estimated diameter, Pacific Northwest Research Station	NUMBER(4,1)
3.1.201	GST_PNWRS	Growth sample tree, Pacific Northwest Research Station	VARCHAR2(1)
3.1.202	INC10YR_PNWRS	10-year increment, Pacific Northwest Research Station	NUMBER(3)
3.1.203	INC5YRHT_PNWRS	5-year height growth, Pacific Northwest Research Station	NUMBER(3,1)
3.1.204	INC5YR_PNWRS	5-year increment, Pacific Northwest Research Station	NUMBER(3)
3.1.205	RING_COUNT_INNER_2INCHES_PN WRS	Number of rings in inner 2 inches, Pacific Northwest Research Station	NUMBER(3)
3.1.206	RING_COUNT_PNWRS	Number of rings, Pacific Northwest Research Station	NUMBER(3)
3.1.207	SNAG_DIS_CD_PNWRS	Snag reason for disappearance code, Pacific Northwest Research Station	NUMBER(1)

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\_NCNS. 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) two-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.

### 3.1.8 PLOT

**Phase 2 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 I](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

### 3.1.10 TREE

**Tree record 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 CON DID**

**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.** The direction, to the nearest degree, from subplot center (microplot center for saplings) to the center of the base of the tree (geographic center for multi-stemmed woodland species). Due north is represented by 360 degrees. This attribute is populated for live and standing dead trees  $\geq 1.0$  inch d.b.h./d.r.c. in a forest condition that were measured on any of the four subplots of the national plot design. It may be populated for other tree records.

**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.

**3.1.13 DIST**

**Horizontal distance.** The horizontal distance in feet from subplot center (microplot center for saplings) to the center of the base of the tree (geographic center for multi-stemmed woodland species). This attribute is populated for live and standing dead trees  $\geq 1.0$  inch d.b.h./d.r.c. in a forest condition that were measured on any of the four subplots of the national plot design. It may be populated for other tree records.

**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.

**3.1.14 PREVCOND**

**Previous condition class number.** 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 due to natural causes. 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](#). Individual tree species and corresponding species group codes are shown in [appendix F](#), [appendix G](#), and [appendix H](#).

**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  $\geq 1.0$  inch d.b.h./d.r.c.*) The total length (height) of a sample 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.

**Note:** Prior to `PLOT.MANUAL = 7.0`, this attribute was tallied as follows:

- Core Phase 2:  $\geq 5.0$ -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  $\geq 5.0$ -inch d.b.h./d.r.c. standing dead trees.

- Core Phase 3:  $\geq 1.0$ -inch d.b.h./d.r.c. live trees.
- Core optional Phase 3:  $\geq 5.0$ -inch d.b.h./d.r.c. standing dead trees.

### 3.1.21 HTCD

**Height method code.** (*All live and standing dead tally trees  $\geq 1.0$  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:  $\geq 5.0$ -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  $\geq 5.0$ -inch d.b.h./d.r.c. standing dead trees.
- Core Phase 3:  $\geq 1.0$ -inch d.b.h./d.r.c. live trees.
- Core optional Phase 3:  $\geq 5.0$ -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  $\geq 1.0$  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,  $\geq 5.0$  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  $\geq 1.0$  inch d.b.h./d.r.c. (with broken or missing tops) and standing dead trees  $\geq 5.0$  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**

<b>Code</b>	<b>Description</b>
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, and Washington 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, and Washington inventories, 75 percent or more cull, rather than 67 percent or more cull, applies. This class also contains all trees of noncommercial species, or those species where SPGRPCD equals 23 (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, and Washington 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**

<b>Code</b>	<b>Description</b>
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  $\geq 1.0$  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 collected by certain FIA work units (SURVEY.RSCD = 23, 24, or 33). Tree grade codes range from 1 to 5.

**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  $\geq 1.0$ , 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 includes field-recorded cull (CULL\_FLD) and any additional cull due to broken top.

### 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 trees <5.0 inches d.b.h./d.r.c. when PLOT.MANUAL ≥1.0 and <7.0.

**Codes: DECAYCD**

<b>Code</b>	<b>Description</b>
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 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.

**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 in the REF\_SPECIES table as REF\_SPECIES.WOODLAND = X. 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 volume.** For timber species (trees where the diameter is measured at breast height [d.b.h.]), this is the net volume of wood in the central stem of a sample tree  $\geq 5.0$  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. For woodland species (woodland species can be identified by REF\_SPECIES.WOODLAND = X), VOLCFNET is the net volume of wood and bark from the d.r.c. measurement point(s) to a 1½-inch top diameter; includes branches that are at least 1½ inches in diameter along the length of the branch. This is a per tree value and must be multiplied by TPA\_UNADJ to obtain per acre information. This attribute is blank (null) for trees with DIA  $<5.0$  inches. All trees measured after 1998 with DIA  $\geq 5.0$  inches (including standing dead trees) will have entries in this field. Does not include rotten, missing, and form cull (volume loss due to rotten, missing, and form cull defect has been deducted).

**3.1.39 VOLCFGRS**

**Gross cubic-foot volume.** For timber species (trees where the diameter is measured at breast height [d.b.h.]), this is the total volume of wood in the central stem of sample trees  $\geq 5.0$  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. For woodland

species (woodland species can be identified by REF\_SPECIES.WOODLAND = X), VOLCFGRS is the total volume of wood and bark from the d.r.c. measurement point(s) to a 1½-inch top diameter; includes branches that are at least 1½ inches in diameter along the length of the branch. This is a per tree value and must be multiplied by TPA\_UNADJ to obtain per acre information. This attribute is blank (null) for trees with DIA <5.0 inches. All trees measured after 1998 with DIA ≥5.0 inches (including standing dead trees) have entries in this field. Includes rotten, missing and form cull (volume loss due to rotten, missing, and form cull defect has not been deducted).

### 3.1.40 VOLCSNET

**Net cubic-foot volume in the sawlog portion of a sawtimber tree.** The net 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 larger trees have entries in this field if they are growing-stock trees (TREECLCD = 2 and STATUSCD = 1). All rough and rotten trees (TREECLCD = 3 or 4) and dead and cut trees (STATUSCD = 2 or 3) are blank (null) in this field. Form cull and rotten/missing cull are excluded.

### 3.1.41 VOLCSGRS

**Gross cubic-foot volume in the sawlog portion of a sawtimber tree.** This is the total 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 larger trees have entries in this field if they are growing-stock trees (TREECLCD = 2 and STATUSCD = 1). All rough and rotten trees (TREECLCD = 3 or 4) and dead and cut trees (STATUSCD = 2 or 3) are blank (null) in this field.

### 3.1.42 VOLBFNET

**Net board-foot volume in the sawlog portion of a sawtimber tree.** This is the net volume (International ¼-inch rule) 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 larger trees should have entries in this field if they are growing-stock trees (TREECLCD = 2 and STATUSCD = 1). All rough and rotten trees (TREECLCD = 3 or 4) and dead and cut trees (STATUSCD = 2 or 3) are blank (null) in this field. Form cull and rotten/missing cull are excluded.

### 3.1.43 VOLBFGRS

**Gross board-foot volume in the sawlog portion of a sawtimber tree.** This is the total volume (International ¼-inch rule) 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 DIA. 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 larger trees should have entries in this field if they are growing-stock trees (TREECLCD = 2 and STATUSCD = 1). All rough and rotten trees (TREECLCD = 3 or 4) and dead and cut trees (STATUSCD = 2 or 3) are blank (null) in this field.

### 3.1.44 VOLCFSND

**Sound cubic-foot volume.** For timber species (trees where the diameter is measured at breast height [d.b.h.]), the volume of sound wood in the central stem of a sample tree  $\geq 5.0$  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. For woodland species (woodland species can be identified by REF\_SPECIES.WOODLAND = X), VOLCFSND is the net volume of wood and bark from the d.r.c. measurement point(s) to a minimum 1½-inch top diameter; includes branches that are at least 1½ inches in diameter along the length of the branch. This is a per tree value and must be multiplied by TPA\_UNADJ to obtain per acre information. This attribute is blank (null) for trees with DIA  $<5.0$  inches. All trees with DIA  $\geq 5.0$  inches (including dead trees) have entries in this field. Does not include rotten and missing cull (volume loss due to rotten and missing cull defect has been deducted).

### 3.1.45 GROWCFGS

**Net annual merchantable cubic-foot growth of a growing-stock tree on timberland.** The net change in cubic-foot volume (VOLCFNET) per year of this tree (for trees on remeasured plots,  $(V2 - V1)/(T2 - T1)$  where 1 and 2 denote the past and current measurement, respectively; V is volume; and T indicates year of measurement; and  $T2 - T1 = PLOT.REMPER$ ). 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 TPAGROW\_UNADJ.

### 3.1.46 GROWBFSL

**Net annual merchantable board-foot growth of a sawtimber tree on timberland.** The net change in merchantable board-foot (VOLBFNET, International ¼-inch rule) volume per year of this 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 TPAGROW\_UNADJ.

### 3.1.47 GROWCFAL

**Net annual sound cubic-foot growth of a live tree on timberland.** The net change in sound cubic-foot volume (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 TPAGROW\_UNADJ.

**3.1.48 MORTCFGs**

**Merchantable cubic-foot volume of a growing-stock tree on timberland for mortality purposes.** The merchantable cubic-foot volume (VOLCFNET) of the tree at the time of mortality. To obtain estimates of annual per acre mortality, multiply by TPAMORT\_UNADJ.

**3.1.49 MORTBFSL**

**Merchantable board-foot volume of a sawtimber tree on timberland for mortality purposes.** The merchantable board-foot (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 TPAMORT\_UNADJ.

**3.1.50 MORTCFAL**

**Sound cubic-foot volume of a tree on timberland for mortality purposes.** The sound cubic-foot volume (VOLCFSND) of the tree at the time of mortality. To obtain estimates of annual per acre mortality, multiply by TPAMORT\_UNADJ.

**3.1.51 REMVCFGs**

**Merchantable cubic-foot volume of a growing-stock tree on timberland for removal purposes.** The merchantable cubic-foot volume (VOLCFNET) of the tree at the time of removal. To obtain estimates of annual per acre removals, multiply by TPAREMV\_UNADJ.

**3.1.52 REMVBFSL**

**Merchantable board-foot volume of a sawtimber tree on timberland for removal purposes.** The merchantable board-foot (VOLBFNET, International 1/4-inch rule) volume of the tree at the time of removal. To obtain estimates of annual per acre removals, multiply by TPAREMV\_UNADJ.

**3.1.53 REMVCFAL**

**Sound cubic-foot volume of a live tree on timberland for removal purposes.** The sound cubic-foot volume (VOLCFSND) of the tree at the time of removal. To obtain estimates of annual per acre removals, multiply by TPAREMV\_UNADJ.

**3.1.54 DIACHECK**

**Diameter check code.** A code indicating the reliability of the diameter measurement.

**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).

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

**3.1.55 MORTYR**

**Mortality year.** (*Core optional*) The estimated year in which a remeasured tree died or was cut. Populated where PLOT.MANUAL  $\geq 1.0$  and populated by some FIA work units where PLOT.MANUAL  $< 1.0$ .

**3.1.56 SALVCD**

**Salvable dead code.** A standing or down dead tree considered merchantable by 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.

**3.1.57 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.

**3.1.58 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.

**3.1.59 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.

**3.1.60 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 between 1.0 and 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.
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.

**3.1.61 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 at least 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%

Code	Description
85	81-85%
90	86-90%
95	91-95%
99	96-100%

**3.1.62 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 at least 5.0 inches d.b.h./d.r.c. See [CDENCD](#) for codes.

**3.1.63 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 at least 5.0 inches d.b.h./d.r.c. See [CDENCD](#) for codes.

**3.1.64 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 collected by certain FIA work units (SURVEY.RSCD = 23, 24, or 33).

**3.1.65 DIACALC**

**Current diameter calculated.** If the diameter is unmeasurable (e.g., the tree is cut or dead), the diameter is calculated (in inches) and stored in this attribute.

**3.1.66 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 collected by certain FIA work units (SURVEY.RSCD = 22 or 26) and is left blank (null) when it is not collected.

**3.1.67 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 to 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 collected by certain FIA work units (SURVEY.RSCD = 22 or 26) and is left blank (null) when it is not collected.

**3.1.68 CULLDEAD**

**Dead cull.** The percent of the gross cubic-foot volume that is cull due to sound dead material. Recorded for all trees that are at least 5.0 inches d.b.h./d.r.c. Only collected by certain FIA work units (SURVEY.RSCD = 22). This attribute is blank (null) for trees smaller than 5 inches and is always null for the other FIA work units.

**3.1.69 CULLFORM**

**Form cull.** The percent of the gross cubic-foot volume that is cull due to form defect. Recorded for live trees that are at least 5.0 inches d.b.h. Only collected by certain FIA work units (SURVEY.RSCD = 22). This attribute is blank (null) for dead trees, trees smaller than 5 inches d.b.h., for all trees where the diameter is measured at root collar (d.r.c.), and is always null for the other FIA work units.

**3.1.70 CULLMSTOP**

**Missing top cull, field recorded.** The percent of the gross cubic-foot volume that is cull due to a missing (broken) merchantable top. Recorded for trees that are  $\geq$  5.0 inches d.b.h. The volume estimate does not include any portion of the missing top that is <4.0 inches DOB (diameter outside bark). Many broken top trees may have 0 percent missing top cull because no merchantable volume was lost. Only collected by certain FIA work units (SURVEY.RSCD = 22). This attribute is blank (null) for trees smaller than 5 inches diameter and is always null for the other FIA work units.

**3.1.71 CULLBF**

**Board-foot cull.** The percent of the gross board-foot volume that is cull due to rot or form. Only collected by certain FIA work units (SURVEY.RSCD = 24).

**3.1.72 CULLCF**

**Cubic-foot cull.** The percent of the gross cubic-foot volume that is cull due to rot or form. Only collected by certain FIA work units (SURVEY.RSCD = 24).

**3.1.73 BFSND**

**Board-foot-cull soundness.** The percent of the board-foot cull that is sound (due to form). Only collected by certain FIA work units (SURVEY.RSCD = 24).

**3.1.74 CFSND**

**Cubic-foot-cull soundness.** The percent of the cubic-foot cull that is sound (due to form). Only collected by certain FIA work units (SURVEY.RSCD = 24).

**3.1.75 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 collected by certain FIA work units (SURVEY.RSCD = 24).

**3.1.76 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 collected by certain FIA work units (SURVEY.RSCD = 24).

**3.1.77 FORMCL**

**Form class.** A code used in calculating merchantable bole net volume. Recorded for all live hardwood trees tallied that are  $\geq 5.0$  inch d.b.h./d.r.c. Also recorded for conifers  $\geq 5.0$  inch d.b.h. in Region 5 National Forests. Only collected 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.

**3.1.78 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 collected by certain FIA work units (SURVEY.RSCD = 33).

**3.1.79 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 collected by certain FIA work units (SURVEY.RSCD = 26).

**3.1.80 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).

**3.1.81 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**3.1.82 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**3.1.83 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**3.1.84 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**3.1.85 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**3.1.86 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.[MODIFIED\\_IN\\_INSTANCE](#) description for definition.

**3.1.87 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.

**3.1.88 HTDMP**

**Height to diameter measurement point.** (*Core optional*) For trees measured directly at 4.5 feet above ground, this item is blank (null). If the diameter is not measured at 4.5 feet, the actual length from the ground, to the nearest 0.1 foot, at which the diameter was measured for each tally tree, 1.0-inch d.b.h. and larger.

**3.1.89 ROUGHCULL**

**Rough cull.** (*Core optional*) Percentage of sound dead cull, as a percent of the merchantable bole/portion of the tree.

**3.1.90 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.
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.

**3.1.91 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/portion 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.

### 3.1.92 RECONCILECD

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

**Note:** Starting with PLOT.MANUAL = 7.0, standing dead saplings that were not included in the previous inventory are assigned RECONCILECD = 4.

**Codes: RECONCILECD**

Code	Description
1	Ingrowth - either a new tally tree not qualifying as through growth or a new tree on land that was formerly nonforest and now qualifies as forest land (includes reversion or encroachments).
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.
3	Missed live - a live tree missed at previous inventory and that is live or dead now. Includes currently tallied trees on previously nonsampled conditions.
4	Missed dead - a dead tree missed at previous inventory and that is dead now. Includes currently tallied trees on previously nonsampled conditions.
5	Shrank - live tree that shrunk below threshold diameter on microplot/subplot/macropot plot.
6	Missing (moved) - 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). 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 - erroneously tallied at previous inventory.
8	Procedural change - tree was tallied at the previous inventory, but is no longer tallied due to a definition or procedural change.
9	Tree was sampled before, but now the area where the tree was located is nonsampled. All trees on the nonsampled area have RECONCILECD = 9.

### 3.1.93 PREVDIA

**Previous diameter.** The previous diameter (in inches) of the sample tree at the point of diameter measurement. Populated for remeasured trees.

### 3.1.94 FGROWCFGs

**Net annual merchantable cubic-foot growth of a growing-stock tree on forest land.**

The net change in merchantable cubic-foot volume (VOLCFNET) 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 TPAGROW\_UNADJ.

**3.1.95 FGROWBFSL**

**Net annual merchantable board-foot growth of a sawtimber tree on forest land.** The net change in merchantable board-foot (VOLBFNET, International 1/4-inch rule) 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 TPAGROW\_UNADJ.

**3.1.96 FGROWCFAL**

**Net annual sound cubic-foot growth of a live tree on forest land.** The net change in sound cubic-foot volume (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 TPAGROW\_UNADJ.

**3.1.97 FMORTCFGs**

**Merchantable cubic-foot volume of a growing-stock tree on forest land for mortality purposes.** The merchantable cubic-foot volume (VOLCFNET) of the tree at the time of mortality. To obtain estimates of annual per acre mortality, multiply by TPAMORT\_UNADJ.

**3.1.98 FMORTBFSL**

**Merchantable board-foot volume of a sawtimber tree on forest land for mortality purposes.** The merchantable board-foot (VOLBFNET, International 1/4-inch rule) volume of the tree at time of mortality. To obtain estimates of annual per acre mortality, multiply by TPAMORT\_UNADJ.

**3.1.99 FMORTCFAL**

**Sound cubic-foot volume of a tree on forest land for mortality purposes.** The sound cubic-foot volume (VOLCFSND) of the tree at the time of mortality. To obtain estimates of annual per acre mortality, multiply by TPAMORT\_UNADJ.

**3.1.100 FREMVCFGs**

**Merchantable cubic-foot volume of a growing-stock tree on forest land for removal purposes.** The merchantable cubic-foot volume of the tree at the time of removal. To obtain estimates of annual per acre removals, multiply by TPAREMV\_UNADJ.

**3.1.101 FREMVBFSL**

**Merchantable board-foot volume of a sawtimber tree on forest land for removal purposes.** The merchantable board-foot (VOLBFNET, International 1/4-inch rule) volume of the tree at the time of removal. To obtain estimates of annual per acre removals, multiply by TPAREMV\_UNADJ.

**3.1.102 FREMVCFAL**

**Sound cubic-foot volume of a live tree on forest land for removal purposes.** The sound cubic-foot volume (VOLCFSND) of the tree at the time of removal. To obtain estimates of annual per acre removals, multiply by TPAREMV\_UNADJ.

**3.1.103 P2A\_GRM\_FLG**

**Periodic to annual growth, removal, and mortality flag.** A code indicating if this tree is part of a periodic inventory (usually from a variable-radius plot design) that is only included for the purposes of computing growth, removals and/or mortality estimates. This tree does not contribute to current estimates of such attributes as volume, biomass or number of trees. The flag is set to Y for those trees that are needed for estimation and otherwise is left blank (null).

**3.1.104 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. and larger. 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. Only collected 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"> <li>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).</li> <li>should have no more than 10 percent board-foot cull due to form defect.</li> <li>should have good vigor, usually indicated by a crown ratio of 30 percent or more and dominant or co-dominant.</li> <li>usually has a grade 1 butt log.</li> </ul>
2	Acceptable - This class includes: <ul style="list-style-type: none"> <li>live sawtimber tree that does not qualify as a preferred tree but is not a cull tree (see Rough and Rotten Cull).</li> <li>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).</li> </ul>
3	Rough Cull - This class includes: <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>
4	Rotten Cull - This class includes: <ul style="list-style-type: none"> <li>live sawtimber tree that currently has 67 percent or more predominantly unsound board-foot cull.</li> <li>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.</li> </ul>

Code	Description
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.

### 3.1.105 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 collected 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.

### 3.1.106 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 inches d.b.h. and larger. 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](http://www.nrs.fs.fed.us/fia/data-collection/) web page (<http://www.nrs.fs.fed.us/fia/data-collection/>). Only collected by certain FIA work units (SURVEY.RSCD = 23).

**Codes: TREECLCD\_NCRS**

<b>Code</b>	<b>Description</b>
20	Growing-stock - Any live tree of commercial species that is saw-timber 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 $\geq$ 5.0-inch d.b.h. that meets these standards is given a tree/decay code of 30.
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.

**3.1.107 TREECLCD\_RMRS**

**Tree class code, Rocky Mountain Research Station.** A code indicating the general quality of the tree. Only collected by certain FIA work units (SURVEY.RSCD = 22).

**Codes: TREECLCD\_RMRS**

<b>Code</b>	<b>Description</b>
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 = X). 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.

Code	Description
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.

**3.1.108 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  $\geq 1.0$  inch d.b.h., have a bole that has an unbroken actual length of  $\geq 4.5$  feet, and lean  $<45$  degrees from vertical as measured from the base of the tree to 4.5 feet. Populated where PLOT.MANUAL  $\geq 2.0$ ; may be populated using information collected on dead trees in earlier inventories for dead trees.

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  $\geq 1.0$  inch d.r.c., be  $\geq 1.0$  foot in unbroken ACTUAL LENGTH, and lean  $<45$  degrees from vertical.

**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.

**3.1.109 PREV\_STATUS\_CD**

**Previous tree status code.** Tree status that was recorded at the previous inventory on all tally trees  $\geq 1.0$  inch d.b.h./d.r.c.

**Codes: PREV\_STATUS\_CD**

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

**3.1.110 PREV\_WDLSTEM**

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

**3.1.111 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](#).

### 3.1.112 **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](#).

### 3.1.113 **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](#).

### 3.1.114 **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](#).

### 3.1.115 **DRYBIO\_BOLE**

**Dry biomass in the merchantable bole.** The oven-dry biomass (pounds) 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. This is the biomass of sound wood in live and dead trees, including bark, from a 1-foot stump to a minimum 4-inch top diameter of the central stem.

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. See [DRYBIO\\_WLDL\\_SPP](#) for biomass of woodland species and [DRYBIO\\_SAPLING](#) for biomass of timber species with DIA <5.0 inches. For dead or cut timber trees, this number represents the biomass at the time of death or last measurement. DRYBIO\_BOLE is based on VOLCFSND and specific gravity information derived by the Forest Products Lab and others (values stored in the REF\_SPECIES table). If VOLCFSND is not available, then either VOLCFGRS \* Percent Sound or VOLCFNET \* (average ratio of cubic foot sound to cubic foot net volume, calculated as national averages by species group and diameter) is used. The source of specific gravity information for each species can be found by linking the REF\_SPECIES table to the REF\_CITATION table. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

### **3.1.116 [DRYBIO\\_TOP](#)**

**Dry biomass in the top and limbs of the tree.** The oven-dry biomass (pounds) in the top and limbs (combined) of timber species [trees where diameter is measured at breast height (d.b.h.)]  $\geq 5.0$  inches d.b.h. DRYBIO\_TOP includes the tip, the portion of the stem above the merchantable bole (i.e., above the 4-inch top diameter), and all branches; excludes foliage. Estimated for live and dead trees. This is a per tree value and must be multiplied by TPA\_UNADJ to obtain per acre information. For dead or cut trees, this number represents the biomass at the time of death or last measurement. This attribute is blank (null) for timber species with DIA <5.0 inches and for woodland species. See [DRYBIO\\_WLDL\\_SPP](#) for biomass of woodland species, and [DRYBIO\\_SAPLING](#) for biomass of timber species with DIA <5.0 inches. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

### **3.1.117 [DRYBIO\\_STUMP](#)**

**Dry biomass in the tree stump.** The oven-dry biomass (pounds) 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 to the bottom of the merchantable bole (i.e., below 1 foot). This is a per tree value and must be multiplied by TPA\_UNADJ to obtain per acre information. Estimated for live and dead trees. For dead or cut trees, this number represents the biomass at the time of death or last measurement. This attribute is blank (null) for timber species with DIA <5.0 inches and for woodland species. See [DRYBIO\\_WLDL\\_SPP](#) for biomass of woodland species, and [DRYBIO\\_SAPLING](#) for biomass of timber species with DIA <5.0 inches. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

### **3.1.118 [DRYBIO\\_SAPLING](#)**

**Aboveground dry biomass of saplings.** The oven-dry biomass (pounds) of the aboveground portion, excluding foliage, of live and standing dead trees 1.0-4.9 inches d.b.h. Calculated for timber species only. The biomass of saplings is based on biomass computed from Jenkins and others (2003), using the observed diameter and an adjustment factor. This is a per tree value and must be multiplied by TPA\_UNADJ to obtain per acre information. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**Note:** Not populated for standing dead saplings (1.0-4.9 inches d.b.h.) when PLOT.MANUAL <7.0.

**3.1.119 DRYBIO\_WDLD\_SPP**

**Aboveground dry biomass of woodland tree species.** The oven-dry biomass (pounds) of the aboveground portion of a live or dead tree, excluding foliage, the tree tip (top of the tree above 1½ inches in diameter), and a portion of the stump from ground to diameter at root collar (d.r.c.). Calculated for woodland species (trees where diameter is measured at d.r.c.) with a diameter ≥1.0 inch. 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 <1.0 inch and for all timber species. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**3.1.120 DRYBIO\_BG**

**Belowground dry biomass.** The oven-dry biomass (pounds) of the belowground portion of a tree, includes 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. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**Note:** Not populated for standing dead saplings (1.0-4.9 inches d.b.h./d.r.c.) when PLOT.MANUAL <7.0.

**3.1.121 CARBON\_AG**

**Aboveground carbon.** The carbon (pounds) 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. Carbon is assumed to be one-half the value of biomass and is derived by summing the aboveground biomass estimates and multiplying by 0.5 as follows:

$$\text{CARBON\_AG} = 0.5 * (\text{DRYBIO_BOLE} + \text{DRYBIO_STUMP} + \text{DRYBIO_TOP} + \text{DRYBIO_SAPLING} + \text{DRYBIO_WDLD_SPP})$$

**Note:** Not populated for standing dead saplings (1.0-4.9 inches d.b.h./d.r.c.) when PLOT.MANUAL <7.0.

**3.1.122 CARBON\_BG**

**Belowground carbon.** The carbon (pounds) of coarse roots >0.1 inch in root diameter. 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. Carbon is assumed to be one-half the value of belowground biomass as follows:

$$\text{CARBON\_BG} = 0.5 * \text{DRYBIO\_BG}$$

**Note:** Not populated for standing dead saplings (1.0-4.9 inches d.b.h./d.r.c.) when PLOT.MANUAL <7.0.

**3.1.123 CYCLE**

**Inventory cycle number.** See SURVEY.[CYCLE](#) description for definition.

**3.1.124 SUBCYCLE**

**Inventory subcycle number.** See SURVEY.[SUBCYCLE](#) description for definition.

**3.1.125 BORED\_CD\_PNWRS**

**Tree bored code, Pacific Northwest Research Station.** Used in conjunction with tree age (BHAGE and TOTAGE). Only collected by certain FIA work units (SURVEY.RSCD = 26).

**Codes: BORED\_CD\_PNWRS**

<b>Code</b>	<b>Description</b>
1	Trees bored or 'whorl counted' at the current inventory.
2	Tree age derived from a previous inventory.
3	Tree age was extrapolated.

**3.1.126 DAMLOC1\_PNWRS**

**Damage location 1, Pacific Northwest Research Station.** The location on the tree where Damage Agent 1 is found. Only collected by certain FIA work units (SURVEY.RSCD = 26).

**Codes: DAMLOC1\_PNWRS**

<b>Code</b>	<b>Location</b>	<b>Definition</b>
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 $\geq 45$ 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.

**3.1.127 DAMLOC2\_PNWRS**

**Damage location 2, Pacific Northwest Research Station.** See [DAMLOC1\\_PNWRS](#). Only collected by certain FIA work units (SURVEY.RSCD = 26).

**3.1.128 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 collected by certain FIA work units (SURVEY.RSCD = 26).

**Codes: DIACHECK\_PNWRS**

<b>Code</b>	<b>Description</b>
5	Diameter estimated because of moss.
6	Diameter estimated because of vines.
7	Diameter estimated (double nail diameter).

**3.1.129 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 K](#). Only collected by certain FIA work units (SURVEY.RSCD = 26).

### **3.1.130 DMG\_AGENT2\_CD\_PNWRS**

**Damage agent 2, Pacific Northwest Research Station.** See [DMG\\_AGENT1\\_CD\\_PNWRS](#). Only collected by certain FIA work units (SURVEY.RSCD = 26).

### **3.1.131 DMG\_AGENT3\_CD\_PNWRS**

**Damage agent 3, Pacific Northwest Research Station.** See [DAMLOC1\\_PNWRS](#). Only collected by certain FIA work units (SURVEY.RSCD = 26).

### **3.1.132 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 collected 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.

### **3.1.133 SEVERITY1\_CD\_PNWRS**

**Damage severity 1, Pacific Northwest Research Station for years 2001-2004.** Damage severity depends on the damage agent coded (see [appendix K](#) 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 collected by certain FIA work units (SURVEY.RSCD = 26).

### **3.1.134 SEVERITY1A\_CD\_PNWRS**

**Damage severity 1A, Pacific Northwest Research Station.** Damage severity depends on the damage agent coded (see [appendix K](#) 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 collected by certain FIA work units (SURVEY.RSCD = 26).

### **3.1.135 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 collected by certain FIA work units (SURVEY.RSCD = 26).

**Codes: SEVERITY1B\_CD\_PNWRS**

<b>Code</b>	<b>Description</b>
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.

**3.1.136 SEVERITY2\_CD\_PNWRS**

**Damage severity 2, Pacific Northwest Research Station for years 2001-2004.** Damage severity depends on the damage agent coded (see [appendix K](#) 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 collected by certain FIA work units (SURVEY.RSCD = 26).

**3.1.137 SEVERITY2A\_CD\_PNWRS**

**Damage severity 2A, Pacific Northwest Research Station starting in 2005.** See [SEVERITY1A\\_CD\\_PNWRS](#). Only collected by certain FIA work units (SURVEY.RSCD = 26).

**3.1.138 SEVERITY2B\_CD\_PNWRS**

**Damage severity 2B, Pacific Northwest Research Station starting in 2005.** See [SEVERITY1B\\_CD\\_PNWRS](#). Only collected by certain FIA work units (SURVEY.RSCD = 26).

**3.1.139 SEVERITY3\_CD\_PNWRS**

**Damage severity 3, Pacific Northwest Research Station for years 2001-2004.** Damage severity depends on the damage agent coded (see [appendix K](#) 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 collected by certain FIA work units (SURVEY.RSCD = 26).

**3.1.140 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 collected by certain FIA work units (SURVEY.RSCD = 26).

**Codes: UNKNOWN\_DAMTYP1\_PNWRS**

<b>Code</b>	<b>Description</b>
1	Canker/gall.
2	Open wound.
3	Resinosis.
4	Broken.
5	Damaged or discolored foliage.
6	Other.

**3.1.141 UNKNOWN\_DAMTYP2\_PNWRS**

**Unknown damage type 2, Pacific Northwest Research Station.** See [UNKNOWN\\_DAMTYP1\\_PNWRS](#). Only collected by certain FIA work units (SURVEY.RSCD = 26).

**3.1.142 PREV\_PNTN\_SRS**

**Previous periodic prism number, 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.

**3.1.143 DISEASE\_SRS**

**Disease, Southern Research Station.** A code indicating the incidence of fusiform, commandra rust or dieback. Dieback is only recorded for live hardwood trees where DIA  $\geq 5.0$  inches with at least 10 percent dieback. Fusiform and commandra rust are only recorded for live pine trees  $\geq 5.0$  inches 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 collected by certain FIA work units (SURVEY.RSCD = 33).

**Codes: DISEASE\_SRS**

Code	Description
0	None.
1	Fusiform/Commandra 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.

**3.1.144 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 collected by certain FIA work units (SURVEY.RSCD = 33).

**Codes: DIEBACK\_SEVERITY\_SRS**

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

**3.1.145 DAMAGE\_AGENT\_CD1**

**Damage agent code 1.** (*Core: all live tally trees  $\geq 5.0$  inches d.b.h/d.r.c; Core optional: All live tally trees  $\geq 1.0$  inches d.b.h/d.r.c.*) A code indicating the first damage agent observed when inspecting the tree from bottom to top (roots, bole, branches, foliage). 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. Up to three damage

agents can be recorded, from most important to least important (DAMAGE\_AGENT\_CD1, DAMAGE\_AGENT\_CD2, and DAMAGE\_AGENT\_CD3).

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. The list is modified by each region to meet the specific needs of that region. The general agent codes are listed here. See [appendix J](#) for the complete list of codes.

#### **Codes: DAMAGE\_AGENT\_CD1**

<b>Code</b>	<b>General Agent</b>	<b>Damage Threshold*</b>	<b>Descriptions</b>
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.

<b>Code</b>	<b>General Agent</b>	<b>Damage Threshold*</b>	<b>Descriptions</b>
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).
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.

<b>Code</b>	<b>General Agent</b>	<b>Damage Threshold*</b>	<b>Descriptions</b>
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.
21000	Root/butt diseases.	Any occurrence.	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.

<b>Code</b>	<b>General Agent</b>	<b>Damage Threshold*</b>	<b>Descriptions</b>
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 $\geq 3$ ; 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.

<b>Code</b>	<b>General Agent</b>	<b>Damage Threshold*</b>	<b>Descriptions</b>
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.

<b>Code</b>	<b>General Agent</b>	<b>Damage Threshold*</b>	<b>Descriptions</b>
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.
71000	Harvest.	Removal of $\geq 10\%$ of cubic volume.	Only recorded for woodland species trees that have partial cutting.

<b>Code</b>	<b>General Agent</b>	<b>Damage Threshold*</b>	<b>Descriptions</b>
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.

### 3.1.146 DAMAGE\_AGENT\_CD2

**Damage agent code 2.** (*Core: all live tally trees  $\geq 5.0$  inches d.b.h/d.r.c; Core optional: All live tally trees  $\geq 1.0$  inches d.b.h/d.r.c.*) See [DAMAGE\\_AGENT\\_CD1](#).

### 3.1.147 DAMAGE\_AGENT\_CD3

**Damage agent code 3.** (*Core: all live tally trees  $\geq 5.0$  inches d.b.h/d.r.c; Core optional: All live tally trees  $\geq 1.0$  inches d.b.h/d.r.c.*) See [DAMAGE\\_AGENT\\_CD1](#).

### 3.1.148 CENTROID\_DIA

**Centroid diameter.** 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 collected by certain FIA work units (SURVEY.RSCD = 26) for the Pacific Islands. This diameter is part of a new upper stem diameter protocol that began with remeasurement, except for Hawaii where the protocol was implemented in the first measurement.

### 3.1.149 CENTROID\_DIA\_HT

**Calculated centroid diameter height.** The height (in feet) to stem centroid. The stem centroid is located at 30 percent of the TOTAL LENGTH of the stem. Only collected by certain FIA work units (SURVEY.RSCD = 26) for the Pacific Islands. This height is part of a new upper stem diameter protocol that began with the first remeasurement, except for Hawaii where the protocol was implemented in the first measurement.

**3.1.150****CENTROID\_DIA\_HT\_ACTUAL**

**Actual centroid diameter height.** 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 collected by certain FIA work units (SURVEY.RSCD = 26) for the Pacific Islands. This height is part of a new upper stem diameter protocol that began with the first remeasurement, except for Hawaii where the protocol was implemented in the first measurement.

**3.1.151****UPPER\_DIA**

**Upper stem diameter.** The outside bark upper stem diameter (in inches), measured at least 3 feet above the point where the 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 collected 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.

**3.1.152****UPPER\_DIA\_HT**

**Upper stem diameter height.** The height (in feet) to where upper stem diameter (UPPER\_DIA) was measured. Only collected 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.

**3.1.153****VOLCSSND**

**Sound cubic-foot volume in the sawlog portion of a sawtimber tree.** The sound 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 larger trees have entries in this field if they are growing-stock trees (TREECLCD = 2 and STATUSCD = 1). All rough and rotten trees (TREECLCD = 3 or 4) and dead and cut trees (STATUSCD = 2 or 3) 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).

**3.1.154****DRYBIO\_SAWLOG**

**Dry biomass in the sawlog portion of a sawtimber tree.** The oven-dry biomass (pounds) 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). For dead or cut timber trees, this number represents the biomass at the time of death or last measurement. DRYBIO\_SAWLOG is based on VOLCSSND and specific gravity information derived by the Forest Products Lab and others (values stored in the REF\_SPECIES table). If VOLCSSND is not available, then either VOLCSGRS \* percent sound or VOLCSNET \* (average ratio of cubic foot sound to cubic foot net volume,

calculated as national averages by species group and diameter) is used. The source of specific gravity information for each species can be found by linking the REF\_SPECIES table to the REF\_CITATION table. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

### **3.1.155 DAMAGE\_AGENT\_CD1\_SRS**

**Damage agent code 1, Southern Research Station.** (*Caribbean only: all live tally trees  $\geq 1.0$  inch d.b.h./d.r.c.*) A code indicating the first damage agent observed when inspecting the tree from bottom to top (roots, bole, branches, foliage). 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 J](#) for the complete list of codes.

### **3.1.156 DAMAGE\_AGENT\_CD2\_SRS**

**Damage agent code 2, Southern Research Station.** (*Caribbean only: all live tally trees  $\geq 1.0$  inch d.b.h./d.r.c.*) See [DAMAGE\\_AGENT\\_CD1\\_SRS](#).

### **3.1.157 DAMAGE\_AGENT\_CD3\_SRS**

**Damage agent code 3, Southern Research Station.** (*Caribbean only: all live tally trees  $\geq 1.0$  inch d.b.h./d.r.c.*) See [DAMAGE\\_AGENT\\_CD1\\_SRS](#).

### **3.1.158 DRYBIO\_AG**

**Aboveground dry biomass.** The oven-dry biomass (pounds) in the aboveground portion, excluding foliage, of live and standing dead trees  $\geq 1.0$  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. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**Note:** Not populated for standing dead saplings (1.0-4.9 inches d.b.h./d.r.c.) when PLOT.MANUAL <7.0.

### **3.1.159 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.

### **3.1.160 ACTUALHT\_CALC\_CD**

**Actual height, calculated, code.** A code identifying the method used to calculate the ACTUALHT\_CALC value. Only collected 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.

### **3.1.161 CULL\_BF\_ROTEN**

**Rotten/missing board-foot cull of the sawlog (used by Northeastern Research Station).** 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 collected by certain FIA work units (SURVEY.RSCD = 24). Not collected for all years or States.

### 3.1.162 CULL\_BF\_ROTEN\_CD

**Rotten/missing board-foot cull of the sawlog code (used by Northeastern Research Station).** A code indicating if the CULL\_BF\_ROTEN attribute is not null. Only collected 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.

### 3.1.163 CULL\_BF\_ROUGH

**Rough board-foot cull of the sawlog (used by Northeastern Research Station).** 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 collected by certain FIA work units (SURVEY.RSCD = 24). Not collected for all years or States.

### 3.1.164 CULL\_BF\_ROUGH\_CD

**Rough board-foot cull of the sawlog code (used by Northeastern Research Station).** A code indicating if the CULL\_BF\_ROUGH attribute is not null. Only collected 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.

### 3.1.165 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.

### 3.1.166 TREECLCD\_31\_NCNS

**Tree class code (version 3.1), North Central Research Station.** A classification of the general quality of a tree that is  $\geq 5.0$  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  $\geq 5.0$  inches d.b.h. for States in the NCRS region (SURVEY.RSCD = 23) for PLOT.MANUAL\_NCRS  $\geq 3.0$ .

**Codes: TREECLCD\_31\_NCRS**

Code	Description
2	Growing Stock - A live sawtimber-size tree with one-third or more of the gross boardfoot 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.

### 3.1.167 TREE\_GRADE\_NCRS

**Tree grade, North Central Research Station.** A three-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 (tree class 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 (tree class 20), the grade is based on the portion of the log that gives the best grade. For a softwood 31-class tree, 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.

### 3.1.168 BOUGHS\_AVAILABLE\_NCRS

**Balsam fir boughs available, North Central Research Station.** A code indicating if harvestable balsam fir boughs are present on trees  $\geq 1.0$  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 collected for States in the NCRS region (SURVEY.RSCD = 23) for PLOT.MANUAL\_NCRS = 2.0-3.0 (INVYR = 2004-2006). Only collected in Minnesota for PLOT.MANUAL\_NCRS = 3.1-4.0 (INVYR in 2007, 2008).

Codes: BOUGHS\_AVAILABLE\_NCRS

Code	Description
0	No boughs available.
1	Boughs available.

### 3.1.169 BOUGHS\_HRVST\_NCRS

**Balsam fir boughs harvested, North Central Research Station.** A code indicating whether or not balsam fir boughs were harvested on trees  $\geq 1.0$  inch d.b.h.

Data collected for States in the NCRS region (SURVEY.RSCD = 24) for PLOT.MANUAL\_NCRS = 2.0-3.0 (INVYR = 2004-2006). Only collected in Minnesota for PLOT.MANUAL\_NCRS = 3.1-4.0 (INVYR in 2007, 2008).

Codes: BOUGHS\_HRVST\_NCRS

Code	Description
0	Boughs have not been harvested.
1	Boughs have been harvested.

### 3.1.170 TREECLCD\_31\_NERS

**Tree class code (version 3.1), Northeastern Research Station.** A classification of the general quality of a tree that is  $\geq 5.0$  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  $\geq 5.0$  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 boardfoot 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.

### 3.1.171 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)**

<b>Code</b>	<b>Description</b>
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)**

<b>Code</b>	<b>Description</b>
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)**

<b>Code</b>	<b>Description</b>
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.). TREE NOTES required.
80	Silvicultural or land clearing activity (death caused by harvesting or other silvicultural activity, including girdling, chaining, etc., or to land clearing activity).

**3.1.172 BFSNDCD\_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,  $\geq 9.0$  inches d.b.h. if softwood, and  $\geq 11.0$  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: BFSNDCD\_NERS**

Code	Description
0	00 - 09%
1	10 - 19%
2	20 - 29%

Code	Description
3	30 - 39%
4	40 - 49%
5	50 - 59%
6	60 - 69%
7	70 - 79%
8	80 - 89%
9	90 - 100%

**3.1.173 AGECKCD\_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 collected by certain FIA work units (SURVEY.RSCD = 22).

**Codes: AGECHKCD\_RMRS**

Code	Description
0	<ul style="list-style-type: none"> <li>Age/radial growth measured directly from core.</li> <li>Age/radial growth calculated from remeasurement data (same tree).</li> </ul>
1	<ul style="list-style-type: none"> <li>Age/radial growth was estimated due to rot.</li> <li>Age/radial growth was estimated because rings were difficult to count (old suppressed trees).</li> <li>Age was estimated because the increment bore could not reach to tree center.</li> </ul>
2	<ul style="list-style-type: none"> <li>Age/radial growth was calculated from a similar remeasure tree (same species and diameter class).</li> <li>Age/radial growth was based on a similar tree off the subplot.</li> </ul>
3	<ul style="list-style-type: none"> <li>Age measured from a collected tree core (for cores collected and sent into the office for aging).</li> </ul>

**Note:** Code 3 was added starting with PLOT.MANUAL = 6.0

**3.1.174 DIA\_1YRAGO\_RMRS**

**Diameter one year ago, Rocky Mountain Research Station.** The modeled diameter of a tree, one year ago (diameter outside bark). This value is computed for live trees  $\geq 5.0$  inches in diameter, and is used to compute regional growth estimates for RMRS (SURVEY.RSCD = 22).

**3.1.175 GROWBFSCR\_RMRS**

**Net annual merchantable board-foot (Scribner rule) growth of a sawtimber tree on forest land, Rocky Mountain Research Station.** The net change in merchantable board-foot (Scribner rule) volume per year of a tree. 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 TPAGROW\_UNADJ. Only collected by certain FIA work units (SURVEY.RSCD = 22).

**Note:** Board foot is not computed for woodland species.

**3.1.176****GROWCFSAWLOG\_RMRS**

**Net annual merchantable cubic-foot growth in the sawlog/utilization portion of a tree, Rocky Mountain Research Station.** The net change in merchantable cubic-foot volume per year in the sawlog/utilization portion of a tree. 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 TPAGROW\_UNADJ. Only collected by certain FIA work units (SURVEY.RSCD = 22).

For timber species (measured at breast height, d.b.h.) of sawtimber size (9.0 inches DIA minimum for softwoods, 11.0 inches DIA minimum for hardwoods), this is the total cubic-foot volume of wood in the sawlog portion, 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 DIA.

For woodland species (measured at root collar, d.r.c.)  $\geq 5.0$  inches in diameter, this is the total cubic-foot volume of wood in the utilization portion, from the diameter measurement point(s) to a 3-inch top diameter; includes branches that are at least 3.0 inches in diameter along the length of the branch (woodland species can be identified by REF\_SPECIES.WOODLAND = X).

**3.1.177****HT\_1YRAGO\_RMRS**

**Height one year ago, Rocky Mountain Research Station.** The modeled height of a tree, one year ago. This value is computed for live trees  $\geq 5.0$  inches d.b.h./d.r.c. and is used to compute regional growth estimates for RMRS (SURVEY.RSCD = 22).

**3.1.178****PREV\_ACTUALHT\_RMRS**

**Previous actual height, Rocky Mountain Research Station.** The actual length (height) of a tree (in feet) assigned at the previous inventory. 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.

**3.1.179****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. Populated for PLOT.MANUAL  $\geq 4.0$ . Only collected by certain FIA work units (SURVEY.RSCD = 22).

**Codes: PREV\_AGECHKCD\_RMRS**

<b>Code</b>	<b>Description</b>
0	<ul style="list-style-type: none"> <li>• Age/radial growth measured directly from core.</li> <li>• Age/radial growth calculated from remeasurement data (same tree).</li> </ul>
1	<ul style="list-style-type: none"> <li>• Age/radial growth was estimated due to rot.</li> <li>• Age/radial growth was estimated because rings were difficult to count (old suppressed trees).</li> <li>• Age was estimated because the increment bore could not reach to tree center.</li> </ul>
2	<ul style="list-style-type: none"> <li>• Age/radial growth was calculated from a similar remeasure tree (same species and diameter class).</li> <li>• Age/radial growth was based on a similar tree off the subplot.</li> </ul>
3	<ul style="list-style-type: none"> <li>• Age measured from a collected tree core (for cores collected and sent into the office for aging).</li> </ul>

**Note:** Code 3 was added starting with PLOT.MANUAL = 6.0

**3.1.180 PREV\_BHAGE\_RMRS**

**Previous breast height age, Rocky Mountain Research Station.** The breast height age (BHAGE) assigned to a tree at the previous inventory. Populated for PLOT.MANUAL  $\geq 4.0$ .

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.

**3.1.181 PREV\_HT\_RMRS**

**Previous total length, Rocky Mountain Research Station.** The total (height) of a tree (in feet) assigned at the previous inventory. 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  $\geq 1.0$  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.

**3.1.182 PREV\_TOTAGE\_RMRS**

**Previous total age, Rocky Mountain Research Station.** The total age assigned to a tree at the previous inventory. Populated for PLOT.MANUAL  $\geq 4.0$ . 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 collected by certain FIA work units (SURVEY.RSCD = 22).

### **3.1.183 PREV\_TREECLCD\_RMRS**

**Previous tree class code, Rocky Mountain Research Station.** The tree class (TREECLCD\_RMRS) assigned at the previous inventory. 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. Only collected by certain FIA work units (SURVEY.RSCD = 22).

### **3.1.184 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:

<b>Stand-Size Class</b>	<b>Softwoods</b>	<b>Hardwoods</b>
-	<b>Size-class range (d.b.h.)</b>	<b>Size-class range (d.b.h.)</b>
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.

### 3.1.185 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 collected by certain FIA work units (SURVEY.RSCD = 22).

### 3.1.186 VOLBFSCRGRS\_RMRS

**Gross board-foot (Scribner rule) volume in the sawlog portion of a sawtimber tree, Rocky Mountain Research Station.** The total board-foot (Scribner rule) volume of wood in the central stem of a timber species tree of sawtimber size (9.0 inches DIA minimum for softwoods, 11.0 inches DIA 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 DIA. This is a per tree value and must be multiplied by TPA\_UNADJ to obtain per unit area information. This attribute is computed for live and dead trees. It is blank (null) for softwood trees with DIA < 9.0 inches (11.0 inches for hardwoods). Only collected by certain FIA work units (SURVEY.RSCD = 22).

**Note:** Board foot is not computed for woodland species.

### 3.1.187 VOLBFSCRNET\_RMRS

**Net board-foot (Scribner rule) volume in the sawlog portion of a sawtimber tree, Rocky Mountain Research Station.** The net board-foot (Scribner rule) volume of wood in the central stem of a timber species tree of sawtimber size (9.0 inches DIA minimum for softwoods, 11.0 inches DIA 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 DIA. This is a per tree value and must be multiplied by TPA\_UNADJ to obtain per unit area information. This attribute is computed for live and dead trees. It is blank (null) for softwood trees with DIA <9.0 inches (11.0 inches for hardwoods). Only collected by certain FIA work units (SURVEY.RSCD = 22).

**Note:** Board foot is not computed for woodland species.

### 3.1.188 VOLCFDEADGRS\_RMRS

**Gross cubic-foot volume of dead wood, Rocky Mountain Research Station.** For timber species (measured at breast height, d.b.h.)  $\geq 5.0$  inches d.b.h., this is the total volume of dead wood in the central stem of sample trees  $\geq 5.0$  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.

For woodland species (measured at root collar, d.r.c.)  $\geq 5.0$  inches d.r.c., this is the total volume of dead wood from the diameter measurement point(s) to a 1.5-inch top diameter; includes branches that are at least 1.5 inches in diameter along the length of the branch (woodland species can be identified by REF\_SPECIES.WOODLAND = X).

This is a per tree value and must be multiplied by TPA\_UNADJ to obtain per acre information. This attribute is computed for live and dead trees. It is blank (null) for trees with DIA  $<5.0$  inches. Includes rotten, missing and form cull (volume loss due to rotten, missing, and form cull defect has not been deducted). Only collected by certain FIA work units (SURVEY.RSCD = 22).

### 3.1.189 VOLCFSAWGRS\_RMRS

**Gross cubic-foot volume in the sawlog/utilization portion, Rocky Mountain Research Station.** For timber species (measured at breast height, d.b.h.) of sawtimber size (9.0 inches DIA minimum for softwoods, 11.0 inches DIA minimum for hardwoods), this is the total cubic-foot volume of wood in the sawlog portion, 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 DIA.

For woodland species (measured at root collar, d.r.c.)  $\geq 5.0$  inches d.r.c., this is the total cubic-foot volume of wood in the utilization portion, from the diameter measurement point(s) to a 3-inch top diameter; includes branches that are at least 3.0 inches in diameter along the length of the branch (woodland species can be identified by REF\_SPECIES.WOODLAND = X).

This is a per tree value and must be multiplied by TPA\_UNADJ to obtain per acre information. This attribute is computed for live and dead trees. Only collected by certain FIA work units (SURVEY.RSCD = 22).

### 3.1.190 VOLCFSAWNET\_RMRS

**Net cubic-foot volume in the sawlog/utilization portion, Rocky Mountain Research Station.** For timber species (measured at breast height, d.b.h.) of sawtimber size (9.0 inches DIA minimum for softwoods, 11.0 inches DIA minimum for hardwoods), this is the net cubic-foot volume of wood in the sawlog portion, 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 DIA.

For woodland species (measured at root collar, d.r.c.)  $\geq 5.0$  inches d.r.c., this is the net cubic-foot volume of wood in the utilization portion, from the diameter measurement point(s) to a 3-inch top diameter; includes branches that are at least 3.0 inches in diameter along the length of the branch (woodland species can be identified by REF\_SPECIES.WOODLAND = X).

This is a per tree value and must be multiplied by TPA\_UNADJ to obtain per acre information. This attribute is computed for live and dead trees. Only collected by certain FIA work units (SURVEY.RSCD = 22).

### 3.1.191

#### **VOLCFTOTNET\_RMRS**

**Net cubic-foot volume in the total stem, Rocky Mountain Research Station.** The net cubic-foot volume in the total stem, which includes total aboveground fiber. Populated for live and dead trees with DIA  $\geq 1.0$  inch. This is a per tree value and must be multiplied by TPA\_UNADJ to obtain per acre information. Only collected by certain FIA work units (SURVEY.RSCD = 22).

### 3.1.192

#### **VOLCFUPPGRS\_RMRS**

**Gross cubic-foot volume in the upper stem, Rocky Mountain Research Station.** The total cubic-foot volume of wood in the upper stem portion of a tree.

For timber species (measured at breast height, d.b.h.) of sawtimber size (9.0 inches DIA minimum for softwoods, 11.0 inches DIA minimum for hardwoods), the upper stem includes the area on the bole above the sawlog portion (7.0 inches for softwoods, 9.0 inches for hardwoods) to a 4-inch top diameter.

For timber species 5.0-9.0 inches in diameter for softwoods, or 5.0-11.0 inches for hardwoods, the upper stem is equal to the entire gross cubic-foot volume.

This is a per tree value and must be multiplied by TPA\_UNADJ to obtain per acre information. Only collected by certain FIA work units (SURVEY.RSCD = 22).

**Note:** This attribute is not computed for woodland species.

### 3.1.193

#### **VOLCFUPPNET\_RMRS**

**Net cubic-foot volume in the upper stem, Rocky Mountain Research Station.** The net cubic-foot volume of wood in the upper stem portion of a tree.

For timber species (measured at breast height, d.b.h.) of sawtimber size (9.0 inches DIA minimum for softwoods, 11.0 inches DIA minimum for hardwoods), the upper stem includes the area on the bole above the sawlog portion (7.0 inches for softwoods, 9.0 inches for hardwoods) to a 4-inch top diameter.

For timber species 5.0-9.0 inches in diameter for softwoods, or 5.0-11.0 inches for hardwoods, the upper stem is equal to the entire net cubic-foot volume.

This is a per tree value and must be multiplied by TPA\_UNADJ to obtain per acre information. Only collected by certain FIA work units (SURVEY.RSCD = 22).

**Note:** This attribute is not computed for woodland species.

### 3.1.194

#### **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  $1 \leq DIA < 5$ . Only collected by certain FIA work units (SURVEY.RSCD = 33).

**Codes: SAPLING\_FUSIFORM\_SRS**

Code	Description
0	None.
1	Fusiform present.

### 3.1.195 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  $\geq 1.0$  inch d.b.h. Only collected 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.

### 3.1.196 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 collected by certain FIA work units (SURVEY.RSCD = 26).

### 3.1.197 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 collected 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 $\geq 6.0$ inches wide.

**3.1.198 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 collected by certain FIA work units (SURVEY.RSCD = 26). Not populated for the Pacific Islands.

**3.1.199 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 collected 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).

**3.1.200 DIA\_EST\_PNWRS**

**Snag estimated diameter, Pacific Northwest Research Station.** An estimate of the diameter at breast height for a standing dead tree when it was alive. Only collected by certain FIA work units (SURVEY.RSCD = 26, 27). Not populated for the Pacific Islands.

**3.1.201 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 collected 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.

**3.1.202 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 collected by certain FIA work units (SURVEY.RSCD = 26, 27). Not populated for the Pacific Islands.

**3.1.203 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 collected by certain FIA work units (SURVEY.RSCD = 26). Not populated for the Pacific Islands.

**Note:** This measurement is only collected for USFS Region 5 and Region 6 administered lands; it is used for growth and yield models.

### 3.1.204 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 collected by certain FIA work units (SURVEY.RSCD = 26). Not populated for the Pacific Islands.

### 3.1.205 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 collected by certain FIA work units (SURVEY.RSCD = 26). Not populated for the Pacific Islands.

### 3.1.206 RING\_COUNT\_PNWRS

**Number of rings, Pacific Northwest Research Station.** The total number of tree rings counted when the tree age is extrapolated. Only collected by certain FIA work units (SURVEY.RSCD = 26). Not populated for the Pacific Islands.

### 3.1.207 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 collected 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).

## 3.2 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	Phase 2 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	WOOS_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 woodland stems record.

**3.2.2 PLT\_CN**

**Plot sequence number.** Foreign key linking the 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) two-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.

**3.2.7 PLOT**

**Phase 2 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 I](#) 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 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.WDLDSTEM).

### **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 Regional Biomass Table

(Oracle table name: TREE\_REGIONAL\_BIOMASS)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
3.3.1	TRE_CN	Tree sequence number	VARCHAR2(34)
3.3.2	STATECD	State code	NUMBER(4)
3.3.3	REGIONAL_DRYBIOT	Regional dry total tree biomass	NUMBER(13,6)
3.3.4	REGIONAL_DRYBIOM	Regional dry merchantable stem biomass	NUMBER(13,6)
3.3.5	CREATED_BY	Created by	VARCHAR2(30)
3.3.6	CREATED_DATE	Created date	DATE
3.3.7	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
3.3.8	MODIFIED_BY	Modified by	VARCHAR2(30)
3.3.9	MODIFIED_DATE	Modified date	DATE
3.3.10	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)
3.3.11	REGIONAL_DRYBIOSL	Regional dry biomass in the sawlog portion of a sawtimber tree	NUMBER(13,6)

Key Type	Column(s) order	Tables to link	Abbreviated notation
Primary	TRE_CN	N/A	TRB_PK
Foreign	TRE_CN	TREE_REGIONAL_BIOMASS to TREE	TRB_TRE_FK

This table provides biomass estimates of live and dead trees  $\geq 1.0$  inch d.b.h./d.r.c using equations and methods that vary by FIA work unit. Both REGIONAL\_DRYBIOT and REGIONAL\_DRYBIOM preserve the original data and computation procedures used by FIA work units to calculate DRYBIOT and DRYBIOM in previous versions of FIADB. Users should be aware that for some FIA work units, these biomass estimates may not include bark. Biomass estimates in this table will differ from biomass estimates found on the TREE table records because components such as bark, stump, and top (with branches) are now being stored on the TREE table and are derived by applying ratios to stem biomass. The TREE table will be the source of biomass data used in official reporting. However, the TREE\_REGIONAL\_BIOMASS table contains valuable information for generating biomass estimates that match earlier published reports.

#### 3.3.1 TRE\_CN

**Tree sequence number.** Foreign key linking the tree regional biomass record to the tree record.

#### 3.3.2 STATECD

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

**3.3.3****REGIONAL\_DRYBIOT**

**Regional dry total tree biomass.** The total aboveground biomass (pounds) of a sample tree 1.0 inch diameter or larger for live trees, and 5.0 inches diameter or larger for dead trees, including all tops and limbs (but excluding foliage). This is a per tree value and must be multiplied by TPA\_UNADJ to obtain per acre information. Calculated in oven-dry pounds per tree. This field should have an entry if DIA is 1.0 inch or larger (5.0 inches or larger for dead trees), regardless of TREECLCD; zero otherwise. For dead or cut trees, this number represents the biomass at the time of death or last measurement. Because total biomass has been calculated differently among FIA work units, contact the appropriate FIA work units ([table 1-1](#)) for information on how biomass was estimated and whether bark was included.

**3.3.4****REGIONAL\_DRYBIOM**

**Regional dry merchantable stem biomass.** The total gross biomass (pounds) of a sample tree 5.0 inches d.b.h. or larger from a 1-foot stump to a minimum 4-inch top diameter of the central stem. This is a per tree value and must be multiplied by TPA\_UNADJ to obtain per acre information. Calculated in oven-dry pounds per tree. This field should have an entry if DIA is 5.0 inches or larger, regardless of TREECLCD; zero otherwise. For dead or cut trees, this number represents the biomass at the time of death or last measurement. Because total biomass has been calculated differently among FIA work units, contact the appropriate FIA work unit ([table 1-1](#)) for information on how biomass was estimated and whether bark was included.

**3.3.5****CREATED\_BY**

**Created by.** See SURVEY.[CREATED\\_BY](#) description for definition.

**3.3.6****CREATED\_DATE**

**Created date.** See SURVEY.[CREATED\\_DATE](#) description for definition.

**3.3.7****CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.[CREATED\\_IN\\_INSTANCE](#) description for definition.

**3.3.8****MODIFIED\_BY**

**Modified by.** See SURVEY.[MODIFIED\\_BY](#) description for definition.

**3.3.9****MODIFIED\_DATE**

**Modified date.** See SURVEY.[MODIFIED\\_DATE](#) description for definition.

**3.3.10****MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.[MODIFIED\\_IN\\_INSTANCE](#) description for definition.

**3.3.11****REGIONAL\_DRYBIOSL**

**Regional dry biomass in the sawlog portion of a sawtimber tree.** The total gross biomass (pounds) of timber species trees 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) of the central stem. This is a per tree value and must be multiplied by TPA\_UNADJ to obtain per acre information. Calculated in oven-dry pounds per tree. This value is calculated by determining the ratio of sawlog volume to merchantable volume and applying it to the REGIONAL\_DRYBIOM estimate. Because total biomass has been calculated differently

among FIA work units, contact the appropriate FIA work unit ([table 1-1](#)) for information on how biomass was estimated and whether bark was included.



## 3.4 Tree Net Growth, Removal, and Mortality Component Table

(Oracle table name: TREE\_GRM\_COMPONENT)

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
3.4.5	DIA_BEGIN	Beginning diameter	NUMBER(5,2)
3.4.6	DIA_MIDPT	Midpoint diameter	NUMBER(5,2)
3.4.7	DIA_END	Ending diameter	NUMBER(5,2)
3.4.8	ANN_DIA_GROWTH	Computed annual diameter growth	NUMBER(5,2)
3.4.9	HT_BEGIN	Beginning height	NUMBER(3)
3.4.10	HT_MIDPT	Midpoint height	NUMBER(3)
3.4.11	HT_END	Ending height	NUMBER(3)
3.4.12	ANN_HT_GROWTH	Computed annual height growth	NUMBER(5,2)
3.4.13	SUBPTYP_BEGIN	Beginning subplot type code	NUMBER(1)
3.4.14	SUBPTYP_MIDPT	Midpoint subplot type code	NUMBER(1)
3.4.15	SUBPTYP_END	Ending subplot type code	NUMBER(1)
3.4.16	STEM_COMPONENT	Growth component of the stem	VARCHAR2(15)
3.4.17	MICR_COMPONENT	Microplot growth component	VARCHAR2(15)
3.4.18	SUBP_COMPONENT	Subplot growth component	VARCHAR2(15)
3.4.19	MACR_COMPONENT	Macroplot growth component	VARCHAR2(15)
3.4.20	GSTK_COMPONENT	Growing-stock growth component	VARCHAR2(15)
3.4.21	SWLG_COMPONENT	Sawtimber growth component	VARCHAR2(15)
3.4.22	GSTK_BEGIN	Growing stock at beginning	VARCHAR2(1)
3.4.23	GSTK_MIDPT	Growing stock at midpoint	VARCHAR2(1)
3.4.24	GSTK_END	Growing stock at end	VARCHAR2(1)
3.4.25	SWLG_DIA_THRESHOLD	Sawtimber diameter threshold	NUMBER(5,2)
3.4.26	SWLG_BEGIN	Sawtimber at beginning	VARCHAR2(1)
3.4.27	SWLG_MIDPT	Sawtimber at midpoint	VARCHAR2(1)
3.4.28	SWLG_END	Sawtimber at end	VARCHAR2(1)
3.4.29	MICR_COMPONENT_AL_FOREST	Trees with DIA $\geq 1.0$ inch - growth component for the all live estimation type on forest land	VARCHAR2(15)
3.4.30	MICR_SUBTYP_GRM_AL_FOREST	Trees with DIA $\geq 1.0$ inch - plot type for GRM for the all live estimation type on forest land	NUMBER(1)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
3.4.31	MICR_TPAGROW_UNADJ_AL_FOREST	Trees with DIA $\geq$ 1.0 inch - unadjusted trees per acre for growth for the all live estimation type on forest land	NUMBER(11,6)
3.4.32	MICR_TPAREMV_UNADJ_AL_FOREST	Trees with DIA $\geq$ 1.0 inch - unadjusted trees per acre per year for removals for the all live estimation type on forest land	NUMBER(11,6)
3.4.33	MICR_TPAMORT_UNADJ_AL_FOREST	Trees with DIA $\geq$ 1.0 inch - unadjusted trees per acre per year for mortality for the all live estimation type on forest land	NUMBER(11,6)
3.4.34	SUBP_COMPONENT_AL_FOREST	Trees with DIA $\geq$ 5.0 inches - growth component for the all live estimation type on forest land	VARCHAR2(15)
3.4.35	SUBP_SUBPTYP_GRM_AL_FOREST	Trees with DIA $\geq$ 5.0 inches - plot type for GRM for the all live estimation type on forest land	NUMBER(1)
3.4.36	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)
3.4.37	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)
3.4.38	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)
3.4.39	SUBP_COMPONENT_GS_FOREST	Trees with DIA $\geq$ 5.0 inches - growth component for the growing-stock estimation type on forest land	VARCHAR2(15)
3.4.40	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)
3.4.41	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)
3.4.42	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)
3.4.43	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)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
3.4.44	SUBP_COMPONENT_SL_FOREST	Trees with DIA $\geq$ 5.0 inches - growth component for the sawtimber estimation type on forest land	VARCHAR2(15)
3.4.45	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)
3.4.46	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)
3.4.47	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)
3.4.48	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)
3.4.49	MICR_COMPONENT_AL_TIMBER	Trees with DIA $\geq$ 1.0 inch - growth component for the all live estimation type on timberland	VARCHAR2(15)
3.4.50	MICR_SUBPTYP_GRM_AL_TIMBER	Trees with DIA $\geq$ 1.0 inch - plot type for GRM for the all live estimation type on timberland	NUMBER(1)
3.4.51	MICR_TPAGROW_UNADJ_AL_TIMBER	Trees with DIA $\geq$ 1.0 inch - unadjusted trees per acre for growth for the all live estimation type on timberland	NUMBER(11,6)
3.4.52	MICR_TPAREMV_UNADJ_AL_TIMBER	Trees with DIA $\geq$ 1.0 inch - unadjusted trees per acre per year for removals for the all live estimation type on timberland	NUMBER(11,6)
3.4.53	MICR_TPAMORT_UNADJ_AL_TIMBER	Trees with DIA $\geq$ 1.0 inch - unadjusted trees per acre per year for mortality for the all live estimation type on timberland	NUMBER(11,6)
3.4.54	SUBP_COMPONENT_AL_TIMBER	Trees with DIA $\geq$ 5.0 inches - growth component for the all live estimation type on timberland	VARCHAR2(15)
3.4.55	SUBP_SUBPTYP_GRM_AL_TIMBER	Trees with DIA $\geq$ 5.0 inches - plot type for GRM for the all live estimation type on timberland	NUMBER(1)
3.4.56	SUBP_TPAGROW_UNADJ_AL_TIMBER	Trees with DIA $\geq$ 5.0 inches - unadjusted trees per acre for growth for the all live estimation type on timberland	NUMBER(11,6)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
3.4.57	SUBP_TPAREMV_UNADJ_AL_TIMBER	Trees with DIA $\geq 5.0$ inches - unadjusted trees per acre per year for removals for the all live estimation type on timberland	NUMBER(11,6)
3.4.58	SUBP_TPAMORT_UNADJ_AL_TIMBER	Trees with DIA $\geq 5.0$ inches - unadjusted trees per acre per year for mortality for the all live estimation type on timberland	NUMBER(11,6)
3.4.59	SUBP_COMPONENT_GS_TIMBER	Trees with DIA $\geq 5.0$ inches - growth component for the growing-stock estimation type on timberland	VARCHAR2(15)
3.4.60	SUBP_SUBPTYP_GRM_GS_TIMBER	Trees with DIA $\geq 5.0$ inches - plot type for GRM for the growing-stock estimation type on timberland	NUMBER(1)
3.4.61	SUBP_TPAGROW_UNADJ_GS_TIMBER	Trees with DIA $\geq 5.0$ inches - unadjusted trees per acre for growth for the growing-stock estimation type on timberland	NUMBER(11,6)
3.4.62	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)
3.4.63	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)
3.4.64	SUBP_COMPONENT_SL_TIMBER	Trees with DIA $\geq 5.0$ inches - growth component for the sawtimber estimation type on timberland	VARCHAR2(15)
3.4.65	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)
3.4.66	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)
3.4.67	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)
3.4.68	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)
3.4.69	GROWCFAL_FOREST	Net annual sound cubic-foot growth of a live tree on forest land (all live estimation type)	NUMBER(13,6)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
3.4.70	GROWCFG_S_FOREST	Net annual merchantable cubic-foot growth of a growing-stock tree on forest land	NUMBER(13,6)
3.4.71	GROWBFSL_FOREST	Net annual merchantable board-foot growth of a sawtimber tree on forest land	NUMBER(13,6)
3.4.72	REMVCFAL_FOREST	Sound cubic-foot volume of a live tree on forest land for removal purposes (all live estimation type)	NUMBER(13,6)
3.4.73	REMVCFGS_FOREST	Merchantable cubic-foot volume of a growing-stock tree on forest land for removal purposes	NUMBER(13,6)
3.4.74	REMVBFSL_FOREST	Merchantable board-foot volume of a sawtimber tree on forest land for removal purposes	NUMBER(13,6)
3.4.75	MORTCFAL_FOREST	Sound cubic-foot volume of a tree on forest land for mortality purposes (all live estimation type)	NUMBER(13,6)
3.4.76	MORTCFG_S_FOREST	Merchantable cubic-foot volume of a growing-stock tree on forest land for mortality purposes	NUMBER(13,6)
3.4.77	MORTBFSL_FOREST	Merchantable board-foot volume of a sawtimber tree on forest land for mortality purposes	NUMBER(13,6)
3.4.78	GROWCFAL_TIMBER	Net annual sound cubic-foot growth of a live tree on timberland (all live estimation type)	NUMBER(13,6)
3.4.79	GROWCFG_S_TIMBER	Net annual merchantable cubic-foot growth of a growing-stock tree on timberland	NUMBER(13,6)
3.4.80	GROWBFSL_TIMBER	Net annual merchantable board-foot growth of a sawtimber tree on timberland	NUMBER(13,6)
3.4.81	REMVCFAL_TIMBER	Sound cubic-foot volume of a live tree on timberland for removal purposes (all live estimation type)	NUMBER(13,6)
3.4.82	REMVCFGS_TIMBER	Merchantable cubic-foot volume of a growing-stock tree on timberland for removal purposes	NUMBER(13,6)
3.4.83	REMVBFSL_TIMBER	Merchantable board-foot volume of a sawtimber tree on timberland for removal purposes	NUMBER(13,6)
3.4.84	MORTCFAL_TIMBER	Sound cubic-foot volume of a tree on timberland for mortality purposes (all live estimation type)	NUMBER(13,6)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
3.4.85	MORTCFG_S_TIMBER	Merchantable cubic-foot volume of a growing-stock tree on timberland for mortality purposes	NUMBER(13,6)
3.4.86	MORTBFSL_TIMBER	Merchantable board-foot volume of a sawtimber tree on timberland for mortality purposes	NUMBER(13,6)
3.4.87	CREATED_BY	Created by	VARCHAR2(30)
3.4.88	CREATED_DATE	Created date	DATE
3.4.89	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
3.4.90	MODIFIED_BY	Modified by	VARCHAR2(30)
3.4.91	MODIFIED_DATE	Modified date	DATE
3.4.92	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.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\_MIDPOINT tables. For example, TREE\_GRM\_COMPONENT.GROWCFAL\_FOREST has 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\_MIDPOINT). The end values are stored in the TREE table.

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\_MIDPOINT, 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.

#### 3.4.1 TRE\_CN

**Tree sequence number.** Foreign key linking the GRM tree component record to the tree record.

#### 3.4.2 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.

#### 3.4.3 PLT\_CN

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

#### 3.4.4 STATECD

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

#### 3.4.5 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.

#### 3.4.6 DIA\_MIDPT

**Midpoint diameter.** Diameter at the midpoint of the measurement interval.

#### 3.4.7 DIA\_END

**Ending diameter.** Diameter at the end of the remeasurement period.

#### 3.4.8 ANN\_DIA\_GROWTH

**Computed annual diameter growth.** The annual diameter growth for the tree expressed as inches per year.

#### 3.4.9 HT\_BEGIN

**Beginning height.** The height of the tree at the beginning of the remeasurement period.

#### 3.4.10 HT\_MIDPT

**Midpoint height.** The height of the tree at the midpoint of the remeasurement period.

#### 3.4.11 HT\_END

**Ending height.** The height of the tree at the end of the remeasurement period.

**3.4.12 ANN\_HT\_GROWTH**

**Computed annual height growth.** The annual height growth for a tree expressed as feet per year.

**3.4.13 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.

**3.4.14 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.

**3.4.15 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.

**3.4.16 STEM\_COMPONENT**

**Growth component of the stem.** The component of change representing the biological change for a given tree regardless of land basis, estimation type, or any other constraint. These component definitions vary from many of the other definitions associated with the same component name but different column.

**Codes: STEM\_COMPONENT**

Code	Description
CUT DEAD	Tree was dead at T1 and was cut and used by T2.
CUT1	Tree was live at T1 and was killed due to harvesting activity by T2 ((TREE.STATUSCD = 3) or (TREE.STATUSCD = 2 and TREE.AGENTCD = 80)).
CUT2	Tree was not present at T1 and was killed due to harvesting activity by T2 ((TREE.STATUSCD = 3) or (TREE.STATUSCD = 2 and TREE.AGENTCD = 80)).
INGROWTH	Tree was not present at T1 and was live at T2.
MORTALITY1	The tree was live at T1 and died of natural causes by T2 (TREE.AGENTCD <> 80).
MORTALITY2	The tree was not present at T1 and died of natural causes by T2 (TREE.AGENTCD <> 80).
NOT USED	The tree was either live or dead at T1 and has no status at T2.
REMEASURED DEAD	The tree was dead at T1 and T2.

Code	Description
SURVIVOR	Tree was live at T1 and T2.
UNKNOWN	The tree lacks information required to classify component, usually due to procedural changes.

### 3.4.17 MICR\_COMPONENT

**Microplot growth component.** The component of change from the perspective of the microplot.

**Codes: MICR\_COMPONENT**

Code	Description
CUT DEAD	Tree was dead at T1 and was cut and used by T2.
CUT1	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 given 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 given estimate since T1. For example, a sapling grows across the 5-inch diameter threshold becoming ingrowth on the subplot.
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 given 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.
OUTGROWTH	Tree was assigned to a plot type at T1 based on its size at that time but grew across the minimum diameter threshold of the plot type by T2. For example, a sapling grows across the five-inch-diameter threshold becoming ingrowth on the subplot but outgrowth from the microplot.
REMEASURED DEAD	Tree was dead at T1 and T2.
SURVIVOR	Tree has remained live and in the estimate from T1 through T2.
UNKNOWN	The tree lacks information required to classify component, usually due to procedural changes.

### 3.4.18 SUBP\_COMPONENT

**Subplot growth component.** The component of change for a given tree from the perspective of the subplot. See [MICR\\_COMPONENT](#) description for codes.

### 3.4.19 MACR\_COMPONENT

**Macroplot growth component.** The component of change for a given tree from the perspective of the macroplot. See [MICR\\_COMPONENT](#) description for codes. This field is blank (null) if the macroplot is not measured.

### 3.4.20 GSTK\_COMPONENT

**Growing-stock growth component.** The biological component of change for a given growing-stock tree regardless of land basis.

Codes: [GSTK\\_COMPONENT](#)

Code	Description
CUT1	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 given 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 given estimate since T1. For example, a sapling grows across the 5-inch diameter threshold becoming ingrowth on the subplot.
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 given 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.

### 3.4.21 SWLG\_COMPONENT

**Sawtimber growth component.** The biological component of change for a given sawtimber tree regardless of land basis. See [GSTK\\_COMPONENT](#) description for codes.

### 3.4.22 GSTK\_BEGIN

**Growing stock at beginning.** A code indicating whether or not the tree was considered growing stock at the beginning of the remeasurement period.

Codes: [GSTK\\_BEGIN](#)

Code	Description
Y	Tree is growing stock.
N	Tree is not growing stock.

### 3.4.23 GSTK\_MIDPT

**Growing stock at midpoint.** A code indicating whether or not the tree was considered growing stock at the midpoint of the remeasurement period. See [GSTK\\_BEGIN](#) description for codes.

### 3.4.24 GSTK\_END

**Growing stock at end.** A code indicating whether or not the tree was considered growing stock at the end of the remeasurement period. See [GSTK\\_BEGIN](#) description for codes.

**3.4.25 SWLG\_DIA\_THRESHOLD**

**Sawtimber diameter threshold.** The sawtimber diameter threshold, 9 inches for softwoods and 11 inches for hardwoods.

**3.4.26 SWLG\_BEGIN**

**Sawtimber at beginning.** A code indicating whether or not the tree was considered sawtimber at the beginning of the remeasurement period.

**Codes: SWLG\_BEGIN**

Code	Description
Y	Tree is sawtimber.
N	Tree is not sawtimber.

**3.4.27 SWLG\_MIDPT**

**Sawtimber at midpoint.** A code indicating whether or not the tree was considered sawtimber at the midpoint of the remeasurement period. See [SWLG\\_BEGIN](#) description for codes.

**3.4.28 SWLG\_END**

**Sawtimber at end.** A code indicating whether or not the tree was considered sawtimber at the end of the remeasurement period. See [SWLG\\_BEGIN](#) description for codes.

**3.4.29 MICR\_COMPONENT\_AL\_FOREST**

**Trees with DIA  $\geq 1.0$  inch - growth component for the all live estimation type on forest land.** Growth component (trees with DIA  $\geq 1.0$  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.
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).

Code	Description
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.

### 3.4.30 MICR\_SUBTYP\_GRM\_AL\_FOREST

**Trees with DIA  $\geq 1.0$  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  $\geq 1.0$  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 [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.

**3.4.31 MICR\_TPAGROW\_UNADJ\_AL\_FOREST**

**Trees with DIA  $\geq 1.0$  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  $\geq 1.0$  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.

**3.4.32 MICR\_TPAREMV\_UNADJ\_AL\_FOREST**

**Trees with DIA  $\geq 1.0$  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  $\geq 1.0$  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.

**3.4.33 MICR\_TPAMORT\_UNADJ\_AL\_FOREST**

**Trees with DIA  $\geq 1.0$  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  $\geq 1.0$  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.

**3.4.34 SUBP\_COMPONENT\_AL\_FOREST**

**Trees with DIA  $\geq 5.0$  inches - growth component for the all live estimation type on forest land.** Growth component (trees with DIA  $\geq 5.0$  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.

**3.4.35 SUBP\_SUBPTYP\_GRM\_AL\_FOREST**

**Trees with DIA  $\geq 5.0$  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  $\geq 5.0$  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.

**3.4.36 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.** Unadjusted trees per acre for growth (trees with DIA  $\geq 5.0$  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.

**3.4.37 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.** Unadjusted trees per acre per year for removals (trees with DIA  $\geq 5.0$  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.

**3.4.38 SUBP\_TPMORT\_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.** Unadjusted trees per acre per year for mortality (trees with DIA  $\geq 5.0$  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.

**3.4.39 SUBP\_COMPONENT\_GS\_FOREST**

**Trees with DIA  $\geq 5.0$  inches - growth component for the growing-stock estimation type on forest land.** Growth component (trees with DIA  $\geq 5$  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.

**3.4.40 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.** The plot type for growth, removals, and mortality (GRM) (trees with DIA  $\geq 5.0$  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.

**3.4.41 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.** Unadjusted trees per acre for growth (trees with DIA  $\geq 5.0$  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.

**3.4.42 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.** Unadjusted trees per acre per year for removals (trees with DIA  $\geq 5.0$  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.

**3.4.43 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.** Unadjusted trees per acre per year for mortality (trees with DIA  $\geq 5.0$  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.

**3.4.44 SUBP\_COMPONENT\_SL\_FOREST**

**Trees with DIA  $\geq 5.0$  inches - growth component for the sawtimber estimation type on forest land.** Growth component (trees with DIA  $\geq 5.0$  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.

**3.4.45 SUBP\_SUBPTYP\_GRM\_SL\_FOREST**

**Trees with DIA  $\geq 5.0$  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  $\geq 5.0$  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.

#### 3.4.46 **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.** Unadjusted trees per acre for growth (trees with DIA  $\geq 5.0$  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.

#### 3.4.47 **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.** Unadjusted trees per acre per year for removals (trees with DIA  $\geq 5.0$  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.

#### 3.4.48 **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.** Unadjusted trees per acre per year for mortality (trees with DIA  $\geq 5.0$  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.

#### 3.4.49 **MICR\_COMPONENT\_AL\_TIMBER**

**Trees with DIA  $\geq 1.0$  inch - growth component for the all live estimation type on timberland.** Growth component (trees with DIA  $\geq 1.0$  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.

#### 3.4.50 **MICR\_SUBPTYP\_GRM\_AL\_TIMBER**

**Trees with DIA  $\geq 1.0$  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  $\geq 1.0$  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.

#### 3.4.51 **MICR\_TPAGROW\_UNADJ\_AL\_TIMBER**

**Trees with DIA  $\geq 1.0$  inch - unadjusted trees per acre for growth for the all live estimation type on timberland.** Unadjusted trees per acre for growth (trees with DIA  $\geq 1.0$  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.

#### 3.4.52 **MICR\_TPAREMV\_UNADJ\_AL\_TIMBER**

**Trees with DIA  $\geq 1.0$  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  $\geq 1.0$  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.

#### 3.4.53 **MICR\_TPAMORT\_UNADJ\_AL\_TIMBER**

**Trees with DIA  $\geq 1.0$  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  $\geq 1.0$  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.

#### 3.4.54 **SUBP\_COMPONENT\_AL\_TIMBER**

**Trees with DIA  $\geq 5.0$  inches - growth component for the all live estimation type on timberland.** Growth component (trees with DIA  $\geq 5.0$  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.

**3.4.55 SUBP\_SUBPTYP\_GRM\_AL\_TIMBER**

**Trees with DIA  $\geq 5.0$  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  $\geq 5.0$  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.

**3.4.56 SUBP\_TPAGROW\_UNADJ\_AL\_TIMBER**

**Trees with DIA  $\geq 5.0$  inches - unadjusted trees per acre for growth for the all live estimation type on timberland.** Unadjusted trees per acre for growth (trees with DIA  $\geq 5.0$  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.

**3.4.57 SUBP\_TPAREMV\_UNADJ\_AL\_TIMBER**

**Trees with DIA  $\geq 5.0$  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  $\geq 5.0$  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.

**3.4.58 SUBP\_TPAMORT\_UNADJ\_AL\_TIMBER**

**Trees with DIA  $\geq 5.0$  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  $\geq 5.0$ ) 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.

**3.4.59 SUBP\_COMPONENT\_GS\_TIMBER**

**Trees with DIA  $\geq 5.0$  inches - growth component for the growing-stock estimation type on timberland.** Growth component (trees with DIA  $\geq 5.0$  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.

**3.4.60 SUBP\_SUBPTYP\_GRM\_GS\_TIMBER**

**Trees with DIA  $\geq 5.0$  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  $\geq 5.0$  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.

**3.4.61 SUBP\_TPAGROW\_UNADJ\_GS\_TIMBER**

**Trees with DIA  $\geq 5.0$  inches - unadjusted trees per acre for growth for the growing-stock estimation type on timberland.** Unadjusted trees per acre for growth (trees with DIA  $\geq 5.0$  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.

**3.4.62 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.** Unadjusted trees per acre per year for removals (trees with DIA  $\geq 5.0$  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.

**3.4.63 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.** Unadjusted trees per acre per year for mortality (trees with DIA  $\geq 5.0$  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.

**3.4.64 SUBP\_COMPONENT\_SL\_TIMBER**

**Trees with DIA  $\geq 5.0$  inches - growth component for the sawtimber estimation type on timberland.** Growth component (trees with DIA  $\geq 5.0$  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.

**3.4.65 SUBP\_SUBPTYP\_GRM\_SL\_TIMBER**

**Trees with DIA  $\geq 5.0$  inches - plot type for GRM for the sawtimber estimation type on timberland.** The plot type for growth, removals, and mortality (GRM) (trees with DIA  $\geq 5.0$  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.

**3.4.66 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.** Unadjusted trees per acre for growth (trees with DIA  $\geq 5.0$  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.

**3.4.67 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.** Unadjusted trees per acre per year for removals (trees with DIA  $\geq 5.0$  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.

**3.4.68 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.** Unadjusted trees per acre per year for mortality (trees with DIA  $\geq 5.0$  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.

**3.4.69 GROWCFAL\_FOREST**

**Net annual sound cubic-foot growth of a live tree on forest land (all live estimation type).** The net change in sound cubic-foot volume (TREE.VOLCFNSND) 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 T2

- T1 = PLOT.REMPER). 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\_FOREST.

**3.4.70****GROWCFGs\_FOREST****Net annual merchantable cubic-foot growth of a growing-stock tree on forest land.**

The net change in merchantable cubic-foot 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\_FOREST.

**3.4.71****GROWBFSL\_FOREST****Net annual merchantable board-foot growth of a sawtimber tree on forest land.** The net change in merchantable board-foot (TREE.VOLBFNET' International 1/4- inch rule) 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\_FOREST.**3.4.72****REMVCFAL\_FOREST****Sound cubic-foot volume of a live tree on forest land for removal purposes (all live estimation type).** The sound cubic-foot 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.**3.4.73****REMVCFGs\_FOREST****Merchantable cubic-foot volume of a growing-stock tree on forest land for removal purposes.** The merchantable cubic-foot 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\_FOREST.**3.4.74****REMVBFSL\_FOREST****Merchantable board-foot volume of a sawtimber tree on forest land for removal purposes.** The merchantable board-foot (TREE.VOLBFNET, International 1/4-inch rule) volume of the tree at the time of removal. To obtain estimates of annual per acre removals, multiply by SUBP\_TPAREMV\_UNADJ\_SL\_FOREST.**3.4.75****MORTCFAL\_FOREST****Sound cubic-foot volume of a tree on forest land for mortality purposes (all live estimation type).** The sound cubic-foot 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.

**3.4.76 MORTCFGs\_FOREST**

**Merchantable cubic-foot volume of a growing-stock tree on forest land for mortality purposes.** The merchantable cubic-foot 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.

**3.4.77 MORTBFSL\_FOREST**

**Merchantable board-foot volume of a sawtimber tree on forest land for mortality purposes.** The merchantable board-foot volume (TREE.VOLBFNET, International 1/4-inch rule) of the tree at the time of mortality. To obtain estimates of annual per acre mortality, multiply by SUBP\_TPAMORT\_UNADJ\_SL\_FOREST.

**3.4.78 GROWCFAL\_TIMBER**

**Net annual sound cubic-foot growth of a live tree on timberland (all live estimation type).** The net change in sound cubic-foot volume (TREE.VOLCFSND) 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\_AL\_TIMBER.

**3.4.79 GROWCFGs\_TIMBER**

**Net annual merchantable cubic-foot growth of a growing-stock tree on timberland.** The net change in merchantable cubic-foot 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\_TIMBER.

**3.4.80 GROWBFSL\_TIMBER**

**Net annual merchantable board-foot growth of a sawtimber tree on timberland.** The net change in merchantable board-foot (TREE.VOLBFNET, International 1/4-inch rule) 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\_TIMBER.

**3.4.81 REMVCFAL\_TIMBER**

**Sound cubic-foot volume of a live tree on timberland for removal purposes (all live estimation type).** The sound cubic-foot 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.

**3.4.82 REMVCFGs\_TIMBER**

**Merchantable cubic-foot volume of a growing-stock tree on timberland for removal purposes.** The merchantable cubic-foot 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.

**3.4.83 REMVBFSL\_TIMBER**

**Merchantable board-foot volume of a sawtimber tree on timberland for removal purposes.** The merchantable board-foot (TREE.VOLBFNET, International 1/4-inch rule) volume of the tree at the time of removal. To obtain estimates of annual per acre removals, multiply by SUBP\_TPAREMV\_UNADJ\_SL\_TIMBER.

**3.4.84 MORTCFAL\_TIMBER**

**Sound cubic-foot volume of a tree on timberland for mortality purposes (all live estimation type).** The sound cubic-foot 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.

**3.4.85 MORTCFGS\_TIMBER**

**Merchantable cubic-foot volume of a growing-stock tree on timberland for mortality purposes.** The merchantable cubic-foot 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.

**3.4.86 MORTBFSL\_TIMBER**

**Merchantable board-foot volume of a sawtimber tree on timberland for mortality purposes.** The merchantable board-foot volume (TREE.VOLBFNET, International 1/4-inch rule) of the tree at the time of mortality. To obtain estimates of annual per acre mortality, multiply by SUBP\_TPAMORT\_UNADJ\_SL\_TIMBER.

**3.4.87 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**3.4.88 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**3.4.89 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**3.4.90 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**3.4.91 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**3.4.92 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.



## 3.5 Tree Net 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(4)
3.5.5	DIA	Midpoint diameter	NUMBER
3.5.6	DIAHTCD	Diameter height code	NUMBER(1)
3.5.7	TREE_SIZE	Tree size	VARCHAR2(10)
3.5.8	TREECLCD	Tree class code	NUMBER(2)
3.5.9	SUBPTYP	Plot type code	NUMBER
3.5.10	VOLCFSND	Sound cubic-foot volume at the midpoint	NUMBER
3.5.11	VOLCFNET	Net cubic-foot volume at the midpoint	NUMBER
3.5.12	VOLCSNET	Net cubic-foot volume in the sawlog portion of a sawtimber tree at the midpoint	NUMBER
3.5.13	VOLBFNET	Net board-foot volume in the sawlog portion of a sawtimber tree at the midpoint	NUMBER
3.5.14	REGIONAL_DRYBIOT	Regional dry total tree biomass at the midpoint	NUMBER
3.5.15	REGIONAL_DRYBIOM	Regional dry merchantable stem biomass at the midpoint	NUMBER
3.5.16	REGIONAL_DRYBIOSL	Regional dry biomass of the sawlog portion of a sawtimber tree at the midpoint	NUMBER
3.5.17	DRYBIO_BG	Belowground dry biomass at the midpoint	NUMBER
3.5.18	DRYBIO_AG	Aboveground dry biomass at the midpoint	NUMBER
3.5.19	DRYBIO_WDLD_SPP	Aboveground dry biomass of woodland tree species at the midpoint	NUMBER
3.5.20	DRYBIO_SAPLING	Aboveground dry biomass of saplings at the midpoint	NUMBER
3.5.21	DRYBIO_STUMP	Dry biomass in the tree stump at the midpoint	NUMBER

Subsection	Column name (attribute)	Descriptive name	Oracle data type
3.5.22	DRYBIO_BOLE	Dry biomass in the merchantable bole at the midpoint	NUMBER
3.5.23	DRYBIO_SAWLOG	Dry biomass in the sawlog portion of a sawtimber tree at the midpoint	NUMBER
3.5.24	DRYBIO_TOP	Dry biomass in the top and limbs of the tree at the midpoint	NUMBER
3.5.25	CREATED_BY	Created by	VARCHAR2(30)
3.5.26	CREATED_DATE	Created date	DATE
3.5.27	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
3.5.28	MODIFIED_BY	Modified by	VARCHAR2(30)
3.5.29	MODIFIED_DATE	Modified date	DATE
3.5.30	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 net growth, removal, and mortality (GRM) estimates on remeasurement trees. This table includes a single record per tree with various midpoint values listed in columns. The current structure of the table supports 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.

### 3.5.1 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) two-digit code for each State. Refer to [appendix B](#).

**3.5.5 DIA**

**Midpoint diameter.** The estimated midpoint diameter (in inches) of the sample tree at the point of diameter measurement. See [DIAHTCD](#) for more information about the point of diameter measurement. See [TREE.DIA](#) for details about how DIA is measured.

**3.5.6 DIAHTCD**

**Diameter height code.** A code indicating the location at which diameter was measured.

**Codes: DIAHTCD**

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

**3.5.7 TREE\_SIZE**

**Tree size.** Classification of the tree size at the midpoint. Tree size classifications correspond to the tree-size thresholds recognized by FIA.

**Codes: TREE\_SIZE**

Code	Description
SEEDLING	Diameter <1 inch.
SAPLING	Diameter ≥1 inch and <5 inches.
SMALL	Diameter ≥5 inches and less than the sawtimber-size threshold.
LARGE	Diameter meeting the diameter threshold for sawtimber-size trees; ≥9 inches for softwoods and ≥11 inches for hardwoods.

**3.5.8 TREECLCD**

**Tree class code.** A code indicating the general quality of the tree at the midpoint of the remeasurement period. The midpoint tree class takes the value of the T2 tree record if present, otherwise it takes the value of the T1 tree record. See the [TREE.TREECLCD](#) description for codes.

**3.5.9 SUBPTYP**

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

**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.

Code	Description
2	Microplot.
3	Macroplot.

**3.5.10****VOLCFSND**

**Sound cubic-foot volume at the midpoint.** For timber species (trees where the diameter is measured at breast height [d.b.h.]), the volume of sound wood in the central stem of a sample tree  $\geq 5.0$  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. For woodland species (woodland species can be identified by REF\_SPECIES.WOODLAND = X), VOLCFSND is the net volume of wood and bark from the d.r.c. measurement point(s) to a minimum 1½-inch top diameter; includes branches that are at least 1½ inches in diameter along the length of the branch. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. This attribute is blank (null) for trees with DIA  $<5.0$  inches. All trees with DIA  $\geq 5.0$  inches (including dead trees) have entries in this field. Does not include rotten and missing cull (volume loss due to rotten and missing cull defect has been deducted).

**3.5.11****VOLCFNET**

**Net cubic-foot volume at the midpoint.** For timber species (trees where the diameter is measured at breast height [d.b.h.]), this is the net volume of wood in the central stem of a sample tree  $\geq 5.0$  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. For woodland species (woodland species can be identified by REF\_SPECIES.WOODLAND = X), VOLCFNET is the net volume of wood and bark from the d.r.c. measurement point(s) to a 1½-inch top diameter; includes branches that are at least 1½ inches in diameter along the length of the branch. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. This attribute is blank (null) for trees with DIA  $<5.0$  inches. All trees measured after 1998 with DIA  $\geq 5.0$  inches (including standing dead trees) will have entries in this field. Does not include rotten, missing, and form cull (volume loss due to rotten, missing, and form cull defect has been deducted).

**3.5.12****VOLCSNET**

**Net cubic-foot volume in the sawlog portion of a sawtimber tree at the midpoint.** The net 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 the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. This attribute is blank (null) for softwood trees with DIA  $<9.0$  inches (11.0 inches for hardwoods). All larger trees have entries in this field if they are growing-stock trees (TREECLCD = 2 and STATUSCD = 1). All rough and rotten trees (TREECLCD = 3 or 4) and dead and cut trees (STATUSCD = 2 or 3) are blank (null) in this field. Form cull and rotten/missing cull are excluded.

**3.5.13****VOLBFNET**

**Net board-foot volume in the sawlog portion of a sawtimber tree at the midpoint.** This is the net volume (International ¼-inch rule) 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 the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. This attribute is blank (null) for softwood trees with DIA <9.0 inches (11.0 inches for hardwoods). All larger trees should have entries in this field if they are growing-stock trees (TREECLCD = 2 and STATUSCD = 1). All rough and rotten trees (TREECLCD = 3 or 4) and dead and cut trees (STATUSCD = 2 or 3) are blank (null) in this field. Form cull and rotten/missing cull are excluded.

**3.5.14****REGIONAL\_DRYBIOT**

**Regional dry total tree biomass at the midpoint.** The total aboveground biomass (pounds) of a sample tree 1.0 inch diameter or larger for live trees, and 5.0 inches diameter or larger for dead trees, including all tops and limbs (but excluding foliage). This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. Calculated in oven-dry pounds per tree. This field should have an entry if DIA is  $\geq 1.0$  inch ( $\geq 5.0$  inches for dead trees), regardless of TREECLCD; zero otherwise. For dead or cut trees, this number represents the biomass at the time of death or last measurement. Because total biomass has been calculated differently among FIA work units, contact the appropriate FIA work units ([table 1-1](#)) for information on how biomass was estimated and whether bark was included.

**3.5.15****REGIONAL\_DRYBIOM**

**Regional dry merchantable stem biomass at the midpoint.** The oven-dry biomass (pounds) in the aboveground portion, excluding foliage, of live trees with a diameter  $\geq 1.0$  inch, and dead trees with a diameter  $\geq 5.0$  inches. Calculated for both timber and woodland species. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**3.5.16****REGIONAL\_DRYBIOSL**

**Regional dry biomass in the sawlog portion of a sawtimber tree at the midpoint.** The total gross biomass (pounds) of timber species trees of sawtimber size (9.0 inches d.b.h. minimum for softwoods, 11.0 inches d.b.h. minimum for hardwood), from a 1-foot stump to a minimum top diameter (7.0 inches for softwoods, 9.0 inches for hardwoods) of the central stem. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. Calculated in oven-dry pounds per tree. This value is calculated by determining the ratio of sawlog volume to merchantable volume and applying it to the REGIONAL\_DRYBIOM estimate. Because total biomass has been calculated differently among FIA work units, contact the appropriate FIA work unit ([table 1-1](#)) for information on how biomass was estimated and whether bark was included.

**3.5.17****DRYBIO\_BG**

**Belowground dry biomass at the midpoint.** The oven-dry biomass (pounds) of the belowground portion of a tree, includes coarse roots with a root diameter  $\geq 0.1$  inch. This is a modeled estimate, calculated on live trees with a diameter of  $\geq 1.0$  inch and dead trees with a diameter of  $\geq 5.0$  inches, for both timber and woodland species. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**3.5.18****DRYBIO\_AG**

**Aboveground dry biomass at the midpoint.** The oven-dry biomass (pounds) of the aboveground portion of a tree. This is a modeled estimate, calculated on live trees with a diameter of  $\geq 1.0$  inch, for both timber and woodland species. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**3.5.19****DRYBIO\_WLDL\_SPP**

**Aboveground dry biomass of woodland tree species at the midpoint.** The oven-dry biomass (pounds) of the aboveground portion of a live or dead tree, excluding foliage, the tree tip (top of the tree above  $1\frac{1}{2}$  inches in diameter), and a portion of the stump from ground to diameter at root collar (d.r.c.). Calculated for woodland species (trees where diameter is measured at d.r.c.)  $\geq 1.0$  inch d.r.c. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. This attribute is blank (null) for woodland species with DIA  $< 1.0$  inch and for all timber species. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**3.5.20****DRYBIO\_SAPLING**

**Aboveground dry biomass of saplings at the midpoint.** The oven-dry biomass (pounds) of the aboveground portion, excluding foliage, of live trees with a diameter from 1.0 to 4.9 inches. Calculated for timber species only. The biomass of saplings is based on biomass computed from Jenkins and others (2003), using the observed diameter and an adjustment factor. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**3.5.21****DRYBIO\_STUMP**

**Dry biomass in the tree stump at the midpoint.** The oven-dry biomass (pounds) 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 to the bottom of the merchantable bole (i.e., below 1 foot). This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. Estimated for live and dead trees. For dead or cut trees, this number represents the biomass at the time of death or last measurement. This attribute is blank (null) for timber species with DIA  $< 5.0$  inches and for woodland species. See [DRYBIO\\_WLDL\\_SPP](#) for biomass of woodland species, and [DRYBIO\\_SAPLING](#) for biomass of timber species with DIA  $< 5.0$  inches. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**3.5.22****DRYBIO\_BOLE**

**Dry biomass in the merchantable bole at the midpoint.** The oven-dry biomass (pounds) 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. This is the biomass of sound wood in live and dead trees, including bark, from a 1-foot stump to a minimum 4-inch top diameter of the central stem. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. This attribute is blank (null) for timber species with DIA  $< 5.0$  inches and for woodland species. See [DRYBIO\\_WLDL\\_SPP](#) for biomass of woodland species and [DRYBIO\\_SAPLING](#) for biomass of timber species with DIA  $< 5.0$  inches. For dead or cut timber trees, this number represents the biomass at the time of death or last measurement. DRYBIO\_BOLE is based on VOLCFSND and specific gravity information derived by the Forest Products Lab and others (values stored in the REF\_SPECIES table). If VOLCFSND is not available, then either VOLCFGRS \* Percent Sound or VOLCFNET \* (average ratio of cubic foot sound to cubic foot net volume, calculated as national averages by species group and diameter) is used. The source of specific gravity information for each species can be found by linking the REF\_SPECIES table to the REF\_CITATION table. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**3.5.23****DRYBIO\_SAWLOG**

**Dry biomass in the sawlog portion of a sawtimber tree at the midpoint.** The oven-dry biomass (pounds) 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 the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. This attribute is blank (null) for softwood trees with DIA  $< 9.0$  inches (11.0 inches for hardwoods). For dead or cut timber trees, this number represents the biomass at the time of death or last measurement. DRYBIO\_SAWLOG is based on VOLCSSND and specific gravity information derived by the Forest Products Lab and others (values stored in the REF\_SPECIES table). If VOLCSSND is not available, then either VOLCSGRS \* percent sound or VOLCSNET \* (average ratio of cubic foot sound to cubic foot net volume, calculated as national averages by species group and diameter) is used. The source of specific gravity information for each species can be found by linking the REF\_SPECIES table to the REF\_CITATION table. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**3.5.24****DRYBIO\_TOP**

**Dry biomass in the top and limbs of the tree at the midpoint.** The oven-dry biomass (pounds) in the top and branches (combined) of timber species [trees where diameter is measured at breast height (d.b.h.)]  $\geq 5.0$  inches d.b.h. DRYBIO\_TOP includes the tip, the portion of the stem above the merchantable bole (i.e., above the 4-inch top diameter), and all branches; excludes foliage. Estimated for live and dead trees. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. For dead or cut trees, this number represents the biomass at the time of death or last measurement. This attribute is blank (null) for timber species with DIA  $< 5.0$  inches and for woodland species. See [DRYBIO\\_WLDL\\_SPP](#) for biomass of woodland species, and [DRYBIO\\_SAPLING](#) for

biomass of timber species with DIA <5.0 inches. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**3.5.25 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**3.5.26 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**3.5.27 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**3.5.28 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**3.5.29 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**3.5.30 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

## 3.6 Tree Net 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(4)
3.6.5	SPCD	Species code	NUMBER
3.6.6	DIA	Diameter at T1	NUMBER(5,2)
3.6.7	DIAHTCD	Diameter height code	NUMBER(1)
3.6.8	TREE_SIZE	Tree size	VARCHAR2(10)
3.6.9	TREECLCD	Tree class code	NUMBER
3.6.10	SUBPTYP	Plot type code	NUMBER
3.6.11	VOLCF SND	Sound cubic-foot volume at T1	NUMBER
3.6.12	VOLCFNET	Net cubic-foot volume at T1	NUMBER
3.6.13	VOLCSNET	Net cubic-foot volume in the sawlog portion of a sawtimber tree at T1	NUMBER
3.6.14	VOLBFNET	Net board-foot volume in the sawlog portion of a sawtimber tree at T1	NUMBER
3.6.15	REGIONAL_DRYBIOT	Regional dry total tree biomass at T1	NUMBER
3.6.16	REGIONAL_DRYBIOM	Regional dry merchantable stem biomass at T1	NUMBER
3.6.17	REGIONAL_DRYBIOSL	Regional dry biomass of the sawlog portion of a sawtimber tree at T1	NUMBER
3.6.18	DRYBIO_BG	Belowground dry biomass at T1	NUMBER
3.6.19	DRYBIO_AG	Aboveground dry biomass at T1	NUMBER
3.6.20	DRYBIO_WDLD_SPP	Aboveground dry biomass of woodland tree species at T1	NUMBER
3.6.21	DRYBIO_SAPLING	Aboveground dry biomass of saplings at T1	NUMBER
3.6.22	DRYBIO_STUMP	Dry biomass in the tree stump at T1	NUMBER
3.6.23	DRYBIO_BOLE	Dry biomass in the merchantable bole at T1	NUMBER
3.6.24	DRYBIO_SAWLOG	Dry biomass in the sawlog portion of a sawtimber tree at T1	NUMBER
3.6.25	DRYBIO_TOP	Dry biomass in the top and limbs of the tree at T1	NUMBER
3.6.26	CREATED_BY	Created by	VARCHAR2(30)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
3.6.27	CREATED_DATE	Created date	DATE
3.6.28	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
3.6.29	MODIFIED_BY	Modified by	VARCHAR2(30)
3.6.30	MODIFIED_DATE	Modified date	DATE
3.6.31	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 with various T1 values listed in columns. The current structure of the table supports 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.

### 3.6.1 **TRE\_CN**

**Tree sequence number.** Foreign key linking the tree GRM begin record to the tree record.

### 3.6.2 **PREV\_TRE\_CN**

**Previous tree sequence number.** Foreign key linking the tree GRM begin tree record to time 1 tree CN.

### 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) two-digit code for each State. Refer to [appendix B](#).

### 3.6.5 **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.

**3.6.6 DIA**

**Diameter at T1.** The estimated T1 diameter (in inches) of the sample tree at the point of diameter measurement. See [DIAHTCD](#) for more information about the point of diameter measurement.

**3.6.7 DIAHTCD**

**Diameter height code.** A code indicating the location at which diameter was measured.

**Codes: DIAHTCD**

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

**3.6.8 TREE\_SIZE**

**Tree size.** Classification of the tree size at T1. Tree size classifications correspond to the tree-size thresholds recognized by FIA. See the TREE\_GRM\_MIDPT.[TREE\\_SIZE](#) description for codes.

**3.6.9 TREECLCD**

**Tree class code.** A code indicating the general quality of the tree at T1. The T1 tree class takes the value of the T2 tree record (T2 TREECLCD) if present, otherwise it takes the value of the T1 tree record (T1 TREECLCD). See the TREE.[TREECLCD](#) description for codes.

**3.6.10 SUBPTYP**

**Plot type code.** A code indicating whether the tree record at T1 is for a subplot, microplot, or macroplot.

**Codes: SUBPTYP**

Code	Description
1	Subplot.
2	Microplot.
3	Macroplot.

**3.6.11 VOLCFSND**

**Sound cubic-foot volume at T1.** For timber species (trees where the diameter is measured at breast height [d.b.h.]), the volume of sound wood in the central stem of a sample tree  $\geq 5.0$  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. For woodland species (woodland species can be identified by REF\_SPECIES.WOODLAND = X), VOLCFSND is the net volume of wood and bark from the d.r.c. measurement point(s) to a minimum 1½-inch top diameter; includes branches that are at least 1½ inches in diameter along the length of the branch. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. This attribute is blank (null) for trees with DIA  $< 5.0$  inches. All trees with DIA  $\geq 5.0$  inches (including dead trees) have entries in this field. Does

not include rotten and missing cull (volume loss due to rotten and missing cull defect has been deducted).

### 3.6.12 VOLCFNET

**Net cubic-foot volume at T1.** For timber species (trees where the diameter is measured at breast height [d.b.h.]), this is the net volume of wood in the central stem of a sample tree  $\geq 5.0$  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. For woodland species (woodland species can be identified by REF\_SPECIES.WOODLAND = X), VOLCFNET is the net volume of wood and bark from the d.r.c. measurement point(s) to a 1½-inch top diameter; includes branches that are at least 1½ inches in diameter along the length of the branch. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. This attribute is blank (null) for trees with DIA  $< 5.0$  inches. All trees measured after 1998 with DIA  $\geq 5.0$  inches (including standing dead trees) will have entries in this field. Does not include rotten, missing, and form cull (volume loss due to rotten, missing, and form cull defect has been deducted).

### 3.6.13 VOLCSNET

**Net cubic-foot volume in the sawlog portion of a sawtimber tree at T1.** The net 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 the appropriate trees per acre expansion factor found in TREE\_GRM\_COMPONENT table to obtain per acre information. This attribute is blank (null) for softwood trees with DIA  $< 9.0$  inches (11.0 inches for hardwoods). All larger trees have entries in this field if they are growing-stock trees (TREECLCD = 2 and STATUSCD = 1). All rough and rotten trees (TREECLCD = 3 or 4) and dead and cut trees (STATUSCD = 2 or 3) are blank (null) in this field. Form cull and rotten/missing cull are excluded.

### 3.6.14 VOLBFNET

**Net board-foot volume in the sawlog portion of a sawtimber tree at T1.** This is the net volume (International ¼-inch rule) 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 the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. This attribute is blank (null) for softwood trees with DIA  $< 9.0$  inches (11.0 inches for hardwoods). All larger trees should have entries in this field if they are growing-stock trees (TREECLCD = 2 and STATUSCD = 1). All rough and rotten trees (TREECLCD = 3 or 4) and dead and cut trees (STATUSCD = 2 or 3) are blank (null) in this field. Form cull and rotten/missing cull are excluded.

### 3.6.15 REGIONAL\_DRYBIOT

**Regional dry total tree biomass at T1.** The total aboveground biomass (pounds) of a sample tree 1.0 inch diameter or larger for live trees, and 5.0 inches diameter or larger for dead trees, including all tops and limbs (but excluding foliage). This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the

TREE\_GRM\_COMPONENT table to obtain per acre information. Calculated in oven-dry pounds per tree. This field should have an entry if DIA is 1.0 inch or larger (5.0 inches or larger for dead trees), regardless of TREECLCD; zero otherwise. For dead or cut trees, this number represents the biomass at the time of death or last measurement. Because total biomass has been calculated differently among FIA work units, contact the appropriate FIA work units ([table 1-1](#)) for information on how biomass was estimated and whether bark was included.

### 3.6.16 REGIONAL\_DRYBIOM

**Regional dry merchantable stem biomass at T1.** The total gross biomass (pounds) of a sample tree 5.0 inches d.b.h. or larger from a 1-foot stump to a minimum 4-inch top diameter of the central stem. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. Calculated in oven-dry pounds per tree. This field should have an entry if DIA is 5.0 inches or larger, regardless of TREECLCD; zero otherwise. For dead or cut trees, this number represents the biomass at the time of death or last measurement. Because total biomass has been calculated differently among FIA work units, contact the appropriate FIA work unit ([table 1-1](#)) for information on how biomass was estimated and whether bark was included.

### 3.6.17 REGIONAL\_DRYBIOSL

**Regional dry biomass in the sawlog portion of a sawtimber tree at T1.** The total gross biomass (pounds) of timber species trees of sawtimber size (9.0 inches d.b.h. minimum for softwoods, 11.0 inches d.b.h. minimum for hardwood), from a 1-foot stump to a minimum top diameter (7.0 inches for softwoods, 9.0 inches for hardwoods) of the central stem. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. Calculated in oven-dry pounds per tree. This value is calculated by determining the ratio of sawlog volume to merchantable volume and applying it to the REGIONAL\_DRYBIOM estimate. Because total biomass has been calculated differently among FIA work units, contact the appropriate FIA work unit ([table 1-1](#)) for information on how biomass was estimated and whether bark was included.

### 3.6.18 DRYBIO\_BG

**Belowground dry biomass at T1.** The oven-dry biomass (pounds) of the belowground portion of a tree, includes coarse roots with a root diameter  $\geq 0.1$  inch. This is a modeled estimate, calculated on live trees with a diameter of  $\geq 1.0$  inch and dead trees with a diameter of  $\geq 5.0$  inches, for both timber and woodland species. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

### 3.6.19 DRYBIO\_AG

**Aboveground dry biomass at T1.** The oven-dry biomass (pounds) of the aboveground portion of a tree. This is a modeled estimate, calculated on live trees with a diameter of  $\geq 1.0$  inch, for both timber and woodland species. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**3.6.20 DRYBIO\_WLDL\_SPP**

**Aboveground dry biomass of woodland tree species at T1.** The oven-dry biomass (pounds) of the aboveground portion of a live or dead tree, excluding foliage, the tree tip (top of the tree above 1½ inches in diameter), and a portion of the stump from ground to diameter at root collar (d.r.c.). Calculated for woodland species (trees where diameter is measured at d.r.c.)  $\geq 1.0$  inch d.r.c. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. This attribute is blank (null) for woodland species with DIA  $< 1.0$  inch and for all timber species. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**3.6.21 DRYBIO\_SAPLING**

**Aboveground dry biomass of saplings at T1.** The oven-dry biomass (pounds) of the aboveground portion, excluding foliage, of live trees with a diameter from 1 to 4.9 inches. Calculated for timber species only. The biomass of saplings is based on biomass computed from Jenkins and others (2003), using the observed diameter and an adjustment factor. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information.

[Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**3.6.22 DRYBIO\_STUMP**

**Dry biomass in the tree stump at T1.** The oven-dry biomass (pounds) 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 to the bottom of the merchantable bole (i.e., below 1 foot). This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. Estimated for live and dead trees. For dead or cut trees, this number represents the biomass at the time of death or last measurement. This attribute is blank (null) for timber species with DIA  $< 5.0$  inches and for woodland species. See [DRYBIO\\_WLDL\\_SPP](#) for biomass of woodland species, and [DRYBIO\\_SAPLING](#) for biomass of timber species with DIA  $< 5.0$  inches. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**3.6.23 DRYBIO\_BOLE**

**Dry biomass in the merchantable bole at T1.** The oven-dry biomass (pounds) 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. This is the biomass of sound wood in live and dead trees, including bark, from a 1-foot stump to a minimum 4-inch top diameter of the central stem. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. This attribute is blank (null) for timber species with DIA  $< 5.0$  inches and for woodland species. See [DRYBIO\\_WLDL\\_SPP](#) for biomass of woodland species and [DRYBIO\\_SAPLING](#) for biomass of timber species with DIA  $< 5.0$  inches. For dead or cut timber trees, this number represents the biomass at the time of death or last measurement. DRYBIO\_BOLE is based on VOLCFSND and specific gravity information derived by the Forest Products Lab and others (values stored in the REF\_SPECIES table). If VOLCFSND is not available, then either VOLCFGRS \* Percent Sound or VOLCFNET \* (average ratio of cubic foot sound to cubic foot net volume, calculated as national averages by species group and diameter) is used. The source of specific gravity information for each species can be found by linking the REF\_SPECIES table to the REF\_CITATION table. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**3.6.24 DRYBIO\_SAWLOG**

**Dry biomass in the sawlog portion of a sawtimber tree at T1.** The oven-dry biomass (pounds) in the sawlog portion of timber species trees 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 the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. This attribute is blank (null) for softwood trees with DIA <9.0 inches (11.0 inches for hardwoods). For dead or cut timber trees, this number represents the biomass at the time of death or last measurement. DRYBIO\_SAWLOG is based on VOLCSSND and specific gravity information derived by the Forest Products Lab and others (values stored in the REF\_SPECIES table). If VOLCSSND is not available, then either VOLCSGRS \* percent sound or VOLCSNET \* (average ratio of cubic foot sound to cubic foot net volume, calculated as national averages by species group and diameter) is used. The source of specific gravity information for each species can be found by linking the REF\_SPECIES table to the REF\_CITATION table. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**3.6.25 DRYBIO\_TOP**

**Dry biomass in the top and limbs of the tree at T1.** The oven-dry biomass (pounds) in the top and branches (combined) of timber species [trees where diameter is measured at breast height (d.b.h.)] ≥5.0 inches d.b.h. DRYBIO\_TOP includes the tip, the portion of the stem above the merchantable bole (i.e., above the 4-inch top diameter), and all branches; excludes foliage. Estimated for live and dead trees. This is a per tree value and must be multiplied by the appropriate trees per acre expansion factor found in the TREE\_GRM\_COMPONENT table to obtain per acre information. For dead or cut trees, this number represents the biomass at the time of death or last measurement. This attribute is blank (null) for timber species with DIA <5.0 inches and for woodland species. See [DRYBIO\\_WDLD\\_SPP](#) for biomass of woodland species, and [DRYBIO\\_SAPLING](#) for biomass of timber species with DIA <5.0 inches. [Appendix M](#) contains equations used to estimate biomass components in the FIADB.

**3.6.26 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**3.6.27 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**3.6.28 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**3.6.29 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**3.6.30 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**3.6.31 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.



## 3.7 Tree Net 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 units	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. Future enhancements could include biomass and

carbon as well as additional estimate types such as sawlog tops, tops and limbs, stumps, etc.

### **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) two-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. For data collected prior to PLOT.MANUAL = 6.0, the old forest land definition was slightly different in that 10 percent stocking rather than canopy cover was used to measure the presence of trees.

**Codes: LAND\_BASIS**

<b>Code</b>	<b>Description</b>
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.** Currently, the only GRM base attribute is volume (ESTIMATE = 'VOLUME'). Future enhancements could include biomass and carbon.

### 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 units.** A code indicating the units for the estimation record.

**Codes: ESTN\_UNITS**

Code	Description
CF	Cubic feet.
BF	Board 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).
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.

Code	Description
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. This attribute is null (blank) for new plots or remeasured plots that are not used for growth, removals, or mortality estimates. For data processed with NIMS, REMPER,

remeasurement period, 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.

**Note:** It is not valid to use REMPER to estimate change.

### 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	Phase 2 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, Southern Research Station	NUMBER(5)
3.9.26	PCT_AFFECTED_DAMAGE_AGENT1_SRS	Percent affected by damage agent 1, Southern Research Station	NUMBER(3)
3.9.27	DAMAGE_AGENT_CD2_SRS	Damage agent code 2, Southern Research Station	NUMBER(5)
3.9.28	PCT_AFFECTED_DAMAGE_AGENT2_SRS	Percent affected by damage agent 2, Southern Research Station	NUMBER(3)
3.9.29	DAMAGE_AGENT_CD3_SRS	Damage agent code 3, 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, 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 index used to easily identify a seedling.

### 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) two-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.

**3.9.7 PLOT**

**Phase 2 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 I](#) 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 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. 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 on presentation tables. Codes and their associated names (see REF\_SPECIES\_GROUP.NAME) are shown in [appendix E](#). Individual tree species and corresponding species group codes are shown in [appendix F](#).

**3.9.12 STOCKING**

**Tree stocking.** The stocking value assigned to each count of seedlings, by species. Stocking is a relative term used to describe (in percent) the adequacy of a given stand density in meeting a specific management objective. Species or forest type stocking functions were used to assess the stocking contribution of seedling records. These functions, which were developed using stocking guides, relate the area occupied by an individual tree to the area occupied by a tree of the same size growing in a fully stocked stand of like trees. The stocking of seedling count records is used in the calculation of COND.GSSTKCD and COND.ALSTKCD on the condition record.

**3.9.13 TREETCOUNT**

**Tree count (for seedlings).** Indicates the number of live seedlings (DIA <1.0 inch) present on the microplot. Conifer seedlings are at least 6 inches tall and hardwood seedlings are at least 12 inches tall. 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 TREETCOUNT is blank (null), then a value of 6 in TREETCOUNT\_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 collected by certain FIA work units (SURVEY.RSCD = 22). This attribute may be blank (null) for SURVEY.RSCD = 22 and is always null for the other FIA work units.

**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 \(Edition: March, 2017\)](#).

**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, Southern Research Station.** (*Caribbean only: all counts of seedlings*) A code indicating the first damage agent observed when inspecting the tree from bottom to top (roots, bole, branches, foliage). 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 J](#) for the complete list of codes.

**3.9.26 PCT\_AFFECTED\_DAMAGE\_AGENT1\_SRS**

**Percent affected by damage agent 1, Southern Research Station.** (*Caribbean only: all counts of seedlings*) The percent of seedlings on the microplot, by species and condition, which are affected by DAMAGE\_AGENT1\_SRS.

**3.9.27 DAMAGE\_AGENT\_CD2\_SRS**

**Damage agent code 2, Southern Research Station.** (*Caribbean only: all counts of seedlings*) See [DAMAGE\\_AGENT\\_CD1\\_SRS](#).

**3.9.28 PCT\_AFFECTED\_DAMAGE\_AGENT2\_SRS**

**Percent affected by damage agent 2, Southern Research Station.** (*Caribbean only: all counts of seedlings*) See [PCT\\_AFFECTED\\_DAMAGE\\_AGENT1\\_SRS](#).

**3.9.29 DAMAGE\_AGENT\_CD3\_SRS**

**Damage agent code 3, Southern Research Station.** (*Caribbean only: all counts of seedlings*) See [DAMAGE\\_AGENT\\_CD1\\_SRS](#).

**3.9.30 PCT\_AFFECTED\_DAMAGE\_AGENT3\_SRS**

**Percent affected by damage agent 3, Southern Research Station.** (*Caribbean only: all counts of seedlings*) See [PCT\\_AFFECTED\\_DAMAGE\\_AGENT1\\_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 collected 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 collected 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	Phase 2 plot number	NUMBER(5)
3.10.9	CONDID	Condition class number	NUMBER(1)
3.10.10	TREE	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	AGECKCD_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)

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
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) two-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.

**3.10.8 PLOT**

**Phase 2 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 CONDID**

**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**

**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 record 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 current 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 a sample 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 on presentation tables. Codes and their associated names (see [REF\\_SPECIES\\_GROUP.NAME](#)) are shown in [appendix E](#). Individual tree species and corresponding species group codes are shown in [appendix F](#).

**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 [METHOD](#)). 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, so 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 I](#) 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*) The direction, to the nearest degree, from subplot center to the center of the base of the tree (geographic center for multi-stemmed woodland species). Due north is represented by 360 degrees.

**3.10.20 DIST**

**Horizontal distance.** (*Core optional*) The horizontal distance in feet from subplot center to the pith at the base of the tree (geographic center for multi-stemmed woodland species).

**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 AGECKCD\_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 collected by certain FIA work units (SURVEY.RSCD = 22).

**Codes: AGECHKCD\_RMRS**

Code	Description
0	<ul style="list-style-type: none"> <li>Age/radial growth measured directly from core.</li> <li>Age/radial growth calculated from remeasurement data (same tree).</li> </ul>
1	<ul style="list-style-type: none"> <li>Age/radial growth was estimated due to rot.</li> <li>Age/radial growth was estimated because rings were difficult to count (old suppressed trees).</li> <li>Age was estimated because the increment bore could not reach to tree center.</li> </ul>
2	<ul style="list-style-type: none"> <li>Age/radial growth was calculated from a similar remeasure tree (same species and diameter class).</li> <li>Age/radial growth was based on a similar tree off the subplot.</li> </ul>
3	<ul style="list-style-type: none"> <li>Age measured from a collected tree core (for cores collected and sent into the office for aging).</li> </ul>

**Note:** Code 3 was added starting with PLOT.MANUAL = 6.0

**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 collected 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 collected by certain FIA work units (SURVEY.RSCD = 22).

**Codes: CCLCD\_RMRS**

<b>Code</b>	<b>Description</b>
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 observed when inspecting the tree from bottom to top (roots, bole, branches, foliage). 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. Up to three damage agents can be recorded, from most important to least important (DAMAGE\_AGENT\_CD1\_RMRS, DAMAGE\_AGENT\_CD2\_RMRS, and DAMAGE\_AGENT\_CD3\_RMRS). The codes used for damage agents come from the January 2012 Pest Trend Impact Plot System (PTIPS) list from the Forest Health Technology Enterprise Team (FHTET) that has been modified to meet FIA's needs. See TREE.DAMAGE\_AGENT\_CD1 for general agent codes. See [appendix J](#) for the complete list of codes. Only collected 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 collected by certain FIA work units (SURVEY.RSCD = 22).

**3.10.37 DAMAGE\_AGENT\_CD3\_RMRS**

**Damage agent code 3, Rocky Mountain Research Station.** See DDAMAGE\_AGENT\_CD1\_RMRS. Only collected 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 collected 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.

Only collected 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 collected by certain FIA work units (SURVEY.RSCD = 26, 27).

**Codes: SITE\_AGE\_TREE\_STATUS\_PNWRS**

<b>Code</b>	<b>Description</b>
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 collected by certain FIA work units (SURVEY.RSCD = 26, 27).

**Codes: SITE\_AGE\_TREE\_TYPE\_PNWRS**

<b>Code</b>	<b>Description</b>
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 collected by certain FIA work units (SURVEY.RSCD = 26, 27). Not populated for Pacific Islands.

**Codes: SITE\_AGE\_TREE\_TYPE\_PNWRS**

<b>Code</b>	<b>Description</b>
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 collected 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 collected by certain FIA work units (SURVEY.RSCD = 22).

**Codes: TREECLCD\_RMRS**

<b>Code</b>	<b>Description</b>
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 record 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 collected by certain FIA work units (SURVEY.RSCD = 22).

**3.10.46 YEAR AGE TAKEN**

**Year age taken.** The year the tree was aged.

# Chapter 4: Database Tables - Invasive Species; Understory Vegetation; Ground Cover

## Chapter Contents:

Section	Database table
4.1	<a href="#">Invasive Subplot Species Table</a>
4.2	<a href="#">Phase 2 Vegetation Subplot Species Table</a>
4.3	<a href="#">Phase 2 Vegetation Subplot Structure Table</a>
4.4	<a href="#">Ground Cover Table</a>

## 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	Phase 2 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

### 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) two-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.

**4.1.7 PLOT**

**Phase 2 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. 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 (Download: January 1, 2010).

**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 (Download: January 1, 2010).

**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	Phase 2 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

**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) two-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.

**4.2.7 PLOT**

**Phase 2 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 (Download: January 1, 2010).

**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 (Download: January 1, 2010).

**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 a 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	<b>Seedlings and Saplings:</b> 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	<b>Shrubs/Subshrubs/Woody Vines:</b> 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.
FB	<b>Forbs:</b> 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.

Code	Description
GR	<b>Graminoids:</b> 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	<b>Large Trees:</b> 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.

#### 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	Phase 2 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) two-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.

**4.3.6 PLOT**

**Phase 2 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.
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. If a tree species has been selected as a tally tree species by the particular FIA unit, that species is recorded as a tally tree species growth habit (TT), even if it grows as a shrub in some environments. Woody plants not on the unit's tally tree species list 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	<b>Tally Tree Species:</b> All core tree species and any core optional tree species selected by a particular FIA work unit. 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	<b>Non-tally Tree Species:</b> 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. Seedlings (any length, no minimum), saplings, and mature plants are included.
SH	<b>Shrubs/Subshrubs/Woody Vines:</b> 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	<b>Forbs:</b> Herbaceous, broad-leaved plants; includes non-woody-vines, ferns (does not include mosses and cryptobiotic crusts).
GR	<b>Graminoids:</b> Grasses and grass-like plants (includes rushes and sedges).

#### 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

## 4.4 Ground Cover Table

(Oracle table name: GRND\_CVR)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
4.4.1	CN	Sequence number	VARCHAR2(34)
4.4.2	PLT_CN	Plot sequence number	VARCHAR2(34)
4.4.3	INVYR	Inventory year	NUMBER(4)
4.4.4	STATECD	State code	NUMBER(4)
4.4.5	UNITCD	Survey unit code	NUMBER(2)
4.4.6	COUNTYCD	County code	NUMBER(3)
4.4.7	PLOT	Phase 2 plot number	NUMBER(5)
4.4.8	SUBP	Subplot number	NUMBER
4.4.9	TRANSECT	Transect	NUMBER(3)
4.4.10	CVR_PCT	Cover percent	NUMBER(3)
4.4.11	GRND_CVR_SEG	Ground cover segment number	NUMBER(1)
4.4.12	GRND_CVR_TYP	Ground cover type	VARCHAR2(4)
4.4.13	CYCLE	Inventory cycle number	NUMBER(2)
4.4.14	SUBCYCLE	Inventory subcycle number	NUMBER(2)
4.4.15	CREATED_BY	Created by	VARCHAR2(30)
4.4.16	CREATED_DATE	Created date	DATE
4.4.17	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
4.4.18	MODIFIED_BY	Modified by	VARCHAR2(30)
4.4.19	MODIFIED_DATE	Modified date	DATE
4.4.20	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.

### 4.4.1 CN

**Sequence number.** A unique sequence number used to identify a ground cover record.

**4.4.2 PLT\_CN**

**Plot sequence number.** Foreign key linking the ground cover record to the plot record.

**4.4.3 INVYR**

**Inventory year.** See SURVEY.INVYR description for definition.

**4.4.4 STATECD**

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

**4.4.5 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.

**4.4.6 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.

**4.4.7 PLOT**

**Phase 2 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.

**4.4.8 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 I](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

**4.4.9 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.

Subplot	Code	Description
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.

#### 4.4.10 **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.

#### 4.4.11 **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).

#### 4.4.12 **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, LITTER 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).

Code	Description
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.

#### 4.4.13 CYCLE

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

#### 4.4.14 SUBCYCLE

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

**4.4.15 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**4.4.16 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**4.4.17 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**4.4.18 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**4.4.19 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**4.4.20 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.



# Chapter 5: Database Tables - Down Woody Material

## Chapter Contents:

Section	Database table
5.1	Down Woody Material Visit Table
5.2	Down Woody Material Coarse Woody Debris Table
5.3	Down Woody Material Duff, Litter, Fuel Table
5.4	Down Woody Material Fine Woody Debris Table
5.5	Down Woody Material Microplot Fuel Table
5.6	Down Woody Material Residual Pile Table
5.7	Down Woody Material Transect Segment Table
5.8	Condition Down Woody Material Calculation Table

## 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	Phase 2 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 P2 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) two-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](#).

**5.1.6 PLOT**

**P2 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
01	January.
02	February.
03	March.
04	April.
05	May.
06	June.

<b>Code</b>	<b>Description</b>
07	July.
08	August.
09	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 2-6 indicate additional quality assurance data that are not included in the FIADB.

**Codes: QASTATCD**

<b>Code</b>	<b>Description</b>
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 - the same as a production plot but the measurement is taken under the supervision of a quality assurance crew.

**5.1.11 CRWTPYPCD**

**Crew type code.** A code identifying the type of crew measuring the plot.

**Codes: CRWTPYPCD**

<b>Code</b>	<b>Description</b>
1	Standard field crew.
2	QA crew (any QA crew member present collecting data).

**5.1.12 SMPKNDCD**

**Sample kind code.** A code indicating the type of plot installation.

**Codes: SMPKNDCD**

<b>Code</b>	<b>Description</b>
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**

<b>Code</b>	<b>Description</b>	<b>Distance measurement</b>
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.

<b>Code</b>	<b>Description</b>	<b>Distance measurement</b>
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**

<b>Code</b>	<b>Description</b>	<b>Distance measurement</b>
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.

**Codes: MICR\_SAMPLE\_METHOD**

<b>Code</b>	<b>Description</b>	<b>Distance measurement</b>
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 are 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**

<b>Code</b>	<b>Description</b>	<b>Distance Measurement</b>
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**

<b>Code</b>	<b>Description</b>	<b>Distance Measurement</b>
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 measured land conditions 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 measured land with National P2 DWM protocol.
3	Rapid assessment sampling option; includes BASE attributes along with other optional attributes selected for individual situations on measured land conditions 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:** QASTATUSCD and QA\_STATUS both reside in this table and have the same description and codes. QASTATUSCD 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**

<b>Code</b>	<b>Description</b>
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 (production plot) - 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	Phase 2 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	Cubic-foot volume of the piece	NUMBER
5.2.23	DRYBIO	Dry biomass of the piece	NUMBER
5.2.24	CARBON	Carbon mass 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 design	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	CARBON_AC_COND	Carbon per acre based on condition transect length actually measured, unadjusted	NUMBER
5.2.48	CARBON_AC_PLOT	Carbon per acre based on plot transect length actually measured, unadjusted	NUMBER
5.2.49	CARBON_AC_UNADJ	Carbon per acre based on target plot transect length, unadjusted	NUMBER
5.2.50	DRYBIO_AC_COND	Dry biomass per acre based on condition transect length actually measured, unadjusted	NUMBER
5.2.51	DRYBIO_AC_PLOT	Dry biomass per acre based on plot transect length actually measured, unadjusted	NUMBER
5.2.52	DRYBIO_AC_UNADJ	Dry biomass per acre based on target plot transect length, unadjusted	NUMBER

Subsection	Column name (attribute)	Descriptive name	Oracle data type
5.2.53	VOLCF_AC_COND	Cubic-foot volume per acre based on condition transect length actually measured, unadjusted	NUMBER
5.2.54	VOLCF_AC_PLOT	Cubic-foot volume per acre based on plot transect length actually measured, unadjusted	NUMBER
5.2.55	VOLCF_AC_UNADJ	Cubic-foot volume per acre based on target plot transect length, 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 record.

### 5.2.2 PLT\_CN

**Plot sequence number.** Foreign key linking the down woody material coarse woody debris record to the P2 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) two-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](#).

### 5.2.6 PLOT

**Phase 2 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 I](#) for

information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

## 5.2.8 TRANSECT

**Transect.** A code indicating the transect on which coarse woody debris was measured. Each code represents the azimuth of the transect line, extending out from subplot center.

**Codes: TRANSECT**

Code	Description
030	Transect extends 30 degrees from subplot center.
150	Transect extends 150 degrees from subplot center.
270	Transect extends 270 degrees 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 coarse woody debris (CWD) piece was sampled, and is defined in the COND table. 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 coarse woody debris (CWD) 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 CWD piece.

## 5.2.14 SPCD

**Species code.** An FIA tree species code. Refer to appendix F for codes. If the CWD 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 CWD 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  $\geq 5.0$  inches in diameter,  $\geq 5.0$  inches from the surface of the ground, and at least 3.0 feet long.

**Codes: DECAYCD**

<b>Decay Class</b>	<b>Structural Integrity</b>	<b>Texture of Rotten Portions</b>	<b>Color of Wood</b>	<b>Invasive Roots</b>	<b>Branches and Twigs</b>
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 CWD 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 of CWD 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 ( $\leq 15$ 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

**Cubic-foot volume of the piece.** The volume (in cubic feet) estimated for the CWD 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 CWD piece, adjusted for the degree of decomposition based on DECAYCD. Piece weight is reduced as it decomposes. 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 mass of the piece.** The oven-dry weight of carbon (in pounds) estimated for the CWD piece, adjusted for the degree of decomposition based on DECAYCD. Carbon mass of the piece is reduced as it decomposes. 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 CWD 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 design 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 of the regional design, 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 design, where transect length and configuration differ from the core design. When regional and core designs are overlaid, those CWD 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 design 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 design 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 design, where transect length and configuration differ from the core design. When regional and core designs are overlaid, those CWD 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 design 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 design 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 design, where transect length and configuration differ from the core design. When regional and core designs are overlaid, those CWD 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 design 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 design.** An estimate of the percent of the condition area covered by the CWD piece, within the regional design.

**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 CHRCD\_PNWRS; the code sets are the same.

**Codes: Charred by fire code**

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.** Orientation on slope.

**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 design and 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.
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.

Code	Description	Transect distance measurement
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 of coarse woody debris 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 ( $\leq 24.0$ 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 CWD 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 CWD pieces  $\geq 3.0$  feet in length.

**Codes: LENGTH\_CD**

Code	Description
1	CWD piece length is $\geq 3.0$ feet.
2	CWD piece length is $>0.5$ feet and $<3.0$ feet.

**5.2.47****CARBON\_AC\_COND**

**Carbon per acre based on condition transect length actually measured, unadjusted.**

This estimate is the oven-dry weight of carbon (in pounds) 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.

**5.2.48****CARBON\_AC\_PLOT**

**Carbon per acre based on plot transect length actually measured, unadjusted.** This estimate is the oven-dry weight of carbon (in pounds) 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****CARBON\_AC\_UNADJ**

**Carbon per acre based on target plot transect length, unadjusted.** This estimate is the oven-dry weight of carbon (in pounds) 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 carbon of CWD logs in an area of interest (e.g., State).

**5.2.50****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 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.

**5.2.51 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 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\_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 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).

**5.2.53 VOLCF\_AC\_COND**

**Cubic-foot volume per acre based on condition transect length actually measured, unadjusted.** This estimate is the 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.

**5.2.54 VOLCF\_AC\_PLOT**

**Cubic-foot volume per acre based on plot transect length actually measured, unadjusted.** This estimate is the 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.

**5.2.55 VOLCF\_AC\_UNADJ**

**Cubic-foot volume per acre based on target plot transect length, unadjusted.** This estimate is the 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 cubic-foot volume of CWD logs in an area of interest (e.g., State).

## 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	Phase 2 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 P2 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) two-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](#).

**5.3.6 PLOT**

**Phase 2 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.** A code indicating the azimuth of the subplot transect.

**Codes: TRANSECT**

Code	Description
030	Transect extends 30 degrees from subplot center.
150	Transect extends 150 degrees from subplot center.
270	Transect extends 270 degrees 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 I](#) 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 two sample locations on the transect (at 14 and 24 feet, slope distance). Starting in 2002, there is only one sample location on the transect (at 24 feet, slope distance).

**Codes: SMPLOCCD**

Code	Description
1	Duff, litter, and fuelbed sampled at 14 feet, slope distance.
2	Duff, litter, and fuelbed sampled at 24 feet, slope distance.

**5.3.10 MEASYEAR**

**Measurement year.** The year in which the plot was completed. MEASYEAR may differ from INVYR.

**5.3.11 CONDID**

**Condition class number.** The unique identifying number assigned to the condition where the duff/litter/fuel measurement(s) was taken, and is defined in the COND table. 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). 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). 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). 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 design and 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.

**5.3.22 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	Phase 2 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	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 record.

#### 5.4.2 PLT\_CN

**Plot sequence number.** Foreign key linking the down woody material fine woody debris record to the P2 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) two-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](#).

#### 5.4.6 PLOT

**Phase 2 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.** A code indicating the azimuth of the subplot transect on which the piece is sampled.

**Codes: TRANSECT**

<b>Code</b>	<b>Description</b>
030	Transect extends 30 degrees from subplot center.
150	Transect extends 150 degrees from subplot center.
270	Transect extends 270 degrees 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 I](#) 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, and is defined in the COND table. 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**

<b>Code</b>	<b>Description</b>
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**

<b>Code</b>	<b>Description</b>
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 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 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 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 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 that were installed to measure medium-sized FWD on the plot. This total length includes segment 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 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 that were installed to measure large-sized FWD in one condition on the plot.

**5.4.23 LARGE\_TL\_PLOT**

**Large-size class transect segment length on plot.** Sum of transect segment lengths 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 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**

<b>Code</b>	<b>Description</b>
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 design and sampling protocol used to collect fine woody debris data.

**Codes: FWD\_SAMPLE\_METHOD**

<b>Code</b>	<b>Description</b>	<b>Transect distance measurement</b>
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**

**Percent slope.** The average percent slope of the transect within the condition class being segmented. 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	Phase 2 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 P2 plot record.

**5.5.3 INVYR**

**Inventory year.** See SURVEY.IINVYR description for definition.

**5.5.4 STATECD**

**State code.** Bureau of the Census Federal Information Processing Standards (FIPS) two-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](#).

**5.5.6 PLOT**

**Phase 2 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 I](#) 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%
60	51-60%
70	61-70%
80	71-80%

Code	Description
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%
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%
80	71-80%
90	81-90%
99	91-100%

**5.5.14 LVSHRBHT**

**Live shrub height.** Indicates the height of the tallest 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 design and sampling protocol used to collect microplot fuels data.

**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 are 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	Phase 2 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	NUMBER
5.6.21	DRYBIO	Dry biomass of the residual pile	NUMBER
5.6.22	CARBON	Carbon mass	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
5.6.32	COMPHT	Compacted height of residual pile	NUMBER(2)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
5.6.33	DECAYCD	Decay class code of the residual pile	NUMBER(1)
5.6.34	HORIZ_BEGNDIST	Pile beginning horizontal distance	NUMBER(3,1)
5.6.35	HORIZ_ENDDIST	Pile ending horizontal distance	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	Subplot transect azimuth	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 P2 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) two-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](#).

**5.6.6 PLOT**

**Phase 2 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 I](#) 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**

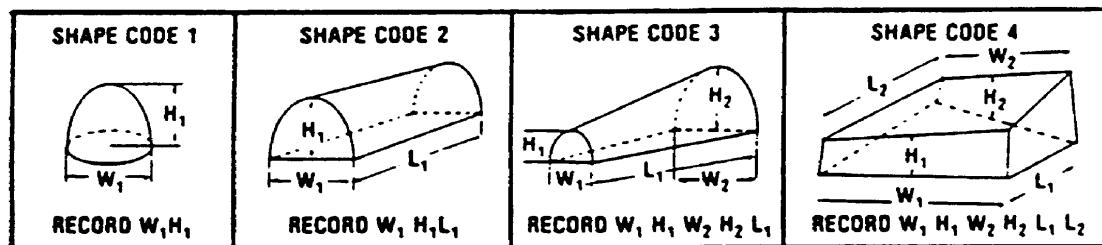
**Measurement year.** The year in which the plot was completed. MEASYEAR may differ from INVYR.

**5.6.10 CONDID**

**Condition class number.** The unique identifying number assigned to the condition where the pile center is located, and is defined in the COND table. 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 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) (see <http://www.fia.fs.fed.us/library/field-guides-methods-proc/>).

**Codes: SHAPECD**

Code	Description
1	Paraboloids.
2	Half-cylinder.
3	Half-frustum of cone.
4	Irregular solid.

**5.6.12 AZIMUTH**

**Azimuth.** The code indicating the azimuth from the subplot center to the pile. This azimuth centers on the pile so that it can be relocated. Use 360 for north.

**5.6.13 DENSITY**

**Density.** A code indicating the percent of the pile that consists of woody material  $\geq 3$  inches. Air, soil, rock, and live plants are not included in the estimate. Estimated to the nearest 10 percent.

**Codes: DENSITY**

<b>Code</b>	<b>Description</b>
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 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 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 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 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 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 in [SHAPECD](#).

**5.6.20 VOLCF**

**Gross cubic foot volume.** 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 mass.** The oven-dry 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 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**

**Pile beginning horizontal distance.** 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**

**Pile ending horizontal distance.** 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 design and 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/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**

**Subplot transect azimuth.** The azimuth of the transect on which the pile was sampled.



## 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	Phase 2 plot number	NUMBER(5)
5.7.7	SUBP	Subplot number	NUMBER(1)
5.7.8	TRANSECT	Transect code	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	Percent slope	NUMBER(3)
5.7.15	HORIZ_LENGTH	Horizontal length	NUMBER
5.7.16	HORIZ_BEGNDIST	Beginning horizontal distance of a coarse woody debris transect segment	NUMBER
5.7.17	HORIZ_ENDDIST	Ending horizontal distance of a coarse woody debris 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) two-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](#).

### 5.7.6 PLOT

**Phase 2 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 I](#) for information about plot designs. For more explanation about SUBP, contact the appropriate FIA work unit ([table 1-1](#)).

### 5.7.8 TRANSECT

**Transect code.** A code indicating the transect on which coarse woody debris was measured. Each code represents the azimuth of the transect line, extending out from subplot center.

**Codes: TRANSECT**

<b>Code</b>	<b>Description</b>
030	Transect extends 30 degrees from subplot center.
150	Transect extends 150 degrees from subplot center.
270	Transect extends 270 degrees 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, and is defined in the COND table. See COND.CONDID for details on the attributes which delineate a condition.

**SLOPE\_BEGNDIST**

**Beginning slope distance of the transect segment.** The location along the CWD transect where the segment begins, as 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.

**SLOPE\_ENDDIST**

**Ending slope distance of the transect segment.** The location along the CWD transect where the segment ends, as 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.

**5.7.14 SLOPE**

**Percent slope.** The average percent slope of the transect within the condition class being segmented. Slope ranges from 0 to 155 percent.

**5.7.15 HORIZ\_LENGTH**

**Horizontal length.** The horizontal length of the individual transect segment in feet.

**5.7.16 HORIZ\_BEGNDIST**

**Beginning horizontal distance of a coarse woody debris 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 a coarse woody debris 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 (horizontal distance, 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	Phase 2 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 identification	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 for small-sized pieces in the condition	NUMBER(13,12)
5.8.15	CONDPROP_FWD_MD	Proportion of fine woody debris transects for 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
5.8.23	CWD_LPA_ADJ	Number of coarse woody debris logs (pieces) per acre, adjusted	NUMBER

Subsection	Column name (attribute)	Descriptive name	Oracle data type
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 mass per acre in the condition	NUMBER
5.8.31	CWD_CARBON_UNADJ	Coarse woody debris carbon mass per acre, unadjusted	NUMBER
5.8.32	CWD_CARBON_ADJ	Coarse woody debris carbon mass per acre, 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 mass per acre 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 mass per acre, unadjusted	NUMBER
5.8.45	FWD_SM_CARBON_ADJ	Small-size class fine woody debris carbon mass per acre, 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 in all conditions, 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 mass per acre in the condition	NUMBER
5.8.57	FWD_MD_CARBON_UNADJ	Medium-size class fine woody debris carbon mass per acre, unadjusted	NUMBER
5.8.58	FWD_MD_CARBON_ADJ	Medium-size class fine woody debris carbon mass per acre, 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 mass per acre in the condition	NUMBER
5.8.70	FWD_LG_CARBON_UNADJ	Large-size class fine woody debris carbon mass per acre, unadjusted	NUMBER
5.8.71	FWD_LG_CARBON_ADJ	Large-size class fine woody debris carbon mass per acre, 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 for population estimates, unadjusted	NUMBER
5.8.77	PILE_VOLCF_ADJ	Cubic foot volume per acre of piles for population estimates, adjusted	NUMBER
5.8.78	PILE_DRYBIO_COND	Biomass per acre of piles in the condition for condition estimates	NUMBER
5.8.79	PILE_DRYBIO_UNADJ	Biomass per acre of piles for population estimates, unadjusted	NUMBER
5.8.80	PILE_DRYBIO_ADJ	Biomass per acre of piles for population estimates, adjusted	NUMBER
5.8.81	PILE_CARBON_COND	Carbon mass per acre of piles in the condition for condition estimates	NUMBER
5.8.82	PILE_CARBON_UNADJ	Carbon mass per acre of piles for population estimates, unadjusted	NUMBER
5.8.83	PILE_CARBON_ADJ	Carbon mass per acre of piles for population estimates, adjusted	NUMBER
5.8.84	FUEL_DEPTH	Average fuelbed depth in the condition	NUMBER

Subsection	Column name (attribute)	Descriptive name	Oracle data type
5.8.85	FUEL_BIOMASS	Average fuelbed biomass per acre in the condition	NUMBER
5.8.86	FUEL_CARBON	Average fuelbed carbon mass per acre in the condition	NUMBER
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 per acre 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 per acre 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, VALIDID, RSCD	N/A	CDC_UK
Unique	STATECD, COUNTYCD, PLOT, INVYR, CONDID, VALIDID, RSCD	N/A	CDC_UK2
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:

- 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 in this table.

### 5.8.2 STATECD

**State code.** Bureau of the Census Federal Information Processing Standards (FIPS) two-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](#).

### 5.8.4 PLOT

**Phase 2 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 that exists on the subplot, and is defined in the COND table. See COND.CONDID for details on the attributes which delineate a condition.

**5.8.8 EVALID**

**Evaluation identification.** The EVALID is the unique identifier that represents the population used to produce a type of estimate. The EVALID is generally in the format of a 2-digit State code, a 2-digit year code, and a 2-digit evaluation type code. For example, EVALID '261607' represents the Michigan 2016 evaluation for down woody material estimates.

**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.** This is the same condition record CN in the COND table.

**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.** This code is used by the PNWRS to indicate the plot design for DWM measurements. Only populated for certain FIA work units (SURVEY.RSCD =26, 27).

**Codes: PHASE**

Code	Description
P2	A phase 2 plot design.
P3	A phase 3 plot design.
P23	A 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 is 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 for small-sized pieces in the condition.** A proportion is 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 for medium-sized pieces in the condition.** A proportion is 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 is 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 is 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 in '\_COND' 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 in '\_UNADJ.'

**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 in '\_ADJ.'

**5.8.21 CWD\_LPA\_COND**

**Number of coarse woody debris logs (pieces) per acre in the condition.** This estimate is the sum of logs per acre from all CWD pieces tallied in one condition on a plot, and is 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.** This estimate is 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.** This estimate is 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.** This estimate is the sum of gross volume per acre (in cubic feet per acre) from all CWD pieces tallied in one condition on a plot, and is 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.** This estimate is the sum of gross volume per acre (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.** This estimate is the sum of gross volume per acre 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.** This estimate is the sum of dry biomass per acre (in oven-dry pounds per acre) from all CWD pieces tallied in one condition on a plot, and is 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.** This estimate is the sum of dry biomass per acre (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.** This estimate is the sum of dry biomass per acre (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 mass per acre in the condition.** This estimate is the sum of carbon mass per acre (in pounds per acre) from all CWD pieces tallied in one condition on a plot, and is 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 mass per acre, unadjusted.** This estimate is the sum of carbon mass per acre (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 mass per acre, adjusted.** This estimate is the sum of carbon mass per acre (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 in '\_COND' 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 in '\_UNADJ.'

#### 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 in '\_ADJ'.

#### 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.** This estimate is the sum of volume per acre (in cubic feet per acre) of small-size class FWD tallied in one condition on a plot, and is 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.** This estimate is the sum of volume per acre (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.** This estimate is the sum of volume per acre (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.** This estimate is the sum of dry biomass per acre (in oven-dry pounds per acre) of small-size class FWD tallied in one condition on a plot, and is 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.** This estimate is the sum of dry biomass per acre (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.** This estimate is the sum of dry biomass per acre (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 mass per acre in the condition.** This estimate is the sum of carbon mass per acre (in pounds per acre) of small-size class FWD tallied in one condition on a plot, and is 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 mass per acre, unadjusted.** This estimate is the sum of carbon mass per acre (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 mass per acre, adjusted.** This estimate is the sum of carbon mass per acre (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 in '\_COND' use this length in the estimation equation.

#### 5.8.47 **FWD\_MD\_TL\_UNADJ**

**Medium-size class fine woody debris transect length in all conditions, 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 in '\_UNADJ'.

#### 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 in '\_ADJ'.

#### 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.** This estimate is the sum of volume per acre (in cubic feet per acre) of medium-size class FWD tallied in one condition on a plot, and is 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.** This estimate is the sum of volume per acre (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.** This estimate is the sum of volume per acre (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.** This estimate is the sum of dry biomass per acre (in oven-dry pounds per acre) of medium-size class FWD tallied in one condition on a plot, and is 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.** This estimate is the sum of dry biomass per acre (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.** This estimate is the sum of dry biomass per acre (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 mass per acre in the condition.** This estimate is the sum of carbon mass per acre (in pounds per acre) of medium-size class FWD tallied in one condition on a plot, and is 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 mass per acre, unadjusted.** This estimate is the sum of carbon mass per acre (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 mass per acre, adjusted.** This estimate is the sum of carbon mass per acre (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 the condition-weighted per-acre estimates of volume, biomass, and carbon for large-size class FWD in the condition. Attribute columns that end in '\_COND' 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 in '\_UNADJ'.

**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 in '\_ADJ'

**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.** This estimate is the sum of volume per acre (in cubic feet per acre) of large-size class FWD tallied in one condition on a plot, and is 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.** This estimate is the sum of volume per acre (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.** This estimate is the sum of volume per acre (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.** This estimate is the sum of dry biomass per acre (in oven-dry pounds per acre) of large-size class FWD tallied in one condition on a plot, and is 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.** This estimate is the sum of dry biomass per acre (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.** This estimate is the sum of dry biomass per acre (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 mass per acre in the condition.** This estimate is the sum of carbon mass per acre (in pounds per acre) of large-size class FWD tallied in one condition on a plot, and is 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 mass per acre, unadjusted.** This estimate is the sum of carbon mass per acre (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 mass per acre, adjusted.** This estimate is the sum of carbon mass per acre (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.** This value is the sum of the area (in acres) of all subplots or macroplots specified in the sampling design. If the macroplot was sampled (PLOT\_BASIS=MACR), this value would be 1 because each macroplot is  $\frac{1}{4}$  acre. If the subplot was sampled (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.** This value is 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 per acre (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 for population estimates, unadjusted.** Sum of the volume per acre (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 for population estimates, adjusted.** Sum of the volume per acre (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, for condition estimates.** The sum of dry biomass per acre (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 for population estimates, unadjusted.** Sum of dry biomass per acre (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 for population estimates, adjusted.** Sum of dry biomass per acre (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 mass per acre of piles in the condition, for condition estimates.** The sum of carbon mass per acre (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 mass per acre of piles for population estimates, unadjusted.** Sum of carbon mass per acre (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 mass per acre of piles for population estimates, adjusted.** Sum of carbon mass per acre (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 FUEL\_BIOMASS**

**Average fuelbed biomass per acre in the condition.** The average biomass per acre (in oven-dry pounds per acre) of the fuelbed in the condition on the plot.

**5.8.86 FUEL\_CARBON**

**Average fuelbed carbon mass per acre in the condition.** The average carbon mass per acre (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 per acre (in pounds per acre) of duff in the condition on the plot.

**5.8.89 DUFF\_CARBON**

**Average duff carbon per acre in the condition.** The average carbon mass per acre (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 per acre (in oven-dry pounds per acre) of litter in the condition on the plot.

**5.8.92 LITTER\_CARBON**

**Average litter carbon per acre in the condition.** The average carbon mass per acre (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.** Depth is measured at the 24-foot (slope distance) location on each transect. This attribute is a count of all locations measured within one condition, and is used to estimate an average for biomass or carbon of duff, litter, or fuelbed in one condition on the plot.

**5.8.94 DUFF\_TC\_UNADJ**

**Number of duff, litter, and fuelbed sampling points on the entire plot, unadjusted.** Depth is measured at the 24-foot (slope distance) location on each transect. This attribute is a count of all locations measured on the plot, before adjustment for partially nonsampled plots in the stratum. It is used to estimate an average for biomass or carbon of duff, litter, or fuelbed on the plot.

**5.8.95 DUFF\_TC\_ADJ**

**Number of duff, litter, and fuelbed sampling points on the entire plot, adjusted.** Depth is measured at the 24-foot (slope distance) location on each transect. This attribute is a count of all locations measured on the plot, after adjustment for partially nonsampled plots in the stratum. It is used to estimate an average for biomass or carbon of duff, litter, or fuelbed on the plot.

**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.** 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**

<b>Code</b>	<b>Description</b>
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)-Alaska.
33	Southern Research Station (SRS).

**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 in '\_COND' 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 one condition 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 ending in '\_UNADJ'.

**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 in '\_ADJ'.

**5.8.110 CONDPROP\_PILE**

**Proportion of piles plot area or transect lengths in the condition.** A proportion is 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).



# Chapter 6: Database Tables - Northern Research Station (NRS) Tree Seedling Regeneration

## Chapter Contents:

Section	Database table
6.1	<a href="#">Plot Regeneration Table</a>
6.2	<a href="#">Subplot Regeneration Table</a>
6.3	<a href="#">Seedling Regeneration Table</a>

In 2012, the Northern Research Station (SURVEY.RSCD = 23 or 24) implemented a new protocol, Tree Seedling Regeneration, on a subset of the P2 grid (P2 plus) to estimate regeneration success (McWilliams et. al. 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	Phase 2 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) two-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.

**6.1.7 PLOT**

**Phase 2 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 enclosure.
2	Low - no browsing observed, vigorous seedling present (no enclosure 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	Phase 2 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_REASN_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) two-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.

**6.2.8 PLOT**

**Phase 2 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.

**Codes: REGEN\_SUBP\_STATUS\_CD**

<b>Code</b>	<b>Description</b>
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 subplot was not sampled for advanced regeneration.

**Codes: REGEN\_NONSAMPLE\_REASN\_CD**

<b>Code</b>	<b>Description</b>
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.

**Codes: SUBPLOT\_SITE\_LIMITATIONS**

<b>Code</b>	<b>Description</b>
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**

<b>Code</b>	<b>Description</b>
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.

**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 can't be assessed (Core SEEDLINGCOUNT is still measured).
4	Advance regeneration nonsampled - QA/QC did not measure subplot/microplot for tree/sapling/seedling data (QA STATUS = 2-6 only).
5	Nonsampled - subplot not sampled (SUBPLOT STATUS = 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	Phase 2 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

Key Type	Column(s) order	Tables to link	Abbreviated notation
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) two-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.

**6.3.9 PLOT**

**Phase 2 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**

<b>Code</b>	<b>Description</b>
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 regen 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 on presentation tables. Codes and their associated names (see REF\_SPECIES\_GROUP.[NAME](#)) are shown in appendix E. Individual tree species and corresponding species group codes are shown in [appendix F](#).

**6.3.14 SEEDLING\_SOURCE\_CD**

**Seedling source code.** A code indicating the source of the seedlings.

**Codes: SEEDLING\_SOURCE\_CD**

<b>Code</b>	<b>Description</b>
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**

<b>Code</b>	<b>Description</b>
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 by 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 based on the sample design. For fixed-radius plots taken with the mapped plot design (PLOT.DESIGNCD = 1), TPA\_UNADJ is the product of a constant derived from the plot size (74.965282) and the seedling count sampled on microplots. 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.

# Chapter 7: Database Tables - Population

## Chapter Contents:

Section	Database table
7.1	Population Estimation Unit Table
7.2	Population Evaluation Table
7.3	Population Evaluation Attribute Table
7.4	Population Evaluation Group Table
7.5	Population Evaluation Type Table
7.6	Population Plot Stratum Assignment Table
7.7	Population Stratum Table

## 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 Population Estimation Unit Table

(Oracle table name: POP\_ESTN\_UNIT)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
7.1.1	CN	Sequence number	VARCHAR2(34)
7.1.2	EVAL_CN	Evaluation sequence number	VARCHAR2(34)
7.1.3	RSCD	Region or station code	NUMBER(2)
7.1.4	VALID	Evaluation identifier	NUMBER(6)
7.1.5	ESTN_UNIT	Estimation unit	NUMBER(6)
7.1.6	ESTN_UNIT_DESCR	Estimation unit description	VARCHAR2(255)
7.1.7	STATECD	State code	NUMBER(4)
7.1.8	AREALAND_EU	Land area within the estimation unit	NUMBER(12,2)
7.1.9	AREATOT_EU	Total area within the estimation unit	NUMBER(12,2)
7.1.10	AREA_USED	Area used to calculate all expansion factors	NUMBER(12,2)
7.1.11	AREA_SOURCE	Area source	VARCHAR2(50)
7.1.12	P1PNTCNT_EU	Phase 1 point count for the estimation unit	NUMBER(12)
7.1.13	P1SOURCE	Phase 1 source	VARCHAR2(50)
7.1.14	CREATED_BY	Created by	VARCHAR2(30)
7.1.15	CREATED_DATE	Created date	DATE
7.1.16	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
7.1.17	MODIFIED_BY	Modified by	VARCHAR2(30)
7.1.18	MODIFIED_DATE	Modified date	DATE
7.1.19	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

### 7.1.1 CN

**Sequence number.** A unique sequence number used to identify a population estimation unit record.

### 7.1.2 EVAL\_CN

**Evaluation sequence number.** Foreign key linking the estimation unit record to the evaluation record.

### 7.1.3 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)-Alaska.
33	Southern Research Station (SRS).

### 7.1.4 EVALID

**Evaluation identifier.** The EVALID is the unique identifier that represents the population used to produce a type of estimate. The EVALID is generally in the format of a 2-digit State code, a 2-digit year code, and a 2-digit evaluation type code. 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

### 7.1.5 ESTN\_UNIT

**Estimation unit.** The specific geographic area that is stratified. Estimation units are often determined by a combination of geographical boundaries, sampling intensity and ownership.

### 7.1.6 ESTN\_UNIT\_DESCR

**Estimation unit description.** A description of the estimation unit (e.g., name of the county).

### 7.1.7 STATECD

**State code.** Bureau of the Census Federal Information Processing Standards (FIPS) two-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.

**7.1.8 AREALAND\_EU**

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

**7.1.9 AREATOT\_EU**

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

**7.1.10 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.

**7.1.11 AREA\_SOURCE**

**Area Source.** Identifies 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 values are 'US CENSUS 2000' or 'PIXEL COUNT'

**7.1.12 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.

**7.1.13 P1SOURCE**

**Phase 1 source.** Identifies the Phase 1 data source used for this stratification. Examples are 'NLCD' and 'AERIAL PHOTOS'.

**7.1.14 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**7.1.15 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**7.1.16 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**7.1.17 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**7.1.18 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**7.1.19 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.



## 7.2 Population Evaluation Table

(Oracle table name: POP\_EVAL)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
7.2.1	CN	Sequence number	VARCHAR2(34)
7.2.2	EVAL_GRP_CN	Evaluation group sequence number	VARCHAR2(34)
7.2.3	RSCD	Region or Station code	NUMBER(2)
7.2.4	VALID	Evaluation identifier	NUMBER(6)
7.2.5	EVAL_DESCR	Evaluation description	VARCHAR2(255)
7.2.6	STATECD	State code	NUMBER(4)
7.2.7	LOCATION_NM	Location name	VARCHAR2(255)
7.2.8	REPORT_YEAR_NM	Report year name	VARCHAR2(255)
7.2.9	START_INVYR	Start inventory year	NUMBER(4)
7.2.10	END_INVYR	End inventory year	NUMBER(4)
7.2.11	LAND_ONLY	Land only	VARCHAR2(1)
7.2.12	TIMBERLAND_ONLY	Timberland only	VARCHAR2(1)
7.2.13	GROWTH_ACCT	Growth accounting	VARCHAR2(1)
7.2.14	ESTN_METHOD	Estimation method	VARCHAR2(40)
7.2.15	NOTES	Notes	VARCHAR2(2000)
7.2.16	CREATED_BY	Created by	VARCHAR2(30)
7.2.17	CREATED_DATE	Created date	DATE
7.2.18	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
7.2.19	MODIFIED_BY	Modified by	VARCHAR2(30)
7.2.20	MODIFIED_DATE	Modified date	DATE
7.2.21	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, VALID	N/A	PEV_UK
Foreign	EVAL_GRP_CN	POP_EVAL to POP_EVAL_GRP	PEV_PEG_FK

### 7.2.1 CN

**Sequence number.** A unique sequence number used to identify a population evaluation record.

### 7.2.2 EVAL\_GRP\_CN

**Evaluation group sequence number.** Foreign key linking the population evaluation record to the population evaluation group record.

### 7.2.3 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)-Alaska.
33	Southern Research Station (SRS).

### 7.2.4 EVALID

**Evaluation identifier.** The EVALID is the unique identifier that represents the population used to produce a type of estimate. The EVALID is generally in the format of a 2-digit State code, a 2-digit year code, and a 2-digit evaluation type code. 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.

### 7.2.5 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 the evaluation can be used to compute (e.g., all lands, area, volume, growth, removals, mortality).

### 7.2.6 STATECD

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

### 7.2.7 LOCATION\_NM

**Location name.** Geographic area as it would appear in the title of a report.

### 7.2.8 REPORT\_YEAR\_NM

**Report year name.** The data collection years that would appear in the title of a report.

**7.2.9 START\_INVYR**

**Start inventory year.** The starting year for the data included in the evaluation.

**7.2.10 END\_INVYR**

**End inventory year.** The ending year for the data included in the evaluation.

**7.2.11 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.

**7.2.12 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.

**7.2.13 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.

**7.2.14 ESTN\_METHOD**

**Estimation method.** Describes the method of estimation. Post-stratification is used for most inventories where PLOT.MANUAL  $\geq$ 1.0.

**Values**

- Simple random sampling
- Stratified random sampling
- Double sampling for stratification

- Post-stratification
- Subsampling units of unequal size

**7.2.15 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.

**7.2.16 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**7.2.17 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**7.2.18 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**7.2.19 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**7.2.20 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**7.2.21 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

## 7.3 Population Evaluation Attribute Table

(Oracle table name: POP\_EVAL\_ATTRIBUTE)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
7.3.1	CN	Sequence number	VARCHAR2(34)
7.3.2	EVAL_CN	Evaluation sequence number	VARCHAR2(34)
7.3.3	ATTRIBUTE_NBR	Attribute number	NUMBER(4)
7.3.4	STATECD	State code	NUMBER(4)
7.3.5	CREATED_BY	Created by	VARCHAR2(30)
7.3.6	CREATED_DATE	Created date	DATE
7.3.7	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
7.3.8	MODIFIED_BY	Modified by	VARCHAR2(30)
7.3.9	MODIFIED_DATE	Modified date	DATE
7.3.10	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	ATTRIBUTE_NBR	POP_EVAL_ATTRIBUTE to REF_POP_ATTRIBUTE	PEA_PAE_FK
Foreign	EVAL_CN	POP_EVAL_ATTRIBUTE to POP_EVAL	PEA_PEV_FK

### 7.3.1 CN

**Sequence number.** A unique sequence number used to identify a population evaluation attribute record.

### 7.3.2 EVAL\_CN

**Evaluation sequence number.** Foreign key linking the population evaluation attribute record to the population evaluation record.

### 7.3.3 ATTRIBUTE\_NBR

**Attribute number.** Foreign key linking the population evaluation attribute record to the reference population attribute record.

### 7.3.4 STATECD

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

### 7.3.5 CREATED\_BY

**Created by.** See SURVEY.CREATED\_BY description for definition.

### 7.3.6 CREATED\_DATE

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**7.3.7 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**7.3.8 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**7.3.9 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**7.3.10 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

## 7.4 Population Evaluation Group Table

(Oracle table name: POP\_EVAL\_GRP)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
7.4.1	CN	Sequence number	VARCHAR2(34)
7.4.2	RSCD	Region or Station code	NUMBER(2)
7.4.3	EVAL_GRP	Evaluation group	NUMBER(6)
7.4.4	EVAL_GRP_DESCR	Evaluation group description	VARCHAR2(255)
7.4.5	STATECD	State code	NUMBER(4)
7.4.6	NOTES	Notes	VARCHAR2(2000)
7.4.7	CREATED_BY	Created by	VARCHAR2(30)
7.4.8	CREATED_DATE	Created date	DATE
7.4.9	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
7.4.10	MODIFIED_BY	Modified by	VARCHAR2(30)
7.4.11	MODIFIED_DATE	Modified date	DATE
7.4.12	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

### 7.4.1 CN

**Sequence number.** A unique sequence number used to identify a population evaluation group record.

### 7.4.2 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)-Alaska.
33	Southern Research Station (SRS).

**7.4.3 EVAL\_GRP**

**Evaluation group.** An evaluation group identifies the evaluations that were used in producing a core set of tables. In some cases one evaluation will be used for area and volume and another evaluation for growth, removals and mortality. The value of this attribute is used to select the appropriate State and year of interest to produce a set of summary tables.

**7.4.4 EVAL\_GRP\_DESCR**

**Evaluation group description.** A description of the evaluation group that includes the State and range of years for the evaluation, for example, "Minnesota: 2004;2005;2006;2007;2008". This is useful to include in a summary report to clearly identify the source of the data.

**7.4.5 STATECD**

**State code.** Bureau of the Census Federal Information Processing Standards (FIPS) two-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.

**7.4.6 NOTES**

**Notes.** Population evaluation group notes.

**7.4.7 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**7.4.8 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**7.4.9 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**7.4.10 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**7.4.11 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**7.4.12 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

## 7.5 Population Evaluation Type Table

(Oracle table name: POP\_EVAL\_TYP)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
7.5.1	CN	Sequence number	VARCHAR2(34)
7.5.2	EVAL_GRP_CN	Evaluation group sequence number	VARCHAR2(34)
7.5.3	EVAL_CN	Evaluation sequence number	VARCHAR2(34)
7.5.4	EVAL_TYP	Evaluation type	VARCHAR2(15)
7.5.5	CREATED_BY	Created by	VARCHAR2(30)
7.5.6	CREATED_DATE	Created date	DATE
7.5.7	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
7.5.8	MODIFIED_BY	Modified by	VARCHAR2(30)
7.5.9	MODIFIED_DATE	Modified date	DATE
7.5.10	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

### 7.5.1 CN

**Sequence number.** A unique sequence number used to identify a population evaluation type record.

### 7.5.2 EVAL\_GRP\_CN

**Evaluation group sequence number.** Foreign key linking the population evaluation type record to the population evaluation group record.

### 7.5.3 EVAL\_CN

**Evaluation sequence number.** Foreign key linking the population evaluation type record to the population evaluation record.

### 7.5.4 EVAL\_TYP

**Evaluation type.** Describes 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). At the present time, nine types of evaluations can be produced. See also the [REF\\_POP\\_EVAL\\_TYP\\_DESCR](#) table.

**Codes: EVAL\_TYP**

Evaluation type	Evaluation type description
EXPALL	All plots: sampled and nonsampled.
EXPCHNG	Sampled plots used for area change estimates.
EXPCURR	Sampled plots used for current area and condition-level estimates.
EXPDWM	Sampled plots used for down woody material estimates.
EXPGROW	Sampled plots used for tree growth estimates.
EXPMORT	Sampled plots used for tree mortality estimates.
EXPREGEN	Sampled plots used for tree regeneration estimates.
EXPREMV	Sampled plots used for tree removal estimates.
EXPVOL	Sampled plots used for tree inventory estimates.

**7.5.5 CREATED\_BY**

**Created by.** See SURVEY.[CREATED\\_BY](#) description for definition.

**7.5.6 CREATED\_DATE**

**Created date.** See SURVEY.[CREATED\\_DATE](#) description for definition.

**7.5.7 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.[CREATED\\_IN\\_INSTANCE](#) description for definition.

**7.5.8 MODIFIED\_BY**

**Modified by.** See SURVEY.[MODIFIED\\_BY](#) description for definition.

**7.5.9 MODIFIED\_DATE**

**Modified date.** See SURVEY.[MODIFIED\\_DATE](#) description for definition.

**7.5.10 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.[MODIFIED\\_IN\\_INSTANCE](#) description for definition.

## 7.6 Population Plot Stratum Assignment Table

(Oracle table name: POP\_PLOT\_STRATUM\_ASSGN)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
7.6.1	CN	Sequence number	VARCHAR2(34)
7.6.2	STRATUM_CN	Stratum sequence number	VARCHAR2(34)
7.6.3	PLT_CN	Plot sequence number	VARCHAR2(34)
7.6.4	STATECD	State code	NUMBER(4)
7.6.5	INVYR	Inventory year	NUMBER(4)
7.6.6	UNITCD	Survey unit code	NUMBER(2)
7.6.7	COUNTYCD	County code	NUMBER(3)
7.6.8	PLOT	Phase 2 plot number	NUMBER(5)
7.6.9	RSCD	Region or Station code	NUMBER(2)
7.6.10	EVALID	Evaluation identifier	NUMBER(6)
7.6.11	ESTN_UNIT	Estimation unit	NUMBER(6)
7.6.12	STRATUMCD	Stratum code	NUMBER(6)
7.6.13	CREATED_BY	Created by	VARCHAR2(30)
7.6.14	CREATED_DATE	Created date	DATE
7.6.15	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
7.6.16	MODIFIED_BY	Modified by	VARCHAR2(30)
7.6.17	MODIFIED_DATE	Modified date	DATE
7.6.18	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

### 7.6.1 CN

**Sequence number.** A unique sequence number used to identify a population plot stratum assignment record.

### 7.6.2 STRATUM\_CN

**Stratum sequence number.** Foreign key linking the population plot stratum assignment record to the population stratum record.

**7.6.3 PLT\_CN**

**Plot sequence number.** Foreign key linking the population plot stratum assignment record to the plot record.

**7.6.4 STATECD**

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

**7.6.5 INVYR**

**Inventory year.** See SURVEY.INVYR description for definition.

**7.6.6 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.

**7.6.7 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.

**7.6.8 PLOT**

**Phase 2 plot number.** An identifier for a plot. Along with INVYR, STATECD, UNITCD, COUNTYCD, PLOT may be used to uniquely identify a plot.

**7.6.9 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)-Alaska.
33	Southern Research Station (SRS).

**7.6.10 EVALID**

**Evaluation identifier.** The EVALID is the unique identifier that represents the population used to produce a type of estimate. The EVALID is generally in the format of a 2-digit State code, a 2-digit year code, and a 2-digit evaluation type code. 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.

#### 7.6.11 **ESTN\_UNIT**

**Estimation unit.** The specific geographic area that is stratified. Estimation units are often determined by a combination of geographical boundaries, sampling intensity and ownership.

#### 7.6.12 **STRATUMCD**

**Stratum code.** The code used for a particular stratum, which is unique within an RSCD, EVALID, ESTN\_UNIT.

#### 7.6.13 **CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

#### 7.6.14 **CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

#### 7.6.15 **CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

#### 7.6.16 **MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

#### 7.6.17 **MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

#### 7.6.18 **MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.



## 7.7 Population Stratum Table

(Oracle table name: POP\_STRATUM)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
7.7.1	CN	Sequence number	VARCHAR2(34)
7.7.2	ESTN_UNIT_CN	Estimation unit sequence number	VARCHAR2(34)
7.7.3	RSCD	Region or Station code	NUMBER(2)
7.7.4	EVALID	Evaluation identifier	NUMBER(6)
7.7.5	ESTN_UNIT	Estimation unit	NUMBER(6)
7.7.6	STRATUMCD	Stratum code	NUMBER(6)
7.7.7	STRATUM_DESCR	Stratum description	VARCHAR2(255)
7.7.8	STATECD	State code	NUMBER(4)
7.7.9	P1POINTCNT	Phase 1 point count	NUMBER(12)
7.7.10	P2POINTCNT	Phase 2 point count	NUMBER(12)
7.7.11	EXPNS	Expansion factor	NUMBER
7.7.12	ADJ_FACTOR_MACR	Adjustment factor for the macroplot	NUMBER
7.7.13	ADJ_FACTOR_SUBP	Adjustment factor for the subplot	NUMBER
7.7.14	ADJ_FACTOR_MICR	Adjustment factor for the microplot	NUMBER
7.7.15	ADJ_FACTOR_CWD	Adjustment factor for coarse woody debris	NUMBER
7.7.16	ADJ_FACTOR_FWD_SM	Adjustment factor for small fine woody debris	NUMBER
7.7.17	ADJ_FACTOR_FWD_LG	Adjustment factor for large fine woody debris	NUMBER
7.7.18	ADJ_FACTOR_DUFF	Adjustment factor for duff	NUMBER
7.7.19	CREATED_BY	Created by	VARCHAR2(30)
7.7.20	CREATED_DATE	Created date	DATE
7.7.21	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
7.7.22	MODIFIED_BY	Modified by	VARCHAR2(30)
7.7.23	MODIFIED_DATE	Modified date	DATE
7.7.24	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)
7.7.25	ADJ_FACTOR_PILE	Adjustment factor for piles	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

**7.7.1 CN**

**Sequence number.** A unique sequence number used to identify a stratum record.

**7.7.2 ESTN\_UNIT\_CN**

**Estimation unit sequence number.** Foreign key linking the stratum record to the estimation unit record.

**7.7.3 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)-Alaska.
33	Southern Research Station (SRS).

**7.7.4 EVALID**

**Evaluation identifier.** The EVALID is the unique identifier that represents the population used to produce a type of estimate. The EVALID is generally in the format of a 2-digit State code, a 2-digit year code, and a 2-digit evaluation type code. 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.

**7.7.5 ESTN\_UNIT**

**Estimation unit.** The specific geographic area that is stratified. Estimation units are often determined by a combination of geographical boundaries, sampling intensity and ownership.

**7.7.6 STRATUMCD**

**Stratum code.** A number used to uniquely identify a stratum within an estimation unit.

**7.7.7 STRATUM\_DESCR**

**Stratum description.** Strata are usually based on land use (e.g., forest or nonforest) but may also be based on other criteria such as ownership (e.g., private/public/national forest).

**7.7.8 STATECD**

**State code.** Bureau of the Census Federal Information Processing Standards (FIPS) two-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.

**7.7.9 P1POINTCNT**

**Phase 1 point count.** The number of basic units (pixels or points) in the stratum.

**7.7.10 P2POINTCNT**

**Phase 2 point count.** The number of field plots that are within the stratum.

**7.7.11 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.

**7.7.12 ADJ\_FACTOR\_MACR**

**Adjustment factor for the macroplot.** A value that adjusts the population estimates to account for partially nonsampled plots (access denied and hazardous portions). 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 (TREE.TPA\_UNADJ, TREE.TPAMORT\_UNADJ, TREE.TPAREMV\_UNADJ, TREE.TPAGROW\_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.

**7.7.13 ADJ\_FACTOR\_SUBP**

**Adjustment factor for the subplot.** A value that adjusts the population estimates to account for partially nonsampled plots (access denied and hazardous portions). 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 (TREE.TPA\_UNADJ, TREE.TPAMORT\_UNADJ, TREE.TPAREMV\_UNADJ, TREE.TPAGROW\_UNADJ) to provide tree estimates for sampled land. Refer to [The Forest Inventory and Analysis Database: Population Estimation User Guide](#) for detailed examples.

**7.7.14 ADJ\_FACTOR\_MICR**

**Adjustment factor for the microplot.** A value that adjusts population estimates to account for partially nonsampled plots (access denied and hazardous portions). It is used with POP\_STRATUM.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.

**7.7.15 ADJ\_FACTOR\_CWD**

**Adjustment factor for coarse woody debris.** Ratio of transect length that was sampled for coarse woody debris on all partially and fully sampled plots in stratum.

**7.7.16 ADJ\_FACTOR\_FWD\_SM**

**Adjustment factor for small fine woody debris.** Ratio of transect length that was sampled for small fine woody debris on all partially and fully sampled plots in stratum.

**7.7.17 ADJ\_FACTOR\_FWD\_LG**

**Adjustment factor for large fine woody debris.** Ratio of transect length that was sampled for large fine woody debris on all partially and fully sampled plots in stratum.

**7.7.18 ADJ\_FACTOR\_DUFF**

**Adjustment factor for duff.** Ratio of points that were sampled for duff and litter to target number of points for all partially and fully sampled plots in stratum.

**7.7.19 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**7.7.20 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**7.7.21 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**7.7.22 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**7.7.23 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**7.7.24 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

**7.7.25 ADJ\_FACTOR\_PILE**

**Adjustment factor for piles.** Ratio of target divided by sampled transect length or area for piles on all partially and fully sampled plots in stratum.

# Chapter 8: Database Tables - Plot Geometry; Plot Snapshot

## Chapter Contents:

Section	Database table
8.1	<a href="#">Plot Geometry Table</a>
8.2	<a href="#">Plot Snapshot Table</a>

## 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 Plot Geometry Table

(Oracle table name: PLOTGEOM)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
8.1.1	CN	Sequence number	VARCHAR2(34)
8.1.2	STATECD	State code	NUMBER
8.1.3	INVYR	Inventory year	NUMBER
8.1.4	UNITCD	Survey unit code	NUMBER
8.1.5	COUNTYCD	County code	NUMBER
8.1.6	PLOT	Phase 2 plot number	NUMBER
8.1.7	LAT	Latitude	NUMBER
8.1.8	LON	Longitude	NUMBER
8.1.9	CONGCD	Congressional district code	NUMBER
8.1.10	ECOSUBCD	Ecological subsection code	VARCHAR2(7)
8.1.11	HUC	Hydrologic unit code	NUMBER
8.1.12	EMAP_HEX	EMAP hexagon	NUMBER
8.1.13	FIPSCOUNTY	FIPS county code	NUMBER
8.1.14	ROADLESSCD	Roadless code	VARCHAR2(4)
8.1.15	CREATED_BY	Created by	VARCHAR2(30)
8.1.16	CREATED_DATE	Created date	DATE
8.1.17	CREATED_IN_INSTANCE	Created in instance	NUMBER(6)
8.1.18	MODIFIED_BY	Modified by	VARCHAR2(30)
8.1.19	MODIFIED_DATE	Modified date	DATE
8.1.20	MODIFIED_IN_INSTANCE	Modified in instance	NUMBER(6)
8.1.21	ALP_ADFORCD	Administrative forest code	NUMBER

Key Type	Column(s) order	Tables to link	Abbreviated notation
Primary	CN	N/A	PLOTGEOM_PK
Foreign	CN	PLOTGEOM to PLOT	PLOTGEOM_PLT_FK

### 8.1.1 CN

**Sequence number.** A unique sequence number used to identify a plot geom record, and is equal to the CN identifier in the PLOT table.

### 8.1.2 STATECD

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

### 8.1.3 INVYR

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

**8.1.4 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.

**8.1.5 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.

**8.1.6 PLOT**

**Phase 2 plot number.** An identifier for a plot. Along with INVYR, STATECD, UNITCD, COUNTYCD, PLOT may be used to uniquely identify a plot.

**8.1.7 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.

**8.1.8 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.

**8.1.9 CONGCD**

**Congressional district code.** A territorial division of a State from which a member of the U.S. House of Representatives is elected. See PLOT.[CONGCD](#) for other details related to congressional code.

**8.1.10 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.

**8.1.11 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: <http://water.usgs.gov/GIS/huc.html>.

**8.1.12 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. Populated for annual inventory and may be populated for periodic inventory.

**8.1.13 FIPSCOUNTY**

**FIPS county code.** State code concatenated with the county code.

**8.1.14 ROADLESSCD**

**Roadless code.** Code representing 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 file is available at the [National Inventoried Roadless Areas](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsm8_037001.html) web page ([http://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fsm8\\_037001.html](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsm8_037001.html)).

**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.

**8.1.15 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**8.1.16 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**8.1.17 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**8.1.18 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**8.1.19 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**8.1.20 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

**8.1.21 ALP\_ADFORCD**

**Administrative forest code.** Identifies the administrative unit (Forest Service Region and National Forest) in which the plot center is located. The first two digits of the four digit code are for the region number and the last two 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.

## 8.2 Plot Snapshot Table

(Oracle table name: PLOTSNAP)

Subsection	Column name	Descriptive name	Oracle data type
8.2.1	CN	Sequence number	VARCHAR2(34)
8.2.2	SRV_CN	Survey sequence number	VARCHAR2(34)
8.2.3	CTY_CN	County sequence number	VARCHAR2(34)
8.2.4	PREV_PLT_CN	Previous plot sequence number	VARCHAR2(34)
8.2.5	INVYR	Inventory year	NUMBER(4)
8.2.6	STATECD	State code	NUMBER(4)
8.2.7	UNITCD	Survey unit code	NUMBER(2)
8.2.8	COUNTYCD	County code	NUMBER(3)
8.2.9	PLOT	Phase 2 plot number	NUMBER(5)
8.2.10	PLOT_STATUS_CD	Plot status code	NUMBER(1)
8.2.11	PLOT_NONSAMPLE_REASON_CD	Plot nonsampled reason code	NUMBER(2)
8.2.12	MEASYEAR	Measurement year	NUMBER(4)
8.2.13	MEASMON	Measurement month	NUMBER(2)
8.2.14	MEASDAY	Measurement day	NUMBER(2)
8.2.15	REMPER	Remeasurement period	NUMBER(3,1)
8.2.16	KINDCD	Sample kind code	NUMBER(2)
8.2.17	DESIGNCD	Design code	NUMBER(4)
8.2.18	RDDISTCD	Horizontal distance to improved road code	NUMBER(2)
8.2.19	WATERCD	Water on plot code	NUMBER(2)
8.2.20	LAT	Latitude	NUMBER(8,6)
8.2.21	LON	Longitude	NUMBER(9,6)
8.2.22	ELEV	Elevation	NUMBER(5)
8.2.23	GROW_TYP_CD	Type of annual volume growth code	NUMBER(2)
8.2.24	MORT_TYP_CD	Type of annual mortality volume code	NUMBER(2)
8.2.25	P2PANEL	Phase 2 panel number	NUMBER(2)
8.2.26	P3PANEL	Phase 3 panel number	NUMBER(2)
8.2.27	ECOSUBCD	Ecological subsection code	VACHAR2(7)
8.2.28	CONGCD	Congressional district code	NUMBER(4)
8.2.29	MANUAL	Manual (field guide) version number	NUMBER(3,1)
8.2.30	MANUAL_DB	Manual version of the data	NUMBER(3,1)
8.2.31	SUBPANEL	Subpanel	NUMBER(2)
8.2.32	KINDCD_NC	Sample kind code, North Central	NUMBER(2)
8.2.33	QA_STATUS	Quality assurance status	NUMBER(1)

<b>Subsection</b>	<b>Column name</b>	<b>Descriptive name</b>	<b>Oracle data type</b>
8.2.34	CREATED_BY	Created by	VARCHAR2(30)
8.2.35	CREATED_DATE	Created date	DATE
8.2.36	CREATED_IN_INSTANCE	Created in instance	NUMBER(6)
8.2.37	MODIFIED_BY	Modified by	VARCHAR2(30)
8.2.38	MODIFIED_DATE	Modified date	DATE
8.2.39	MODIFIED_IN_INSTANCE	Modified in instance	NUMBER(6)
8.2.40	MICROPLOT_LOC	Microplot location	VARCHAR2(12)
8.2.41	DECLINATION	Declination	NUMBER(4,1)
8.2.42	EMAP_HEX	EMAP hexagon	NUMBER(7)
8.2.43	SAMP_METHOD_CD	Sample method code	NUMBER(1)
8.2.44	SUBP_EXAMINE_CD	Subplots examined code	NUMBER(1)
8.2.45	MACRO_BREAKPOINT_DIA	Macroplot breakpoint diameter	NUMBER(2)
8.2.46	INTENSITY	Intensity	VARCHAR2(2)
8.2.47	CYCLE	Inventory cycle number	NUMBER(2)
8.2.48	SUBCYCLE	Inventory subcycle number	NUMBER(2)
8.2.49	ECO_UNIT_PNW	Ecological unit, Pacific Northwest Research Station	VARCHAR2(10)
8.2.50	TOPO_POSITION_PNW	Topographic position, Pacific Northwest Research Station	VARCHAR2(2)
8.2.51	EVAL_GRP_CN	Evaluation group sequence number	VARCHAR2(34)
8.2.52	EVAL_GRP	Evaluation group	NUMBER(6)
8.2.53	EXPALL	Area expansion factor for all land	NUMBER
8.2.54	EXPCURR	Area expansion factor for forest land and timberland	NUMBER
8.2.55	EXPVOL	Volume expansion factor for forest land and timberland	NUMBER
8.2.56	EXPGROW	Growth expansion factor for forest land and timberland	NUMBER
8.2.57	EXPMORT	Mortality expansion factor for forest land and timberland	NUMBER
8.2.58	EXPREMV	Removals expansion factor for forest land and timberland	NUMBER
8.2.59	ADJ_EXPALL	Adjustment factor for all land area	NUMBER
8.2.60	ADJ_EXPCURR	Adjustment factor for forest land and timberland area	NUMBER
8.2.61	ADJ_EXPVOL_MACR	Macroplot adjustment factor for volume estimation	NUMBER
8.2.62	ADJ_EXPVOL_SUBP	Subplot adjustment factor for volume estimation	NUMBER

Subsection	Column name	Descriptive name	Oracle data type
8.2.63	ADJ_EXPVOL_MICR	Microplot adjustment factor for volume estimation	NUMBER
8.2.64	ADJ_EXPGROW_MACR	Macroplot adjustment factor for growth estimation	NUMBER
8.2.65	ADJ_EXPGROW_SUBP	Subplot adjustment factor for growth estimation	NUMBER
8.2.66	ADJ_EXPGROW_MICR	Microplot adjustment factor for growth estimation	NUMBER
8.2.67	ADJ_EXPMORT_MACR	Macroplot adjustment factor for mortality estimation	NUMBER
8.2.68	ADJ_EXPMORT_SUBP	Subplot adjustment factor for mortality estimation	NUMBER
8.2.69	ADJ_EXPMORT_MICR	Microplot adjustment factor for mortality estimation	NUMBER
8.2.70	ADJ_EXPREMV_MACR	Macroplot adjustment factor for removals estimation	NUMBER
8.2.71	ADJ_EXPREMV_SUBP	Subplot adjustment factor for removals estimation	NUMBER
8.2.72	ADJ_EXPREMV_MICR	Microplot adjustment factor for removals estimation	NUMBER

Key Type	Column(s) order	Tables to link	Abbreviated notation
Primary	CN, EVAL_GRP_CN	N/A	PLOTSNP_PK
Foreign	STATECD, EVAL_GRP	PLOTSNAP to POP_EVAL_GRP	PLOTSNP_PEG_FK_I
Foreign	EVAL_GRP_CN	PLOTSNAP to POP_EVAL_GRP	PLOTSNP_PEG_FK_I2

**8.2.1 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 snapshot record.

**8.2.2 SRV\_CN**

**Survey sequence number.** Foreign key linking the snapshot record to the survey record.

**8.2.3 CTY\_CN**

**County sequence number.** Foreign key linking the snapshot record to the county record.

**8.2.4 PREV\_PLT\_CN**

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

**8.2.5 INVYR**

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

**8.2.6 STATECD**

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

**8.2.7 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.

**8.2.8 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.

**8.2.9 PLOT**

**Phase 2 plot number.** An identifier for a plot. Along with INVYR, STATECD, UNITCD, COUNTYCD, PLOT may be used to uniquely identify a plot.

**8.2.10 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.

**8.2.11 PLOT\_NONSAMPLE\_REASN\_CD**

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

**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.

Code	Description
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.

### 8.2.12 MEASYEAR

**Measurement year.** The year in which the plot was completed. MEASYEAR may differ from INVYR.

### 8.2.13 MEASMON

**Measurement month.** The month in which the plot was completed. May be blank (null) for periodic inventory.

**Codes: MEASMON**

Code	Description
01	January.
02	February.
03	March.
04	April.
05	May.
06	June.
07	July.
08	August.
09	September.
10	October.
11	November.
12	December.

### 8.2.14 MEASDAY

**Measurement day.** The day of the month in which the plot was completed. May be blank (null) for periodic inventory.

### 8.2.15 REMPER

**Remeasurement period.** The number of years between measurements for remeasured plots. This attribute is null (blank) 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.

**Note:** It is not valid to use REMPER to estimate change.

## 8.2.16 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).

## 8.2.17 DESIGNCD

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

## 8.2.18 RDDISTCD

**Horizontal distance to 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. Populated for all forested plots using the National Field Guide protocols (MANUAL  $\geq 1.0$ ) and populated by some FIA work units for inventory plots collected where 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.

## 8.2.19 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 forest land portion of the four subplots. The coding hierarchy is listed in order from large permanent water to temporary water. Populated for all forested plots using the National Field Guide protocols (MANUAL  $\geq 1.0$ ) and populated by some FIA work units for inventory plots collected where MANUAL  $< 1.0$ .

**Codes: WATERCD**

<b>Code</b>	<b>Description</b>
0	None - no water sources within the accessible forest land condition class.
1	Permanent streams or ponds too small to qualify as noncensus water.
2	Permanent water in the form of deep swamps, bogs, marshes without standing trees present and less than 1.0 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.

**8.2.20 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.

**8.2.21 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.

**8.2.22 ELEV**

**Elevation.** The distance the plot is located above sea level. Rounded to the nearest 10-foot category for certain FIA work units (SURVEY.RSCD = 23 and 24), and rounded to the nearest 100-foot category for other FIA work units (SURVEY.RSCD = 22, 26, 27, or 33). Negative values indicate distance below sea level.

**8.2.23 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.

**8.2.24 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.

**8.2.25 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.

**8.2.26 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).

**8.2.27 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.

**8.2.28 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.

**8.2.29 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  $\geq 1.0$ . Data taken according to field instructions prior to the use of the National Field Guide have PLOT.MANUAL  $< 1.0$ .

### 8.2.30 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 web site](http://www.fia.fs.fed.us/library/field-guides-methods-proc/index.php) (<http://www.fia.fs.fed.us/library/field-guides-methods-proc/index.php>).

### 8.2.31 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 or 27); SRS (SURVEY.RSCD = 33, only for Oklahoma where UNITCD  $\geq 3$ ). Populated for all plots using the National Field Guide protocols (MANUAL  $\geq 1.0$ ).

**Codes: SUBPANEL**

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

### 8.2.32 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.

### 8.2.33 QA\_STATUS

**Quality assurance status.** A code indicating the type of plot data collected. Populated for all forested subplots using the National Field Guide protocols (MANUAL  $\geq 1.0$ ). Codes 2-6 indicate additional quality assurance data that are not included in the FIADB.

**Codes: QA\_STATUS**

<b>Code</b>	<b>Description</b>
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 - the same as a production plot but the measurement is taken under the supervision of a quality assurance crew.

**8.2.34 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**8.2.35 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**8.2.36 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**8.2.37 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**8.2.38 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**8.2.39 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

**8.2.40 MICROPLOT\_LOC**

**Microplot location.** Values are 'OFFSET' or 'CENTER.' The offset microplot center is located 12 feet due east (90 degrees) of subplot center. The current standard 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.

**8.2.41 DECLINATION**

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

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

**8.2.42 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. Populated for annual inventory and may be populated for periodic inventory.

**8.2.43 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.

**8.2.44 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).

**8.2.45 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 (Pacific Northwest), or 21 inches (Interior West). 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).

**8.2.46 INTENSITY**

**Intensity.** A code used to identify federal base grid annual inventory plots and plots that have been added to intensify a particular sample. Under the federal base grid, one plot is collected in each theoretical hexagonal polygon, which is slightly more than 5,900 acres in size. Plots with INTENSITY = 1 are part of the federal base grid. In some instances, States and/or agencies have provided additional support to increase the sampling intensity for an area. Supplemental plots have INTENSITY set to higher numbers depending on the amount of plot intensification chosen for the particular estimation unit. Populated for annual inventory data only.

**8.2.47 CYCLE**

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

**8.2.48 SUBCYCLE**

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

**8.2.49 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 collected by certain FIA work units (SURVEY.RSCD = 26 or 27).

**8.2.50 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](http://www.fs.fed.us/pnw/fia/publications/fieldmanuals.shtml) (<http://www.fs.fed.us/pnw/fia/publications/fieldmanuals.shtml>). Adapted from information found in Wilson (1900). Only collected 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.

**8.2.51 EVAL\_GRP\_CN**

**Evaluation group sequence number.** Foreign key linking the PLOTSNAP record to a unique POP\_EVAL\_GRP record.

**8.2.52 EVAL\_GRP**

**Evaluation group.** A variable that in conjunction with the STATECD variable uniquely identifies a unique POP\_EVAL\_GRP record.

**8.2.53 EXPALL**

**Area expansion factor for all land.** The number of acres the sample plot represents for estimating current land area, where the sample includes denied-access and hazardous plots, but excludes outside-of-the-population plots.

**8.2.54 EXPCURR**

**Area expansion factor for forest land and timberland.** The number of acres the sample plot represents for estimating current forest and timberland area, where the sample excludes outside-of-the-population, denied-access, and hazardous plots.

**8.2.55 EXPVOL**

**Volume expansion factor for forest land and timberland.** The number of acres the sample plot represents for estimating current volume, biomass, and number of trees (based on number of sampled plots only).

**8.2.56 EXPGROW**

**Growth expansion factor for forest land and timberland.** The number of acres the sample plot represents for estimating net average annual growth (based on number of sampled plots only).

**8.2.57 EXPMORT**

**Mortality expansion factor for forest land and timberland.** The number of acres the sample plot represents for estimating average annual mortality (based on number of sampled plots only).

**8.2.58 EXPREMV**

**Removals expansion factor for forest land and timberland.** The number of acres the sample plot represents for estimating average annual removals (based on number of sampled plots only).

**8.2.59 ADJ\_EXPALL**

**Adjustment factor for all land area.** This adjustment factor should be applied to the CONDPROP\_UNADJ on the condition record when generating population estimates to take into account out-of-population portions of conditions within the stratum.

**8.2.60 ADJ\_EXPCURR**

**Adjustment factor for forest land and timberland area.** This adjustment factor should be applied to the CONDPROP\_UNADJ on the condition record when generating population estimates to take into account out-of-population and denied access/hazardous portions of conditions within the stratum.

**8.2.61 ADJ\_EXPVOL\_MACR**

**Macroplot adjustment factor for volume estimation.** This adjustment factor should be applied to the TPA\_UNADJ on the tree record when generating population estimates to take into account out-of-population and denied access/hazardous portions of conditions within the stratum. This should be applied only to those trees that were measured on the macroplot. Includes trees whose diameters exceed that specified in COND.MACRO\_BREAKPOINT\_DIA when MACRO\_BREAKPOINT\_DIA is not null.

**8.2.62 ADJ\_EXPVOL\_SUBP**

**Subplot adjustment factor for volume estimation.** This adjustment factor should be applied to the TPA\_UNADJ on the tree record when generating population estimates to take into account out-of-population and denied access/hazardous portions of conditions within the stratum. This should be applied only to those trees that were measured on the subplot.

**8.2.63 ADJ\_EXPVOL\_MICR**

**Microplot adjustment factor for volume estimation.** This adjustment factor should be applied to the TPA\_UNADJ on the tree record when generating population estimates to take into account out-of-population and denied access/hazardous portions of conditions within the stratum. This should be applied only to those trees that were measured on the microplot. Includes trees from 1.00 to 4.99 inches d.b.h.

**8.2.64 ADJ\_EXPGROW\_MACR**

**Macroplot adjustment factor for growth estimation.** This adjustment factor should be applied to the TPAGROW\_UNADJ on the tree record when generating population estimates to take into account out-of-population and denied access/hazardous portions of conditions within the stratum. This should be applied only to those trees that were measured on the macroplot. Includes trees whose diameters exceed that specified in COND.MACRO\_BREAKPOINT\_DIA when MACRO\_BREAKPOINT\_DIA is not null.

**8.2.65 ADJ\_EXPGROW\_SUBP**

**Subplot adjustment factor for growth estimation.** This adjustment factor should be applied to the TPAGROW\_UNADJ on the tree record when generating population estimates to take into account out-of-population and denied access/hazardous portions of conditions within the stratum. This should be applied only to those trees that were measured on the subplot.

**8.2.66 ADJ\_EXPGROW\_MICR**

**Microplot adjustment factor for growth estimation.** This adjustment factor should be applied to the TPAGROW\_UNADJ on the tree record when generating population estimates to take into account out-of-population and denied access/hazardous portions of conditions within the stratum. This should be applied only to those trees that were measured on the subplot.

**8.2.67 ADJ\_EXPMORT\_MACR**

**Macroplot adjustment factor for mortality estimation.** This adjustment factor should be applied to the TPAMORT\_UNADJ on the tree record when generating population estimates to take into account out-of-population and denied access/hazardous portions of conditions within the stratum. This should be applied only to those trees that were measured on the macroplot. Includes trees whose diameters exceed that specified in COND.MACRO\_BREAKPOINT\_DIA when MACRO\_BREAKPOINT\_DIA is not null.

**8.2.68 ADJ\_EXPMORT\_SUBP**

**Subplot adjustment factor for mortality estimation.** This adjustment factor should be applied to the TPAMORT\_UNADJ on the tree record when generating population estimates to take into account out-of-population and denied access/hazardous portions of conditions within the stratum. This should be applied only to those trees that were measured on the subplot.

**8.2.69 ADJ\_EXPMORT\_MICR**

**Microplot adjustment factor for mortality estimation.** This adjustment factor should be applied to the TPAMORT\_UNADJ on the tree record when generating population estimates to take into account out-of-population and denied access/hazardous portions of conditions within the stratum. This should be applied only to those trees that were measured on the microplot. Includes trees from 1.00 to 4.99 inches d.b.h.

**8.2.70 ADJ\_EXPREMV\_MACR**

**Macroplot adjustment factor for removals estimation.** This adjustment factor should be applied to the TPAREMV\_UNADJ on the tree record when generating population estimates to take into account out-of-population and denied access/hazardous portions of conditions within the stratum. This should be applied only to those trees that were measured on the macroplot. Trees whose diameters exceed that specified in COND.MACRO\_BREAKPOINT\_DIA when MACRO\_BREAKPOINT\_DIA is not null.

**8.2.71 ADJ\_EXPREMV\_SUBP**

**Subplot adjustment factor for removals estimation.** This adjustment factor should be applied to the TPAREMV\_UNADJ on the tree record when generating population estimates to take into account out-of-population and denied access/hazardous portions of conditions within the stratum. This should be applied only to those trees that were measured on the subplot.

**8.2.72 ADJ\_EXPREMV\_MICR**

**Microplot adjustment factor for removals estimation.** This adjustment factor should be applied to the TPAREMV\_UNADJ on the tree record when generating population estimates to take into account out-of-population and denied access/hazardous portions of conditions within the stratum. This should be applied only to those trees that were measured on the microplot. Includes trees from 1.00 to 4.99 inches d.b.h.



# Chapter 9: Database Tables - Reference

## Chapter Contents:

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## 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 Reference Population Attribute Table

(Oracle table name: REF\_POP\_ATTRIBUTE)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.1.1	CN	Sequence number	VARCHAR2(34)
9.1.2	ATTRIBUTE_NBR	Attribute number	NUMBER(4)
9.1.3	ATTRIBUTE_DESCR	Attribute description	VARCHAR2(255)
9.1.4	TIMBERLAND	Timberland	VARCHAR2(1)
9.1.5	EVAL_TYP	Evaluation type	VARCHAR2(15)
9.1.6	EXPRESSION	Expression	VARCHAR2(4000)
9.1.7	WHERE_CLAUSE	Where clause	VARCHAR2(4000)
9.1.8	FOOTNOTE	Footnote	VARCHAR2(2000)
9.1.9	ATTRIBUTE_GLOSSARY	Attribute glossary	VARCHAR2(4000)
9.1.10	CREATED_BY	Created by	VARCHAR2(30)
9.1.11	CREATED_DATE	Created date	DATE
9.1.12	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.1.13	MODIFIED_BY	Modified by	VARCHAR2(30)
9.1.14	MODIFIED_DATE	Modified date	DATE
9.1.15	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)
9.1.16	NOTES	Notes	VARCHAR2(2000)
9.1.17	SQL_QUERY	SQL estimate script	VARCHAR2(4000)

Key Type	Column(s) order	Tables to link	Abbreviated notation
Primary	CN	N/A	PAE_PK
Unique	ATTRIBUTE_NBR	N/A	PAE_UK

The expression (EXPRESSION) and where clauses (WHERE\_CLAUSE) are used in other applications and may not correspond to SQL statements in this document. We recommend using the SQL\_QUERY column as all of the assumptions are built in and populated for all records.

### 9.1.1 CN

**Sequence number.** A unique sequence number used to identify a reference population attribute record.

### 9.1.2 ATTRIBUTE\_NBR

**Attribute number.** A numeric code used to identify an attribute record. See codes and descriptions in [appendix O](#).

### 9.1.3 ATTRIBUTE\_DESCR

**Attribute description.** Examples include 'Area of forest land, in acres' or 'Net volume of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland'. See codes and descriptions in [appendix O](#).

### 9.1.4 TIMBERLAND

**Timberland.** A code indicating whether or not the attribute can be computed for a timberland species.

**Codes: TIMBERLAND**

Code	Description
Y	Yes, the attribute can be computed for a timberland species.
N	No, the attribute cannot be computed for a timberland species.

### 9.1.5 EVAL\_TYP

**Evaluation type.** Describes 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 volume (EXPVOL). At the present time, nine types of evaluations can be produced. See also the [REF\\_POP\\_EVAL\\_TYP\\_DESCR](#) table.

**Codes: EVAL\_TYP**

Evaluation type	Evaluation type description
EXPALL	All plots: sampled and nonsampled.
EXPCHNG	Sampled plots used for area change estimates.
EXPCURR	Sampled plots used for current area and condition-level estimates.
EXPDWM	Sampled plots used for down woody material estimates.
EXPGROW	Sampled plots used for tree growth estimates.
EXPMORT	Sampled plots used for tree mortality estimates.
EXPREGEN	Sampled plots used for tree regeneration estimates.
EXPREMV	Sampled plots used for tree removal estimates.
EXPVOL	Sampled plots used for tree inventory estimates.

### 9.1.6 EXPRESSION

**Expression.** SQL expression that identifies variables that are used to generate population estimate identified by ATTRIBUTE\_DESCR ([The Forest Inventory and Analysis Database: Population Estimation User Guide](#), table 3-1).

**Note:** When EXPRESSION contains 'z\_user', 'z\_user' is a placeholder for the table owner name.

### 9.1.7 WHERE\_CLAUSE

**Where clause.** SQL where clause that identifies the appropriate method for joining tables and screening records to generate population estimate identified by ATTRIBUTE\_DESCR ([The Forest Inventory and Analysis Database: Population Estimation User Guide](#), table 3-1).

**9.1.8 FOOTNOTE**

**Footnote.** Contains the footnote to be used in reports summarizing the attribute.

**9.1.9 ATTRIBUTE\_GLOSSARY**

**Attribute glossary.** Description of the attribute.

**9.1.10 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**9.1.11 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**9.1.12 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.1.13 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.1.14 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**9.1.15 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

**9.1.16 NOTES**

**Notes.** Reference population attribute notes.

**9.1.17 SQL\_QUERY**

**SQL estimate script.** SQL script used to generate the population estimate for this attribute.



## 9.2 Reference Population Evaluation Type Description Table

(Oracle table name: REF\_POP\_EVAL\_TYP\_DESCR)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.2.1	CN	Sequence number	VARCHAR2(34)
9.2.2	LABEL_ORDER	Label order	NUMBER(2)
9.2.3	EVAL_TYP	Evaluation type	VARCHAR2(15)
9.2.4	EVAL_TYP_LABEL	Evaluation type label	VARCHAR2(15)
9.2.5	CHANGE_EVAL_TYP	Change evaluation type	VARCHAR2(1)
9.2.6	EVAL_TYP_DESCR	Evaluation type description	VARCHAR2(255)
9.2.7	CREATED_BY	Created by	VARCHAR2(30)
9.2.8	CREATED_DATE	Created date	DATE
9.2.9	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.2.10	MODIFIED_BY	Modified by	VARCHAR2(30)
9.2.11	MODIFIED_DATE	Modified date	DATE
9.2.12	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)
9.2.13	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

### 9.2.1 CN

**Sequence number.** A unique sequence number used to identify a reference population evaluation type description record.

### 9.2.2 LABEL\_ORDER

**Label order.** The order in which to assemble EVAL\_TYP to create standardized evaluation group descriptions.

### 9.2.3 EVAL\_TYP

**Evaluation type.** Evaluation types (EVAL\_TYP) and the description of the evaluation types (EVAL\_TYP\_DESCR) are:

Codes: EVAL\_TYP

Evaluation type	Evaluation type description
EXPALL	All plots: sampled and nonsampled.
EXPCHNG	Sampled plots used for area change estimates.
EXPCURR	Sampled plots used for current area and condition-level estimates.

Evaluation type	Evaluation type description
EXPDWM	Sampled plots used for down woody material estimates.
EXPGROW	Sampled plots used for tree growth estimates.
EXPMORT	Sampled plots used for tree mortality estimates.
EXPREGEN	Sampled plots used for tree regeneration estimates.
EXPREMV	Sampled plots used for tree removal estimates.
EXPVOL	Sampled plots used for tree inventory estimates.

#### 9.2.4 EVAL\_TYP\_LABEL

**Evaluation type label.** The label used for the EVAL\_TYP description.

#### 9.2.5 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.

#### 9.2.6 EVAL\_TYP\_DESCR

**Evaluation type description.** The description for each evaluation type (EVAL\_TYP). See the list of codes and descriptions in EVAL\_TYP.

#### 9.2.7 CREATED\_BY

**Created by.** See SURVEY.CREATED\_BY description for definition.

#### 9.2.8 CREATED\_DATE

**Created date.** See SURVEY.CREATED\_DATE description for definition.

#### 9.2.9 CREATED\_IN\_INSTANCE

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

#### 9.2.10 MODIFIED\_BY

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

#### 9.2.11 MODIFIED\_DATE

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

#### 9.2.12 MODIFIED\_IN\_INSTANCE

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

#### 9.2.13 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**

<b>Evaluation type code (EVAL_TYP_CD)</b>	<b>Evaluation type (EVAL_TYP)</b>	<b>Evaluation type description</b>
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.



## 9.3 Reference Forest Type Table

(Oracle table name: REF\_FOREST\_TYPE)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.3.1	VALUE	Value	NUMBER(3)
9.3.2	MEANING	Meaning	VARCHAR2(80)
9.3.3	TYPGRPCD	Forest type group code	NUMBER(3)
9.3.4	MANUAL_START	Manual start	NUMBER(3,1)
9.3.5	MANUAL_END	Manual end	NUMBER(3,1)
9.3.6	ALLOWED_IN_FIELD	Allowed in field	VARCHAR2(1)
9.3.7	CREATED_BY	Created by	VARCHAR2(30)
9.3.8	CREATED_DATE	Created date	DATE
9.3.9	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.3.10	MODIFIED_BY	Modified by	VARCHAR2(30)
9.3.11	MODIFIED_DATE	Modified date	DATE
9.3.12	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)

Key Type	Column(s) order	Tables to link	Abbreviated notation
Primary	VALUE	N/A	RFT_PK

### 9.3.1 VALUE

**Value.** A code used for the forest type (COND.FORTYPCD, COND.FLDTYPED, COND.FORTYPCDCALC). Refer to [appendix D](#).

### 9.3.2 MEANING

**Meaning.** The descriptive name corresponding with the forest type code (VALUE). Refer to [appendix D](#).

### 9.3.3 TYPGRPCD

**Forest type group code.** A code assigned to individual forest types in order to group them for reporting purposes. Refer to [appendix D](#).

### 9.3.4 MANUAL\_START

**Manual start.** The first version of the Field Guide (PLOT.MANUAL) that the forest type code (VALUE) began to be used.

### 9.3.5 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.

**9.3.6 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).

**9.3.7 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**9.3.8 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**9.3.9 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.3.10 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.3.11 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**9.3.12 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

## 9.4 Reference Forest Type Group Table

(Oracle table name: REF\_FOREST\_TYPE\_GROUP)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.4.1	VALUE	Value	NUMBER(3)
9.4.2	MEANING	Meaning	VARCHAR2(80)
9.4.3	ABBR	Abbreviation	VARCHAR2(40)
9.4.4	DUFF_DENSITY	Duff density	NUMBER(12,10)
9.4.5	DUFF_CARBON_RATIO	Duff carbon ratio	NUMBER(12,11)
9.4.6	LITTER_DENSITY	Litter density	NUMBER(12,10)
9.4.7	LITTER_CARBON_RATIO	Litter carbon ratio	NUMBER(12,11)
9.4.8	PILE_DENSITY	Pile density	NUMBER(12,10)
9.4.9	PILE_CARBON_RATIO	Pile carbon ratio	NUMBER(12,11)
9.4.10	PILE_DECAY_RATIO	Pile decay ratio	NUMBER(12,11)
9.4.11	FWD_DENSITY	Fine woody debris density	NUMBER(12,10)
9.4.12	FWD_CARBON_RATIO	Fine woody debris carbon ratio	NUMBER(12,11)
9.4.13	FWD_DECAY_RATIO	Fine woody debris decay ratio	NUMBER(12,11)
9.4.14	FWD_SMALL_QMD	Small fine woody debris quadratic mean diameter	NUMBER(12,10)
9.4.15	FWD_MEDIUM_QMD	Medium fine woody debris quadratic mean diameter	NUMBER(12,10)
9.4.16	FWD_LARGE_QMD	Large fine woody debris quadratic mean diameter	NUMBER(12,10)
9.4.17	CREATED_BY	Created by	VARCHAR2(30)
9.4.18	CREATED_DATE	Created date	DATE
9.4.19	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.4.20	MODIFIED_BY	Modified by	VARCHAR2(30)
9.4.21	MODIFIED_DATE	Modified date	DATE
9.4.22	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)

Key Type	Column(s) order	Tables to link	Abbreviated notation
Primary	VALUE	N/A	FTGP_PK

### 9.4.1 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](#).

**9.4.2 MEANING**

**Meaning.** The descriptive name corresponding with the forest type group code (VALUE). Refer to [appendix D](#).

**9.4.3 ABBR**

**Abbreviation.** The Forest type group abbreviation.

**9.4.4 DUFF\_DENSITY**

**Duff density.** The average oven dry density of duff in pounds per cubic foot.

**9.4.5 DUFF\_CARBON\_RATIO**

**Duff carbon ratio.** The ratio of carbon weight to biomass of duff.

**9.4.6 LITTER\_DENSITY**

**Litter density.** The average oven dry density of litter in pounds per cubic foot.

**9.4.7 LITTER\_CARBON\_RATIO**

**Litter carbon ratio.** The ratio of carbon weight to biomass of litter.

**9.4.8 PILE\_DENSITY**

**Pile density.** The average oven dry density of piles in pounds per cubic foot.

**9.4.9 PILE\_CARBON\_RATIO**

**Pile carbon ratio.** The ratio of carbon weight to biomass of piles.

**9.4.10 PILE\_DECAY\_RATIO**

**Pile decay ratio.** The ratio of decayed to sound wood weight of piles.

**9.4.11 FWD\_DENSITY**

**Fine woody debris density.** The average oven dry density of fine woody debris in pounds per cubic foot.

**9.4.12 FWD\_CARBON\_RATIO**

**Fine woody debris carbon ratio.** The ratio of carbon weight to biomass of fine woody debris.

**9.4.13 FWD\_DECAY\_RATIO**

**Fine woody debris decay ratio.** The ratio of decayed to sound wood weight of fine woody debris.

**9.4.14 FWD\_SMALL\_QMD**

**Small fine woody debris quadratic mean diameter.** The quadratic mean diameter of small fine woody debris. A constant value is used for all forest type groups.

**9.4.15 FWD\_MEDIUM\_QMD**

**Medium fine woody debris quadratic mean diameter.** The quadratic mean diameter of medium fine woody debris. A constant value is used for all forest type groups.

**9.4.16 FWD\_LARGE\_QMD**

**Large fine woody debris quadratic mean diameter.** The quadratic mean diameter of large fine woody debris. A constant value is used for all forest type groups.

**9.4.17 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**9.4.18 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**9.4.19 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.4.20 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.4.21 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**9.4.22 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.



## 9.5 Reference Species Table

(Oracle table name: REF\_SPECIES)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.5.1	SPCD	Species code	NUMBER
9.5.2	COMMON_NAME	Common name	VARCHAR2(100)
9.5.3	GENUS	Genus	VARCHAR2(40)
9.5.4	SPECIES	Species (Latin)	VARCHAR2(50)
9.5.5	VARIETY	Variety	VARCHAR2(50)
9.5.6	SUBSPECIES	Subspecies	VARCHAR2(50)
9.5.7	SPECIES_SYMBOL	Species symbol	VARCHAR2(8)
9.5.8	E_SPGRPCD	Eastern species group code	NUMBER(2)
9.5.9	W_SPGRPCD	Western species group code	NUMBER(2)
9.5.10	C_SPGRPCD	Caribbean Islands species group code	NUMBER(2)
9.5.11	P_SPGRPCD	Pacific Islands species group code	NUMBER(2)
9.5.12	MAJOR_SPGRPCD	Major species group code	NUMBER(1)
9.5.13	STOCKING_SPGRPCD	Stocking species group code	NUMBER(3)
9.5.14	FOREST_TYPE_SPGRPCD	Forest type species group code	NUMBER(3)
9.5.15	EXISTS_IN_NCRS	Exists in the North Central Research Station region	VARCHAR2(1)
9.5.16	EXISTS_IN_NERS	Exists in the Northeastern Research Station region	VARCHAR2(1)
9.5.17	EXISTS_IN_PNWRS	Exists in the Pacific Northwest Research Station region	VARCHAR2(1)
9.5.18	EXISTS_IN_RMRS	Exists in the Rocky Mountain Research Station region	VARCHAR2(1)
9.5.19	EXISTS_IN_SRS	Exists in the Southern Research Station region	VARCHAR2(1)
9.5.20	SITETREE	Site tree	VARCHAR2(1)
9.5.21	SFTWD_HRDWD	Softwood or hardwood	VARCHAR2(1)
9.5.22	ST_EXISTS_IN_NCRS	Site tree exists in the North Central Research Station region	VARCHAR2(1)
9.5.23	ST_EXISTS_IN_NERS	Site tree exists in the Northeastern Research Station region	VARCHAR2(1)
9.5.24	ST_EXISTS_IN_PNWRS	Site tree exists in the Pacific Northwest Research Station region	VARCHAR2(1)
9.5.25	ST_EXISTS_IN_RMRS	Site tree exists in the Rocky Mountain Research Station region	VARCHAR2(1)
9.5.26	ST_EXISTS_IN_SRS	Site tree exists in the Southern Research Station region	VARCHAR2(1)
9.5.27	CORE	Core	VARCHAR2(1)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.5.28	EAST	Eastern species	VARCHAR2(1)
9.5.29	WEST	Western species	VARCHAR2(1)
9.5.30	CARIBBEAN	Caribbean Islands species	VARCHAR2(1)
9.5.31	PACIFIC	Pacific Islands species	VARCHAR2(1)
9.5.32	WOODLAND	Woodland species	VARCHAR2(1)
9.5.33	MANUAL_START	Manual start	NUMBER(3,1)
9.5.34	MANUAL_END	Manual end	NUMBER(3,1)
9.5.35	JENKINS_SPGRPCD	Jenkins species group code	NUMBER(2)
9.5.36	JENKINS_TOTAL_B1	Jenkins total B1	NUMBER(8,5)
9.5.37	JENKINS_TOTAL_B2	Jenkins total B2	NUMBER(8,5)
9.5.38	JENKINS_STEM_WOOD_RATIO_B1	Jenkins stem wood ratio B1	NUMBER(8,5)
9.5.39	JENKINS_STEM_WOOD_RATIO_B2	Jenkins stem wood ratio B2	NUMBER(8,5)
9.5.40	JENKINS_STEM_BARK_RATIO_B1	Jenkins stem bark ratio B1	NUMBER(8,5)
9.5.41	JENKINS_STEM_BARK_RATIO_B2	Jenkins stem bark ratio B2	NUMBER(8,5)
9.5.42	JENKINS_FOLIAGE_RATIO_B1	Jenkins foliage ratio B1	NUMBER(8,5)
9.5.43	JENKINS_FOLIAGE_RATIO_B2	Jenkins foliage ratio B2	NUMBER(8,5)
9.5.44	JENKINS_ROOT_RATIO_B1	Jenkins root ratio B1	NUMBER(8,5)
9.5.45	JENKINS_ROOT_RATIO_B2	Jenkins root ratio B2	NUMBER(8,5)
9.5.46	JENKINS_SAPLING_ADJUSTMENT	Jenkins sapling adjustment factor	NUMBER(8,5)
9.5.47	WOOD_SPGR_GREENVOL_DRYWT	Green specific gravity of wood (green volume and oven-dry weight)	NUMBER(8,5)
9.5.48	WOOD_SPGR_GREENVOL_DRYWT_CIT	Citation for WOOD_SPGR_GREENVOL_DRYWT	NUMBER(7)
9.5.49	BARK_SPGR_GREENVOL_DRYWT	Green specific gravity of bark (green volume and oven-dry weight)	NUMBER(8,5)
9.5.50	BARK_SPGR_GREENVOL_DRYWT_CIT	Citation for BARK_SPGR_GREENVOL_DRYWT	NUMBER(7)
9.5.51	MC_PCT_GREEN_BARK	Moisture content of green bark as a percent of oven-dry weight	NUMBER(8,5)
9.5.52	MC_PCT_GREEN_BARK_CIT	Citation for MC_PCT_GREEN_BARK	NUMBER(7)
9.5.53	MC_PCT_GREEN_WOOD	Moisture content of green wood as a percent of oven-dry weight	NUMBER(8,5)
9.5.54	MC_PCT_GREEN_WOOD_CIT	Citation for MC_PCT_GREEN_WOOD	NUMBER(7)
9.5.55	WOOD_SPGR_MC12VOL_DRYWT	Wood specific gravity (12 percent moisture content volume and oven-dry weight)	NUMBER(8,5)
9.5.56	WOOD_SPGR_MC12VOL_DRYWT_CIT	Citation for WOOD_SPGR_MC12VOL_DRYWT	NUMBER(7)
9.5.57	BARK_VOL_PCT	Bark volume as a percent of wood volume	NUMBER(8,5)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.5.58	BARK_VOL_PCT_CIT	Citation for BARK_VOL_PCT	NUMBER(7)
9.5.59	RAILE_STUMP_DOB_B1	Raile stump diameter outside bark equation coefficient B1	NUMBER(8,5)
9.5.60	RAILE_STUMP_DIB_B1	Raile stump diameter inside bark equation coefficient B1	NUMBER(8,5)
9.5.61	RAILE_STUMP_DIB_B2	Raile stump diameter inside bark equation coefficient B2	NUMBER(8,5)
9.5.62	CWD_DECAY_RATIO1	Coarse woody debris decay ratio 1	NUMBER(6,5)
9.5.63	CWD_DECAY_RATIO2	Coarse woody debris decay ratio 2	NUMBER(6,5)
9.5.64	CWD_DECAY_RATIO3	Coarse woody debris decay ratio 3	NUMBER(6,5)
9.5.65	CWD_DECAY_RATIO4	Coarse woody debris decay ratio 4	NUMBER(6,5)
9.5.66	CWD_DECAY_RATIO5	Coarse woody debris decay ratio 5	NUMBER(6,5)
9.5.67	DWM_CARBON_RATIO	Down woody debris carbon ratio	NUMBER(6,5)
9.5.68	STANDING_DEAD_DECAY_RATIO1	Standing dead decay ratio 1	NUMBER(6,5)
9.5.69	STANDING_DEAD_DECAY_RATIO2	Standing dead decay ratio 2	NUMBER(6,5)
9.5.70	STANDING_DEAD_DECAY_RATIO3	Standing dead decay ratio 3	NUMBER(6,5)
9.5.71	STANDING_DEAD_DECAY_RATIO4	Standing dead decay ratio 4	NUMBER(6,5)
9.5.72	STANDING_DEAD_DECAY_RATIO5	Standing dead decay ratio 5	NUMBER(6,5)
9.5.73	CREATED_BY	Created by	VARCHAR2(30)
9.5.74	CREATED_DATE	Created date	DATE
9.5.75	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.5.76	MODIFIED_BY	Modified by	VARCHAR2(30)
9.5.77	MODIFIED_DATE	Modified date	DATE
9.5.78	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)
9.5.79	DRYWT_TO_GREENWT_CONVERSATION	Dry weight to green weight conversion	NUMBER

Key Type	Column(s) order	Tables to link	Abbreviated notation
Primary	SPCD	N/A	SPC_PK
Unique	SPECIES_SYMBOL	N/A	SPC_UK
Foreign	E_SPGRPCD	REF_SPECIES to REF_SPECIES_GROUP	SPC_SGP_FK1
Foreign	W_SPGRPCD	REF_SPECIES to REF_SPECIES_GROUP	SPC_SGP_FK2
Foreign	C_SPGRPCD	REF_SPECIES to REF_SPECIES_GROUP	SPC_SGP_FK3
Foreign	P_SPGRPCD	REF_SPECIES to REF_SPECIES_GROUP	SPC_SGP_FK4

Coefficients for calculating total aboveground biomass based on Jenkins and others (2003) equations are included in the REF\_SPECIES table. Coefficients for calculating biomass components (stem wood, stem bark, foliage, coarse roots, stump, and sapling) are also included in the REF\_SPECIES table. Biomass in branches and treetops (tops and limbs) may be found by subtracting the biomass in stem wood, stem bark, foliage, and stump from total aboveground biomass. Heath and others (2009) provides an overview of the historical use of Jenkins and others (2003) for biomass estimation for the U.S. forest greenhouse gas inventory (U.S. Environmental Protection Agency 2008) and an overview of the approach of the new biomass equations used for FIA data.

### 9.5.1 SPCD

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

### 9.5.2 COMMON\_NAME

**Common name.** Common name of the species. Refer to [appendix F](#).

### 9.5.3 GENUS

**Genus.** The genus name associated with the FIA tree species code. Refer to [appendix F](#).

### 9.5.4 SPECIES

**Species (Latin).** The species name associated with the FIA tree species code. Refer to [appendix F](#).

### 9.5.5 VARIETY

**Variety.** The variety name associated with the FIA tree species code.

### 9.5.6 SUBSPECIES

**Subspecies.** The subspecies name associated with the FIA tree species code.

### 9.5.7 SPECIES\_SYMBOL

**Species symbol.** The NRCS PLANTS database code associated with the FIA tree species code.

### 9.5.8 E\_SPGRPCD

**Eastern species group code.** A code indicating the species group assignment for eastern species. Depending on the State in which a tree is tallied, the eastern, western, Caribbean, or pacific species group code is associated with the actual TREE, SITETREE, and SEEDLING data. Species group codes and names can be found in [appendix E](#).

### 9.5.9 W\_SPGRPCD

**Western species group code.** A code indicating the FIADB species group assignment for western species. Depending on the State in which a tree is tallied, the eastern, western, Caribbean, or pacific species group code is associated with the actual TREE, SITETREE, and SEEDLING data. Species group codes and names can be found in [appendix E](#).

### 9.5.10 C\_SPGRPCD

**Caribbean Islands species group code.** A code indicating the species group assignment for Caribbean Islands species. Depending on the State in which a tree is tallied, the eastern, western, Caribbean Islands, or Pacific Islands species group code is associated

with the actual TREE, SITETREE, and SEEDLING data. Species group codes and names can be found in [appendix E](#).

#### **9.5.11 P\_SPGRPCD**

**Pacific Islands species group code.** A code indicating the species group assignment for Pacific Islands species. Depending on the State in which a tree is tallied, the eastern, western, Caribbean Islands, or Pacific Islands species group code is associated with the actual TREE, SITETREE, and SEEDLING data. Species group codes and names can be found in [appendix E](#).

#### **9.5.12 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.
3	Soft hardwoods.
4	Hard hardwoods.

#### **9.5.13 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.

<b>Code</b>	<b>Description</b>
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.
37	Average hardwood.
38	Dryland species.

**9.5.14 FOREST\_TYPE\_SPGRPCD**

**Forest type species group code.** A code indicating which initial forest type group a species is assigned.

**9.5.15 EXISTS\_IN\_NCRS**

**Exists in the North Central Research Station region.** Indicates which species are valid for States in the North Central Research Station region. Valid tree species are marked with an 'X'.

**9.5.16 EXISTS\_IN\_NERS**

**Exists in the Northeastern Research Station region.** Indicates which tree species are valid for States in the Northeastern Research Station region. Valid tree species are marked with an 'X'.

**9.5.17 EXISTS\_IN\_PNWRS**

**Exists in the Pacific Northwest Research Station region.** Indicates which species are valid for States in the Pacific Northwest Research Station region. Valid tree species are marked with an 'X'.

**9.5.18 EXISTS\_IN\_RMRS**

**Exists in the Rocky Mountain Research Station region.** Indicates which species are valid for States in the Rocky Mountain Research Station region. Valid tree species are marked with an 'X'.

**9.5.19 EXISTS\_IN\_SRS**

**Exists in the Southern Research Station region.** Indicates which species are valid for States in the Southern Research Station region. Valid tree species are marked with an 'X'.

**9.5.20 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'.

**9.5.21 SFTWD\_HRDWD**

**Softwood or hardwood.** Indicates whether the species is a softwood or a hardwood. Softwoods are marked with an 'S' and hardwoods with an 'H'.

**9.5.22 ST\_EXISTS\_IN\_NCRS**

**Site tree exists in the North Central Research Station region.** Indicates whether or not the species is valid as a site tree for States in the North Central Research Station region. Tree species that are applicable to have site data collected are marked with an 'X'.

**9.5.23 ST\_EXISTS\_IN\_NERS**

**Site tree exists in the Northeastern Research Station region.** Indicates whether or not the species is valid as a site tree for States in the Northeastern Research Station region. Tree species that are applicable to have site data collected are marked with an 'X'.

**9.5.24 ST\_EXISTS\_IN\_PNWRS**

**Site tree exists in the Pacific Northwest Research Station region.** Indicates whether or not the species is valid as a site tree for States in the Pacific Northwest Research Station region. Tree species that are applicable to have site data collected are marked with an 'X'.

**9.5.25 ST\_EXISTS\_IN\_RMRS**

**Site tree exists in the Rocky Mountain Research Station region.** Indicates whether or not the species is valid as a site tree for States in the Rocky Mountain Research Station region. Tree species that are applicable to have site data collected are marked with an 'X'.

**9.5.26 ST\_EXISTS\_IN\_SRS**

**Site tree exists in the Southern Research Station region.** Indicates whether or not the species is valid as a site tree for States in the Southern Research Station region. Tree species that are applicable to have site data collected are marked with an 'X'.

**9.5.27 CORE**

**Core.** Indicates that the tree species must be tallied (measured) by all FIA work units. Species marked with a 'Y' are core and core optional species are marked with an 'N'.

**9.5.28 EAST**

**Eastern species.** Indicates if the species can occur in the Eastern United States. Valid eastern species are marked with an 'E'.

**9.5.29 WEST**

**Western species.** Indicates if the species can occur in the Western United States. Valid western species are marked with a 'W'.

**9.5.30 CARIBBEAN**

**Caribbean Islands species.** Indicates if the species can occur in the Caribbean Islands. Valid species for the Caribbean Islands are marked with a 'C'.

**9.5.31 PACIFIC**

**Pacific Islands species.** Indicates if the species can occur in the Pacific Islands. Valid species for the Pacific Islands are marked with a 'P'.

**9.5.32 WOODLAND**

**Woodland species.** Indicates if the species is classified as a woodland species, meaning that the diameter is measured as root collar. Woodland species are marked with an 'X'.

**9.5.33 MANUAL\_START**

**Manual start.** The first version of the Field Guide (PLOT.MANUAL) that the species code was used.

**9.5.34 MANUAL\_END**

**Manual end.** The last version of the Field Guide (PLOT. MANUAL) that the species code was valid. When MANUAL\_END is blank (null), the code is still valid.

**9.5.35 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 M](#).

**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.

**9.5.36 JENKINS\_TOTAL\_B1**

**Jenkins total B1.** Jenkins B1 coefficient used to estimate total aboveground oven-dry biomass (pounds). This is coefficient  $B_0$  from table 4 in Jenkins and others (2003). See [appendix M](#) for details on biomass equations.

Use JENKINS\_TOTAL\_B1 along with JENKINS\_TOTAL\_B2 to estimate total aboveground biomass (includes stem wood (bole), stump, bark, top, limbs, and foliage) with the equation below:

$$\text{Total_agb} = (\text{Exp}(\text{JENKINS\_TOTAL\_B1} + \text{JENKINS\_TOTAL\_B2} * \ln(\text{DIA}*2.54))) * 2.2046$$

**Codes: JENKINS\_TOTAL\_B1**

JENKINS_SPGRPCD	JENKINS_TOTAL_B1
1	-2.03360
2	-2.23040
3	-2.53840
4	-2.53560
5	-2.07730
6	-2.20940
7	-1.91230
8	-2.48000
9	-2.01270
10	-0.71520

**9.5.37 JENKINS\_TOTAL\_B2**

**Jenkins total B2.** Jenkins B2 coefficient used to estimate total aboveground oven-dry biomass (pounds). This is coefficient  $B_1$  from table 4 in Jenkins and others (2003). See [appendix M](#) for details on biomass equations.

Use JENKINS\_TOTAL\_B2 along with JENKINS\_TOTAL\_B1 to estimate total aboveground biomass (includes stem wood (bole), stump, bark, top, limbs, and foliage) with the equation below:

$$\text{Total_agb} = (\text{Exp}(\text{JENKINS\_TOTAL\_B1} + \text{JENKINS\_TOTAL\_B2} * \ln(\text{DIA} * 2.54)) * 2.2046)$$

**Codes: JENKINS\_TOTAL\_B2**

JENKINS_SPGRPCD	JENKINS_TOTAL_B2
1	2.25920
2	2.44350
3	2.48140
4	2.43490
5	2.33230
6	2.38670
7	2.36510
8	2.48350
9	2.43420
10	1.70290

**9.5.38 JENKINS\_STEM\_WOOD\_RATIO\_B1**

**Jenkins stem wood ratio B1.** A coefficient used in computing component ratio biomass. This is equivalent to coefficient  $B_0$  for stem wood from table 6 in Jenkins and others (2003). The appropriate coefficient to use is based on the species category (SFTWD\_HRDWD). The stem is defined as that portion of the tree from a 1-foot stump to a 4-inch DOB top (i.e., the merchantable bole.) See [appendix M](#) for details on biomass equations.

The average proportion of aboveground biomass in stem wood is calculated using this equation:

$$\text{stem\_ratio} = \text{Exp}(\text{JENKINS\_STEM\_WOOD\_RATIO\_B1} + \text{JENKINS\_STEM\_WOOD\_RATIO\_B2} / (\text{DIA}^*2.54))$$

**Codes: JENKINS\_STEM\_WOOD\_RATIO\_B1**

Species category	JENKINS_STEM_WOOD_RATIO_B1
Softwood (S)	-0.3737
Hardwood (H)	-0.3065

### 9.5.39 **JENKINS\_STEM\_WOOD\_RATIO\_B2**

**Jenkins stem wood ratio B2.** A coefficient used in computing component ratio biomass. This is equivalent to coefficient B<sub>1</sub> for stem wood from table 6 in Jenkins and others (2003). The appropriate coefficient to use is based on the species category (SFTWD\_HRDWD). The stem is defined as that portion of the tree from a 1-foot stump to a 4-inch DOB top (i.e., the merchantable bole.) See [appendix M](#) for details on biomass equations.

The average proportion of aboveground biomass in stem wood is calculated using this equation:

$$\text{stem\_ratio} = \text{Exp}(\text{JENKINS\_STEM\_WOOD\_RATIO\_B1} + \text{JENKINS\_STEM\_WOOD\_RATIO\_B2} / (\text{DIA}^*2.54))$$

**Codes: JENKINS\_STEM\_WOOD\_RATIO\_B2**

Species category	JENKINS_STEM_WOOD_RATIO_B2
Softwood (S)	-1.8055
Hardwood (H)	-5.4240

### 9.5.40 **JENKINS\_STEM\_BARK\_RATIO\_B1**

**Jenkins stem bark ratio B1.** A coefficient used in computing component ratio biomass. This is equivalent to coefficient B<sub>0</sub> for stem bark from table 6 in Jenkins and others (2003). The appropriate coefficient to use is based on the species category (SFTWD\_HRDWD). This ratio estimates bark biomass on the stem, defined as that portion of the tree from a 1-foot stump to a 4-inch DOB top (i.e., the merchantable bole.) See [appendix M](#) for details on biomass equations.

The average proportion of aboveground biomass in stem bark is calculated using this equation:

$$\text{bark\_ratio} = \text{Exp}(\text{JENKINS\_STEM\_BARK\_RATIO\_B1} + \text{JENKINS\_STEM\_BARK\_RATIO\_B2} / (\text{DIA}^*2.54))$$

**Codes: JENKINS\_STEM\_BARK\_RATIO\_B1**

Species category	JENKINS_STEM_BARK_RATIO_B1
Softwood (S)	-2.0980
Hardwood (H)	-2.0129

**9.5.41 JENKINS\_STEM\_BARK\_RATIO\_B2**

**Jenkins stem bark ratio B2.** A coefficient used in computing component ratio biomass. This is equivalent to coefficient  $B_1$  for stem bark from table 6 in Jenkins and others (2003). The appropriate coefficient to use is based on the species category (SFTWD\_HRDWD). This ratio estimates bark biomass on the stem, defined as that portion of the tree from a 1-foot stump to a 4-inch DBH top (i.e., the merchantable bole.) See [appendix M](#) for details on biomass equations.

The average proportion of aboveground biomass in stem bark is calculated using this equation:

$$\text{bark\_ratio} = \text{Exp}(\text{JENKINS\_STEM\_BARK\_RATIO\_B1} + \text{JENKINS\_STEM\_BARK\_RATIO\_B2} / (\text{DIA} * 2.54))$$

Codes: **JENKINS\_STEM\_BARK\_RATIO\_B2**

Species category	JENKINS_STEM_BARK_RATIO_B2
Softwood (S)	-1.1432
Hardwood (H)	-1.6805

**9.5.42 JENKINS\_FOLIAGE\_RATIO\_B1**

**Jenkins foliage ratio B1.** A coefficient used in computing component ratio biomass. This is equivalent to coefficient  $B_0$  for foliage from table 6 in Jenkins and others (2003). The appropriate coefficient to use is based on the species category (SFTWD\_HRDWD). See [appendix M](#) for details on biomass equations.

The average proportion of aboveground biomass in foliage is calculated using this equation:

$$\text{foliage\_ratio} = \text{Exp}(\text{JENKINS\_FOLIAGE\_RATIO\_B1} + \text{JENKINS\_FOLIAGE\_RATIO\_B2} / (\text{DIA} * 2.54))$$

Codes: **JENKINS\_FOLIAGE\_RATIO\_B1**

Species category	JENKINS_FOLIAGE_RATIO_B1
Softwood (S)	-2.9584
Hardwood (H)	-4.0813

**9.5.43 JENKINS\_FOLIAGE\_RATIO\_B2**

**Jenkins foliage ratio B2.** A coefficient used in computing component ratio biomass. This is equivalent to coefficient  $B_1$  for foliage from table 6 in Jenkins and others (2003). The appropriate coefficient to use is based on the species category (SFTWD\_HRDWD). See [appendix M](#) for details on biomass equations.

The average proportion of aboveground biomass in foliage is calculated using this equation:

$$\text{foliage\_ratio} = \text{Exp}(\text{JENKINS\_FOLIAGE\_RATIO\_B1} + \text{JENKINS\_FOLIAGE\_RATIO\_B2} / (\text{DIA} * 2.54))$$

**Codes: JENKINS\_FOLIAGE\_RATIO\_B2**

Species category	JENKINS_FOLIAGE_RATIO_B2
Softwood (S)	4.4766
Hardwood (H)	5.8816

**9.5.44 JENKINS\_ROOT\_RATIO\_B1**

**Jenkins root ratio B1.** A coefficient used in computing component ratio biomass. This is equivalent to coefficient  $B_0$  for coarse roots from table 6 in Jenkins and others (2003). The appropriate coefficient to use is based on the species category (SFTWD\_HRDWD). See [appendix M](#) for details on biomass equations.

The average proportion of coarse roots to total aboveground biomass is calculated using this equation:

$$\text{root\_ratio} = \text{Exp}(\text{JENKINS_ROOT_RATIO_B1} + \text{JENKINS_ROOT_RATIO_B2} / (\text{DIA}^2.54))$$

**Codes: JENKINS\_ROOT\_RATIO\_B1**

Species category	JENKINS_ROOT_RATIO_B1
Softwood (S)	-1.5619
Hardwood (H)	-1.6911

**9.5.45 JENKINS\_ROOT\_RATIO\_B2**

**Jenkins root ratio B2.** A coefficient used in computing component ratio biomass. This is equivalent to coefficient  $B_1$  for coarse roots from table 6 in Jenkins and others (2003). The appropriate coefficient to use is based on the species category (SFTWD\_HRDWD). See [appendix M](#) for details on biomass equations.

The average proportion of coarse roots to total aboveground biomass is calculated using this equation:

$$\text{root\_ratio} = \text{Exp}(\text{JENKINS_ROOT_RATIO_B1} + \text{JENKINS_ROOT_RATIO_B2} / (\text{DIA}^2.54))$$

**Codes: JENKINS\_ROOT\_RATIO\_B2**

Species category	JENKINS_ROOT_RATIO_B2
Softwood (S)	0.6614
Hardwood (H)	0.8160

**9.5.46 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 REGIONAL\_DRYBIOT (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. Users can download the REF\_SPECIES\_TABLE, which includes the values of JENKINS\_SAPLING\_ADJUSTMENT,

at the [FIA DataMart](http://apps.fs.fed.us/fiadb-downloads/datamart.html) (<http://apps.fs.fed.us/fiadb-downloads/datamart.html>). See [appendix M](#) for details on biomass equations.

#### **9.5.47 WOOD\_SPGR\_GREENVOL\_DRYWT**

**Green specific gravity of wood (green volume and oven-dry weight).** This variable 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...). These volumes are assumed to be green wood volumes. Oven-dry biomass for the sound volume in a tree can be calculated using this equation:

$$B_{odw} = VOLCFSND \times WOOD\_SPGR\_GREENVOL\_DRYWT \times 62.4$$

Where:

$B_{odw}$  = sound oven-dry biomass of a tree in pounds

VOLCFSND = sound volume of a tree in cubic feet

#### **9.5.48 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.

#### **9.5.49 BARK\_SPGR\_GREENVOL\_DRYWT**

**Green specific gravity of bark (green volume and oven-dry weight).** There is some shrinkage in bark volume when a live tree is cut and dried. In FIADB, this specific gravity is used on live and dead trees to convert green volume to oven-dry weight in pounds. Oven-dry biomass for bark can be calculated using the volume of a tree using this equation:

$$B_{odw} = BARK\_VOLUME \times BARK\_SPGR\_GREENVOL\_DRYWT \times 62.4$$

Where:

$B_{odw}$  = oven-dry biomass of bark on a tree in pounds

BARK\_VOLUME = volume of the bark on a tree bole, in cubic feet. Note that bark volume is often estimated by subtracting volume of the bole inside bark from volume of the bole outside bark. Or, an estimate of bark volume can be obtained using any tree volume column along with BARK\_VOL\_PCT found in this table as follows:

$$\text{BARK\_VOLUME} = \text{TREE\_VOLUME} * (\text{BARK\_VOL\_PCT}/100.0)$$

#### **9.5.50 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.

#### **9.5.51 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. To estimate the biomass of green bark, use the following formula for each biomass component:

Biomass in pounds = ((1.0 + MC\_PCT\_GREEN\_BARK/100) \*  
 (1.0 - (BARK\_VOL\_PCT / (100 + BARK\_VOL\_PCT)) \* BARK\_SPGR\_GREENVOL\_DRYWT)) \*  
 [a biomass component: DRYBIO\_BOLE, DRYBIO\_TOP,  
 DRYBIO\_STUMP, DRYBIO\_SAPLING, or DRYBIO\_WDLD\_SPP]

**Note:** The biomass must be multiplied by TPA\_UNADJ and the appropriate adjustment factor to develop a per-acre estimate.

#### 9.5.52 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.

#### 9.5.53 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. To estimate the biomass of green wood, use the following formula for each biomass component:

Biomass (per tree) in pounds = ((1+[MC\_PCT\_GREEN\_WOOD]/100)\*([BARK\_VOL\_PCT]/(100+[BARK\_VOL\_PCT])\*[WOOD\_SPGR\_GREENVOL\_DRYWT])) \*  
 [a biomass component: DRYBIO\_BOLE, DRYBIO\_TOP, DRYBIO\_STUMP,  
 DRYBIO\_SAPLING, or DRYBIO\_WDLD\_SPP]

**Note:** The biomass must be multiplied by TPA\_UNADJ and the appropriate adjustment factor to develop a per-acre estimate.

#### 9.5.54 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.

#### 9.5.55 WOOD\_SPGR\_MC12VOL\_DRYWT

**Wood specific gravity (12 percent moisture content volume and oven-dry weight).** Used in biomass estimation of forest products (lumber, veneer, etc.).

#### 9.5.56 WOOD\_SPGR\_MC12VOL\_DRYWT\_CIT

**Citation for WOOD\_SPGR\_MC12VOL\_DRYWT.** A code indicating the citation for the WOOD\_SPGR\_MC12VOL\_DRYWT attribute. Refer to REF\_CITATION.CITATION\_NBR to determine the citation corresponding to the WOOD\_SPGR\_MC12VOL\_DRYWT\_CIT code.

#### 9.5.57 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.

#### 9.5.58 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.

**9.5.59 RAILE\_STUMP\_DOB\_B1**

**Raile stump diameter outside bark equation coefficient B1.** This is equivalent to coefficient B from table 1 in Raile (1982). See [appendix M](#) for details on biomass equations.

This coefficient is used in an equation to estimate diameter outside bark at any point on the stump from ground to 1 foot high. From this, volume outside bark is estimated for the selected height along the stump. Volume inside bark is subtracted from volume outside bark to estimate bark volume. Both volumes are converted to biomass using either wood or bark specific gravities. (DOB and DIA are in inches, HT is in feet.)

$$\text{DOB} = \text{DIA} + (\text{DIA} * \text{RAILE\_STUMP\_DOB\_B1} * (4.5-\text{HT}) / (\text{HT}+1))$$

**9.5.60 RAILE\_STUMP\_DIB\_B1**

**Raile stump diameter inside bark equation coefficient B1.** This is equivalent to coefficient A from table 2 in Raile (1982). See [appendix M](#) for details on biomass equations.

This coefficient is used along with RAILE\_STUMP\_DIB\_B2 in an equation to estimate diameter inside bark at any point on the stump from ground to 1 foot high. From this, volume inside bark is estimated for the selected height along the stump. Volume inside bark is subtracted from volume outside bark to estimate bark volume. Both volumes are converted to biomass using either wood or bark specific gravities. (DIB and DIA are in inches, HT is in feet.)

$$\text{DIB} = (\text{DIA} * \text{RAILE\_STUMP\_DIB\_B1}) + (\text{DIA} * \text{RAILE\_STUMP\_DIB\_B2} * (4.5-\text{HT}) / (\text{HT}+1))$$

**9.5.61 RAILE\_STUMP\_DIB\_B2**

**Raile stump diameter inside bark equation coefficient B2.** This is equivalent to coefficient B from table 2 in Raile (1982). See [appendix M](#) for details on biomass equations.

This coefficient is used along with RAILE\_STUMP\_DIB\_B1 in an equation to estimate diameter inside bark at any point on the stump from ground to 1 foot high. From this, volume inside bark is estimated for the selected height along the stump. Volume inside bark is subtracted from volume outside bark to estimate bark volume. Both volumes are converted to biomass using either wood or bark specific gravities. (DIB and DIA are in inches, HT is in feet.)

$$\text{DIB} = (\text{DIA} * \text{RAILE\_STUMP\_DIB\_B1}) + (\text{DIA} * \text{RAILE\_STUMP\_DIB\_B2} * (4.5-\text{HT}) / (\text{HT}+1))$$

**9.5.62 CWD\_DECAY\_RATIO1**

**Coarse woody debris decay ratio 1.** Ratio of decayed to sound wood weight of CWD indicated by decay class 1.

**9.5.63 CWD\_DECAY\_RATIO2**

**Coarse woody debris decay ratio 2.** Ratio of decayed to sound wood weight of CWD indicated by decay class 2.

**9.5.64 CWD\_DECAY\_RATIO3**

**Coarse woody debris decay ratio 3.** Ratio of decayed to sound wood weight of CWD indicated by decay class 3.

**9.5.65 CWD\_DECAY\_RATIO4**

**Coarse woody debris decay ratio 4.** Ratio of decayed to sound wood weight of CWD indicated by decay class 4.

**9.5.66 CWD\_DECAY\_RATIO5**

**Coarse woody debris decay ratio 5.** Ratio of decayed to sound wood weight of CWD indicated by decay class 5.

**9.5.67 DWM\_CARBON\_RATIO**

**Down woody debris carbon ratio.** Ratio of carbon to dry wood weight.

**9.5.68 STANDING\_DEAD\_DECAY\_RATIO1**

**Standing dead decay ratio 1.** Ratio of decayed wood density to undecayed wood density as indicated by decay class 1.

**9.5.69 STANDING\_DEAD\_DECAY\_RATIO2**

**Standing dead decay ratio 2.** Ratio of decayed wood density to undecayed wood density as indicated by decay class 2.

**9.5.70 STANDING\_DEAD\_DECAY\_RATIO3**

**Standing dead decay ratio 3.** Ratio of decayed wood density to undecayed wood density as indicated by decay class 3.

**9.5.71 STANDING\_DEAD\_DECAY\_RATIO4**

**Standing dead decay ratio 4.** Ratio of decayed wood density to undecayed wood density as indicated by decay class 4.

**9.5.72 STANDING\_DEAD\_DECAY\_RATIO5**

**Standing dead decay ratio 5.** Ratio of decayed wood density to undecayed wood density as indicated by decay class 5.

**9.5.73 CREATED\_BY**

**Created by.** See SURVEY.[CREATED\\_BY](#) description for definition.

**9.5.74 CREATED\_DATE**

**Created date.** See SURVEY.[CREATED\\_DATE](#) description for definition.

**9.5.75 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.[CREATED\\_IN\\_INSTANCE](#) description for definition.

**9.5.76 MODIFIED\_BY**

**Modified by.** See SURVEY.[MODIFIED\\_BY](#) description for definition.

**9.5.77 MODIFIED\_DATE**

**Modified date.** See SURVEY.[MODIFIED\\_DATE](#) description for definition.

**9.5.78 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.[MODIFIED\\_IN\\_INSTANCE](#) description for definition.

**9.5.79 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))
```



## 9.6 Reference Plant Dictionary

(Oracle table name: REF\_PLANT\_DICTIONARY)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.6.1	CN	Sequence number	VARCHAR2(34)
9.6.2	SYMBOL_TYPE	Symbol type	VARCHAR2(20)
9.6.3	SYMBOL	Symbol	VARCHAR2(16)
9.6.4	SCIENTIFIC_NAME	Scientific name	VARCHAR2(100)
9.6.5	NEW_SYMBOL	New symbol	VARCHAR2(16)
9.6.6	NEW_SCIENTIFIC_NAME	New scientific name	VARCHAR2(100)
9.6.7	COMMON_NAME	Common name	VARCHAR2(100)
9.6.8	CATEGORY	Category	VARCHAR2(15)
9.6.9	FAMILY	Family	VARCHAR2(25)
9.6.10	GROWTH_HABIT	Growth habit	VARCHAR2(50)
9.6.11	DURATION	Duration	VARCHAR2(50)
9.6.12	US_NATIVITY	United States nativity	VARCHAR2(100)
9.6.13	STATE_DISTRIBUTION	State distribution	VARCHAR2(300)
9.6.14	STATE_AND_PROVINCE	State and province	VARCHAR2(500)
9.6.15	SCIENTIFIC_NAME_W_AUTHOR	Scientific name with author	VARCHAR2(500)
9.6.16	GENERA_BINOMIAL_AUTHOR	Genera binomial author	VARCHAR2(100)
9.6.17	TRINOMIAL_AUTHOR	Trinomial author	VARCHAR2(100)
9.6.18	QUADRINOMIAL_AUTHOR	Quadrinomial author	VARCHAR2(100)
9.6.19	XGENUS	Cross genus	VARCHAR2(1)
9.6.20	GENUS	Genus	VARCHAR2(40)
9.6.21	XSPECIES	Cross species	VARCHAR2(1)
9.6.22	SPECIES	Species	VARCHAR2(50)
9.6.23	SSP	Subspecies indicator	VARCHAR2(4)
9.6.24	XSUBSPECIES	Cross subspecies	VARCHAR2(1)
9.6.25	SUBSPECIES	Subspecies	VARCHAR2(30)
9.6.26	VAR	Variety indicator	VARCHAR2(4)
9.6.27	XVARIETY	Cross variety	VARCHAR2(1)
9.6.28	VARIETY	Variety	VARCHAR2(30)
9.6.29	SUBVAR	Subvariety indicator	VARCHAR2(7)
9.6.30	SUBVARIETY	Subvariety	VARCHAR2(30)
9.6.31	F	Forma indicator	VARCHAR2(2)
9.6.32	FORMA	Forma	VARCHAR2(30)
9.6.33	NOTES	Notes	VARCHAR2(2000)
9.6.34	CREATED_BY	Created by	VARCHAR2(30)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.6.35	CREATED_DATE	Created date	DATE
9.6.36	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.6.37	MODIFIED_BY	Modified by	VARCHAR2(30)
9.6.38	MODIFIED_DATE	Modified date	DATE
9.6.39	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](#) (<http://plants.usda.gov>) on a periodic basis. The most recent NRCS download for the FIA program was January 1, 2010.

#### 9.6.1 CN

**Sequence number.** A unique sequence number used to identify a reference plant dictionary table record.

#### 9.6.2 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.

#### 9.6.3 SYMBOL

**Symbol.** The NRCS PLANTS database symbol code assigned to a specific plant taxon. The SYMBOL code is also used to populate the VEG\_SPCD attribute.

#### 9.6.4 SCIENTIFIC\_NAME

**Scientific name.** The NRCS PLANTS database scientific name for the taxon SYMBOL.

#### 9.6.5 NEW\_SYMBOL

**New symbol.** Populated only when SYMBOL\_TYPE = 'Old'. Represents the new NRCS PLANTS database accepted code that has been reclassified from the old synonym symbol.

**9.6.6 NEW\_SCIENTIFIC\_NAME**

**New scientific name.** Populated only when SYMBOL\_TYPE = 'Old'. Represents the new NRCS PLANTS database accepted scientific name that has been reclassified from the old synonym scientific name.

**9.6.7 COMMON\_NAME**

**Common name.** The NRCS PLANTS database common name associated with the taxon SYMBOL.

**9.6.8 CATEGORY**

**Category.** Indicates the broad taxonomic category for the symbol. Attribute is null (blank) when SYMBOL = 'Unknown'.

**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 Psilophyta (whisk-ferns).
Quillwort	Division Lycopodiophyta; Class Lycopodiopsida; Order Isoetales.

**9.6.9 FAMILY**

**Family.** The NRCS PLANTS database family name associated with the species SYMBOL.

**9.6.10 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	Grass or grass-like plant, including grasses (Poaceae), sedges (Cyperaceae), rushes (Juncaceae), arrow-grasses (Juncaginaceae), and quillworts (Isoetes).

Code	Growth habit
Subshrub	Climbing plant found in tropical forests with long, woody rope-like stems of anomalous anatomical structure.
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.

### 9.6.11 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.

### 9.6.12 US\_NATIVITY

**United States nativity.** TA 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 (Native status)

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).

Jurisdiction code	Description
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.

**9.6.13 STATE\_DISTRIBUTION**

**State distribution.** State distribution of the plant according to the NRCS PLANTS database.

**9.6.14 STATE\_AND\_PROVINCE**

**State and province.** State and province distribution of the plant according to the NRCS PLANTS database.

**9.6.15 SCIENTIFIC\_NAME\_W\_AUTHOR**

**Scientific name with author.** Scientific name with author of the plant according to the NRCS PLANTS database.

**9.6.16 GENERA\_BINOMIAL\_AUTHOR**

**Genera binomial author.** Genera binomial author of the plant according to the NRCS PLANTS database.

**9.6.17 TRINOMIAL\_AUTHOR**

**Trinomial author.** Trinomial author of the plant according to the NRCS PLANTS database.

**9.6.18 QUADRINOMIAL\_AUTHOR**

**Quadrinomial author.** Quadrinomial author of the plant according to the NRCS PLANTS database.

**9.6.19 XGENUS**

**Cross genus.** The cross-genus hybridization indicator.

**9.6.20 GENUS**

**Genus.** The NRCS PLANTS database genus name.

**9.6.21 XSPECIES**

**Cross species.** The cross-species hybridization indicator.

**9.6.22 SPECIES**

**Species.** The NRCS PLANTS database species name.

**9.6.23 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.

**9.6.24 XSUBSPECIES**

**Cross subspecies.** Cross-subspecies hybridization indicator.

**9.6.25 SUBSPECIES**

**Subspecies.** The NRCS PLANTS database subspecies name.

**9.6.26 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 species symbol is listed in the VARIETY column.

**9.6.27 XVARIETY**

**Cross-variety.** Cross-variety hybridization indicator.

**9.6.28 VARIETY**

**Variety.** The NRCS PLANTS database variety name.

**9.6.29 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.

**9.6.30 SUBVARIETY**

**Subvariety.** Subvariety of the plant according to the NRCS PLANTS database.

**9.6.31 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.

**9.6.32 FORMA**

**Forma.** Forma of the plant according to the NRCS PLANTS database.

**9.6.33 NOTES**

**Notes.** Notes pertaining to the record.

**9.6.34 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**9.6.35 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**9.6.36 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.6.37 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.6.38 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**9.6.39 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.



## 9.7 Reference Species Group Table

(Oracle table name: REF\_SPECIES\_GROUP)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.7.1	SPGRPCD	Species group code	NUMBER(2)
9.7.2	NAME	Name	VARCHAR2(40)
9.7.3	REGION	Region	VARCHAR2(8)
9.7.4	CLASS	Class	VARCHAR2(8)
9.7.5	CREATED_BY	Created by	VARCHAR2(30)
9.7.6	CREATED_DATE	Created date	DATE
9.7.7	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.7.8	MODIFIED_BY	Modified by	VARCHAR2(30)
9.7.9	MODIFIED_DATE	Modified date	DATE
9.7.10	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)

Key Type	Column(s) order	Tables to link	Abbreviated notation
Primary	SPGRPCD	N/A	SGP_PK

### 9.7.1 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](#). Individual tree species and corresponding species group codes are shown in [appendix F](#).

### 9.7.2 NAME

**Name.** A descriptive name for each species group code (SPGRPCD). Refer to [appendix E](#).

### 9.7.3 REGION

**Region.** A description of the section of the United States in which the species, and therefore species group is commonly found. Values are 'EASTERN' and 'WESTERN'.

### 9.7.4 CLASS

**Class.** A descriptor for the classification of the species type within the species group. Values are 'SOFTWOOD' and 'HARDWOOD'.

### 9.7.5 CREATED\_BY

**Created by.** See SURVEY.CREATED\_BY description for definition.

### 9.7.6 CREATED\_DATE

**Created date.** See SURVEY.CREATED\_DATE description for definition.

### 9.7.7 CREATED\_IN\_INSTANCE

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.7.8 MODIFIED\_BY**

**Modified by.** See SURVEY.[MODIFIED\\_BY](#) description for definition.

**9.7.9 MODIFIED\_DATE**

**Modified date.** See SURVEY.[MODIFIED\\_DATE](#) description for definition.

**9.7.10 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.[MODIFIED\\_IN\\_INSTANCE](#) description for definition.

## 9.8 Reference Invasive Species Table

(Oracle table name: REF\_INVASIVE\_SPECIES)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.8.1	CN	Sequence number	VARCHAR2(34)
9.8.2	STATECD	State code	NUMBER(4)
9.8.3	SYMBOL	Symbol	VARCHAR2(16)
9.8.4	INV_GROUP_CD	Invasive group code	NUMBER
9.8.5	UNITCD_LIST	Unit code list	VARCHAR2(20)
9.8.6	START_DATE	Start date	DATE
9.8.7	END_DATE	End date	DATE
9.8.8	MANUAL_START	Manual start	NUMBER(3,1)
9.8.9	MANUAL_END	Manual end	NUMBER(3,1)
9.8.10	NOTES	Notes	VARCHAR2(2000)
9.8.11	CREATED_BY	Created by	VARCHAR2(30)
9.8.12	CREATED_DATE	Created date	DATE
9.8.13	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.8.14	MODIFIED_BY	Modified by	VARCHAR2(30)
9.8.15	MODIFIED_DATE	Modified date	DATE
9.8.16	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) in the [PLANTS database](http://plants.usda.gov) (<http://plants.usda.gov>) on a periodic basis. The most recent NRCS download for the FIA program was January 1, 2010. 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.

### 9.8.1 CN

**Sequence number.** A unique sequence number used to identify a reference invasive species record.

### 9.8.2 STATECD

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

**9.8.3 SYMBOL**

**Symbol.** The NRCS PLANTS code used to represent a plant species.

**9.8.4 INV\_GROUP\_CD**

**Invasive group code.** Invasive species group code allows multiple species that are difficult to distinguish from one another to be recorded as the most likely species in the invasive species group, or the first one in the group if the field person was not sure. These groups are typically defined by region.

**9.8.5 UNITCD\_LIST**

**Unit code list.** This defines a list of unit codes within the state where the species is likely to be found (e.g., to differentiate E vs. W Oregon and Washington).

**9.8.6 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.

**9.8.7 END\_DATE**

**End date.** The date the species was no longer considered an invasive plant species for a State.

**9.8.8 MANUAL\_START**

**Manual start.** The first version of the Field Guide (PLOT.MANUAL) that the invasive species (SYMBOL) began to be used.

**9.8.9 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.

**9.8.10 NOTES**

**Notes.** Notes on this invasive species for this State (e.g., why added to list, why removed from list, etc.).

**9.8.11 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**9.8.12 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**9.8.13 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.8.14 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.8.15 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**9.8.16 MODIFIED\_IN\_INSTANCE**

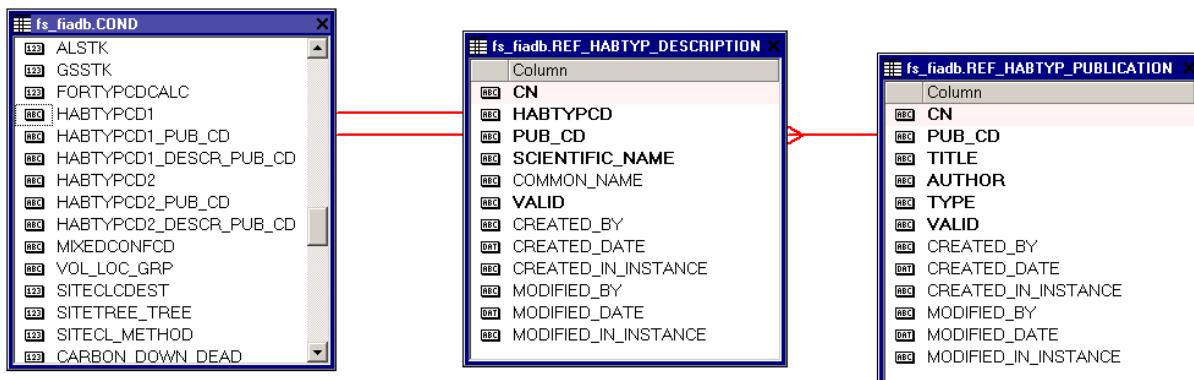
**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

## 9.9 Reference Habitat Type Description Table

(Oracle table name: REF\_HABTYP\_DESCRIPTION)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.9.1	CN	Sequence number	VARCHAR2(34)
9.9.2	HABTYP_CD	Habitat type code	VARCHAR2(10)
9.9.3	PUB_CD	Publication code	VARCHAR2(10)
9.9.4	SCIENTIFIC_NAME	Scientific name	VARCHAR2(115)
9.9.5	COMMON_NAME	Common name	VARCHAR2(255)
9.9.6	VALID	Valid	VARCHAR2(1)
9.9.7	CREATED_BY	Created by	VARCHAR2(30)
9.9.8	CREATED_DATE	Created date	DATE
9.9.9	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.9.10	MODIFIED_BY	Modified by	VARCHAR2(30)
9.9.11	MODIFIED_DATE	Modified date	DATE
9.9.12	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 9-1:** Illustration of how publication information can be derived.

**9.9.1 CN**

**Sequence number.** A unique sequence number used to identify a habitat type description record.

**9.9.2 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).

**9.9.3 PUB\_CD**

**Publication code.** A code indicating the publication that lists the name associated with a particular habitat type code (HABTYP\_CD).

**9.9.4 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.

**9.9.5 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.

**9.9.6 VALID**

**Valid.** A flag to indicate if this is a valid, documented habitat type code. Values are Y and N.

**9.9.7 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**9.9.8 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**9.9.9 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.9.10 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.9.11 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**9.9.12 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

## 9.10 Reference Habitat Type Publication Table

(Oracle table name: REF\_HABTYP\_PUBLICATION)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.10.1	CN	Sequence number	VARCHAR2(34)
9.10.2	PUB_CD	Publication code	VARCHAR2(10)
9.10.3	TITLE	Title of publication	VARCHAR2(200)
9.10.4	AUTHOR	Author of publication	VARCHAR2(200)
9.10.5	TYPE	Type of publication	VARCHAR2(10)
9.10.6	VALID	Valid	VARCHAR2(1)
9.10.7	CREATED_BY	Created by	VARCHAR2(30)
9.10.8	CREATED_DATE	Created date	DATE
9.10.9	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.10.10	MODIFIED_BY	Modified by	VARCHAR2(30)
9.10.11	MODIFIED_DATE	Modified date	DATE
9.10.12	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

### 9.10.1 CN

**Sequence number.** A unique sequence number used to identify a habitat type publication record.

### 9.10.2 PUB\_CD

**Publication code.** A code indicating the publication that lists the name associated with a particular habitat type code (REF\_HABTYP\_DESCRIPTION.HABTYP\_CD).

### 9.10.3 TITLE

**Title of publication.** The title of the publication defining particular habitat types.

### 9.10.4 AUTHOR

**Author of publication.** The author of the publication defining particular habitat types.

### 9.10.5 TYPE

**Type of publication.** An attribute describing if the habitat type publication describes potential vegetation or existing vegetation. Values are PVREF and EVREF. If it is unknown which type of habitat is being described, then TYPE = '?'.

### 9.10.6 VALID

**Valid.** A flag to indicate if this publication is valid for FIA. Values are 'Y' and 'N'.

**9.10.7 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**9.10.8 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**9.10.9 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.10.10 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.10.11 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**9.10.12 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

## 9.11 Reference Citation Table

(Oracle table name: REF\_CITATION)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.11.1	CITATION_NBR	Citation number	NUMBER(7)
9.11.2	CITATION	Citation	VARCHAR2(2000)
9.11.3	CREATED_BY	Created by	VARCHAR2(30)
9.11.4	CREATED_DATE	Created date	DATE
9.11.5	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.11.6	MODIFIED_BY	Modified by	VARCHAR2(30)
9.11.7	MODIFIED_DATE	Modified date	DATE
9.11.8	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

### 9.11.1 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 variables ending in '\_CIT' link back to the REF\_CITATION table through CITATION\_NBR.

### 9.11.2 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.

### 9.11.3 CREATED\_BY

**Created by.** See SURVEY.CREATED\_BY description for definition.

### 9.11.4 CREATED\_DATE

**Created date.** See SURVEY.CREATED\_DATE description for definition.

### 9.11.5 CREATED\_IN\_INSTANCE

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

### 9.11.6 MODIFIED\_BY

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

### 9.11.7 MODIFIED\_DATE

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

### 9.11.8 MODIFIED\_IN\_INSTANCE

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.



## 9.12 Reference Forest Inventory and Analysis Database Version Table

(Oracle table name: REF\_FIADB\_VERSION)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.12.1	VERSION	Version number	VARCHAR2(40)
9.12.2	DESCR	Version description	VARCHAR2(2000)
9.12.3	CREATED_BY	Created by	VARCHAR2(30)
9.12.4	CREATED_DATE	Created date	DATE
9.12.5	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.12.6	MODIFIED_BY	Modified by	VARCHAR2(30)
9.12.7	MODIFIED_DATE	Modified date	DATE
9.12.8	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)
9.12.9	INSTALL_TYPE	Install type	VARCHAR2(10)

Key Type	Column(s) order	Tables to link	Abbreviated notation
Primary	VERSION	N/A	RFN_PK

### 9.12.1 VERSION

**Version number.** A unique number used to identify a REF\_FIADB\_VERSION record.

### 9.12.2 DESCRIPTOR

**Version description.** A description of the FIADB version. This may include a literature citation and internet links to documentation.

### 9.12.3 CREATED\_BY

**Created by.** See SURVEY.CREATED\_BY description for definition.

### 9.12.4 CREATED\_DATE

**Created date.** See SURVEY.CREATED\_DATE description for definition.

### 9.12.5 CREATED\_IN\_INSTANCE

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

### 9.12.6 MODIFIED\_BY

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

### 9.12.7 MODIFIED\_DATE

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

### 9.12.8 MODIFIED\_IN\_INSTANCE

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

### 9.12.9 **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.

## 9.13 Reference State Elevation Table

(Oracle table name: REF\_STATE\_ELEV)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.13.1	STATECD	State code	NUMBER(4)
9.13.2	MIN_ELEV	Minimum elevation	NUMBER(5)
9.13.3	MAX_ELEV	Maximum elevation	NUMBER(5)
9.13.4	LOWEST_POINT	Lowest point	VARCHAR2(30)
9.13.5	HIGHEST_POINT	Highest point	VARCHAR2(30)
9.13.6	CREATED_BY	Created by	VARCHAR2(30)
9.13.7	CREATED_DATE	Created date	DATE
9.13.8	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.13.9	MODIFIED_BY	Modified by	VARCHAR2(30)
9.13.10	MODIFIED_DATE	Modified date	DATE
9.13.11	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)

Key Type	Column(s) order	Tables to link	Abbreviated notation
Primary	STATECD	N/A	RSE_PK

### 9.13.1 STATECD

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

### 9.13.2 MIN\_ELEV

**Minimum elevation.** The minimum elevation within the State in feet.

### 9.13.3 MAX\_ELEV

**Maximum elevation.** The maximum elevation within the State in feet.

### 9.13.4 LOWEST\_POINT

**Lowest point.** The name of the lowest point within the State. 'SL' refers to sea level. Negative minimum elevations are listed here.

### 9.13.5 HIGHEST\_POINT

**Highest point.** The name of the highest point within the State. Alternative names are provided also.

### 9.13.6 CREATED\_BY

**Created by.** See SURVEY.CREATED\_BY description for definition.

### 9.13.7 CREATED\_DATE

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**9.13.8 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.13.9 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.13.10 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**9.13.11 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

## 9.14 Reference Unit Table

(Oracle table name: REF\_UNIT)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.14.1	STATECD	State code	NUMBER(4)
9.14.2	VALUE	Value	NUMBER(2)
9.14.3	MEANING	Meaning	VARCHAR2(80)
9.14.4	CREATED_BY	Created by	VARCHAR2(30)
9.14.5	CREATED_DATE	Created date	DATE
9.14.6	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.14.7	MODIFIED_BY	Modified by	VARCHAR2(30)
9.14.8	MODIFIED_DATE	Modified date	DATE
9.14.9	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

### 9.14.1 STATECD

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

### 9.14.2 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.

### 9.14.3 MEANING

**Meaning.** The name corresponding to the survey unit code (VALUE) in the State (STATECD). Refer to [appendix B](#).

### 9.14.4 CREATED\_BY

**Created by.** See SURVEY.CREATED\_BY description for definition.

### 9.14.5 CREATED\_DATE

**Created date.** See SURVEY.CREATED\_DATE description for definition.

### 9.14.6 CREATED\_IN\_INSTANCE

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

### 9.14.7 MODIFIED\_BY

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.14.8 MODIFIED\_DATE**

**Modified date.** See SURVEY.[MODIFIED\\_DATE](#) description for definition.

**9.14.9 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.[MODIFIED\\_IN\\_INSTANCE](#) description for definition.

## 9.15 Reference Research Station Table

(Oracle table name: REF\_RESEARCH\_STATION)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.15.1	STATECD	State code	NUMBER(4)
9.15.2	RSCD	Region or station code	NUMBER(2)
9.15.3	RS	Research station abbreviation	VARCHAR2(5)
9.15.4	STATE_NAME	State name	VARCHAR2(40)
9.15.5	STATE_ABBR	State abbreviation	VARCHAR2(4)
9.15.6	CREATED_BY	Created by	VARCHAR2(30)
9.15.7	CREATED_DATE	Created date	DATE
9.15.8	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.15.9	MODIFIED_BY	Modified by	VARCHAR2(30)
9.15.10	MODIFIED_DATE	Modified date	DATE
9.15.11	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)

Key Type	Column(s) order	Tables to link	Abbreviated notation
Primary	STATECD	N/A	RES_PK

### 9.15.1 STATECD

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

### 9.15.2 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)-Alaska.
33	Southern Research Station (SRS).

### 9.15.3 RS

**Research Station Abbreviation.** Abbreviation for the research station.

**Codes: RS**

<b>Code</b>	<b>Description</b>
RMRS	Rocky Mountain Research Station.
NCRS	North Central Research Station.
NERS	Northeastern Research Station.
PNWRS	Pacific Northwest Research Station (PNWRS).
SRS	Southern Research Station.

**9.15.4 STATE\_NAME**

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

**9.15.5 STATE\_ABBR**

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

**9.15.6 CREATED\_BY**

**Created by.** See SURVEY.[CREATED\\_BY](#) description for definition.

**9.15.7 CREATED\_DATE**

**Created date.** See SURVEY.[CREATED\\_DATE](#) description for definition.

**9.15.8 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.[CREATED\\_IN\\_INSTANCE](#) description for definition.

**9.15.9 MODIFIED\_BY**

**Modified by.** See SURVEY.[MODIFIED\\_BY](#) description for definition.

**9.15.10 MODIFIED\_DATE**

**Modified date.** See SURVEY.[MODIFIED\\_DATE](#) description for definition.

**9.15.11 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.[MODIFIED\\_IN\\_INSTANCE](#) description for definition.

## 9.16 Reference National Vegetation Classification System (NVCS) Hierarchy Structure Table

(Oracle table name: REF\_NVCS\_HIERARCHY\_STRCT)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.16.1	HIERARCHY_VERSION	Hierarchy version	VARCHAR2(30)
9.16.2	PRIMARY_CLASS	Primary class	VARCHAR2(8)
9.16.3	NVCS_LEVEL_1_LABEL	Level 1 label of the NVCS	VARCHAR2(30)
9.16.4	NVCS_LEVEL_1_CD	Level 1 code of the NVCS	VARCHAR2(3)
9.16.5	NVCS_LEVEL_2_LABEL	Level 2 label of the NVCS	VARCHAR2(30)
9.16.6	NVCS_LEVEL_2_CD	Level 2 code of the NVCS	VARCHAR2(8)
9.16.7	NVCS_LEVEL_3_LABEL	Level 3 label of the NVCS	VARCHAR2(30)
9.16.8	NVCS_LEVEL_3_CD	Level 3 code of the NVCS	VARCHAR2(10)
9.16.9	NVCS_LEVEL_4_LABEL	Level 4 label of the NVCS	VARCHAR2(30)
9.16.10	NVCS_LEVEL_4_CD	Level 4 code of the NVCS	VARCHAR2(13)
9.16.11	NVCS_LEVEL_5_LABEL	Level 5 label of the NVCS	VARCHAR2(30)
9.16.12	NVCS_LEVEL_5_CD	Level 5 code of the NVCS	VARCHAR2(20)
9.16.13	NVCS_LEVEL_6_LABEL	Level 6 label of the NVCS	VARCHAR2(30)
9.16.14	NVCS_LEVEL_6_CD	Level 6 code of the NVCS	VARCHAR2(20)
9.16.15	NVCS_LEVEL_7_LABEL	Level 7 label of the NVCS	VARCHAR2(30)
9.16.16	NVCS_LEVEL_7_CD	Level 7 code of the NVCS	VARCHAR2(25)
9.16.17	NVCS_LEVEL_8_LABEL	Level 8 label of the NVCS	VARCHAR2(30)
9.16.18	NVCS_LEVEL_8_CD	Level 8 code of the NVCS	VARCHAR2(25)
9.16.19	NVCS_LEVEL_1_MEANING	Level 1 meaning of the NVCS	VARCHAR2(100)
9.16.20	NVCS_LEVEL_2_MEANING	Level 2 meaning of the NVCS	VARCHAR2(100)
9.16.21	NVCS_LEVEL_3_MEANING	Level 3 meaning of the NVCS	VARCHAR2(100)
9.16.22	NVCS_LEVEL_4_MEANING	Level 4 meaning of the NVCS	VARCHAR2(100)
9.16.23	NVCS_LEVEL_5_MEANING	Level 5 meaning of the NVCS	VARCHAR2(100)
9.16.24	NVCS_LEVEL_6_MEANING	Level 6 meaning of the NVCS	VARCHAR2(100)
9.16.25	NVCS_LEVEL_7_MEANING	Level 7 meaning of the NVCS	VARCHAR2(100)
9.16.26	NVCS_LEVEL_8_MEANING	Level 8 meaning of the NVCS	VARCHAR2(100)
9.16.27	NVCS_LEVEL_1_NOTE	Level 1 note of the NVCS	VARCHAR2(1000)
9.16.28	NVCS_LEVEL_2_NOTE	Level 2 note of the NVCS	VARCHAR2(1000)
9.16.29	NVCS_LEVEL_3_NOTE	Level 3 note of the NVCS	VARCHAR2(1000)
9.16.30	NVCS_LEVEL_4_NOTE	Level 4 note of the NVCS	VARCHAR2(1000)
9.16.31	NVCS_LEVEL_5_NOTE	Level 5 note of the NVCS	VARCHAR2(1000)
9.16.32	NVCS_LEVEL_6_NOTE	Level 6 note of the NVCS	VARCHAR2(1000)
9.16.33	NVCS_LEVEL_7_NOTE	Level 7 note of the NVCS	VARCHAR2(1000)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.16.34	NVCS_LEVEL_8_NOTE	Level 8 note of the NVCS	VARCHAR2(1000)
9.16.35	CITATION_NBR	Citation number	NUMBER(7)
9.16.36	CREATED_BY	Created by	VARCHAR2(30)
9.16.37	CREATED_DATE	Created date	DATE
9.16.38	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.16.39	MODIFIED_BY	Modified by	VARCHAR2(30)
9.16.40	MODIFIED_DATE	Modified date	DATE
9.16.41	MODIFIED_IN_INSTANCE	Modified in instance	VARCHAR2(6)

This table describes the structure of a given National Vegetation Classification System (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](http://www.usnvc.org) ([www.usnvc.org](http://www.usnvc.org)) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL ≥1.0).

### 9.16.1 HIERARCHY\_VERSION

**Hierarchy version.** A version indicator for the National Vegetation Classification hierarchy.

### 9.16.2 PRIMARY\_CLASS

**Primary class.** The primary classification determined by the NVCS classification algorithm. Valid values are 'NATURAL' or 'CULTURAL'. 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. It may also remain blank (null) if the algorithm failed to produce a valid classification.

### 9.16.3 NVCS\_LEVEL\_1\_LABEL

**Level 1 label of the NVCS.** A label assigned to the current level of the NVCS hierarchy.

### 9.16.4 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 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;

```

**9.16.5 NVCS\_LEVEL\_2\_LABEL**

**Level 2 label of the NVCS.** A label assigned to the current level of the NVCS hierarchy.

**9.16.6 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 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;
```

**9.16.7 NVCS\_LEVEL\_3\_LABEL**

**Level 3 label of the NVCS.** A label assigned to the current level of the NVCS hierarchy.

**9.16.8 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 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;
```

**9.16.9 NVCS\_LEVEL\_4\_LABEL**

**Level 4 label of the NVCS.** A label assigned to the current level of the NVCS hierarchy.

**9.16.10 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 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;

```

#### **9.16.11 NVCS\_LEVEL\_5\_LABEL**

**Level 5 label of the NVCS.** A label assigned to the current level of the NVCS hierarchy.

#### **9.16.12 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 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;

```

#### **9.16.13 NVCS\_LEVEL\_6\_LABEL**

**Level 6 label of the NVCS.** A label assigned to the current level of the NVCS hierarchy.

#### **9.16.14 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 both the 'NATURAL' and 'CULTURAL' primary classifications. 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;

```

#### **9.16.15 NVCS\_LEVEL\_7\_LABEL**

**Level 7 label of the NVCS.** A label assigned to the current level of the NVCS hierarchy.

**9.16.16 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 both the 'NATURAL' and 'CULTURAL' primary classifications. 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;
```

**9.16.17 NVCS\_LEVEL\_8\_LABEL**

**Level 8 label of the NVCS.** A label assigned to the current level of the NVCS hierarchy.

**9.16.18 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 both the 'NATURAL' and 'CULTURAL' primary classifications. 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;
```

**9.16.19 NVCS\_LEVEL\_1\_MEANING**

**Level 1 meaning of the NVCS.** The meaning of the code at the current level of the NVCS hierarchy.

**9.16.20 NVCS\_LEVEL\_2\_MEANING**

**Level 2 meaning of the NVCS.** The meaning of the code at the current level of the NVCS hierarchy.

**9.16.21 NVCS\_LEVEL\_3\_MEANING**

**Level 3 meaning of the NVCS.** The meaning of the code at the current level of the NVCS hierarchy.

**9.16.22 NVCS\_LEVEL\_4\_MEANING**

**Level 4 meaning of the NVCS.** The meaning of the code at the current level of the NVCS hierarchy.

**9.16.23 NVCS\_LEVEL\_5\_MEANING**

**Level 5 meaning of the NVCS.** The meaning of the code at the current level of the NVCS hierarchy.

**9.16.24 NVCS\_LEVEL\_6\_MEANING**

**Level 6 meaning of the NVCS.** The meaning of the code at the current level of the NVCS hierarchy.

**9.16.25 NVCS\_LEVEL\_7\_MEANING**

**Level 7 meaning of the NVCS.** The meaning of the code at the current level of the NVCS hierarchy.

**9.16.26 NVCS\_LEVEL\_8\_MEANING**

**Level 8 meaning of the NVCS.** The meaning of the code at the current level of the NVCS hierarchy.

**9.16.27 NVCS\_LEVEL\_1\_NOTE**

**Level 1 note of the NVCS.** Any remark relevant to the hierarchy structure record.

**9.16.28 NVCS\_LEVEL\_2\_NOTE**

**Level 2 note of the NVCS.** Any remark relevant to the hierarchy structure record.

**9.16.29 NVCS\_LEVEL\_3\_NOTE**

**Level 3 note of the NVCS.** Any remark relevant to the hierarchy structure record.

**9.16.30 NVCS\_LEVEL\_4\_NOTE**

**Level 4 note of the NVCS.** Any remark relevant to the hierarchy structure record.

**9.16.31 NVCS\_LEVEL\_5\_NOTE**

**Level 5 note of the NVCS.** Any remark relevant to the hierarchy structure record.

**9.16.32 NVCS\_LEVEL\_6\_NOTE**

**Level 6 note of the NVCS.** Any remark relevant to the hierarchy structure record.

**9.16.33 NVCS\_LEVEL\_7\_NOTE**

**Level 7 note of the NVCS.** Any remark relevant to the hierarchy structure record.

**9.16.34 NVCS\_LEVEL\_8\_NOTE**

**Level 8 note of the NVCS.** Any remark relevant to the hierarchy structure record.

**9.16.35 CITATION\_NBR**

**Citation number.** Foreign key to the parent REF\_CITATION record.

**9.16.36 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**9.16.37 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**9.16.38 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.16.39 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.16.40 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**9.16.41 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.



## 9.17 Reference National Vegetation Classification System Level 1 Codes Table

(Oracle table name: REF\_NVCS\_LEVEL\_1\_CODES)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.17.1	CN	Sequence number	VARCHAR2(34)
9.17.2	PRIMARY_CLASS	Primary class	VARCHAR2(8)
9.17.3	HIERARCHY_LEVEL	Hierarchy level	NUMBER(2)
9.17.4	HIERARCHY_LEVEL_LABEL	Hierarchy level label	VARCHAR2(30)
9.17.5	NVCS_CODE	NVCS code	VARCHAR2(20)
9.17.6	MEANING	Meaning	VARCHAR2(100)
9.17.7	NOTE	Note	VARCHAR2(1000)
9.17.8	CREATED_BY	Created by	VARCHAR2(30)
9.17.9	CREATED_DATE	Created date	DATE
9.17.10	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.17.11	MODIFIED_BY	Modified by	VARCHAR2(30)
9.17.12	MODIFIED_DATE	Modified date	DATE
9.17.13	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 System (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](http://www.usnvc.org) ([www.usnvc.org](http://www.usnvc.org)) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL ≥ 1.0).

### 9.17.1 CN

**Sequence number.** A unique sequence number used to identify a reference NVCS level 1 code record.

### 9.17.2 PRIMARY\_CLASS

**Primary class.** The primary classification determined by the NVCS classification algorithm. Valid values are 'NATURAL' or 'CULTURAL'. 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. It may also remain blank (null) if the algorithm failed to produce a valid classification.

**9.17.3 HIERARCHY\_LEVEL**

**Hierarchy level.** An integer value indicating at what level in the National Vegetation Classification System hierarchy the current record exists.

**9.17.4 HIERARCHY\_LEVEL\_LABEL**

**Hierarchy level label.** A label assigned to the current level of the NVCS hierarchy.

**9.17.5 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.

**9.17.6 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.

**9.17.7 NOTE**

**Note.** Any remark relevant to the hierarchy structure record.

**9.17.8 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**9.17.9 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**9.17.10 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.17.11 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.17.12 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**9.17.13 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.[MODIFIED\\_IN\\_INSTANCE](#) description for definition.



## 9.18 Reference National Vegetation Classification System Level 2 Codes Table

(Oracle table name: REF\_NVCS\_LEVEL\_2\_CODES)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.18.1	CN	Sequence number	VARCHAR2(34)
9.18.2	PRIMARY_CLASS	Primary class	VARCHAR2(8)
9.18.3	HIERARCHY_LEVEL	Hierarchy level	NUMBER(2)
9.18.4	HIERARCHY_LEVEL_LABEL	Hierarchy level label	VARCHAR2(30)
9.18.5	NVCS_CODE	NVCS code	VARCHAR2(20)
9.18.6	MEANING	Meaning	VARCHAR2(100)
9.18.7	NOTE	Note	VARCHAR2(1000)
9.18.8	CREATED_BY	Created by	VARCHAR2(30)
9.18.9	CREATED_DATE	Created date	DATE
9.18.10	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.18.11	MODIFIED_BY	Modified by	VARCHAR2(30)
9.18.12	MODIFIED_DATE	Modified date	DATE
9.18.13	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 System (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](http://www.usnvc.org) ([www.usnvc.org](http://www.usnvc.org)) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL ≥ 1.0).

### 9.18.1 CN

**Sequence number.** A unique sequence number used to identify a reference NVCS level 2 code record.

### 9.18.2 PRIMARY\_CLASS

**Primary class.** The primary classification determined by the NVCS classification algorithm. Valid values are 'NATURAL' or 'CULTURAL'. 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. It may also remain blank (null) if the algorithm failed to produce a valid classification.

**9.18.3 HIERARCHY\_LEVEL**

**Hierarchy level.** An integer value indicating at what level in the National Vegetation Classification System hierarchy the current record exists.

**9.18.4 HIERARCHY\_LEVEL\_LABEL**

**Hierarchy level label.** A label assigned to the current level of the NVCS hierarchy.

**9.18.5 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.

**9.18.6 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.

**9.18.7 NOTE**

**Note.** Any remark relevant to the hierarchy structure record.

**9.18.8 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**9.18.9 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**9.18.10 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.18.11 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.18.12 MODIFIED\_DATE**

**Modified date.** See SURVEY.[MODIFIED\\_DATE](#) description for definition.

**9.18.13 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.[MODIFIED\\_IN\\_INSTANCE](#) description for definition.



## 9.19 Reference National Vegetation Classification System Level 3 Codes Table

(Oracle table name: REF\_NVCS\_LEVEL\_3\_CODES)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.19.1	CN	Sequence number	VARCHAR2(34)
9.19.2	PRIMARY_CLASS	Primary class	VARCHAR2(8)
9.19.3	HIERARCHY_LEVEL	Hierarchy level	NUMBER(2)
9.19.4	HIERARCHY_LEVEL_LABEL	Hierarchy level label	VARCHAR2(30)
9.19.5	NVCS_CODE	NVCS code	VARCHAR2(20)
9.19.6	MEANING	Meaning	VARCHAR2(100)
9.19.7	NOTE	Note	VARCHAR2(1000)
9.19.8	CREATED_BY	Created by	VARCHAR2(30)
9.19.9	CREATED_DATE	Created date	DATE
9.19.10	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.19.11	MODIFIED_BY	Modified by	VARCHAR2(30)
9.19.12	MODIFIED_DATE	Modified date	DATE
9.19.13	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 System (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](http://www.usnvc.org) ([www.usnvc.org](http://www.usnvc.org)) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL ≥ 1.0).

### 9.19.1 CN

**Sequence number.** A unique sequence number used to identify a reference NVCS level 3 code record.

### 9.19.2 PRIMARY\_CLASS

**Primary class.** The primary classification determined by the NVCS classification algorithm. Valid values are 'NATURAL' or 'CULTURAL'. 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. It may also remain blank (null) if the algorithm failed to produce a valid classification.

**9.19.3 HIERARCHY\_LEVEL**

**Hierarchy level.** An integer value indicating at what level in the National Vegetation Classification System hierarchy the current record exists.

**9.19.4 HIERARCHY\_LEVEL\_LABEL**

**Hierarchy level label.** A label assigned to the current level of the NVCS hierarchy.

**9.19.5 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.

**9.19.6 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.

**9.19.7 NOTE**

**Note.** Any remark relevant to the hierarchy structure record.

**9.19.8 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**9.19.9 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**9.19.10 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.19.11 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.19.12 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**9.19.13 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.



## 9.20 Reference National Vegetation Classification System Level 4 Codes Table

(Oracle table name: REF\_NVCS\_LEVEL\_4\_CODES)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.20.1	CN	Sequence number	VARCHAR2(34)
9.20.2	PRIMARY_CLASS	Primary class	VARCHAR2(8)
9.20.3	HIERARCHY_LEVEL	Hierarchy level	NUMBER(2)
9.20.4	HIERARCHY_LEVEL_LABEL	Hierarchy level label	VARCHAR2(30)
9.20.5	NVCS_CODE	NVCS code	VARCHAR2(20)
9.20.6	MEANING	Meaning	VARCHAR2(100)
9.20.7	NOTE	Note	VARCHAR2(1000)
9.20.8	CREATED_BY	Created by	VARCHAR2(30)
9.20.9	CREATED_DATE	Created date	DATE
9.20.10	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.20.11	MODIFIED_BY	Modified by	VARCHAR2(30)
9.20.12	MODIFIED_DATE	Modified date	DATE
9.20.13	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 System (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](http://www.usnvc.org) ([www.usnvc.org](http://www.usnvc.org)) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL ≥ 1.0).

### 9.20.1 CN

**Sequence number.** A unique sequence number used to identify a reference NVCS level 4 code record.

### 9.20.2 PRIMARY\_CLASS

**Primary class.** The primary classification determined by the NVCS classification algorithm. Valid values are 'NATURAL' or 'CULTURAL'. 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. It may also remain blank (null) if the algorithm failed to produce a valid classification.

**9.20.3 HIERARCHY\_LEVEL**

**Hierarchy level.** An integer value indicating at what level in the National Vegetation Classification System hierarchy the current record exists.

**9.20.4 HIERARCHY\_LEVEL\_LABEL**

**Hierarchy level label.** A label assigned to the current level of the NVCS hierarchy.

**9.20.5 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.

**9.20.6 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.
1.B.3.Nb	Southeastern North American Flooded & Swamp Forest.
1.B.4.Na	North American Boreal Forest & Woodland.

NVCS_CODE	MEANING
1.B.5.Na	North American Boreal Flooded & Swamp Forest.
7.A.2.1	Forest Plantation.

**9.20.7 NOTE**

**Note.** Any remark relevant to the hierarchy structure record.

**9.20.8 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**9.20.9 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**9.20.10 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.20.11 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.20.12 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**9.20.13 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.



## 9.21 Reference National Vegetation Classification System Level 5 Codes Table

(Oracle table name: REF\_NVCS\_LEVEL\_5\_CODES)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.21.1	CN	Sequence number	VARCHAR2(34)
9.21.2	PRIMARY_CLASS	Primary class	VARCHAR2(8)
9.21.3	HIERARCHY_LEVEL	Hierarchy level	NUMBER(2)
9.21.4	HIERARCHY_LEVEL_LABEL	Hierarchy level label	VARCHAR2(30)
9.21.5	NVCS_CODE	NVCS code	VARCHAR2(20)
9.21.6	MEANING	Meaning	VARCHAR2(100)
9.21.7	NOTE	Note	VARCHAR2(1000)
9.21.8	CREATED_BY	Created by	VARCHAR2(30)
9.21.9	CREATED_DATE	Created date	DATE
9.21.10	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.21.11	MODIFIED_BY	Modified by	VARCHAR2(30)
9.21.12	MODIFIED_DATE	Modified date	DATE
9.21.13	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 System (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](http://www.usnvc.org) ([www.usnvc.org](http://www.usnvc.org)) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL ≥ 1.0).

### 9.21.1 CN

**Sequence number.** A unique sequence number used to identify a reference NVCS level 5 code record.

### 9.21.2 PRIMARY\_CLASS

**Primary class.** The primary classification determined by the NVCS classification algorithm. Valid values are 'NATURAL' or 'CULTURAL'. 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. It may also remain blank (null) if the algorithm failed to produce a valid classification.

**9.21.3 HIERARCHY\_LEVEL**

**Hierarchy level.** An integer value indicating at what level in the National Vegetation Classification System hierarchy the current record exists.

**9.21.4 HIERARCHY\_LEVEL\_LABEL**

**Hierarchy level label.** A label assigned to the current level of the NVCS hierarchy.

**9.21.5 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.
1.B.3.Nb.M161	Pond-cypress Basin Swamp.
1.B.3.Nb.M033	Southern Coastal Plain Basin Swamp & Flatwoods.

NVCS_CODE	MEANING
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.

### 9.21.6 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.
1.B.2.Na.M014	Laurentian-Acadian Mesic Hardwood - Conifer Forest.
1.B.2.Na.M013	Eastern North American Ruderal Forest.

NVCS_CODE	MEANING
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.

**9.21.7 NOTE**

**Note.** Any remark relevant to the hierarchy structure record.

**9.21.8 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**9.21.9 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**9.21.10 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.21.11 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.21.12 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**9.21.13 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.

## 9.22 Reference National Vegetation Classification System Level 6 Codes Table

(Oracle table name: REF\_NVCS\_LEVEL\_6\_CODES)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.22.1	CN	Sequence number	VARCHAR2(34)
9.22.2	PRIMARY_CLASS	Primary class	VARCHAR2(8)
9.22.3	HIERARCHY_LEVEL	Hierarchy level	NUMBER(2)
9.22.4	HIERARCHY_LEVEL_LABEL	Hierarchy level label	VARCHAR2(30)
9.22.5	NVCS_CODE	NVCS code	VARCHAR2(20)
9.22.6	MEANING	Meaning	VARCHAR2(100)
9.22.7	NOTE	Note	VARCHAR2(1000)
9.22.8	CREATED_BY	Created by	VARCHAR2(30)
9.22.9	CREATED_DATE	Created date	DATE
9.22.10	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.22.11	MODIFIED_BY	Modified by	VARCHAR2(30)
9.22.12	MODIFIED_DATE	Modified date	DATE
9.22.13	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 System (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](http://www.usnvc.org) ([www.usnvc.org](http://www.usnvc.org)) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL ≥ 1.0).

### 9.22.1 CN

**Sequence number.** A unique sequence number used to identify a reference NVCS level 6 code record.

### 9.22.2 PRIMARY\_CLASS

**Primary class.** The primary classification determined by the NVCS classification algorithm. Valid values are 'NATURAL' or 'CULTURAL'. 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. It may also remain blank (null) if the algorithm failed to produce a valid classification.

**9.22.3 HIERARCHY\_LEVEL**

**Hierarchy level.** An integer value indicating at what level in the National Vegetation Classification System hierarchy the current record exists.

**9.22.4 HIERARCHY\_LEVEL\_LABEL**

**Hierarchy level label.** A label assigned to the current level of the NVCS hierarchy.

**9.22.5 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.

**9.22.6 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.

**9.22.7 NOTE**

**Note.** Any remark relevant to the hierarchy structure record.

**9.22.8 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**9.22.9 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**9.22.10 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.22.11 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.22.12 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**9.22.13 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.[MODIFIED\\_IN\\_INSTANCE](#) description for definition.



## 9.23 Reference National Vegetation Classification System Level 7 Codes Table

(Oracle table name: REF\_NVCS\_LEVEL\_7\_CODES)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.23.1	CN	Sequence number	VARCHAR2(34)
9.23.2	PRIMARY_CLASS	Primary class	VARCHAR2(8)
9.23.3	HIERARCHY_LEVEL	Hierarchy level	NUMBER(2)
9.23.4	HIERARCHY_LEVEL_LABEL	Hierarchy level label	VARCHAR2(30)
9.23.5	NVCS_CODE	NVCS code	VARCHAR2(20)
9.23.6	MEANING	Meaning	VARCHAR2(100)
9.23.7	NOTE	Note	VARCHAR2(1000)
9.23.8	CREATED_BY	Created by	VARCHAR2(30)
9.23.9	CREATED_DATE	Created date	DATE
9.23.10	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.23.11	MODIFIED_BY	Modified by	VARCHAR2(30)
9.23.12	MODIFIED_DATE	Modified date	DATE
9.23.13	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 System (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](http://www.usnvc.org) ([www.usnvc.org](http://www.usnvc.org)) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL ≥ 1.0).

### 9.23.1 CN

**Sequence number.** A unique sequence number used to identify a reference NVCS level 7 code record.

### 9.23.2 PRIMARY\_CLASS

**Primary class.** The primary classification determined by the NVCS classification algorithm. Valid values are 'NATURAL' or 'CULTURAL'. 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. It may also remain blank (null) if the algorithm failed to produce a valid classification.

**9.23.3 HIERARCHY\_LEVEL**

**Hierarchy level.** An integer value indicating at what level in the National Vegetation Classification System hierarchy the current record exists.

**9.23.4 HIERARCHY\_LEVEL\_LABEL**

**Hierarchy level label.** A label assigned to the current level of the NVCS hierarchy.

**9.23.5 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.
-1-1-1-1-1-1-1-1	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.

**9.23.6 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.
-1-1-1-1-1-1-1-1	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.

**9.23.7 NOTE**

**Note.** Any remark relevant to the hierarchy structure record.

**9.23.8 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**9.23.9 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**9.23.10 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.23.11 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.23.12 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**9.23.13 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE description for definition.



## 9.24 Reference National Vegetation Classification System Level 8 Codes Table

(Oracle table name: REF\_NVCS\_LEVEL\_8\_CODES)

Subsection	Column name (attribute)	Descriptive name	Oracle data type
9.24.1	CN	Sequence number	VARCHAR2(34)
9.24.2	PRIMARY_CLASS	Primary class	VARCHAR2(8)
9.24.3	HIERARCHY_LEVEL	Hierarchy level	NUMBER(2)
9.24.4	HIERARCHY_LEVEL_LABEL	Hierarchy level label	VARCHAR2(30)
9.24.5	NVCS_CODE	NVCS code	VARCHAR2(25)
9.24.6	MEANING	Meaning	VARCHAR2(100)
9.24.7	NOTE	Note	VARCHAR2(1000)
9.24.8	CREATED_BY	Created by	VARCHAR2(30)
9.24.9	CREATED_DATE	Created date	DATE
9.24.10	CREATED_IN_INSTANCE	Created in instance	VARCHAR2(6)
9.24.11	MODIFIED_BY	Modified by	VARCHAR2(30)
9.24.12	MODIFIED_DATE	Modified date	DATE
9.24.13	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 System (NVCS) hierarchy. More information about the NVCS is available at the [United States National Vegetation Classification website](http://www.usnvc.org) ([www.usnvc.org](http://www.usnvc.org)) (United States National Vegetation Classification 2016). Populated for data collected using the National Field Guide protocols (PLOT.MANUAL ≥ 1.0).

### 9.24.1 CN

**Sequence number.** A unique sequence number used to identify a reference NVCS level 8 code record.

### 9.24.2 PRIMARY\_CLASS

**Primary class.** The primary classification determined by the NVCS classification algorithm. Valid values are 'NATURAL' or 'CULTURAL'. 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. It may also remain blank (null) if the algorithm failed to produce a valid classification.

**9.24.3 HIERARCHY\_LEVEL**

**Hierarchy level.** An integer value indicating at what level in the National Vegetation Classification System hierarchy the current record exists.

**9.24.4 HIERARCHY\_LEVEL\_LABEL**

**Hierarchy level label.** A label assigned to the current level of the NVCS hierarchy.

**9.24.5 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.
-1-1-1-1-1-1-1-1	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.
7.A.2.1.2.a.5.CST007167	Norway Spruce Plantation.
7.A.2.1.2.a.5.CST006686	Scotch Pine Plantation.

NVCS_CODE	MEANING
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.

## 9.24.6 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.
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.

NVCS_CODE	MEANING
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.

**9.24.7 NOTE**

**Note.** Any remark relevant to the hierarchy structure record.

**9.24.8 CREATED\_BY**

**Created by.** See SURVEY.CREATED\_BY description for definition.

**9.24.9 CREATED\_DATE**

**Created date.** See SURVEY.CREATED\_DATE description for definition.

**9.24.10 CREATED\_IN\_INSTANCE**

**Created in instance.** See SURVEY.CREATED\_IN\_INSTANCE description for definition.

**9.24.11 MODIFIED\_BY**

**Modified by.** See SURVEY.MODIFIED\_BY description for definition.

**9.24.12 MODIFIED\_DATE**

**Modified date.** See SURVEY.MODIFIED\_DATE description for definition.

**9.24.13 MODIFIED\_IN\_INSTANCE**

**Modified in instance.** See SURVEY.MODIFIED\_IN\_INSTANCE 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:			
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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
		<b>A</b>	
		<b>B</b>	
3.8	BEGINEND	<a href="#">Begin and End Table</a>	<b>Begin and end table.</b> 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	<a href="#">Boundary Table</a>	<b>Boundary table.</b> This table provides a description of the demarcation line between two conditions that occur on a single subplot. <ul style="list-style-type: none"> <li>PLOT.CN = BOUNDARY.PLT_CN links the boundary records to the unique plot record.</li> </ul>
		<b>C</b>	

Section	Oracle table name	Table name	Description
2.4	COND	Condition Table	<p><b>Condition table.</b> 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"> <li>• PLOT.CN = COND.PLT_CN links the condition class record(s) to the plot table.</li> <li>• COND.PLT_CN = SITETREE.PLT_CN and COND.CON DID = SITETREE.CON DID links the condition class record to the site tree data.</li> <li>• COND.PLT_CN = TREE.PLT_CN and COND.CON DID = TREE.CON DID links the condition class record to the tree data.</li> </ul>
5.8	COND_DWM_CALC	Condition Down Woody Material Calculation Table	<p><b>Condition down woody material calculation table.</b> This table contains calculations used to create estimations on the down woody material indicator.</p> <ul style="list-style-type: none"> <li>• PLOT.CN = COND_DWM_CALC.PLT_CN links the down woody material calculation records to the unique plot record.</li> <li>• COND.CN = COND_DWM_CALC.CND_CN links the down woody material calculation records to the unique condition record.</li> <li>• POP_STRATUM.CN = COND_DWM_CALC.STRATUM_CN links the down woody material calculation records to the unique population stratum record.</li> </ul>
2.2	COUNTY	County Table	<p><b>County table.</b> 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"> <li>• COUNTY.CN = PLOT.CTY_CN links the unique county record to the plot record.</li> </ul>
<b>D</b>			
5.2	DWM_COARSE_WOODY_DEBRIS	Down Woody Material Coarse Woody Debris Table	<p><b>Down woody material coarse woody debris table.</b> This table provides information for each piece of coarse woody debris measured along the transects.</p> <ul style="list-style-type: none"> <li>• PLOT.CN = DWM_COARSE_WOODY_DEBRIS.PLT_CN links the down woody material coarse woody debris records to the unique plot record.</li> <li>• COND.PLT_CN = DWM_COARSE_WOODY_DEBRIS.PLT_CN and COND.CON DID = DWM_COARSE_WOODY_DEBRIS.CON DID links the coarse woody debris records to the unique condition record.</li> </ul>

Section	Oracle table name	Table name	Description
5.3	DWM_DUFF_LITTER_FUEL	Down Woody Material Duff, Litter, Fuel Table	<p><b>Down woody material duff, litter, fuel table.</b> This table provides information on the duff, litter, fuelbed depths measured at a point on the transects.</p> <ul style="list-style-type: none"> <li>• PLOT.CN = DWM_DUFF_LITTER_FUEL.PLT_CN links the duff, litter, fuelbed records to the unique plot record.</li> <li>• COND.PLT_CN = DWM_DUFF_LITTER_FUEL.PLT_CN and COND.CONDID= DWM_DUFF_LITTER_FUEL.CONDID links the duff, litter, fuel records to the unique condition record.</li> </ul>
5.4	DWM_FINE_WOODY_DEBRIS	Down Woody Material Fine Woody Debris Table	<p><b>Down woody material fine woody debris table.</b> This table provides information on the fine woody debris measured along a segment of the transects.</p> <ul style="list-style-type: none"> <li>• PLOT.CN = DWM_FINE_WOODY_DEBRIS.PLT_CN links the fine woody debris records to the unique plot record.</li> <li>• COND.PLT_CN = DWM_FINE_WOODY_DEBRIS.PLT_CN and COND.CONDID= DWM_FINE_WOODY_DEBRIS.CONDID links the fine woody debris records to the unique condition record.</li> </ul>
5.5	DWM_MICROPLOT_FUEL	Down Woody Material Microplot Fuel Table	<p><b>Down woody material microplot fuel table.</b> This table provides information on the fuel loads (shrubs and herbs) measured on the microplot.</p> <ul style="list-style-type: none"> <li>• PLOT.CN = DWM_MICROPLOT_FUEL.PLT_CN links the microplot fuel records to the unique plot record.</li> </ul>
5.6	DWM_RESIDUALPILE	Down Woody Material Residual Pile Table	<p><b>Down woody material residual pile table.</b> This table provides information on the wood piles measured on the subplot.</p> <ul style="list-style-type: none"> <li>• PLOT.CN = DWM_RESIDUALPILE.PLT_CN links the wood piles records to the unique plot record.</li> <li>• COND.PLT_CN = DWM_RESIDUALPILE.PLT_CN and COND.CONDID= DWM_RESIDUALPILE.CONDID links the wood piles records to the unique condition record.</li> </ul>
5.7	DWM_TRANSECT_SEGMENT	Down Woody Material Transect Segment Table	<p><b>Down woody material transect segment table.</b> This table describes the down woody material transect segment lengths by condition class.</p> <ul style="list-style-type: none"> <li>• PLOT.CN = DWM_TRANSECT_SEGMENT.PLT_CN links the down woody material transect length records to the unique plot record.</li> <li>• COND.PLT_CN = DWM_TRANSECT_SEGMENT.PLT_CN and COND.CONDID= DWM_TRANSECT_SEGMENT.CONDID links the down woody material transect segment records to the unique condition record.</li> </ul>

Section	Oracle table name	Table name	Description
5.1	DWM_VISIT	Down Woody Material Visit Table	<p><b>Down woody material visit table.</b> 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"> <li>PLOT.CN = DWM_VISIT.PLT_CN links the down woody material indicator visit record to the unique plot record.</li> </ul>
		E	
		F	
		G	
4.4	GRND_CVR	Ground Cover Table	<p><b>Ground cover table.</b> This table provides ground cover measurement data for National Forest System (NFS) ownership protocols.</p> <ul style="list-style-type: none"> <li>PLOT.CN = GRND_CVR.PLT_CN links the ground cover record to the unique plot record.</li> </ul>
		H	
		I	
4.1	INVASIVE_SUBPLOT_SPP	Invasive Subplot Species Table	<p><b>Invasive subplot species table.</b> This table provides percent cover data of invasive species identified on the subplot.</p> <ul style="list-style-type: none"> <li>PLOT.CN = INVASIVE_SUBPLOT_SPP.PLT_CN links the invasive subplot species record(s) to the unique plot record.</li> <li>SUBP_COND.PLT_CN = INVASIVE_SUBPLOT_SPP.PLT_CN and SUBP_COND.CONDID = INVASIVE_SUBPLOT_SPP.CONDID and SUBP_COND.SUBP = INVASIVE_SUBPLOT_SPP.SUBP links the invasive subplot species record(s) to the unique subplot condition record.</li> <li>INVASIVE_SUBPLOT_SPP.VEG_SPCD = REF_PLANT_DICTIONARY.SYMBOL links the invasive vegetation subplot NRCS species code to the plant dictionary reference species code.</li> </ul>
		J	
		K	
		L	
		M	
		N	
		O	
		P	

Section	Oracle table name	Table name	Description
4.3	P2VEG_SUBP_STRUCTURE	Phase 2 Vegetation Subplot Structure Table	<p><b>Phase 2 Vegetation subplot structure table.</b> This table provides percent cover by layer by growth habit.</p> <ul style="list-style-type: none"> <li>• PLOT.CN = P2VEG_SUBP_STRUCTURE. PLT_CN links the subplot structure record(s) to the unique plot record.</li> <li>• SUBP_COND.PLT_CN = P2VEG_SUBP_STRUCTURE.PLT_CN and SUBP_COND.CONDID = P2VEG_SUBP_STRUCTURE.CONDID and SUBP_COND.SUBP = P2VEG_SUBP_STRUCTURE.SUBP links the vegetation subplot structure record(s) to the unique subplot condition record.</li> </ul>
4.2	P2VEG_SUBPLOT_SPP	Phase 2 Vegetation Subplot Species Table	<p><b>Phase 2 Vegetation subplot species table.</b> This table provides percent cover data of vegetation species identified on the subplot.</p> <ul style="list-style-type: none"> <li>• PLOT.CN = P2VEG_SUBPLOT_SPP.PLT_CN links the vegetation subplot species record(s) to the unique plot record.</li> <li>• SUBP_COND.PLT_CN = P2VEG_SUBPLOT_SPP.PLT_CN and SUBP_COND.CONDID = P2VEG_SUBPLOT_SPP.CONDID and SUBP_COND.SUBP = P2VEG_SUBPLOT_SPP.SUBP links the vegetation subplot species record(s) to the unique subplot condition record.</li> <li>• P2VEG_SUBPLOT_SPP.VEG_SPCD = REF_PLANT_DICTIONARY.SYMBOL links the P2 vegetation subplot NRCS species code to the plant dictionary reference species code.</li> </ul>
2.3	PLOT	Plot Table	<p><b>Plot table.</b> 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"> <li>• PLOT.CN = COND.PLT_CN links the unique plot record to the condition class record(s).</li> <li>• PLOT.CN = SUBPLOT.PLT_CN links the unique plot record to the subplot records.</li> <li>• PLOT.CN = TREE.PLT_CN links the unique plot record to the tree records.</li> <li>• PLOT.CN = SEEDLING.PLT_CN links the unique plot record to the seedling records.</li> </ul>
8.1	PLOTGEOM	Plot Geometry Table	<p><b>Plot geometry table.</b> This table contains geometric attributes associated with the plot location, such as the hydrological unit and roadless codes.</p> <ul style="list-style-type: none"> <li>• PLOTGEOM.CN = PLOT.CN links the unique plot record between the two tables.</li> </ul>

Section	Oracle table name	Table name	Description
8.2	PLOTSNAP	Plot Snapshot Table	<p><b>Plot snapshot table.</b> 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.</p> <ul style="list-style-type: none"> <li>PLOTSNAP.CN = PLOT.CN links the unique plot record between the two tables.</li> </ul>
6.1	PLOT_REGEN	Plot Regeneration Table	<p><b>Plot regeneration table.</b> This table contains the information for the four subplots describing the amount of animal browse pressure exerted on the regeneration of trees.</p> <ul style="list-style-type: none"> <li>PLOT.CN = PLOT_REGEN.PLT_CN links the unique plot record to the unique plot regeneration record.</li> </ul>
7.1	POP_ESTN_UNIT	Population Estimation Unit Table	<p><b>Population estimation unit table.</b> 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> <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>
7.2	POP_EVAL	Population Evaluation Table	<p><b>Population evaluation table.</b> 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"> <li>POP_ESTN_UNIT.EVAL_CN = POP_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).</li> </ul>

Section	Oracle table name	Table name	Description
7.3	POP_EVAL_ATTRIBUTE	Population Evaluation Attribute Table	<p><b>Population evaluation attribute table.</b> 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"> <li>POP_EVAL.CN = POP_EVAL_ATTRIBUTE.EVAL_CN links the unique evaluation identifier to the list of population estimates that can be derived for that evaluation.</li> </ul>
7.4	POP_EVAL_GRP	Population Evaluation Group Table	<p><b>Population evaluation group table.</b> 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"> <li>POP_EVAL_GRP.CN = POP_EVAL_TYP.EVAL_GRP_CN links the evaluation group record to the evaluation type record.</li> </ul>
7.5	POP_EVAL_TYP	Population Evaluation Type Table	<p><b>Population evaluation type table.</b> 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"> <li>POP_EVAL_TYP.EVAL_CN = POP_EVAL.CN links the evaluation type record to the evaluation record.</li> <li>POP_EVAL_TYP.EVAL_GRP_CN = POP_EVAL_GRP.CN links the evaluation type record to the evaluation group record.</li> <li>POP_EVAL_TYP.EVAL_TYP = REF_POP_EVAL_TYP_DESCR.EVAL_TYP links an evaluation type record to an evaluation type description reference record.</li> </ul>
7.6	POP_PLOT_STRATUM_ASSGN	Population Plot Stratum Assignment Table	<p><b>Population plot stratum assignment table.</b> 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"> <li>POP_PLOT_STRATUM_ASSGN.PLT_CN = PLOT.CN links the stratum assigned to the plot record.</li> </ul>

Section	Oracle table name	Table name	Description
7.7	POP_STRATUM	Population Stratum Table	<p><b>Population stratum table.</b> 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"> <li>• POP_STRATUM.CN = POP_PLOT_STRATUM_ASSGN.STRATUM_CN links the defined stratum to each plot.</li> </ul>
		<b>Q</b>	
		<b>R</b>	
9.11	REF_CITATION	Reference Citation Table	<p><b>Reference citation table.</b> 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"> <li>• REF_SPECIES.WOOD_SPGR_GREENVOL_DRYWT_CIT = REF_CITATION.CITATION_NBR.</li> <li>• REF_SPECIES.BARK_SPGR_GREENVOL_DRYWT_CIT = REF_CITATION.CITATION_NBR.</li> <li>• REF_SPECIES.MC_PCT_GREEN_WOOD_CIT = REF_CITATION.CITATION_NBR.</li> <li>• REF_SPECIES.MC_PCT_GREEN_BARK_CIT = REF_CITATION.CITATION_NBR.</li> <li>• REF_SPECIES.WOOD_SPGR_MC12VOL_DRYWT_CIT = REF_CITATION.CITATION_NBR.</li> <li>• REF_SPECIES.BARK_VOL_PCT_CIT = REF_CITATION.CITATION_NBR.</li> </ul>
9.12	REF_FIADB_VERSION	Reference Forest Inventory and Analysis Database Version Table	<p><b>Reference forest inventory and analysis database version table.</b> This table contains information identifying the format of the currently available FIADB.</p>
9.3	REF_FOREST_TYPE	Reference Forest Type Table	<p><b>Reference forest type table.</b> 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"> <li>• REF_FOREST_TYPE.VALUE = COND.FORTYPCD links the forest type reference record to the condition forest code used for reporting and analysis purposes.</li> <li>• REF_FOREST_TYPE.VALUE = COND.FLDTYPCD links the forest type reference record to the condition forest type code recorded by field crews.</li> <li>• REF_FOREST_TYPE.VALUE = COND.FORTYPCDCALC links the forest type reference record to the condition forest type code calculated by an algorithm.</li> </ul>

Section	Oracle table name	Table name	Description
9.4	REF_FOREST_TYPE_GROUP	Reference Forest Type Group Table	<p><b>Reference forest type group table.</b> 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"> <li>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.</li> </ul>
9.9	REF_HABTYP_DESCRIPTION	Reference Habitat Type Description Table	<p><b>Reference habitat type description table.</b> 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"> <li>COND.HABTYP_CD1 = REF_HABTYP_DESCRIPTION.HABTYP_CD and COND.HABTYP_CD1_DESCR_PUB_CD = REF_HABTYP_DESCRIPTION.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).</li> <li>COND.HABTYP_CD2 = REF_HABTYP_DESCRIPTION.HABTYP_CD and COND.HABTYP_CD2_DESCR_PUB_CD = REF_HABTYP_DESCRIPTION.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.</li> </ul>
9.10	REF_HABTYP_PUBLICATION	Reference Habitat Type Publication Table	<b>Reference habitat type publication table.</b> This table contains the publication information (title, author) for the publication code. See the links described above in REF_HABTYP_DESCRIPTION.

Section	Oracle table name	Table name	Description
9.8	REF_INVASIVE_SPECIES	Reference Invasive Species Table	<p><b>Reference invasive species table.</b> This table contains the invasive species list by State.</p> <ul style="list-style-type: none"> <li>• REF_INVASIVE_SPECIES.SYMBOL = INVASIVE_SUBPLOT_SPP.VEG_SP_CD links the invasive species reference to the invasive species NRCS code.</li> <li>• REF_INVASIVE_SPECIES.SYMBOL = REF_PLANT_DICTIONARY.SYMBOL links the invasive species reference to the plant dictionary reference NRCS species code.</li> </ul>
9.16	REF_NVCS_HIERARCHY_STRCT	Reference National Vegetation Classification System (NVCS) Hierarchy Structure Table	<p><b>Reference national vegetation classification system (NVCS) hierarchy structure table.</b> This table describes the structure of a given National Vegetation Classification System (NVCS) hierarchy.</p>
9.17	REF_NVCS_LEVEL_1_CODES	Reference National Vegetation Classification System Level 1 Codes Table	<p><b>Reference national vegetation classification system level 1 codes table.</b> This table contains definitions of the codes for the first level of the National Vegetation Classification System (NVCS) hierarchy.</p>
9.18	REF_NVCS_LEVEL_2_CODES	Reference National Vegetation Classification System Level 2 Codes Table	<p><b>Reference national vegetation classification system level 2 codes table.</b> This table contains definitions of the codes for the second level of the National Vegetation Classification System (NVCS) hierarchy.</p>
9.19	REF_NVCS_LEVEL_3_CODES	Reference National Vegetation Classification System Level 3 Codes Table	<p><b>Reference national vegetation classification system level 3 codes table.</b> This table contains definitions of the codes for the third level of the National Vegetation Classification System (NVCS) hierarchy.</p>
9.20	REF_NVCS_LEVEL_4_CODES	Reference National Vegetation Classification System Level 4 Codes Table	<p><b>Reference national vegetation classification system level 4 codes table.</b> This table contains definitions of the codes for the fourth level of the National Vegetation Classification System (NVCS) hierarchy.</p>
9.21	REF_NVCS_LEVEL_5_CODES	Reference National Vegetation Classification System Level 5 Codes Table	<p><b>Reference national vegetation classification system level 5 codes table.</b> This table contains definitions of the codes for the fifth level of the National Vegetation Classification System (NVCS) hierarchy.</p>

Section	Oracle table name	Table name	Description
9.22	REF_NVCS_LEVEL_6_CODES	Reference National Vegetation Classification System Level 6 Codes Table	<b>Reference national vegetation classification system level 6 codes table.</b> This table contains definitions of the codes for the sixth level of the National Vegetation Classification System (NVCS) hierarchy.
9.23	REF_NVCS_LEVEL_7_CODES	Reference National Vegetation Classification System Level 7 Codes Table	<b>Reference national vegetation classification system level 7 codes table.</b> This table contains definitions of the codes for the seventh level of the National Vegetation Classification System (NVCS) hierarchy.
9.24	REF_NVCS_LEVEL_8_CODES	Reference National Vegetation Classification System Level 8 Codes Table	<b>Reference national vegetation classification system level 8 codes table.</b> This table contains definitions of the codes for the eighth level of the National Vegetation Classification System (NVCS) hierarchy.
9.6	REF_PLANT_DICTIONARY	Reference Plant Dictionary	<p><b>Reference plant dictionary table.</b> 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"> <li>• REF_PLANT_DICTIONARY.SYMBOL = INVASIVE_SUBPLOT_SPP.VEG_SPCD links the plant dictionary reference species code to the invasive vegetation subplot NRCS species code.</li> <li>• REF_PLANT_DICTIONARY.SYMBOL = P2VEG_SUBPLOT_SPP.VEG_SPCD links the plant dictionary reference species code to the P2 vegetation subplot NRCS species code.</li> </ul>
9.1	REF_POP_ATTRIBUTE	Reference Population Attribute Table	<p><b>Reference population attribute table.</b> 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"> <li>• 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.</li> </ul>

Section	Oracle table name	Table name	Description
9.2	REF_POP_EVAL_TYP_DESCR	Reference Population Evaluation Type Description Table	<p><b>Reference population evaluation type description table.</b> This table contains the description for each evaluation type.</p> <ul style="list-style-type: none"> <li>REF_POP_EVAL_TYP_DESCR.EVAL_TYP = POP_EVAL_TYP.EVAL_TYP links an evaluation type description reference record to an evaluation type record.</li> </ul>
9.15	REF_RESEARCH_STATION	Reference Research Station Table	<p><b>Reference research station table.</b> This table contains the state codes, and abbreviations, and the region or station codes and abbreviations.</p>
9.5	REF_SPECIES	Reference Species Table	<p><b>Reference species table.</b> 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"> <li>REF_SPECIES.SPCD = TREE.SPCD links the species reference table record to the tree species code.</li> <li>REF_SPECIES.SPCD = SEEDLING.SPCD links the species reference table record to the seedling species code.</li> <li>REF_SPECIES.SPCD = SITETREE.SPCD links the species reference table record to the site tree species code.</li> </ul>
9.7	REF_SPECIES_GROUP	Reference Species Group Table	<p><b>Reference species group table.</b> 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"> <li>REF_SPECIES_GROUP.SPGRPCD = TREE.SPGRPCD links the species group reference table to the tree species group code.</li> <li>REF_SPECIES_GROUP.SPGRPCD = SEEDLING.SPGRPCD links the species reference table record to the seedling species group code.</li> <li>REF_SPECIES_GROUP.SPGRPCD = SITETREE.SPGRPCD links the species reference table record to the site tree species group code.</li> </ul>
9.13	REF_STATE_ELEV	Reference State Elevation Table	<p><b>Reference state elevation table.</b> This table contains information about minimum and maximum elevation found within a State.</p> <ul style="list-style-type: none"> <li>REF_STATE_ELEV.STATECD = SURVEY.STATECD links the State elevation reference record to the survey record.</li> </ul>
9.14	REF_UNIT	Reference Unit Table	<p><b>Reference unit table.</b> This table contains the description for each survey unit in a State.</p> <ul style="list-style-type: none"> <li>REF_UNIT.STATECD = PLOT.STATECD and REF_UNIT.VALUE = PLOT.UNITCD links the survey unit description (MEANING) to the PLOT record.</li> </ul>

Section	Oracle table name	Table name	Description
		<b>S</b>	
3.9	SEEDLING	<a href="#">Seedling Table</a>	<p><b>Seedling table.</b> 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.</p> <ul style="list-style-type: none"> <li>• PLOT.CN = SEEDLING.PLT_CN links the seedling records to the unique plot record.</li> <li>• COND.PLT_CN = SEEDLING.PLT_CN and COND.CONDID = SEEDLING.CONDID links the condition record to the seedling record.</li> </ul>
6.3	SEEDLING_REGEN	<a href="#">Seedling Regeneration Table</a>	<p><b>Seedling regeneration.</b> This table contains provides information on the seedling count by condition, species, source, and length class for the tree regeneration study.</p> <ul style="list-style-type: none"> <li>• PLOT.CN = SEEDLING_REGEN.PLT_CN links the unique plot record to the seedling regeneration records.</li> <li>• COND.PLT_CN = SEEDLING_REGEN.PLT_CN and COND.CONDID = SEEDLING_REGEN.CONDID links the regeneration seedling records to the unique condition record.</li> </ul>
3.10	SITETREE	<a href="#">Site Tree Table</a>	<p><b>Site tree table.</b> This table provides information on the site tree(s) collected in order to calculate site index and/or site productivity information for a condition.</p> <ul style="list-style-type: none"> <li>• PLOT.CN = SITETREE.PLT_CN links the site tree records to the unique plot record.</li> <li>• SITETREE.PLT_CN = COND.PLT_CN and SITETREE.CONDID = COND.CONDID links the site tree record(s) to the unique condition class record.</li> </ul>
2.6	SUBP_COND	<a href="#">Subplot Condition Table</a>	<p><b>Subplot condition table.</b> This table contains information about the proportion of a subplot in a condition.</p> <ul style="list-style-type: none"> <li>• PLOT.CN = SUBP_COND.PLT_CN links the subplot condition class record to the plot table.</li> <li>• SUBP_COND.PLT_CN = COND.PLT_CN and SUBP_COND.CONDID = COND.CONDID links the condition class records found on the four subplots to the subplot description.</li> </ul>
2.8	SUBP_COND_CHNG_MTRX	<a href="#">Subplot Condition Change Matrix</a>	<p><b>Subplot condition change matrix table.</b> 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"> <li>• PLOT.CN = SUBP_COND_CHNG_MTRX.PLT_CN links the subplot condition change matrix records to the unique plot record.</li> <li>• PLOT.PREV_PLT_CN = SUBP_COND_CHNG_MTRX.PREV_PLT_CN links the subplot condition change matrix records to the unique previous plot record.</li> </ul>

Section	Oracle table name	Table name	Description
2.5	SUBPLOT	Subplot Table	<p><b>Subplot table.</b> 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"> <li>• PLOT.CN = SUBPLOT.PLT_CN links the unique plot record to the subplot records.</li> <li>• SUBPLOT.PLT_CN = COND.PLT_CN and SUBPLOT.MACRCOND = COND.CON DID links the macroplot conditions to the condition class record.</li> <li>• SUBPLOT.PLT_CN = COND.PLT_CN and SUBPLOT.SUBPCOND = COND.CON DID links the subplot conditions to the condition class record.</li> <li>• SUBPLOT.PLT_CN = COND.PLT_CN and SUBPLOT.MICRCOND = COND.CON DID links the microplot conditions to the condition class record.</li> </ul>
6.2	SUBPLOT_REGEN	Subplot Regeneration Table	<p><b>Subplot regeneration table.</b> 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"> <li>• PLOT.CN = SUBPLOT_REGEN.PLT_CN links the unique plot record to the subplot regeneration records.</li> <li>• SUBPLOT.PLT_CN = SUBPLOT_REGEN.PLT_CN and SUBPLOT.SUBP = SUBPLOT_REGEN.SUBP links the subplot record to the subplot regeneration record.</li> </ul>
2.1	SURVEY	Survey Table	<p><b>Survey table.</b> 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"> <li>• SURVEY.CN = PLOT.SRV_CN links the unique inventory record for a State and year to the plot records.</li> </ul>
<b>T</b>			
3.1	TREE	Tree Table	<p><b>Tree table.</b> This table provides information for each tree 1 inch in diameter and larger found on a microplot, subplot, or core optional macroplot.</p> <ul style="list-style-type: none"> <li>• PLOT.CN = TREE.PLT_CN links the tree records to the unique plot record.</li> <li>• COND.PLT_CN = TREE.PLT_CN and COND.CON DID = TREE.CON DID links the tree records to the unique condition record.</li> </ul>
3.6	TREE_GRM_BEGIN	Tree Net Growth, Removal, and Mortality Begin Table	<p><b>Tree net growth, removal, and mortality begin table.</b> 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 net growth, removal and mortality estimates on remeasured trees.</p> <ul style="list-style-type: none"> <li>• TREE_GRM_BEGIN.TRE_CN = TREE.TRE_CN links the records in this table to the corresponding tree record in the TREE table.</li> </ul>

Section	Oracle table name	Table name	Description
3.4	TREE_GRM_COMPONENT	Tree Net Growth, Removal, and Mortality Component Table	<p><b>Tree net growth, removal, and mortality component table.</b> This table stores information used to compute net 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"> <li>• TREE_GRM_COMPONENT.TRE_CN = TREE.TRE_CN links the records in this table to the corresponding tree record in the TREE table.</li> </ul>
3.7	TREE_GRM_ESTN	Tree Net Growth, Removal, and Mortality Estimation Table	<p><b>Tree net growth, removal, and mortality estimation table.</b> This table contains information used to produce estimates of growth, removals and mortality.</p> <ul style="list-style-type: none"> <li>• PLOT.CN = TREE_GRM_ESTN.PLT_CN links the tree GRM estimation records to the unique plot record.</li> <li>• TREE.CN = TREE_GRM_ESTN.TRE_CN links the tree GRM estimation records to the unique tree record.</li> </ul>
3.5	TREE_GRM_MIDPT	Tree Net Growth, Removal, and Mortality Midpoint Table	<p><b>Tree net growth, removal, and mortality midpoint table.</b> 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 net growth, removal, and mortality estimates on remeasurement trees.</p> <ul style="list-style-type: none"> <li>• TREE_GRM_MIDPT.TRE_CN = TREE.TRE_CN links the records in this table to the corresponding tree record in the TREE table.</li> </ul>
3.3	TREE_REGIONAL_BIOMASS	Tree Regional Biomass Table	<p><b>Tree regional biomass table.</b> This table contains biomass estimates computed using equations and methodology that varies by FIA work unit. This table retains valuable information for generating biomass estimates that match earlier published reports.</p> <ul style="list-style-type: none"> <li>• TREE.CN = TREE_REGIONAL_BIOMASS.TRE_CN links a tree regional biomass record to the corresponding unique tree.</li> </ul>
3.2	TREE_WOODLAND_STEMS	Tree Woodland Stems Table	<p><b>Tree woodland stems table.</b> This table contains data specifically for woodland stems.</p> <ul style="list-style-type: none"> <li>• TREE.CN = TREE_WOODLAND_STEMS.TRE_CN links a woodland stems record to the corresponding unique tree record.</li> </ul>
		U	
		V	
		W	
		X	
		Y	
		Z	



# 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.

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Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
		<b>A</b>		
9.4.3	-	ABBR	REF_FOREST_TYPE_GROUP	Abbreviation
3.1.22	5.15	ACTUALHT	TREE	Actual height
3.1.159	-	ACTUALHT_CALC	TREE	Actual height, calculated
3.1.160	-	ACTUALHT_CALC_CD	TREE	Actual height, calculated, code
2.4.15	-	ADFORCD	COND	Administrative forest code
8.2.59	-	ADJ_EXPALL	PLOTSNAP	Adjustment factor for all land area
8.2.60	-	ADJ_EXPCURR	PLOTSNAP	Adjustment factor for forest land and timberland area
8.2.64	-	ADJ_EXPGROW_MACR	PLOTSNAP	Macroplot adjustment factor for growth estimation

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
8.2.66	-	ADJ_EXPGROW_MICR	PLOTSNAP	Microplot adjustment factor for growth estimation
8.2.65	-	ADJ_EXPGROW_SUBP	PLOTSNAP	Subplot adjustment factor for growth estimation
8.2.67	-	ADJ_EXPMORT_MACR	PLOTSNAP	Macroplot adjustment factor for mortality estimation
8.2.69	-	ADJ_EXPMORT_MICR	PLOTSNAP	Microplot adjustment factor for mortality estimation
8.2.68	-	ADJ_EXPMORT_SUBP	PLOTSNAP	Subplot adjustment factor for mortality estimation
8.2.70	-	ADJ_EXPREMV_MACR	PLOTSNAP	Macroplot adjustment factor for removals estimation
8.2.72	-	ADJ_EXPREMV_MICR	PLOTSNAP	Microplot adjustment factor for removals estimation
8.2.71	-	ADJ_EXPREMV_SUBP	PLOTSNAP	Subplot adjustment factor for removals estimation
8.2.61	-	ADJ_EXPVOL_MACR	PLOTSNAP	Macroplot adjustment factor for volume estimation
8.2.63	-	ADJ_EXPVOL_MICR	PLOTSNAP	Microplot adjustment factor for volume estimation
8.2.62	-	ADJ_EXPVOL_SUBP	PLOTSNAP	Subplot adjustment factor for volume estimation
7.7.15	-	ADJ_FACTOR_CWD	POP_STRATUM	Adjustment factor for coarse woody debris
7.7.18	-	ADJ_FACTOR_DUFF	POP_STRATUM	Adjustment factor for duff
7.7.17	-	ADJ_FACTOR_FWD_LG	POP_STRATUM	Adjustment factor for large fine woody debris
7.7.16	-	ADJ_FACTOR_FWD_SM	POP_STRATUM	Adjustment factor for small fine woody debris
7.7.12	-	ADJ_FACTOR_MACR	POP_STRATUM	Adjustment factor for the macroplot
7.7.14	-	ADJ_FACTOR_MICR	POP_STRATUM	Adjustment factor for the microplot
7.7.25	-	ADJ_FACTOR_PILE	POP_STRATUM	Adjustment factor for piles
7.7.13	-	ADJ_FACTOR_SUBP	POP_STRATUM	Adjustment factor for the subplot
2.4.104	-	ADMIN_WITHDRAWN_CD	COND	Administratively withdrawn code
2.4.107	2.5.33	AFFORESTATION_CD	COND	Current afforestation code

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
2.4.119	-	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	-	AGECKCD_RMRS	SITETREE	Radial growth and tree age check code, Rocky Mountain Research Station
3.1.173	-	AGECKCD_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
3.1.171	-	AGENTCD_NERS	TREE	General damage / cause of death (agent) code, Northeastern Research Station
9.3.6	-	ALLOWED_IN_FIELD	REF_FOREST_TYPE	Allowed in field
8.1.21	-	ALP_ADFORCD	PLOTGEOM	Administrative forest code
2.4.53	-	ALSTK	COND	All-live-tree stocking percent
2.4.37	-	ALSTKCD	COND	All live stocking code
3.4.8	-	ANN_DIA_GROWTH	TREE_GRM_COMPONENT	Computed annual diameter growth
3.4.12	-	ANN_HT_GROWTH	TREE_GRM_COMPONENT	Computed annual height growth
2.1.8	-	ANN_INVENTORY	SURVEY	Annual inventory
3.7.16	-	ANN_NET_GROWTH	TREE_GRM_ESTN	Average annual net growth estimate
7.1.11	-	AREA_SOURCE	POP_ESTN_UNIT	Area source
7.1.10	-	AREA_USED	POP_ESTN_UNIT	Area used to calculate all expansion factors
7.1.8	-	AREALAND_EU	POP_ESTN_UNIT	Land area within the estimation unit
7.1.9	-	AREATOT_EU	POP_ESTN_UNIT	Total area within the estimation unit
2.4.34	-	ASPECT	COND	Aspect
2.5.17	3.9	ASPECT	SUBPLOT	Subplot aspect
9.1.3	-	ATTRIBUTE_DESCR	REF_POP_ATTRIBUTE	Attribute description
9.1.9	-	ATTRIBUTE_GLOSSARY	REF_POP_ATTRIBUTE	Attribute glossary
7.3.3	-	ATTRIBUTE_NBR	POP_EVAL_ATTRIBUTE	Attribute number

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
9.1.2	-	ATTRIBUTE_NBR	REF_POP_ATTRIBUTE	Attribute number
9.10.4	-	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
2.7.13	4.2.6	AZMCORN	BOUNDARY	Corner azimuth
2.7.12	4.2.5	AZMLEFT	BOUNDARY	Left azimuth
2.7.15	4.2.8	AZMRIGHT	BOUNDARY	Right azimuth
<b>B</b>				
2.4.51	-	BALIVE	COND	Basal area per acre of live trees
9.5.49	-	BARK_SPGR_GREENVOL_DRYWT	REF_SPECIES	Green specific gravity of bark (green volume and oven-dry weight)
9.5.50	-	BARK_SPGR_GREENVOL_DRYWT_CIT	REF_SPECIES	Citation for BARK_SPGR_GREENVOL_DRYWT
9.5.57	-	BARK_VOL_PCT	REF_SPECIES	Bark volume as a percent of wood volume
9.5.58	-	BARK_VOL_PCT_CIT	REF_SPECIES	Citation for BARK_VOL_PCT
3.1.73	-	BFSND	TREE	Board-foot-cull soundness
3.1.172	-	BFSNDCD_NERS	TREE	Board-foot soundness code, Northeastern Research Station
3.1.66	-	BHAGE	TREE	Breast height age
2.7.10	4.2.3	BNDCHG	BOUNDARY	Boundary change code
3.1.76	-	BOLEHT	TREE	Bole height
3.1.125	-	BORED_CD_PNWRS	TREE	Tree bored code, Pacific Northwest Research Station
3.1.168	-	BOUGHS_AVAILABLE_NCNS	TREE	Balsam fir boughs available, North Central Research Station
3.1.169	-	BOUGHS_HRVST_NCNS	TREE	Balsam fir boughs harvested, North Central Research Station
6.1.8	-	BROWSE_IMPACT	PLOT_REGEN	Browse impact
<b>C</b>				
3.7.34	-	C	TREE_GRM_ESTN	Cut
9.5.10	-	C_SPGRPCD	REF_SPECIES	Caribbean Islands species group code

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
2.4.97	-	CANOPY_CVR_SAMPLE_METHOD_CD	COND	Canopy cover sample method code
5.2.24	-	CARBON	DWM_COARSE_WOODY_DEB_RIS	Carbon mass of the piece
5.6.22	-	CARBON	DWM_RESIDUAL_PILE	Carbon mass
5.2.47	-	CARBON_AC_COND	DWM_COARSE_WOODY_DEB_RIS	Carbon per acre based on condition transect length actually measured, unadjusted
5.2.48	-	CARBON_AC_PLOT	DWM_COARSE_WOODY_DEB_RIS	Carbon per acre based on plot transect length actually measured, unadjusted
5.2.49	-	CARBON_AC_UNADJ	DWM_COARSE_WOODY_DEB_RIS	Carbon per acre based on target plot transect length, unadjusted
3.1.121	-	CARBON_AG	TREE	Aboveground carbon
3.1.122	-	CARBON_BG	TREE	Belowground carbon
2.4.67	-	CARBON_DOWN_DEAD	COND	Carbon in down dead
2.4.68	-	CARBON_LITTER	COND	Carbon in litter
2.4.69	-	CARBON_SOIL_ORG	COND	Carbon in soil organic material
2.4.70	-	CARBON_STANDING_DEAD	COND	Carbon in standing dead trees
2.4.71	-	CARBON_UNDERSTORY_AG	COND	Carbon in understory aboveground
2.4.72	-	CARBON_UNDERSTORY_BG	COND	Carbon in understory belowground
9.5.30	-	CARIBBEAN	REF_SPECIES	Caribbean Islands species
9.6.8	-	CATEGORY	REF_PLANT_DICTIONARY	Category
3.1.197	-	CAVITY_USE_PNWRS	TREE	Cavity presence, Pacific Northwest Research Station
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
3.1.61	12.9	CDENCD	TREE	Crown density code
3.1.62	12.10	CDIEBKCD	TREE	Crown dieback code
3.1.148	-	CENTROID_DIA	TREE	Centroid diameter
3.1.149	-	CENTROID_DIA_HT	TREE	Calculated centroid diameter height
3.1.150	-	CENTROID_DIA_HT_ACTUAL	TREE	Actual centroid diameter height

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.1.74	-	CFSND	TREE	Cubic-foot-cull soundness
2.4.105	2.5.36	CHAINING_CD	COND	Chaining code
9.2.5	-	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
3742	-	CI	TREE_GRM_ESTN	Cull increment
9.11.2	-	CITATION	REF_CITATION	Citation
9.11.1	-	CITATION_NBR	REF_CITATION	Citation number
9.16.35	-	CITATION_NBR	REF_NVCS_HIERARCHY_STRICT	Citation number
9.7.4	-	CLASS	REF_SPECIES_GROUP	Class
3.1.59	12.6	CLIGHTCD	TREE	Crown light exposure code
2.7.1	-	CN	BOUNDARY	Sequence number
2.4.1	-	CN	COND	Sequence number
5.8.1	-	CN	COND_DWM_CALC	Sequence number
2.2.5	-	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
4.4.1	-	CN	GRND_CVR	Sequence number
4.1.1	-	CN	INVASIVE_SUBPLOT_SPP	Sequence number
4.3.1	-	CN	P2VEG_SUBP_STRUCTURE	Sequence number
4.2.1	-	CN	P2VEG_SUBPLOT_SPP	Sequence number
2.3.1	-	CN	PLOT	Sequence number
6.1.1	-	CN	PLOT_REGEN	Sequence number
8.1.1	-	CN	PLOTGEOM	Sequence number
8.2.1	-	CN	PLOTSNAP	Sequence number
7.1.1	-	CN	POP_ESTN_UNIT	Sequence number
7.2.1	-	CN	POP_EVAL	Sequence number
7.3.1	-	CN	POP_EVAL_ATTRIBUTE	Sequence number
7.4.1	-	CN	POP_EVAL_GRP	Sequence number
7.5.1	-	CN	POP_EVAL_TYP	Sequence number
7.6.1	-	CN	POP_PLOT_STRATUM_ASSGN	Sequence number
7.7.1	-	CN	POP_STRATUM	Sequence number

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
9.9.1	-	CN	REF_HABTYP_DESCRIPTION	Sequence number
9.10.1	-	CN	REF_HABTYP_PUBLICATION	Sequence number
9.8.1	-	CN	REF_INVASIVE_SPECIES	Sequence number
9.17.1	-	CN	REF_NVCS_LEVEL_1_CODES	Sequence number
9.6.1	-	CN	REF_PLANT_DICTIONARY	Sequence number
9.1.1	-	CN	REF_POP_ATTRIBUTE	Sequence number
9.2.1	-	CN	REF_POP_EVAL_TYP_DESCR	Sequence number
3.9.1	-	CN	SEEDLING	Sequence number
6.3.1	-	CN	SEEDLING_REGEN	Sequence number
3.10.1	-	CN	SITETREE	Sequence number
2.6.1	-	CN	SUBP_COND	Sequence number
2.8.1	-	CN	SUBP_COND_CHNG_MTRX	Sequence number
2.5.1	-	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
2.3.58	-	COLOCATED_CD_RMRS	PLOT	Accounting co-located code, Rocky Mountain Research Station
9.9.5	-	COMMON_NAME	REF_HABTYP_DESCRIPTION	Common name
9.6.7	-	COMMON_NAME	REF_PLANT_DICTIONARY	Common name
9.5.2	-	COMMON_NAME	REF_SPECIES	Common name
5.6.32		COMPHT	DWM_RESIDUALPILE	Compacted height of residual pile
3.6.10	-	COMPONENT	TREE_GRM_ESTN	Growth component type
2.3.59	-	CONDCHNGCD_RMRS	PLOT	Condition class change code, Rocky Mountain Research Station
2.4.10	2.4.3	COND_NONSAMPLE_REASON_CD	COND	Condition nonsampled reason code
2.4.120	-	COND_STATUS_CHNG_CD_RMRS	COND	Condition class status change code, Rocky Mountain Research Station
2.4.9	2.4.2	COND_STATUS_CD	COND	Condition status code
2.4.8	2.4.1	CONDID	COND	Condition class number
5.8.7	-	CONDID	COND_DWM_CALC	Condition class number

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
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
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
2.6.9	-	CONDID	SUBP_COND	Condition class number
2.8.6	-	CONDID	SUBP_COND_CHNG_MTRX	Condition class number
3.1.11	5.3	CONDID	TREE	Condition class number
2.5.15	-	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 for medium-sized pieces in the condition
5.8.14	-	CONDPROP_FWD_SM	COND_DWM_CALC	Proportion of fine woody debris transects for 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
2.4.29	-	CONDPROP_UNADJ	COND	Condition proportion unadjusted
2.3.28	-	CONGCD	PLOT	Congressional district code
8.1.9	-	CONGCD	PLOTGEOM	Congressional district code
8.2.28	-	CONGCD	PLOTSNAP	Congressional district code

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
2.7.11	4.2.4	CONTRAST	BOUNDARY	Contrasting condition
9.5.27	-	CORE	REF_SPECIES	Core
3.1.198	-	CORE_LENGTH_PNWRS	TREE	Length of measured core, Pacific Northwest Research Station
3.9.32	-	COUNTCHKCD_RMRS	SEEDLING	Seedling count check code, Rocky Mountain Research Station
2.7.6	-	COUNTYCD	BOUNDARY	County code
2.4.6	-	COUNTYCD	COND	County code
5.8.3	-	COUNTYCD	COND_DWM_CALC	County code
2.2.3	-	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
4.4.6	-	COUNTYCD	GRND_CVR	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
2.3.8	1.2	COUNTYCD	PLOT	County code
6.1.6	-	COUNTYCD	PLOT_REGEN	County Code
8.1.5	-	COUNTYCD	PLOTGEOM	County code
8.2.8	-	COUNTYCD	PLOTSNAP	County code
7.6.7	-	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
2.6.6	-	COUNTYCD	SUBP_COND	County code
2.5.7	-	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
2.2.4	-	COUNTYNM	COUNTY	County name
5.2.25	-	COVER_PCT	DWM_COARSE_WOODY_DEB_RIS	Percent cover represented by each coarse woody debris piece

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
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 design
3.1.58	12.7	CPOS_CD	TREE	Crown position code
3.1.24	5.19	CR	TREE	Compacted crown ratio
2.4.121	-	CRCOV_PCT_RMRS	COND	Live crown cover percent, Rocky Mountain Research Station
3.8.2	-	CREATED_BY	BEGINEND	Created by
2.7.18	-	CREATED_BY	BOUNDARY	Created by
2.4.73	-	CREATED_BY	COND	Created by
5.8.97	-	CREATED_BY	COND_DWM_CALC	Created by
2.2.6	-	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
4.4.15	-	CREATED_BY	GRND_CVR	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
2.3.32	-	CREATED_BY	PLOT	Created by
6.1.9	-	CREATED_BY	PLOT_REGEN	Created by
8.1.15	-	CREATED_BY	PLOTGEOM	Created by
8.2.32	-	CREATED_BY	PLOTSNAP	Created by
7.1.14	-	CREATED_BY	POP_ESTN_UNIT	Created by
7.2.16	-	CREATED_BY	POP_EVAL	Created by
7.3.5	-	CREATED_BY	POP_EVAL_ATTRIBUTE	Created by
7.4.7	-	CREATED_BY	POP_EVAL_GRP	Created by
7.5.5	-	CREATED_BY	POP_EVAL_TYP	Created by
7.6.13	-	CREATED_BY	POP_PLOT_STRATUM_ASSGN	Created by

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
7.7.19	-	CREATED_BY	POP_STRATUM	Created by
9.11.3	-	CREATED_BY	REF_CITATION	Created by
9.12.3	-	CREATED_BY	REF_FIADB_VERSION	Created by
9.3.7	-	CREATED_BY	REF_FOREST_TYPE	Created by
9.4.17	-	CREATED_BY	REF_FOREST_TYPE_GROUP	Created by
9.9.7	-	CREATED_BY	REF_HABTYP_DESCRIPTION	Created by
9.10.7	-	CREATED_BY	REF_HABTYP_PUBLICATION	Created by
9.8.11	-	CREATED_BY	REF_INVASIVE_SPECIES	Created by
9.16.36	-	CREATED_BY	REF_NVCS_HIERARCHY_STRICT	Created by
9.17.8	-	CREATED_BY	REF_NVCS_LEVEL_1_CODES	Created by
9.18.8	-	CREATED_BY	REF_NVCS_LEVEL_2_CODES	Created by
9.19.8	-	CREATED_BY	REF_NVCS_LEVEL_3_CODES	Created by
9.20.8	-	CREATED_BY	REF_NVCS_LEVEL_4_CODES	Created by
9.21.8	-	CREATED_BY	REF_NVCS_LEVEL_5_CODES	Created by
9.22.8	-	CREATED_BY	REF_NVCS_LEVEL_6_CODES	Created by
9.23.8	-	CREATED_BY	REF_NVCS_LEVEL_7_CODES	Created by
9.24.8	-	CREATED_BY	REF_NVCS_LEVEL_8_CODES	Created by
9.6.34	-	CREATED_BY	REF_PLANT_DICTIONARY	Created by
9.1.10	-	CREATED_BY	REF_POP_ATTRIBUTE	Created by
9.2.7	-	CREATED_BY	REF_POP_EVAL_TYP_DESCR	Created by
9.15.6	-	CREATED_BY	REF_RESEARCH_STATION	Created by
9.5.73	-	CREATED_BY	REF_SPECIES	Created by
9.7.5	-	CREATED_BY	REF_SPECIES_GROUP	Created by
9.13.6	-	CREATED_BY	REF_STATE_ELEV	Created by
9.14.4	-	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
2.6.10	-	CREATED_BY	SUBP_COND	Created by
2.8.10	-	CREATED_BY	SUBP_COND_CHNG_MTRX	Created by
2.5.20	-	CREATED_BY	SUBPLOT	Created by
6.2.15	-	CREATED_BY	SUBPLOT_REGEN	Created by
2.1.10	-	CREATED_BY	SURVEY	Created by
3.1.81	-	CREATED_BY	TREE	Created by
3.6.26	-	CREATED_BY	TREE_GRM_BEGIN	Created by
3.4.87	-	CREATED_BY	TREE_GRM_COMPONENT	Created by
3.7.44	-	CREATED_BY	TREE_GRM_ESTN	Created by
3.5.25	-	CREATED_BY	TREE_GRM_MIDPT	Created by

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.3.5	-	CREATED_BY	TREE_REGIONAL_BIOMASS	Created by
3.2.16	-	CREATED_BY	TREE_WOODLAND_STEMS	Created by
3.8.3	-	CREATED_DATE	BEGINEND	Created date
2.7.19	-	CREATED_DATE	BOUNDARY	Created date
2.4.74	-	CREATED_DATE	COND	Created date
5.8.98	-	CREATED_DATE	COND_DWM_CALC	Created date
2.2.7	-	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
4.4.16	-	CREATED_DATE	GRND_CVR	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
2.3.33	-	CREATED_DATE	PLOT	Created date
6.1.10	-	CREATED_DATE	PLOT_REGEN	Created date
8.1.16	-	CREATED_DATE	PLOTGEOM	Created date
8.2.33	-	CREATED_DATE	PLOTSNAP	Created date
7.1.15	-	CREATED_DATE	POP_ESTN_UNIT	Created date
7.2.17	-	CREATED_DATE	POP_EVAL	Created date
7.3.6	-	CREATED_DATE	POP_EVAL_ATTRIBUTE	Created date
7.4.8	-	CREATED_DATE	POP_EVAL_GRP	Created date
7.5.6	-	CREATED_DATE	POP_EVAL_TYP	Created date
7.6.14	-	CREATED_DATE	POP_PLOT_STRATUM_ASSGN	Created date
7.7.20	-	CREATED_DATE	POP_STRATUM	Created date
9.11.4	-	CREATED_DATE	REF_CITATION	Created date
9.12.4	-	CREATED_DATE	REF_FIADB_VERSION	Created date
9.3.8	-	CREATED_DATE	REF_FOREST_TYPE	Created date
9.4.18	-	CREATED_DATE	REF_FOREST_TYPE_GROUP	Created date
9.9.8	-	CREATED_DATE	REF_HABTYP_DESCRIPTION	Created date
9.10.8	-	CREATED_DATE	REF_HABTYP_PUBLICATION	Created date
9.8.12	-	CREATED_DATE	REF_INVASIVE_SPECIES	Created date
9.16.37	-	CREATED_DATE	REF_NVCS_HIERARCHY_STRICT	Created date

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
9.17.9	-	CREATED_DATE	REF_NVCS_LEVEL_1_CODES	Created date
9.18.9	-	CREATED_DATE	REF_NVCS_LEVEL_2_CODES	Created date
9.19.9	-	CREATED_DATE	REF_NVCS_LEVEL_3_CODES	Created date
9.20.9	-	CREATED_DATE	REF_NVCS_LEVEL_4_CODES	Created date
9.21.9	-	CREATED_DATE	REF_NVCS_LEVEL_5_CODES	Created date
9.22.9	-	CREATED_DATE	REF_NVCS_LEVEL_6_CODES	Created date
9.23.9	-	CREATED_DATE	REF_NVCS_LEVEL_7_CODES	Created date
9.24.9	-	CREATED_DATE	REF_NVCS_LEVEL_8_CODES	Created date
9.6.35	-	CREATED_DATE	REF_PLANT_DICTIONARY	Created date
9.1.11	-	CREATED_DATE	REF_POP_ATTRIBUTE	Created date
9.2.8	-	CREATED_DATE	REF_POP_EVAL_TYP_DESCR	Created date
9.15.7	-	CREATED_DATE	REF_RESEARCH_STATION	Created date
9.5.74	-	CREATED_DATE	REF_SPECIES	Created date
9.7.6	-	CREATED_DATE	REF_SPECIES_GROUP	Created date
9.13.7	-	CREATED_DATE	REF_STATE_ELEV	Created date
9.14.5	-	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
2.6.11	-	CREATED_DATE	SUBP_COND	Created date
2.8.11	-	CREATED_DATE	SUBP_COND_CHNG_MTRX	Created date
2.5.21	-	CREATED_DATE	SUBPLOT	Created date
6.2.16	-	CREATED_DATE	SUBPLOT_REGEN	Created date
2.1.11	-	CREATED_DATE	SURVEY	Created date
3.1.82	-	CREATED_DATE	TREE	Created date
3.6.27	-	CREATED_DATE	TREE_GRM_BEGIN	Created date
3.4.88	-	CREATED_DATE	TREE_GRM_COMPONENT	Created date
3.7.45	-	CREATED_DATE	TREE_GRM_ESTN	Created date
3.5.26	-	CREATED_DATE	TREE_GRM_MIDPT	Created date
3.3.6	-	CREATED_DATE	TREE_REGIONAL_BIOMASS	Created date
3.2.17	-	CREATED_DATE	TREE_WOODLAND_STEMS	Created date
3.8.4	-	CREATED_IN_INSTANCE	BEGINEND	Created in instance
2.7.20	-	CREATED_IN_INSTANCE	BOUNDARY	Created in instance
2.4.75	-	CREATED_IN_INSTANCE	COND	Created in instance
5.8.99	-	CREATED_IN_INSTANCE	COND_DWM_CALC	Created in instance
2.2.8	-	CREATED_IN_INSTANCE	COUNTY	Created in instance
5.2.37	-	CREATED_IN_INSTANCE	DWM_COARSE_WOODY_DEB_RIS	Created in instance
5.3.17	-	CREATED_IN_INSTANCE	DWM_DUFF_LITTER_FUEL	Created in instance

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
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
4.4.17	-	CREATED_IN_INSTANCE	GRND_CVR	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
2.3.34	-	CREATED_IN_INSTANCE	PLOT	Created in instance
6.1.11	-	CREATED_IN_INSTANCE	PLOT_REGEN	Created in instance
8.1.17	-	CREATED_IN_INSTANCE	PLOTGEOM	Created in instance
8.2.36	-	CREATED_IN_INSTANCE	PLOTSNAP	Created in instance
7.1.16	-	CREATED_IN_INSTANCE	POP_ESTN_UNIT	Created in instance
7.2.18	-	CREATED_IN_INSTANCE	POP_EVAL	Created in instance
7.3.7	-	CREATED_IN_INSTANCE	POP_EVAL_ATTRIBUTE	Created in instance
7.4.9	-	CREATED_IN_INSTANCE	POP_EVAL_GRP	Created in instance
7.5.7	-	CREATED_IN_INSTANCE	POP_EVAL_TYP	Created in instance
7.6.15	-	CREATED_IN_INSTANCE	POP_PLOT_STRATUM_ASSGN	Created in instance
7.7.21	-	CREATED_IN_INSTANCE	POP_STRATUM	Created in instance
9.11.5	-	CREATED_IN_INSTANCE	REF_CITATION	Created in instance
9.12.5	-	CREATED_IN_INSTANCE	REF_FIADB_VERSION	Created in instance
9.3.9	-	CREATED_IN_INSTANCE	REF_FOREST_TYPE	Created in instance
9.4.19	-	CREATED_IN_INSTANCE	REF_FOREST_TYPE_GROUP	Created in instance
9.9.9	-	CREATED_IN_INSTANCE	REF_HABTYP_DESCRIPTION	Created in instance
9.10.9	-	CREATED_IN_INSTANCE	REF_HABTYP_PUBLICATION	Created in instance
9.8.13	-	CREATED_IN_INSTANCE	REF_INVASIVE_SPECIES	Created in instance
9.16.38	-	CREATED_IN_INSTANCE	REF_NVCS_HIERARCHY_STRICT	Created in instance
9.17.10	-	CREATED_IN_INSTANCE	REF_NVCS_LEVEL_1_CODES	Created in instance
9.18.10	-	CREATED_IN_INSTANCE	REF_NVCS_LEVEL_2_CODES	Created in instance
9.19.10	-	CREATED_IN_INSTANCE	REF_NVCS_LEVEL_3_CODES	Created in instance
9.20.10	-	CREATED_IN_INSTANCE	REF_NVCS_LEVEL_4_CODES	Created in instance
9.21.10	-	CREATED_IN_INSTANCE	REF_NVCS_LEVEL_5_CODES	Created in instance
9.22.10	-	CREATED_IN_INSTANCE	REF_NVCS_LEVEL_6_CODES	Created in instance
9.23.10	-	CREATED_IN_INSTANCE	REF_NVCS_LEVEL_7_CODES	Created in instance
9.24.10	-	CREATED_IN_INSTANCE	REF_NVCS_LEVEL_8_CODES	Created in instance
9.6.36	-	CREATED_IN_INSTANCE	REF_PLANT_DICTIONARY	Created in instance
9.1.12	-	CREATED_IN_INSTANCE	REF_POP_ATTRIBUTE	Created in instance

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
9.2.9	-	CREATED_IN_INSTANCE	REF_POP_EVAL_TYP_DESCR	Created in instance
9.15.8	-	CREATED_IN_INSTANCE	REF_RESEARCH_STATION	Created in instance
9.5.75	-	CREATED_IN_INSTANCE	REF_SPECIES	Created in instance
9.7.7	-	CREATED_IN_INSTANCE	REF_SPECIES_GROUP	Created in instance
9.13.8	-	CREATED_IN_INSTANCE	REF_STATE_ELEV	Created in instance
9.14.6	-	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
2.6.12	-	CREATED_IN_INSTANCE	SUBP_COND	Created in instance
2.8.12	-	CREATED_IN_INSTANCE	SUBP_COND_CHNG_MTRX	Created in instance
2.5.22	-	CREATED_IN_INSTANCE	SUBPLOT	Created in instance
6.2.17	-	CREATED_IN_INSTANCE	SUBPLOT_REGEN	Created in instance
2.1.12	-	CREATED_IN_INSTANCE	SURVEY	Created in instance
3.1.83	-	CREATED_IN_INSTANCE	TREE	Created in instance
3.6.28	-	CREATED_IN_INSTANCE	TREE_GRM_BEGIN	Created in instance
3.4.89	-	CREATED_IN_INSTANCE	TREE_GRM_COMPONENT	Created in instance
3.7.46	-	CREATED_IN_INSTANCE	TREE_GRM_ESTN	Created in instance
3.5.27	-	CREATED_IN_INSTANCE	TREE_GRM_MIDPT	Created in instance
3.3.7	-	CREATED_IN_INSTANCE	TREE_REGIONAL_BIOMASS	Created in instance
3.2.18	-	CREATED_IN_INSTANCE	TREE_WOODLAND_STEMS	Created in instance
2.5.35	-	CROWN_CLOSURE_ME_NERS	SUBPLOT	Crown closure (Maine), Northeastern Research Station
5.1.11	-	CRWTYP_CD	DWM_VISIT	Crew type code
2.3.3	-	CTY_CN	PLOT	County sequence number
8.2.3	-	CTY_CN	PLOTSNAP	County sequence number
3.1.28	-	CULL	TREE	Rotten and missing cull
3.1.161	-	CULL_BF_ROTTEN	TREE	Rotten/missing board-foot cull of the sawlog (used by Northeastern Research Station)
3.1.162	-	CULL_BF_ROTTEN_CD	TREE	Rotten/missing board-foot cull of the sawlog code (used by Northeastern Research Station)
3.1.163	-	CULL_BF_ROUGH	TREE	Rough board-foot cull of the sawlog (used by Northeastern Research Station)

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.1.164	-	CULL_BF_ROUGH_CD	TREE	Rough board-foot cull of the sawlog code (used by Northeastern Research Station)
3.1.91	5.13	CULL_FLD	TREE	Rotten/missing cull, field recorded
3.1.71	-	CULLBF	TREE	Board-foot cull
3.1.72	-	CULLCF	TREE	Cubic-foot cull
3.1.68	-	CULLDEAD	TREE	Dead cull
3.1.69	-	CULLFORM	TREE	Form cull
3.1.70	-	CULLMSTOP	TREE	Missing top cull, field recorded
3.1.199	-	CULTURALLY_KILLED_PNWRS	TREE	Culturally killed code, Pacific Northwest Research Station
3.1.60	12.8	CVIGORCD	TREE	Crown vigor code (sapling)
4.4.10	-	CVR_PCT	GRND_CVR	Cover percent
5.8.32	-	CWD_CARBON_ADJ	COND_DWM_CALC	Coarse woody debris carbon mass per acre, adjusted
5.8.30	-	CWD_CARBON_COND	COND_DWM_CALC	Coarse woody debris carbon mass per acre in the condition
5.8.31	-	CWD_CARBON_UNADJ	COND_DWM_CALC	Coarse woody debris carbon mass per acre, unadjusted
9.5.62	-	CWD_DECAY_RATIO1	REF_SPECIES	Coarse woody debris decay ratio 1
9.5.63	-	CWD_DECAY_RATIO2	REF_SPECIES	Coarse woody debris decay ratio 2
9.5.64	-	CWD_DECAY_RATIO3	REF_SPECIES	Coarse woody debris decay ratio 3
9.5.65	-	CWD_DECAY_RATIO4	REF_SPECIES	Coarse woody debris decay ratio 4
9.5.66	-	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

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
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	CWD_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
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_DEBRIS	Coarse woody debris history code
5.2.9	-	CWDID	DWM_COARSE_WOODY_DEBRIS	Coarse woody debris piece (log) number
2.7.16	-	CYCLE	BOUNDARY	Inventory cycle number
2.4.79	-	CYCLE	COND	Inventory cycle number
5.8.103	-	CYCLE	COND_DWM_CALC	Inventory cycle number
4.4.13	-	CYCLE	GRND_CVR	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
2.3.45	-	CYCLE	PLOT	Inventory cycle number
6.1.15	-	CYCLE	PLOT_REGEN	Inventory cycle number
8.2.47	-	CYCLE	PLOTSNAP	Inventory cycle number
3.9.23	-	CYCLE	SEEDLING	Inventory cycle number

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
6.3.23	-	CYCLE	SEEDLING_REGEN	Inventory cycle number
3.10.30	-	CYCLE	SITETREE	Inventory cycle number
2.6.21	-	CYCLE	SUBP_COND	Inventory cycle number
2.5.26	-	CYCLE	SUBPLOT	Inventory cycle number
6.2.20	-	CYCLE	SUBPLOT_REGEN	Inventory cycle number
2.1.16	-	CYCLE	SURVEY	Inventory cycle number
3.1.123	-	CYCLE	TREE	Inventory cycle number
3.2.14	-	CYCLE	TREE_WOODLAND_STEMS	Inventory cycle number
		<b>D</b>		
3.7.38	-	D	TREE_GRM_ESTN	Diversion
3.1.145	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, Southern Research Station
3.1.155	5.36.1 (SRS)	DAMAGE_AGENT_CD1_SRS	TREE	Damage agent code 1, Southern Research Station
3.10.35	-	DAMAGE_AGENT_CD1_RMRS	SITETREE	Damage agent code 1, Rocky Mountain Research Station
3.1.146	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, Southern Research Station
3.1.156	5.36.1 (SRS)	DAMAGE_AGENT_CD2_SRS	TREE	Damage agent code 2, Southern Research Station
3.10.36	-	DAMAGE_AGENT_CD2_RMRS	SITETREE	Damage agent code 2, Rocky Mountain Research Station
3.1.147	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, Southern Research Station
3.1.157	5.36.1 (SRS)	DAMAGE_AGENT_CD3_SRS	TREE	Damage agent code 3, 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
3.1.126	-	DAMLOC1_PNWRS	TREE	Damage location 1, Pacific Northwest Research Station
3.1.32	-	DAMLOC2	TREE	Damage location 2
3.1.127	-	DAMLOC2_PNWRS	TREE	Damage location 2, Pacific Northwest Research Station
3.1.31	-	DAMSEV1	TREE	Damage severity 1

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
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	-	DECAYCD	DWM_COARSE_WOODY_DEB_RIS	Decay class code
5.6.33		DECAYCD	DWM_RESIDUAL_PILE	Decay class code of the residual pile
3.1.35	5.23	DECAYCD	TREE	Decay class code
2.3.39	1.14	DECLINATION	PLOT	Declination
8.2.41	-	DECLINATION	PLOTSNAP	Declination
5.6.13	-	DENSITY	DWM_RESIDUAL_PILE	Density
9.12.2	-	DESCR	REF_FIADB_VERSION	Version description
2.3.17	-	DESIGNCD	PLOT	Plot design code
8.2.17	-	DESIGNCD	PLOTSNAP	Design code
2.3.56	-	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	Current diameter
3.1.18	5.9.2	DIA	TREE	Current diameter
3.6.6	-	DIA	TREE_GRM_BEGIN	Diameter at T1
3.5.5	-	DIA	TREE_GRM_MIDPT	Midpoint diameter
3.2.11	-	DIA	TREE_WOODLAND_STEMS	Woodland stem diameter
3.1.174	-	DIA_1YRAGO_RMRS	TREE	Diameter one year ago, Rocky Mountain Research Station
3.4.5	-	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
3.4.7	-	DIA_END	TREE_GRM_COMPONENT	Ending diameter
37.26	-	DIA_END	TREE_GRM_ESTN	Ending diameter
3.1.200	-	DIA_EST_PNWRS	TREE	Snag estimated diameter, Pacific Northwest Research Station
3.4.6	-	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
3.1.65	-	DIACALC	TREE	Current diameter calculated
3.1.54	5.12	DIACHECK	TREE	Diameter check code

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.1.128	-	DIACHECK_PNWRS	TREE	Diameter check, Pacific Northwest Research Station
3.1.19	-	DIAHTCD	TREE	Diameter height code
3.6.7	-	DIAHTCD	TREE_GRM_BEGIN	Diameter height code
3.5.6	-	DIAHTCD	TREE_GRM_MIDPT	Diameter height code
3.1.144	-	DIEBACK_SEVERITY_SRS	TREE	Dieback severity, Southern Research Station
3.1.143	-	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
2.7.14	4.2.7	DISTCORN	BOUNDARY	Corner 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
3.1.129	-	DMG_AGENT1_CD_PNWRS	TREE	Damage agent 1, Pacific Northwest Research Station
3.1.130	-	DMG_AGENT2_CD_PNWRS	TREE	Damage agent 2, Pacific Northwest Research Station
3.1.131	-	DMG_AGENT3_CD_PNWRS	TREE	Damage agent 3, Pacific Northwest Research Station
2.4.122	-	DOMINANT_SPECIES1_PNWRS	COND	Dominant tree species 1 (Pacific Islands), Pacific Northwest Research Station
2.4.123	-	DOMINANT_SPECIES2_PNWRS	COND	Dominant tree species 2 (Pacific Islands), Pacific Northwest Research Station
2.4.124	-	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

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
5.2.50	-	DRYBIO_AC_COND	DWM_COARSE_WOODY_DEB RIS	Dry biomass per acre based on condition transect length actually measured, unadjusted
5.2.51	-		DWM_COARSE_WOODY_DEB RIS	Dry biomass per acre based on plot transect length actually measured, unadjusted
5.2.52	-	DRYBIO_AC_UNADJ	DWM_COARSE_WOODY_DEB RIS	Dry biomass per acre based on target plot transect length, unadjusted
5.1.158	-	DRYBIO_AG	TREE	Aboveground dry biomass
3.6.19	-	DRYBIO_AG	TREE_GRM_BEGIN	Aboveground dry biomass at T1
3.5.18	-	DRYBIO_AG	TREE_GRM_MIDPT	Aboveground dry biomass at the midpoint
3.1.120	-	DRYBIO_BG	TREE	Belowground dry biomass
3.6.18	-	DRYBIO_BG	TREE_GRM_BEGIN	Belowground dry biomass at T1
3.5.17	-	DRYBIO_BG	TREE_GRM_MIDPT	Belowground dry biomass at the midpoint
3.1.115	-	DRYBIO_BOLE	TREE	Dry biomass in the merchantable bole
3.6.23	-	DRYBIO_BOLE	TREE_GRM_BEGIN	Dry biomass in the merchantable bole at T1
3.5.22	-	DRYBIO_BOLE	TREE_GRM_MIDPT	Dry biomass in the merchantable bole at the midpoint
3.1.118	-	DRYBIO_SAPLING	TREE	Aboveground dry biomass of saplings
3.6.21	-	DRYBIO_SAPLING	TREE_GRM_BEGIN	Aboveground dry biomass of saplings at T1
3.5.20	-	DRYBIO_SAPLING	TREE_GRM_MIDPT	Aboveground dry biomass of saplings at the midpoint
3.1.154	-	DRYBIO_SAWLOG	TREE	Dry biomass in the sawlog portion of a sawtimber tree
3.6.24	-	DRYBIO_SAWLOG	TREE_GRM_BEGIN	Dry biomass in the sawlog portion of a sawtimber tree at T1
3.5.23	-	DRYBIO_SAWLOG	TREE_GRM_MIDPT	Dry biomass in the sawlog portion of a sawtimber tree at the midpoint
3.1.117	-	DRYBIO_STUMP	TREE	Dry biomass in the tree stump

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.6.22	-	DRYBIO_STUMP	TREE_GRM_BEGIN	Dry biomass in the tree stump at T1
3.5.21	-	DRYBIO_STUMP	TREE_GRM_MIDPT	Dry biomass in the tree stump at the midpoint
3.1.116	-	DRYBIO_TOP	TREE	Dry biomass in the top and limbs of the tree
3.6.25	-	DRYBIO_TOP	TREE_GRM_BEGIN	Dry biomass in the top and limbs of the tree at T1
3.5.24	-	DRYBIO_TOP	TREE_GRM_MIDPT	Dry biomass in the top and limbs of the tree at the midpoint
3.1.119	-	DRYBIO_WDLD_SPP	TREE	Aboveground dry biomass of woodland tree species
3.6.20	-	DRYBIO_WDLD_SPP	TREE_GRM_BEGIN	Aboveground dry biomass of woodland tree species at T1
3.5.19	-	DRYBIO_WDLD_SPP	TREE_GRM_MIDPT	Aboveground dry biomass of woodland tree species at the midpoint
9.5.79	-	DRYWT_TO_GREENWT_CONVERSION	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
2.4.38	2.5.15	DSTRBCD1	COND	Disturbance code 1
2.4.125	-	DSTRBCD1_P2A	COND	Disturbance code 1, periodic to annual
2.4.40	2.5.17	DSTRBCD2	COND	Disturbance code 2
2.4.126	-	DSTRBCD2_P2A	COND	Disturbance code 2, periodic to annual
2.4.42	2.5.19	DSTRBCD3	COND	Disturbance code 3
2.4.127	-	DSTRBCD3_P2A	COND	Disturbance code 3, periodic to annual
2.4.39	2.5.16	DSTRBYR1	COND	Disturbance year 1
2.4.128	-	DSTRBYR1_P2A	COND	Disturbance year 1, periodic to annual
2.4.41	2.5.18	DSTRBYR2	COND	Disturbance year 2
2.4.129	-	DSTRBYR2_P2A	COND	Disturbance year 2, periodic to annual
2.4.43	2.5.20	DSTRBYR3	COND	Disturbance year 3
2.4.130	-	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 per acre in the condition

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
9.4.5	-	DUFF_CARBON_RATIO	REF_FOREST_TYPE_GROUP	Duff carbon ratio
9.4.4	-	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
9.6.11	-	DURATION	REF_PLANT_DICTIONARY	Duration
9.5.67	-	DWM_CARBON_RATIO	REF_SPECIES	Down woody debris carbon ratio
2.4.109	-	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
		<b>E</b>		
9.5.8	-	E_SPGRPCD	REF_SPECIES	Eastern species group code
9.5.28	-	EAST	REF_SPECIES	Eastern species
2.3.47	-	ECO_UNIT_PNW	PLOT	Ecological unit, Pacific Northwest Research Station
8.2.49	-	ECO_UNIT_PNW	PLOTSNAP	Ecological unit, Pacific Northwest Research Station
2.3.27	-	ECOSUBCD	PLOT	Ecological subsection code
8.1.10	-	ECOSUBCD	PLOTGEOM	Ecological subsection code
8.2.27	-	ECOSUBCD	PLOTSNAP	Ecological subsection code
2.3.22	-	ELEV	PLOT	Elevation
8.2.22	-	ELEV	PLOTSNAP	Elevation

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
2.3.40	-	EMAP_HEX	PLOT	EMAP hexagon
8.1.12	-	EMAP_HEX	PLOTGEOM	EMAP hexagon
8.2.42	-	EMAP_HEX	PLOTSNAP	EMAP hexagon
9.8.7	-	END_DATE	REF_INVASIVE_SPECIES	End date
7.2.10	-	END_INVYR	POP_EVAL	End inventory year
3.1.195	-	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
37.23	-	EST_THRESHOLD	TREE_GRM_ESTN	Threshold estimate
3.7.7	-	ESTIMATE	TREE_GRM_ESTN	Base attribute that is being estimated
7.2.14	-	ESTN_METHOD	POP_EVAL	Estimation method
3.7.8	-	ESTN_TYPE	TREE_GRM_ESTN	Estimation type of the tree
7.1.5	-	ESTN_UNIT	POP_ESTN_UNIT	Estimation unit
7.6.11	-	ESTN_UNIT	POP_PLOT_STRATUM_ASSGN	Estimation unit
7.7.5	-	ESTN_UNIT	POP_STRATUM	Estimation unit
7.7.2	-	ESTN_UNIT_CN	POP_STRATUM	Estimation unit sequence number
7.1.6	-	ESTN_UNIT_DESCR	POP_ESTN_UNIT	Estimation unit description
3.7.9	-	ESTN_UNITS	TREE_GRM_ESTN	Estimation units
7.1.2	-	EVAL_CN	POP_ESTN_UNIT	Evaluation sequence number
7.3.2	-	EVAL_CN	POP_EVAL_ATTRIBUTE	Evaluation sequence number
7.5.3	-	EVAL_CN	POP_EVAL_TYP	Evaluation sequence number
7.2.5	-	EVAL_DESCR	POP_EVAL	Evaluation description
8.2.52	-	EVAL_GRP	PLOTSNAP	Evaluation group
7.4.3	-	EVAL_GRP	POP_EVAL_GRP	Evaluation group
8.2.51	-	EVAL_GRP_CN	PLOTSNAP	Evaluation group sequence number
7.2.2	-	EVAL_GRP_CN	POP_EVAL	Evaluation group sequence number
7.5.2	-	EVAL_GRP_CN	POP_EVAL_TYP	Evaluation group sequence number
7.4.4	-	EVAL_GRP_DESCR	POP_EVAL_GRP	Evaluation group description

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
7.5.4	-	EVAL_TYP	POP_EVAL_TYP	Evaluation type
9.1.5	-	EVAL_TYP	REF_POP_ATTRIBUTE	Evaluation type
9.2.3	-	EVAL_TYP	REF_POP_EVAL_TYP_DESCR	Evaluation type
9.2.13	-	EVAL_TYP_CD	REF_POP_EVAL_TYP_DESCR	Evaluation type code
9.2.6	-	EVAL_TYP_DESCR	REF_POP_EVAL_TYP_DESCR	Evaluation type description
9.2.4	-	EVAL_TYP_LABEL	REF_POP_EVAL_TYP_DESCR	Evaluation type label
5.8.8	-	VALID	COND_DWM_CALC	Evaluation identification
7.1.4	-	VALID	POP_ESTN_UNIT	Evaluation identifier
7.2.4	-	VALID	POP_EVAL	Evaluation identifier
7.6.10	-	VALID	POP_PLOT_STRATUM_ASSGN	Evaluation identifier
7.7.4	-	VALID	POP_STRATUM	Evaluation identifier
9.5.15	-	EXISTS_IN_NCRS	REF_SPECIES	Exists in the North Central Research Station region
9.5.16	-	EXISTS_IN_NERS	REF_SPECIES	Exists in the Northeastern Research Station region
9.5.17	-	EXISTS_IN_PNWRS	REF_SPECIES	Exists in the Pacific Northwest Research Station region
9.5.18	-	EXISTS_IN_RMRS	REF_SPECIES	Exists in the Rocky Mountain Research Station region
9.5.19	-	EXISTS_IN_SRS	REF_SPECIES	Exists in the Southern Research Station region
8.2.53	-	EXPALL	PLOTSNAP	Area expansion factor for all land
8.2.54	-	EXPCURR	PLOTSNAP	Area expansion factor for forest land and timberland
8.2.56	-	EXPGROW	PLOTSNAP	Growth expansion factor for forest land and timberland
8.2.57	-	EXPMORT	PLOTSNAP	Mortality expansion factor for forest land and timberland
7.7.11	-	EXPNS	POP_STRATUM	Expansion factor
8.2.58	-	EXPREMV	PLOTSNAP	Removals expansion factor for forest land and timberland
9.1.6	-	EXPRESSION	REF_POP_ATTRIBUTE	Expression
8.2.55	-	EXPVOL	PLOTSNAP	Volume expansion factor for forest land and timberland
<b>F</b>				
9.6.31	-	F	REF_PLANT_DICTIONARY	Forma indicator
9.6.9	-	FAMILY	REF_PLANT_DICTIONARY	Family

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.1.95	-	FGROWBFSL	TREE	Net annual merchantable board-foot growth of a sawtimber tree on forest land
3.1.96	-	FGROWCFAL	TREE	Net annual sound cubic-foot growth of a live tree on forest land
3.1.94	-	FGROWCFGSS	TREE	Net annual merchantable cubic-foot growth of a growing-stock tree on forest land
8.1.13	-	FIPSCOUNTY	PLOTGEOM	FIPS county code
2.4.87	-	FIRE_SRS	COND	Fire, Southern Research Station
2.4.52	-	FLDAGE	COND	Field-recorded stand age
2.4.21	2.5.4	FLDSZCD	COND	Field stand-size class code
2.4.17	2.5.3	FLDTYPCD	COND	Field forest type code
2.4.131	-	FLDTYPCD_30	COND	Field forest type code, version 3.0
3.1.98	-	FMORTBFSL	TREE	Merchantable board-foot volume of a sawtimber tree on forest land for mortality purposes
3.1.99	-	FMORTCFAL	TREE	Sound cubic-foot volume of a tree on forest land for mortality purposes
3.1.97	-	FMORTCFGSS	TREE	Merchantable cubic-foot volume of a growing-stock tree on forest land for mortality purposes
9.1.8	-	FOOTNOTE	REF_POP_ATTRIBUTE	Footnote
2.4.132	-	FOREST_COMMUNITY_PNWRS	COND	Forest type (Pacific Islands), Pacific Northwest Research Station
9.5.14	-	FOREST_TYPE_SPGRPCD	REF_SPECIES	Forest type species group code
2.4.14	-	FORINDCD	COND	Private owner industrial status code
9.6.32	-	FORMA	REF_PLANT_DICTIONARY	Forma
3.1.77	-	FORMCL	TREE	Form class
2.4.16	-	FORTYPCD	COND	Forest type code
2.4.55	-	FORTYPCDCALC	COND	Forest type code calculated
3.1.101	-	FREMVBFSL	TREE	Merchantable board-foot volume of a sawtimber tree on forest land for removal purposes

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.1.102	-	FREMVCFAL	TREE	Sound cubic-foot volume of a live tree on forest land for removal purposes
3.1.100	-	FREMVCFGS	TREE	Merchantable cubic-foot volume of a growing-stock tree on forest land for removal purposes
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 mass per acre 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	-	FUELDEP	DWM_DUFF_LITTER_FUEL	Fuelbed depth
2.3.60	-	FUTFORCD_RMRS	PLOT	Future forest potential code, Rocky Mountain Research Station
9.4.12	-	FWD_CARBON_RATIO	REF_FOREST_TYPE_GROUP	Fine woody debris carbon ratio
9.4.13	-	FWD_DECAY_RATIO	REF_FOREST_TYPE_GROUP	Fine woody debris decay ratio
9.4.11	-	FWD_DENSITY	REF_FOREST_TYPE_GROUP	Fine woody debris density
9.4.16	-	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 mass per acre, adjusted
5.8.69	-	FWD_LG_CARBON_COND	COND_DWM_CALC	Large-size class fine woody debris carbon mass per acre in the condition
5.8.70	-	FWD_LG_CARBON_UNADJ	COND_DWM_CALC	Large-size class fine woody debris carbon mass per acre, 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

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
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
5.8.58	-	FWD_MD_CARBON_ADJ	COND_DWM_CALC	Medium-size class fine woody debris carbon mass per acre, adjusted
5.8.56	-	FWD_MD_CARBON_COND	COND_DWM_CALC	Medium-size class fine woody debris carbon mass per acre in the condition
5.8.57	-	FWD_MD_CARBON_UNADJ	COND_DWM_CALC	Medium-size class fine woody debris carbon mass per acre, 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

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
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 in all conditions, 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
9.4.15	-	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
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 mass per acre, adjusted
5.8.43	-	FWD_SM_CARBON_COND	COND_DWM_CALC	Small-size class fine woody debris carbon mass per acre in the condition
5.8.44	-	FWD_SM_CARBON_UNADJ	COND_DWM_CALC	Small-size class fine woody debris carbon mass per acre, 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

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
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
9.4.14	-	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
		<b>G</b>		
3.7.35	-	G_C	TREE_GRM_ESTN	Cut growth
3.7.41	-	G_CD	TREE_GRM_ESTN	Cull decrement growth
3.7.43	-	G_CI	TREE_GRM_ESTN	Cull increment growth
37.39	-	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
9.6.16	-	GENERA_BINOMIAL_AUTHOR	REF_PLANT_DICTIONARY	Genera binomial author
9.6.20	-	GENUS	REF_PLANT_DICTIONARY	Genus
9.5.3	-	GENUS	REF_SPECIES	Genus
2.4.88	-	GRAZING_SRS	COND	Grazing, Southern Research Station
4.4.11	-	GRND_CVR_SEG	GRND_CVR	Ground cover segment number
4.4.12	-	GRND_CVR_TYP	GRND_CVR	Ground cover type
2.4.82	-	GROUND_LAND_CLASS_PNW	COND	Present ground land class, Pacific Northwest Research Station

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
2.5.36	-	GROUND_TRAN PTS_BARE_RMRS	SUBPLOT	Ground surface cover transect points - bare ground, Rocky Mountain Research Station
2.5.37	-	GROUND_TRAN PTS_CRYP_RMRS	SUBPLOT	Ground surface cover transect points - cryptogamic crust, Rocky Mountain Research Station
2.5.38	-	GROUND_TRAN PTS_DEV_RMRS	SUBPLOT	Ground surface cover transect points - developed land, Rocky Mountain Research Station
2.5.39	-	GROUND_TRAN PTS_LICHEN_RM RS	SUBPLOT	Ground surface cover transect points - lichen, Rocky Mountain Research Station
2.5.40	-	GROUND_TRAN PTS_LITTER_RM RS	SUBPLOT	Ground surface cover transect points - litter, Rocky Mountain Research Station
2.5.41	-	GROUND_TRAN PTS_MOSS_RMRS	SUBPLOT	Ground surface cover transect points - moss, Rocky Mountain Research Station
2.5.42	-	GROUND_TRAN PTS_NOTSAMP_RMRS	SUBPLOT	Ground surface cover transect points - not sampled, Rocky Mountain Research Station
2.5.43	-	GROUND_TRAN PTS_OTHER_RMRS	SUBPLOT	Ground surface cover transect points - other cover, Rocky Mountain Research Station
2.5.44	-	GROUND_TRAN PTS_PEIS_RMRS	SUBPLOT	Ground surface cover transect points - permanent ice and snow, Rocky Mountain Research Station
2.5.45	-	GROUND_TRAN PTS_ROAD_RMRS	SUBPLOT	Ground surface cover transect points - road, Rocky Mountain Research Station
2.5.46	-	GROUND_TRAN PTS_ROCK_RMRS	SUBPLOT	Ground surface cover transect points - rock, Rocky Mountain Research Station
2.5.47	-	GROUND_TRAN PTS_TRIS_RMRS	SUBPLOT	Ground surface cover transect points - transient ice and snow, Rocky Mountain Research Station

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
2.5.48	-	GROUND_TRAN PTS_VEG_RMRS	SUBPLOT	Ground surface cover transect points - vegetation, Rocky Mountain Research Station
2.5.49	-	GROUND_TRAN PTS_WATER_RM RS	SUBPLOT	Ground surface cover transect points - water, Rocky Mountain Research Station
2.5.50	-	GROUND_TRAN PTS_WOOD_RMRS	SUBPLOT	Ground surface cover transect points - wood, Rocky Mountain Research Station
2.3.23	-	GROW_TYP_CD	PLOT	Type of annual volume growth code
8.2.23	-	GROW_TYP_CD	PLOTSNAP	Type of annual volume growth code
3.1.175	-	GROWBFSCR_RMRS	TREE	Net annual merchantable board-foot (Scribner rule) growth of a sawtimber tree on forest land, Rocky Mountain Research Station
3.1.46	-	GROWBFSL	TREE	Net annual merchantable board-foot growth of a sawtimber tree on timberland
3.4.71	-	GROWBFSL_FOREST	TREE_GRM_COMPONENT	Net annual merchantable board-foot growth of a sawtimber tree on forest land
3.4.80	-	GROWBFSL_TIMBER	TREE_GRM_COMPONENT	Net annual merchantable board-foot growth of a sawtimber tree on timberland
3.1.47	-	GROWCFAL	TREE	Net annual sound cubic-foot growth of a live tree on timberland
3.4.69	-	GROWCFAL_FOREST	TREE_GRM_COMPONENT	Net annual sound cubic-foot growth of a live tree on forest land (all live estimation type)
3.4.78	-	GROWCFAL_TIMBER	TREE_GRM_COMPONENT	Net annual sound cubic-foot growth of a live tree on timberland (all live estimation type)
3.1.45	-	GROWCFGS	TREE	Net annual merchantable cubic-foot growth of a growing-stock tree on timberland

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.4.70	-	GROWCFGS_FOREST	TREE_GRM_COMPONENT	Net annual merchantable cubic-foot growth of a growing-stock tree on forest land
3.4.79	-	GROWCFGS_TIMBER	TREE_GRM_COMPONENT	Net annual merchantable cubic-foot growth of a growing-stock tree on timberland
3.1.176	-	GROWCFSAWLOG_RMRS	TREE	Net annual merchantable cubic-foot growth in the sawlog/utilization portion of a tree, Rocky Mountain Research Station
7.2.13	-	GROWTH_ACCT	POP_EVAL	Growth accounting
9.6.10	-	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)
2.4.54	-	GSSTK	COND	Growing stock stocking percent
2.4.36	-	GSSTKCD	COND	Growing-stock stocking code
3.1.201	-	GST_PNWRS	TREE	Growth sample tree, Pacific Northwest Research Station
3.4.22	-	GSTK_BEGIN	TREE_GRM_COMPONENT	Growing stock at beginning
3.4.20	-	GSTK_COMPONENT	TREE_GRM_COMPONENT	Growing-stock growth component
3.4.24	-	GSTK_END	TREE_GRM_COMPONENT	Growing stock at end
3.4.23	-	GSTK_MIDPT	TREE_GRM_COMPONENT	Growing stock at midpoint
		H		
9.9.2	-	HABTYP_CD	REF_HABTYP_DESCRIPTION	Habitat type code
2.4.56	-	HABTYP_CD1	COND	Habitat type code 1
2.4.58	-	HABTYP_CD1_DESCR_PUB_CD	COND	Habitat type code 1 description publication code
2.4.57	-	HABTYP_CD1_PUB_CD	COND	Habitat type code 1 publication code
2.4.59	-	HABTYP_CD2	COND	Habitat type code 2
2.4.61	-	HABTYP_CD2_DESCR_PUB_CD	COND	Habitat type code 2 description publication code

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
2.4.60	-	HABTYP_CD2_PUB_CD	COND	Habitat type code 2 publication code
2.4.89	-	HARVEST_TYPE1_SRS	COND	Harvest type code 1, Southern Research Station
2.4.90	-	HARVEST_TYPE2_SRS	COND	Harvest type code 2, Southern Research Station
2.4.91	-	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
9.17.3	-	HIERARCHY_LEVEL	REF_NVCS_LEVEL_1_CODES	Hierarchy level
9.18.3	-	HIERARCHY_LEVEL	REF_NVCS_LEVEL_2_CODES	Hierarchy level
9.19.3	-	HIERARCHY_LEVEL	REF_NVCS_LEVEL_3_CODES	Hierarchy level
9.20.3	-	HIERARCHY_LEVEL	REF_NVCS_LEVEL_4_CODES	Hierarchy level
9.21.3	-	HIERARCHY_LEVEL	REF_NVCS_LEVEL_5_CODES	Hierarchy level
9.22.3	-	HIERARCHY_LEVEL	REF_NVCS_LEVEL_6_CODES	Hierarchy level
9.23.3	-	HIERARCHY_LEVEL	REF_NVCS_LEVEL_7_CODES	Hierarchy level
9.24.3	-	HIERARCHY_LEVEL	REF_NVCS_LEVEL_8_CODES	Hierarchy level
9.17.4	-	HIERARCHY_LEVEL_LABEL	REF_NVCS_LEVEL_1_CODES	Hierarchy level label
9.18.4	-	HIERARCHY_LEVEL_LABEL	REF_NVCS_LEVEL_2_CODES	Hierarchy level label
9.19.4	-	HIERARCHY_LEVEL_LABEL	REF_NVCS_LEVEL_3_CODES	Hierarchy level label
9.20.4	-	HIERARCHY_LEVEL_LABEL	REF_NVCS_LEVEL_4_CODES	Hierarchy level label
9.21.4	-	HIERARCHY_LEVEL_LABEL	REF_NVCS_LEVEL_5_CODES	Hierarchy level label
9.22.4	-	HIERARCHY_LEVEL_LABEL	REF_NVCS_LEVEL_6_CODES	Hierarchy level label
9.23.4	-	HIERARCHY_LEVEL_LABEL	REF_NVCS_LEVEL_7_CODES	Hierarchy level label
9.24.4	-	HIERARCHY_LEVEL_LABEL	REF_NVCS_LEVEL_8_CODES	Hierarchy level label
9.16.1	-	HIERARCHY_VERSION	REF_NVCS_HIERARCHY_STRICT	Hierarchy version
9.13.5	-	HIGHEST_POINT	REF_STATE_ELEV	Highest point
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_RESIDUALPILE	Pile beginning horizontal distance
5.7.16	10.3.4	HORIZ_BEGNDIST	DWM_TRANSECT_SEGMENT	Beginning horizontal distance of a coarse woody debris transect segment
5.2.13	10.4.3. 5	HORIZ_DIST	DWM_COARSE_WOODY_DEBRIS	Horizontal distance

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
5.2.43		HORIZ_DIST_CD	DWM_COARSE_WOODY_DEB_RIS	Horizontal distance code
5.6.35	10.5.5	HORIZ_ENDDIST	DWM_RESIDUAL_PILE	Pile ending horizontal distance
5.7.17	10.3.5	HORIZ_ENDDIST	DWM_TRANSECT_SEGMENT	Ending horizontal distance of a coarse woody debris transect segment
5.7.15	-	HORIZ_LENGTH	DWM_TRANSECT_SEGMENT	Horizontal length
3.1.79	-	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
3.4.9	-	HT_BEGIN	TREE_GRM_COMPONENT	Beginning height
3.1.177	-	HT_1YRAGO_RMRS	TREE	Height one year ago, Rocky Mountain Research Station
3.4.11	-	HT_END	TREE_GRM_COMPONENT	Ending height
3.4.10	-	HT_MIDPT	TREE_GRM_COMPONENT	Midpoint height
3.1.78	-	HTCALC	TREE	Current height calculated
3.1.21	5.16	HTCD	TREE	Height method code
3.1.88	5.24	HTDMP	TREE	Height to diameter measurement point
8.1.11	-	HUC	PLOTGEOM	Hydrologic unit code
		I		
3.7.30	-	I	TREE_GRM_ESTN	Ingrowth
3.1.202	-	INC10YR_PNWRS	TREE	10-year increment, Pacific Northwest Research Station
3.1.204	-	INC5YR_PNWRS	TREE	5-year increment, Pacific Northwest Research Station
3.1.203	-	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
2.4.102	-	INDUSTRIALCD_FIADB	COND	Industrial code in FIADB
9.12.9	-	INSTALL_TYPE	REF_FIADB_VERSION	Install type
2.3.44	-	INTENSITY	PLOT	Intensity
8.2.46	-	INTENSITY	PLOTSNAP	Intensity
9.8.4	-	INV_GROUP_CD	REF_INVASIVE_SPECIES	Invasive group code
2.5.34	-	INVASIVE_NONSAMPLE_REASON_CD	SUBPLOT	Invasive nonsampled reason code

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
2.3.54	-	INVASIVE_SAMPLING_STATUS_CD	PLOT	Invasive sampling status code
2.3.55	-	INVASIVE_SPECIMEN_RULE_CD	PLOT	Invasive specimen rule code
2.5.33	-	INVASIVE_SUBP_STATUS_CD	SUBPLOT	Invasive subplot status code
2.7.3	-	INVYR	BOUNDARY	Inventory year
2.4.3	-	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
4.4.3	-	INVYR	GRND_CVR	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
2.3.5	-	INVYR	PLOT	Inventory year
6.1.3	-	INVYR	PLOT_REGEN	Inventory year
8.1.3	-	INVYR	PLOTGEOM	Inventory year
8.2.5	-	INVYR	PLOTSNAP	Inventory year
7.6.5	-	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
2.6.3	-	INVYR	SUBP_COND	Inventory year
2.5.4	-	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		
9.5.42	-	JENKINS_FOLIAGE_RATIO_B1	REF_SPECIES	Jenkins foliage ratio B1
9.5.43	-	JENKINS_FOLIAGE_RATIO_B2	REF_SPECIES	Jenkins foliage ratio B2
9.5.44	-	JENKINS_ROOT_RATIO_B1	REF_SPECIES	Jenkins root ratio B1

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
9.5.45	-	JENKINS_ROOT_RATIO_B2	REF_SPECIES	Jenkins root ratio B2
9.5.46	-	JENKINS_SAPLING_ADJUSTMENT	REF_SPECIES	Jenkins sapling adjustment factor
9.5.35	-	JENKINS_SPGRPCD	REF_SPECIES	Jenkins species group code
9.5.40	-	JENKINS_STEM_BARK_RATIO_B1	REF_SPECIES	Jenkins stem bark ratio B1
9.5.41	-	JENKINS_STEM_BARK_RATIO_B2	REF_SPECIES	Jenkins stem bark ratio B2
9.5.38	-	JENKINS_STEM_WOOD_RATIO_B1	REF_SPECIES	Jenkins stem wood ratio B1
9.5.39	-	JENKINS_STEM_WOOD_RATIO_B2	REF_SPECIES	Jenkins stem wood ratio B2
9.5.36	-	JENKINS_TOTAL_B1	REF_SPECIES	Jenkins total B1
9.5.37	-	JENKINS_TOTAL_B2	REF_SPECIES	Jenkins total B2
<b>K</b>				
2.3.16	1.10	KINDCD	PLOT	Sample kind code
8.2.16	-	KINDCD	PLOTSNAP	Sample kind code
2.3.30	-	KINCD_NC	PLOT	Sample kind code, North Central
8.2.32	-	KINCD_NC	PLOTSNAP	Sample kind code, North Central
<b>L</b>				
9.2.2	-	LABEL_ORDER	REF_POP_EVAL_TYP_DESCR	Label order
3.7.6	-	LAND_BASIS	TREE_GRM_ESTN	Land basis for estimate
2.4.106	2.5.28	LAND_COVER_CLASS_CD	COND	Land cover class
7.2.11	-	LAND_ONLY	POP_EVAL	Land only
2.4.92	-	LAND_USE_SRS	COND	Land use, Southern Research Station
2.4.133	-	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
2.3.20	1.19.8	LAT	PLOT	Latitude
8.1.7	-	LAT	PLOTGEOM	Latitude

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
8.2.20	-	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)
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 per acre in the condition
9.4.7	-	LITTER_CARBON_RATIO	REF_FOREST_TYPE_GROUP	Litter carbon ratio
9.4.6	-	LITTER_DENSITY	REF_FOREST_TYPE_GROUP	Litter density
5.8.90	-	LITTER_DEPTH	COND_DWM_CALC	Average litter depth in the condition
5.3.24	10.7.10	LITTER_METHOD	DWM_DUFF_LITTER_FUEL	Litter measurement method
5.3.25	10.7.7	LITTER_NONSAMPLE_REASON_CD	DWM_DUFF_LITTER_FUEL	Litter nonsampled reason code
5.5.13	-	LITTERCD	DWM_MICROPLOT_FUEL	Litter code
2.4.98	-	LIVE_CANOPY_CVR_PCT	COND	Live canopy cover percent
2.4.99	-	LIVE_MISSING_CANOPY_CVR_PCT	COND	Live plus missing canopy cover percent
7.2.7	-	LOCATION_NM	POP_EVAL	Location name
2.3.21	1.19.9	LON	PLOT	Longitude
8.1.8	-	LON	PLOTGEOM	Longitude
8.2.21	-	LON	PLOTSNAP	Longitude
9.13.4	-	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

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
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	-	LVSHRBbcd	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
3.4.19	-	MACR_COMPONENT	TREE_GRM_COMPONENT	Macroplot growth component
2.5.14	-	MACRCOND	SUBPLOT	Macroplot center condition
2.6.18	-	MACRCOND_PROP	SUBP_COND	Macroplot-condition proportion
2.3.43	1.20	MACRO_BREAKPOINT_DIA	PLOT	Macroplot breakpoint diameter
8.2.45	-	MACRO_BREAKPOINT_DIA	PLOTSNAP	Macroplot breakpoint diameter
2.4.32	-	MACRPROP_UNADJ	COND	Macroplot proportion unadjusted
2.4.134	-	MAICF_RMRS	COND	Mean annual increment cubic feet, Rocky Mountain Research Station
9.5.12	-	MAJOR_SPGRPCD	REF_SPECIES	Major species group code
2.3.29	1.12	MANUAL	PLOT	Manual (field guide) version number
8.2.29	-	MANUAL	PLOTSNAP	Manual (field guide) version number
2.3.61	-	SUBPANEL	PLOT	Manual version of the data
8.2.30	-	MANUAL_DB	PLOTSNAP	Manual version of the data
9.3.5	-	MANUAL_END	REF_FOREST_TYPE	Manual end
9.8.9	-	MANUAL_END	REF_INVASIVE_SPECIES	Manual end
9.5.34	-	MANUAL_END	REF_SPECIES	Manual end

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
2.3.62	-	MANUAL_NCRS	PLOT	Manual (field guide) version number, North Central Research Station
2.3.63	-	MANUAL_NERS	PLOT	Manual (field guide) version number, Northeastern Research Station
2.3.64	-	MANUAL_RMRS	PLOT	Manual (field guide) version number, Rocky Mountain Research Station
9.3.4	-	MANUAL_START	REF_FOREST_TYPE	Manual start
9.8.8	-	MANUAL_START	REF_INVASIVE_SPECIES	Manual start
9.5.33	-	MANUAL_START	REF_SPECIES	Manual start
2.4.18	-	MAPDEN	COND	Mapping density
9.13.3	-	MAX_ELEV	REF_STATE_ELEV	Maximum elevation
9.5.51	-	MC_PCT_GREEN_BARK	REF_SPECIES	Moisture content of green bark as a percent of oven-dry weight
9.5.52	-	MC_PCT_GREEN_BARK_CIT	REF_SPECIES	Citation for MC_PCT_GREEN_BARK
9.5.53	-	MC_PCT_GREEN_WOOD	REF_SPECIES	Moisture content of green wood as a percent of oven-dry weight
9.5.54	-	MC_PCT_GREEN_WOOD_CIT	REF_SPECIES	Citation for MC_PCT_GREEN_WOOD
9.3.2	-	MEANING	REF_FOREST_TYPE	Meaning
9.4.2	-	MEANING	REF_FOREST_TYPE_GROUP	Meaning
9.17.6	-	MEANING	REF_NVCS_LEVEL_1_CODES	Meaning
9.18.6	-	MEANING	REF_NVCS_LEVEL_2_CODES	Meaning
9.19.6	-	MEANING	REF_NVCS_LEVEL_3_CODES	Meaning
9.20.6	-	MEANING	REF_NVCS_LEVEL_4_CODES	Meaning
9.21.6	-	MEANING	REF_NVCS_LEVEL_5_CODES	Meaning
9.22.6	-	MEANING	REF_NVCS_LEVEL_6_CODES	Meaning
9.23.6	-	MEANING	REF_NVCS_LEVEL_7_CODES	Meaning
9.24.6	-	MEANING	REF_NVCS_LEVEL_8_CODES	Meaning
9.14.3	-	MEANING	REF_UNIT	Meaning
5.1.7	-	MEASDAY	DWM_VISIT	Measurement day
2.3.14	1.13.3	MEASDAY	PLOT	Measurement day
8.2.14	-	MEASDAY	PLOTSNAP	Measurement day
5.1.8	-	MEASMON	DWM_VISIT	Measurement month
2.3.13	1.13.2	MEASMON	PLOT	Measurement month
8.2.13	-	MEASMON	PLOTSNAP	Measurement month
5.8.5	-	MEASYEAR	COND_DWM_CALC	Measurement year

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
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
2.3.12	1.13.1	MEASYEAR	PLOT	Measurement year
8.2.12	-	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
3.4.17	-	MICR_COMPONENT	TREE_GRM_COMPONENT	Microplot growth component
3.4.29	-	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
3.4.49	-	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
3.4.30	-	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
3.4.50	-	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
3.4.31	-	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

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.4.51	-	MICR_TPAGROW_UNADJ_AL_TIMBER	TREE_GRM_COMPONENT	Trees with DIA $\geq 1.0$ inch - unadjusted trees per acre for growth for the all live estimation type on timberland
3.4.33	-	MICR_TPAMORT_UNADJ_AL_FOREST	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
3.4.53	-	MICR_TPAMORT_UNADJ_AL_TIMBER	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
3.4.32	-	MICR_TPAREMV_UNADJ_AL_FOREST	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
3.4.52	-	MICR_TPAREMV_UNADJ_AL_TIMBER	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
2.5.12	3.7	MICRCOND	SUBPLOT	Microplot center condition
2.6.16	-	MICRCOND_PROP	SUBP_COND	Microplot-condition proportion
2.3.38	-	MICROPLOT_LOC	PLOT	Microplot location
8.2.40	-	MICROPLOT_LOC	PLOTSNAP	Microplot location
6.2.13	-	MICROPLOT_SITE_LIMITATIONS	SUBPLOT_REGEN	Microplot site limitations
2.4.30	-	MICRPROP_UNADJ	COND	Microplot proportion unadjusted
9.13.2	-	MIN_ELEV	REF_STATE_ELEV	Minimum elevation
3.1.90	5.26	MIST_CL_CD	TREE	Mistletoe class code
3.1.132	-	MIST_CL_CD_PNWRS	TREE	Leafy mistletoe class code, Pacific Northwest Research Station
2.4.62	-	MIXEDCONFCD	COND	Mixed conifer code
3.8.5	-	MODIFIED_BY	BEGINEND	Modified by
2.7.21	-	MODIFIED_BY	BOUNDARY	Modified by
2.4.76	-	MODIFIED_BY	COND	Modified by
5.8.100	-	MODIFIED_BY	COND_DWM_CALC	Modified by
2.2.9	-	MODIFIED_BY	COUNTY	Modified by
5.2.38	-	MODIFIED_BY	DWM_COARSE_WOODY_DEB_RIS	Modified by

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
5.3.19	-	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
4.4.18	-	MODIFIED_BY	GRND_CVR	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
2.3.35	-	MODIFIED_BY	PLOT	Modified by
6.1.12	-	MODIFIED_BY	PLOT_REGEN	Modified by
8.1.18	-	MODIFIED_BY	PLOTGEOM	Modified by
8.2.37	-	MODIFIED_BY	PLOTSNAP	Modified by
7.1.17	-	MODIFIED_BY	POP_ESTN_UNIT	Modified by
7.2.19	-	MODIFIED_BY	POP_EVAL	Modified by
7.3.8	-	MODIFIED_BY	POP_EVAL_ATTRIBUTE	Modified by
7.4.10	-	MODIFIED_BY	POP_EVAL_GRP	Modified by
7.5.8	-	MODIFIED_BY	POP_EVAL_TYP	Modified by
7.6.16	-	MODIFIED_BY	POP_PLOT_STRATUM_ASSGN	Modified by
7.7.22	-	MODIFIED_BY	POP_STRATUM	Modified by
9.11.6	-	MODIFIED_BY	REF_CITATION	Modified by
9.12.6	-	MODIFIED_BY	REF_FIADB_VERSION	Modified by
9.3.10	-	MODIFIED_BY	REF_FOREST_TYPE	Modified by
9.4.20	-	MODIFIED_BY	REF_FOREST_TYPE_GROUP	Modified by
9.9.10	-	MODIFIED_BY	REF_HABTYP_DESCRIPTION	Modified by
9.10.10	-	MODIFIED_BY	REF_HABTYP_PUBLICATION	Modified by
9.8.14	-	MODIFIED_BY	REF_INVASIVE_SPECIES	Modified by
9.16.39	-	MODIFIED_BY	REF_NVCS_HIERARCHY_STRICT	Modified by
9.17.11	-	MODIFIED_BY	REF_NVCS_LEVEL_1_CODES	Modified by
9.18.11	-	MODIFIED_BY	REF_NVCS_LEVEL_2_CODES	Modified by
9.19.11	-	MODIFIED_BY	REF_NVCS_LEVEL_3_CODES	Modified by
9.20.11	-	MODIFIED_BY	REF_NVCS_LEVEL_4_CODES	Modified by
9.21.11	-	MODIFIED_BY	REF_NVCS_LEVEL_5_CODES	Modified by
9.22.11	-	MODIFIED_BY	REF_NVCS_LEVEL_6_CODES	Modified by
9.23.11	-	MODIFIED_BY	REF_NVCS_LEVEL_7_CODES	Modified by
9.24.11	-	MODIFIED_BY	REF_NVCS_LEVEL_7_CODES	Modified by
9.6.37	-	MODIFIED_BY	REF_PLANT_DICTIONARY	Modified by

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
9.1.13	-	MODIFIED_BY	REF_POP_ATTRIBUTE	Modified by
9.2.10	-	MODIFIED_BY	REF_POP_EVAL_TYP_DESCR	Modified by
9.15.9	-	MODIFIED_BY	REF_RESEARCH_STATION	Modified by
9.5.76	-	MODIFIED_BY	REF_SPECIES	Modified by
9.7.8	-	MODIFIED_BY	REF_SPECIES_GROUP	Modified by
9.13.9	-	MODIFIED_BY	REF_STATE_ELEV	Modified by
9.14.7	-	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
2.6.13	-	MODIFIED_BY	SUBP_COND	Modified by
2.8.13	-	MODIFIED_BY	SUBP_COND_CHNG_MTRX	Modified by
2.5.23	-	MODIFIED_BY	SUBPLOT	Modified by
6.2.18	-	MODIFIED_BY	SUBPLOT_REGEN	Modified by
2.1.13	-	MODIFIED_BY	SURVEY	Modified by
3.1.84	-	MODIFIED_BY	TREE	Modified by
3.6.29	-	MODIFIED_BY	TREE_GRM_BEGIN	Modified by
3.4.90	-	MODIFIED_BY	TREE_GRM_COMPONENT	Modified by
3.7.47	-	MODIFIED_BY	TREE_GRM_ESTN	Modified by
3.5.28	-	MODIFIED_BY	TREE_GRM_MIDPT	Modified by
3.3.8	-	MODIFIED_BY	TREE_REGIONAL_BIOMASS	Modified by
3.2.19	-	MODIFIED_BY	TREE_WOODLAND_STEMS	Modified by
3.8.6	-	MODIFIED_DATE	BEGINEND	Modified date
2.7.22	-	MODIFIED_DATE	BOUNDARY	Modified date
2.4.77	-	MODIFIED_DATE	COND	Modified date
5.8.101	-	MODIFIED_DATE	COND_DWM_CALC	Modified date
2.2.10	-	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
4.4.19	-	MODIFIED_DATE	GRND_CVR	Modified date
4.1.18	-	MODIFIED_DATE	INVASIVE_SUBPLOT_SPP	Modified date
4.3.17	-	MODIFIED_DATE	P2VEG_SUBP_STRUCTURE	Modified date
4.2.20	-	MODIFIED_DATE	P2VEG_SUBPLOT_SPP	Modified date

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
2.3.36	-	MODIFIED_DATE	PLOT	Modified date
6.1.13	-	MODIFIED_DATE	PLOT_REGEN	Modified date
8.1.19	-	MODIFIED_DATE	PLOTGEOM	Modified date
8.2.38	-	MODIFIED_DATE	PLOTSNAP	Modified date
7.1.18	-	MODIFIED_DATE	POP_ESTN_UNIT	Modified date
7.2.20	-	MODIFIED_DATE	POP_EVAL	Modified date
7.3.9	-	MODIFIED_DATE	POP_EVAL_ATTRIBUTE	Modified date
7.4.11	-	MODIFIED_DATE	POP_EVAL_GRP	Modified date
7.5.9	-	MODIFIED_DATE	POP_EVAL_TYP	Modified date
7.6.17	-	MODIFIED_DATE	POP_PLOT_STRATUM_ASSGN	Modified date
7.7.23	-	MODIFIED_DATE	POP_STRATUM	Modified date
9.11.7	-	MODIFIED_DATE	REF_CITATION	Modified date
9.12.7	-	MODIFIED_DATE	REF_FIADB_VERSION	Modified date
9.3.11	-	MODIFIED_DATE	REF_FOREST_TYPE	Modified date
9.4.21	-	MODIFIED_DATE	REF_FOREST_TYPE_GROUP	Modified date
9.9.11	-	MODIFIED_DATE	REF_HABTYP_DESCRIPTION	Modified date
9.10.11	-	MODIFIED_DATE	REF_HABTYP_PUBLICATION	Modified date
9.8.15	-	MODIFIED_DATE	REF_INVASIVE_SPECIES	Modified date
9.16.40	-	MODIFIED_DATE	REF_NVCS_HIERARCHY_STRICT	Modified date
9.17.12	-	MODIFIED_DATE	REF_NVCS_LEVEL_1_CODES	Modified date
9.18.12	-	MODIFIED_DATE	REF_NVCS_LEVEL_2_CODES	Modified date
9.19.12	-	MODIFIED_DATE	REF_NVCS_LEVEL_3_CODES	Modified date
9.20.12	-	MODIFIED_DATE	REF_NVCS_LEVEL_4_CODES	Modified date
9.21.12	-	MODIFIED_DATE	REF_NVCS_LEVEL_5_CODES	Modified date
9.22.12	-	MODIFIED_DATE	REF_NVCS_LEVEL_6_CODES	Modified date
9.23.12	-	MODIFIED_DATE	REF_NVCS_LEVEL_7_CODES	Modified date
9.24.12	-	MODIFIED_DATE	REF_NVCS_LEVEL_8_CODES	Modified date
9.6.38	-	MODIFIED_DATE	REF_PLANT_DICTIONARY	Modified date
9.1.14	-	MODIFIED_DATE	REF_POP_ATTRIBUTE	Modified date
9.2.11	-	MODIFIED_DATE	REF_POP_EVAL_TYP_DESCR	Modified date
9.15.10	-	MODIFIED_DATE	REF_RESEARCH_STATION	Modified date
9.5.77	-	MODIFIED_DATE	REF_SPECIES	Modified date
9.7.9	-	MODIFIED_DATE	REF_SPECIES_GROUP	Modified date
9.13.10	-	MODIFIED_DATE	REF_STATE_ELEV	Modified date
9.14.8	-	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

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
2.6.14	-	MODIFIED_DATE	SUBP_COND	Modified date
2.8.14	-	MODIFIED_DATE	SUBP_COND_CHNG_MTRX	Modified date
2.5.24	-	MODIFIED_DATE	SUBPLOT	Modified date
6.2.19	-	MODIFIED_DATE	SUBPLOT_REGEN	Modified date
2.1.14	-	MODIFIED_DATE	SURVEY	Modified date
3.1.85	-	MODIFIED_DATE	TREE	Modified date
3.6.30	-	MODIFIED_DATE	TREE_GRM_BEGIN	Modified date
3.4.91	-	MODIFIED_DATE	TREE_GRM_COMPONENT	Modified date
3.7.48	-	MODIFIED_DATE	TREE_GRM_ESTN	Modified date
3.5.29	-	MODIFIED_DATE	TREE_GRM_MIDPT	Modified date
3.3.9	-	MODIFIED_DATE	TREE_REGIONAL_BIOMASS	Modified date
3.2.20	-	MODIFIED_DATE	TREE_WOODLAND_STEMS	Modified date
3.8.7	-	MODIFIED_IN_INSTANCE	BEGINEND	Modified in instance
2.7.23	-	MODIFIED_IN_INSTANCE	BOUNDARY	Modified in instance
2.4.78	-	MODIFIED_IN_INSTANCE	COND	Modified in instance
5.8.102	-	MODIFIED_IN_INSTANCE	COND_DWM_CALC	Modified in instance
2.2.11	-	MODIFIED_IN_INSTANCE	COUNTY	Modified in instance
5.2.40	-	MODIFIED_IN_INSTANCE	DWM_COARSE_WOODY_DEBRIS	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
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
4.4.20	-	MODIFIED_IN_INSTANCE	GRND_CVR	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
2.3.37	-	MODIFIED_IN_INSTANCE	PLOT	Modified in instance
6.1.14	-	MODIFIED_IN_INSTANCE	PLOT_REGEN	Modified in instance
8.1.20	-	MODIFIED_IN_INSTANCE	PLOTGEOM	Modified in instance
8.2.39	-	MODIFIED_IN_INSTANCE	PLOTSNAP	Modified in instance
7.1.19	-	MODIFIED_IN_INSTANCE	POP_ESTN_UNIT	Modified in instance
7.2.21	-	MODIFIED_IN_INSTANCE	POP_EVAL	Modified in instance
7.3.10	-	MODIFIED_IN_INSTANCE	POP_EVAL_ATTRIBUTE	Modified in instance
7.4.12	-	MODIFIED_IN_INSTANCE	POP_EVAL_GRP	Modified in instance
7.5.10	-	MODIFIED_IN_INSTANCE	POP_EVAL_TYP	Modified in instance
7.6.18	-	MODIFIED_IN_INSTANCE	POP_PLOT_STRATUM_ASSGN	Modified in instance

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
7.7.24	-	MODIFIED_IN_INSTANCE	POP_STRATUM	Modified in instance
9.11.8	-	MODIFIED_IN_INSTANCE	REF_CITATION	Modified in instance
9.12.8	-	MODIFIED_IN_INSTANCE	REF_FIADB_VERSION	Modified in instance
9.3.12	-	MODIFIED_IN_INSTANCE	REF_FOREST_TYPE	Modified in instance
9.4.22	-	MODIFIED_IN_INSTANCE	REF_FOREST_TYPE_GROUP	Modified in instance
9.9.12	-	MODIFIED_IN_INSTANCE	REF_HABTYP_DESCRIPTION	Modified in instance
9.10.12	-	MODIFIED_IN_INSTANCE	REF_HABTYP_PUBLICATION	Modified in instance
9.8.16	-	MODIFIED_IN_INSTANCE	REF_INVASIVE_SPECIES	Modified in instance
9.16.41	-	MODIFIED_IN_INSTANCE	REF_NVCS_HIERARCHY_STRUCT	Modified in instance
9.17.13	-	MODIFIED_IN_INSTANCE	REF_NVCS_LEVEL_1_CODES	Modified in instance
9.18.13	-	MODIFIED_IN_INSTANCE	REF_NVCS_LEVEL_2_CODES	Modified in instance
9.19.13	-	MODIFIED_IN_INSTANCE	REF_NVCS_LEVEL_3_CODES	Modified in instance
9.20.13	-	MODIFIED_IN_INSTANCE	REF_NVCS_LEVEL_4_CODES	Modified in instance
9.21.13	-	MODIFIED_IN_INSTANCE	REF_NVCS_LEVEL_5_CODES	Modified in instance
9.22.13	-	MODIFIED_IN_INSTANCE	REF_NVCS_LEVEL_6_CODES	Modified in instance
9.23.13	-	MODIFIED_IN_INSTANCE	REF_NVCS_LEVEL_7_CODES	Modified in instance
9.24.13	-	MODIFIED_IN_INSTANCE	REF_NVCS_LEVEL_8_CODES	Modified in instance
9.6.39	-	MODIFIED_IN_INSTANCE	REF_PLANT_DICTIONARY	Modified in instance
9.1.15	-	MODIFIED_IN_INSTANCE	REF_POP_ATTRIBUTE	Modified in instance
9.2.12	-	MODIFIED_IN_INSTANCE	REF_POP_EVAL_TYP_DESCR	Modified in instance
9.15.11	-	MODIFIED_IN_INSTANCE	REF_RESEARCH_STATION	Modified in instance
9.5.78	-	MODIFIED_IN_INSTANCE	REF_SPECIES	Modified in instance
9.7.10	-	MODIFIED_IN_INSTANCE	REF_SPECIES_GROUP	Modified in instance
9.13.11	-	MODIFIED_IN_INSTANCE	REF_STATE_ELEV	Modified in instance
9.14.9	-	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
2.6.15	-	MODIFIED_IN_INSTANCE	SUBP_COND	Modified in instance
2.8.15	-	MODIFIED_IN_INSTANCE	SUBP_COND_CHNG_MTRX	Modified in instance
2.5.25	-	MODIFIED_IN_INSTANCE	SUBPLOT	Modified in instance
6.2.20	-	MODIFIED_IN_INSTANCE	SUBPLOT_REGEN	Modified in instance
2.1.15	-	MODIFIED_IN_INSTANCE	SURVEY	Modified in instance
3.1.86	-	MODIFIED_IN_INSTANCE	TREE	Modified in instance
3.6.31	-	MODIFIED_IN_INSTANCE	TREE_GRM_BEGIN	Modified in instance
3.4.92	-	MODIFIED_IN_INSTANCE	TREE_GRM_COMPONENT	Modified in instance
3.7.49	-	MODIFIED_IN_INSTANCE	TREE_GRM_ESTN	Modified in instance
3.5.30	-	MODIFIED_IN_INSTANCE	TREE_GRM_MIDPT	Modified in instance

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.3.10	-	MODIFIED_IN_INSTANCE	TREE_REGIONALBIOMASS	Modified in instance
3.2.21	-	MODIFIED_IN_INSTANCE	TREE_WOODLAND_STEMS	Modified in instance
2.3.24	-	MORT_TYP_CD	PLOT	Type of annual mortality volume code
8.2.24	-	MORT_TYP_CD	PLOTSNAP	Type of annual mortality volume code
3.7.18	-	MORTALITY	TREE_GRM_ESTN	Mortality estimate
3.1.49	-	MORTBFSL	TREE	Merchantable board-foot volume of a sawtimber tree on timberland for mortality purposes
3.4.77	-	MORTBFSL_FOREST	TREE_GRM_COMPONENT	Merchantable board-foot volume of a sawtimber tree for mortality purposes on forest land
3.4.86	-	MORTBFSL_TIMBER	TREE_GRM_COMPONENT	Merchantable board-foot volume of a sawtimber tree on timberland for mortality purposes
3.1.87	5.7.3	MORTCD	TREE	Mortality code
3.1.50	-	MORTCFAL	TREE	Sound cubic-foot volume of a tree on timberland for mortality purposes
3.4.75	-	MORTCFAL_FOREST	TREE_GRM_COMPONENT	Sound cubic-foot volume of a tree on forest land for mortality purposes (all live estimation type)
3.4.84	-	MORTCFAL_TIMBER	TREE_GRM_COMPONENT	Sound cubic-foot volume of a tree on timberland for mortality purposes (all live estimation type)
3.1.48	-	MORTCFGS	TREE	Merchantable cubic-foot volume of a growing-stock tree on timberland for mortality purposes
3.4.76	-	MORTCFGS_FOREST	TREE_GRM_COMPONENT	Merchantable cubic-foot volume of a growing-stock tree on forest land for mortality purposes
3.4.85	-	MORTCFGS_TIMBER	TREE_GRM_COMPONENT	Merchantable cubic-foot volume of a growing-stock tree on timberland for mortality purposes
3.1.55	5.22	MORTYR	TREE	Mortality year
		N		
9.7.2	-	NAME	REF_SPECIES_GROUP	Name
2.4.100	-	NBR_LIVE_STEMS	COND	Number of live stems

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
9.6.6	-	NEW_SCIENTIFIC_NAME	REF_PLANT_DICTIONARY	New scientific name
9.6.5	-	NEW_SYMBOL	REF_PLANT_DICTIONARY	New symbol
2.4.96	-	NF_COND_NONSAMPLE_REASON_CD	COND	Nonforest condition nonsampled reason code
2.4.95	-	NF_COND_STATUS_CD	COND	Nonforest condition status code
2.3.51	-	NF_PLOT_NONSAMPLE_REASON_CD	PLOT	Nonforest plot nonsampled reason code
2.3.50	-	NF_PLOT_STATUS_CD	PLOT	Nonforest plot status code
2.3.49	-	NF_SAMPLING_STATUS_CD	PLOT	Nonforest sampling status code
2.5.30	-	NF_SUBP_NONSAMPLE_REASON_CD	SUBPLOT	Nonforest subplot/macroplot nonsampled reason code
2.5.29	-	NF_SUBP_STATUS_CD	SUBPLOT	Nonforest subplot/macroplot status code
2.6.20	-	NONFR_INCL_PCT_MACRO	SUBP_COND	Nonforest inclusions percentage of macroplot
2.6.19	-	NONFR_INCL_PCT_SUBP	SUBP_COND	Nonforest inclusions percentage of subplot
9.17.7	-	NOTE	REF_NVCS_LEVEL_1_CODES	Note
9.18.7	-	NOTE	REF_NVCS_LEVEL_2_CODES	Note
9.19.7	-	NOTE	REF_NVCS_LEVEL_3_CODES	Note
9.20.7	-	NOTE	REF_NVCS_LEVEL_4_CODES	Note
9.21.7	-	NOTE	REF_NVCS_LEVEL_5_CODES	Note
9.22.7	-	NOTE	REF_NVCS_LEVEL_6_CODES	Note
9.23.7	-	NOTE	REF_NVCS_LEVEL_7_CODES	Note
9.24.7	-	NOTE	REF_NVCS_LEVEL_8_CODES	Note
7.2.15	-	NOTES	POP_EVAL	Notes
7.4.6	-	NOTES	POP_EVAL_GRP	Notes
9.8.10	-	NOTES	REF_INVASIVE_SPECIES	Notes
9.6.33	-	NOTES	REF_PLANT_DICTIONARY	Notes
9.1.16	-	NOTES	REF_POP_ATTRIBUTE	Notes
2.1.9	1.21	NOTES	SURVEY	Notes
9.17.5	-	NVCS_CODE	REF_NVCS_LEVEL_1_CODES	NVCS code
9.18.5	-	NVCS_CODE	REF_NVCS_LEVEL_2_CODES	NVCS code
9.19.5	-	NVCS_CODE	REF_NVCS_LEVEL_3_CODES	NVCS code
9.20.5	-	NVCS_CODE	REF_NVCS_LEVEL_4_CODES	NVCS code
9.21.5	-	NVCS_CODE	REF_NVCS_LEVEL_5_CODES	NVCS code
9.22.5	-	NVCS_CODE	REF_NVCS_LEVEL_6_CODES	NVCS code
9.23.5	-	NVCS_CODE	REF_NVCS_LEVEL_7_CODES	NVCS code

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
9.24.5	-	NVCS_CODE	REF_NVCS_LEVEL_8_CODES	NVCS code
2.4.110	-	NVCS_PRIMARY_CLASS	COND	Primary class of the National Vegetation Classification Standard (NVCS)
2.4.111	-	NVCS_LEVEL_1_CD	COND	Level 1 code of the NVCS
9.16.4	-	NVCS_LEVEL_1_CD	REF_NVCS_HIERARCHY_STRICT	Level 1 code of the NVCS
9.16.3	-	NVCS_LEVEL_1_LABEL	REF_NVCS_HIERARCHY_STRICT	Label 1 label of the NVCS
9.16.19	-	NVCS_LEVEL_1_MEANING	REF_NVCS_HIERARCHY_STRICT	Level 1 meaning of the NVCS
9.16.27	-	NVCS_LEVEL_1_NOTE	REF_NVCS_HIERARCHY_STRICT	Level 1 note of the NVCS
2.4.112	-	NVCS_LEVEL_2_CD	COND	Level 2 code of the NVCS
9.16.6	-	NVCS_LEVEL_2_CD	REF_NVCS_HIERARCHY_STRICT	Level 2 code of the NVCS
9.16.5	-	NVCS_LEVEL_2_LABEL	REF_NVCS_HIERARCHY_STRICT	Label 2 label of the NVCS
9.16.20	-	NVCS_LEVEL_2_MEANING	REF_NVCS_HIERARCHY_STRICT	Level 2 meaning of the NVCS
9.16.28	-	NVCS_LEVEL_2_NOTE	REF_NVCS_HIERARCHY_STRICT	Level 2 note of the NVCS
2.4.113	-	NVCS_LEVEL_3_CD	COND	Level 3 code of the NVCS
9.16.8	-	NVCS_LEVEL_3_CD	REF_NVCS_HIERARCHY_STRICT	Level 3 code of the NVCS
9.16.7	-	NVCS_LEVEL_3_LABEL	REF_NVCS_HIERARCHY_STRICT	Label 3 label of the NVCS
9.16.21	-	NVCS_LEVEL_3_MEANING	REF_NVCS_HIERARCHY_STRICT	Level 3 meaning of the NVCS
9.16.29	-	NVCS_LEVEL_3_NOTE	REF_NVCS_HIERARCHY_STRICT	Level 3 note of the NVCS
2.4.114	-	NVCS_LEVEL_4_CD	COND	Level 4 code of the NVCS
9.16.10	-	NVCS_LEVEL_4_CD	REF_NVCS_HIERARCHY_STRICT	Level 4 code of the NVCS
9.16.9	-	NVCS_LEVEL_4_LABEL	REF_NVCS_HIERARCHY_STRICT	Label 4 label of the NVCS
9.16.22	-	NVCS_LEVEL_4_MEANING	REF_NVCS_HIERARCHY_STRICT	Level 4 meaning of the NVCS
9.16.30	-	NVCS_LEVEL_4_NOTE	REF_NVCS_HIERARCHY_STRICT	Level 4 note of the NVCS
2.4.115	-	NVCS_LEVEL_5_CD	COND	Level 5 code of the NVCS
9.16.12	-	NVCS_LEVEL_5_CD	REF_NVCS_HIERARCHY_STRICT	Level 5 code of the NVCS

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
9.16.11	-	NVCS_LEVEL_5_LABEL	REF_NVCS_HIERARCHY_STRCT	Label 5 label of the NVCS
9.16.23	-	NVCS_LEVEL_5_MEANING	REF_NVCS_HIERARCHY_STRCT	Level 5 meaning of the NVCS
9.16.31	-	NVCS_LEVEL_5_NOTE	REF_NVCS_HIERARCHY_STRCT	Level 5 note of the NVCS
2.4.116	-	NVCS_LEVEL_6_CD	COND	Level 6 code of the NVCS
9.16.14	-	NVCS_LEVEL_6_CD	REF_NVCS_HIERARCHY_STRCT	Level 6 code of the NVCS
9.16.13	-	NVCS_LEVEL_6_LABEL	REF_NVCS_HIERARCHY_STRCT	Label 6 label of the NVCS
9.16.24	-	NVCS_LEVEL_6_MEANING	REF_NVCS_HIERARCHY_STRCT	Level 6 meaning of the NVCS
9.16.32	-	NVCS_LEVEL_6_NOTE	REF_NVCS_HIERARCHY_STRCT	Level 6 note of the NVCS
2.4.117	-	NVCS_LEVEL_7_CD	COND	Level 7 code of the NVCS
9.16.16	-	NVCS_LEVEL_7_CD	REF_NVCS_HIERARCHY_STRCT	Level 7 code of the NVCS
9.16.15	-	NVCS_LEVEL_7_LABEL	REF_NVCS_HIERARCHY_STRCT	Label 7 label of the NVCS
9.16.25	-	NVCS_LEVEL_7_MEANING	REF_NVCS_HIERARCHY_STRCT	Level 7 meaning of the NVCS
9.16.33	-	NVCS_LEVEL_7_NOTE	REF_NVCS_HIERARCHY_STRCT	Level 7 note of the NVCS
2.4.118	-	NVCS_LEVEL_8_CD	COND	Level 8 code of the NVCS
9.16.18	-	NVCS_LEVEL_8_CD	REF_NVCS_HIERARCHY_STRCT	Level 8 code of the NVCS
9.16.17	-	NVCS_LEVEL_8_LABEL	REF_NVCS_HIERARCHY_STRCT	Label 8 label of the NVCS
9.16.26	-	NVCS_LEVEL_8_MEANING	REF_NVCS_HIERARCHY_STRCT	Level 8 meaning of the NVCS
9.16.34	-	NVCS_LEVEL_8_NOTE	REF_NVCS_HIERARCHY_STRCT	Level 8 note of the NVCS
<b>O</b>				
3.8.1	-	ONEORTWO	BEGINEND	One or two
2.4.93	-	OPERABILITY_SRS	COND	Operability, Southern Research Station
5.2.34	-	ORNTCD_PNWRS	DWM_COARSE_WOODY_DEBRIS	Orientation code, Pacific Northwest Research Station
2.4.12	2.5.7	OWNCD	COND	Owner class code
2.4.13	2.5.2	OWNGRPCD	COND	Owner group code
2.4.101	2.5.8	OWNSUBCD	COND	Owner subclass code
<b>P</b>				

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
9.5.11	-	P_SPGRPCD	REF_SPECIES	Pacific Islands species group code
7.1.12	-	P1PNTCNT_EU	POP_ESTN_UNIT	Phase 1 point count for the estimation unit
7.7.9	-	P1POINTCNT	POP_STRATUM	Phase 1 point count
7.1.13	-	P1SOURCE	POP_ESTN_UNIT	Phase 1 source
2.5.19	-	P2A_GRM_FLG	SUBPLOT	Periodic to annual growth, removal, and mortality flag
3.1.103	-	P2A_GRM_FLG	TREE	Periodic to annual growth, removal, and mortality flag
2.3.25	-	P2PANEL	PLOT	Phase 2 panel number
8.2.25	-	P2PANEL	PLOTSNAP	Phase 2 panel number
7.7.10	-	P2POINTCNT	POP_STRATUM	Phase 2 point count
2.3.53	1.22.2	P2VEG_SAMPLING_LEVEL_DETAIL_CD	PLOT	P2 vegetation sampling level detail code
2.3.52	1.22.1	P2VEG_SAMPLING_STATUS_CD	PLOT	P2 vegetation sampling status code
2.5.32	3.13	P2VEG_SUBP_NONSAMPLE_REAS_N_CD	SUBPLOT	P2 vegetation subplot nonsampled reason code
2.5.31	3.12	P2VEG_SUBP_STATUS_CD	SUBPLOT	P2 vegetation subplot status code
2.1.3	-	P3_OZONE_IND	SURVEY	Phase 3 ozone indicator
2.3.26	-	P3PANEL	PLOT	Phase 3 panel number
8.2.26	-	P3PANEL	PLOTSNAP	Phase 3 panel number
9.5.31	-	PACIFIC	REF_SPECIES	Pacific Islands species
2.3.65	-	PAC_ISLAND_PNWRS	PLOT	Pacific Island name, Pacific Northwest Research Station
3.9.26	6.6.2 (SRS)	PCT_AFFECTED_DAMAGE_AGENT_1_SRS	SEEDLING	Percent affected by damage agent 1, Southern Research Station
3.9.28	6.6.2 (SRS)	PCT_AFFECTED_DAMAGE_AGENT_2_SRS	SEEDLING	Percent affected by damage agent 2, Southern Research Station
3.9.30	6.6.2 (SRS)	PCT_AFFECTED_DAMAGE_AGENT_3_SRS	SEEDLING	Percent affected by damage agent 3, Southern Research Station
2.4.135	-	PCTBARE_RMRS	COND	Percent bare ground, Rocky Mountain Research Station
5.8.12	-	PHASE	COND_DWM_CALC	Phase
2.4.35	2.5.27	PHYSCLCD	COND	Physiographic class code
5.6.8	-	PILE	DWM_RESIDUAL_PILE	Pile number

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
5.8.83	-	PILE_CARBON_ADJ	COND_DWM_CALC	Carbon mass per acre of piles for population estimates, adjusted
5.8.81	-	PILE_CARBON_COND	COND_DWM_CALC	Carbon mass per acre of piles in the condition for condition estimates
9.4.9	-	PILE_CARBON_RATIO	REF_FOREST_TYPE_GROUP	Pile carbon ratio
5.8.82	-	PILE_CARBON_UNADJ	COND_DWM_CALC	Carbon mass per acre of piles, for population estimates, unadjusted
9.4.10	-	PILE_DECAY_RATIO	REF_FOREST_TYPE_GROUP	Pile decay ratio
9.4.8	-	PILE_DENSITY	REF_FOREST_TYPE_GROUP	Pile density
5.8.80	-	PILE_DRYBIO_ADJ	COND_DWM_CALC	Biomass per acre of piles for population estimates, adjusted
5.8.78	-	PILE_DRYBIO_COND	COND_DWM_CALC	Biomass per acre of piles in the condition, for condition estimates
5.8.79	-	PILE_DRYBIO_UNADJ	COND_DWM_CALC	Biomass per acre of piles for population estimates, 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
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_COND	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 for population estimates, 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 for population estimates, unadjusted
5.4.15	-	PILESCD	DWM_FINE_WOODY_DEBRIS	Piles code

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
2.4.83	-	PLANT_STOCKABILITY_FACTOR_P_NW	COND	Plant stockability factor, Pacific Northwest Research Station
2.7.7	-	PLOT	BOUNDARY	Phase 2 plot number
2.4.7	-	PLOT	COND	Phase 2 plot number
5.8.4	-	PLOT	COND_DWM_CALC	Phase 2 plot number
5.2.6	-	PLOT	DWM_COARSE_WOODY_DEB_RIS	Phase 2 plot number
5.3.6	-	PLOT	DWM_DUFF_LITTER_FUEL	Phase 2 plot number
5.4.6	-	PLOT	DWM_FINE_WOODY_DEBRIS	Phase 2 plot number
5.5.6	-	PLOT	DWM_MICROPLOT_FUEL	Phase 2 plot number
5.6.6	-	PLOT	DWM_RESIDUALPILE	Phase 2 plot number
5.7.6	-	PLOT	DWM_TRANSECT_SEGMENT	Phase 2 plot number
5.1.6	-	PLOT	DWM_VISIT	Phase 2 plot number
4.4.7	-	PLOT	GRND_CVR	Phase 2 plot number
4.1.7	-	PLOT	INVASIVE_SUBPLOT_SPP	Phase 2 plot number
4.3.6	-	PLOT	P2VEG_SUBP_STRUCTURE	Phase 2 plot number
4.2.7	-	PLOT	P2VEG_SUBPLOT_SPP	Phase 2 plot number
2.3.9	1.3	PLOT	PLOT	Phase 2 plot number
6.1.7	-	PLOT	PLOT_REGEN	Phase 2 plot number
8.1.6	-	PLOT	PLOTGEOM	Phase 2 plot number
8.2.9	-	PLOT	PLOTSNAP	Phase 2 plot number
7.6.8	-	PLOT	POP_PLOT_STRATUM_ASSGN	Phase 2 plot number
3.9.7	-	PLOT	SEEDLING	Phase 2 plot number
6.3.9	-	PLOT	SEEDLING_REGEN	Phase 2 plot number
3.10.8	-	PLOT	SITETREE	Phase 2 plot number
2.6.7	-	PLOT	SUBP_COND	Phase 2 plot number
2.5.8	-	PLOT	SUBPLOT	Phase 2 plot number
6.2.8	-	PLOT	SUBPLOT_REGEN	Phase 2 plot number
3.1.8	-	PLOT	TREE	Phase 2 plot number
3.2.7	-	PLOT	TREE_WOODLAND_STEMS	Phase 2 plot number
2.3.11	1.7	PLOT_NONSAMPLE_REASON_CD	PLOT	Plot nonsampled reason code
8.2.11	-	PLOT_NONSAMPLE_REASON_CD	PLOTSNAP	Plot nonsampled reason code
2.3.66	-	PLOT_SEASON_NERS	PLOT	Plot accessible season, Northeastern Research Station
2.3.10	1.4	PLOT_STATUS_CD	PLOT	Plot status code
8.2.10	-	PLOT_STATUS_CD	PLOTSNAP	Plot status code
2.7.2	-	PLT_CN	BOUNDARY	Plot sequence number

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
2.4.2	-	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
4.4.2	-	PLT_CN	GRND_CVR	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
7.6.3	-	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
2.6.2	-	PLT_CN	SUBP_COND	Plot sequence number
2.8.5	-	PLT_CN	SUBP_COND_CHNG_MTRX	Plot sequence number
2.5.2	-	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
3.4.3	-	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
3.2.2	-	PLT_CN	TREE_WOODLAND_STEMS	Plot sequence number
2.5.11	3.3	POINT_NONSAMPLE_REASON_CD	SUBPLOT	Point nonsampled reason code
5.6.25	-	PPA_COND	DWM_RESIDUALPILE	Piles per acre, unadjusted, for condition estimates
5.6.24	-	PPA_PLOT	DWM_RESIDUALPILE	Piles per acre, unadjusted for plot estimates
5.6.23	-	PPA_UNADJ	DWM_RESIDUALPILE	Piles per acre, unadjusted, for population estimates
2.3.67	-	PRECIPITATION	PLOT	Precipitation
2.4.50	-	PRESNFCD	COND	Present nonforest code

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.1.178	-	PREV_ACTUALHT_RMRS	TREE	Previous actual height, Rocky Mountain Research Station
2.4.108	2.5.34	PREV_AFFORESTATION_CD	COND	Previous afforestation code
3.1.179	-	PREV_AGECHKCD_RMRS	TREE	Previous radial growth and tree age check code, Rocky Mountain Research Station
3.1.180	-	PREV_BHAGE_RMRS	TREE	Previous breast height age, Rocky Mountain Research Station
3.1.181	-	PREV_HT_RMRS	TREE	Previous total length, Rocky Mountain Research Station
2.3.68	-	PREV_MICROPLOT_LOC_RMRS	PLOT	Previous microplot location, Rocky Mountain Research Station
2.3.69	-	PREV_PLOT_STATUS_CD_RMRS	PLOT	Previous plot status code, Rocky Mountain Research Station
2.3.4	-	PREV_PLT_CN	PLOT	Previous plot sequence number
8.2.4	-	PREV_PLT_CN	PLOTSNAP	Previous plot sequence number
2.8.7	-	PREV_PLT_CN	SUBP_COND_CHNG_MTRX	Previous plot sequence number
3.1.142	-	PREV_PNTN_SRS	TREE	Previous periodic prism point, tree number, Southern Research Station
2.5.3	-	PREV_SBP_CN	SUBPLOT	Previous subplot sequence number
3.10.3	-	PREV_SIT_CN	SITETREE	Previous site tree sequence number
3.1.109	5.6	PREV_STATUS_CD	TREE	Previous tree status code
2.5.51	-	PREV_STATUSCD_RMRS	SUBPLOT	Previous subplot status code, Rocky Mountain Research Station
3.1.182	-	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
3.4.2	-	PREV_TRE_CN	TREE_GRM_COMPONENT	Previous tree sequence number

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.5.2	-	PREV_TRE_CN	TREE_GRM_MIDPT	Previous tree sequence number
3.1.183	-	PREV_TREECLCD_RMRS	TREE	Previous tree class code, Rocky Mountain Research Station
3.1.110	5.10	PREV_WLDLSTEM	TREE	Previous woodland stem count
2.8.8	-	PREVCOND	SUBP_COND_CHNG_MTRX	Previous condition class number
3.1.14	-	PREVCOND	TREE	Previous condition class number
3.1.93	5.9.1	PREVDIA	TREE	Previous diameter
3.1.165	-	PREVDIA_FLD	TREE	Previous diameter, field
9.16.2	-	PRIMARY_CLASS	REF_NVCS_HIERARCHY_STRICT	Primary class
9.17.2	-	PRIMARY_CLASS	REF_NVCS_LEVEL_1_CODES	Primary class
9.18.2	-	PRIMARY_CLASS	REF_NVCS_LEVEL_2_CODES	Primary class
9.19.2	-	PRIMARY_CLASS	REF_NVCS_LEVEL_3_CODES	Primary class
9.20.2	-	PRIMARY_CLASS	REF_NVCS_LEVEL_4_CODES	Primary class
9.21.2	-	PRIMARY_CLASS	REF_NVCS_LEVEL_5_CODES	Primary class
9.22.2	-	PRIMARY_CLASS	REF_NVCS_LEVEL_6_CODES	Primary class
9.23.2	-	PRIMARY_CLASS	REF_NVCS_LEVEL_7_CODES	Primary class
9.24.2	-	PRIMARY_CLASS	REF_NVCS_LEVEL_8_CODES	Primary class
2.4.28	-	PROP_BASIS	COND	Proportion basis
9.9.3	-	PUB_CD	REF_HABTYP_DESCRIPTION	Publication code
9.10.2	-	PUB_CD	REF_HABTYP_PUBLICATION	Publication code
<b>Q</b>				
5.1.29	-	QA_STATUS	DWM_VISIT	Quality assurance status
2.3.31	1.17	QA_STATUS	PLOT	Quality assurance status
8.2.33	-	QA_STATUS	PLOTSNAP	Quality assurance status
5.1.10	-	QASTATCD	DWM_VISIT	Quality assurance status code
2.4.136	-	QMD_RMRS	COND	Quadratic mean diameter, Rocky Mountain Research Station
9.6.18	-	QUADRINOMIAL_AUTHOR	REF_PLANT_DICTIONARY	Quadrinomial author
<b>R</b>				
3.7.36	-	R	TREE_GRM_ESTN	Reversion
3.1.184	-	RADAGECD_RMRS	TREE	Radial growth / age code, Rocky Mountain Research Station

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.1.185	-	RADGRW_RMRS	TREE	Radial growth, Rocky Mountain Research Station
9.5.60	-	RAILE_STUMP_DIB_B1	REF_SPECIES	Raile stump diameter inside bark equation coefficient B1
9.5.61	-	RAILE_STUMP_DIB_B2	REF_SPECIES	Raile stump diameter inside bark equation coefficient B2
9.5.59	-	RAILE_STUMP_DOB_B1	REF_SPECIES	Raile stump diameter outside bark equation coefficient B1
2.4.137	-	RANGETYPCD_RMRS	COND	Range type code (existing vegetation classification), Rocky Mountain Research Station
2.3.18	1.15	RDDISTCD	PLOT	Horizontal distance to improved road code
8.2.18	-	RDDISTCD	PLOTSNAP	Horizontal distance to improved road code
3.1.92	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_REASON_CD	SUBPLOT_REGEN	Regeneration nonsampled reason code
6.2.10	-	REGEN_SUBP_STATUS_CD	SUBPLOT_REGEN	Regeneration subplot status code
9.7.3	-	REGION	REF_SPECIES_GROUP	Region
3.6.16	-	REGIONAL_DRYBIOM	TREE_GRM_BEGIN	Regional dry merchantable stem biomass at T1
3.5.15	-	REGIONAL_DRYBIOM	TREE_GRM_MIDPT	Regional dry merchantable stem biomass at the midpoint
3.3.4	-	REGIONAL_DRYBIOM	TREE_REGIONAL BIOMASS	Regional dry merchantable stem biomass
3.6.17	-	REGIONAL_DRYBIOSL	TREE_GRM_BEGIN	Regional dry biomass of the sawlog portion of a sawtimber tree at T1
3.5.16	-	REGIONAL_DRYBIOSL	TREE_GRM_MIDPT	Regional dry biomass of the sawlog portion of a sawtimber tree at the midpoint
3.3.11	-	REGIONAL_DRYBIOSL	TREE_REGIONAL BIOMASS	Regional dry biomass in the sawlog portion of a sawtimber tree
3.6.15	-	REGIONAL_DRYBIOT	TREE_GRM_BEGIN	Regional dry total tree biomass at T1

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.5.14	-	REGIONAL_DRYBIOT	TREE_GRM_MIDPT	Regional dry total tree biomass at the midpoint
3.3.3	-	REGIONAL_DRYBIOT	TREE_REGIONAL_BIOMASS	Regional dry total tree biomass
37.17	-	REMOVALS	TREE_GRM_ESTN	Removal estimate
2.3.15	-	REMPER	PLOT	Remeasurement period
8.2.15	-	REMPER	PLOTSNAP	Remeasurement period
3.7.12	-	REMPER	TREE_GRM_ESTN	Remeasurement period
3.1.52	-	REMVBFSL	TREE	Merchantable board-foot volume of a sawtimber tree on timberland for removal purposes
3.4.74	-	REMVBFSL_FOREST	TREE_GRM_COMPONENT	Merchantable board-foot volume of a sawtimber tree on forest land for removal purposes
3.4.83	-	REMVBFSL_TIMBER	TREE_GRM_COMPONENT	Merchantable board-foot volume of a sawtimber tree on timberland for removal purposes
3.1.53	-	REMVCFAL	TREE	Sound cubic-foot volume of a live tree on timberland for removal purposes
3.4.72	-	REMVCFAL_FOREST	TREE_GRM_COMPONENT	Sound cubic-foot volume of a live tree on forest land for removal purposes (all live estimation type)
3.4.81	-	REMVCFAL_TIMBER	TREE_GRM_COMPONENT	Sound cubic-foot volume of a live tree on timberland for removal purposes (all live estimation type)
3.1.51	-	REMVCFGS	TREE	Merchantable cubic-foot volume of a growing-stock tree on timberland for removal purposes
3.4.73	-	REMVCFGS_FOREST	TREE_GRM_COMPONENT	Merchantable cubic-foot volume of a growing-stock tree on forest land for removal purposes
3.4.82	-	REMVCFGS_TIMBER	TREE_GRM_COMPONENT	Merchantable cubic-foot volume of a growing-stock tree on timberland for removal purposes
7.2.8	-	REPORT_YEAR_NM	POP_EVAL	Report year name
2.4.11	2.5.1	RESERVCD	COND	Reserved status code
2.4.103	-	RESERVCD_5	COND	Reserve code field
2.3.70	-	REUSECD1	PLOT	Recreation use code 1 (Pacific Islands)

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
2.3.71	-	REUSECD2	PLOT	Recreation use code 2 (Pacific Islands)
2.3.72	-	REUSECD3	PLOT	Recreation use code 3 (Pacific Islands)
3.1.205	-	RING_COUNT_INNER_2INCHES_PNWRS	TREE	Number of rings in inner 2 inches, Pacific Northwest Research Station
3.1.206	-	RING_COUNT_PNWRS	TREE	Number of rings, Pacific Northwest Research Station
8.1.14	-	ROADLESSCD	PLOTGEOM	Roadless code
2.5.28	-	ROOT_DIS_SEV_CD_PNWRS	SUBPLOT	Root disease severity rating code, Pacific Northwest Research Station
3.1.196	-	ROOT_HT_PNWRS	TREE	Rooting height (Pacific Islands), Pacific Northwest Research Station
2.5.52	-	ROOTSEVCD_RMRS	SUBPLOT	Root disease severity rating code, Rocky Mountain Research Station
3.1.89	5.25	ROUGHCULL	TREE	Rough cull
9.15.3	-	RS	REF_RESEARCH_STATION	Research station abbreviation
5.8.106	-	RSCD	COND_DWM_CALC	Region or station code
7.1.3	-	RSCD	POP_ESTN_UNIT	Region or station code
7.2.3	-	RSCD	POP_EVAL	Region or Station code
7.4.2	-	RSCD	POP_EVAL_GRP	Region or Station code
7.6.9	-	RSCD	POP_PLOT_STRATUM_ASSGN	Region or Station code
7.7.3	-	RSCD	POP_STRATUM	Region or Station code
9.15.2	-	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
		<b>S</b>		
3.1.56	-	SALVCD	TREE	Salvable dead code
2.3.41	-	SAMP_METHOD_CD	PLOT	Sample method code
8.2.43	-	SAMP_METHOD_CD	PLOTSNAP	Sample method code
3.1.194	-	SAPLING_FUSIFORM_SRS	TREE	Sapling fusiform, Southern Research Station
3.1.75	-	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

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
9.9.4	-	SCIENTIFIC_NAME	REF_HABTYP_DESCRIPTION	Scientific name
9.6.4	-	SCIENTIFIC_NAME	REF_PLANT_DICTIONARY	Scientific name
9.6.15	-	SCIENTIFIC_NAME_W_AUTHOR	REF_PLANT_DICTIONARY	Scientific name with author
2.4.140	-	SDI_RMRS	COND	Stand density index for the condition, Rocky Mountain Research Station
2.4.138	-	SDIMAX_RMRS	COND	Stand density index maximum, Rocky Mountain Research Station
2.4.139	-	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
5.7.9	-	SEGMENT	DWM_TRANSECT_SEGMENT	Segment number
5.7.25	10.3.7	SEGMENT_NONSAMPLE_REASON_CD	DWM_TRANSECT_SEGMENT	Segment nonsampled reason code
5.7.24	10.3.6	SEGMENT_STATUS_CD	DWM_TRANSECT_SEGMENT	Segment sample status code
3.1.133	-	SEVERITY1_CD_PNWRS	TREE	Damage severity 1, Pacific Northwest Research Station for years 2001-2004
3.1.134	-	SEVERITY1A_CD_PNWRS	TREE	Damage severity 1A, Pacific Northwest Research Station
3.1.135	-	SEVERITY1B_CD_PNWRS	TREE	Damage severity 1B, Pacific Northwest Research Station
3.1.136	-	SEVERITY2_CD_PNWRS	TREE	Damage severity 2, Pacific Northwest Research Station for years 2001-2004
3.1.137	-	SEVERITY2A_CD_PNWRS	TREE	Damage severity 2A, Pacific Northwest Research Station starting in 2005
3.1.138	-	SEVERITY2B_CD_PNWRS	TREE	Damage severity 2B, Pacific Northwest Research Station starting in 2005
3.1.139	-	SEVERITY3_CD_PNWRS	TREE	Damage severity 3, Pacific Northwest Research Station for years 2001-2004
9.5.21	-	SFTWD_HRDWD	REF_SPECIES	Softwood or hardwood
5.6.11	-	SHAPECD	DWM_RESIDUALPILE	Shape code

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
2.4.24	-	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
2.4.23	-	SICOND	COND	Site index for the condition
2.4.25	-	SISP	COND	Site index species code
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
2.4.66	-	SITECL_METHOD	COND	Site class method
2.4.22	-	SITECLCD	COND	Site productivity class code
2.4.64	-	SITECLCDEST	COND	Site productivity class code estimated
3.10.39	-	SITETRCD_RMRS	SITETREE	Site tree code, Rocky Mountain Research Station
9.5.20	-	SITETREE	REF_SPECIES	Site tree
2.4.65	-	SITETREE_TREE	COND	Site tree tree number
3.10.16	-	SITREE	SITETREE	Site index for the tree
3.1.80	-	SITREE	TREE	Calculated site index
3.10.22	-	SITREE_EST	SITETREE	Estimated site index for the tree
3.10.43	-	SITREE_EQU_NO_PNWRS	SITETREE	Site index equation number, Pacific Northwest Research Station
5.2.12	-	SLOPDIST	DWM_COARSE_WOODY_DEBRIS	Slope distance
2.4.33	-	SLOPE	COND	Percent slope
5.4.34	-	SLOPE	DWM_FINE_WOODY_DEBRIS	Percent slope
5.7.14	-	SLOPE	DWM_TRANSECT_SEGMENT	Percent slope
2.5.16	3.8	SLOPE	SUBPLOT	Subplot 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

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
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_DEBRIS	Small diameter
5.1.12	-	SMPKNDCC	DWM_VISIT	Sample kind code
5.3.9	-	SMPLOCCD	DWM_DUFF_LITTER_FUEL	Sample location code
3.1.207	-	SNAG_DIS_CD_PNWRS	TREE	Snag reason for disappearance code, Pacific Northwest Research Station
2.4.81	-	SOIL_ROOTING_DEPTH_PNW	COND	Soil rooting depth, Pacific Northwest Research Station
5.2.14	10.4.3. 7	SPCD	DWM_COARSE_WOODY_DEBRIS	Species code
5.6.37	10.5.8	SPCD	DWM_RESIDUALPILE	Species code for the residual pile
9.5.1	-	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
3.6.5	-	SPCD	TREE_GRM_BEGIN	Species code
9.6.22	-	SPECIES	REF_PLANT_DICTIONARY	Species
9.5.4	-	SPECIES	REF_SPECIES	Species (Latin)
9.5.7	-	SPECIES_SYMBOL	REF_SPECIES	Species symbol
9.7.1	-	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
9.1.17	-	SQL_QUERY	REF_POP_ATTRIBUTE	SQL estimate script
2.3.2	-	SRV_CN	PLOT	Survey sequence number
8.2.2	-	SRV_CN	PLOTSNAP	Survey sequence number
9.6.23	-	SSP	REF_PLANT_DICTIONARY	Subspecies indicator
9.5.22	-	ST_EXISTS_IN_NCRS	REF_SPECIES	Site tree exists in the North Central Research Station region

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
9.5.23	-	ST_EXISTS_IN_NERS	REF_SPECIES	Site tree exists in the Northeastern Research Station region
9.5.24	-	ST_EXISTS_IN_PNWRS	REF_SPECIES	Site tree exists in the Pacific Northwest Research Station region
9.5.25	-	ST_EXISTS_IN_RMRS	REF_SPECIES	Site tree exists in the Rocky Mountain Research Station region
9.5.26	-	ST_EXISTS_IN_SRS	REF_SPECIES	Site tree exists in the Southern Research Station region
2.4.94	-	STAND_STRUCTURE_SRS	COND	Stand structure, Southern Research Station
2.4.141	-	STAND_STRUCTURE_ME_NERS	COND	Stand structure (Maine), Northeastern Research Station
3.1.108	5.7.2	STANDING_DEAD_CD	TREE	Standing dead code
9.5.68	-	STANDING_DEAD_DECAY_RATIO1	REF_SPECIES	Standing dead decay ratio 1
9.5.69	-	STANDING_DEAD_DECAY_RATIO2	REF_SPECIES	Standing dead decay ratio 2
9.5.70	-	STANDING_DEAD_DECAY_RATIO3	REF_SPECIES	Standing dead decay ratio 3
9.5.71	-	STANDING_DEAD_DECAY_RATIO4	REF_SPECIES	Standing dead decay ratio 4
9.5.72	-	STANDING_DEAD_DECAY_RATIO5	REF_SPECIES	Standing dead decay ratio 5
9.8.6	-	START_DATE	REF_INVASIVE_SPECIES	Start date
7.2.9	-	START_INVYR	POP_EVAL	Start inventory year
9.15.5	-	STATE_ABBR	REF_RESEARCH_STATION	State abbreviation
9.6.14	-	STATE_AND_PROVINCE	REF_PLANT_DICTIONARY	State and province
9.6.13	-	STATE_DISTRIBUTION	REF_PLANT_DICTIONARY	State distribution
9.15.4	-	STATE_NAME	REF_RESEARCH_STATION	State name
2.1.5	-	STATEAB	SURVEY	State abbreviation
2.7.4	-	STATECD	BOUNDARY	State code
2.4.4	-	STATECD	COND	State code
5.8.2	-	STATECD	COND_DWM_CALC	State code
2.2.1	-	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

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
5.6.4	-	STATECD	DWM_RESIDUALPILE	State code
5.7.4	-	STATECD	DWM_TRANSECT_SEGMENT	State code
5.1.4	-	STATECD	DWM_VISIT	State code
4.4.4	-	STATECD	GRND_CVR	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
2.3.6	1.1	STATECD	PLOT	State code
6.1.4	-	STATECD	PLOT_REGEN	State code
8.1.2	-	STATECD	PLOTGEOM	State code
8.2.6	-	STATECD	PLOTSNAP	State code
7.1.7	-	STATECD	POP_ESTN_UNIT	State code
7.2.6	-	STATECD	POP_EVAL	State code
7.3.4	-	STATECD	POP_EVAL_ATTRIBUTE	State code
7.4.5	-	STATECD	POP_EVAL_GRP	State code
7.6.4	-	STATECD	POP_PLOT_STRATUM_ASSGN	State code
7.7.8	-	STATECD	POP_STRATUM	State code
9.8.2	-	STATECD	REF_INVASIVE_SPECIES	State code
9.15.1	-	STATECD	REF_RESEARCH_STATION	State code
9.13.1	-	STATECD	REF_STATE_ELEV	State code
9.14.1	-	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
2.6.4	-	STATECD	SUBP_COND	State code
2.8.2	-	STATECD	SUBP_COND_CHNG_MTRX	State code
2.5.5	-	STATECD	SUBPLOT	State code
6.2.5	-	STATECD	SUBPLOT_REGEN	State code
2.1.4	-	STATECD	SURVEY	State code
3.1.5	-	STATECD	TREE	State code
3.6.4	-	STATECD	TREE_GRM_BEGIN	State code
3.4.4	-	STATECD	TREE_GRM_COMPONENT	State code
3.7.2	-	STATECD	TREE_GRM_ESTN	State code
3.5.4	-	STATECD	TREE_GRM_MIDPT	State code
3.3.2	-	STATECD	TREE_REGIONAL_BIOMASS	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

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.2.12	-	STATUSCD	TREE_WOODLAND_STEMS	Woodland stem status code
2.4.19	2.5.14	STDAGE	COND	Stand age
2.4.26	-	STDORGCD	COND	Stand origin code
2.4.27	-	STDORGSP	COND	Stand origin species code
2.4.20	2.5.4	STDSZCD	COND	Stand-size class code
3.4.16	-	STEM_COMPONENT	TREE_GRM_COMPONENT	Growth component of the stem
3.2.13	-	STEM_NBR	TREE_WOODLAND_STEMS	Woodland stem number
2.4.84	-	STND_COND_CD_PNWRS	COND	Stand condition code, Pacific Northwest Research Station
2.4.85	-	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
9.5.13	-	STOCKING_SPGRPCD	REF_SPECIES	Stocking species group code
5.8.11	-	STRATUM_CN	COND_DWM_CALC	Stratum sequence number
7.6.2	-	STRATUM_CN	POP_PLOT_STRATUM_ASSGN	Stratum sequence number
7.7.7	-	STRATUM_DESCR	POP_STRATUM	Stratum description
7.6.12	-	STRATUMCD	POP_PLOT_STRATUM_ASSGN	Stratum code
7.7.6	-	STRATUMCD	POP_STRATUM	Stratum code
2.4.86	-	STUMP_CD_PNWRS	COND	Stump code, Pacific Northwest Research Station
2.7.17	-	SUBCYCLE	BOUNDARY	Inventory subcycle number
2.4.80	-	SUBCYCLE	COND	Inventory subcycle number
5.8.104	-	SUBCYCLE	COND_DWM_CALC	Inventory subcycle number
4.4.14	-	SUBCYCLE	GRND_CVR	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
2.3.46	-	SUBCYCLE	PLOT	Inventory subcycle number

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
6.1.16	-	SUBCYCLE	PLOT_REGEN	Inventory subcycle number
8.2.48	-	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
2.6.22	-	SUBCYCLE	SUBP_COND	Inventory subcycle number
2.5.27	-	SUBCYCLE	SUBPLOT	Inventory subcycle number
6.2.21	-	SUBCYCLE	SUBPLOT_REGEN	Inventory subcycle number
2.1.17	-	SUBCYCLE	SURVEY	Inventory subcycle number
3.1.124	-	SUBCYCLE	TREE	Inventory subcycle number
3.2.15	-	SUBCYCLE	TREE_WOODLAND_STEMS	Inventory subcycle number
2.7.8	4.2.1	SUBP	BOUNDARY	Subplot number
5.2.7	-	SUBP	DWM_COARSE_WOODY_DEBRIS	Subplot number
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
4.4.8	-	SUBP	GRND_CVR	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
2.6.8	-	SUBP	SUBP_COND	Subplot number
2.8.3	-	SUBP	SUBP_COND_CHNG_MTRX	Subplot number
2.5.9	3.1	SUBP	SUBPLOT	Subplot number
6.2.9	-	SUBP	SUBPLOT_REGEN	Subplot number
3.1.9	5.1	SUBP	TREE	Subplot number

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.2.8	-	SUBP	TREE_WOODLAND_STEMS	Subplot number
3.4.18	-	SUBP_COMPONENT	TREE_GRM_COMPONENT	Subplot growth component
3.4.34	-	SUBP_COMPONENT_AL_FOREST	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - growth component for the all live estimation type on forest land
3.4.54	-	SUBP_COMPONENT_AL_TIMBER	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - growth component for the all live estimation type on timberland
3.4.39	-	SUBP_COMPONENT_GS_FOREST	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - growth component for the growing-stock estimation type on forest land
3.4.59	-	SUBP_COMPONENT_GS_TIMBER	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - growth component for the growing-stock estimation type on timberland
3.4.44	-	SUBP_COMPONENT_SL_FOREST	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - growth component for the sawtimber estimation type on forest land
3.4.64	-	SUBP_COMPONENT_SL_TIMBER	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - growth component for the sawtimber estimation type on timberland
2.3.42	1.9	SUBP_EXAMINE_CD	PLOT	Subplots examined code
8.2.44	-	SUBP_EXAMINE_CD	PLOTSNAP	Subplots examined code
2.5.10	3.2	SUBP_STATUS_CD	SUBPLOT	Subplot/macroplot status code
3.4.35	-	SUBP_SUBPTYP_GRM_AL_FOREST	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - plot type for GRM for the all live estimation type on forest land
3.4.55	-	SUBP_SUBPTYP_GRM_AL_TIMBER	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - plot type for GRM for the all live estimation type on timberland
3.4.40	-	SUBP_SUBPTYP_GRM_GS_FOREST	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - plot type for GRM for the growing-stock estimation type on forest land
3.4.60	-	SUBP_SUBPTYP_GRM_GS_TIMBER	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - plot type for GRM for the growing-stock estimation type on timberland

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.4.45	-	SUBP_SUBPTYP_GRM_SL_FOREST	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - plot type for GRM for the sawtimber estimation type on forest land
3.4.65	-	SUBP_SUBPTYP_GRM_SL_TIMBER	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - plot type for GRM for the sawtimber estimation type on timberland
3.4.36	-	SUBP_TPAGROW_UNADJ_AL_FOR EST	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - unadjusted trees per acre for growth for the all live estimation type on forest land
3.4.56	-	SUBP_TPAGROW_UNADJ_AL_TIM BER	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - unadjusted trees per acre for growth for the all live estimation type on timberland
3.4.41	-	SUBP_TPAGROW_UNADJ_GS_FOR EST	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - unadjusted trees per acre for growth for the growing-stock estimation type on forest land
3.4.61	-	SUBP_TPAGROW_UNADJ_GS_TIM BER	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - unadjusted trees per acre for growth for the growing-stock estimation type on timberland
3.4.46	-	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
3.4.66	-	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
3.4.38	-	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
3.4.58	-	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

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.4.43	-	SUBP_TPAMORT_UNADJ_GS_FOREST	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
3.4.63	-	SUBP_TPAMORT_UNADJ_GS_TIMBER	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
3.4.48	-	SUBP_TPAMORT_UNADJ_SL_FOREST	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
3.4.68	-	SUBP_TPAMORT_UNADJ_SL_TIMBER	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
3.4.37	-	SUBP_TPAREMV_UNADJ_AL_FOREST	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
3.4.57	-	SUBP_TPAREMV_UNADJ_AL_TIMBER	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 timberland
3.4.42	-	SUBP_TPAREMV_UNADJ_GS_FOREST	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - unadjusted trees per acre per year for removals for the growing-stock estimation type on forest land
3.4.62	-	SUBP_TPAREMV_UNADJ_GS_TIMBER	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - unadjusted trees per acre per year for removals for the growing-stock estimation type on timberland
3.4.47	-	SUBP_TPAREMV_UNADJ_SL_FOREST	TREE_GRM_COMPONENT	Trees with DIA $\geq 5.0$ inches - unadjusted trees per acre per year for removals for the sawtimber estimation type on forest land

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.4.67	-	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
2.3.57	-	SUBPANEL	PLOT	Subpanel
8.2.31	-	SUBPANEL	PLOTSNAP	Subpanel
2.5.13	3.6	SUBPCOND	SUBPLOT	Subplot center condition
2.6.17	-	SUBPCOND_PROP	SUBP_COND	Subplot-condition proportion
6.2.13	-	SUBPLOT_SITE_LIMITATIONS	SUBPLOT_REGEN	Subplot site limitations
2.4.31	-	SUBPPROP_UNADJ	COND	Subplot proportion unadjusted
2.7.9	4.2.2	SUBPTYP	BOUNDARY	Plot type code
2.8.4	-	SUBPTYP	SUBP_COND_CHNG_MTRX	Plot type code
3.5610	-	SUBPTYP	TREE_GRM_BEGIN	Plot type code
3.5.9	-	SUBPTYP	TREE_GRM_MIDPT	Plot type code
3.4.13	-	SUBPTYP_BEGIN	TREE_GRM_COMPONENT	Beginning subplot type code
3.4.15	-	SUBPTYP_END	TREE_GRM_COMPONENT	Ending subplot type code
3.4.14	-	SUBPTYP_MIDPT	TREE_GRM_COMPONENT	Midpoint subplot type code
2.8.9	-	SUBPTYP_PROP_CHNG	SUBP_COND_CHNG_MTRX	Subplot type proportion change
9.6.25	-	SUBSPECIES	REF_PLANT_DICTIONARY	Subspecies
9.5.6	-	SUBSPECIES	REF_SPECIES	Subspecies
3.7.11	-	SUBTYP_GRM	TREE_GRM_ESTN	Subplot type used for GRM estimation
9.6.29	-	SUBVAR	REF_PLANT_DICTIONARY	Subvariety indicator
9.6.30	-	SUBVARIETY	REF_PLANT_DICTIONARY	Subvariety
3.4.26	-	SWLG_BEGIN	TREE_GRM_COMPONENT	Sawtimber at beginning
3.4.21	-	SWLG_COMPONENT	TREE_GRM_COMPONENT	Sawtimber growth component
3.4.25	-	SWLG_DIA_THRESHOLD	TREE_GRM_COMPONENT	Sawtimber diameter threshold
3.4.28	-	SWLG_END	TREE_GRM_COMPONENT	Sawtimber at end
3.4.27	-	SWLG_MIDPT	TREE_GRM_COMPONENT	Sawtimber at midpoint
9.8.3	-	SYMBOL	REF_INVASIVE_SPECIES	Symbol
9.6.3	-	SYMBOL	REF_PLANT_DICTIONARY	Symbol
9.6.2	-	SYMBOL_TYPE	REF_PLANT_DICTIONARY	Symbol type
		T		
7.2.12	-	TIMBERLAND_ONLY	POP_EVAL	Timberland only
9.10.3	-	TITLE	REF_HABTYP_PUBLICATION	Title of publication

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
9.1.4	-	TIMBERLAND	REF_POP_ATTRIBUTE	Timberland
2.3.48	-	TOPO_POSITION_PNW	PLOT	Topographic position, Pacific Northwest Research Station
8.2.50	-	TOPO_POSITION_PNW	PLOTSNAP	Topographic position, Pacific Northwest Research Station
3.9.14	-	TOTAGE	SEEDLING	Total age
3.1.67	-	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
3.1.111	-	TPA_UNADJ	TREE	Trees per acre unadjusted
3.1.114	-	TPAGROW_UNADJ	TREE	Growth trees per acre unadjusted
3.7.13	-	TPAGROW_UNADJ	TREE_GRM_ESTN	Growth trees per acre unadjusted
3.1.112	-	TPAMORT_UNADJ	TREE	Mortality trees per acre per year unadjusted
3.7.15	-	TPAMORT_UNADJ	TREE_GRM_ESTN	Mortality trees per acre per year unadjusted
3.1.113	-	TPAREMV_UNADJ	TREE	Removal trees per acre per year unadjusted
3.6.14	-	TPAREMV_UNADJ	TREE_GRM_ESTN	Removal trees per acre per year unadjusted
3.1.63	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
5.6.38		TRANSECT	DWM_RESIDUALPILE	Subplot transect azimuth
5.7.8	-	TRANSECT	DWM_TRANSECT_SEGMENT	Transect code
4.4.9	-	TRANSECT	GRND_CVR	Transect number
5.7.26	-	TRANSECT_LENGTH	DWM_TRANSECT_SEGMENT	Transect length
3.4.1	-	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
3.3.1	-	TRE_CN	TREE_REGIONALBIOMASS	Tree sequence number
3.2.10	-	TRE_CN	TREE_WOODLAND_STEMS	Tree sequence number
3.10.10	-	TREE	SITETREE	Tree number

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.1.10	5.2	TREE	TREE	Tree record 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
3.1.167	-	TREE_GRADE_NCRS	TREE	Tree grade, North Central Research Station
3.6.8	-	TREE_SIZE	TREE_GRM_BEGIN	Tree size
3.5.7	-	TREE_SIZE	TREE_GRM_MIDPT	Tree size
3.1.23	-	TREECLCD	TREE	Tree class code
3.6.9	-	TREECLCD	TREE_GRM_BEGIN	Tree class code
3.5.8	-	TREECLCD	TREE_GRM_MIDPT	Tree class code
3.1.166	-	TREECLCD_31_NCRS	TREE	Tree class code (version 3.1), North Central Research Station
3.1.170	-	TREECLCD_31_NERS	TREE	Tree class code (version 3.1), Northeastern Research Station
3.1.106	-	TREECLCD_NCRS	TREE	Tree class code, North Central Research Station
3.1.104	-	TREECLCD_NERS	TREE	Tree class code, Northeastern Research Station
3.10.44	-	TREECLCD_RMRS	SITETREE	Tree class code, Rocky Mountain Research Station
3.1.107	-	TREECLCD_RMRS	TREE	Tree class code, Rocky Mountain Research Station
3.1.105	-	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
3.1.26	-	TREEGRCD	TREE	Tree grade code
3.1.64	-	TREEHISTCD	TREE	Tree history code
2.4.142	-	TREES_PRESENT_NCRS	COND	Trees present on nonforest, North Central Research Station
2.4.143	-	TREES_PRESENT_NERS	COND	Trees present on nonforest, Northeastern Research Station
9.6.17	-	TRINOMIAL_AUTHOR	REF_PLANT_DICTIONARY	Trinomial author
2.4.44	2.5.21	TRTCD1	COND	Treatment code 1
2.4.144	-	TRTCD1_P2A	COND	Treatment code 1, periodic to annual
2.4.46	2.5.23	TRTCD2	COND	Treatment code 2

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
2.4.145	-	TRTCD2_P2A	COND	Treatment code 2, periodic to annual
2.4.48	2.5.25	TRTCD3	COND	Treatment code 3
2.4.146	-	TRTCD3_P2A	COND	Treatment code 3, periodic to annual
2.4.147	-	TRTOPCD	COND	Treatment opportunity code
2.4.45	2.5.22	TRTYR1	COND	Treatment year 1
2.4.148	-	TRTYR1_P2A	COND	Treatment year 1, periodic to annual
2.4.47	2.5.24	TRTYR2	COND	Treatment year 2
2.4.149	-	TRTYR2_P2A	COND	Treatment year 2, periodic to annual
2.4.49	2.5.26	TRTYR3	COND	Treatment year 3
2.4.150	-	TRTYR3_P2A	COND	Treatment year 3, periodic to annual
9.10.5	-	TYPE	REF_HABTYP_PUBLICATION	Type of publication
9.3.3	-	TYPGRPCD	REF_FOREST_TYPE	Forest type group code
		<b>U</b>		
3.1.57	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
2.7.5	-	UNITCD	BOUNDARY	Survey unit code
2.4.5	-	UNITCD	COND	Survey unit code
5.8.105	-	UNITCD	COND_DWM_CALC	Survey unit code
2.2.2	-	UNITCD	COUNTY	Survey unit code
4.4.5	-	UNITCD	GRND_CVR	Survey unit code
4.1.5	-	UNITCD	INVASIVE_SUBPLOT_SPP	Survey unit code
4.3.4	-	UNITCD	P2VEG_SUBP STRUCTURE	Survey unit code
4.2.5	-	UNITCD	P2VEG_SUBPLOT_SPP	Survey unit code
2.3.7	-	UNITCD	PLOT	Survey unit code
6.1.5	-	UNITCD	PLORT_REGEN	Survey unit code
8.1.4	-	UNITCD	PLOTGEOM	Survey unit code
8.2.7	-	UNITCD	PLOTSNAP	Survey unit code
7.6.6	-	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
2.6.5	-	UNITCD	SUBP_COND	Survey unit code
2.5.6	-	UNITCD	SUBPLOT	Survey unit code

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
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
9.8.5	-	UNITCD_LIST	REF_INVASIVE_SPECIES	Unit code list
3.1.140	-	UNKNOWN_DAMTYP1_PNWRS	TREE	Unknown damage type 1, Pacific Northwest Research Station
3.1.141	-	UNKNOWN_DAMTYP2_PNWRS	TREE	Unknown damage type 2, Pacific Northwest Research Station
3.1.151	-	UPPER_DIA	TREE	Upper stem diameter
3.1.152	-	UPPER_DIA_HT	TREE	Upper stem diameter height
9.6.12	-	US_NATIVITY	REF_PLANT_DICTIONARY	United States nativity
<b>V</b>				
9.9.6	-	VALID	REF_HABTYP_DESCRIPTION	Valid
9.10.6	-	VALID	REF_HABTYP_PUBLICATION	Valid
3.10.23	-	VALIDCD	SITETREE	Validity code
9.3.1	-	VALUE	REF_FOREST_TYPE	Value
9.4.1	-	VALUE	REF_FOREST_TYPE_GROUP	Value
9.14.2	-	VALUE	REF_UNIT	Value
9.6.26	-	VAR	REF_PLANT_DICTIONARY	Variety indicator
9.6.28	-	VARIETY	REF_PLANT_DICTIONARY	Variety
9.5.5	-	VARIETY	REF_SPECIES	Variety
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
9.12.1	-	VERSION	REF_FIADB_VERSION	Version number
2.4.63	-	VOL_LOC_GRP	COND	Volume location group
3.1.43	-	VOLBFGRS	TREE	Gross board-foot volume in the sawlog portion of a sawtimber tree
3.1.42	-	VOLBFNET	TREE	Net board-foot volume in the sawlog portion of a sawtimber tree
3.6.14	-	VOLBFNET	TREE_GRM_BEGIN	Net board-foot volume in the sawlog portion of a sawtimber tree at T1

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.5.13	-	VOLBFNET	TREE_GRM_MIDPT	Net board-foot volume in the sawlog portion of a sawtimber tree at the midpoint
3.1.186	-	VOLBFSCRGRS_RMRS	TREE	Gross board-foot (Scribner rule) volume in the sawlog portion of a sawtimber tree, Rocky Mountain Research Station
3.1.187	-	VOLBFSCRNET_RMRS	TREE	Net board-foot (Scribner rule) volume in the sawlog portion of a sawtimber tree, Rocky Mountain Research Station
5.2.22	-	VOLCF	DWM_COARSE_WOODY_DEB_RIS	Cubic-foot volume of the piece
5.6.20	-	VOLCF	DWM_RESIDUAL_PILE	Gross cubic-foot volume
5.2.53	-	VOLCF_AC_COND	DWM_COARSE_WOODY_DEB_RIS	Cubic-foot volume per acre based on condition transect length actually measured, unadjusted
5.2.54	-	VOLCF_AC_PLOT	DWM_COARSE_WOODY_DEB_RIS	Cubic-foot volume per acre based on plot transect length actually measured, unadjusted
5.2.55	-	VOLCF_AC_UNADJ	DWM_COARSE_WOODY_DEB_RIS	Cubic-foot volume per acre based on target plot transect length, unadjusted
3.1.188	-	VOLCFDEADGRS_RMRS	TREE	Gross cubic-foot volume of dead wood, Rocky Mountain Research Station
3.1.39	-	VOLCFGRS	TREE	Gross cubic-foot volume
3.1.38	-	VOLCFNET	TREE	Net cubic-foot volume
3.6.12	-	VOLCFNET	TREE_GRM_BEGIN	Net cubic-foot volume at T1
3.5.11	-	VOLCFNET	TREE_GRM_MIDPT	Net cubic-foot volume at the midpoint
3.1.189	-	VOLCFSAWGRS_RMRS	TREE	Gross cubic-foot volume in the sawlog/utilization portion, Rocky Mountain Research Station
3.1.190	-	VOLCFSAWNET_RMRS	TREE	Net cubic-foot volume in the sawlog/utilization portion, Rocky Mountain Research Station
3.1.44	-	VOLCFSND	TREE	Sound cubic-foot volume

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
3.6.11	-	VOLCFSND	TREE_GRM_BEGIN	Sound cubic-foot volume at T1
3.5.10	-	VOLCFSND	TREE_GRM_MIDPT	Sound cubic-foot volume at the midpoint
3.1.191	-	VOLCFTOTNET_RMRS	TREE	Net cubic-foot volume in the total stem, Rocky Mountain Research Station
3.1.192	-	VOLCFUPPGRS_RMRS	TREE	Gross cubic-foot volume in the upper stem, Rocky Mountain Research Station
3.1.193	-	VOLCFUPPNET_RMRS	TREE	Net cubic-foot volume in the upper stem, Rocky Mountain Research Station
3.1.41	-	VOLCSGRS	TREE	Gross cubic-foot volume in the sawlog portion of a sawtimber tree
3.1.40	-	VOLCSNET	TREE	Net cubic-foot volume in the sawlog portion of a sawtimber tree
3.6.13	-	VOLCSNET	TREE_GRM_BEGIN	Net cubic-foot volume in the sawlog portion of a sawtimber tree at T1
3.5.12	-	VOLCSNET	TREE_GRM_MIDPT	Net cubic-foot volume in the sawlog portion of a sawtimber tree at the midpoint
3.1.153	-	VOLCSSND	TREE	Sound cubic-foot volume in the sawlog portion of a sawtimber tree
<b>W</b>				
9.5.9	-	W_SPGRPCD	REF_SPECIES	Western species group code
2.3.19	1.16	WATERCD	PLOT	Water on plot code
8.2.19	-	WATERCD	PLOTSNAP	Water on plot code
2.5.18	3.10	WATERDEP	SUBPLOT	Snow/water depth
3.1.37	5.11	WDLDSTEM	TREE	Woodland tree species stem count
9.5.29	-	WEST	REF_SPECIES	Western species
9.1.7	-	WHERE_CLAUSE	REF_POP_ATTRIBUTE	Where clause
5.6.15	-	WIDTH1	DWM_RESIDUAL_PILE	Width first measurement
5.6.18	-	WIDTH2	DWM_RESIDUAL_PILE	Width second measurement
9.5.47	-	WOOD_SPGR_GREENVOL_DRYWT	REF_SPECIES	Green specific gravity of wood (green volume and oven-dry weight)

Subsection	Field Guide section	Column name (attribute)	Oracle table name	Descriptive name
9.5.48	-	WOOD_SPGR_GREENVOL_DRYWT_CIT	REF_SPECIES	Citation for WOOD_SPGR_GREENVOL_DRYWT
9.5.55	-	WOOD_SPGR_MC12VOL_DRYWT	REF_SPECIES	Wood specific gravity (12 percent moisture content volume and oven-dry weight)
9.5.56	-	WOOD_SPGR_MC12VOL_DRYWT_CIT	REF_SPECIES	Citation for WOOD_SPGR_MC12VOL_DRYWT
9.5.32	-	WOODLAND	REF_SPECIES	Woodland species
		X		
9.6.19	-	XGENUS	REF_PLANT_DICTIONARY	Cross genus
9.6.21	-	XSPECIES	REF_PLANT_DICTIONARY	Cross species
9.6.24	-	XSUBSPECIES	REF_PLANT_DICTIONARY	Cross subspecies
9.6.27	-	XVARIETY	REF_PLANT_DICTIONARY	Cross variety
		Y		
3.10.46	-	YEAR AGE_TAKEN	SITETREE	Year age taken
		Z		

# Appendix A: Quick Links

## Forest Inventory and Analysis (FIA) - National:

Quick Link	Website (URL address)
FIA - National Program	<a href="http://www.fia.fs.fed.us/">http://www.fia.fs.fed.us/</a>
FIA - Data and Tools	<a href="http://www.fia.fs.fed.us/tools-data/">http://www.fia.fs.fed.us/tools-data/</a>
FIA - DataMart	<a href="https://apps.fs.usda.gov/fia/datamart/datamart.html">https://apps.fs.usda.gov/fia/datamart/datamart.html</a>
FIA - Library	<a href="http://www.fia.fs.fed.us/library/">http://www.fia.fs.fed.us/library/</a>
FIA - Database Documentation	<a href="http://www.fia.fs.fed.us/library/database-documentation/">http://www.fia.fs.fed.us/library/database-documentation/</a>
FIA - Field Guides, Methods, and Procedures	<a href="http://www.fia.fs.fed.us/library/field-guides-methods-proc/">http://www.fia.fs.fed.us/library/field-guides-methods-proc/</a>

## FIA - Research Stations:

Quick Link	Website (URL address)
FIA - Northern Research Station	<a href="http://www.nrs.fs.fed.us/fia/">http://www.nrs.fs.fed.us/fia/</a>
FIA - Southern Research Station	<a href="https://www.srs.fs.usda.gov/research/research_analysis.php">https://www.srs.fs.usda.gov/research/research_analysis.php</a>
FIA - Rocky Mountain Research Station (Interior West)	<a href="http://www.fs.fed.us/rm/ogden/">http://www.fs.fed.us/rm/ogden/</a>
FIA - Pacific Northwest Research Station	<a href="http://www.fs.fed.us/pnw/rma/fia-topics/">http://www.fs.fed.us/pnw/rma/fia-topics/</a>

## USDA Forest Service:

Quick Link	Website (URL address)
USDA Forest Service	<a href="http://www.fs.fed.us/">http://www.fs.fed.us/</a>
USDA Forest Service - FSGeodata Clearinghouse	<a href="http://fsgeodata.fs.fed.us/other_resources/ecosubregions.html">http://fsgeodata.fs.fed.us/other_resources/ecosubregions.html</a>
USDA Forest Service - National Offices and Programs	<a href="http://www.fs.fed.us/aboutus/national.shtml">http://www.fs.fed.us/aboutus/national.shtml</a>
USDA Forest Service - Research & Development	<a href="http://www.fs.fed.us/research/">http://www.fs.fed.us/research/</a>
USDA Forest Service - Regions	<a href="http://www.fs.fed.us/contactus/regions.shtml">http://www.fs.fed.us/contactus/regions.shtml</a>
USDA Forest Service - State and Private Forestry	<a href="http://www.fs.fed.us/spf/">http://www.fs.fed.us/spf/</a>

## Other:

Quick Link	Website (URL address)
U.S. Geological Survey - National Water Information System (NWIS)	<a href="http://water.usgs.gov/GIS/huc.html">http://water.usgs.gov/GIS/huc.html</a>



# Appendix B: State, Survey Unit, and County Codes

## Appendix Contents:

State	State	State	State	State
Alabama	Alaska	Arizona	Arkansas	California
Colorado	Connecticut	Delaware	Florida	Georgia
Hawaii	Idaho	Illinois	Indiana	Iowa
Kansas	Kentucky	Louisiana	Maine	Maryland
Massachusetts	Michigan	Minnesota	Mississippi	Missouri
Montana	Nebraska	Nevada	New Hampshire	New Jersey
New Mexico	New York	North Carolina	North Dakota	Ohio
Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina
South Dakota	Tennessee	Texas	Utah	Vermont
Virginia	Washington	West Virginia	Wisconsin	Wyoming

<b>Washington, D.C.</b>
District of Columbia

<b>Pacific Islands</b>
American Samoa
Federated States of Micronesia
Guam
Marshall Islands
Northern Mariana Islands
Palau

<b>Caribbean Islands</b>
Puerto Rico
U.S. Virgin Islands

## Alabama

<b>State Name:</b> Alabama		
<b>State Code:</b> 1	<b>State Abbreviation:</b> AL	<b>Region/Station Code:</b> 33

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name:</b> Southwest-South					
Code	County	Code	County	Code	County	Code	County
3	Baldwin	53	Escambia	129	Washington		
39	Covington	97	Mobile				

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name:</b> Southwest-North					
Code	County	Code	County	Code	County	Code	County
23	Choctaw	35	Conecuh	99	Monroe	131	Wilcox
25	Clarke	91	Marengo	119	Sumter		

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name:</b> Southeast					
Code	County	Code	County	Code	County	Code	County
1	Autauga	31	Coffee	67	Henry	109	Pike
5	Barbour	41	Crenshaw	69	Houston	113	Russell
11	Bullock	45	Dale	81	Lee	123	Tallapoosa
13	Butler	47	Dallas	85	Lowndes		
17	Chambers	51	Elmore	87	Macon		
21	Chilton	61	Geneva	101	Montgomery		

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name:</b> West Central					
Code	County	Code	County	Code	County	Code	County
7	Bibb	65	Hale	105	Perry		
57	Fayette	75	Lamar	107	Pickens		
63	Greene	93	Marion	125	Tuscaloosa		

<b>Survey Unit Code: 5</b>		<b>Survey Unit Name:</b> North Central					
Code	County	Code	County	Code	County	Code	County
9	Blount	29	Cleburne	73	Jefferson	121	Talladega
15	Calhoun	37	Coosa	111	Randolph	127	Walker
19	Cherokee	43	Cullman	115	St. Clair	133	Winston
27	Clay	55	Etowah	117	Shelby		

<b>Survey Unit Code: 6</b>		<b>Survey Unit Name:</b> North					
Code	County	Code	County	Code	County	Code	County
33	Colbert	71	Jackson	83	Limestone	103	Morgan
49	DeKalb	77	Lauderdale	89	Madison		
59	Franklin	79	Lawrence	95	Marshall		

## Alaska

<b>State Name:</b> Alaska			
<b>State Code:</b> 2	<b>State Abbreviation:</b> AK	<b>Region/Station Code:</b> 27	
<b>Survey Unit Code: 1</b>		<b>Survey Unit Name:</b> Alaska	
Code	County	Code	County
13	Aleutians East Borough	170	Matanuska-Susitna Borough
16	Aleutians West Census Area	180	Nome Census Area
20	Anchorage Borough	185	North Slope Borough
50	Bethel Census Area	188	Northwest Arctic Borough
60	Bristol Bay Borough	201	Prince of Wales-Outer Ketchikan Census Area
68	Denali Borough	220	Sitka Borough
70	Dillingham Census Area	232	Skagway-Hoonah-Angoon Census Area
90	Fairbanks North Star Borough	240	Southeast Fairbanks Census Area
100	Haines Borough	261	Valdez-Cordova Census Area
110	Juneau Borough	270	Wade Hampton Census Area
122	Kenai Peninsula Borough	280	Wrangell-Petersburg Census Area
130	Ketchikan Gateway Borough	282	Yakutat Borough
150	Kodiak Island Borough	290	Yukon-Koyukuk Census Area
164	Lake and Peninsula Borough		

## Arizona

<b>State Name:</b> Arizona							
<b>State Code:</b> 4	<b>State Abbreviation:</b> AZ	<b>Region/Station Code:</b> 22					
<b>Survey Unit Code: 1</b>		<b>Survey Unit Name:</b> Southern					
Code	County	Code	County	Code	County	Code	County
3	Cochise	12	La Paz	21	Pinal		
9	Graham	13	Maricopa	23	Santa Cruz		
11	Greenlee	19	Pima	27	Yuma		
<b>Survey Unit Code: 2</b>		<b>Survey Unit Name:</b> Northern					
Code	County	Code	County	Code	County	Code	County
1	Apache	7	Gila	17	Navajo		
5	Coconino	15	Mohave	25	Yavapai		

**Arkansas**

<b>State Name:</b> Arkansas		
<b>State Code:</b> 5	<b>State Abbreviation:</b> AR	<b>Region/Station Code:</b> 33

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: South Delta</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Arkansas	69	Jefferson
17	Chicot	77	Lee
41	Desha	79	Lincoln
		85	Lonoke
		95	Monroe
		107	Phillips
		117	Prairie

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: North Delta</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
21	Clay	37	Cross
31	Craighead	55	Greene
35	Crittenden	67	Jackson
		75	Lawrence
		93	Mississippi
		111	Poinsett
		123	St. Francis
		147	Woodruff

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name: Southwest</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
3	Ashley	27	Columbia
11	Bradley	39	Dallas
13	Calhoun	43	Drew
19	Clark	53	Grant
25	Cleveland	57	Hempstead
		59	Hot Spring
		61	Howard
		73	Lafayette
		81	Little River
		91	Miller
		99	Nevada
		103	Ouachita
		109	Pike
		133	Sevier
		139	Union

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name: Ouachita</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
51	Garland	105	Perry
83	Logan	113	Polk
97	Montgomery	119	Pulaski
		125	Saline
		127	Scott
		131	Sebastian
		149	Yell

<b>Survey Unit Code: 5</b>		<b>Survey Unit Name: Ozark</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
5	Baxter	33	Crawford
7	Benton	45	Faulkner
9	Boone	47	Franklin
15	Carroll	49	Fulton
23	Cleburne	63	Independence
29	Conway	65	Izard
		71	Johnson
		87	Madison
		89	Marion
		101	Newton
		115	Pope
		121	Randolph
		129	Searcy
		135	Sharp
		137	Stone
		141	Van Buren
		143	Washington
		145	White

## California

<b>State Name:</b> California							
<b>State Code:</b> 6	<b>State Abbreviation:</b> CA			<b>Region/Station Code:</b> 26			
<b>Survey Unit Code:</b> 1		<b>Survey Unit Name:</b> North Coast					
Code	County	Code	County	Code	County	Code	County
15	Del Norte	23	Humboldt	45	Mendocino	97	Sonoma
<b>Survey Unit Code:</b> 2		<b>Survey Unit Name:</b> North Interior					
Code	County	Code	County	Code	County	Code	County
35	Lassen	89	Shasta	105	Trinity		
49	Modoc	93	Siskiyou				
<b>Survey Unit Code:</b> 3		<b>Survey Unit Name:</b> Sacramento					
Code	County	Code	County	Code	County	Code	County
7	Butte	33	Lake	63	Plumas	103	Tehama
11	Colusa	55	Napa	67	Sacramento	113	Yolo
17	El Dorado	57	Nevada	91	Sierra	115	Yuba
21	Glenn	61	Placer	101	Sutter		
<b>Survey Unit Code:</b> 4		<b>Survey Unit Name:</b> Central Coast					
Code	County	Code	County	Code	County	Code	County
1	Alameda	69	San Benito	83	Santa Barbara	111	Ventura
13	Contra Costa	75	San Francisco	85	Santa Clara		
41	Marin	79	San Luis Obispo	87	Santa Cruz		
53	Monterey	81	San Mateo	95	Solano		
<b>Survey Unit Code:</b> 5		<b>Survey Unit Name:</b> San Joaquin					
Code	County	Code	County	Code	County	Code	County
3	Alpine	29	Kern	47	Merced	107	Tulare
5	Amador	31	Kings	51	Mono	109	Tuolumne
9	Calaveras	39	Madera	77	San Joaquin		
19	Fresno	43	Mariposa	99	Stanislaus		
<b>Survey Unit Code:</b> 6		<b>Survey Unit Name:</b> Southern					
Code	County	Code	County	Code	County	Code	County
25	Imperial	37	Los Angeles	65	Riverside	73	San Diego
27	Inyo	59	Orange	71	San Bernardino		

## Colorado

<b>State Name:</b> Colorado		
<b>State Code:</b> 8	<b>State Abbreviation:</b> CO	<b>Region/Station Code:</b> 22

<b>Survey Unit Code:</b> 1	<b>Survey Unit Name:</b> Northern Front Range						
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
13	Boulder	35	Douglas	47	Gilpin	69	Larimer
14	Broomfield <sup>a</sup>	39	Elbert	59	Jefferson	93	Park
19	Clear Creek	41	El Paso	65	Lake	119	Teller

<b>Survey Unit Code:</b> 2	<b>Survey Unit Name:</b> Southern Front Range						
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
15	Chaffee	27	Custer	55	Huerfano	101	Pueblo
23	Costilla	43	Fremont	71	Las Animas		

<b>Survey Unit Code:</b> 3	<b>Survey Unit Name:</b> West Central						
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
3	Alamosa	51	Gunnison	97	Pitkin	111	San Juan
21	Conejos	53	Hinsdale	105	Rio Grande	117	Summit
37	Eagle	57	Jackson	107	Routt		
49	Grand	79	Mineral	109	Saguache		

<b>Survey Unit Code:</b> 4	<b>Survey Unit Name:</b> Western						
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
7	Archuleta	45	Garfield	81	Moffat	91	Ouray
29	Delta	67	La Plata	83	Montezuma	103	Rio Blanco
33	Dolores	77	Mesa	85	Montrose	113	San Miguel

<b>Survey Unit Code:</b> 5	<b>Survey Unit Name:</b> Eastern						
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Adams	25	Crowley	75	Logan	115	Sedgwick
5	Arapahoe	31	Denver	87	Morgan	121	Washington
9	Baca	61	Kiowa	89	Otero	123	Weld
11	Bent	63	Kit Carson	95	Phillips	125	Yuma
17	Cheyenne	73	Lincoln	99	Prowers		

<sup>a</sup>This is a new county in the 2010 census, but is not currently added to the COUNTY table.

## Connecticut

<b>State Name:</b> Connecticut								
<b>State Code:</b> 9		<b>State Abbreviation:</b> CT				<b>Region/Station Code:</b> 24		
<b>Survey Unit Code:</b> 1		<b>Survey Unit Name:</b> Connecticut						
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	
1	Fairfield	5	Litchfield	9	New Haven	13	Tolland	
3	Hartford	7	Middlesex	11	New London	15	Windham	

## Delaware

<b>State Name:</b> Delaware								
<b>State Code:</b> 10		<b>State Abbreviation:</b> DE				<b>Region/Station Code:</b> 24		
<b>Survey Unit Code:</b> 1		<b>Survey Unit Name:</b> Delaware						
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	
1	Kent	3	New Castle	5	Sussex			

## District of Columbia

<b>State Name:</b> District of Columbia								
<b>State Code:</b> 11		<b>State Abbreviation:</b> DC				<b>Region/Station Code:</b> 24		
<b>Survey Unit Code:</b> 1		<b>Survey Unit Name:</b> District of Columbia						

## Florida

<b>State Name:</b> Florida		
<b>State Code:</b> 12	<b>State Abbreviation:</b> FL	<b>Region/Station Code:</b> 33

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: Northeast</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Alachua	31	Duval
3	Baker	35	Flagler
7	Bradford	41	Gilchrist
19	Clay	47	Hamilton
23	Columbia	67	Lafayette
29	Dixie	75	Levy
79	Madison	123	Taylor
83	Marion	125	Union
89	Nassau	127	Volusia
107	Putnam		
109	St. Johns		
121	Suwannee		

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: Northwest</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
5	Bay	39	Gadsden
13	Calhoun	45	Gulf
33	Escambia	59	Holmes
37	Franklin	63	Jackson
65	Jefferson	113	Santa Rosa
73	Leon	129	Wakulla
77	Liberty	131	Walton
91	Okaloosa	133	Washington

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name: Central</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
9	Brevard	55	Highlands
17	Citrus	57	Hillsborough
27	DeSoto	61	Indian River
49	Hardee	69	Lake
53	Hernando	81	Manatee
93	Okeechobee	105	Polk
95	Orange	111	St. Lucie
97	Osceola	115	Sarasota
101	Pasco	117	Seminole
103	Pinellas	119	Sumter

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name: South</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
11	Broward	25	Dade
15	Charlotte	43	Glades
21	Collier	51	Hendry
71	Lee	99	Palm Beach
85	Martin		
87	Monroe		

**Georgia**

<b>State Name:</b> Georgia		
<b>State Code:</b> 13	<b>State Abbreviation:</b> GA	<b>Region/Station Code:</b> 33

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: Southeast</b>					
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Appling	51	Chatham	161	Jeff Davis	251	Screven
3	Atkinson	65	Clinch	165	Jenkins	267	Tattnall
5	Bacon	69	Coffee	167	Johnson	271	Telfair
25	Brantley	91	Dodge	175	Laurens	279	Toombs
29	Bryan	101	Echols	179	Liberty	283	Treutlen
31	Bullock	103	Effingham	183	Long	299	Ware
39	Camden	107	Emanuel	191	McIntosh	305	Wayne
43	Candler	109	Evans	209	Montgomery	309	Wheeler
49	Charlton	127	Glynn	229	Pierce		

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: Southwest</b>					
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
7	Baker	81	Crisp	173	Lanier	277	Tift
17	Ben Hill	87	Decatur	185	Lowndes	287	Turner
19	Berrien	93	Dooly	201	Miller	315	Wilcox
27	Brooks	99	Early	205	Mitchell	321	Worth
71	Colquitt	131	Grady	253	Seminole		
75	Cook	155	Irwin	275	Thomas		

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name: Central</b>					
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
9	Baldwin	141	Hancock	211	Morgan	265	Taliaferro
21	Bibb	145	Harris	215	Muscogee	269	Taylor
23	Bleckley	153	Houston	225	Peach	273	Terrell
33	Burke	159	Jasper	231	Pike	289	Twiggs
35	Butts	163	Jefferson	235	Pulaski	293	Upson
37	Calhoun	169	Jones	237	Putnam	301	Warren
53	Chattahoochee	171	Lamar	239	Quitman	303	Washington
61	Clay	177	Lee	243	Randolph	307	Webster
73	Columbia	181	Lincoln	245	Richmond	317	Wilkes
79	Crawford	189	McDuffie	249	Schley	319	Wilkinson
95	Dougherty	193	Macon	259	Stewart		
125	Glascock	197	Marion	261	Sumter		
133	Greene	207	Monroe	263	Talbot		

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name: North Central</b>					
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
11	Banks	97	Douglas	143	Haralson	219	Oconee
13	Barrow	105	Elbert	147	Hart	221	Oglethorpe
45	Carroll	113	Fayette	149	Heard	223	Paulding
59	Clarke	117	Forsyth	151	Henry	233	Polk
63	Clayton	119	Franklin	157	Jackson	247	Rockdale
67	Cobb	121	Fulton	195	Madison	255	Spalding
77	Coweta	135	Gwinnett	199	Meriwether	285	Troup
89	DeKalb	139	Hall	217	Newton	297	Walton

Georgia - continued on next page

<b>State Name:</b> Georgia							
<b>State Code:</b> 13	<b>State Abbreviation:</b> GA						
<b>Survey Unit Code:</b> 5	<b>Survey Unit Name:</b> North						
Code	County	Code	County	Code	County	Code	County
15	Bartow	111	Fannin	213	Murray	295	Walker
47	Catoosa	115	Floyd	227	Pickens	311	White
55	Chattooga	123	Gilmer	241	Rabun	313	Whitfield
57	Cherokee	129	Gordon	257	Stephens		
83	Dade	137	Habersham	281	Towns		
85	Dawson	187	Lumpkin	291	Union		

## Hawaii

<b>State Name:</b> Hawaii							
<b>State Code:</b> 15	<b>State Abbreviation:</b> HI						
<b>Survey Unit Code:</b> 1	<b>Survey Unit Name:</b> Hawaii						
Code	County	Code	County	Code	County	Code	County
1	Hawaii	5	Kalawao	9	Maui		
3	Honolulu	7	Kauai				

**Idaho**

<b>State Name:</b> Idaho									
<b>State Code:</b> 16	<b>State Abbreviation:</b> ID				<b>Region/Station Code:</b> 22				
<b>Survey Unit Code: 1</b>		<b>Survey Unit Name:</b> Northern							
Code	County	Code	County	Code	County	Code	County	Code	
9	Benewah	35	Clearwater	57	Latah	79	Shoshone		
17	Bonner	49	Idaho	61	Lewis				
21	Boundary	55	Kootenai	69	Nez Perce				
<b>Survey Unit Code: 2</b>		<b>Survey Unit Name:</b> Southwestern							
Code	County	Code	County	Code	County	Code	County	Code	
1	Ada	27	Canyon	73	Owyhee	87	Washington		
3	Adams	39	Elmore	75	Payette				
15	Boise	45	Gem	85	Valley				
<b>Survey Unit Code: 3</b>		<b>Survey Unit Name:</b> Southeastern							
Code	County	Code	County	Code	County	Code	County	Code	
5	Bannock	25	Camas	43	Fremont	65	Madison		
7	Bear Lake	29	Caribou	47	Gooding	67	Minidoka		
11	Bingham	31	Cassia	51	Jefferson	71	Oneida		
13	Blaine	33	Clark	53	Jerome	77	Power		
19	Bonneville	37	Custer	59	Lemhi	81	Teton		
23	Butte	41	Franklin	63	Lincoln	83	Twin Falls		

**Illinois**

<b>State Name:</b> Illinois		
<b>State Code:</b> 17	<b>State Abbreviation:</b> IL	<b>Region/Station Code:</b> 23

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: Southern</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
3	Alexander	69	Hardin
55	Franklin	77	Jackson
59	Gallatin	87	Johnson
65	Hamilton	127	Massac
145	Perry	165	Saline
151	Pope	181	Union
153	Pulaski	193	White
157	Randolph	199	Williamson

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: Claypan</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
5	Bond	47	Edwards
13	Calhoun	49	Effingham
23	Clark	51	Fayette
25	Clay	61	Greene
27	Clinton	79	Jasper
33	Crawford	81	Jefferson
35	Cumberland	83	Jersey
101	Lawrence	163	St. Clair
117	Macoupin	173	Shelby
119	Madison	185	Wabash
121	Marion	189	Washington
133	Monroe	191	Wayne
135	Montgomery		
159	Richland		

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name: Prairie</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Adams	53	Ford
7	Boone	57	Fulton
9	Brown	63	Grundy
11	Bureau	67	Hancock
15	Carroll	71	Henderson
17	Cass	73	Henry
19	Champaign	75	Iroquois
21	Christian	85	Jo Daviess
29	Coles	89	Kane
31	Cook	91	Kankakee
37	DeKalb	93	Kendall
39	De Witt	95	Knox
41	Douglas	97	Lake
43	DuPage	99	La Salle
45	Edgar	103	Lee
105	Livingston	149	Pike
107	Logan	155	Putnam
109	McDonough	161	Rock Island
111	McHenry	167	Sangamon
113	McLean	169	Schuylerville
115	Macon	171	Scott
123	Marshall	175	Stark
125	Mason	177	Stephenson
129	Menard	179	Tazewell
131	Mercer	183	Vermilion
137	Morgan	187	Warren
139	Moultrie	195	Whiteside
141	Ogle	197	Will
143	Peoria	201	Winnebago
147	Piatt	203	Woodford

**Indiana**

<b>State Name:</b> Indiana		
<b>State Code:</b> 18	<b>State Abbreviation:</b> IN	<b>Region/Station Code:</b> 23

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: Lower Wabash</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
21	Clay	83	Knox
27	Daviess	101	Martin
51	Gibson	121	Parke
55	Greene	125	Pike
			129 Posey
			133 Putnam
			153 Sullivan
			163 Vanderburgh
			165 Vermillion
			167 Vigo

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: Knobs</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
13	Brown	61	Harrison
19	Clark	71	Jackson
25	Crawford	93	Lawrence
37	Dubois	105	Monroe
43	Floyd	109	Morgan
		117	Orange
		119	Owen
		123	Perry
		143	Scott
		147	Spencer
			173 Warrick
			175 Washington

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name: Upland Flats</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
29	Dearborn	77	Jefferson
41	Fayette	79	Jennings
47	Franklin	115	Ohio
		137	Ripley
		155	Switzerland
		161	Union

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name: Northern</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Adams	45	Fountain
3	Allen	49	Fulton
5	Bartholomew	53	Grant
7	Benton	57	Hamilton
9	Blackford	59	Hancock
11	Boone	63	Hendricks
15	Carroll	65	Henry
17	Cass	67	Howard
23	Clinton	69	Huntington
31	Decatur	73	Jasper
33	De Kalb	75	Jay
35	Delaware	81	Johnson
39	Elkhart	85	Kosciusko
		87	Lagrange
		89	Lake
		91	La Porte
		95	Madison
		97	Marion
		99	Marshall
		103	Miami
		107	Montgomery
		111	Newton
		113	Noble
		127	Porter
		131	Pulaski
		135	Randolph
		139	Rush
		141	St. Joseph
		145	Shelby
		149	Starke
		151	Steuben
		157	Tippecanoe
		159	Tipton
		169	Wabash
		171	Warren
		177	Wayne
		179	Wells
		181	White
		183	Whitley

**Iowa**

<b>State Name:</b> Iowa		
<b>State Code:</b> 19	<b>State Abbreviation:</b> IA	<b>Region/Station Code:</b> 23

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: Northeastern</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
5	Allamakee	31	Cedar
11	Benton	37	Chickasaw
13	Black Hawk	43	Clayton
17	Bremer	45	Clinton
19	Buchanan	55	Delaware
23	Butler	61	Dubuque
65	Fayette	105	Jones
67	Floyd	113	Linn
75	Grundy	131	Mitchell
89	Howard	163	Scott
97	Jackson	171	Tama
103	Johnson	191	Winneshiek

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: Southeastern</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
7	Appanoose	83	Hardin
15	Boone	87	Henry
39	Clarke	95	Iowa
49	Dallas	99	Jasper
51	Davis	101	Jefferson
53	Decatur	107	Keokuk
57	Des Moines	111	Lee
77	Guthrie	115	Louisa
79	Hamilton	117	Lucas
121	Madison	177	Van Buren
123	Mahaska	179	Wapello
125	Marion	181	Warren
127	Marshall	183	Washington
135	Monroe	185	Wayne
139	Muscatine	187	Webster
153	Polk		
157	Poweshiek		
169	Story		

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name: Southwestern</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Adair	47	Crawford
3	Adams	71	Fremont
9	Audubon	73	Greene
27	Carroll	85	Harrison
29	Cass	129	Mills
133	Monona	165	Shelby
137	Montgomery	173	Taylor
145	Page	175	Union
155	Pottawattamie	193	Woodbury
159	Ringgold		

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name: Northwestern</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
21	Buena Vista	63	Emmet
25	Calhoun	69	Franklin
33	Cerro Gordo	81	Hancock
35	Cherokee	91	Humboldt
41	Clay	93	Ida
59	Dickinson	109	Kossuth
119	Lyon	161	Sac
141	O'Brien	167	Sioux
143	Osceola	189	Winnebago
147	Palo Alto	195	Worth
149	Plymouth	197	Wright
151	Pocahontas		

**Kansas**

<b>State Name:</b> Kansas																																																																																																																																																																																			
<b>State Code:</b> 20		<b>State Abbreviation:</b> KS				<b>Region/Station Code:</b> 23																																																																																																																																																																													
<b>Survey Unit Code: 1</b>		<b>Survey Unit Name:</b> Northeastern																																																																																																																																																																																	
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45	Douglas	103	Leavenworth	161	Riley																																																																																																																																																																														
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## Kentucky

<b>State Name:</b> Kentucky		
<b>State Code:</b> 21	<b>State Abbreviation:</b> KY	<b>Region/Station Code:</b> 33

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: Eastern</b>	
Code	County	Code	County
71	Floyd	119	Knott
95	Harlan	131	Leslie
		133	Letcher
		159	Martin
		193	Perry
		195	Pike

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: Northern Cumberland</b>	
Code	County	Code	County
19	Boyd	115	Johnson
43	Carter	127	Lawrence
63	Elliott	135	Lewis
89	Greenup	153	Magoffin
		165	Menifee
		175	Morgan
		197	Powell
		205	Rowan
		237	Wolfe

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name: Southern Cumberland</b>	
Code	County	Code	County
13	Bell	65	Estill
25	Breathitt	109	Jackson
51	Clay	121	Knox
		125	Laurel
		129	Lee
		147	McCreary
		189	Owsley
		203	Rockcastle
		235	Whitley

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name: Bluegrass</b>	
Code	County	Code	County
5	Anderson	67	Fayette
11	Bath	69	Fleming
15	Boone	73	Franklin
17	Bourbon	77	Gallatin
21	Boyle	79	Garrard
23	Bracken	81	Grant
37	Campbell	97	Harrison
41	Carroll	103	Henry
49	Clark	111	Jefferson
		113	Jessamine
		117	Kenton
		137	Lincoln
		151	Madison
		161	Mason
		167	Mercer
		173	Montgomery
		181	Nicholas
		185	Oldham
		187	Owen
		191	Pendleton
		201	Robertson
		209	Scott
		211	Shelby
		215	Spencer
		223	Trimble
		229	Washington
		239	Woodford

<b>Survey Unit Code: 5</b>		<b>Survey Unit Name: Pennyroyal</b>	
Code	County	Code	County
1	Adair	57	Cumberland
27	Breckinridge	85	Grayson
29	Bullitt	87	Green
45	Casey	91	Hancock
53	Clinton	93	Hardin
		99	Hart
		123	Larue
		155	Marion
		163	Meade
		169	Metcalfe
		179	Nelson
		199	Pulaski
		207	Russell
		217	Taylor
		231	Wayne

<b>Survey Unit Code: 6</b>		<b>Survey Unit Name: Western Coalfield</b>	
Code	County	Code	County
3	Allen	55	Crittenden
9	Barren	59	Daviess
31	Butler	61	Edmonson
33	Caldwell	101	Henderson
47	Christian	107	Hopkins
		141	Logan
		149	McLean
		171	Monroe
		177	Muhlenberg
		183	Ohio
		213	Simpson
		219	Todd
		225	Union
		227	Warren
		233	Webster

Kentucky - continued on next page

<b>State Name:</b> Kentucky		
<b>State Code:</b> 21	<b>State Abbreviation:</b> KY	<b>Region/Station Code:</b> 33

<b>Survey Unit Code: 7</b>		<b>Survey Unit Name: Western</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
7	Ballard	75	Fulton
35	Calloway	83	Graves
39	Carlisle	105	Hickman
		139	Livingston
		143	Lyon
		145	McCracken
		157	Marshall
		221	Trigg

## Louisiana

<b>State Name:</b> Louisiana		
<b>State Code:</b> 22	<b>State Abbreviation:</b> LA	<b>Region/Station Code:</b> 33

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: North Delta</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
25	Catahoula	41	Franklin
29	Concordia	65	Madison
35	East Carroll	67	Morehouse
		83	Richland
		107	Tensas
		123	West Carroll

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: South Delta</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Acadia	47	Iberville
5	Ascension	51	Jefferson
7	Assumption	55	Lafayette
9	Avoyelles	57	Lafourche
23	Cameron	71	Orleans
45	Iberia	75	Plaquemines
		77	Pointe Coupee
		87	St. Bernard
		89	St. Charles
		93	St. James
		95	St. John the Baptist
		97	St. Landry
		99	St. Martin
		101	St. Mary
		109	Terrebonne
		113	Vermilion
		121	West Baton Rouge
		125	West Feliciana

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name: Southwest</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
3	Allen	39	Evangeline
11	Beauregard	43	Grant
19	Calcasieu	53	Jefferson Davis
		59	La Salle
		69	Natchitoches
		79	Rapides
		85	Sabine
		115	Vernon

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name: Southeast</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
33	East Baton Rouge	63	Livingston
37	East Feliciana	91	St. Helena
		103	St. Tammany
		105	Tangipahoa
		117	Washington

<b>Survey Unit Code: 5</b>		<b>Survey Unit Name: Northwest</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
13	Bienville	27	Claiborne
15	Bossier	31	De Soto
17	Caddo	49	Jackson
21	Caldwell	61	Lincoln
		73	Ouachita
		81	Red River
		111	Union
		119	Webster
		127	Winn

**Maine**

<b>State Name:</b> Maine									
<b>State Code:</b> 23		<b>State Abbreviation:</b> ME				<b>Region/Station Code:</b> 24			
<b>Survey Unit Code:</b> 1		<b>Survey Unit Name:</b> Washington							
Code	County	Code	County	Code	County	Code	County	Code	County
29	Washington								
<b>Survey Unit Code:</b> 2		<b>Survey Unit Name:</b> Aroostook							
Code	County	Code	County	Code	County	Code	County	Code	County
3	Aroostook								
<b>Survey Unit Code:</b> 3		<b>Survey Unit Name:</b> Penobscot							
Code	County	Code	County	Code	County	Code	County	Code	County
19	Penobscot								
<b>Survey Unit Code:</b> 4		<b>Survey Unit Name:</b> Hancock							
Code	County	Code	County	Code	County	Code	County	Code	County
9	Hancock								
<b>Survey Unit Code:</b> 5		<b>Survey Unit Name:</b> Piscataquis							
Code	County	Code	County	Code	County	Code	County	Code	County
21	Piscataquis								
<b>Survey Unit Code:</b> 6		<b>Survey Unit Name:</b> Capitol Region							
Code	County	Code	County	Code	County	Code	County	Code	County
11	Kennebec	13	Knox	15	Lincoln	27	Waldo		
<b>Survey Unit Code:</b> 7		<b>Survey Unit Name:</b> Somerset							
Code	County	Code	County	Code	County	Code	County	Code	County
25	Somerset								
<b>Survey Unit Code:</b> 8		<b>Survey Unit Name:</b> Casco Bay							
Code	County	Code	County	Code	County	Code	County	Code	County
1	Androscoggin	5	Cumberland	23	Sagadahoc	31	York		
<b>Survey Unit Code:</b> 9		<b>Survey Unit Name:</b> Western Maine							
Code	County	Code	County	Code	County	Code	County	Code	County
7	Franklin	17	Oxford						

## Maryland

<b>State Name:</b> Maryland							
<b>State Code:</b> 24	<b>State Abbreviation:</b> MD			<b>Region/Station Code:</b> 24			
<b>Survey Unit Code:</b> 2		<b>Survey Unit Name:</b> Central					
Code	County	Code	County	Code	County	Code	County
3	Anne Arundel	15	Cecil	29	Kent	41	Talbot
5	Baltimore	21	Frederick	31	Montgomery	43	Washington
11	Caroline	25	Harford	33	Prince George's	510	Baltimore city
13	Carroll	27	Howard	35	Queen Anne's		
<b>Survey Unit Code:</b> 3		<b>Survey Unit Name:</b> Southern					
Code	County	Code	County	Code	County	Code	County
9	Calvert	17	Charles	37	St. Mary's		
<b>Survey Unit Code:</b> 4		<b>Survey Unit Name:</b> Lower Eastern Shore					
Code	County	Code	County	Code	County	Code	County
19	Dorchester	39	Somerset	45	Wicomico	47	Worcester
<b>Survey Unit Code:</b> 5		<b>Survey Unit Name:</b> Western					
Code	County	Code	County	Code	County	Code	County
1	Allegany	23	Garrett				

## Massachusetts

<b>State Name:</b> Massachusetts							
<b>State Code:</b> 25	<b>State Abbreviation:</b> MA			<b>Region/Station Code:</b> 24			
<b>Survey Unit Code:</b> 1		<b>Survey Unit Name:</b> Massachusetts					
Code	County	Code	County	Code	County	Code	County
1	Barnstable	9	Essex	17	Middlesex	25	Suffolk
3	Berkshire	11	Franklin	19	Nantucket	27	Worcester
5	Bristol	13	Hampden	21	Norfolk		
7	Dukes	15	Hampshire	23	Plymouth		

## Michigan

<b>State Name:</b> Michigan		
<b>State Code:</b> 26	<b>State Abbreviation:</b> MI	<b>Region/Station Code:</b> 23

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name:</b> Eastern Upper Peninsula					
Code	County	Code	County	Code	County	Code	County
3	Alger	41	Delta	97	Mackinac	153	Schoolcraft
33	Chippewa	95	Luce	109	Menominee		

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name:</b> Western Upper Peninsula					
Code	County	Code	County	Code	County	Code	County
13	Baraga	53	Gogebic	71	Iron	103	Marquette
43	Dickinson	61	Houghton	83	Keweenaw	131	Ontonagon

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name:</b> Northern Lower Peninsula					
Code	County	Code	County	Code	County	Code	County
1	Alcona	39	Crawford	101	Manistee	133	Osceola
7	Alpena	47	Emmet	105	Mason	135	Oscoda
9	Antrim	51	Gladwin	107	Mecosta	137	Otsego
11	Arenac	55	Grand Traverse	111	Midland	141	Presque Isle
17	Bay	69	Iosco	113	Missaukee	143	Roscommon
19	Benzie	73	Isabella	119	Montmorency	165	Wexford
29	Charlevoix	79	Kalkaska	123	Newaygo		
31	Cheboygan	85	Lake	127	Oceana		
35	Clare	89	Leelanau	129	Ogemaw		

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name:</b> Southern Lower Peninsula					
Code	County	Code	County	Code	County	Code	County
5	Allegan	57	Gratiot	91	Lenawee	147	St. Clair
15	Barry	59	Hillsdale	93	Livingston	149	St. Joseph
21	Berrien	63	Huron	99	Macomb	151	Sanilac
23	Branch	65	Ingham	115	Monroe	155	Shiawassee
25	Calhoun	67	Ionia	117	Montcalm	157	Tuscola
27	Cass	75	Jackson	121	Muskegon	159	Van Buren
37	Clinton	77	Kalamazoo	125	Oakland	161	Washtenaw
45	Eaton	81	Kent	139	Ottawa	163	Wayne
49	Genesee	87	Lapeer	145	Saginaw		

**Minnesota**

<b>State Name:</b> Minnesota									
<b>State Code:</b> 27		<b>State Abbreviation:</b> MN			<b>Region/Station Code:</b> 23				
<b>Survey Unit Code:</b> 1		<b>Survey Unit Name:</b> Aspen-Birch							
Code	County	Code	County	Code	County	Code	County	Code	County
17	Carlton	71	Koochiching	137	St. Louis				
31	Cook	75	Lake						
<b>Survey Unit Code:</b> 2		<b>Survey Unit Name:</b> Northern Pine							
Code	County	Code	County	Code	County	Code	County	Code	County
1	Aitkin	21	Cass	57	Hubbard	87	Mahnomen		
5	Becker	29	Clearwater	61	Itasca	135	Roseau		
7	Beltrami	35	Crow Wing	77	Lake of the Woods	159	Wadena		
<b>Survey Unit Code:</b> 3		<b>Survey Unit Name:</b> Central Hardwood							
Code	County	Code	County	Code	County	Code	County	Code	County
3	Anoka	49	Goodhue	97	Morrison	141	Sherburne		
9	Benton	53	Hennepin	109	Olmsted	145	Stearns		
19	Carver	55	Houston	111	Otter Tail	153	Todd		
25	Chisago	59	Isanti	115	Pine	157	Wabasha		
37	Dakota	65	Kanabec	123	Ramsey	163	Washington		
41	Douglas	79	Le Sueur	131	Rice	169	Winona		
45	Fillmore	95	Mille Lacs	139	Scott	171	Wright		
<b>Survey Unit Code:</b> 4		<b>Survey Unit Name:</b> Prairie							
Code	County	Code	County	Code	County	Code	County	Code	County
11	Big Stone	67	Kandiyohi	103	Nicollet	143	Sibley		
13	Blue Earth	69	Kittson	105	Nobles	147	Steele		
15	Brown	73	Lac qui Parle	107	Norman	149	Stevens		
23	Chippewa	81	Lincoln	113	Pennington	151	Swift		
27	Clay	83	Lyon	117	Pipestone	155	Traverse		
33	Cottonwood	85	McLeod	119	Polk	161	Waseca		
39	Dodge	89	Marshall	121	Pope	165	Watonwan		
43	Faribault	91	Martin	125	Red Lake	167	Wilkin		
47	Freeborn	93	Meeker	127	Redwood	173	Yellow Medicine		
51	Grant	99	Mower	129	Renville				
63	Jackson	101	Murray	133	Rock				

## Mississippi

<b>State Name:</b> Mississippi		
<b>State Code:</b> 28	<b>State Abbreviation:</b> MS	<b>Region/Station Code:</b> 33

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: Delta</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
11	Bolivar	55	Issaquena
27	Coahoma	83	Leflore
51	Holmes	119	Quitman
53	Humphreys	125	Sharkey
		133	Sunflower
		135	Tallahatchie
		143	Tunica
		149	Warren
151	Washington		
163	Yazoo		

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: North</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
3	Alcorn	33	DeSoto
9	Benton	43	Grenada
13	Calhoun	57	Itawamba
15	Carroll	71	Lafayette
17	Chickasaw	81	Lee
19	Choctaw	87	Lowndes
25	Clay	93	Marshall
		95	Monroe
		97	Montgomery
		105	Oktibbeha
		107	Panola
		115	Pontotoc
		117	Prentiss
		137	Tate
139	Tippah		
141	Tishomingo		
145	Union		
155	Webster		
161	Yalobusha		

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name: Central</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
7	Attala	75	Lauderdale
23	Clarke	79	Leake
61	Jasper	99	Neshoba
69	Kemper	101	Newton
		103	Noxubee
		121	Rankin
		123	Scott
		127	Simpson
129	Smith		
159	Winston		

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name: South</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
31	Covington	47	Harrison
35	Forrest	59	Jackson
39	George	65	Jefferson Davis
41	Greene	67	Jones
45	Hancock	73	Lamar
		77	Lawrence
		91	Marion
		109	Pearl River
		111	Perry
		131	Stone
147	Walthall		
153	Wayne		

<b>Survey Unit Code: 5</b>		<b>Survey Unit Name: Southwest</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Adams	29	Copiah
5	Amite	37	Franklin
21	Claiborne	49	Hinds
		63	Jefferson
		85	Lincoln
		89	Madison
113	Pike		
157	Wilkinson		

**Missouri**

<b>State Name:</b> Missouri							
<b>State Code:</b> 29	<b>State Abbreviation:</b> MO	<b>Region/Station Code:</b> 23					
<b>Survey Unit Code: 1</b>		<b>Survey Unit Name:</b> Eastern Ozarks					
Code	County	Code	County	Code	County	Code	County
17	Bollinger	65	Dent	179	Reynolds	221	Washington
23	Butler	93	Iron	181	Ripley	223	Wayne
35	Carter	123	Madison	187	St. Francois		
55	Crawford	149	Oregon	203	Shannon		
<b>Survey Unit Code: 2</b>		<b>Survey Unit Name:</b> Southwestern Ozarks					
Code	County	Code	County	Code	County	Code	County
9	Barry	91	Howell	153	Ozark	215	Texas
43	Christian	119	McDonald	209	Stone	225	Webster
67	Douglas	145	Newton	213	Taney	229	Wright
<b>Survey Unit Code: 3</b>		<b>Survey Unit Name:</b> Northwestern Ozarks					
Code	County	Code	County	Code	County	Code	County
15	Benton	85	Hickory	141	Morgan	185	St. Clair
29	Camden	105	Laclede	161	Phelps		
39	Cedar	125	Maries	167	Polk		
59	Dallas	131	Miller	169	Pulaski		
<b>Survey Unit Code: 4</b>		<b>Survey Unit Name:</b> Prairie					
Code	County	Code	County	Code	County	Code	County
1	Adair	53	Cooper	107	Lafayette	171	Putnam
3	Andrew	57	Dade	109	Lawrence	173	Ralls
5	Atchison	61	Daviess	111	Lewis	175	Randolph
7	Audrain	63	DeKalb	113	Lincoln	177	Ray
11	Barton	75	Gentry	115	Linn	195	Saline
13	Bates	77	Greene	117	Livingston	197	Schuylerville
21	Buchanan	79	Grundy	121	Macon	199	Scotland
25	Caldwell	81	Harrison	127	Marion	205	Shelby
33	Carroll	83	Henry	129	Mercer	211	Sullivan
37	Cass	87	Holt	137	Monroe	217	Vernon
41	Chariton	95	Jackson	147	Nodaway	227	Worth
45	Clark	97	Jasper	159	Pettis		
47	Clay	101	Johnson	163	Pike		
49	Clinton	103	Knox	165	Platte		
<b>Survey Unit Code: 5</b>		<b>Survey Unit Name:</b> Riverborder					
Code	County	Code	County	Code	County	Code	County
19	Boone	73	Gasconade	143	New Madrid	189	St. Louis
27	Callaway	89	Howard	151	Osage	201	Scott
31	Cape Girardeau	99	Jefferson	155	Pemiscot	207	Stoddard
51	Cole	133	Mississippi	157	Perry	219	Warren
69	Dunklin	135	Moniteau	183	St. Charles	510	St. Louis city
71	Franklin	139	Montgomery	186	Ste. Genevieve		

## Montana

<b>State Name:</b> Montana							
<b>State Code:</b> 30		<b>State Abbreviation:</b> MT		<b>Region/Station Code:</b> 22			

<b>Survey Unit Code:</b> 1		<b>Survey Unit Name:</b> Northwestern					
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
29	Flathead	47	Lake	53	Lincoln	89	Sanders

<b>Survey Unit Code:</b> 2		<b>Survey Unit Name:</b> Eastern					
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
3	Big Horn	27	Fergus	71	Phillips	95	Stillwater
5	Blaine	33	Garfield	73	Pondera	97	Sweet Grass
9	Carbon	35	Glacier	75	Powder River	99	Teton
11	Carter	37	Golden Valley	79	Prairie	101	Toole
15	Chouteau	41	Hill	83	Richland	103	Treasure
17	Custer	51	Liberty	85	Roosevelt	105	Valley
19	Daniels	55	McCone	87	Rosebud	109	Wibaux
21	Dawson	65	Musselshell	91	Sheridan	111	Yellowstone
25	Fallon	69	Petroleum				

<b>Survey Unit Code:</b> 3		<b>Survey Unit Name:</b> Western					
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
39	Granite	61	Mineral	63	Missoula	81	Ravalli

<b>Survey Unit Code:</b> 4		<b>Survey Unit Name:</b> West Central					
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
7	Broadwater	43	Jefferson	49	Lewis and Clark	77	Powell
13	Cascade	45	Judith Basin	59	Meagher	107	Wheatland

<b>Survey Unit Code:</b> 5		<b>Survey Unit Name:</b> Southwestern					
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Beaverhead	31	Gallatin	67	Park		
23	Deer Lodge	57	Madison	93	Silver Bow		

**Nebraska**

<b>State Name:</b> Nebraska		
<b>State Code:</b> 31	<b>State Abbreviation:</b> NE	<b>Region/Station Code:</b> 23

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: Eastern</b>					
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Adams	55	Douglas	99	Kearney	151	Saline
11	Boone	59	Fillmore	109	Lancaster	153	Sarpy
19	Buffalo	61	Franklin	119	Madison	155	Saunders
21	Burt	63	Frontier	121	Merrick	159	Seward
23	Butler	65	Furnas	125	Nance	163	Sherman
25	Cass	67	Gage	127	Nemaha	167	Stanton
27	Cedar	73	Gosper	129	Nuckolls	169	Thayer
35	Clay	77	Greeley	131	Otoe	173	Thurston
37	Colfax	79	Hall	133	Pawnee	175	Valley
39	Cuming	81	Hamilton	137	Phelps	177	Washington
41	Custer	83	Harlan	139	Pierce	179	Wayne
43	Dakota	87	Hitchcock	141	Platte	181	Webster
47	Dawson	93	Howard	143	Polk	185	York
51	Dixon	95	Jefferson	145	Red Willow		
53	Dodge	97	Johnson	147	Richardson		

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: Western</b>					
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
3	Antelope	33	Cheyenne	91	Hooker	123	Morrill
5	Arthur	45	Dawes	101	Keith	135	Perkins
7	Banner	49	Deuel	103	Keya Paha	149	Rock
9	Blaine	57	Dundy	105	Kimball	157	Scotts Bluff
13	Box Butte	69	Garden	107	Knox	161	Sheridan
15	Boyd	71	Garfield	111	Lincoln	165	Sioux
17	Brown	75	Grant	113	Logan	171	Thomas
29	Chase	85	Hayes	115	Loup	183	Wheeler
31	Cherry	89	Holt	117	McPherson		

## Nevada

<b>State Name:</b> Nevada																																																							
<b>State Code:</b> 32		<b>State Abbreviation:</b> NV			<b>Region/Station Code:</b> 22																																																		
<b>Survey Unit Code: 1</b>				<b>Survey Unit Name:</b> Nevada																																																			
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Code	County	Code	County	Code	County	Code	County																																																
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3	Clark	13	Humboldt	23	Nye	510	Carson City																																																
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7	Elko	17	Lincoln	29	Storey																																																		
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## New Hampshire

<b>State Name:</b> New Hampshire																															
<b>State Code:</b> 33		<b>State Abbreviation:</b> NH			<b>Region/Station Code:</b> 24																										
<b>Survey Unit Code: 2</b>				<b>Survey Unit Name:</b> Northern																											
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Code	County	Code	County	Code	County	Code	County																								
3	Carroll	7	Coos	9	Grafton																										
<b>Survey Unit Code: 3</b>				<b>Survey Unit Name:</b> Southern																											
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Code	County	Code	County	Code	County	Code	County																								
1	Belknap	11	Hillsborough	15	Rockingham	19	Sullivan																								
5	Cheshire	13	Merrimack	17	Strafford																										

## New Jersey

<b>State Name:</b> New Jersey		
<b>State Code:</b> 34	<b>State Abbreviation:</b> NJ	<b>Region/Station Code:</b> 24

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: New Jersey</b>					
Code	County	Code	County	Code	County	Code	County
1	Atlantic	13	Essex	25	Monmouth	37	Sussex
3	Bergen	15	Gloucester	27	Morris	39	Union
5	Burlington	17	Hudson	29	Ocean	41	Warren
7	Camden	19	Hunterdon	31	Passaic		
9	Cape May	21	Mercer	33	Salem		
11	Cumberland	23	Middlesex	35	Somerset		

## New Mexico

<b>State Name:</b> New Mexico		
<b>State Code:</b> 35	<b>State Abbreviation:</b> NM	<b>Region/Station Code:</b> 22

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: Northwestern</b>					
Code	County	Code	County	Code	County	Code	County
1	Bernalillo	31	McKinley	45	San Juan	61	Valencia
6	Cibola	39	Rio Arriba	49	Santa Fe		
28	Los Alamos	43	Sandoval	55	Taos		

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: Northeastern</b>					
Code	County	Code	County	Code	County	Code	County
7	Colfax	21	Harding	37	Quay	57	Torrance
19	Guadalupe	33	Mora	47	San Miguel	59	Union

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name: Southwestern</b>					
Code	County	Code	County	Code	County	Code	County
3	Catron	17	Grant	29	Luna	53	Socorro
13	Dona Ana	23	Hidalgo	51	Sierra		

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name: Southeastern</b>					
Code	County	Code	County	Code	County	Code	County
5	Chaves	11	De Baca	25	Lea	35	Otero
9	Curry	15	Eddy	27	Lincoln	41	Roosevelt

## New York

<b>State Name:</b> New York		
<b>State Code:</b> 36	<b>State Abbreviation:</b> NY	<b>Region/Station Code:</b> 24

<b>Survey Unit Code:</b> 1	<b>Survey Unit Name:</b> Adirondack	
<b>Code</b> <b>County</b>	<b>Code</b> <b>County</b>	<b>Code</b> <b>County</b>

19 Clinton	33 Franklin	45 Jefferson	89 St. Lawrence
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<b>Survey Unit Code:</b> 2	<b>Survey Unit Name:</b> Lake Plain	
<b>Code</b> <b>County</b>	<b>Code</b> <b>County</b>	<b>Code</b> <b>County</b>

11 Cayuga	53 Madison	69 Ontario	117 Wayne
29 Erie	55 Monroe	73 Orleans	121 Wyoming
37 Genesee	63 Niagara	75 Oswego	123 Yates
51 Livingston	67 Onondaga	99 Seneca	

<b>Survey Unit Code:</b> 3	<b>Survey Unit Name:</b> Western Adirondack	
<b>Code</b> <b>County</b>	<b>Code</b> <b>County</b>	<b>Code</b> <b>County</b>

35 Fulton	43 Herkimer	49 Lewis	65 Oneida
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<b>Survey Unit Code:</b> 4	<b>Survey Unit Name:</b> Eastern Adirondack	
<b>Code</b> <b>County</b>	<b>Code</b> <b>County</b>	<b>Code</b> <b>County</b>

31 Essex	41 Hamilton	113 Warren
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<b>Survey Unit Code:</b> 5	<b>Survey Unit Name:</b> Southwest Highlands	
<b>Code</b> <b>County</b>	<b>Code</b> <b>County</b>	<b>Code</b> <b>County</b>

3 Allegany	9 Cattaraugus	13 Chautauqua	101 Steuben
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<b>Survey Unit Code:</b> 6	<b>Survey Unit Name:</b> South-Central Highlands	
<b>Code</b> <b>County</b>	<b>Code</b> <b>County</b>	<b>Code</b> <b>County</b>

7 Broome	23 Cortland	97 Schuyler
15 Chemung	25 Delaware	107 Tioga
17 Chenango	77 Otsego	109 Tompkins

<b>Survey Unit Code:</b> 7	<b>Survey Unit Name:</b> Capitol District	
<b>Code</b> <b>County</b>	<b>Code</b> <b>County</b>	<b>Code</b> <b>County</b>

1 Albany	57 Montgomery	91 Saratoga	115 Washington
21 Columbia	83 Rensselaer	93 Schenectady	

<b>Survey Unit Code:</b> 8	<b>Survey Unit Name:</b> Catskill-Lower Hudson	
<b>Code</b> <b>County</b>	<b>Code</b> <b>County</b>	<b>Code</b> <b>County</b>

5 Bronx	59 Nassau	81 Queens	103 Suffolk
27 Dutchess	61 New York	85 Richmond	105 Sullivan
39 Greene	71 Orange	87 Rockland	111 Ulster
47 Kings	79 Putnam	95 Schoharie	119 Westchester

## North Carolina

<b>State Name:</b> North Carolina		
<b>State Code:</b> 37	<b>State Abbreviation:</b> NC	<b>Region/Station Code:</b> 33

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name:</b> Southern Coastal Plain					
Code	County	Code	County	Code	County	Code	County
17	Bladen	85	Harnett	125	Moore	163	Sampson
19	Brunswick	93	Hoke	129	New Hanover	165	Scotland
47	Columbus	101	Johnston	133	Onslow	191	Wayne
51	Cumberland	103	Jones	141	Pender		
61	Duplin	105	Lee	153	Richmond		
79	Greene	107	Lenoir	155	Robeson		

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name:</b> Northern Coastal Plain					
Code	County	Code	County	Code	County	Code	County
13	Beaufort	53	Currituck	95	Hyde	143	Perquimans
15	Bertie	55	Dare	117	Martin	147	Pitt
29	Camden	65	Edgecombe	127	Nash	177	Tyrrell
31	Carteret	73	Gates	131	Northhampton	187	Washington
41	Chowan	83	Halifax	137	Pamlico	195	Wilson
49	Craven	91	Hertford	139	Pasquotank		

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name:</b> Piedmont					
Code	County	Code	County	Code	County	Code	County
1	Alamance	59	Davie	119	Mecklenburg	167	Stanly
3	Alexander	63	Durham	123	Montgomery	169	Stokes
7	Anson	67	Forsyth	135	Orange	171	Surry
25	Cabarrus	69	Franklin	145	Person	179	Union
33	Caswell	71	Gaston	149	Polk	181	Vance
35	Catawba	77	Granville	151	Randolph	183	Wake
37	Chatham	81	Guilford	157	Rockingham	185	Warren
45	Cleveland	97	Iredell	159	Rowan	197	Yadkin
57	Davidson	109	Lincoln	161	Rutherford		

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name:</b> Mountains					
Code	County	Code	County	Code	County	Code	County
5	Alleghany	39	Cherokee	111	McDowell	189	Watauga
9	Ashe	43	Clay	113	Macon	193	Wilkes
11	Avery	75	Graham	115	Madison	199	Yancey
21	Buncombe	87	Haywood	121	Mitchell		
23	Burke	89	Henderson	173	Swain		
27	Caldwell	99	Jackson	175	Transylvania		

## North Dakota

<b>State Name:</b> North Dakota		
<b>State Code:</b> 38	<b>State Abbreviation:</b> ND	<b>Region/Station Code:</b> 23

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: Eastern</b>					
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Adams	29	Emmons	57	Mercer	85	Sioux
3	Barnes	31	Foster	59	Morton	87	Slope
5	Benson	33	Golden Valley	61	Mountrail	89	Stark
7	Billings	35	Grand Forks	63	Nelson	91	Steele
9	Bottineau	37	Grant	65	Oliver	93	Stutsman
11	Bowman	39	Griggs	67	Pembina	95	Towner
13	Burke	41	Hettinger	69	Pierce	97	Traill
15	Burleigh	43	Kidder	71	Ramsey	99	Walsh
17	Cass	45	LaMoure	73	Ransom	101	Ward
19	Cavalier	47	Logan	75	Renville	103	Wells
21	Dickey	49	McHenry	77	Richland	105	Williams
23	Divide	51	McIntosh	79	Rolette		
25	Dunn	53	McKenzie	81	Sargent		
27	Eddy	55	McLean	83	Sheridan		

**Ohio**

<b>State Name:</b> Ohio									
<b>State Code:</b> 39	<b>State Abbreviation:</b> OH				<b>Region/Station Code:</b> 24				
<b>Survey Unit Code: 1</b>		<b>Survey Unit Name:</b> South-Central							
Code	County	Code	County	Code	County	Code	County	Code	
1	Adams	53	Gallia	87	Lawrence	145	Scioto		
15	Brown	71	Highland	131	Pike				
25	Clermont	79	Jackson	141	Ross				
<b>Survey Unit Code: 2</b>		<b>Survey Unit Name:</b> Southeastern							
Code	County	Code	County	Code	County	Code	County	Code	
9	Athens	105	Meigs	127	Perry	167	Washington		
73	Hocking	115	Morgan	163	Vinton				
<b>Survey Unit Code: 3</b>		<b>Survey Unit Name:</b> East-Central							
Code	County	Code	County	Code	County	Code	County	Code	
13	Belmont	59	Guernsey	81	Jefferson	121	Noble		
19	Carroll	67	Harrison	111	Monroe	157	Tuscarawas		
31	Coshocton	75	Holmes	119	Muskingum				
<b>Survey Unit Code: 4</b>		<b>Survey Unit Name:</b> Northeastern							
Code	County	Code	County	Code	County	Code	County	Code	
5	Ashland	55	Geauga	103	Medina	155	Trumbull		
7	Ashtabula	77	Huron	133	Portage	169	Wayne		
29	Columbiana	85	Lake	139	Richland				
35	Cuyahoga	93	Lorain	151	Stark				
43	Erie	99	Mahoning	153	Summit				
<b>Survey Unit Code: 5</b>		<b>Survey Unit Name:</b> Southwestern							
Code	County	Code	County	Code	County	Code	County	Code	
17	Butler	45	Fairfield	61	Hamilton	113	Montgomery		
23	Clark	47	Fayette	89	Licking	129	Pickaway		
27	Clinton	49	Franklin	97	Madison	135	Preble		
37	Darke	57	Greene	109	Miami	165	Warren		
<b>Survey Unit Code: 6</b>		<b>Survey Unit Name:</b> Northwestern							
Code	County	Code	County	Code	County	Code	County	Code	
3	Allen	63	Hancock	107	Mercer	149	Shelby		
11	Auglaize	65	Hardin	117	Morrow	159	Union		
21	Champaign	69	Henry	123	Ottawa	161	Van Wert		
33	Crawford	83	Knox	125	Paulding	171	Williams		
39	Defiance	91	Logan	137	Putnam	173	Wood		
41	Delaware	95	Lucas	143	Sandusky	175	Wyandot		
51	Fulton	101	Marion	147	Seneca				

## Oklahoma

<b>State Name:</b> Oklahoma		
<b>State Code:</b> 40	<b>State Abbreviation:</b> OK	<b>Region/Station Code:</b> 33

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: Southeast</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
5	Atoka	29	Coal
13	Bryan	61	Haskell
23	Choctaw	77	Latimer
			79 Le Flore
			89 McCurtain
			121 Pittsburg
			127 Pushmataha

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: Northeast</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Adair	41	Delaware
21	Cherokee	91	McIntosh
			97 Mayes
			101 Muskogee
			115 Ottawa
			135 Sequoyah

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name: North Central</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
35	Craig	113	Osage
37	Creek	117	Pawnee
105	Nowata	119	Payne
			131 Rogers
			143 Tulsa
			145 Wagoner
			147 Washington

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name: South Central</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
19	Carter	81	Lincoln
27	Cleveland	83	Logan
49	Garvin	85	Love
63	Hughes	87	McClain
69	Johnston		95 Marshall
			107 Okfuskee
			109 Oklahoma
			111 Okmulgee
			123 Pontotoc
			125 Pottawatomie
			133 Seminole

<b>Survey Unit Code: 5</b>		<b>Survey Unit Name: Southwest</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
9	Beckham	33	Cotton
11	Blaine	39	Custer
15	Caddo	43	Dewey
17	Canadian	51	Grady
31	Comanche	55	Greer
			57 Harmon
			65 Jackson
			67 Jefferson
			73 Kingfisher
			75 Kiowa
			129 Roger Mills
			137 Stephens
			141 Tillman
			149 Washita

<b>Survey Unit Code: 6</b>		<b>Survey Unit Name: High Plains</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
7	Beaver	45	Ellis
25	Cimarron		59 Harper
			139 Texas

<b>Survey Unit Code: 7</b>		<b>Survey Unit Name: Great Plains</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
3	Alfalfa	53	Grant
47	Garfield	71	Kay
			93 Major
			103 Noble
			151 Woods
			153 Woodward

**Oregon**

<b>State Name:</b> Oregon		
<b>State Code:</b> 41	<b>State Abbreviation:</b> OR	<b>Region/Station Code:</b> 26

<b>Survey Unit Code: 0</b>		<b>Survey Unit Name: Northwest</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
5	Clackamas	27	Hood River
7	Clatsop	47	Marion
9	Columbia	51	Multnomah
			53 Polk
			57 Tillamook
			67 Washington
			71 Yamhill

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: West Central</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
3	Benton	39	Lane
			41 Lincoln
			43 Linn

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: Southwest</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
11	Coos	19	Douglas
15	Curry	29	Jackson
			33 Josephine

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name: Central</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
13	Crook	31	Jefferson
17	Deschutes	35	Klamath
21	Gilliam	37	Lake
			55 Sherman
			65 Wasco
			69 Wheeler

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name: Blue Mountains</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Baker	25	Harney
23	Grant	45	Malheur
			49 Morrow
			59 Umatilla
			61 Union
			63 Wallowa

## Pennsylvania

<b>State Name:</b> Pennsylvania		
<b>State Code:</b> 42	<b>State Abbreviation:</b> PA	<b>Region/Station Code:</b> 24

<b>Survey Unit Code: 0</b>		<b>Survey Unit Name:</b> South Central	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
43	Dauphin	61	Huntingdon
55	Franklin	67	Juniata
57	Fulton	87	Mifflin
		99	Perry
		109	Snyder
		119	Union

<b>Survey Unit Code: 5</b>		<b>Survey Unit Name:</b> Western	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
3	Allegheny	19	Butler
5	Armstrong	39	Crawford
7	Beaver	49	Erie
		59	Greene
		63	Indiana
		73	Lawrence
		85	Mercer
		125	Washington
		129	Westmoreland

<b>Survey Unit Code: 6</b>		<b>Survey Unit Name:</b> North Central/Allegheny	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
23	Cameron	35	Clinton
27	Centre	47	Elk
31	Clarion	53	Forest
33	Clearfield	65	Jefferson
		81	Lycoming
		83	McKean
		105	Potter
		113	Sullivan
		117	Tioga
		121	Venango
		123	Warren

<b>Survey Unit Code: 7</b>		<b>Survey Unit Name:</b> Southwestern	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
9	Bedford	21	Cambria
13	Blair	51	Fayette
		111	Somerset

<b>Survey Unit Code: 8</b>		<b>Survey Unit Name:</b> Northeastern/Pocono	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
15	Bradford	79	Luzerne
25	Carbon	89	Monroe
37	Columbia	93	Montour
69	Lackawanna	97	Northumberland
		103	Pike
		107	Schuylkill
		115	Susquehanna
		127	Wayne
		131	Wyoming

<b>Survey Unit Code: 9</b>		<b>Survey Unit Name:</b> Southeastern	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Adams	41	Cumberland
11	Berks	45	Delaware
17	Bucks	71	Lancaster
29	Chester	75	Lebanon
		77	Lehigh
		91	Montgomery
		95	Northampton
		101	Philadelphia
		133	York

## Rhode Island

<b>State Name:</b> Rhode Island									
<b>State Code:</b> 44		<b>State Abbreviation:</b> RI				<b>Region/Station Code:</b> 24			
<b>Survey Unit Code:</b> 1		<b>Survey Unit Name:</b> Rhode Island							
Code	County	Code	County	Code	County	Code	County	Code	County
1	Bristol	5	Newport	9	Washington				
3	Kent	7	Providence						

## South Carolina

<b>State Name:</b> South Carolina									
<b>State Code:</b> 45		<b>State Abbreviation:</b> SC				<b>Region/Station Code:</b> 33			
<b>Survey Unit Code:</b> 1		<b>Survey Unit Name:</b> Southern Coastal Plain							
Code	County	Code	County	Code	County	Code	County	Code	County
3	Aiken	11	Barnwell	29	Colleton	53	Jasper		
5	Allendale	13	Beaufort	35	Dorchester	63	Lexington		
9	Bamberg	17	Calhoun	49	Hampton	75	Orangeburg		
<b>Survey Unit Code:</b> 2		<b>Survey Unit Name:</b> Northern Coastal Plain							
Code	County	Code	County	Code	County	Code	County	Code	County
15	Berkeley	31	Darlington	51	Horry	69	Marlboro		
19	Charleston	33	Dillon	55	Kershaw	79	Richland		
25	Chesterfield	41	Florence	61	Lee	85	Sumter		
27	Clarendon	43	Georgetown	67	Marion	89	Williamsburg		
<b>Survey Unit Code:</b> 3		<b>Survey Unit Name:</b> Piedmont							
Code	County	Code	County	Code	County	Code	County	Code	County
1	Abbeville	39	Fairfield	65	McCormick	83	Spartanburg		
7	Anderson	45	Greenville	71	Newberry	87	Union		
21	Cherokee	47	Greenwood	73	Oconee	91	York		
23	Chester	57	Lancaster	77	Pickens				
37	Edgefield	59	Laurens	81	Saluda				

**South Dakota**

<b>State Name:</b> South Dakota		
<b>State Code:</b> 46	<b>State Abbreviation:</b> SD	<b>Region/Station Code:</b> 23

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: Eastern</b>					
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
3	Aurora	37	Day	71	Jackson	107	Potter
5	Beadle	39	Deuel	73	Jerauld	109	Roberts
7	Bennett	41	Dewey	75	Jones	111	Sanborn
9	Bon Homme	43	Douglas	77	Kingsbury	115	Spink
11	Brookings	45	Edmunds	79	Lake	117	Stanley
13	Brown	49	Faulk	83	Lincoln	119	Sully
15	Brule	51	Grant	85	Lyman	121	Todd
17	Buffalo	53	Gregory	87	McCook	123	Tripp
21	Campbell	55	Haakon	89	McPherson	125	Turner
23	Charles Mix	57	Hamlin	91	Marshall	127	Union
25	Clark	59	Hand	95	Mellette	129	Walworth
27	Clay	61	Hanson	97	Miner	135	Yankton
29	Codington	65	Hughes	99	Minnehaha	137	Ziebach
31	Corson	67	Hutchinson	101	Moody		
35	Davison	69	Hyde	105	Perkins		

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: Western</b>					
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
19	Butte	47	Fall River	81	Lawrence	103	Pennington
33	Custer	63	Harding	93	Meade	113	Shannon

**Tennessee**

<b>State Name:</b> Tennessee		
<b>State Code:</b> 47	<b>State Abbreviation:</b> TN	<b>Region/Station Code:</b> 33

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: West</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
17	Carroll	53	Gibson
23	Chester	69	Hardeman
33	Crockett	75	Haywood
45	Dyer	77	Henderson
47	Fayette	79	Henry
95	Lake	157	Shelby
97	Lauderdale	167	Tipton
109	McNairy	183	Weakley
113	Madison		
131	Obion		

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: West Central</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
5	Benton	81	Hickman
39	Decatur	83	Houston
71	Hardin	85	Humphreys
99	Lawrence	161	Stewart
101	Lewis	181	Wayne
135	Perry		

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name: Central</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
3	Bedford	41	DeKalb
15	Cannon	43	Dickson
21	Cheatham	55	Giles
27	Clay	87	Jackson
31	Coffee	103	Lincoln
37	Davidson	111	Macon
117	Marshall	159	Smith
119	Maury	165	Sumner
125	Montgomery	169	Trousdale
127	Moore	187	Williamson
147	Robertson	189	Wilson
149	Rutherford		

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name: Plateau</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
7	Bledsoe	51	Franklin
13	Campbell	61	Grundy
35	Cumberland	115	Marion
49	Fentress	129	Morgan
133	Overton	153	Sequatchie
137	Pickett	175	Van Buren
141	Putnam	177	Warren
151	Scott	185	White

<b>Survey Unit Code: 5</b>		<b>Survey Unit Name: East</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Anderson	59	Greene
9	Blount	63	Hamblen
11	Bradley	65	Hamilton
19	Carter	67	Hancock
25	Claiborne	73	Hawkins
29	Cocke	89	Jefferson
57	Grainger	91	Johnson
93	Knox	145	Roane
105	Loudon	155	Sevier
107	McMinn	163	Sullivan
121	Meigs	171	Unicoi
123	Monroe	173	Union
139	Polk	179	Washington
143	Rhea		

**Texas**

<b>State Name:</b> Texas		
<b>State Code:</b> 48	<b>State Abbreviation:</b> TX	<b>Region/Station Code:</b> 33

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: Southeast</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
5	Angelina	241	Jasper
71	Chambers	245	Jefferson
185	Grimes	289	Leon
199	Hardin	291	Liberty
201	Harris	313	Madison
225	Houston	339	Montgomery
351	Newton	455	Trinity
361	Orange	457	Tyler
373	Polk	471	Walker
403	Sabine	473	Waller
405	San Augustine		
407	San Jacinto		

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: Northeast</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Anderson	183	Gregg
37	Bowie	203	Harrison
63	Camp	213	Henderson
67	Cass	315	Marion
73	Cherokee	343	Morris
159	Franklin	347	Nacogdoches
365	Panola	459	Upshur
387	Red River	467	Van Zandt
401	Rusk	499	Wood
419	Shelby		
423	Smith		
449	Titus		

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name: North Central</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
15	Austin	121	Denton
21	Bastrop	123	De Witt
41	Brazos	139	Ellis
51	Burleson	145	Falls
55	Caldwell	147	Fannin
77	Clay	149	Fayette
85	Collin	161	Freestone
89	Colorado	175	Goliad
97	Cooke	177	Gonzales
113	Dallas	181	Grayson
119	Delta	187	Guadalupe
217	Hill	337	Montague
223	Hopkins	349	Navarro
231	Hunt	367	Parker
237	Jack	379	Rains
251	Johnson	395	Robertson
257	Kaufman	397	Rockwall
277	Lamar	439	Tarrant
285	Lavaca	477	Washington
287	Lee	497	Wise
293	Limestone	503	Young
331	Milam		

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name: South</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
7	Aransas	157	Fort Bend
13	Atascosa	163	Frio
25	Bee	167	Galveston
39	Brazoria	215	Hidalgo
47	Brooks	239	Jackson
57	Calhoun	247	Jim Hogg
61	Cameron	249	Jim Wells
127	Dimmit	255	Karnes
131	Duval	261	Kenedy
273	Kleberg	427	Starr
283	La Salle	469	Victoria
297	Live Oak	479	Webb
311	McMullen	481	Wharton
321	Matagorda	489	Willacy
323	Maverick	493	Wilson
355	Nueces	505	Zapata
391	Refugio	507	Zavala
409	San Patricio		

Texas - continued on next page

<b>State Name:</b> Texas	
<b>State Code:</b> 48	<b>State Abbreviation:</b> TX

<b>Survey Unit Code:</b> 5		<b>Survey Unit Name:</b> West Central					
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
19	Bandera	99	Coryell	267	Kimble	385	Real
27	Bell	105	Crockett	271	Kinney	399	Runnels
29	Bexar	133	Eastland	281	Lampasas	411	San Saba
31	Blanco	137	Edwards	299	Llano	413	Schleicher
35	Bosque	143	Erath	307	McCulloch	425	Somervell
49	Brown	171	Gillespie	309	McLennan	429	Stephens
53	Burnet	193	Hamilton	319	Mason	435	Sutton
59	Callahan	209	Hays	325	Medina	453	Travis
83	Coleman	221	Hood	327	Menard	463	Uvalde
91	Comal	259	Kendall	333	Mills	465	Val Verde
93	Comanche	265	Kerr	363	Palo Pinto	491	Williamson
95	Concho						

<b>Survey Unit Code:</b> 6		<b>Survey Unit Name:</b> Northwest					
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
3	Andrews	129	Donley	235	Irion	375	Potter
9	Archer	151	Fisher	253	Jones	381	Randall
11	Armstrong	153	Floyd	263	Kent	383	Reagan
17	Bailey	155	Foard	269	King	393	Roberts
23	Baylor	165	Gaines	275	Knox	415	Scurry
33	Borden	169	Garza	279	Lamb	417	Shackelford
45	Briscoe	173	Glasscock	295	Lipscomb	421	Sherman
65	Carson	179	Gray	303	Lubbock	431	Sterling
69	Castro	189	Hale	305	Lynn	433	Stonewall
75	Childress	191	Hall	317	Martin	437	Swisher
79	Cochran	195	Hansford	329	Midland	441	Taylor
81	Coke	197	Hardeman	335	Mitchell	445	Terry
87	Collingsworth	205	Hartley	341	Moore	447	Throckmorton
101	Cottle	207	Haskell	345	Motley	451	Tom Green
107	Crosby	211	Hemphill	353	Nolan	483	Wheeler
111	Dallam	219	Hockley	357	Ochiltree	485	Wichita
115	Dawson	227	Howard	359	Oldham	487	Wilbarger
117	Deaf Smith	233	Hutchinson	369	Parmer	501	Yoakum
125	Dickens						

<b>Survey Unit Code:</b> 7		<b>Survey Unit Name:</b> West					
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
43	Brewster	141	El Paso	371	Pecos	461	Upton
103	Crane	229	Hudspeth	377	Presidio	475	Ward
109	Culberson	243	Jeff Davis	389	Reeves	495	Winkler
135	Ector	301	Loving	443	Terrell		

## Utah

<b>State Name:</b> Utah							
<b>State Code:</b> 49	<b>State Abbreviation:</b> UT			<b>Region/Station Code:</b> 22			
<b>Survey Unit Code: 1</b>		<b>Survey Unit Name:</b> Northern					
Code	County	Code	County	Code	County	Code	County
3	Box Elder	29	Morgan	43	Summit	51	Wasatch
5	Cache	33	Rich	45	Tooele	57	Weber
11	Davis	35	Salt Lake	49	Utah		
<b>Survey Unit Code: 2</b>		<b>Survey Unit Name:</b> Uinta					
Code	County	Code	County	Code	County	Code	County
9	Daggett	13	Duchesne	47	Uintah		
<b>Survey Unit Code: 3</b>		<b>Survey Unit Name:</b> Central					
Code	County	Code	County	Code	County	Code	County
23	Juab	31	Piute	41	Sevier		
27	Millard	39	Sanpete	55	Wayne		
<b>Survey Unit Code: 4</b>		<b>Survey Unit Name:</b> Eastern					
Code	County	Code	County	Code	County	Code	County
7	Carbon	15	Emery	19	Grand	37	San Juan
<b>Survey Unit Code: 5</b>		<b>Survey Unit Name:</b> Southwestern					
Code	County	Code	County	Code	County	Code	County
1	Beaver	21	Iron	53	Washington		
17	Garfield	25	Kane				

## Vermont

<b>State Name:</b> Vermont							
<b>State Code:</b> 50	<b>State Abbreviation:</b> VT			<b>Region/Station Code:</b> 24			
<b>Survey Unit Code: 2</b>		<b>Survey Unit Name:</b> Northern					
Code	County	Code	County	Code	County	Code	County
5	Caledonia	11	Franklin	15	Lamoille	19	Orleans
9	Essex	13	Grand Isle	17	Orange	23	Washington
<b>Survey Unit Code: 3</b>		<b>Survey Unit Name:</b> Southern					
Code	County	Code	County	Code	County	Code	County
1	Addison	7	Chittenden	25	Windham		
3	Bennington	21	Rutland	27	Windsor		

## Virginia

<b>State Name:</b> Virginia		
<b>State Code:</b> 51	<b>State Abbreviation:</b> VA	<b>Region/Station Code:</b> 33

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: Coastal Plain</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Accomack	85	Hanover
25	Brunswick	87	Henrico
33	Caroline	93	Isle Of Wight
36	Charles City	95	James City
41	Chesterfield	97	King And Queen
53	Dinwiddie	99	King George
57	Essex	101	King William
73	Gloucester	103	Lancaster
81	Greensville	115	Mathews
119	Middlesex	193	Westmoreland
127	New Kent	199	York
131	Northampton	550	Chesapeake city
133	Northumberland	650	Hampton city
149	Prince George	700	Newport News city
159	Richmond	800	Suffolk city
175	Southampton	810	Virginia Beach city
181	Surry		
183	Sussex		

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: Southern Piedmont</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
7	Amelia	37	Charlotte
11	Appomattox	49	Cumberland
19	Bedford	67	Franklin
29	Buckingham	83	Halifax
31	Campbell	89	Henry
111	Lunenburg	145	Powhatan
117	Mecklenburg	147	Prince Edward
135	Nottoway		
141	Patrick		
143	Pittsylvania		

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name: Northern Piedmont</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
3	Albemarle	61	Fauquier
9	Amherst	65	Fluvanna
13	Arlington	75	Goochland
47	Culpeper	79	Greene
59	Fairfax	107	Loudoun
109	Louisa	157	Rappahannock
113	Madison	177	Spotsylvania
125	Nelson	179	Stafford
137	Orange		
153	Prince William		

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name: Northern Mountains</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
5	Alleghany	43	Clarke
15	Augusta	45	Craig
17	Bath	69	Frederick
23	Botetourt	91	Highland
139	Page	171	Shenandoah
161	Roanoke	187	Warren
163	Rockbridge		
165	Rockingham		

<b>Survey Unit Code: 5</b>		<b>Survey Unit Name: Southern Mountains</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
21	Bland	71	Giles
27	Buchanan	77	Grayson
35	Carroll	105	Lee
51	Dickenson	121	Montgomery
63	Floyd	155	Pulaski
167	Russell	195	Wise
169	Scott	197	Wythe
173	Smyth		
185	Tazewell		
191	Washington		

Virginia - continued on next page

<b>State Name:</b> Virginia		
<b>State Code:</b> 51	<b>State Abbreviation:</b> VA	<b>Region/Station Code:</b> 33

**Cities aggregated into other counties**

<b>City:</b>		<b>Associated county:</b>		<b>City:</b>		<b>Associated county:</b>	
<b>Code</b>	<b>Name</b>	<b>Code</b>	<b>Name</b>	<b>Code</b>	<b>Name</b>	<b>Code</b>	<b>Name</b>
510	Alexandria city	59	Fairfax	683	Manassas city	153	Prince William
515	Bedford city	19	Bedford	685	Manassas Park city	153	Prince William
520	Bristol city	191	Washington	690	Martinsville city	89	Henry
530	Buena Vista city	163	Rockbridge	710	Norfolk city	550	Chesapeake City
540	Charlottesville city	3	Albemarle	720	Norton city	195	Wise
560	Clifton Forge city	5	Allegheny	730	Petersburg city	53	Dinwiddie
570	Colonial Heights city	41	Chesterfield	730	Petersburg city	149	Prince George
580	Covington city	5	Allegheny	735	Poquoson city	199	York
590	Danville city	143	Pittsylvania	740	Portsmouth city	550	Chesapeake City
595	Emporia city	81	Greensville	750	Radford city	121	Montgomery
600	Fairfax city	59	Fairfax	760	Richmond city	41	Chesterfield
610	Falls Church city	59	Fairfax	760	Richmond city	87	Henrico
620	Franklin city	175	Southampton	770	Roanoke city	161	Roanoke
630	Fredericksburg city	177	Spotsylvania	775	Salem city	161	Roanoke
640	Galax city	35	Carroll	780	South Boston city	83	Halifax
640	Galax city	77	Grayson	790	Staunton city	15	Augusta
660	Harrisonburg city	165	Rockingham	820	Waynesboro city	15	Augusta
670	Hopewell city	149	Prince George	830	Williamsburg city	95	County of James City
678	Lexington city	163	Rockbridge	840	Winchester city	69	Frederick
680	Lynchburg city	31	Campbell				

## Washington

<b>State Name:</b> Washington		
<b>State Code:</b> 53	<b>State Abbreviation:</b> WA	<b>Region/Station Code:</b> 26

<b>Survey Unit Code:</b> 5		<b>Survey Unit Name:</b> Puget Sound	
Code	County	Code	County
29	Island	35	Kitsap
33	King	53	Pierce
55	San Juan	61	Snohomish
57	Skagit	73	Whatcom

<b>Survey Unit Code:</b> 6		<b>Survey Unit Name:</b> Olympic Peninsula	
Code	County	Code	County
9	Clallam	31	Jefferson
27	Grays Harbor	45	Mason
67	Thurston		

<b>Survey Unit Code:</b> 7		<b>Survey Unit Name:</b> Southwest	
Code	County	Code	County
11	Clark	41	Lewis
15	Cowlitz	49	Pacific
59	Skamania	69	Wahkiakum

<b>Survey Unit Code:</b> 8		<b>Survey Unit Name:</b> Central	
Code	County	Code	County
7	Chelan	37	Kittitas
17	Douglas	39	Klickitat
47	Okanogan	77	Yakima

<b>Survey Unit Code:</b> 9		<b>Survey Unit Name:</b> Inland Empire	
Code	County	Code	County
1	Adams	19	Ferry
3	Asotin	21	Franklin
5	Benton	23	Garfield
13	Columbia	25	Grant
43	Lincoln	71	Walla Walla
51	Pend Oreille	75	Whitman
63	Spokane		
65	Stevens		

## West Virginia

<b>State Name:</b> West Virginia		
<b>State Code:</b> 54	<b>State Abbreviation:</b> WV	<b>Region/Station Code:</b> 24

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: Northeastern</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Barbour	31	Hardy
3	Berkeley	33	Harrison
7	Braxton	37	Jefferson
23	Grant	41	Lewis
27	Hampshire	57	Mineral
			65 Morgan
			71 Pendleton
			75 Pocahontas
			77 Preston
			83 Randolph
			91 Taylor
			93 Tucker
			97 Upshur
			101 Webster

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name: Southern</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
5	Boone	39	Kanawha
15	Clay	45	Logan
19	Fayette	47	McDowell
25	Greenbrier	55	Mercer
			59 Mingo
			63 Monroe
			67 Nicholas
			81 Raleigh
			89 Summers
			109 Wyoming

<b>Survey Unit Code: 4</b>		<b>Survey Unit Name: Northwestern</b>	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
9	Brooke	35	Jackson
11	Cabell	43	Lincoln
13	Calhoun	49	Marion
17	Doddridge	51	Marshall
21	Gilmer	53	Mason
29	Hancock	61	Monongalia
			69 Ohio
			73 Pleasants
			79 Putnam
			85 Ritchie
			87 Roane
			95 Tyler
			99 Wayne
			103 Wetzel
			105 Wirt
			107 Wood

## Wisconsin

<b>State Name:</b> Wisconsin									
<b>State Code:</b> 55		<b>State Abbreviation:</b> WI			<b>Region/Station Code:</b> 23				
<b>Survey Unit Code: 1</b>		<b>Survey Unit Name:</b> Northeastern							
Code	County	Code	County	Code	County	Code	County	Code	County
37	Florence	69	Lincoln	83	Oconto	125	Vilas		
41	Forest	75	Marinette	85	Oneida				
67	Langlade	78	Menominee	115	Shawano				
<b>Survey Unit Code: 2</b>		<b>Survey Unit Name:</b> Northwestern							
Code	County	Code	County	Code	County	Code	County	Code	County
3	Ashland	13	Burnett	95	Polk	113	Sawyer		
5	Barron	31	Douglas	99	Price	119	Taylor		
7	Bayfield	51	Iron	107	Rusk	129	Washburn		
<b>Survey Unit Code: 3</b>		<b>Survey Unit Name:</b> Central							
Code	County	Code	County	Code	County	Code	County	Code	County
1	Adams	53	Jackson	81	Monroe	141	Wood		
17	Chippewa	57	Juneau	97	Portage				
19	Clark	73	Marathon	135	Waupaca				
35	Eau Claire	77	Marquette	137	Waushara				
<b>Survey Unit Code: 4</b>		<b>Survey Unit Name:</b> Southwestern							
Code	County	Code	County	Code	County	Code	County	Code	County
11	Buffalo	49	Iowa	93	Pierce	121	Trempealeau		
23	Crawford	63	La Crosse	103	Richland	123	Vernon		
33	Dunn	65	Lafayette	109	St. Croix				
43	Grant	91	Pepin	111	Sauk				
<b>Survey Unit Code: 5</b>		<b>Survey Unit Name:</b> Southeastern							
Code	County	Code	County	Code	County	Code	County	Code	County
9	Brown	39	Fond du Lac	71	Manitowoc	117	Sheboygan		
15	Calumet	45	Green	79	Milwaukee	127	Walworth		
21	Columbia	47	Green Lake	87	Outagamie	131	Washington		
25	Dane	55	Jefferson	89	Ozaukee	133	Waukesha		
27	Dodge	59	Kenosha	101	Racine	139	Winnebago		
29	Door	61	Kewaunee	105	Rock				

## Wyoming

<b>State Name:</b> Wyoming		
<b>State Code:</b> 56	<b>State Abbreviation:</b> WY	<b>Region/Station Code:</b> 22

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name:</b> Western	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
13	Fremont	23	Lincoln
17	Hot Springs	29	Park
35	Sublette	39	Teton
37	Sweetwater	41	Uinta

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name:</b> Central and Southeastern	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Albany	9	Converse
3	Big Horn	15	Goshen
7	Carbon	19	Johnson
21	Laramie	31	Platte
25	Natrona	33	Sheridan
27	Niobrara	43	Washakie

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name:</b> Northeastern	
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
5	Campbell	11	Crook
45	Weston		

## American Samoa

<b>State Name:</b> American Samoa							
<b>State Code:</b> 60		<b>State Abbreviation:</b> AS			<b>Region/Station Code:</b> 26		
<b>Survey Unit Code:</b> 1		<b>Survey Unit Name:</b> American Samoa					
Code	County	Code	County	Code	County	Code	County
10	Tutuila East	30	Rose	50	Tutuila West		
20	Manu'a	40	Swains				

## Federated States of Micronesia

<b>State Name:</b> Federated States of Micronesia							
<b>State Code:</b> 64		<b>State Abbreviation:</b> FM			<b>Region/Station Code:</b> 26		
<b>Survey Unit Code:</b> 1		<b>Survey Unit Name:</b> Federated States of Micronesia					
Code	County	Code	County	Code	County	Code	County
2	Chuuk	5	Kosrae	40	Pohnpei	60	Yap

## Guam

<b>State Name:</b> Guam							
<b>State Code:</b> 66		<b>State Abbreviation:</b> GU			<b>Region/Station Code:</b> 26		
<b>Survey Unit Code:</b> 1		<b>Survey Unit Name:</b> Guam					
Code	County	Code	County	Code	County	Code	County
10	Guam						

## Marshall Islands

<b>State Name:</b> Marshall Islands							
<b>State Code:</b> 68		<b>State Abbreviation:</b> MH			<b>Region/Station Code:</b> 26		
<b>Survey Unit Code:</b> 1		<b>Survey Unit Name:</b> Marshall Islands					
Code	County	Code	County	Code	County	Code	County
7	Ailinginae	90	Enewetak	170	Lib	350	Rongelap
10	Ailinglaplap	100	Erikub	180	Likiep	360	Rongrik
30	Ailuk	110	Jabat	190	Majuro	385	Toke
40	Arno	120	Jaluit	300	Maloelap	390	Ujae
50	Aur	130	Jemo	310	Mejit	400	Ujelang
60	Bikar	140	Kili	320	Mili	410	Utrik
70	Bikini	150	Kwajalein	330	Namorik	420	Wotho
73	Bokak	160	Lae	340	Namu	430	Wotje
80	Ebon						

## Northern Mariana Islands

<b>State Name:</b> Northern Mariana Islands		
<b>State Code:</b> 69	<b>State Abbreviation:</b> MP	<b>Region/Station Code:</b> 26

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: Northern Mariana Islands</b>	
Code	County	Code	County
85	Northern Islands	100	Rota
		110	Saipan
		120	Tinian

## Palau

<b>State Name:</b> Palau		
<b>State Code:</b> 70	<b>State Abbreviation:</b> PW	<b>Region/Station Code:</b> 26

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: Palau</b>	
Code	County	Code	County
2	Aimeliik	100	Kayangel
4	Airai	150	Koror
10	Angaur	212	Melekeok
50	Hatoboheit	214	Ngaraard
		218	Ngarchelong
		222	Ngardmau
		224	Ngatpang
		226	Ngchesar
		227	Ngernmlengui
		228	Ngiwal
		350	Peleliu
		370	Sonsorol

## Puerto Rico

<b>State Name:</b> Puerto Rico		
<b>State Code:</b> 72 <sup>a</sup>	<b>State Abbreviation:</b> PR	<b>Region/Station Code:</b> 33

<b>Survey Unit Code: 1</b>		<b>Survey Unit Name: Mainland Puerto Rico</b>			
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
1	Adjuntas	39	Ciales	77	Juncos
3	Aguada	41	Cidra	79	Lajas
5	Aguadilla	43	Coamo	81	Lares
7	Aguas Buenas	45	Comerío	83	Las Marías
9	Aibonito	47	Corozal	85	Las Piedras
11	Añasco	51	Dorado	87	Loiza
13	Arecibo	53	Fajardo	89	Luquillo
15	Arroyo	54	Florida	91	Manatí
17	Barceloneta	55	Guánica	93	Maricao
19	Barranquitas	57	Guayama	95	Maunabo
21	Bayamón	59	Guayanilla	97	Mayagüez <sup>b</sup>
23	Cabo Rojo	61	Guaynabo	99	Moca
25	Caguas	63	Gurabo	101	Morovis
27	Camuy	65	Hatillo	103	Naguabo
29	Canóvanas	67	Hormigueros	105	Naranjito
31	Carolina	69	Humacao	107	Orocovis
33	Cataño	71	Isabela Municipio	109	Patillas
35	Cayey	73	Jayuya	111	Peñuelas
37	Ceiba	75	Juana Díaz	113	Ponce

<b>Survey Unit Code: 2</b>		<b>Survey Unit Name: Vieques</b>			
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
147	Vieques				

<b>Survey Unit Code: 3</b>		<b>Survey Unit Name: Culebra</b>			
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
49	Culebra				

<sup>a</sup>FIA estimates of Puerto Rico do not include the small outlying islands such as Desecheo, Caja de Muertos, etc.

<sup>b</sup>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.

## U.S. Virgin Islands

<b>State Name:</b> U.S. Virgin Islands		
<b>State Code:</b> 78	<b>State Abbreviation:</b> VI	<b>Region/Station Code:</b> 33

<b>Survey Unit Code:</b> 1	<b>Survey Unit Name:</b> St. Croix Island						
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
10	St. Croix Island						

<b>Survey Unit Code:</b> 2	<b>Survey Unit Name:</b> St. John Island						
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
20	St. John Island						

<b>Survey Unit Code:</b> 3	<b>Survey Unit Name:</b> St. Thomas Island						
<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>	<b>Code</b>	<b>County</b>
30	St. Thomas Island						

# Appendix C: Administrative National Forest Codes and Names

## Appendix Contents:

Region
<a href="#">Region 1 (Northern)</a>
<a href="#">Region 2 (Rocky Mountain)</a>
<a href="#">Region 3 (Southwestern)</a>
<a href="#">Region 4 (Intermountain)</a>
<a href="#">Region 5 (Pacific Southwest)</a>
<a href="#">Region 6 (Pacific Northwest)</a>
<a href="#">Region 8 (Southern)</a>
<a href="#">Region 9 (Eastern)</a>
<a href="#">Region 10 (Alaska)</a>
<a href="#">For Any Region (Other Forest Service)</a>

## 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 NGL (National Grassland)
Region1	121	Little Missouri NGL
Region1	122	Sheyenne NGL
Region1	124	Grand River NGL
Region1	199	Other NFS Areas

## Region 2 (Rocky Mountain)

<b>Region</b>	<b>Code</b>	<b>National Forest / Grassland / Area</b>
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 NGL
Region2	218	Commanche NGL
Region2	219	Pawnee NGL
Region2	220	Oglala NGL
Region2	221	Buffalo Gap NGL
Region2	222	Fort Pierre NGL
Region2	223	Thunder Basin NGL
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)

<b>Region</b>	<b>Code</b>	<b>National Forest / Grassland / Area</b>
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)

<b>Region</b>	<b>Code</b>	<b>National Forest / Grassland / Area</b>
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)

<b>Region</b>	<b>Code</b>	<b>National Forest / Grassland / Area</b>
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)

<b>Region</b>	<b>Code</b>	<b>National Forest / Grassland / Area</b>
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)

<b>Region</b>	<b>Code</b>	<b>National Forest / Grassland / Area</b>
Region10	1004	Chugach
Region10	1005	Tongass
Region10	1099	Other NFS Areas

## For Any Region (Other Forest Service)

<b>Region</b>	<b>Code</b>	<b>National Forest / Grassland / Area</b>
-	9999	Other Forest Service



# 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
940	Tanoak / laurel group

<b>Code</b>	<b>Forest type group</b>
960	Other hardwoods group
970	Woodland hardwoods group
980	Tropical hardwoods group
988	Cloud forest
990	Exotic hardwoods group
999	Nonstocked

This following list includes all forest types in the Continental U.S. and Alaska Types designated East/West are commonly found in those regions, although types designated for one region may occasionally be found in another.

## Forest Types

<b>East</b>	<b>West</b>	<b>Code</b>	<b>Forest type / type group</b>
-	-	<b>100</b>	<b>White / red / jack pine group</b>
E	-	<b>101</b>	Jack pine
E	-	<b>102</b>	Red pine
E	-	<b>103</b>	Eastern white pine
E	-	<b>104</b>	Eastern white pine / eastern hemlock
E	-	<b>105</b>	Eastern hemlock
-	-	<b>120</b>	<b>Spruce / fir group</b>
E	-	<b>121</b>	Balsam fir
E	-	<b>122</b>	White spruce
E	-	<b>123</b>	Red spruce
E	-	<b>124</b>	Red spruce / balsam fir
E	W	<b>125</b>	Black spruce
E	-	<b>126</b>	Tamarack
E	-	<b>127</b>	Northern white-cedar
E	-	<b>128</b>	Fraser fir
E	-	<b>129</b>	Red spruce / Fraser fir
-	-	<b>140</b>	<b>Longleaf / slash pine group</b>
E	-	<b>141</b>	Longleaf pine
E	-	<b>142</b>	Slash pine
-	-	<b>150</b>	<b>Tropical softwoods group</b>
E	-	<b>151</b>	Tropical pines
-	-	<b>160</b>	<b>Loblolly / shortleaf pine group</b>
E	-	<b>161</b>	Loblolly pine
E	-	<b>162</b>	Shortleaf pine
E	-	<b>163</b>	Virginia pine
E	-	<b>164</b>	Sand pine
E	-	<b>165</b>	Table mountain pine
E	-	<b>166</b>	Pond pine
E	-	<b>167</b>	Pitch pine
E	-	<b>168</b>	Spruce pine
-	-	<b>170</b>	<b>Other eastern softwoods group</b>
E	-	<b>171</b>	Eastern redcedar

<b>East</b>	<b>West</b>	<b>Code</b>	<b>Forest type / type group</b>
E	-	172	Florida softwoods
-	-	<b>180</b>	<b>Pinyon / juniper group</b>
E	W	182	Rocky Mountain juniper
E	W	184	Juniper woodland
E	W	185	Pinyon / juniper woodland
-	-	<b>200</b>	<b>Douglas-fir group</b>
E	W	201	Douglas-fir
-	W	202	Port-Orford-cedar
-	W	203	Bigcone Douglas-fir
-	-	<b>220</b>	<b>Ponderosa pine group</b>
E	W	221	Ponderosa pine
-	W	222	Incense-cedar
-	W	224	Sugar pine
-	W	225	Jeffrey pine
-	W	226	Coulter pine
-	-	<b>240</b>	<b>Western white pine group</b>
-	W	241	Western white pine
-	-	<b>260</b>	<b>Fir / spruce / mountain hemlock group</b>
-	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
-	-	<b>280</b>	<b>Lodgepole pine group</b>
-	W	281	Lodgepole pine
-	-	<b>300</b>	<b>Hemlock / Sitka spruce group</b>
-	W	301	Western hemlock
-	W	304	Western redcedar
-	W	305	Sitka spruce
-	-	<b>320</b>	<b>Western larch group</b>
-	W	321	Western larch

<b>East</b>	<b>West</b>	<b>Code</b>	<b>Forest type / type group</b>
-	-	<b>340</b>	<b>Redwood group</b>
-	W	<b>341</b>	Redwood
-	W	<b>342</b>	Giant sequoia
-	-	<b>360</b>	<b>Other western softwoods group</b>
-	W	<b>361</b>	Knobcone pine
-	W	<b>362</b>	Southwestern white pine
-	W	<b>363</b>	Bishop pine
-	W	<b>364</b>	Monterey pine
-	W	<b>365</b>	Foxtail pine / bristlecone pine
-	W	<b>366</b>	Limber pine
-	W	<b>367</b>	Whitebark pine
-	W	<b>368</b>	Miscellaneous western softwoods
-	W	<b>369</b>	Western juniper
-	-	<b>370</b>	<b>California mixed conifer group</b>
-	W	<b>371</b>	California mixed conifer
-	-	<b>380</b>	<b>Exotic softwoods group</b>
E	-	<b>381</b>	Scotch pine
E	W	<b>383</b>	Other exotic softwoods
E	-	<b>384</b>	Norway spruce
E	-	<b>385</b>	Introduced larch
-	-	<b>390</b>	<b>Other softwoods group</b>
E	-	<b>391</b>	Other softwoods
-	-	<b>400</b>	<b>Oak / pine group</b>
E	-	<b>401</b>	Eastern white pine / northern red oak / white ash
E	-	<b>402</b>	Eastern redcedar / hardwood
E	-	<b>403</b>	Longleaf pine / oak
E	-	<b>404</b>	Shortleaf pine / oak
E	-	<b>405</b>	Virginia pine / southern red oak
E	-	<b>406</b>	Loblolly pine / hardwood
E	-	<b>407</b>	Slash pine / hardwood
E	-	<b>409</b>	Other pine / hardwood
-	-	<b>500</b>	<b>Oak / hickory group</b>
E	-	<b>501</b>	Post oak / blackjack oak
E	-	<b>502</b>	Chestnut oak
E	-	<b>503</b>	White oak / red oak / hickory
E	-	<b>504</b>	White oak
E	-	<b>505</b>	Northern red oak

<b>East</b>	<b>West</b>	<b>Code</b>	<b>Forest type / type group</b>
E	-	<b>506</b>	Yellow-poplar / white oak / northern red oak
E	-	<b>507</b>	Sassafras / persimmon
E	-	<b>508</b>	Sweetgum / yellow-poplar
E	-	<b>509</b>	Bur oak
E	-	<b>510</b>	Scarlet oak
E	-	<b>511</b>	Yellow-poplar
E	-	<b>512</b>	Black walnut
E	-	<b>513</b>	Black locust
E	-	<b>514</b>	Southern scrub oak
E	-	<b>515</b>	Chestnut oak / black oak / scarlet oak
E	-	<b>516</b>	Cherry / white ash / yellow-poplar
E	-	<b>517</b>	Elm / ash / black locust
E	-	<b>519</b>	Red maple / oak
E	-	<b>520</b>	Mixed upland hardwoods
-	-	<b>600</b>	<b>Oak / gum / cypress group</b>
E	-	<b>601</b>	Swamp chestnut oak / cherrybark oak
E	-	<b>602</b>	Sweetgum / Nuttall oak / willow oak
E	-	<b>605</b>	Overcup oak / water hickory
E	-	<b>606</b>	Atlantic white-cedar
E	-	<b>607</b>	Baldcypress / water tupelo
E	-	<b>608</b>	Sweetbay / swamp tupelo / red maple
E	-	<b>609</b>	Baldcypress / pondcypress
-	-	<b>700</b>	<b>Elm / ash / cottonwood group</b>
E	-	<b>701</b>	Black ash / American elm / red maple
E	-	<b>702</b>	River birch / sycamore
E	W	<b>703</b>	Cottonwood
E	W	<b>704</b>	Willow
E	-	<b>705</b>	Sycamore / pecan / American elm
E	-	<b>706</b>	Sugarberry / hackberry / elm / green ash
E	-	<b>707</b>	Silver maple / American elm
E	-	<b>708</b>	Red maple / lowland
E	W	<b>709</b>	Cottonwood / willow
-	W	<b>722</b>	Oregon ash
-	-	<b>800</b>	<b>Maple / beech / birch group</b>
E	-	<b>801</b>	Sugar maple / beech / yellow birch
E	-	<b>802</b>	Black cherry
E	-	<b>805</b>	Hard maple / basswood

<b>East</b>	<b>West</b>	<b>Code</b>	<b>Forest type / type group</b>
E	-	809	Red maple / upland
-	-	<b>900</b>	<b>Aspen / birch group</b>
E	W	901	Aspen
E	W	902	Paper birch
E	-	903	Gray birch
E	W	904	Balsam poplar
E	W	905	Pin cherry
-	-	<b>910</b>	<b>Alder / maple group</b>
-	W	911	Red alder
-	W	912	Bigleaf maple
-	-	<b>920</b>	<b>Western oak group</b>
-	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)
-	-	<b>940</b>	<b>Tanoak / laurel group</b>
-	W	941	Tanoak
-	W	942	California laurel
-	W	943	Giant chinkapin
-	-	<b>960</b>	<b>Other hardwoods group</b>
-	W	961	Pacific madrone
-	W	962	Other hardwoods
-	-	<b>970</b>	<b>Woodland hardwoods group</b>
-	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
-	-	<b>980</b>	<b>Tropical hardwoods group</b>
E	-	982	Mangrove
E	W	983	Palms
-	W	984	Dry forest

<b>East</b>	<b>West</b>	<b>Code</b>	<b>Forest type / type group</b>
-	W	<b>985</b>	Moist forest
-	W	<b>986</b>	Wet and rain forest
-	W	<b>987</b>	Lower montane wet and rain forest
-	W	<b>989</b>	Other tropical hardwoods
-	-	<b>990</b>	<b>Exotic hardwoods group</b>
E	-	<b>991</b>	Paulownia
E	-	<b>992</b>	Melaleuca
E	W	<b>993</b>	Eucalyptus
E	W	<b>995</b>	Other exotic hardwoods
-	-	<b>988</b>	<b>Cloud forest</b>
-	-	<b>999</b>	<b>Nonstocked</b>

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 (beginning with forest type code (401).

### **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, 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. SRS 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. SRS distribution coastal plain and piedmont units from North Carolina to Florida.

**TROPICAL SOFTWOODS GROUP****151**

**Tropical pines:** Tropical pine forests and plantations comprised of Caribbean pine (*Pinus caribaea*). 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. caribaea* 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. SRS 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 acres, 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. SRS distribution 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, 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, 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, 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 are found in California, although its range extends into SW Oregon and western Nevada.

## 226

**Coulter pine:** Associates - blue oak, California black oak, interior live oak, interior live oak, coast live oak, California white oak, California scrub oak, buckeye, 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.

**LOGEPOLE 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 comes in 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 SOFWOODS 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, 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 - a complex association of ponderosa pine, sugar pine, Douglas-fir, white fir, red fir, and incense-cedar. Generally, five or six conifer species are intermixed either as single trees or in small groups. Sites - Mixed conifer sites are often on east-facing slopes of the California Coast Range and on the west-facing and higher elevation east-facing slopes of the Oregon Cascades and Sierra Nevadas.

**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. SRS 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, 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. SRS 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, 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, 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 sophora, 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, cucumber tree, 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. SRS 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, cucumber tree, 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, green ash predominate. Found in North Central region, unknown in Northeast. 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 flood plains 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, 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 flood plains 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 - North includes gray birch, pitch pine, hemlock, blackgum, and red maple. South 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 flood plains 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, hackberry, and boxelder. Sites - low ridges and flats in flood plains.

**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, 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 hop hornbeam. 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 hop hornbeam, American elm, red maple, eastern white pine, 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, 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, red alder. Sites - Flat interior valleys, gently sloping stream bottoms, and moderate to steep slopes; favors moist, well-drained soils of river terraces and flood plains, 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, 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, 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, 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., and 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, coarse-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. SRS 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), *Hymanaea 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 comprised 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 comprised 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.



# 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

Region	Code	Species group name
Eastern	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
Western	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	23	Woodland softwoods
Western	24	Other western softwoods

## Hardwood species groups

Region	Code	Species group name
Eastern	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
Western	44	Cottonwood and aspen
Western	45	Red alder
Western	46	Oak
Western	47	Other western hardwoods
Western	48	Woodland hardwoods

## Tropical and subtropical species groups

Region	Code	Species group name
Tropical / Subtropical	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

## Urban species groups

Region	Code	Species group name
All	55	Urban - specific hardwoods
All	56	Urban - specific softwoods

# Appendix F: Tree Species Codes, Names, and Occurrences

Major groups (MAJGRP) are (1) pines, (2) other softwoods, (3) soft hardwoods, and (4) hard hardwoods. The 48 species groups (SPGRPCD) can be found in appendix E. The FIA work units listed are NC - (former) North Central, NE - (former) Northeastern, PNW - Pacific Northwest, RM - Rocky Mountain, and SO - Southern. A dash means the cell is intentionally left blank.

Note: The REF\_SPECIES download file contains urban species (noted by SPGRPCD = 55 or 56) that are not documented in this appendix. See the [Urban FIADB guide](#) for documentation (available at web address: <https://www.fia.fs.fed.us/library/database-documentation/index.php>).

## Tree Species:

-	-	-	SPGRPCD		-	Occurrence by FIA work unit				
SPCD	COMMON_NAME	Scientific Name	East	West	MAJGRP	NC	NE	PNW	RM	SO
10	fir spp.	<i>Abies</i> spp.	6	12	2	X	X	-	-	X
11	Pacific silver fir	<i>Abies amabilis</i>	9	12	2	-	-	X	-	-
12	balsam fir	<i>Abies balsamea</i>	6	12	2	X	X	-	-	X
14	Santa Lucia or bristlecone fir	<i>Abies bracteata</i>	9	12	2	-	-	X	-	-
15	white fir	<i>Abies concolor</i>	9	12	2	X	-	X	X	X
16	Fraser fir	<i>Abies fraseri</i>	9	12	2	X	X	-	-	X
17	grand fir	<i>Abies grandis</i>	9	12	2	-	-	X	X	-
18	corkbark fir	<i>Abies lasiocarpa</i> var. <i>arizonica</i>	9	12	2	-	-	-	X	X
19	subalpine fir	<i>Abies lasiocarpa</i>	9	12	2	-	-	X	X	X
20	California red fir	<i>Abies magnifica</i>	9	12	2	-	-	X	X	-
21	Shasta red fir	<i>Abies shastensis</i>	9	12	2	-	-	X	X	-
22	noble fir	<i>Abies procera</i>	9	12	2	-	-	X	X	-
40	white-cedar spp.	<i>Chamaecyparis</i> spp.	9	24	2	-	X	X	-	-
41	Port-Orford-cedar	<i>Chamaecyparis lawsoniana</i>	9	24	2	-	-	X	-	-
42	Alaska yellow-cedar	<i>Chamaecyparis nootkatensis</i>	9	24	2	-	-	X	-	-
43	Atlantic white-cedar	<i>Chamaecyparis thyoides</i>	9	24	2	-	X	-	-	X
50	cypress	<i>Cupressus</i> spp.	9	24	2	-	-	X	-	X
51	Arizona cypress	<i>Cupressus arizonica</i>	9	24	2	-	-	X	X	X
52	Baker or Modoc cypress	<i>Cupressus bakeri</i>	9	24	2	-	-	X	-	-
53	Tecate cypress	<i>Cupressus forbesii</i>	9	24	2	-	-	X	-	-
54	Monterey cypress	<i>Cupressus macrocarpa</i>	9	24	2	-	-	X	-	-
55	Sargent's cypress	<i>Cupressus sargentii</i>	9	24	2	-	-	X	-	-
56	MacNab's cypress	<i>Cupressus macnabiana</i>	9	24	2	-	-	X	-	-
57	redcedar/juniper spp.	<i>Juniperus</i> spp.	9	23	2	X	X	-	-	X
58	Pinchot juniper	<i>Juniperus pinchotii</i>	23	23	2	-	-	-	X	X

-	-	-	SPGRPCD		-	Occurrence by FIA work unit				
SPCD	COMMON_NAME	Scientific Name	East	West	MAJGRP	NC	NE	PNW	RM	SO
59	redberry juniper	<i>Juniperus coahuilensis</i>	23	23	2	-	-	-	X	X
60	drooping juniper	<i>Juniperus flaccida</i>	23	23	2	-	-	-	-	X
61	Ashe juniper	<i>Juniperus ashei</i>	23	23	2	X	-	-	-	X
62	California juniper	<i>Juniperus californica</i>	23	23	2	-	-	X	X	-
63	alligator juniper	<i>Juniperus deppeana</i>	23	23	2	-	-	-	X	X
64	western juniper	<i>Juniperus occidentalis</i>	9	24	2	-	-	X	X	-
65	Utah juniper	<i>Juniperus osteosperma</i>	23	23	2	-	-	X	X	X
66	Rocky Mountain juniper	<i>Juniperus scopulorum</i>	23	23	2	X	-	X	X	X
67	southern redcedar	<i>Juniperus virginiana</i> var. <i>silicicola</i>	9	24	2	-	-	-	-	X
68	eastern redcedar	<i>Juniperus virginiana</i>	9	24	2	X	X	-	X	X
69	oneseed juniper	<i>Juniperus monosperma</i>	23	23	2	-	-	-	X	X
70	larch spp.	<i>Larix</i> spp.	9	24	2	X	X	-	-	-
71	tamarack (native)	<i>Larix laricina</i>	9	24	2	X	X	X	-	-
72	subalpine larch	<i>Larix lyallii</i>	9	24	2	-	-	X	X	-
73	western larch	<i>Larix occidentalis</i>	9	19	2	-	-	X	X	-
81	incense-cedar	<i>Calocedrus decurrens</i>	9	20	2	-	-	X	X	-
90	spruce spp.	<i>Picea</i> spp.	6	18	2	X	X	-	-	X
91	Norway spruce	<i>Picea abies</i>	9	18	2	X	X	-	-	X
92	Brewer spruce	<i>Picea breweriana</i>	9	18	2	-	-	X	-	-
93	Engelmann spruce	<i>Picea engelmannii</i>	9	18	2	X	-	X	X	X
94	white spruce	<i>Picea glauca</i>	6	18	2	X	X	X	X	X
95	black spruce	<i>Picea mariana</i>	6	18	2	X	X	X	-	X
96	blue spruce	<i>Picea pungens</i>	9	18	2	X	X	-	X	X
97	red spruce	<i>Picea rubens</i>	6	18	2	-	X	-	-	X
98	Sitka spruce	<i>Picea sitchensis</i>	9	17	2	-	-	X	-	-
100	pine spp.	<i>Pinus</i> spp.	9	24	1	X	X	X	-	X
101	whitebark pine	<i>Pinus albicaulis</i>	9	24	1	-	-	X	X	-
102	Rocky Mountain bristlecone pine	<i>Pinus aristata</i>	9	24	1	-	-	X	X	X
103	knobcone pine	<i>Pinus attenuata</i>	9	24	1	-	-	X	X	-
104	foxtail pine	<i>Pinus balfouriana</i>	9	24	1	-	-	X	X	-
105	jack pine	<i>Pinus banksiana</i>	5	24	1	X	X	-	-	-
106	common or two-needle pinyon	<i>Pinus edulis</i>	23	23	1	-	-	X	X	X
107	sand pine	<i>Pinus clausa</i>	3	24	1	-	-	-	-	X
108	lodgepole pine	<i>Pinus contorta</i>	9	21	1	X	-	X	X	-
109	Coulter pine	<i>Pinus coulteri</i>	9	24	1	-	-	X	-	-
110	shortleaf pine	<i>Pinus echinata</i>	2	24	1	X	X	-	-	X
111	slash pine	<i>Pinus elliottii</i>	1	24	1	-	-	-	-	X
112	Apache pine	<i>Pinus engelmannii</i>	9	24	1	-	-	-	X	-

-	-	-	SPGRPCD			-	Occurrence by FIA work unit				
SPCD	COMMON_NAME	Scientific Name	East	West	MAJGRP	NC	NE	PNW	RM	SO	
113	limber pine	<i>Pinus flexilis</i>	9	24	1	X	-	X	X	X	
114	southwestern white pine	<i>Pinus strobiformis</i>	9	24	1	-	-	-	X	X	
115	spruce pine	<i>Pinus glabra</i>	3	24	1	-	-	-	-	X	
116	Jeffrey pine	<i>Pinus jeffreyi</i>	9	11	1	-	-	X	X	-	
117	sugar pine	<i>Pinus lambertiana</i>	9	14	1	-	-	X	X	-	
118	Chihuahuan pine	<i>Pinus leiophylla</i>	9	24	1	-	-	-	X	X	
119	western white pine	<i>Pinus monticola</i>	9	15	1	-	-	X	X	-	
120	bishop pine	<i>Pinus muricata</i>	9	24	1	-	-	X	-	-	
121	longleaf pine	<i>Pinus palustris</i>	1	24	1	-	-	-	-	X	
122	ponderosa pine	<i>Pinus ponderosa</i>	9	11	1	X	-	X	X	X	
123	Table Mountain pine	<i>Pinus pungens</i>	3	24	1	-	X	-	-	X	
124	Monterey pine	<i>Pinus radiata</i>	9	24	1	-	-	X	-	-	
125	red pine	<i>Pinus resinosa</i>	4	24	1	X	X	-	-	X	
126	pitch pine	<i>Pinus rigida</i>	3	24	1	-	X	-	-	X	
127	gray or California foothill pine	<i>Pinus sabiniana</i>	9	24	1	-	-	X	-	-	
128	pond pine	<i>Pinus serotina</i>	3	24	1	-	X	-	-	X	
129	eastern white pine	<i>Pinus strobus</i>	4	24	1	X	X	-	-	X	
130	Scotch pine	<i>Pinus sylvestris</i>	3	24	1	X	X	X	X	X	
131	loblolly pine	<i>Pinus taeda</i>	2	24	1	X	X	-	-	X	
132	Virginia pine	<i>Pinus virginiana</i>	3	24	1	X	X	-	-	X	
133	singleleaf pinyon	<i>Pinus monophylla</i>	23	23	1	-	-	X	X	X	
134	border pinyon	<i>Pinus discolor</i>	23	23	1	-	-	-	X	X	
135	Arizona pine	<i>Pinus arizonica</i>	9	11	1	-	-	-	X	X	
136	Austrian pine	<i>Pinus nigra</i>	9	24	1	X	X	-	X	X	
137	Washoe pine	<i>Pinus washoensis</i>	9	24	1	-	-	X	X	-	
138	four-leaf or Parry pinyon pine	<i>Pinus quadrifolia</i>	23	23	1	-	-	X	-	-	
139	Torrey pine	<i>Pinus torreyana</i>	9	24	1	-	-	X	-	-	
140	Mexican pinyon pine	<i>Pinus cembroides</i>	23	23	1	-	-	-	X	X	
141	papershell pinyon pine	<i>Pinus remota</i>	23	23	1	-	-	-	-	X	
142	Great Basin bristlecone pine	<i>Pinus longaeva</i>	9	24	1	-	-	X	X	-	
143	Arizona pinyon pine	<i>Pinus monophylla</i> var. <i>fallax</i>	23	23	1	-	-	-	X	X	
144	Honduras pine	<i>Pinus elliottii</i> var. <i>elliottii</i>	9	24	1	-	-	-	-	X	
200	Douglas-fir spp.	<i>Pseudotsuga</i> spp.	9	10	2	X	-	X	-	-	
201	bigcone Douglas-fir	<i>Pseudotsuga macrocarpa</i>	9	10	2	-	-	X	-	-	
202	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	10	2	X	X	X	X	X	
211	redwood	<i>Sequoia sempervirens</i>	9	16	2	-	-	X	-	-	
212	giant sequoia	<i>Sequoiadendron giganteum</i>	9	24	2	-	-	X	-	-	
220	baldcypress spp.	<i>Taxodium</i> spp.	9	24	2	X	X	-	-	X	
221	baldcypress	<i>Taxodium distichum</i>	8	24	2	X	X	-	-	X	
222	pondcypress	<i>Taxodium ascendens</i>	8	24	2	-	X	-	-	X	

-	-	-	SPGRPCD		-	Occurrence by FIA work unit				
SPCD	COMMON_NAME	Scientific Name	East	West	MAJGRP	NC	NE	PNW	RM	SO
223	Montezuma baldcypress	<i>Taxodium mucronatum</i>	8	24	2	-	-	-	-	X
230	yew spp.	<i>Taxus</i> spp.	9	24	2	X	-	X	-	-
231	Pacific yew	<i>Taxus brevifolia</i>	9	24	2	-	-	X	X	-
232	Florida yew	<i>Taxus floridana</i>	9	24	2	-	-	-	-	X
240	thuja spp.	<i>Thuja</i> spp.	9	24	2	X	-	X	-	X
241	northern white-cedar	<i>Thuja occidentalis</i>	9	24	2	X	X	-	-	X
242	western redcedar	<i>Thuja plicata</i>	9	22	2	-	-	X	X	-
250	torreya (nutmeg) spp.	<i>Torreya</i> spp.	9	24	2	-	-	X	-	-
251	California torreya (nutmeg)	<i>Torreya californica</i>	9	24	2	-	-	X	-	-
252	Florida torreya (nutmeg)	<i>Torreya taxifolia</i>	9	24	2	-	-	-	-	X
260	hemlock spp.	<i>Tsuga</i> spp.	7	24	2	X	X	-	-	X
261	eastern hemlock	<i>Tsuga canadensis</i>	7	24	2	X	X	-	-	X
262	Carolina hemlock	<i>Tsuga caroliniana</i>	7	24	2	-	-	-	-	X
263	western hemlock	<i>Tsuga heterophylla</i>	9	13	2	-	-	X	X	-
264	mountain hemlock	<i>Tsuga mertensiana</i>	9	24	2	-	-	X	X	-
299	Unknown dead conifer	<i>Tree evergreen</i>	9	24	2	X	X	X	-	X
300	acacia spp.	<i>Acacia</i> spp.	48	48	3	-	-	X	-	X
303	sweet acacia	<i>Acacia farnesiana</i>	48	48	3	-	-	X	-	X
304	catclaw acacia	<i>Acacia greggii</i>	48	48	3	-	-	X	-	X
310	maple spp.	<i>Acer</i> spp.	31	47	4	X	X	-	-	X
311	Florida maple	<i>Acer barbatum</i>	31	47	4	-	-	-	-	X
312	bigleaf maple	<i>Acer macrophyllum</i>	43	47	3	-	-	X	-	X
313	boxelder	<i>Acer negundo</i>	41	47	3	X	X	X	X	X
314	black maple	<i>Acer nigrum</i>	31	47	4	X	X	-	-	X
315	striped maple	<i>Acer pensylvanicum</i>	43	47	3	X	X	-	-	X
316	red maple	<i>Acer rubrum</i>	32	47	3	X	X	-	-	X
317	silver maple	<i>Acer saccharinum</i>	32	47	3	X	X	-	-	X
318	sugar maple	<i>Acer saccharum</i>	31	47	4	X	X	-	-	X
319	mountain maple	<i>Acer spicatum</i>	43	47	4	X	X	-	-	X
320	Norway maple	<i>Acer platanoides</i>	31	47	4	X	X	X	-	X
321	Rocky Mountain maple	<i>Acer glabrum</i>	48	48	4	X	-	X	-	X
322	bigtooth maple	<i>Acer grandidentatum</i>	48	48	4	-	-	X	X	X
323	chalk maple	<i>Acer leucoderme</i>	31	47	4	-	-	-	-	X
330	buckeye, horsechestnut spp.	<i>Aesculus</i> spp.	41	47	3	X	X	X	-	X
331	Ohio buckeye	<i>Aesculus glabra</i>	41	47	3	X	X	-	-	X
332	yellow buckeye	<i>Aesculus flava</i>	43	47	3	X	X	-	-	X
333	California buckeye	<i>Aesculus californica</i>	41	47	3	-	-	X	-	-
334	Texas buckeye	<i>Aesculus glabra</i> var. <i>arguta</i>	41	47	3	X	-	-	-	X
336	red buckeye	<i>Aesculus pavia</i>	43	47	3	X	X	-	-	X
337	painted buckeye	<i>Aesculus sylvatica</i>	41	47	3	-	-	-	-	X

-	-	-	SPGRPCD			-	Occurrence by FIA work unit				
SPCD	COMMON_NAME	Scientific Name	East	West	MAJGRP	NC	NE	PNW	RM	SO	
341	ailanthus	<i>Ailanthus altissima</i>	43	47	4	X	X	X	-	X	
345	mimosa, silktree	<i>Albizia julibrissin</i>	43	47	3	X	X	-	-	X	
350	alder spp.	<i>Alnus</i> spp.	41	47	3	X	-	X	-	X	
351	red alder	<i>Alnus rubra</i>	43	45	3	-	-	X	X	X	
352	white alder	<i>Alnus rhombifolia</i>	43	47	3	-	-	X	X	-	
353	Arizona alder	<i>Alnus oblongifolia</i>	43	47	3	-	-	X	X	X	
355	European alder	<i>Alnus glutinosa</i>	43	47	3	X	X	-	-	X	
356	serviceberry spp.	<i>Amelanchier</i> spp.	43	47	4	X	X	-	-	X	
357	common serviceberry	<i>Amelanchier arborea</i>	43	47	4	X	X	-	-	X	
358	roundleaf serviceberry	<i>Amelanchier sanguinea</i>	43	47	4	X	X	-	-	-	
360	madrone spp.	<i>Arbutus</i> spp.	43	47	4	-	-	X	-	X	
361	Pacific madrone	<i>Arbutus menziesii</i>	43	47	4	-	-	X	X	-	
362	Arizona madrone	<i>Arbutus arizonica</i>	43	47	4	-	-	X	X	X	
363	Texas madrone	<i>Arbutus xalapensis</i>	48	48	4	-	-	-	-	X	
367	pawpaw	<i>Asimina triloba</i>	43	47	3	X	X	-	-	X	
370	birch spp.	<i>Betula</i> spp.	41	47	4	X	X	-	-	X	
371	yellow birch	<i>Betula alleghaniensis</i>	30	47	4	X	X	-	-	X	
372	sweet birch	<i>Betula lenta</i>	42	47	4	X	X	-	-	X	
373	river birch	<i>Betula nigra</i>	41	47	3	X	X	-	-	X	
374	water birch	<i>Betula occidentalis</i>	41	47	3	X	-	X	X	X	
375	paper birch	<i>Betula papyrifera</i>	41	47	3	X	X	X	X	X	
376	resin birch	<i>Betula neoalaskana</i>	41	47	3	-	-	X	-	-	
377	Virginia roundleaf birch	<i>Betula uber</i>	41	47	3	-	-	-	-	X	
378	northwestern paper birch	<i>Betula x utahensis</i>	43	47	3	-	-	X	-	-	
379	gray birch	<i>Betula populifolia</i>	41	47	3	X	X	-	-	X	
381	chittamwood, gum bumelia	<i>Sideroxylon lanuginosum</i> ssp. <i>lanuginosum</i>	43	47	4	X	-	-	-	X	
391	American hornbeam, musclewood	<i>Carpinus caroliniana</i>	43	47	4	X	X	-	-	X	
400	hickory spp.	<i>Carya</i> spp.	29	47	4	X	X	-	-	X	
401	water hickory	<i>Carya aquatica</i>	29	47	4	X	-	-	-	X	
402	bitternut hickory	<i>Carya cordiformis</i>	29	47	4	X	X	-	-	X	
403	pignut hickory	<i>Carya glabra</i>	29	47	4	X	X	-	-	X	
404	pecan	<i>Carya illinoiensis</i>	29	47	4	X	X	-	X	X	
405	shellbark hickory	<i>Carya laciniosa</i>	29	47	4	X	X	-	-	X	
406	nutmeg hickory	<i>Carya myristiciformis</i>	29	47	4	-	-	-	-	X	
407	shagbark hickory	<i>Carya ovata</i>	29	47	4	X	X	-	-	X	
408	black hickory	<i>Carya texana</i>	29	47	4	X	-	-	-	X	
409	mockernut hickory	<i>Carya alba</i>	29	47	4	X	X	-	-	X	
410	sand hickory	<i>Carya pallida</i>	29	47	4	X	X	-	-	X	

-	-	-	SPGRPCD		-	Occurrence by FIA work unit				
SPCD	COMMON_NAME	Scientific Name	East	West	MAJGRP	NC	NE	PNW	RM	SO
411	scrub hickory	<i>Carya floridana</i>	29	47	4	-	-	-	-	X
412	red hickory	<i>Carya ovalis</i>	29	47	4	X	X	-	-	X
413	southern shagbark hickory	<i>Carya caroliniana-septentrionalis</i>	29	47	4	-	-	-	-	X
420	chestnut spp.	<i>Castanea</i> spp.	43	47	3	X	X	-	-	X
421	American chestnut	<i>Castanea dentata</i>	43	47	3	X	X	-	-	X
422	Allegheny chinkapin	<i>Castanea pumila</i>	43	47	3	X	X	-	-	X
423	Ozark chinkapin	<i>Castanea pumila</i> var. <i>ozarkensis</i>	43	47	3	X	-	-	-	X
424	Chinese chestnut	<i>Castanea mollissima</i>	43	47	3	X	X	-	-	X
431	giant chinkapin, golden chinkapin	<i>Chrysolepis chrysophylla</i> var. <i>chrysophylla</i>	43	47	3	-	-	X	-	-
450	catalpa spp.	<i>Catalpa</i> spp.	42	47	4	X	X	-	-	X
451	southern catalpa	<i>Catalpa bignonioides</i>	43	47	4	X	X	-	-	X
452	northern catalpa	<i>Catalpa speciosa</i>	41	47	3	X	X	-	-	X
460	hackberry spp.	<i>Celtis</i> spp.	41	47	3	X	X	X	-	X
461	sugarberry	<i>Celtis laevigata</i>	41	47	3	X	X	-	X	X
462	hackberry	<i>Celtis occidentalis</i>	41	47	3	X	X	-	X	X
463	netleaf hackberry	<i>Celtis laevigata</i> var. <i>reticulata</i>	41	47	3	X	-	-	-	X
471	eastern redbud	<i>Cercis canadensis</i>	43	47	3	X	X	-	-	X
475	curlleaf mountain-mahogany	<i>Cercocarpus ledifolius</i>	48	48	4	-	-	X	X	X
481	yellowwood	<i>Cladrastis kentukea</i>	43	47	4	X	X	-	-	X
490	dogwood spp.	<i>Cornus</i> spp.	43	47	4	X	X	X	-	-
491	flowering dogwood	<i>Cornus florida</i>	42	47	4	X	X	-	-	X
492	Pacific dogwood	<i>Cornus nuttallii</i>	43	47	4	-	-	X	X	X
500	hawthorn spp.	<i>Crataegus</i> spp.	43	47	4	X	X	X	-	X
501	cockspur hawthorn	<i>Crataegus crus-galli</i>	43	47	4	X	X	-	-	X
502	downy hawthorn	<i>Crataegus mollis</i>	43	47	4	X	X	-	-	X
503	Brainerd's hawthorn	<i>Crataegus brainerdii</i>	43	47	4	X	X	-	-	X
504	pear hawthorn	<i>Crataegus calpodendron</i>	43	47	4	X	X	-	-	X
505	fireberry hawthorn	<i>Crataegus chrysocarpa</i>	43	47	4	X	X	-	-	X
506	broadleaf hawthorn	<i>Crataegus dilatata</i>	43	47	4	X	X	-	-	X
507	fanleaf hawthorn	<i>Crataegus flabellata</i>	43	47	4	X	X	-	-	X
508	oneseed hawthorn	<i>Crataegus monogyna</i>	43	47	4	X	X	-	-	X
509	scarlet hawthorn	<i>Crataegus pedicellata</i>	43	47	4	X	X	-	-	X
5091	Washington hawthorn	<i>Crataegus phaeopyrum</i>	43	47	4	X	X	-	-	X
5092	fleshy hawthorn	<i>Crataegus succulenta</i>	43	47	4	X	X	-	-	X
5093	dwarf hawthorn	<i>Crataegus uniflora</i>	43	47	4	X	X	-	-	X
510	eucalyptus spp.	<i>Eucalyptus</i> spp.	42	47	4	-	-	X	-	X
511	Tasmanian bluegum	<i>Eucalyptus globulus</i>	43	47	4	-	-	X	-	X
512	river redgum	<i>Eucalyptus camaldulensis</i>	43	47	4	-	-	X	-	-
513	grand eucalyptus	<i>Eucalyptus grandis</i>	43	47	4	-	-	X	-	X

-	-	-	SPGRPCD			-	Occurrence by FIA work unit				
SPCD	COMMON_NAME	Scientific Name	East	West	MAJGRP	NC	NE	PNW	RM	SO	
514	swampmahogany	<i>Eucalyptus robusta</i>	43	47	4	-	-	X	-	X	
520	persimmon spp.	<i>Diospyros</i> spp.	43	47	4	X	X	X	-	X	
521	common persimmon	<i>Diospyros virginiana</i>	42	47	4	X	X	-	-	X	
522	Texas persimmon	<i>Diospyros texana</i>	43	47	4	-	-	-	-	X	
523	Anacua knockaway	<i>Ehretia anacua</i>	48	48	3	-	-	-	-	X	
531	American beech	<i>Fagus grandifolia</i>	33	47	4	X	X	-	-	X	
540	ash spp.	<i>Fraxinus</i> spp.	36	47	3	X	X	X	-	X	
541	white ash	<i>Fraxinus americana</i>	36	47	4	X	X	X	-	X	
542	Oregon ash	<i>Fraxinus latifolia</i>	43	47	4	-	-	X	-	-	
543	black ash	<i>Fraxinus nigra</i>	36	47	3	X	X	-	-	X	
544	green ash	<i>Fraxinus pennsylvanica</i>	36	47	4	X	X	-	X	X	
545	pumpkin ash	<i>Fraxinus profunda</i>	36	47	3	X	X	-	-	X	
546	blue ash	<i>Fraxinus quadrangulata</i>	36	47	4	X	X	-	-	X	
547	velvet ash	<i>Fraxinus velutina</i>	43	47	4	-	-	X	X	X	
548	Carolina ash	<i>Fraxinus caroliniana</i>	36	47	4	-	-	-	-	X	
549	Texas ash	<i>Fraxinus texensis</i>	36	47	3	-	-	-	-	X	
5491	Berlandier ash	<i>Fraxinus berlandieriana</i>	36	47	3	-	-	-	-	X	
550	honeylocust spp.	<i>Gleditsia</i> spp.	42	47	4	X	X	X	-	X	
551	waterlocust	<i>Gleditsia aquatica</i>	42	47	4	X	-	-	-	X	
552	honeylocust	<i>Gleditsia triacanthos</i>	42	47	4	X	X	-	X	X	
555	loblolly-bay	<i>Gordonia lasianthus</i>	41	47	3	-	-	-	-	X	
561	ginkgo, maidenhair tree	<i>Ginkgo biloba</i>	43	47	3	X	X	X	-	X	
571	Kentucky coffeetree	<i>Gymnocladus dioicus</i>	42	47	4	X	X	-	-	X	
580	silverbell spp.	<i>Halesia</i> spp.	43	47	3	X	X	-	-	X	
581	Carolina silverbell	<i>Halesia carolina</i>	41	47	3	-	-	-	-	X	
582	two-wing silverbell	<i>Halesia diptera</i>	41	47	3	-	-	-	-	X	
583	little silverbell	<i>Halesia parviflora</i>	41	47	3	-	-	-	-	X	
591	American holly	<i>Ilex opaca</i>	42	47	4	X	X	X	-	X	
600	walnut spp.	<i>Juglans</i> spp.	41	47	4	X	X	X	-	X	
601	butternut	<i>Juglans cinerea</i>	41	47	3	X	X	-	-	X	
602	black walnut	<i>Juglans nigra</i>	40	47	4	X	X	X	X	X	
603	northern California black walnut	<i>Juglans hindsii</i>	43	47	4	-	-	X	-	-	
604	southern California black walnut	<i>Juglans californica</i>	43	47	4	-	-	X	-	-	
605	Texas walnut	<i>Juglans microcarpa</i>	41	47	4	X	-	-	-	X	
606	Arizona walnut	<i>Juglans major</i>	43	47	4	-	-	X	X	X	
611	sweetgum	<i>Liquidambar styraciflua</i>	34	47	3	X	X	X	-	X	
621	yellow-poplar	<i>Liriodendron tulipifera</i>	39	47	3	X	X	-	-	X	
631	tanoak	<i>Lithocarpus densiflorus</i>	43	47	4	-	-	X	-	-	

-	-	-	SPGRPCD		-	Occurrence by FIA work unit				
SPCD	COMMON_NAME	Scientific Name	East	West	MAJGRP	NC	NE	PNW	RM	SO
641	Osage-orange	<i>Maclura pomifera</i>	43	47	4	X	X	-	-	X
650	magnolia spp.	<i>Magnolia</i> spp.	41	47	3	X	X	-	-	X
651	cuckertree	<i>Magnolia acuminata</i>	41	47	3	X	X	-	-	X
652	southern magnolia	<i>Magnolia grandiflora</i>	41	47	3	-	X	-	-	X
653	sweetbay	<i>Magnolia virginiana</i>	43	47	3	-	X	-	-	X
654	bigleaf magnolia	<i>Magnolia macrophylla</i>	43	47	4	-	X	-	-	X
655	mountain or Fraser magnolia	<i>Magnolia fraseri</i>	41	47	3	-	X	-	-	X
657	pyramid magnolia	<i>Magnolia pyramidata</i>	41	47	3	-	-	-	-	X
658	umbrella magnolia	<i>Magnolia tripetala</i>	41	47	3	X	X	-	-	X
660	apple spp.	<i>Malus</i> spp.	43	47	4	X	X	X	-	X
661	Oregon crab apple	<i>Malus fusca</i>	43	47	4	-	-	X	-	-
662	southern crab apple	<i>Malus angustifolia</i>	43	47	4	X	X	-	-	X
663	sweet crab apple	<i>Malus coronaria</i>	43	47	4	X	X	-	-	X
664	prairie crab apple	<i>Malus ioensis</i>	43	47	4	X	-	-	-	X
680	mulberry spp.	<i>Morus</i> spp.	42	47	4	X	X	-	-	X
681	white mulberry	<i>Morus alba</i>	42	47	4	X	X	X	-	X
682	red mulberry	<i>Morus rubra</i>	42	47	4	X	X	-	-	X
683	Texas mulberry	<i>Morus microphylla</i>	42	47	4	-	-	-	-	X
684	black mulberry	<i>Morus nigra</i>	43	47	4	-	X	-	-	X
690	tupelo spp.	<i>Nyssa</i> spp.	35	47	3	X	X	-	-	X
691	water tupelo	<i>Nyssa aquatica</i>	35	47	3	X	-	-	-	X
692	Ogeechee tupelo	<i>Nyssa ogeche</i>	43	47	4	-	-	-	-	X
693	blackgum	<i>Nyssa sylvatica</i>	35	47	3	X	X	-	-	X
694	swamp tupelo	<i>Nyssa biflora</i>	35	47	3	X	X	-	-	X
701	eastern hophornbeam	<i>Ostrya virginiana</i>	43	47	4	X	X	-	-	X
711	sourwood	<i>Oxydendrum arboreum</i>	43	47	4	X	X	-	-	X
712	paulownia, empress-tree	<i>Paulownia tomentosa</i>	41	47	3	X	X	X	-	X
720	bay spp.	<i>Persea</i> spp.	43	47	3	-	X	X	-	X
721	redbay	<i>Persea borbonia</i>	41	47	3	-	-	-	-	X
7211	avocado	<i>Persea americana</i>	43	47	3	-	-	X	-	X
722	water-elm, planertree	<i>Planera aquatica</i>	43	47	3	X	-	-	-	X
729	sycamore spp.	<i>Platanus</i> spp.	41	47	3	X	X	X	-	X
730	California sycamore	<i>Platanus racemosa</i>	43	47	3	-	-	X	-	-
731	American sycamore	<i>Platanus occidentalis</i>	41	47	3	X	X	X	-	X
732	Arizona sycamore	<i>Platanus wrightii</i>	41	47	3	-	-	X	X	X
740	cottonwood and poplar spp.	<i>Populus</i> spp.	37	44	3	X	X	-	-	X
741	balsam poplar	<i>Populus balsamifera</i>	37	44	3	X	X	X	X	X
742	eastern cottonwood	<i>Populus deltoides</i>	37	44	3	X	X	-	X	X
743	bigtooth aspen	<i>Populus grandidentata</i>	37	44	3	X	X	-	-	X
744	swamp cottonwood	<i>Populus heterophylla</i>	37	44	3	X	X	-	-	X

-	-	-	SPGRPCD			-	Occurrence by FIA work unit				
SPCD	COMMON_NAME	Scientific Name	East	West	MAJGRP	NC	NE	PNW	RM	SO	
745	plains cottonwood	<i>Populus deltoides</i> ssp. <i>monilifera</i>	37	44	3	X	-	-	X	X	
746	quaking aspen	<i>Populus tremuloides</i>	37	44	3	X	X	X	X	X	
747	black cottonwood	<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>	37	44	4	X	-	X	X	-	
748	Fremont cottonwood	<i>Populus fremontii</i>	37	44	4	-	-	X	X	X	
749	narrowleaf cottonwood	<i>Populus angustifolia</i>	37	44	3	X	-	-	X	X	
752	silver poplar	<i>Populus alba</i>	37	44	3	X	X	-	-	X	
753	Lombardy poplar	<i>Populus nigra</i>	37	44	3	X	X	X	-	X	
755	mesquite spp.	<i>Prosopis</i> spp.	48	48	4	-	-	X	-	X	
756	honey mesquite	<i>Prosopis glandulosa</i>	48	48	4	-	-	X	X	X	
757	velvet mesquite	<i>Prosopis velutina</i>	48	48	4	-	-	X	X	X	
758	screwbean mesquite	<i>Prosopis pubescens</i>	48	48	4	-	-	X	X	X	
760	cherry and plum spp.	<i>Prunus</i> spp.	43	47	4	X	X	X	-	X	
761	pin cherry	<i>Prunus pensylvanica</i>	43	47	3	X	X	-	-	X	
762	black cherry	<i>Prunus serotina</i>	41	47	3	X	X	-	-	X	
763	chokecherry	<i>Prunus virginiana</i>	43	47	4	X	X	X	-	X	
764	peach	<i>Prunus persica</i>	43	47	3	X	X	X	-	X	
765	Canada plum	<i>Prunus nigra</i>	43	47	4	X	X	-	-	X	
766	American plum	<i>Prunus americana</i>	43	47	4	X	X	-	-	X	
768	bitter cherry	<i>Prunus emarginata</i>	43	47	4	-	-	X	-	-	
769	Allegheny plum	<i>Prunus alleghaniensis</i>	43	47	3	X	X	-	-	X	
770	Chickasaw plum	<i>Prunus angustifolia</i>	43	47	3	X	X	-	-	X	
771	sweet cherry, domesticated	<i>Prunus avium</i>	43	47	3	X	X	X	-	X	
772	sour cherry, domesticated	<i>Prunus cerasus</i>	43	47	3	X	X	X	-	-	
773	European plum, domesticated	<i>Prunus domestica</i>	43	47	3	X	X	X	-	-	
774	Mahaleb cherry, domesticated	<i>Prunus mahaleb</i>	43	47	3	X	X	X	-	-	
800	oak spp.	<i>Quercus</i> spp.	42	48	4	X	X	X	-	X	
801	California live oak	<i>Quercus agrifolia</i>	43	46	4	-	-	X	-	-	
802	white oak	<i>Quercus alba</i>	25	47	4	X	X	-	-	X	
803	Arizona white oak	<i>Quercus arizonica</i>	48	48	4	-	-	-	X	X	
804	swamp white oak	<i>Quercus bicolor</i>	25	47	4	X	X	-	-	X	
805	canyon live oak	<i>Quercus chrysolepis</i>	43	46	4	-	-	X	-	-	
806	scarlet oak	<i>Quercus coccinea</i>	28	47	4	X	X	-	-	X	
807	blue oak	<i>Quercus douglasii</i>	43	46	4	-	-	X	-	-	
808	Durand oak	<i>Quercus sinuata</i> var. <i>sinuata</i>	25	47	4	-	-	-	-	X	
809	northern pin oak	<i>Quercus ellipsoidalis</i>	28	47	4	X	X	-	-	X	
810	Emory oak	<i>Quercus emoryi</i>	48	48	4	-	-	-	X	X	
811	Engelmann oak	<i>Quercus engelmannii</i>	43	46	4	-	-	X	-	-	
812	southern red oak	<i>Quercus falcata</i>	28	47	4	X	X	-	-	X	
813	cherrybark oak	<i>Quercus pagoda</i>	26	47	4	X	X	-	-	X	

-	-	-	SPGRPCD		-	Occurrence by FIA work unit				
SPCD	COMMON_NAME	Scientific Name	East	West	MAJGRP	NC	NE	PNW	RM	SO
814	Gambel oak	<i>Quercus gambelii</i>	48	48	4	-	-	-	X	X
815	Oregon white oak	<i>Quercus garryana</i>	43	46	4	-	-	X	-	-
816	scrub oak	<i>Quercus ilicifolia</i>	43	47	4	-	X	-	-	X
817	shingle oak	<i>Quercus imbricaria</i>	28	47	4	X	X	-	-	X
818	California black oak	<i>Quercus kelloggii</i>	43	46	4	-	-	X	-	-
819	turkey oak	<i>Quercus laevis</i>	43	47	4	-	-	-	-	X
820	laurel oak	<i>Quercus laurifolia</i>	28	47	4	-	X	-	-	X
821	California white oak	<i>Quercus lobata</i>	43	46	4	-	-	X	-	-
822	overcup oak	<i>Quercus lyrata</i>	27	47	4	X	X	-	-	X
823	bur oak	<i>Quercus macrocarpa</i>	25	47	4	X	X	-	X	X
824	blackjack oak	<i>Quercus marilandica</i>	28	47	4	X	X	-	-	X
825	swamp chestnut oak	<i>Quercus michauxii</i>	25	47	4	X	X	-	-	X
826	chinkapin oak	<i>Quercus muehlenbergii</i>	25	47	4	X	X	X	X	X
827	water oak	<i>Quercus nigra</i>	28	47	4	X	X	-	-	X
828	Texas red oak	<i>Quercus texana</i>	28	47	4	X	-	-	-	X
829	Mexican blue oak	<i>Quercus oblongifolia</i>	48	48	4	-	-	-	X	X
830	pin oak	<i>Quercus palustris</i>	28	47	4	X	X	-	-	X
831	willow oak	<i>Quercus phellos</i>	28	47	4	X	X	-	-	X
832	chestnut oak	<i>Quercus prinus</i>	27	47	4	X	X	-	-	X
833	northern red oak	<i>Quercus rubra</i>	26	47	4	X	X	-	-	X
834	Shumard oak	<i>Quercus shumardii</i>	26	47	4	X	X	-	-	X
835	post oak	<i>Quercus stellata</i>	27	47	4	X	X	-	-	X
836	Delta post oak	<i>Quercus similis</i>	27	47	4	-	-	-	-	X
837	black oak	<i>Quercus velutina</i>	28	47	4	X	X	-	-	X
838	live oak	<i>Quercus virginiana</i>	27	47	4	-	-	-	-	X
839	interior live oak	<i>Quercus wislizeni</i>	43	46	4	-	-	X	-	-
840	dwarf post oak	<i>Quercus margarettiae</i>	27	47	4	X	-	-	-	X
841	dwarf live oak	<i>Quercus minima</i>	27	47	4	-	-	-	-	X
842	bluejack oak	<i>Quercus incana</i>	43	47	4	-	-	-	-	X
843	silverleaf oak	<i>Quercus hypoleucoides</i>	48	48	4	-	-	-	X	X
844	Oglethorpe oak	<i>Quercus oglethorpensis</i>	27	47	4	-	-	-	-	X
845	dwarf chinkapin oak	<i>Quercus prinoides</i>	43	47	4	X	X	-	-	X
846	gray oak	<i>Quercus grisea</i>	48	48	4	-	-	-	X	X
847	netleaf oak	<i>Quercus rugosa</i>	48	48	4	-	-	-	X	X
851	Chisos oak	<i>Quercus graciliformis</i>	26	47	4	-	-	-	-	X
8511	Graves oak	<i>Quercus gravesii</i>	26	47	4	-	-	-	-	X
8512	Mexican white oak	<i>Quercus polymorpha</i>	26	47	4	-	-	-	-	X
8513	Buckley oak	<i>Quercus buckleyi</i>	26	47	4	-	-	-	-	X
8514	Lacey oak	<i>Quercus laceyi</i>	26	47	4	-	-	-	-	X
852	sea torchwood	<i>Amyris elemifera</i>	43	47	3	-	-	-	-	X

-	-	-	SPGRPCD			-	Occurrence by FIA work unit				
SPCD	COMMON_NAME	Scientific Name	East	West	MAJGRP	NC	NE	PNW	RM	SO	
853	pond-apple	<i>Annona glabra</i>	43	47	3	-	-	-	-	-	X
854	gumbo limbo	<i>Bursera simaruba</i>	43	47	3	-	-	-	-	-	X
855	sheoak spp.	<i>Casuarina</i> spp.	43	47	3	-	-	X	-	-	X
856	gray sheoak	<i>Casuarina glauca</i>	43	47	3	-	-	X	-	-	X
857	belah	<i>Casuarina lepidophloia</i>	43	47	3	-	-	-	-	-	X
858	camphortree	<i>Cinnamomum camphora</i>	43	47	3	-	-	X	-	-	X
859	Florida fiddlewood	<i>Citharexylum fruticosum</i>	43	47	3	-	-	-	-	-	X
860	citrus spp.	<i>Citrus</i> spp.	43	47	3	-	-	X	-	-	X
863	tietongue, pigeon-plum	<i>Coccoloba diversifolia</i>	43	47	3	-	-	-	-	-	X
864	soldierwood	<i>Colubrina elliptica</i>	43	47	3	-	-	-	-	-	X
865	largeleaf geigertree	<i>Cordia sebestena</i>	43	47	3	-	-	X	-	-	X
8651	Texas olive	<i>Cordia boissieri</i>	27	47	4	-	-	-	-	-	X
866	carrotwood	<i>Cupaniopsis anacardoides</i>	43	47	3	-	-	-	-	-	X
867	bluewood	<i>Condalia hookeri</i>	48	48	4	-	-	-	-	-	X
868	blackbead ebony	<i>Ebenopsis ebano</i>	42	47	4	-	-	-	-	-	X
869	great leucaene	<i>Leucaena pulverulenta</i>	43	47	3	-	-	-	-	-	X
870	Texas sophra	<i>Sophora affinis</i>	42	47	4	-	-	-	-	-	X
873	red stopper	<i>Eugenia rhombea</i>	43	47	3	-	-	-	-	-	X
874	butterbough, inkwood	<i>Exothea paniculata</i>	43	47	3	-	-	-	-	-	X
876	Florida strangler fig	<i>Ficus aurea</i>	43	47	3	-	-	-	-	-	X
877	wild banyantree, shortleaf fig	<i>Ficus citrifolia</i>	43	47	3	-	-	-	-	-	X
882	beeftree, longleaf blolly	<i>Guapira discolor</i>	43	47	3	-	-	-	-	-	X
883	manchineel	<i>Hippomane mancinella</i>	43	47	3	-	-	-	-	-	X
884	false tamarind	<i>Lysiloma latisiliquum</i>	43	47	3	-	-	-	-	-	X
885	mango	<i>Mangifera indica</i>	43	47	3	-	-	X	-	-	X
886	Florida poisontree	<i>Metopium toxiferum</i>	43	47	3	-	-	-	-	-	X
887	fishpoison tree	<i>Piscidia piscipula</i>	43	47	3	-	-	X	-	-	X
888	octopus tree, schefflera	<i>Schefflera actinophylla</i>	43	47	3	-	-	X	-	-	X
890	false mastic	<i>Sideroxylon foetidissimum</i>	43	47	3	-	-	-	-	-	X
891	white bully, willow bustic	<i>Sideroxylon salicifolium</i>	43	47	3	-	-	-	-	-	X
895	paradisetree	<i>Simarouba glauca</i>	43	47	3	-	-	-	-	-	X
896	Java plum	<i>Syzygium cumini</i>	43	47	3	-	-	X	-	-	X
897	tamarind	<i>Tamarindus indica</i>	43	47	3	-	-	X	-	-	X
901	black locust	<i>Robinia pseudoacacia</i>	42	47	4	X	X	X	X	X	
902	New Mexico locust	<i>Robinia neomexicana</i>	48	48	4	-	-	-	-	-	X
906	Everglades palm, paurotis-palm	<i>Acoelorraphe wrightii</i>	43	47	3	-	-	-	-	-	X
907	Florida silver palm	<i>Coccothrinax argentata</i>	43	47	3	-	-	-	-	-	X
908	coconut palm	<i>Cocos nucifera</i>	43	47	3	-	-	X	-	-	X
909	royal palm spp.	<i>Roystonea</i> spp.	43	47	3	-	-	-	-	-	X

-	-	-	SPGRPCD		-	Occurrence by FIA work unit				
SPCD	COMMON_NAME	Scientific Name	East	West	MAJGRP	NC	NE	PNW	RM	SO
911	Mexican palmetto	<i>Sabal mexicana</i>	41	47	3	-	-	-	-	X
912	cabbage palmetto	<i>Sabal palmetto</i>	43	47	3	-	-	-	-	X
913	key thatch palm	<i>Thrinax morrisii</i>	43	47	3	-	-	-	-	X
914	Florida thatch palm	<i>Thrinax radiata</i>	43	47	3	-	-	-	-	X
915	other palms	<i>Family Arecaceae not listed above</i>	43	47	3	-	-	-	-	X
919	western soapberry	<i>Sapindus saponaria var. drummondii</i>	43	47	4	X	-	-	-	X
920	willow spp.	<i>Salix</i> spp.	43	47	3	X	X	X	-	X
921	peachleaf willow	<i>Salix amygdaloides</i>	43	47	3	X	X	-	-	X
922	black willow	<i>Salix nigra</i>	41	47	3	X	X	X	-	X
923	Bebb willow	<i>Salix bebbiana</i>	43	47	3	X	X	-	-	X
924	Bonpland willow	<i>Salix bonplandiana</i>	41	47	3	-	-	-	-	X
925	coastal plain willow	<i>Salix caroliniana</i>	43	47	3	X	X	-	-	X
926	balsam willow	<i>Salix pyrifolia</i>	43	47	3	X	X	X	-	-
927	white willow	<i>Salix alba</i>	41	47	3	X	X	-	-	X
928	Scouler's willow	<i>Salix scouleriana</i>	41	47	3	X	-	X	-	-
929	weeping willow	<i>Salix sepulcralis</i>	41	47	3	X	X	-	-	X
931	sassafras	<i>Sassafras albidum</i>	41	47	3	X	X	-	-	X
934	mountain-ash spp.	<i>Sorbus</i> spp.	43	47	4	X	X	-	-	X
935	American mountain-ash	<i>Sorbus americana</i>	43	47	4	X	X	-	-	X
936	European mountain-ash	<i>Sorbus aucuparia</i>	43	47	4	-	X	-	-	X
937	northern mountain-ash	<i>Sorbus decora</i>	43	47	4	X	X	-	-	-
940	West Indian mahogany	<i>Swietenia mahagoni</i>	43	47	4	-	-	X	-	X
950	basswood spp.	<i>Tilia</i> spp.	38	47	3	X	X	-	-	X
951	American basswood	<i>Tilia americana</i>	38	47	3	X	X	-	-	X
952	white basswood	<i>Tilia americana var. heterophylla</i>	38	47	3	X	X	-	-	X
953	Carolina basswood	<i>Tilia americana var. caroliniana</i>	38	47	3	X	-	-	-	X
970	elm spp.	<i>Ulmus</i> spp.	41	47	3	X	X	-	-	X
971	winged elm	<i>Ulmus alata</i>	41	47	4	X	X	-	-	X
972	American elm	<i>Ulmus americana</i>	41	47	3	X	X	-	X	X
973	cedar elm	<i>Ulmus crassifolia</i>	41	47	3	X	-	-	-	X
974	Siberian elm	<i>Ulmus pumila</i>	41	47	3	X	X	X	X	X
975	slippery elm	<i>Ulmus rubra</i>	41	47	3	X	X	-	-	X
976	September elm	<i>Ulmus serotina</i>	41	47	3	X	-	-	-	X
977	rock elm	<i>Ulmus thomasii</i>	42	47	4	X	X	-	-	X
981	California-laurel	<i>Umbellularia californica</i>	43	47	4	-	-	X	-	-
982	Joshua tree	<i>Yucca brevifolia</i>	43	47	3	-	-	X	-	-
986	black-mangrove	<i>Avicennia germinans</i>	43	47	4	-	-	-	-	X
987	buttonwood-mangrove	<i>Conocarpus erectus</i>	43	47	4	-	-	X	-	X
988	white-mangrove	<i>Laguncularia racemosa</i>	43	47	4	-	-	-	-	X

-	-	-	SPGRPCD			-	Occurrence by FIA work unit				
SPCD	COMMON_NAME	Scientific Name	East	West	MAJGRP	NC	NE	PNW	RM	SO	
989	American mangrove	<i>Rhizophora mangle</i>	43	47	4	-	-	X	-	X	
990	desert ironwood	<i>Olneya tesota</i>	48	48	4	-	-	X	-	-	
991	saltcedar	<i>Tamarix</i> spp.	43	47	3	X	-	X	-	X	
992	melaleuca	<i>Melaleuca quinquenervia</i>	41	47	3	-	-	X	-	X	
993	chinaberry	<i>Melia azedarach</i>	43	47	4	X	-	X	-	X	
994	Chinese tallowtree	<i>Triadica sebifera</i>	43	47	4	-	-	X	-	X	
995	tungoil tree	<i>Vernicia fordii</i>	43	47	4	-	-	-	-	X	
996	smoketree	<i>Cotinus obovatus</i>	43	47	4	X	-	-	-	X	
997	Russian-olive	<i>Elaeagnus angustifolia</i>	43	47	3	X	X	X	-	X	
998	Unknown dead hardwood	Tree broadleaf	43	47	3	X	X	X	-	X	
999	Other or unknown live tree	Tree unknown	43	47	3	X	X	X	-	X	
8420	pear	<i>Pyrus</i> spp	55	55	3	X	X	X	-	X	



# Appendix G: Caribbean Tree Species Codes and Names

Major groups (MAJGRP) are (1) pines, (2) other softwoods, (3) soft hardwoods, and (4) hard hardwoods. The species groups (SPGRPCD) can be found in [appendix E](#).

## Caribbean Tree Species:

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
0050	cypress	<i>Cupressus</i> spp.	52	2
0100	pine spp.	<i>Pinus</i> spp.	51	1
0223	Montezuma baldcypress	<i>Taxodium mucronatum</i>	52	2
0240	thuja spp.	<i>Thuja</i> spp.	52	2
0299	Unknown dead conifer	Tree evergreen	52	2
0300	acacia spp.	<i>Acacia</i> spp.	54	3
0303	sweet acacia	<i>Acacia farnesiana</i>	54	3
0450	catalpa spp.	<i>Catalpa</i> spp.	54	4
0460	hackberry spp.	<i>Celtis</i> spp.	54	3
0510	eucalyptus spp.	<i>Eucalyptus</i> spp.	54	4
0511	Tasmanian bluegum	<i>Eucalyptus globulus</i>	54	4
0513	grand eucalyptus	<i>Eucalyptus grandis</i>	54	4
0514	swampmahogany	<i>Eucalyptus robusta</i>	54	4
0520	persimmon spp.	<i>Diospyros</i> spp.	54	4
0540	ash spp.	<i>Fraxinus</i> spp.	54	3
0600	walnut spp.	<i>Juglans</i> spp.	54	4
0650	magnolia spp.	<i>Magnolia</i> spp.	54	3
0680	mulberry spp.	<i>Morus</i> spp.	54	4
0681	white mulberry	<i>Morus alba</i>	54	4
0684	black mulberry	<i>Morus nigra</i>	54	4
0720	bay spp.	<i>Persea</i> spp.	54	3
7211	avocado	<i>Persea americana</i>	54	3
0755	mesquite spp.	<i>Prosopis</i> spp.	54	4
0760	cherry and plum spp.	<i>Prunus</i> spp.	54	4
0852	sea torchwood	<i>Amyris elemifera</i>	54	3
0853	pond-apple	<i>Annona glabra</i>	54	3
0854	gumbo limbo	<i>Bursera simaruba</i>	54	3
0855	sheoak spp.	<i>Casuarina</i> spp.	54	3
0856	gray sheoak	<i>Casuarina glauca</i>	54	3
0857	belah	<i>Casuarina lepidophloia</i>	54	3
0858	camphortree	<i>Cinnamomum camphora</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
0859	Florida fiddlewood	<i>Citharexylum fruticosum</i>	54	3
0860	citrus spp.	<i>Citrus</i> spp.	54	3
0863	tietongue, pigeon-plum	<i>Coccoloba diversifolia</i>	54	3
0864	soldierwood	<i>Colubrina elliptica</i>	54	3
0865	largeleaf geigertree	<i>Cordia sebestena</i>	54	3
0873	red stopper	<i>Eugenia rhombea</i>	54	3
0874	butterbough, inkwood	<i>Exothea paniculata</i>	54	3
0877	wild banyantree, shortleaf fig	<i>Ficus citrifolia</i>	54	3
0882	beeftree, longleaf blolly	<i>Guapira discolor</i>	54	3
0883	manchineel	<i>Hippomane mancinella</i>	54	3
0884	false tamarind	<i>Lysiloma latisiliquum</i>	54	3
0885	mango	<i>Mangifera indica</i>	54	3
0886	Florida poisontree	<i>Metopium toxiferum</i>	54	3
0888	octopus tree, schefflera	<i>Schefflera actinophylla</i>	54	3
0890	false mastic	<i>Sideroxylon foetidissimum</i>	54	3
0891	white bully, willow bustic	<i>Sideroxylon salicifolium</i>	54	3
0897	tamarind	<i>Tamarindus indica</i>	54	3
0908	coconut palm	<i>Cocos nucifera</i>	53	3
0909	royal palm spp.	<i>Roystonea</i> spp.	53	3
0913	key thatch palm	<i>Thrinax morrisii</i>	53	3
0914	Florida thatch palm	<i>Thrinax radiata</i>	54	3
0920	willow spp.	<i>Salix</i> spp.	54	3
0940	West Indian mahogany	<i>Swietenia mahagoni</i>	54	4
0986	black-mangrove	<i>Avicennia germinans</i>	54	4
0987	buttonwood-mangrove	<i>Conocarpus erectus</i>	54	4
0988	white-mangrove	<i>Laguncularia racemosa</i>	54	4
0989	American mangrove	<i>Rhizophora mangle</i>	54	4
0991	saltcedar	<i>Tamarix</i> spp.	54	3
0992	melaleuca	<i>Melaleuca quinquenervia</i>	54	3
0993	chinaberry	<i>Melia azedarach</i>	54	4
0995	tungoil tree	<i>Vernicia fordii</i>	54	4
0998	Unknown dead hardwood	<i>Tree broadleaf</i>	54	3
0999	Other or unknown live tree	<i>Tree unknown</i>	54	3
6001	blackbrush wattle	<i>Acacia anegadensis</i>	54	3
6008	porknut	<i>Acacia macracantha</i>	54	3
6009	black wattle	<i>Acacia mangium</i>	54	3
6012	spineless wattle	<i>Acacia muricata</i>	54	3
6013	gum arabic tree	<i>Acacia nilotica</i>	54	3
6015	Acacia polyacantha	<i>Acacia polyacantha</i>	54	3
6018	poponax	<i>Acacia tortuosa</i>	54	3
6021	hollowheart	<i>Acnistus arborescens</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6023	grugru palm	<i>Acrocomia media</i>	53	3
6025	baobab	<i>Adansonia digitata</i>	54	3
6026	wild lime	<i>Adelia ricinella</i>	54	3
6028	red beadtree	<i>Adenanthera pavonina</i>	54	3
6032	Caribbean spiritweed	<i>Aegiphila martinicensis</i>	54	3
6036	kauri	<i>Agathis australis</i>	54	3
6037	Queensland kauri	<i>Agathis robusta</i>	54	3
6053	Aiphanes minima	<i>Aiphanes minima</i>	54	3
6055	cream albizia	<i>Albizia adinocephala</i>	54	3
6056	naked albizia	<i>Albizia carbonaria</i>	54	3
6059	woman's tongue	<i>Albizia lebbeck</i>	54	3
6060	tall albizia	<i>Albizia procera</i>	54	3
6064	achiotillo	<i>Alchornea latifolia</i>	54	3
6066	palo de gallina	<i>Alchorneopsis floribunda</i>	54	3
6075	Indian walnut	<i>Aleurites moluccana</i>	54	3
6080	palo blanco	<i>Allophylus crassinervis</i>	54	3
6082	palo de caja	<i>Allophylus racemosus</i>	54	3
6092	helecho gigante de la sierra	<i>Alsophila bryophila</i>	54	3
6093	Alsophila portoricensis	<i>Alsophila portoricensis</i>	54	3
6101	black calabash	<i>Amphitecna latifolia</i>	54	3
6103	balsam torchwood	<i>Amyris balsamifera</i>	54	3
6106	anacardium	<i>Anacardium spp.</i>	54	3
6107	cashew	<i>Anacardium occidentale</i>	54	3
6111	Anadenanthera peregrina	<i>Anadenanthera peregrina</i>	54	3
6114	cabbagebark tree	<i>Andira inermis</i>	54	3
6120	canelillo	<i>Aniba bracteata</i>	54	3
6124	Annona cherimola	<i>Annona cherimola</i>	54	3
6125	ilama	<i>Annona diversifolia</i>	54	3
6127	mountain soursop	<i>Annona montana</i>	54	3
6128	soursop	<i>Annona muricata</i>	54	3
6129	custard apple	<i>Annona reticulata</i>	54	3
6131	sugar apple	<i>Annona squamosa</i>	54	3
6137	Antidesma bunius	<i>Antidesma bunius</i>	54	3
6146	placa chiquitu	<i>Antirhea acutata</i>	54	3
6147	pegwood	<i>Antirhea coriacea</i>	54	3
6149	palo iloron	<i>Antirhea lucida</i>	54	3
6150	quina roja	<i>Antirhea obtusifolia</i>	54	3
6151	Puerto Rico quina	<i>Antirhea portoricensis</i>	54	3
6152	Sintenis' quina	<i>Antirhea sintenisii</i>	54	3
6154	parana pine	<i>Araucaria angustifolia</i>	54	3
6157	Norfolk Island pine	<i>Araucaria heterophylla</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6162	ausubon	<i>Ardisia glauciflora</i>	54	3
6163	mountain marlberry	<i>Ardisia luquillensis</i>	54	3
6164	Guadeloupe marlberry	<i>Ardisia obovata</i>	54	3
6165	China-shrub	<i>Ardisia solanacea</i>	54	3
6171	breadfruit	<i>Artocarpus altilis</i>	54	3
6173	Artocarpus heterophyllus	<i>Artocarpus heterophyllus</i>	54	3
6198	carambola	<i>Averrhoa carambola</i>	54	3
6206	neem	<i>Azadirachta indica</i>	54	3
6216	common bamboo	<i>Bambusa vulgaris</i>	54	3
6217	Puerto Rico palo de ramon	<i>Banara portoricensis</i>	54	3
6219	Vanderbilt's palo de ramon	<i>Banara vanderbiltii</i>	54	3
6220	sea putat	<i>Barringtonia asiatica</i>	54	3
6224	Bastardiopsis eggersii	<i>Bastardiopsis eggersii</i>	54	3
6226	Napoleon's plume	<i>Bauhinia monandra</i>	54	3
6227	petite flamboyant bauhinia	<i>Bauhinia multinervia</i>	54	3
6228	railroadfence	<i>Bauhinia pauletia</i>	54	3
6229	butterfly tree	<i>Bauhinia purpurea</i>	54	3
6231	St. Thomas tree	<i>Bauhinia tomentosa</i>	54	3
6232	mountain ebony	<i>Bauhinia variegata</i>	54	3
6233	slugwood	<i>Beilschmiedia pendula</i>	54	3
6235	Caribbean myrtlecroton	<i>Bernardia dichotoma</i>	54	3
6238	lipsticktree	<i>Bixa orellana</i>	54	3
6240	akee	<i>Blighia sapida</i>	54	3
6247	parrotweed	<i>Bocconia frutescens</i>	54	3
6251	white alling	<i>Bontia daphnoides</i>	54	3
6253	Bourreria radula	<i>Bourreria radula</i>	54	3
6255	bodywood	<i>Bourreria succulenta</i>	54	3
6257	roble de guayo	<i>Bourreria virgata</i>	54	3
6270	West Indian sumac	<i>Brunellia comocladiifolia</i>	54	3
6272	American brunfelsia	<i>Brunfelsia americana</i>	54	3
6273	Serpentine Hill raintree	<i>Brunfelsia densifolia</i>	54	3
6274	vega blanca	<i>Brunfelsia lactea</i>	54	3
6275	Puerto Rico raintree	<i>Brunfelsia portoricensis</i>	54	3
6283	fourleaf buchenavia	<i>Buchenavia tetraphylla</i>	54	3
6284	gregorywood	<i>Bucida buceras</i>	54	3
6294	cafe falso	<i>Bunchosia glandulifera</i>	54	3
6295	cafe forastero	<i>Bunchosia glandulosa</i>	54	3
6297	Bunchosia polystachia	<i>Bunchosia polystachia</i>	54	3
6303	Buxus laevigata	<i>Buxus laevigata</i>	54	3
6304	Puerto Rico box	<i>Buxus portoricensis</i>	54	3
6306	Vahl's box	<i>Buxus vahlii</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6308	maricao cimun	<i>Byrsinima crassifolia</i>	54	3
6311	Long Key locustberry	<i>Byrsinima lucida</i>	54	3
6313	doncella	<i>Byrsinima spicata</i>	54	3
6315	almendrillo	<i>Byrsinima wadsworthii</i>	54	3
6316	nicker	<i>Caesalpinia</i> spp.	54	3
6317	divi divi	<i>Caesalpinia coriaria</i>	54	3
6319	pride-of-Barbados	<i>Caesalpinia pulcherrima</i>	54	3
6320	sappanwood	<i>Caesalpinia sappan</i>	54	3
6325	Surinamese stickpea	<i>Calliandra surinamensis</i>	54	3
6326	caparosa	<i>Callicarpa ampla</i>	54	3
6328	crimson bottlebrush	<i>Callistemon citrinus</i>	54	3
6331	Callitris columellaris	<i>Callitris columellaris</i>	52	2
6337	Caloncba echinata	<i>Caloncba echinata</i>	54	3
6338	Antilles calophyllum	<i>Calophyllum antillanum</i>	54	3
6341	Alexandrian laurel	<i>Calophyllum inophyllum</i>	54	3
6346	roostertree	<i>Calotropis procera</i>	54	3
6350	degame	<i>Calycophyllum candidissimum</i>	54	3
6351	Kiaerskov's lidflower	<i>Calyptranthes kiaerskovii</i>	54	3
6352	limoncillo	<i>Calyptranthes krugii</i>	54	3
6353	Luquillo forest lidflower	<i>Calyptranthes luquillensis</i>	54	3
6354	pale lidflower	<i>Calyptranthes pallens</i>	54	3
6355	Puerto Rico lidflower	<i>Calyptranthes portoricensis</i>	54	3
6356	limoncillo de monte	<i>Calyptranthes sintenisii</i>	54	3
6358	Thomas' lidflower	<i>Calyptranthes thomasiana</i>	54	3
6359	myrtle of the river	<i>Calyptranthes zuzygium</i>	53	3
6360	Puerto Rico manac	<i>Calyptronoma rivalis</i>	54	3
6370	ilang-ilang	<i>Cananga odorata</i>	54	3
6380	wild cinnamon	<i>Canella winteriana</i>	54	3
6383	burro blanco	<i>Capparis amplissima</i>	54	3
6384	caper	<i>Capparis baducca</i>	54	3
6386	Jamaican caper	<i>Capparis cynophallophora</i>	54	3
6387	falseteeth	<i>Capparis flexuosa</i>	54	3
6389	broadleaf caper	<i>Capparis hastata</i>	54	3
6390	linguam	<i>Capparis indica</i>	54	3
6393	crabwood	<i>Carapa guianensis</i>	54	3
6395	papaya	<i>Carica papaya</i>	54	3
6402	rabo de ranton	<i>Casearia aculeata</i>	54	3
6403	gia verde	<i>Casearia arborea</i>	54	3
6406	wild honeytree	<i>Casearia decandra</i>	54	3
6407	Guyanese wild coffee	<i>Casearia guianensis</i>	54	3
6410	crackopen	<i>Casearia sylvestris</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6415	golden shower	<i>Cassia fistula</i>	54	3
6417	pink shower	<i>Cassia grandis</i>	54	3
6418	apple blossom	<i>Cassia javanica</i>	54	3
6425	marbletree	<i>Cassine xylocarpa</i>	54	3
6427	goatwood	<i>Cassipourea guianensis</i>	54	3
6429	goatbush	<i>Castela erecta</i>	54	3
6430	Panama rubbertree	<i>Castilla elastica</i>	54	3
6433	river sheoak	<i>Casuarina cunninghamiana</i>	54	3
6434	beach sheoak	<i>Casuarina equisetifolia</i>	54	3
6439	Haitian catalpa	<i>Catalpa longissima</i>	54	3
6443	pumpwood	<i>Cecropia schreberiana</i>	54	3
6445	Spanish cedar	<i>Cedrela odorata</i>	54	3
6447	pochote	<i>Ceiba acuminata</i>	54	3
6448	pochote	<i>Ceiba aesculifolia</i>	54	3
6449	kapoktree	<i>Ceiba pentandra</i>	54	3
6454	almex	<i>Celtis trinervia</i>	54	3
6457	St. John's bread	<i>Ceratonia siliqua</i>	54	3
6468	lady of the night cactus	<i>Cereus hexagonus</i>	54	3
6469	Cereus hildmannianus	<i>Cereus hildmannianus</i>	54	3
6474	day jessamine	<i>Cestrum diurnum</i>	54	3
6475	galen del monte	<i>Cestrum laurifolium</i>	54	3
6477	night jessamine	<i>Cestrum nocturnum</i>	54	3
6481	jointed sandmat	<i>Chamaesyce articulata</i>	54	3
6519	hueso	<i>Chionanthus axilliflorus</i>	54	3
6520	bridgotree	<i>Chionanthus compactus</i>	54	3
6521	white rosewood	<i>Chionanthus domingensis</i>	54	3
6522	hueso prieto	<i>Chionanthus holdridgei</i>	54	3
6523	cabra blanca	<i>Chionanthus ligustrinus</i>	54	3
6526	puntaj jayuya	<i>Chione seminervis</i>	54	3
6528	fatpork	<i>Chione venosa</i>	54	3
6529	african teak	<i>Chlorophora excelsa</i>	54	3
6532	silk-floss tree	<i>Chorisia speciosa</i>	54	3
6535	icaco coco plum	<i>Chrysobalanus icaco</i>	54	3
6539	bastard redwood	<i>Chrysophyllum argenteum</i>	54	3
6541	star apple	<i>Chrysophyllum cainito</i>	54	3
6542	satinleaf	<i>Chrysophyllum oliviforme</i>	54	3
6543	camito de perro	<i>Chrysophyllum pauciflorum</i>	54	3
6554	cassia	<i>Cinnamomum aromaticum</i>	54	3
6559	laurel avisillo	<i>Cinnamomum elongatum</i>	54	3
6560	avisillo	<i>Cinnamomum montanum</i>	54	3
6564	cinnamon	<i>Cinnamomum verum</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6565	juniper berry	<i>Citharexylum caudatum</i>	54	3
6567	spiny fiddlewood	<i>Citharexylum spinosum</i>	54	3
6569	threespike fiddlewood	<i>Citharexylum tristachyum</i>	54	3
6573	key lime	<i>Citrus xaurantiifolia</i>	54	3
6574	sour orange	<i>Citrus xaurantium</i>	54	3
6575	lemon	<i>Citrus xlimon</i>	54	3
6576	grapefruit	<i>Citrus xparadisi</i>	54	3
6577	sweet orange	<i>Citrus xsinensis</i>	54	3
6581	Citrus maxima	<i>Citrus maxima</i>	54	3
6582	Citrus medica	<i>Citrus medica</i>	54	3
6584	Citrus reticulata	<i>Citrus reticulata</i>	54	3
6631	haggarbush	<i>Clerodendrum aculeatum</i>	54	3
6637	teta prieta	<i>Cleyera albopunctata</i>	54	3
6639	jackass breadnut	<i>Clibadium erosum</i>	54	3
6641	Clidemia cymosa	<i>Clidemia cymosa</i>	54	3
6642	soapbush	<i>Clidemia hirta</i>	54	3
6644	Philippine pigeonwings	<i>Clitoria fairchildiana</i>	54	3
6646	cupeillo	<i>Clusia clusioides</i>	54	3
6648	Grundlach's attorney	<i>Clusia gundlachii</i>	54	3
6650	cupey de monte	<i>Clusia minor</i>	54	3
6651	Scotch attorney	<i>Clusia rosea</i>	54	3
6653	deepwoods fern	<i>Cnemidaria horrida</i>	54	3
6655	treadsoftly	<i>Cnidoscolus aconitifolius</i>	54	3
6658	uvilla	<i>Coccoloba costata</i>	54	3
6660	whitewood	<i>Coccoloba krugii</i>	54	3
6661	puckhout	<i>Coccoloba microstachya</i>	54	3
6662	pale seagrape	<i>Coccoloba pallida</i>	54	3
6663	grandleaf seagrape	<i>Coccoloba pubescens</i>	54	3
6664	uvera	<i>Coccoloba pyrifolia</i>	54	3
6665	ortegon	<i>Coccoloba rugosa</i>	54	3
6666	uvero de monte	<i>Coccoloba sintenisii</i>	54	3
6668	Swartz's pigeonplum	<i>Coccoloba swartzii</i>	54	3
6669	Bahama pigeonplum	<i>Coccoloba tenuifolia</i>	54	3
6670	seagrape	<i>Coccoloba uvifera</i>	54	3
6671	false chiggergrape	<i>Coccoloba venosa</i>	54	3
6673	Coccothrinax barbadensis	<i>Coccothrinax barbadensis</i>	54	3
6679	silk cottontree	<i>Cochlospermum vitifolium</i>	53	3
6683	garden croton	<i>Codiaeum variegatum</i>	54	3
6684	Arabian coffee	<i>Coffea arabica</i>	54	3
6686	Coffea liberica	<i>Coffea liberica</i>	54	3
6688	Cojoba arborea	<i>Cojoba arborea</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6689	abata cola	<i>Cola acuminata</i>	54	3
6693	greenheart, common snakebark	<i>Colubrina arborescens</i>	54	3
6700	Urban's nakedwood	<i>Colubrina verrucosa</i>	54	3
6705	poison ash	<i>Comocladia dodonaeae</i>	54	3
6706	carrasco	<i>Comocladia glabra</i>	54	3
6710	Luquillo Mountain snailwood	<i>Conostegia rufescens</i>	54	3
6711	Consolea moniliformis	<i>Consolea moniliformis</i>	54	3
6712	Consolea rubescens	<i>Consolea rubescens</i>	54	3
6714	copaiba	<i>Copaifera officinalis</i>	54	3
6728	Spanish elm	<i>Cordia alliodora</i>	54	3
6730	muneco	<i>Cordia borinquensis</i>	54	3
6731	red manjack	<i>Cordia collococca</i>	54	3
6735	smooth manjack	<i>Cordia laevigata</i>	54	3
6737	clammy cherry	<i>Cordia obliqua</i>	54	3
6738	San Bartolome	<i>Cordia rickseckeri</i>	54	3
6739	Puerto Rico manjack	<i>Cordia rupicola</i>	54	3
6743	mucilage manjack	<i>Cordia sulcata</i>	54	3
6746	nigua	<i>Cornutia obovata</i>	54	3
6747	azulejo	<i>Cornutia pyramidata</i>	54	3
6750	Corymbia citriodora	<i>Corymbia citriodora</i>	54	3
6756	cannonball tree	<i>Couroupita guianensis</i>	54	3
6761	common calabash tree	<i>Crescentia cujete</i>	54	3
6762	higuerito	<i>Crescentia linearifolia</i>	54	3
6763	higuero de sierra	<i>Crescentia portoricensis</i>	54	3
6765	Critonia portoricensis	<i>Critonia portoricensis</i>	54	3
6767	maidenberry	<i>Crossopetalum rhacoma</i>	54	3
6773	wild marrow	<i>Croton astroites</i>	54	3
6774	Croton flavens	<i>Croton flavens</i>	54	3
6775	sabinon	<i>Croton poecilanthus</i>	54	3
6786	Japanese cedar	<i>Cryptomeria japonica</i>	52	2
6788	Chinese fir	<i>Cunninghamia lanceolata</i>	52	2
6790	wild ackee	<i>Cupania americana</i>	54	3
6792	guara blanca	<i>Cupania triquetra</i>	54	3
6795	cedar-of-Goa	<i>Cupressus lusitanica</i>	52	2
6796	Italian cypress	<i>Cupressus sempervirens</i>	52	2
6834	parrotfeather treefern	<i>Cyathea andina</i>	54	3
6835	West Indian treefern	<i>Cyathea arborea</i>	54	3
6839	Jamaican treefern	<i>Cyathea furfuracea</i>	54	3
6843	small treefern	<i>Cyathea parvula</i>	54	3
6848	helecho gigante	<i>Cyathea tenera</i>	54	3
6850	Cybianthus sintenisii	<i>Cybianthus sintenisii</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6852	queen sago	<i>Cycas circinalis</i>	54	3
6857	oreganillo falso	<i>Cynometra portoricensis</i>	54	3
6862	swamp titi	<i>Cyrilla racemiflora</i>	54	3
6867	candletree	<i>Dacryodes excelsa</i>	54	3
6869	Indian rosewood	<i>Dalbergia sissoo</i>	54	3
6871	burn nose	<i>Daphnopsis americana</i>	54	3
6872	Heller's cieneguillo	<i>Daphnopsis helleriana</i>	54	3
6873	emajagua de sierra	<i>Daphnopsis philippiana</i>	54	3
6883	royal poinciana	<i>Delonix regia</i>	54	3
6888	angelica tree	<i>Dendropanax arboreus</i>	54	3
6889	palo de vaca	<i>Dendropanax laurifolius</i>	54	3
6896	chulta	<i>Dillenia indica</i>	54	3
6899	Dimocarpus longan	<i>Dimocarpus longan</i>	54	3
6909	black apple	<i>Diospyros revoluta</i>	54	3
6912	Chinese persimmon	<i>Diospyros sintenisii</i>	54	3
6923	jaboncillo	<i>Ditta myricoides</i>	54	3
6927	Florida hopbush	<i>Dodonaea viscosa</i>	54	3
6930	Ceylon gooseberry	<i>Dovyalis hebecarpa</i>	54	3
6932	fragrant dracaena	<i>Dracaena fragrans</i>	54	3
6937	cafeillo	<i>Drypetes alba</i>	54	3
6938	varital	<i>Drypetes glauca</i>	54	3
6939	rosewood	<i>Drypetes ilicifolia</i>	54	3
6940	guiana plum	<i>Drypetes lateriflora</i>	54	3
6961	golden dewdrops	<i>Duranta erecta</i>	54	3
6966	Dypsis lutescens	<i>Dypsis lutescens</i>	54	3
6996	monkeysoap	<i>Enterolobium cyclocarpum</i>	54	3
6998	loquat	<i>Eriobotrya japonica</i>	54	3
7000	blacktorch	<i>Erithalis fruticosa</i>	54	3
7004	machete	<i>Erythrina berteriana</i>	54	3
7005	coral erythrina	<i>Erythrina corallodendron</i>	54	3
7006	crybabbytree	<i>Erythrina crista-galli</i>	54	3
7007	cock's spur	<i>Erythrina eggersii</i>	54	3
7008	bucayo	<i>Erythrina fusca</i>	54	3
7011	mountain immortelle	<i>Erythrina poeppigiana</i>	54	3
7015	tiger's claw	<i>Erythrina variegata</i>	54	3
7016	tiger's claw	<i>Erythrina variegata</i> var. <i>orientalis</i>	54	3
7019	swamp-redwood	<i>Erythroxylum areolatum</i>	54	3
7021	ratwood	<i>Erythroxylum rotundifolium</i>	54	3
7022	rufous false cocaine	<i>Erythroxylum rufum</i>	54	3
7024	Urban's false cocaine	<i>Erythroxylum urbanii</i>	54	3
7034	Indonesian gum	<i>Eucalyptus deglupta</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
7043	spotted gum	<i>Eucalyptus maculata</i>	54	3
7046	gray ironbark	<i>Eucalyptus paniculata</i>	54	3
7049	redmahogany	<i>Eucalyptus resinifera</i>	54	3
7053	Sydney bluegum	<i>Eucalyptus saligna</i>	54	3
7060	white stopper	<i>Eugenia axillaris</i>	54	3
7061	blackrodwood	<i>Eugenia biflora</i>	54	3
7062	Sierra de Cayey stopper	<i>Eugenia boqueronensis</i>	54	3
7063	guayabota de sierra	<i>Eugenia borinquensis</i>	54	3
7066	redberry stopper	<i>Eugenia confusa</i>	54	3
7067	lathberry	<i>Eugenia cordata</i>	54	3
7068	lathberry	<i>Eugenia cordata</i> var. <i>sintenisii</i>	54	3
7069	sperry guava	<i>Eugenia corozalensis</i>	54	3
7071	serrette guave	<i>Eugenia domingensis</i>	54	3
7072	guasabara	<i>Eugenia eggersii</i>	54	3
7075	smooth rodwood	<i>Eugenia glabrata</i>	54	3
7076	Luquillo Mountain stopper	<i>Eugenia haematocarpa</i>	54	3
7081	privet stopper	<i>Eugenia ligustrina</i>	54	3
7084	birdcherry	<i>Eugenia monticola</i>	54	3
7089	rockmyrtle	<i>Eugenia procera</i>	54	3
7090	Christmas cherry	<i>Eugenia pseudopsidium</i>	54	3
7093	serrasuela	<i>Eugenia serrasuela</i>	54	3
7094	sessileleaf stopper	<i>Eugenia sessiliflora</i>	54	3
7098	Stahl's stopper	<i>Eugenia stahlii</i>	54	3
7100	Stewardson's stopper	<i>Eugenia stewardsonii</i>	54	3
7103	Underwood's stopper	<i>Eugenia underwoodii</i>	54	3
7104	Surinam cherry	<i>Eugenia uniflora</i>	54	3
7105	aridland stopper	<i>Eugenia xerophytica</i>	54	3
7109	Mexican shrubby spurge	<i>Euphorbia cotinifolia</i>	54	3
7111	mottled spurge	<i>Euphorbia lactea</i>	54	3
7112	Indian spurgetree	<i>Euphorbia nerifolia</i>	54	3
7113	manchineel berry	<i>Euphorbia petiolaris</i>	54	3
7116	Indiantree spurge	<i>Euphorbia tirucalli</i>	54	3
7135	Caribbean princewood	<i>Exostema caribaeum</i>	54	3
7136	plateado	<i>Exostema ellipticum</i>	54	3
7137	Exostema sanctae-luciae	<i>Exostema sanctae-luciae</i>	54	3
7146	false coffee	<i>Faramea occidentalis</i>	54	3
7148	Jamaican cherry fig	<i>Ficus americana</i>	54	3
7149	Indian banyan	<i>Ficus benghalensis</i>	54	3
7150	weeping fig	<i>Ficus benjamina</i>	54	3
7151	edible fig	<i>Ficus carica</i>	54	3
7154	brown-woolly fig	<i>Ficus drupacea</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
7155	Indian rubberplant	<i>Ficus elastica</i>	54	3
7158	Ficus lutea	<i>Ficus lutea</i>	54	3
7159	fiddleleaf fig	<i>Ficus lyrata</i>	54	3
7160	Chinese banyan	<i>Ficus microcarpa</i>	54	3
7162	tibig	<i>Ficus nota</i>	54	3
7164	amate	<i>Ficus obtusifolia</i>	54	3
7166	peepul tree	<i>Ficus religiosa</i>	54	3
7173	jaguey	<i>Ficus stahlii</i>	54	3
7174	sycamore fig	<i>Ficus sycomorus</i>	54	3
7177	jaguey blanco	<i>Ficus trigonata</i>	54	3
7184	governor's plum	<i>Flacourtie indica</i>	54	3
7185	batoko plum	<i>Flacourtie inermis</i>	54	3
7190	Flueggea acidoton	<i>Flueggea acidoton</i>	54	3
7194	inkbush	<i>Forestiera eggarsiana</i>	54	3
7195	caca ravet	<i>Forestiera rhamnifolia</i>	54	3
7196	Florida swampprivet	<i>Forestiera segregata</i>	54	3
7198	oval kumquat	<i>Fortunella margarita</i>	54	3
7202	West Indian buckthorn	<i>Frangula sphaerosperma</i>	54	3
7206	shamel ash	<i>Fraxinus uhdei</i>	54	3
7210	silkrubber	<i>Funtumia elastica</i>	54	3
7212	Gourka	<i>Garcinia dulcis</i>	53	3
7213	lemon saptree	<i>Garcinia hessii</i>	54	3
7214	mangosteen	<i>Garcinia mangostana</i>	54	3
7218	palo de cruz	<i>Garcinia portoricensis</i>	54	3
7223	Garcinia xanthochymus	<i>Garcinia xanthochymus</i>	54	3
7231	llume	<i>Gaussia attenuata</i>	54	3
7235	jagua	<i>Genipa americana</i>	54	3
7237	arbol de Navidad	<i>Gesneria pedunculosa</i>	54	3
7239	bastard gregre	<i>Ginoria rohrii</i>	54	3
7245	quickstick	<i>Gliricidia sepium</i>	54	3
7256	mata buey	<i>Goetzea elegans</i>	54	3
7258	grand merisier	<i>Gomidesia lindeniana</i>	54	3
7262	Creole cotton	<i>Gossypium barbadense</i>	54	3
7264	Gossypium hirsutum	<i>Gossypium hirsutum</i>	54	3
7268	Graffenrieda ottoschulzii	<i>Graffenrieda ottoschulzii</i>	54	3
7273	silkoak	<i>Grevillea robusta</i>	54	3
7279	lignum-vitae	<i>Guaiacum officinale</i>	54	3
7280	hollywood	<i>Guaiacum sanctum</i>	54	3
7285	black mampoo	<i>Guapira fragrans</i>	54	3
7286	corcho prieto	<i>Guapira obtusata</i>	54	3
7288	alligatorwood	<i>Guarea glabra</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
7290	American muskwood	<i>Guarea guidonia</i>	54	3
7294	haya minga	<i>Guatteria blainii</i>	54	3
7295	haya blanca	<i>Guatteria caribaea</i>	54	3
7298	bastardcedar	<i>Guazuma ulmifolia</i>	54	3
7299	hammock velvetseed	<i>Guettarda elliptica</i>	54	3
7300	frogwood	<i>Guettarda krugii</i>	54	3
7302	cucubano de vieques	<i>Guettarda odorata</i>	54	3
7303	cucubano	<i>Guettarda ovalifolia</i>	54	3
7305	roseta	<i>Guettarda pungens</i>	54	3
7306	wild guave	<i>Guettarda scabra</i>	54	3
7309	cucubano de monte	<i>Guettarda valenzuelana</i>	54	3
7315	West Indian false box	<i>Gyminda latifolia</i>	54	3
7317	oysterwood	<i>Gymnanthes lucida</i>	54	3
7321	bloodwoodtree	<i>Haematoxylum campechianum</i>	54	3
7327	palo de hueso	<i>Haenianthus salicifolius</i>	54	3
7330	scarletbush	<i>Hamelia patens</i>	54	3
7336	false locust	<i>Hebestigma cubense</i>	54	3
7341	cigarbush	<i>Hedyosmum arborescens</i>	54	3
7347	screwtree	<i>Helicteres jamaicensis</i>	54	3
7353	camasey peludo	<i>Henriettea fascicularis</i>	54	3
7354	MacFadyen's camasey	<i>Henriettea macfadyenii</i>	54	3
7355	thinleaf camasey	<i>Henriettea membranifolia</i>	54	3
7357	jusillo	<i>Henriettea squamulosum</i>	54	3
7366	mago	<i>Hernandia sonora</i>	54	3
7403	mahoe	<i>Hibiscus elatus</i>	54	3
7409	seaside mahoe	<i>Hibiscus pernambucensis</i>	54	3
7410	shoeblackplant	<i>Hibiscus rosa-sinensis</i>	54	3
7412	sea hibiscus	<i>Hibiscus tiliaceus</i>	54	3
7418	teta de burra cinarron	<i>Hirtella rugosa</i>	54	3
7420	pigeonberry	<i>Hirtella triandra</i>	54	3
7422	white cogwood	<i>Homalium racemosum</i>	54	3
7434	sandbox tree	<i>Hura crepitans</i>	54	3
7438	cedro macho	<i>Hieronima clusioides</i>	54	3
7442	stinkingtoe	<i>Hymenaea courbaril</i>	54	3
7445	inkwood	<i>Hypelate trifoliata</i>	54	3
7446	limestone snakevine	<i>Hyperbaena laurifolia</i>	54	3
7455	dahooon	<i>Ilex cassine</i>	54	3
7456	te	<i>Ilex cookii</i>	54	3
7457	maconcona	<i>Ilex guianensis</i>	54	3
7458	Caribbean holly	<i>Ilex macfadyenii</i>	54	3
7459	Puerto Rico holly	<i>Ilex nitida</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
7462	gongolin	<i>Ilex sideroxyloides</i>	54	3
7463	Sintenis' holly	<i>Ilex sintenisii</i>	54	3
7465	Urban's holly	<i>Ilex urbaniana</i>	54	3
7466	Ilex urbaniana	<i>Ilex urbaniana</i> var. <i>riedlaei</i>	54	3
7467	inga	<i>Inga</i> spp.	54	3
7470	sacky sac bean	<i>Inga laurina</i>	54	3
7471	Inga nobilis	<i>Inga nobilis</i>	54	3
7474	river koko	<i>Inga vera</i>	54	3
7479	palo de hierro	<i>Ixora ferrea</i>	54	3
7481	white jungleflame	<i>Ixora thwaitesii</i>	54	3
7482	black poui	<i>Jacaranda mimosifolia</i>	54	3
7485	braceletwood	<i>Jacquinia armillaris</i>	54	3
7487	bois bande	<i>Jacquinia berteroii</i>	54	3
7490	chirriador	<i>Jacquinia umbellata</i>	54	3
7491	Barbados nut	<i>Jatropha curcas</i>	54	3
7492	wild oilnut	<i>Jatropha hernandiifolia</i>	54	3
7493	coralbush	<i>Jatropha multifida</i>	54	3
7495	West Indian walnut	<i>Juglans jamaicensis</i>	54	3
7499	Khaya anthotheca	<i>Khaya anthotheca</i>	54	3
7501	Senegal mahogany	<i>Khaya senegalensis</i>	54	3
7503	Kigelia africana	<i>Kigelia africana</i>	54	3
7506	guest tree	<i>Kleinholzia hospita</i>	54	3
7508	Koanophyllum polyodon	<i>Koanophyllum polyodon</i>	54	3
7514	leadwood	<i>Krugiodendron ferreum</i>	54	3
7530	cuero de rana	<i>Laetia procera</i>	54	3
7532	crapemyrtle	<i>Lagerstroemia indica</i>	54	3
7533	pride of India	<i>Lagerstroemia speciosa</i>	54	3
7541	nino de cota	<i>Laplacea portoricensis</i>	54	3
7550	henna	<i>Lawsonia inermis</i>	54	3
7552	Krug's roughleaf	<i>Leandra krugiana</i>	54	3
7556	pitahaya	<i>Leptocereus quadricostatus</i>	54	3
7565	white leadtree	<i>Leucaena leucocephala</i>	54	3
7569	Maria laurel	<i>Licaria brittoniana</i>	54	3
7570	Puerto Rico cinnamon	<i>Licaria parvifolia</i>	54	3
7573	pepperleaf sweetwood	<i>Licaria triandra</i>	54	3
7574	Amur privet	<i>Ligustrum amurense</i>	54	3
7590	geno geno	<i>Lonchocarpus domingensis</i>	54	3
7591	geno	<i>Lonchocarpus glaucifolius</i>	54	3
7592	broadleaf lancepod	<i>Lonchocarpus heptaphyllus</i>	54	3
7600	luehea	<i>Luehea speciosa</i>	54	3
7604	lunania	<i>Lunania</i> spp.	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
7606	Lunania ekmanii	<i>Lunania ekmanii</i>	54	3
7608	St. Thomas staggerbush	<i>Lyonia rubiginosa</i>	54	3
7628	palo de hoz	<i>Machaerium lunatum</i>	54	3
7630	Puerto Rico alfilerillo	<i>Machaonia portoricensis</i>	54	3
7632	Maclura tinctoria	<i>Maclura tinctoria</i>	54	3
7633	umbrella-tree	<i>Maesopsis eminii</i>	54	3
7635	Puerto Rico magnolia	<i>Magnolia portoricensis</i>	54	3
7636	laurel magnolia	<i>Magnolia splendens</i>	54	3
7643	Singapore holly	<i>Malpighia coccigera</i>	54	3
7644	Barbados cherry	<i>Malpighia emarginata</i>	54	3
7645	palo bronco	<i>Malpighia fucata</i>	54	3
7646	wild crapemyrtle	<i>Malpighia glabra</i>	54	3
7647	cowhage cherry	<i>Malpighia infestissima</i>	54	3
7648	bastard cherry	<i>Malpighia linearis</i>	54	3
7652	mammee apple	<i>Mammea americana</i>	54	3
7662	bulletwood	<i>Manilkara bidentata</i>	54	3
7663	Surinam bulletwood	<i>Manilkara bidentata</i> ssp. <i>surinamensis</i>	54	3
7667	wild dilly	<i>Manilkara jaimiqui</i>	54	3
7669	zapote de costa	<i>Manilkara pleeana</i>	54	3
7673	nisperillo	<i>Manilkara valenzuela</i>	54	3
7674	sapodilla	<i>Manilkara zapota</i>	54	3
7677	palo de cana	<i>Mappia racemosa</i>	54	3
7682	bastard hogberry	<i>Margaritaria nobilis</i>	54	3
7684	beruquillo	<i>Marlierea sintenisii</i>	54	3
7688	Matayba apetala	<i>Matayba apetala</i>	54	3
7689	negra lora	<i>Matayba domingensis</i>	54	3
7695	Caribbean mayten	<i>Maytenus cymosa</i>	54	3
7697	Puerto Rico mayten	<i>Maytenus elongata</i>	54	3
7698	white cinnamon	<i>Maytenus laevigata</i>	54	3
7699	ponce mayten	<i>Maytenus ponceana</i>	54	3
7702	Mecranium latifolium	<i>Mecranium latifolium</i>	54	3
7717	Spanish lime	<i>Melicoccus bijugatus</i>	54	3
7763	aguacatillo	<i>Meliosma herbertii</i>	54	3
7764	cacaillo	<i>Meliosma obtusifolia</i>	54	3
7768	teabush	<i>Melochia tomentosa</i>	54	3
7803	hairy johnnyberry	<i>Miconia lanata</i>	54	3
7804	saquiyac	<i>Miconia affinis</i>	54	3
7806	Puerto Rico johnnyberry	<i>Miconia foveolata</i>	54	3
7807	camasey de costilla	<i>Miconia impetiolaris</i>	54	3
7808	smooth johnnyberry	<i>Miconia laevigata</i>	54	3
7810	camasey cuatrocanales	<i>Miconia mirabilis</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
7812	camasey racimoso	<i>Miconia pachyphylla</i>	54	3
7813	granadillo bobo	<i>Miconia prasina</i>	54	3
7814	auquey	<i>Miconia punctata</i>	54	3
7815	ridge johnnyberry	<i>Miconia pycnoneura</i>	54	3
7816	camasey felpa	<i>Miconia racemosa</i>	54	3
7817	peralejo	<i>Miconia rubiginosa</i>	54	3
7818	jau jau	<i>Miconia serrulata</i>	54	3
7819	mountain johnnyberry	<i>Miconia sintenisii</i>	54	3
7821	forest johnnyberry	<i>Miconia subcordymbosa</i>	54	3
7822	rajador	<i>Miconia tetrandra</i>	54	3
7823	camasey tomaso	<i>Miconia thomasiana</i>	54	3
7828	caimitillo verde	<i>Micropholis garciniifolia</i>	54	3
7829	Micropholis guyanensis	<i>Micropholis guyanensis</i>	54	3
7833	elegant mimosa	<i>Mimosa arenosa</i>	54	3
7839	monodora	<i>Monodora</i> spp.	54	3
7845	Morella cerifera	<i>Morella cerifera</i>	54	3
7847	Morella holdridgeana	<i>Morella holdridgeana</i>	54	3
7849	Indian mulberry	<i>Morinda citrifolia</i>	54	3
7855	horseradishtree	<i>Moringa oleifera</i>	54	3
7857	rataapple	<i>Morisonia americana</i>	54	3
7862	murta	<i>Mouriri domingensis</i>	54	3
7863	mameyuelo	<i>Mouriri helleri</i>	54	3
7867	strawberrytree	<i>Muntingia calabura</i>	54	3
7869	Murraya exotica	<i>Murraya exotica</i>	54	3
7886	red rodwood	<i>Myrcia citrifolia</i>	54	3
7887	cieneguillo	<i>Myrcia deflexa</i>	54	3
7888	curame	<i>Myrcia fallax</i>	54	3
7889	guayabacon	<i>Myrcia leptoclada</i>	54	3
7890	ausu	<i>Myrcia paganii</i>	54	3
7891	punchberry	<i>Myrcia splendens</i>	54	3
7893	twinberry	<i>Myrcianthes fragrans</i>	54	3
7895	guavaberry	<i>Myrciaria floribunda</i>	54	3
7905	cercipo	<i>Myrospermum frutescens</i>	54	3
7907	balsam of Tolu	<i>Myroxylon balsamum</i>	54	3
7911	leathery colicwood	<i>Myrsine coriacea</i>	54	3
7912	Myrsine cubana	<i>Myrsine cubana</i>	54	3
7932	Nectandra coriacea	<i>Nectandra coriacea</i>	54	3
7933	shinglewood	<i>Nectandra hihua</i>	54	3
7934	Nectandra krugii	<i>Nectandra krugii</i>	54	3
7935	Nectandra membranacea	<i>Nectandra membranacea</i>	54	3
7936	Nectandra patens	<i>Nectandra patens</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
7939	Nectandra turbacensis	<i>Nectandra turbacensis</i>	54	3
7940	saltwood	<i>Neea buxifolia</i>	54	3
7944	kadam	<i>Neolamarckia cadamba</i>	54	3
7946	aquilon	<i>Neolaugeria resinosa</i>	54	3
7956	oleander	<i>Nerium oleander</i>	54	3
7976	African bird's-eye bush	<i>Ochna mossambicensis</i>	54	3
7980	Ochroma pyramidale	<i>Ochroma pyramidale</i>	54	3
7990	laurel espada	<i>Ocotea floribunda</i>	54	3
7991	black sweetwood	<i>Ocotea foeniculacea</i>	54	3
7994	loblolly sweetwood	<i>Ocotea leucoxylon</i>	54	3
7996	nemoca	<i>Ocotea moschata</i>	54	3
7997	laurel sassafras	<i>Ocotea nemodaphne</i>	54	3
7999	laurel de paloma	<i>Ocotea portoricensis</i>	54	3
8001	nemoca cimarrona	<i>Ocotea spathulata</i>	54	3
8003	Wright's laurel canelon	<i>Ocotea wrightii</i>	54	3
8020	peronia	<i>Ormosia krugii</i>	54	3
8027	pincho palo de rosa	<i>Ottoschulzia rhodoxylon</i>	54	3
8029	chicharron amarillo	<i>Ouratea ilicifolia</i>	54	3
8030	abey amarillo	<i>Ouratea littoralis</i>	54	3
8032	guanabanilla	<i>Ouratea striata</i>	54	3
8033	blacklancewood	<i>Oxandra lanceolata</i>	54	3
8034	haya	<i>Oxandra laurifolia</i>	54	3
8037	wild chestnut	<i>Pachira insignis</i>	53	3
8045	tafetan	<i>Palicourea alpina</i>	54	3
8047	red cappel	<i>Palicourea crocea</i>	54	3
8049	Palicourea croceoides	<i>Palicourea croceoides</i>	54	3
8051	showy cappel	<i>Palicourea guianensis</i>	54	3
8088	common screwpine	<i>Pandanus utilis</i>	54	3
8099	scratchthroat	<i>Parathesis crenulata</i>	54	3
8106	parkia	<i>Parkia spp.</i>	54	3
8110	Parkia timoriana	<i>Parkia timoriana</i>	54	3
8111	Jerusalem thorn	<i>Parkinsonia aculeata</i>	54	3
8113	cuachilote	<i>Parmentiera aculeata</i>	54	3
8114	candle tree	<i>Parmentiera cereifera</i>	54	3
8121	Peltophorum pterocarpum	<i>Peltophorum pterocarpum</i>	54	3
8125	butter tree	<i>Pentadesma butyracea</i>	54	3
8127	jiqi	<i>Pera bumeliafolia</i>	54	3
8134	canela	<i>Persea krugii</i>	54	3
8138	aquacatillo	<i>Persea urbaniana</i>	54	3
8141	bastard stopper	<i>Petitia domingensis</i>	54	3
8143	aquilon prieto	<i>Phialanthus grandifolius</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
8144	candlewood	<i>Phialanthus myrtilloides</i>	54	3
8157	Tahitian gooseberry tree	<i>Phyllanthus acidus</i>	54	3
8160	gamo de costa	<i>Phyllanthus juglandifolius</i>	54	3
8162	Phyllanthus orbicularis	<i>Phyllanthus orbicularis</i>	54	3
8164	Florida bitterbush	<i>Picramnia pentandra</i>	54	3
8167	bitterwood	<i>Picrasma excelsa</i>	54	3
8169	fustic	<i>Pictetia aculeata</i>	54	3
8171	aceitillo	<i>Pilocarpus racemosus</i>	54	3
8173	Royen's tree cactus	<i>Pilosocereus royenii</i>	54	3
8175	allspice	<i>Pimenta dioica</i>	54	3
8177	bayrumtree	<i>Pimenta racemosa</i>	54	3
8178	bayrumtree	<i>Pimenta racemosa</i> var. <i>grisea</i>	54	3
8183	Caribbean pine	<i>Pinus caribaea</i>	51	1
8184	Chinese red pine	<i>Pinus massoniana</i>	51	1
8185	Merkus pine	<i>Pinus merkusii</i>	51	1
8186	ocote chino	<i>Pinus oocarpa</i>	51	1
8187	Mexican weeping pine	<i>Pinus patula</i>	51	1
8190	higuillo de hoja menuda	<i>Piper aduncum</i>	54	3
8191	higuillo de limon	<i>Piper amalago</i>	54	3
8192	moth pepper	<i>Piper blattarum</i>	54	3
8193	Guyanese pepper	<i>Piper glabrescens</i>	54	3
8194	Jamaican pepper	<i>Piper hispidum</i>	54	3
8195	Caracas pepper	<i>Piper jacquemontianum</i>	54	3
8196	marigold pepper	<i>Piper marginatum</i>	54	3
8199	spanish elder	<i>Piper swartzianum</i>	54	3
8208	stinkwood	<i>Piscidia carthagenensis</i>	54	3
8211	corcho bobo	<i>Pisonia albida</i>	54	3
8216	water mampoo	<i>Pisonia subcordata</i>	54	3
8220	monkeypod	<i>Pithecellobium dulce</i>	54	3
8223	catclaw blackbead	<i>Pithecellobium unguis-cati</i>	54	3
8249	Oriental arborvitae	<i>Platycladus orientalis</i>	52	2
8255	chupa gallo	<i>Pleodendron macranthum</i>	54	3
8266	nosegaytree	<i>Plumeria alba</i>	54	3
8268	Singapore graveyard flower	<i>Plumeria obtusa</i>	54	3
8269	Plumeria obtusa	<i>Plumeria obtusa</i> var. <i>obtusa</i>	54	3
8271	templetree	<i>Plumeria rubra</i>	54	3
8273	yucca plum pine	<i>Podocarpus coriaceus</i>	54	3
8275	Poitea florida	<i>Poitea florida</i>	54	3
8276	Poitea punicea	<i>Poitea punicea</i>	54	3
8279	violet tree	<i>Polygala cowellii</i>	54	3
8280	crevajosa	<i>Polygala penaea</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
8284	geranium aralia	<i>Polyscias guilfoylei</i>	54	3
8300	cocuyo	<i>Pouteria dictyoneura</i>	54	3
8301	redmammee	<i>Pouteria hotteana</i>	53	3
8302	bullytree	<i>Pouteria multiflora</i>	54	3
8305	mammee sapote	<i>Pouteria sapota</i>	54	3
8311	Prestoea acuminata	<i>Prestoea acuminata</i>	54	3
8340	guasimilla	<i>Prockia crucis</i>	54	3
8342	jand	<i>Prosopis cineraria</i>	54	3
8344	kiawe	<i>Prosopis pallida</i>	54	3
8346	West Indian cherry	<i>Prunus myrtifolia</i>	54	3
8347	western cherry laurel	<i>Prunus occidentalis</i>	54	3
8349	Prunus serotina	<i>Prunus serotina</i> ssp. <i>capuli</i>	54	3
8352	false breadnut	<i>Pseudolmedia spuria</i>	54	3
8353	Florida cherry palm	<i>Pseudophoenix sargentii</i>	54	3
8354	mountain guava	<i>Psidium amplexicaule</i>	54	3
8356	guava	<i>Psidium guajava</i>	54	3
8358	<i>Psidium longipes</i>	<i>Psidium longipes</i>	54	3
8359	Sintenis' guava	<i>Psidium sintenisii</i>	54	3
8361	cachimbo-cumun	<i>Psychotria berteriana</i>	54	3
8362	palo de cachimbo	<i>Psychotria brachiata</i>	54	3
8363	Browne's wild coffee	<i>Psychotria brownei</i>	54	3
8364	Psychotria domingensis	<i>Psychotria domingensis</i>	54	3
8367	cachimbo grande	<i>Psychotria grandis</i>	54	3
8389	cachimbo de gato	<i>Psychotria maleolens</i>	54	3
8391	cachimbo de maricao	<i>Psychotria maricaensis</i>	54	3
8394	thicket wild coffee	<i>Psychotria microdon</i>	54	3
8395	floating balsamo	<i>Psychotria nutans</i>	54	3
8397	hairy wild coffee	<i>Psychotria pubescens</i>	54	3
8407	pterocarpus	<i>Pterocarpus indicus</i>	54	3
8408	Burma padauk	<i>Pterocarpus macrocarpus</i>	54	3
8409	Malabar kino	<i>Pterocarpus marsupium</i>	54	3
8410	dragonsblood tree	<i>Pterocarpus officinalis</i>	54	3
8419	pomegranate	<i>Punica granatum</i>	54	3
8422	swizzlestick tree	<i>Quararibea turbinata</i>	54	3
8425	white indigoberry	<i>Randia aculeata</i>	54	3
8433	palo amargo	<i>Rauvolfia nitida</i>	54	3
8436	traveler's tree	<i>Ravenala madagascariensis</i>	54	3
8439	tortugo prieto	<i>Ravenia urbanii</i>	54	3
8444	guama	<i>Reynosia guama</i>	53	3
8445	Krug's darlingplum	<i>Reynosia krugii</i>	53	3
8447	sloe	<i>Reynosia uncinata</i>	53	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
8472	castorbean	<i>Ricinus communis</i>	54	3
8476	greenheart ebony	<i>Rochefortia acanthophora</i>	54	3
8478	Rochefortia spinosa	<i>Rochefortia spinosa</i>	54	3
8481	wild sugar apple	<i>Rollinia mucosa</i>	54	3
8483	cordobancillo	<i>Rondeletia inermis</i>	54	3
8484	cordobancillo peludo	<i>Rondeletia pilosa</i>	54	3
8485	Juan Tomas	<i>Rondeletia portoricensis</i>	54	3
8489	Puerto Rico royal palm	<i>Roystonea borinquena</i>	54	3
8490	Roystonea elata	<i>Roystonea elata</i>	54	3
8494	Puerto Rico palmetto	<i>Sabal causiarum</i>	54	3
8499	white hogwood	<i>Sagraea umbrosa</i>	54	3
8501	Salix humboldtiana	<i>Salix humboldtiana</i>	54	3
8505	raintree	<i>Samanea saman</i>	54	3
8509	common elderberry	<i>Sambucus nigra</i>	54	3
8529	wingleaf soapberry	<i>Sapindus saponaria</i>	54	3
8533	gumtree	<i>Sapium glandulosum</i>	54	3
8535	hinchahuevos	<i>Sapium laurifolium</i>	54	3
8536	milktree	<i>Sapium laurocerasus</i>	54	3
8546	amansa guapo	<i>Savia sessiliflora</i>	54	3
8554	Florida boxwood	<i>Schaefferia frutescens</i>	54	3
8556	guayabilla	<i>Samyda dodecandra</i>	54	3
8557	yuquilla	<i>Schefflera gleasonii</i>	54	3
8558	matchwood	<i>Schefflera morototoni</i>	54	3
8563	Brazilian peppertree	<i>Schinus terebinthifolius</i>	54	3
8565	Brazilian firetree	<i>Schizolobium parahybum</i>	54	3
8567	lac tree	<i>Schleichera oleosa</i>	54	3
8571	arana	<i>Schoepfia arenaria</i>	54	3
8572	white beefwood	<i>Schoepfia obovata</i>	54	3
8573	gulf graytwig	<i>Schoepfia schreberi</i>	54	3
8588	emperor's candlesticks	<i>Senna alata</i>	54	3
8589	flor de San Jose	<i>Senna atomaria</i>	54	3
8591	false sicklepod	<i>Senna multijuga</i>	54	3
8594	retama prieta	<i>Senna polyphylla</i>	54	3
8596	Siamese cassia	<i>Senna siamea</i>	54	3
8597	casia amarilla	<i>Senna spectabilis</i>	54	3
8599	Senna sulfurea	<i>Senna sulfurea</i>	54	3
8600	glossy shower	<i>Senna surattensis</i>	54	3
8605	vegetable hummingbird	<i>Sesbania grandiflora</i>	54	3
8611	espejuelo	<i>Sideroxylon cubense</i>	54	3
8613	breakbill	<i>Sideroxylon obovatum</i>	54	3
8614	Puerto Rico bully	<i>Sideroxylon portoricense</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
8617	simarouba	<i>Simarouba</i> spp.	54	3
8619	aceitillo falso	<i>Simarouba tulae</i>	54	3
8620	hoja menuda	<i>Siphoneugena densiflora</i>	54	3
8622	bullwood	<i>Sloanea</i> spp.	54	3
8623	motillo	<i>Sloanea amygdalina</i>	54	3
8624	bullwood	<i>Sloanea berteriana</i>	54	3
8626	Solanum bahamense	<i>Solanum bahamense</i>	54	3
8627	mullein nightshade	<i>Solanum donianum</i>	54	3
8629	potatotree	<i>Solanum erianthum</i>	54	3
8632	forest nightshade	<i>Solanum nudum</i>	54	3
8633	cakalaka berry	<i>Solanum polygamum</i>	54	3
8634	tabacon aspero	<i>Solanum rugosum</i>	54	3
8636	turkey berry	<i>Solanum torvum</i>	54	3
8644	African tuliptree	<i>Spathodea campanulata</i>	54	3
8649	Spondias dulcis	<i>Spondias dulcis</i>	54	3
8650	yellow mombin	<i>Spondias mombin</i>	54	3
8652	purple mombin	<i>Spondias purpurea</i>	54	3
8654	cobana negra	<i>Stahlia monosperma</i>	54	3
8664	Panama tree	<i>Sterculia apetala</i>	54	3
8666	hazel sterculia	<i>Sterculia foetida</i>	54	3
8674	palo de jazmin	<i>Styrax portoricensis</i>	54	3
8676	bay cedar	<i>Suriana maritima</i>	54	3
8678	mahogany	<i>Swietenia</i> spp.	54	3
8679	Honduras mahogany	<i>Swietenia macrophylla</i>	54	3
8683	nispero cimarron	<i>Symplocos lanata</i>	54	3
8684	Martinique sweetleaf	<i>Symplocos martinicensis</i>	54	3
8685	aceitunilla	<i>Symplocos micrantha</i>	54	3
8701	Syzygium jambos	<i>Syzygium jambos</i>	54	3
8702	Malaysian apple	<i>Syzygium malaccense</i>	54	3
8709	roble amarillo	<i>Tabebuia chrysantha</i>	54	3
8710	primavera	<i>Tabebuia donnell-smithii</i>	54	3
8712	roble cimarron	<i>Tabebuia haemantha</i>	54	3
8713	white cedar	<i>Tabebuia heterophylla</i>	54	3
8715	roble de sierra	<i>Tabebuia rigida</i>	54	3
8716	pink trumpet-tree	<i>Tabebuia rosea</i>	54	3
8717	roble colorado	<i>Tabebuia schumanniana</i>	54	3
8720	milkwood	<i>Tabernaemontana citrifolia</i>	54	3
8727	Athel tamarisk	<i>Tamarix aphylla</i>	54	3
8743	yellow trumpetbush	<i>Tecoma stans</i>	54	3
8744	teak	<i>Tectona grandis</i>	54	3
8748	tropical almond	<i>Terminalia</i> spp.	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
8750	tropical almond	<i>Terminalia catappa</i>	54	3
8754	Ivory Coast almond	<i>Terminalia ivorensis</i>	54	3
8756	East Indian almond	<i>Terminalia myriocarpa</i>	54	3
8757	Peruvian almond	<i>Terminalia oblonga</i>	54	3
8761	superb terminalia	<i>Terminalia superba</i>	54	3
8762	saintedwood	<i>Ternstroemia heptasepala</i>	54	3
8763	palo colorado	<i>Ternstroemia luquillensis</i>	54	3
8764	copey vera	<i>Ternstroemia peduncularis</i>	54	3
8766	mamey de cura	<i>Ternstroemia stahlii</i>	54	3
8767	el yunque colorado	<i>Ternstroemia subsessilis</i>	53	3
8768	masa	<i>Tetragastris balsamifera</i>	53	3
8778	stinkingfish	<i>Tetrazygia angustifolia</i>	54	3
8780	Puerto Rico clover ash	<i>Tetrazygia biflora</i>	54	3
8781	krekre	<i>Tetrazygia elaeagnoides</i>	54	3
8783	cenizo	<i>Tetrazygia urbanii</i>	54	3
8784	cacao	<i>Theobroma cacao</i>	54	3
8786	maga	<i>Thespesia grandiflora</i>	54	3
8787	Portia tree	<i>Thespesia populnea</i>	54	3
8789	luckynut	<i>Thevetia peruviana</i>	54	3
8793	ceboruquillo	<i>Thouinia striata</i>	54	3
8794	Puerto Rico ceboruquillo	<i>Thouinia striata var. portoricensis</i>	54	3
8803	Brazilian glorytree	<i>Tibouchina granulosa</i>	54	3
8811	redcedar	<i>Toona spp.</i>	54	3
8812	Australian redcedar	<i>Toona ciliata</i>	54	3
8816	boje	<i>Torralbasia cuneifolia</i>	54	3
8825	cold withe	<i>Tournefortia filiflora</i>	54	3
8828	Lamarck's trema	<i>Trema lamarckianum</i>	54	3
8829	Jamaican nettletree	<i>Trema micranthum</i>	54	3
8833	broomstick	<i>Trichilia hirta</i>	54	3
8834	gaita	<i>Trichilia pallida</i>	54	3
8836	bariaco	<i>Trichilia triacantha</i>	54	3
8842	limeberry	<i>Triphasia trifolia</i>	54	3
8843	Triplaris spp.	<i>Triplaris spp.</i>	54	3
8844	ant tree	<i>Triplaris cumingiana</i>	54	3
8848	white ramoon	<i>Trophis racemosa</i>	54	3
8850	buttonwood	<i>Turpinia occidentalis</i>	54	3
8853	scratchbush	<i>Urema baccifera</i>	54	3
8854	flameberry	<i>Urema caracasana</i>	54	3
8855	ortiga	<i>Urema chlorocarpa</i>	54	3
8861	voa vanga	<i>Vangueria madagascariensis</i>	54	3
8871	lilac chastetree	<i>Vitex agnus-castus</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
8873	higuerillo	<i>Vitex divaricata</i>	54	3
8881	Wallenia lamarckiana	<i>Wallenia lamarckiana</i>	54	3
8887	bastard briziletto	<i>Weinmannia pinnata</i>	54	3
8901	tallow wood	<i>Ximenia americana</i>	54	3
8906	much-a-gente	<i>Xylosma buxifolia</i>	54	3
8910	spiny logwood	<i>Xylosma pachyphylla</i>	54	3
8912	white logwood	<i>Xylosma schaefferioides</i>	54	3
8913	Schwanbeck's logwood	<i>Xylosma schwanbeckiana</i>	54	3
8916	aloe yucca	<i>Yucca aloifolia</i>	54	3
8918	moundlily yucca	<i>Yucca gloriosa</i>	54	3
8919	bluestem yucca	<i>Yucca guatemalensis</i>	54	3
8923	Maricao pricklyash	<i>Zanthoxylum bifoliolatum</i>	54	3
8924	prickly yellow	<i>Zanthoxylum caribaeum</i>	54	3
8928	West Indian satinwood	<i>Zanthoxylum flavum</i>	54	3
8931	white pricklyash	<i>Zanthoxylum martinicense</i>	54	3
8932	yellow prickle	<i>Zanthoxylum monophyllum</i>	54	3
8934	dotted pricklyash	<i>Zanthoxylum punctatum</i>	54	3
8935	niaragato	<i>Zanthoxylum spinifex</i>	54	3
8937	St. Thomas pricklyash	<i>Zanthoxylum thomasianum</i>	54	3
8938	Zapoteca portoricensis	<i>Zapoteca portoricensis</i>	54	3
8939	Indian jujube	<i>Ziziphus mauritiana</i>	54	3
8940	cacao rojo	<i>Ziziphus reticulata</i>	54	3
8941	soana	<i>Ziziphus rignonii</i>	54	3
8943	Taylor's jujube	<i>Ziziphus taylorii</i>	54	3

# Appendix H: Pacific Tree Species Codes and Names

Major groups (MAJGRP) are (1) pines, (2) other softwoods, (3) soft hardwoods, and (4) hard hardwoods. The species groups (SPGRPCD) can be found in [appendix E](#).

## Pacific Tree Species:

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
0050	cypress	<i>Cupressus</i> spp.	52	2
0100	pine spp.	<i>Pinus</i> spp.	52	1
0211	redwood	<i>Sequoia sempervirens</i>	52	2
0299	Unknown dead conifer	<i>Tree evergreen</i>	52	2
0300	acacia spp.	<i>Acacia</i> spp.	54	3
0303	sweet acacia	<i>Acacia farnesiana</i>	54	3
0341	ailanthus	<i>Ailanthus altissima</i>	54	4
0350	alder spp.	<i>Alnus</i> spp.	54	3
0460	hackberry spp.	<i>Celtis</i> spp.	54	3
0510	eucalyptus spp.	<i>Eucalyptus</i> spp.	54	4
0511	Tasmanian bluegum	<i>Eucalyptus globulus</i>	54	4
0512	river redgum	<i>Eucalyptus camaldulensis</i>	54	4
0513	grand eucalyptus	<i>Eucalyptus grandis</i>	54	4
0514	swamp mahogany	<i>Eucalyptus robusta</i>	54	4
0520	persimmon spp.	<i>Diospyros</i> spp.	54	4
0541	white ash	<i>Fraxinus americana</i>	54	4
0681	white mulberry	<i>Morus alba</i>	54	4
0712	paulownia, empress-tree	<i>Paulownia tomentosa</i>	54	3
0715	Maytenus palauica	<i>Maytenus palauica</i>	54	3
0718	kesiamel	<i>Osmoxylon truncatum</i>	54	3
0720	bay spp.	<i>Persea</i> spp.	54	3
0755	mesquite spp.	<i>Prosopis</i> spp.	54	4
0764	peach	<i>Prunus persica</i>	54	3
0800	oak spp.	<i>Quercus</i> spp.	54	4
0855	sheoak spp.	<i>Casuarina</i> spp.	52	3
0856	gray sheoak	<i>Casuarina glauca</i>	54	3
0858	camphortree	<i>Cinnamomum camphora</i>	54	3
0860	citrus spp.	<i>Citrus</i> spp.	54	3
0865	largeleaf geigertree	<i>Cordia sebestena</i>	54	3
0885	mango	<i>Mangifera indica</i>	54	3
0887	fishpoison tree	<i>Piscidia piscipula</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
0888	octopus tree, schefflera	<i>Schefflera actinophylla</i>	54	3
0896	Java plum	<i>Syzygium cumini</i>	54	3
0897	tamarind	<i>Tamarindus indica</i>	54	3
0908	coconut palm	<i>Cocos nucifera</i>	53	3
0940	West Indian mahogany	<i>Swietenia mahagoni</i>	54	4
0974	Siberian elm	<i>Ulmus pumila</i>	54	3
0987	buttonwood-mangrove	<i>Conocarpus erectus</i>	54	4
0989	American mangrove	<i>Rhizophora mangle</i>	54	4
0992	melaleuca	<i>Melaleuca quinquenervia</i>	54	3
0993	chinaberry	<i>Melia azedarach</i>	54	4
0994	Chinese tallowtree	<i>Triadica sebifera</i>	54	4
0998	unknown dead hardwood	<i>Tree broadleaf</i>	54	3
0999	other or unknown live tree	<i>Tree unknown</i>	52	3
5261	peach palm	<i>Bactris gasipaes</i>	53	3
6002	mulga	<i>Acacia aneura</i>	54	3
6003	auri	<i>Acacia auriculiformis</i>	54	3
6004	small Philippine acacia	<i>Acacia confusa</i>	54	3
6006	koa	<i>Acacia koa</i>	54	3
6007	koaoha	<i>Acacia koaia</i>	54	3
6009	black wattle	<i>Acacia mangium</i>	54	3
6010	black wattle	<i>Acacia mearnsii</i>	54	3
6011	blackwood	<i>Acacia melanoxylon</i>	54	3
6014	South Wales wattle	<i>Acacia parramattensis</i>	54	3
6028	red beadtree	<i>Adenanthera pavonina</i>	54	3
6029	beadtree	<i>Adenanthera spp.</i>	54	3
6042	Titimel	<i>Aglaia mariannensis</i>	54	3
6043	mesecheues	<i>Aglaia palauensis</i>	54	3
6044	karasyu, marasau	<i>Aglaia ponapensis</i>	54	3
6046	laga ali	<i>Aglaia samoensis</i>	54	3
6047	Aglaia	<i>Aglaia spp.</i>	54	3
6048	Olomea	<i>Aidia cochinchinensis</i>	54	3
6049	Aidia racemosa	<i>Aidia racemosa</i>	54	3
6051	ailanthus	<i>Ailanthus spp.</i>	54	3
6057	Chinese albizia	<i>Albizia chinensis</i>	54	3
6058	ukall ra ngebard	<i>Albizia falcataria</i>	54	3
6059	woman's tongue	<i>Albizia lebbeck</i>	54	3
6061	ukall ra ngebard	<i>Albizia retusa</i>	54	3
6062	whiteflower albizia	<i>Albizia saponaria</i>	54	3
6063	albizia	<i>Albizia spp.</i>	54	3
6069	Hawaii alectryon	<i>Alectryon macrococcus</i>	54	3
6072	Elattostachys falcata	<i>Elattostachys falcata</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6073	alectryon	<i>Alectryon</i> spp.	54	3
6075	Indian walnut	<i>Aleurites moluccana</i>	54	3
6077	aleurites	<i>Aleurites</i> spp.	54	3
6078	lumbang	<i>Aleurites trisperma</i>	54	3
6083	Allophylus	<i>Allophylus</i> spp.	54	3
6084	chebeludes	<i>Allophylus ternatus</i>	54	3
6085	ebeludes, chebeludes	<i>Allophylus timorensis</i>	54	3
6086	Nepal alder	<i>Alnus nepalensis</i>	54	3
6088	chelebiob, elebiong	<i>Alphitonia carolinensis</i>	54	3
6089	Hawaii kauilatree	<i>Alphitonia ponderosa</i>	54	3
6090	Alphitonia	<i>Alphitonia</i> spp.	54	3
6091	toi	<i>Alphitonia zizyphoides</i>	54	3
6095	deviltree	<i>Alstonia macrophylla</i>	54	3
6096	Alstonia pacifica	<i>Alstonia pacifica</i>	54	3
6097	alstonia	<i>Alstonia</i> spp.	54	3
6107	cashew	<i>Anacardium occidentale</i>	54	3
6108	Anacolosa glochidiiformis	<i>Anacolosa glochidiiformis</i>	54	3
6109	Anacolosa insularis	<i>Anacolosa insularis</i>	54	3
6118	dermarm	<i>Angiopteris evecta</i>	54	3
6124	Annona cherimola	<i>Annona cherimola</i>	54	3
6128	soursop	<i>Annona muricata</i>	54	3
6129	custard apple	<i>Annona reticulata</i>	54	3
6130	Annona	<i>Annona</i> spp.	54	3
6131	sugar apple	<i>Annona squamosa</i>	54	3
6135	Kapua china laurel	<i>Antidesma kapuae</i>	54	3
6137	Antidesma bunius	<i>Antidesma bunius</i>	54	3
6138	Antidesma kusaiense	<i>Antidesma kusaiense</i>	54	3
6139	ha a	<i>Antidesma platyphyllum</i>	54	3
6142	Antidesma ponapense	<i>Antidesma ponapense</i>	54	3
6143	hame	<i>Antidesma pulvinatum</i>	54	3
6144	Antidesma sphaerocarpum	<i>Antidesma sphaerocarpum</i>	54	3
6145	chinalaurel	<i>Antidesma</i> spp.	54	3
6148	Antirhea inconspicua	<i>Antirhea inconspicua</i>	54	3
6154	parana pine	<i>Araucaria angustifolia</i>	51	3
6155	New Caledonia pine	<i>Araucaria columnaris</i>	51	1
6156	Norfolk Island Pine	<i>Araucaria excelsa</i>	51	1
6157	Norfolk Island pine	<i>Araucaria heterophylla</i>	51	3
6158	Araucaria	<i>Araucaria</i> spp.	51	3
6159	Alexandra palm	<i>Archontophoenix alexandrae</i>	53	3
6161	shoebutton	<i>Ardisia elliptica</i>	54	3
6166	marlberry	<i>Ardisia</i> spp.	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6167	betelnut	<i>Areca catechu</i>	54	3
6169	cabo-negro	<i>Arenga pinnata</i>	54	3
6171	breadfruit	<i>Artocarpus altilis</i>	54	3
6173	Artocarpus heterophyllus	<i>Artocarpus heterophyllus</i>	54	3
6175	dugdug, Marianas breadfruit	<i>Artocarpus mariannensis</i>	54	3
6176	Artocarpus nobilis	<i>Artocarpus nobilis</i>	54	3
6177	Marang	<i>Artocarpus odoratissimus</i>	54	3
6178	meduu	<i>Artocarpus</i> spp.	54	3
6179	taputoi	<i>Arytera brackenridgei</i>	54	3
6181	afia	<i>Ascarina diffusa</i>	54	3
6184	Astronidium kusaianum	<i>Astronidium kusaianum</i>	54	3
6185	Astronidium navigatorum	<i>Astronidium navigatorum</i>	54	3
6186	meskui	<i>Astronidium palauense</i>	54	3
6187	Astronidium pickeringii	<i>Astronidium pickeringii</i>	54	3
6188	Astronidium samoense	<i>Astronidium samoense</i>	54	3
6189	Astronidium	<i>Astronidium</i> spp.	54	3
6190	Astronidium subcordata	<i>Astronidium subcordata</i>	54	3
6193	ifi ifi	<i>Atuna racemosa</i>	54	3
6197	Bilimbi	<i>Averrhoa bilimbi</i>	54	3
6198	carambola	<i>Averrhoa carambola</i>	54	3
6199	Averrhoa	<i>Averrhoa</i> spp.	54	3
6200	biut	<i>Avicennia alba</i>	54	3
6203	Avicennia marina	<i>Avicennia marina</i>	54	3
6205	Avicennia	<i>Avicennia</i> spp.	54	3
6208	Saitamu	<i>Baccaurea taitensis</i>	54	3
6213	ralm	<i>Badusa palauensis</i>	54	3
6215	bamboo	<i>Bambusa</i> spp.	54	3
6216	common bamboo	<i>Bambusa vulgaris</i>	54	3
6220	sea putat	<i>Barringtonia asiatica</i>	54	3
6221	langaasag	<i>Barringtonia racemosa</i>	54	3
6222	falaga	<i>Barringtonia samoensis</i>	54	3
6223	Barringtonia	<i>Barringtonia</i> spp.	54	3
6225	Bauhinia binata	<i>Bauhinia binata</i>	54	3
6226	Napoleon's plume	<i>Bauhinia monandra</i>	54	3
6230	bauhinia	<i>Bauhinia</i> spp.	54	3
6236	Javanese bishopwood	<i>Bischofia javanica</i>	54	3
6237	bishopwood	<i>Bischofia</i> spp.	54	3
6238	lipsticktree	<i>Bixa orellana</i>	54	3
6239	bixa	<i>Bixa</i> spp.	54	3
6242	akupa	<i>Bobea brevipes</i>	54	3
6243	ahakea lau nui	<i>Bobea elatior</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6244	Hawaii dogweed	<i>Bobeia sandwicensis</i>	54	3
6245	ahakea	<i>Bobeia</i> spp.	54	3
6246	ahakea	<i>Bobeia timonioides</i>	54	3
6247	parrotweed	<i>Bocconia frutescens</i>	54	3
6248	bocconia	<i>Bocconia</i> spp.	54	3
6250	virgata	<i>Boehmeria virgata</i>	54	3
6260	kanawao	<i>Broussaisia arguta</i>	54	3
6262	paper mulberry	<i>Broussonetia papyrifera</i>	54	3
6264	angels-trumpet	<i>Brugmansia candida</i>	54	3
6266	Oriental mangrove	<i>Bruguiera gymnorhiza</i>	54	3
6267	smallflower bruguiera	<i>Bruguiera parviflora</i>	54	3
6268	Oriental mangrove	<i>Bruguiera sexangula</i>	54	3
6269	bruguiera	<i>Bruguiera</i> spp.	54	3
6277	omail	<i>Buchanania engleriana</i>	54	3
6278	gasu	<i>Buchanania merrillii</i>	54	3
6279	omail, deuachel	<i>Buchanania palawensis</i>	54	3
6280	Buchanania	<i>Buchanania</i> spp.	54	3
6286	dogtail	<i>Buddleja asiatica</i>	54	3
6299	Burckella richii	<i>Burckella richii</i>	54	3
6318	uhiuhi	<i>Caesalpinia kavaiensis</i>	54	3
6320	sappanwood	<i>Caesalpinia sappan</i>	54	3
6329	weeping bottlebrush	<i>Callistemon viminalis</i>	54	3
6341	Alexandrian laurel	<i>Calophyllum inophyllum</i>	54	3
6342	tamanu	<i>Calophyllum neo-ebudicum</i>	54	3
6343	chesemolech	<i>Calophyllum pelewense</i>	54	3
6344	olebtaches, chesemolech	<i>Calophyllum soulatatri</i>	54	3
6345	calophyllum	<i>Calophyllum</i> spp.	54	3
6346	roostertree	<i>Calotropis procera</i>	54	3
6347	calotropis	<i>Calotropis</i> spp.	54	3
6366	kelela charm, kiu	<i>Campnosperma brevipetiolatum</i>	54	3
6367	campnosperma brevipetiolata	<i>Campnosperma brevipetiolata</i>	54	3
6370	ilang-ilang	<i>Cananga odorata</i>	54	3
6372	mafoa	<i>Canarium mafoa</i>	54	3
6373	mesecheues	<i>Canarium hirsutum</i>	54	3
6374	lukerr	<i>Canarium indicum</i>	54	3
6375	Pili Nut	<i>Canarium ovatum</i>	54	3
6377	Canarium	<i>Canarium</i> spp.	54	3
6378	maali	<i>Canarium vitiense</i>	54	3
6379	Canarium vulgare	<i>Canarium vulgare</i>	54	3
6381	Olasina	<i>Psydrax merrillii</i>	54	3
6395	papaya	<i>Carica papaya</i>	53	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6396	papaya	<i>Carica</i> spp.	53	3
6397	scorpionbush	<i>Carmona retusa</i>	54	3
6398	scorpionbush	<i>Carmona</i> spp.	54	3
6399	fish tail palm	<i>Caryota mitis</i>	53	3
6400	Caryota	<i>Caryota</i> spp.	53	3
6401	fishtail palm	<i>Caryota urens</i>	53	3
6405	keuert	<i>Casearia cauliflora</i>	54	3
6408	Casearia	<i>Casearia</i> spp.	54	3
6415	golden shower	<i>Cassia fistula</i>	54	3
6417	pink shower	<i>Cassia grandis</i>	54	3
6418	apple blossom	<i>Cassia javanica</i>	54	3
6420	kassod tree	<i>Cassia siamea</i>	54	3
6422	Cassia	<i>Cassia</i> spp.	54	3
6430	Panama rubbertree	<i>Castilla elastica</i>	54	3
6433	river sheoak	<i>Casuarina cunninghamiana</i>	52	3
6434	beach sheoak	<i>Casuarina equisetifolia</i>	52	3
6437	gagu, australian pine	<i>Casuarina litorea</i>	52	1
6439	Haitian catalpa	<i>Catalpa longissima</i>	54	3
6441	trumpet tree	<i>Cecropia obtusifolia</i>	54	3
6444	pumpwood	<i>Cecropia</i> spp.	54	3
6445	Spanish cedar	<i>Cedrela odorata</i>	54	3
6449	kapoktree	<i>Ceiba pentandra</i>	54	3
6452	Celtis paniculata	<i>Celtis paniculata</i>	54	3
6459	chuti	<i>Cerbera dilatata</i>	54	3
6460	emeridech	<i>Cerbera floribunda</i>	54	3
6461	leva	<i>Cerbera manghas</i>	54	3
6462	chiute	<i>Cerbera odollam</i>	54	3
6463	Cerbera spp	<i>Cerbera</i> spp.	54	3
6469	Cereus hildmannianus	<i>Cereus hildmannianus</i>	52	3
6470	sweetpotato cactus	<i>Cereus</i> spp.	52	3
6472	biut	<i>Ceriops tagal</i>	54	3
6473	orange jessamine	<i>Cestrum aurantiacum</i>	54	3
6474	day jessamine	<i>Cestrum diurnum</i>	54	3
6477	night jessamine	<i>Cestrum nocturnum</i>	54	3
6478	jessamine	<i>Cestrum</i> spp.	54	3
6482	koko	<i>Chamaesyce atroccocca</i>	54	3
6483	ekoko	<i>Chamaesyce celastroides</i>	54	3
6492	Herbsts sandmat	<i>Chamaesyce herbstii</i>	54	3
6493	kokomalei	<i>Chamaesyce kuwaleana</i>	54	3
6494	alpine sandmat	<i>Chamaesyce olowaluana</i>	54	3
6495	Koolau Range sandmat	<i>Chamaesyce rockii</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6496	sandmat	<i>Chamaesyce</i> spp.	54	3
6497	Napali coast papala	<i>Charpentiera densiflora</i>	54	3
6498	ellipticleaf papala	<i>Charpentiera elliptica</i>	54	3
6499	broadleaf papala	<i>Charpentiera obovata</i>	54	3
6500	Koolau Range papala	<i>Charpentiera ovata</i>	54	3
6503	papala	<i>Charpentiera</i> spp.	54	3
6504	Waianae Range papala	<i>Charpentiera tomentosa</i>	54	3
6507	Domins club	<i>Cheirodendron dominii</i>	54	3
6508	Fauries club	<i>Cheirodendron fauriei</i>	54	3
6509	olapa	<i>Cheirodendron forbesii</i>	54	3
6510	lapalapa	<i>Cheirodendron platyphyllum</i>	54	3
6513	cheirodendron	<i>Cheirodendron</i> spp.	54	3
6514	olapalapa	<i>Cheirodendron trigynum</i>	54	3
6517	alaweo	<i>Chenopodium oahuense</i>	54	3
6518	goosefoot	<i>Chenopodium</i> spp.	54	3
6525	vitiensis	<i>Chionanthus vitiensis</i>	54	3
6541	star apple	<i>Chrysophyllum cainito</i>	54	3
6542	satinleaf	<i>Chrysophyllum oliviforme</i>	54	3
6545	Hawaiian tree fern	<i>Cibotium heleniae</i>	54	3
6546	Chamisso's manfern	<i>Cibotium chamissoi</i>	54	3
6547	hapuu	<i>Cibotium glaucum</i>	54	3
6548	hapuu li	<i>Cibotium menziesii</i>	54	3
6549	manfern	<i>Cibotium</i> spp.	54	3
6552	quinine	<i>Cinchona pubescens</i>	54	3
6553	cinchona	<i>Cinchona</i> spp.	54	3
6555	Padang cassia	<i>Cinnamomum burmannii</i>	54	3
6557	ochod	<i>Cinnamomum carolinense</i>	54	3
6561	ochod	<i>Cinnamomum pedatinervium</i>	54	3
6562	matieu	<i>Cinnamomum sessilifolium</i>	54	3
6563	cinnamon	<i>Cinnamomum</i> spp.	54	3
6564	cinnamon	<i>Cinnamomum verum</i>	54	3
6565	juniper berry	<i>Citharexylum caudatum</i>	54	3
6567	spiny fiddlewood	<i>Citharexylum spinosum</i>	54	3
6568	fiddlewood	<i>Citharexylum</i> spp.	54	3
6570	samoensis	<i>Citronella samoensis</i>	54	3
6572	Lime (Tipolo)	<i>Citrus aurantifolia</i>	54	3
6574	sour orange	<i>Citrus xaurantium</i>	54	3
6575	lemon	<i>Citrus xlimon</i>	54	3
6577	sweet orange	<i>Citrus xsinensis</i>	54	3
6578	grapefruit, kahet magas	<i>Citrus grandis</i>	54	3
6579	limon china	<i>Citrus hystrix</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6580	kahet, wild orange	<i>Citrus macroptera</i>	54	3
6581	Citrus maxima	<i>Citrus maxima</i>	54	3
6582	Citrus medica	<i>Citrus medica</i>	54	3
6583	Calamondin, kingkang	<i>Citrus mitis</i>	54	3
6584	Citrus reticulata	<i>Citrus reticulata</i>	54	3
6586	koe	<i>Claoxylon carolinianum</i>	54	3
6588	Claoxylon fallax	<i>Claoxylon fallax</i>	54	3
6589	Claoxylon longiracemosum	<i>Claoxylon longiracemosum</i>	54	3
6590	katteknaau, katot	<i>Claoxylon mariannum</i>	54	3
6591	poola	<i>Claoxylon sandwicense</i>	54	3
6592	clooxylon	<i>Claoxylon spp.</i>	54	3
6593	Cleistanthus carolinianus	<i>Cleistanthus carolinianus</i>	54	3
6594	Cleistanthus insularis	<i>Cleistanthus insularis</i>	54	3
6595	Cleistanthus	<i>Cleistanthus spp.</i>	54	3
6596	oha wai nui Clermontia	<i>Clermontia leptoclada</i>	54	3
6597	oha wai nui	<i>Clermontia arborescens</i>	54	3
6601	Kauai clermontia	<i>Clermontia clermontioides</i>	54	3
6604	Kohala Mountain clermontia	<i>Clermontia drepanomorpha</i>	54	3
6605	haha aiakamanu	<i>Clermontia fauriei</i>	54	3
6606	bog clermontia	<i>Clermontia grandiflora</i>	54	3
6610	oha kepau	<i>Clermontia hawaiiensis</i>	54	3
6611	forest clermontia	<i>Clermontia kakeana</i>	54	3
6612	Waipio Valley clermontia	<i>Clermontia kohalae</i>	54	3
6613	hillside clermontia	<i>Clermontia lindseyana</i>	54	3
6614	Maui clermontia	<i>Clermontia micrantha</i>	54	3
6615	Mauna Loa clermontia	<i>Clermontia montis-loa</i>	54	3
6616	Oahu clermontia	<i>Clermontia oblongifolia</i>	54	3
6620	Wailai Pali clermontia	<i>Clermontia pallida</i>	54	3
6621	smallflower clermontia	<i>Clermontia parviflora</i>	54	3
6622	pele clermontia	<i>Clermontia peleana</i>	54	3
6625	Waioiani clermontia	<i>Clermontia persicifolia</i>	54	3
6626	Hamakua clermontia	<i>Clermontia pyrularia</i>	54	3
6627	Clermontia singuliflora	<i>Clermontia singuliflora</i>	54	3
6628	clermontia	<i>Clermontia spp.</i>	54	3
6629	Haleakala clermontia	<i>Clermontia tuberculata</i>	54	3
6630	swampforest clermontia	<i>Clermontia waimeae</i>	54	3
6632	stickbush	<i>Clerodendrum chinense</i>	54	3
6633	Natal glorybower	<i>Clerodendrum glabrum</i>	54	3
6634	turks turbin	<i>Clerodendrum indicum</i>	54	3
6635	velvetleaf glorybower	<i>Clerodendrum macrostegium</i>	54	3
6636	glorybower	<i>Clerodendrum spp.</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6645	palm tree	<i>Clinostigma carolinense</i>	53	3
6651	Scotch attorney	<i>Clusia rosea</i>	54	3
6652	attorney	<i>Clusia</i> spp.	54	3
6670	seagrape	<i>Coccoloba uvifera</i>	54	3
6681	coconut palm	<i>Cocos</i> spp.	53	3
6684	Arabian coffee	<i>Coffea arabica</i>	54	3
6685	robusta coffee	<i>Coffea robusta</i>	54	3
6686	Coffea liberica	<i>Coffea liberica</i>	54	3
6687	coffee	<i>Coffea</i> spp.	54	3
6691	uab, chuchab	<i>Colona scabra</i>	54	3
6693	common snakebark	<i>Colubrina arborescens</i>	54	3
6694	Asian nakedwood	<i>Colubrina asiatica</i>	54	3
6697	kauila	<i>Colubrina oppositifolia</i>	54	3
6699	nakedwood	<i>Colubrina</i> spp.	54	3
6702	ochaoi	<i>Combretum tetralophum</i>	54	3
6703	Mao	<i>Commersonia bartramia</i>	54	3
6709	mangrove	<i>Conocarpus</i> spp.	54	3
6716	forest mirrorplant	<i>Coprosma foliosa</i>	54	3
6717	koi	<i>Coprosma kauensis</i>	54	3
6718	Oahu mirrorplant	<i>Coprosma longifolia</i>	54	3
6719	alpine mirrorplant	<i>Coprosma montana</i>	54	3
6720	Maui mirrorplant	<i>Coprosma ochracea</i>	54	3
6721	pubescent mirrorplant	<i>Coprosma pubens</i>	54	3
6722	woodland mirrorplant	<i>Coprosma rhytidocarpa</i>	54	3
6724	mirrorplant	<i>Coprosma</i> spp.	54	3
6726	olena	<i>Coprosma waimeae</i>	54	3
6729	Tou	<i>Cordia aspera</i>	54	3
6731	red manjack	<i>Cordia collococca</i>	54	3
6733	fragrant manjack	<i>Cordia dichotoma</i>	54	3
6736	Cordia micronesica	<i>Cordia micronesica</i>	54	3
6741	cordia	<i>Cordia</i> spp.	54	3
6742	kou	<i>Cordia subcordata</i>	54	3
6744	tiplant	<i>Cordyline fruticosa</i>	53	3
6745	cordyline	<i>Cordyline</i> spp.	53	3
6749	redgum	<i>Corymbia calophylla</i>	54	3
6750	<i>Corymbia citriodora</i>	<i>Corymbia citriodora</i>	54	3
6751	redflower gum	<i>Corymbia ficifolia</i>	54	3
6752	red bloodwood	<i>Corymbia gummifera</i>	54	3
6754	karaka nut	<i>Corynocarpus laevigatus</i>	54	3
6755	corynocarpus	<i>Corynocarpus</i> spp.	54	3
6756	cannonball tree	<i>Couroupita guianensis</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6758	sacred garlic pear	<i>Crateva religiosa</i>	54	3
6760	houka, calabash	<i>Crescentia alata</i>	54	3
6769	Saitamu	<i>Crossostylis biflora</i>	54	3
6771	longbeak rattlebox	<i>Crotalaria longirostrata</i>	54	3
6772	croton	<i>Croton spp.</i>	54	3
6778	Cryptocarya oreophila	<i>Cryptocarya oreophila</i>	54	3
6779	laulilii	<i>Cryptocarya elegans</i>	54	3
6781	holio	<i>Cryptocarya mannii</i>	54	3
6783	cryptocarya	<i>Cryptocarya spp.</i>	54	3
6784	laulilii	<i>Cryptocarya turbinata</i>	54	3
6786	Japanese cedar	<i>Cryptomeria japonica</i>	51	2
6787	Japanese cedar	<i>Cryptomeria spp.</i>	51	3
6795	cedar-of-Goa	<i>Cupressus lusitanica</i>	52	2
6796	Italian cypress	<i>Cupressus sempervirens</i>	52	2
6800	Haleakala cyanea	<i>Cyanea aculeatiflora</i>	53	3
6801	palmtree cyanea	<i>Cyanea arborea</i>	53	3
6802	Kauai cyanea	<i>Cyanea fissa</i>	53	3
6805	Degeners cyanea	<i>Cyanea floribunda</i>	53	3
6806	Kilauea Mauna cyanea	<i>Cyanea giffardii</i>	53	3
6807	wetforest cyanea	<i>Cyanea hamatiflora</i>	53	3
6810	Oahu cyanea	<i>Cyanea hardyi</i>	53	3
6811	prickly cyanea	<i>Cyanea horrida</i>	53	3
6812	Limahuli Valley cyanea	<i>Cyanea kuhihewa</i>	53	3
6813	Kunths cyanea	<i>Cyanea kunthiana</i>	53	3
6814	giant kokee cyanea	<i>Cyanea leptostegia</i>	53	3
6815	purple cyanea	<i>Cyanea macrostegia</i>	53	3
6818	Marks cyanea	<i>Cyanea marksii</i>	53	3
6819	hairy cyanea	<i>Cyanea pilosa</i>	53	3
6822	pohaku cyanea	<i>Cyanea pohaku</i>	53	3
6823	Molokai cyanea	<i>Cyanea procera</i>	53	3
6824	manyfruit cyanea	<i>Cyanea pycnocarpa</i>	53	3
6825	oakleaf cyanea	<i>Cyanea quercifolia</i>	53	3
6826	plateau delissea	<i>Cyanea rivularis</i>	53	3
6827	pua kala	<i>Cyanea solenocalyx</i>	53	3
6828	cyanea	<i>Cyanea spp.</i>	53	3
6829	Kaiholena cyanea	<i>Cyanea stictophylla</i>	53	3
6830	Mt. Kaala cyanea	<i>Cyanea superba</i>	53	3
6833	akuaku	<i>Cyanea tritomantha</i>	53	3
6837	Coopers cyathea	<i>Cyathea cooperi</i>	53	3
6838	olioli	<i>Cyathea decurrens</i>	53	3
6840	olioli	<i>Cyathea lunulata</i>	53	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6841	olioli	<i>Cyathea medullaris</i>	53	3
6842	kattar	<i>Cyathea nigricans</i>	53	3
6844	kattar	<i>Cyathea ponapeana</i>	53	3
6847	treefern	<i>Cyathea</i> spp.	53	3
6849	olioli	<i>Cyathea truncata</i>	53	3
6852	queen sago	<i>Cycas circinalis</i>	53	3
6853	remiang	<i>Cycas revoluta</i>	53	3
6854	Cycas	<i>Cycas</i> spp.	53	3
6855	ola	<i>Cyclophyllum barbatum</i>	54	3
6858	gulos	<i>Cynometra ramiflora</i>	54	3
6859	eeme	<i>Cynometra yokotae</i>	54	3
6860	tree-tomato	<i>Cyphomandra betacea</i>	54	3
6863	cyrtandra	<i>Cyrtandra pulchella</i>	54	4
6864	Cyrtandra	<i>Cyrtandra ramosissima</i>	54	3
6865	forest cyrtandra	<i>Cyrtandra giffardii</i>	54	3
6866	cyrtandra	<i>Cyrtandra</i> spp.	54	3
6868	Dalbergia retusa	<i>Dalbergia retusa</i>	54	3
6870	cocobolo	<i>Dalbergia tucurensis</i>	54	3
6875	Hawaii delissea	<i>Delissea fallax</i>	54	3
6876	cutleaf delissea	<i>Delissea laciniosa</i>	54	3
6877	Niihau delissea	<i>Delissea niihauensis</i>	54	3
6880	smallflower delissea	<i>Delissea parviflora</i>	54	3
6881	delissea	<i>Delissea</i> spp.	54	3
6882	leechleaf delissea	<i>Delissea undulata</i>	54	3
6883	royal poinciana	<i>Delonix regia</i>	54	3
6884	delonix	<i>Delonix</i> spp.	54	3
6885	salato	<i>Dendrocnide harveyi</i>	54	3
6886	kahtat	<i>Dendrocnide latifolia</i>	54	3
6887	Dendrocnide	<i>Dendrocnide</i> spp.	54	3
6891	redpalm	<i>Dictyosperma album</i>	53	3
6898	Shrubby dillenia	<i>Dillenia suffruticosa</i>	54	3
6900	mabolo	<i>Diospyros blancoi</i>	54	3
6902	Mabolo	<i>Diospyros discolor</i>	54	3
6903	Black sapote	<i>Diospyros ebenaster</i>	54	3
6904	anume	<i>Diospyros elliptica</i>	54	3
6905	Diospyros ferrea	<i>Diospyros ferrea</i>	54	3
6906	elama	<i>Diospyros hillebrandii</i>	54	3
6907	persimmon	<i>Diospyros kaki</i>	54	3
6910	auauli	<i>Diospyros samoensis</i>	54	3
6911	lama	<i>Diospyros sandwicensis</i>	54	3
6921	otot	<i>Discocalyx ponapensis</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6927	Florida hopbush	<i>Dodonaea viscosa</i>	54	3
6928	rru	<i>Dolichandrone spathacea</i>	54	3
6930	Ceylon gooseberry	<i>Dovyalis hebecarpa</i>	54	3
6933	Dracaena multiflora	<i>Dracaena multiflora</i>	53	3
6934	song of India	<i>Dracaena reflexa</i>	54	3
6935	Drypetes carolinensis	<i>Drypetes carolinensis</i>	54	3
6936	Drypetes dolichocarpa	<i>Drypetes dolichocarpa</i>	54	3
6941	kevert	<i>Drypetes nitida</i>	54	3
6942	Drypetes	<i>Drypetes spp.</i>	54	3
6943	none	<i>Drypetes vitiensis</i>	54	3
6944	Dubautia	<i>Dubautia demissifolia</i>	54	3
6945	Dubautia	<i>Dubautia fallax</i>	54	3
6946	Dubautia	<i>Dubautia montana</i>	54	3
6947	Mauna Kea dubautia	<i>Dubautia arborea</i>	54	3
6948	forest dubautia	<i>Dubautia knudsenii</i>	54	3
6949	Drypetes yapensis	<i>Drypetes yapensis</i>	54	3
6952	Kauai dubautia	<i>Dubautia microcephala</i>	54	3
6953	plantainleaf dubautia	<i>Dubautia plantaginea</i>	54	3
6957	netvein dubautia	<i>Dubautia reticulata</i>	54	3
6958	dubautia	<i>Dubautia spp.</i>	54	3
6961	golden dewdrops	<i>Duranta erecta</i>	54	3
6965	Durian	<i>Durio zibethinus</i>	54	3
6966	Dypsis lutescens	<i>Dypsis lutescens</i>	53	3
6968	maota mea	<i>Dysoxylum huntii</i>	54	3
6969	maota	<i>Dysoxylum maota</i>	54	3
6970	mamala	<i>Dysoxylum samoense</i>	54	3
6971	Dysoxylum	<i>Dysoxylum spp.</i>	54	3
6972	Dysoxylum mollissimum ssp. Molle	<i>Dysoxylum mollissimum ssp. Molle</i>	54	3
6973	oil nut palm	<i>Elaeis guineensis</i>	53	3
6974	Kosrae elaeocarpus	<i>Elaeocarpus Kaneh</i>	54	3
6975	kalia	<i>Elaeocarpus bifidus</i>	54	3
6976	syatak	<i>Elaeocarpus carolinensis</i>	54	3
6977	`a` mati`e	<i>Elaeocarpus floridanus</i>	54	3
6978	Elaeocarpus graeffei	<i>Elaeocarpus graeffei</i>	54	3
6979	sapatua	<i>Elaeocarpus grandis</i>	54	3
6980	joga	<i>Elaeocarpus joga</i>	54	3
6981	Elaeocarpus kerstingianus	<i>Elaeocarpus kerstingianus</i>	54	3
6982	maratte, opop	<i>Elaeocarpus kusanoi</i>	54	3
6983	Elaeocarpus	<i>Elaeocarpus spp.</i>	54	3
6984	aamatie	<i>Elaeocarpus tonganus</i>	54	3
6985	Elaeocarpus	<i>Elaeocarpus ulianus</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
6990	taputoi	<i>Elattostachys falcata</i>	54	3
6992	utuutu	<i>Eleocharis dulcis</i>	54	3
6994	elaeocarpa	<i>Endiandra elaeocarpa</i>	54	3
6996	monkeysoap	<i>Enterolobium cyclocarpum</i>	54	3
6998	loquat	<i>Eriobotrya japonica</i>	54	3
6999	loquat	<i>Eriobotrya</i> spp.	54	3
7008	bucayo	<i>Erythrina fusca</i>	54	3
7012	wili wili	<i>Erythrina sandwicensis</i>	54	3
7013	erythrina	<i>Erythrina</i> spp.	54	3
7014	gatae palagi	<i>Erythrina subumbrans</i>	54	3
7016	tiger's claw	<i>Erythrina variegata</i> var. <i>orientalis</i>	54	3
7017	acuminatissimum	<i>Erythrospermum acuminatissimum</i>	54	3
7025	southern mahogany	<i>Eucalyptus botryoides</i>	54	3
7026	applebox	<i>Eucalyptus bridgesiana</i>	54	3
7028	argyle apple	<i>Eucalyptus cinerea</i>	54	3
7030	sugargum	<i>Eucalyptus cladocalyx</i>	54	3
7031	yate	<i>Eucalyptus cornuta</i>	54	3
7032	narrowleaf red ironbark	<i>Eucalyptus crebra</i>	54	3
7033	roundleaf gum	<i>Eucalyptus deanei</i>	54	3
7034	Indonesian gum	<i>Eucalyptus deglupta</i>	54	3
7038	tauart	<i>Eucalyptus gomphocephala</i>	54	3
7039	mountain graygum	<i>Eucalyptus goniocalyx</i>	54	3
7041	white box	<i>Eucalyptus hemiphloia</i>	54	3
7044	jarrah	<i>Eucalyptus marginata</i>	54	3
7045	Australian tallowwood	<i>Eucalyptus microcorys</i>	54	3
7046	gray ironbark	<i>Eucalyptus paniculata</i>	54	3
7047	blackbutt	<i>Eucalyptus pilularis</i>	54	3
7048	black ironbox	<i>Eucalyptus raveretiana</i>	54	3
7049	redmahogany	<i>Eucalyptus resinifera</i>	54	3
7051	Western Australian floodedgum	<i>Eucalyptus rudis</i>	54	3
7052	black peppermint	<i>Eucalyptus salicifolia</i>	54	3
7053	Sydney bluegum	<i>Eucalyptus saligna</i>	54	3
7054	red ironbark	<i>Eucalyptus sideroxylon</i>	54	3
7056	forest redgum	<i>Eucalyptus tereticornis</i>	54	3
7057	manna gum	<i>Eucalyptus viminalis</i>	54	3
7059	edebsachel, chedebsachel	<i>Eugenia aquea</i>	54	3
7065	cloves	<i>Eugenia caryophyllus</i>	54	3
7078	macupa, wax apple	<i>Eugenia javanica</i>	54	3
7079	nioi	<i>Eugenia koolauensis</i>	54	3
7082	makupa, malay apple	<i>Eugenia malaccensis</i>	54	3
7086	Eugenia nitida	<i>Eugenia nitida</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
7087	orenged	<i>Eugenia palauensis</i>	54	3
7088	agatelang	<i>Eugenia palumbis</i>	54	3
7091	mountain stopper	<i>Eugenia reinwardtiana</i>	54	3
7096	stopper	<i>Eugenia</i> spp.	54	3
7099	luluhut	<i>Eugenia stelechantha</i>	54	3
7101	rebotel	<i>Eugenia suzukii</i>	54	3
7102	atoto	<i>Eugenia thompsonii</i>	54	3
7104	Surinam cherry	<i>Eugenia uniflora</i>	54	3
7110	Kauai spurge	<i>Euphorbia haeleleleana</i>	54	3
7112	Indian spurgetree	<i>Euphorbia neriifolia</i>	54	3
7114	poinsettia	<i>Euphorbia pulcherrima</i>	54	3
7115	spurge	<i>Euphorbia</i> spp.	54	3
7116	Indiantree spurge	<i>Euphorbia tirucalli</i>	54	3
7117	Longan	<i>Euphoria longana</i>	54	3
7119	anini	<i>Eurya sandwicensis</i>	54	3
7120	eurya	<i>Eurya</i> spp.	54	3
7123	Euodia hortensis	<i>Euodia hortensis</i>	54	3
7124	kertub	<i>Euodia nitida</i>	54	3
7125	beror	<i>Euodia palawensis</i>	54	3
7126	Euodia ponapensis	<i>Euodia ponapensis</i>	54	3
7127	Euodia	<i>Euodia</i> spp.	54	3
7128	Euodia trichantha	<i>Euodia trichantha</i>	54	3
7129	blinding tree	<i>Excoecaria agallocha</i>	54	3
7131	hulumoa	<i>Exocarpos gaudichaudii</i>	54	3
7132	exocarpos	<i>Exocarpos</i> spp.	54	3
7133	kotop	<i>Exorrhiza ponapensis</i>	54	3
7141	pualulu	<i>Fagraea berteroana</i>	54	3
7142	ksid	<i>Fagraea ksid</i>	54	3
7143	Fagraea	<i>Fagraea</i> spp.	54	3
7144	peacocksplume	<i>Falcataria moluccana</i>	54	3
7145	peacocksplume	<i>Falcataria</i> spp.	54	3
7150	weeping fig	<i>Ficus benjamina</i>	54	3
7151	edible fig	<i>Ficus carica</i>	54	3
7152	Ficus copiosa	<i>Ficus copiosa</i>	54	3
7155	Indian rubberplant	<i>Ficus elastica</i>	54	3
7156	mati	<i>Ficus godeffroyi</i>	54	3
7160	Chinese banyan	<i>Ficus microcarpa</i>	54	3
7162	tibig	<i>Ficus nota</i>	54	3
7163	aoa	<i>Ficus obliqua</i>	54	3
7165	aoa	<i>Ficus prolixa</i>	54	3
7167	Port Jackson fig	<i>Ficus rubiginosa</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
7168	lulk, banyan	<i>Ficus saffordii</i>	54	3
7169	mati vao	<i>Ficus scabra</i>	54	3
7171	fig	<i>Ficus spp.</i>	54	3
7175	Chinese banyan	<i>Ficus thonningii</i>	54	3
7176	mati	<i>Ficus tinctoria</i>	54	3
7178	mati	<i>Ficus uniauriculata</i>	54	3
7179	higo	<i>Ficus virens</i>	54	3
7180	Finschia chloroxantha	<i>Finschia chloroxantha</i>	54	3
7182	burrdaisytree	<i>Fitchia speciosa</i>	54	3
7186	filimoto	<i>Flacourtie rukam</i>	54	3
7188	Queensland maple	<i>Flindersia brayleyana</i>	54	3
7191	poumuli	<i>Flueggea flexuosa</i>	54	3
7192	mehamehame	<i>Flueggea neowawraea</i>	54	3
7193	bushweed	<i>Flueggea spp.</i>	54	3
7200	California buckthorn	<i>Frangula californica</i>	54	3
7206	shamel ash	<i>Fraxinus uhdei</i>	54	3
7207	Bolivian fuchsia	<i>Fuchsia boliviana</i>	54	3
7208	shrubby fuchsia	<i>Fuchsia paniculata</i>	54	3
7209	fuchsia	<i>Fuchsia spp.</i>	54	3
7210	silkrubber	<i>Funtumia elastica</i>	54	3
7211	avocado	<i>Persea americana</i>	54	3
7214	mangosteen	<i>Garcinia mangostana</i>	54	3
7215	tilol	<i>Garcinia matsudai</i>	54	3
7216	none	<i>Garcinia myrtifolia</i>	54	3
7217	konpuil	<i>Garcinia ponapensis</i>	54	3
7219	tilol	<i>Garcinia rumiyo</i>	54	3
7220	Garcinia quadrilocularis	<i>Garcinia quadrilocularis</i>	54	3
7221	Garcinia	<i>Garcinia spp.</i>	54	3
7224	forest gardenia	<i>Gardenia brighamii</i>	54	3
7225	Oahu gardenia	<i>Gardenia mannii</i>	54	3
7226	Remys gardenia	<i>Gardenia remyi</i>	54	3
7227	gardenia	<i>Gardenia spp.</i>	54	3
7228	Tahitian gardenia	<i>Gardenia taitensis</i>	54	3
7229	manuai vivao	<i>Garuga floribunda</i>	54	3
7233	taipoipo	<i>Geniostoma rupestre</i>	54	3
7241	Gironniera celtidifolia	<i>Gironniera celtidifolia</i>	54	3
7245	quickstick	<i>Gliricidia sepium</i>	54	3
7247	masame	<i>Glochidion cuspidatum</i>	54	3
7248	Glochidion Marianum	<i>Glochidion marianum</i>	54	3
7249	masame	<i>Glochidion ramiflorum</i>	54	3
7250	Glochidion	<i>Glochidion spp.</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
7251	belau	<i>Gmelina elliptica</i>	54	3
7252	blacheos	<i>Gmelina palawensis</i>	54	3
7253	Gmelina	<i>Gmelina</i> spp.	54	3
7254	Gnetum gnemon	<i>Gnetum gnemon</i>	54	3
7257	Glochidion kanehirae	<i>Glochidion kanehirae</i>	54	3
7260	Goniothalamus carolinensis	<i>Goniothalamus carolinensis</i>	54	3
7262	Creole cotton	<i>Gossypium barbadense</i>	54	3
7264	Gossypium hirsutum	<i>Gossypium hirsutum</i>	54	3
7272	kahiliflower	<i>Grevillea banksii</i>	54	3
7273	silkoak	<i>Grevillea robusta</i>	54	3
7274	grevillea	<i>Grevillea</i> spp.	54	3
7275	fau ui	<i>Grewia crenata</i>	54	3
7279	lignum-vitae	<i>Guaiacum officinale</i>	54	3
7282	paipai	<i>Guamia mariannae</i>	54	3
7307	puapua	<i>Guettarda speciosa</i>	54	3
7311	rhoifolia	<i>Guioa rhoifolia</i>	54	3
7312	Guioa	<i>Guioa</i> spp.	54	3
7313	bochela uchererak, uch	<i>Gulubia palauensis</i>	54	3
7319	vilivili	<i>Gyrocarpus americanus</i>	54	3
7321	bloodwoodtree	<i>Haematoxylum campechianum</i>	54	3
7332	Haplolobus floribundus	<i>Haplolobus floribundus</i>	54	3
7334	fa`aili	<i>Harpullia arborea</i>	54	3
7338	denticulata	<i>Hedycarya denticulata</i>	54	3
7340	Hedycarya	<i>Hedycarya</i> spp.	54	3
7343	Fosbergs starviolet	<i>Hedyotis fosbergii</i>	54	3
7344	manono	<i>Hedyotis hillebrandii</i>	54	3
7345	starviolet	<i>Hedyotis</i> spp.	54	3
7346	variable starviolet	<i>Hedyotis terminalis</i>	54	3
7349	white moho	<i>Helicocarpus popayanensis</i>	54	3
7350	heliocarpus	<i>Helicocarpus</i> spp.	54	3
7359	ufa	<i>Heritiera littoralis</i>	54	3
7360	ufa halemtano	<i>Heritiera longipetiolata</i>	54	3
7362	Heritiera	<i>Heritiera</i> spp.	54	3
7363	pipi	<i>Hernandia moerenhoutiana</i>	54	3
7364	pua, Chinese lantern tree	<i>Hernandia nymphaeifolia</i>	54	3
7365	Hernandia ovigera	<i>Hernandia ovigera</i>	54	3
7366	mago	<i>Hernandia sonora</i>	54	3
7367	Hernandia	<i>Hernandia</i> spp.	54	3
7368	Hernandia labyrinthica	<i>Hernandia labyrinthica</i>	54	3
7370	Lanai island-aster	<i>Hesperomannia arborescens</i>	54	3
7371	Maui island-aster	<i>Hesperomannia arbuscula</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
7372	Kauai island-aster	<i>Hesperomannia lydgatei</i>	54	3
7373	island-aster	<i>Hesperomannia</i> spp.	54	3
7374	toyon	<i>Heteromeles arbutifolia</i>	54	3
7376	toyon	<i>Heteromeles</i> spp.	54	3
7377	palma brava	<i>Heterospathe elata</i>	53	3
7381	para rubber tree	<i>Hevea brasiliensis</i>	54	3
7384	hau kuahiwi	<i>Hibiscadelphus bombycinus</i>	54	3
7385	lava hau kuahiwi	<i>Hibiscadelphus cruciata</i>	54	3
7386	Kauai hau kuahiwi	<i>Hibiscadelphus distans</i>	54	3
7387	Kilauea hau kuahiwi	<i>Hibiscadelphus giffardianus</i>	54	3
7388	Hualalai hau kuahiwi	<i>Hibiscadelphus hualalaiensis</i>	54	3
7389	hau kuahiwi	<i>Hibiscadelphus puahuahiwi</i>	54	3
7390	hibiscadelphus	<i>Hibiscadelphus</i> spp.	54	3
7391	Maui hau kuahiwi	<i>Hibiscadelphus wilderianus</i>	54	3
7392	Woods hau kuahiwi	<i>Hibiscadelphus woodii</i>	54	3
7393	white rosemallow	<i>Hibiscus arnottianus</i>	54	3
7397	Brackenridges rosemallow	<i>Hibiscus brackenridgei</i>	54	3
7401	lemonyellow rosemallow	<i>Hibiscus calyphyllus</i>	54	3
7402	red Kauai rosemallow	<i>Hibiscus clayi</i>	54	3
7403	mahoe	<i>Hibiscus elatus</i>	54	3
7404	red rosemallow	<i>Hibiscus kokio</i>	54	3
7407	largeleaf rosemallow	<i>Hibiscus macrophyllus</i>	54	3
7408	Dixie rosemallow	<i>Hibiscus mutabilis</i>	54	3
7411	rosemallow	<i>Hibiscus</i> spp.	54	3
7412	sea hibiscus	<i>Hibiscus tiliaceus</i>	54	3
7413	white Kauai rosemallow	<i>Hibiscus waimeae</i>	54	3
7424	Homalium whitmeeanum	<i>Homalium whitmeeanum</i>	54	3
7427	chemeklachel, eumail	<i>Horsfieldia amklaal</i>	54	3
7428	ersachel	<i>Horsfieldia novoguineensis</i>	54	3
7429	Horsfieldia nunu	<i>Horsfieldia nunu</i>	54	3
7430	chersachel	<i>Horsfieldia palauensis</i>	54	3
7431	Horsfieldia	<i>Horsfieldia</i> spp.	54	3
7440	nightblooming cactus	<i>Hylocereus</i> spp.	54	3
7441	nightblooming cactus	<i>Hylocereus undatus</i>	54	3
7442	stinkingtoe	<i>Hymenaea courbaril</i>	54	3
7448	Canary Island St. Johnswort	<i>Hypericum canariense</i>	54	3
7453	Hawaii holly	<i>Ilex anomala</i>	54	3
7454	English holly	<i>Ilex aquifolium</i>	54	3
7460	mate	<i>Ilex paraguariensis</i>	54	3
7464	holly	<i>Ilex</i> spp.	54	3
7472	ice cream bean	<i>Inga edulis</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
7475	ifi	<i>Inocarpus fagifer</i>	54	3
7477	ifilele	<i>Intsia bijuga</i>	54	3
7482	black poui	<i>Jacaranda mimosifolia</i>	54	3
7483	jacaranda	<i>Jacaranda</i> spp.	54	3
7491	Barbados nut	<i>Jatropha curcas</i>	54	3
7494	nettlespurge	<i>Jatropha</i> spp.	54	3
7497	ketoguit	<i>Kayea pacifica</i>	54	3
7506	guest tree	<i>Kleinhowia hospita</i>	54	3
7509	Molokai treecotton	<i>Kokia cookei</i>	54	3
7510	Hawaii treecotton	<i>Kokia drynarioides</i>	54	3
7511	Kauai treecotton	<i>Kokia kauaiensis</i>	54	3
7512	Wailupe Valley treecotton	<i>Kokia lanceolata</i>	54	3
7513	treecotton	<i>Kokia</i> spp.	54	3
7516	burgan	<i>Kunzea ericoides</i>	54	3
7517	Kunzea	<i>Kunzea</i> spp.	54	3
7518	summit labordia	<i>Labordia fragaeoidea</i>	54	3
7519	bog labordia	<i>Labordia hedyosmifolia</i>	54	3
7520	mountain labordia	<i>Labordia hirtella</i>	54	3
7521	Waianae Range labordia	<i>Labordia kaalae</i>	54	3
7522	Wahiawa Mountain labordia	<i>Labordia lydgatei</i>	54	3
7523	labordia	<i>Labordia</i> spp.	54	3
7524	paleflower labordia	<i>Labordia tinifolia</i>	54	3
7528	Lanai labordia	<i>Labordia triflora</i>	54	3
7529	Nevada peavine	<i>Labordia waiolani</i>	54	3
7533	pride of India	<i>Lagerstroemia speciosa</i>	54	3
7539	Langsat	<i>Lansium domesticum</i>	54	3
7543	bluelatan	<i>Latania loddigesii</i>	54	3
7558	large-leaf yellow teatree	<i>Leptospermum Morrisonii</i>	54	3
7559	common teatree	<i>Leptospermum petersonii</i>	54	3
7560	common teatree	<i>Leptospermum polygalifolium</i>	54	3
7561	broom teatree	<i>Leptospermum scoparium</i>	54	3
7562	teatree	<i>Leptospermum</i> spp.	54	3
7564	Leucaena insularum	<i>Leucaena insularum</i>	54	3
7565	white leadtree	<i>Leucaena leucocephala</i>	54	3
7566	leadtree	<i>Leucaena</i> spp.	54	3
7575	Chinese privet	<i>Ligustrum sinense</i>	54	3
7576	privet	<i>Ligustrum</i> spp.	54	3
7583	Lychee	<i>Litchi chinensis</i>	54	3
7586	papaono	<i>Litsea samoensis</i>	54	3
7587	Litsea	<i>Litsea</i> spp.	54	3
7588	fountain palm	<i>Livistona chinensis</i>	53	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
7595	vinegartree	<i>Lophostemon confertus</i>	54	3
7598	Egg Fruit / Canistel	<i>Lucuma nervosa</i>	54	3
7602	bakauaine, nana	<i>Lumnitzera littorea</i>	54	3
7614	macadamia nut tree, pengua	<i>Macadamia integrifolia</i>	54	3
7616	Macadamia	<i>Macadamia</i> spp.	54	3
7617	Macadamia Nut	<i>Macadamia tetraphylla</i>	54	3
7618	bedel	<i>Macaranga carolinensis</i>	54	3
7619	Macaranga grayana	<i>Macaranga grayana</i>	54	3
7620	lau pata	<i>Macaranga harveyana</i>	54	3
7621	pengua	<i>Macaranga mappa</i>	54	3
7623	macaranga	<i>Macaranga</i> spp.	54	3
7625	lau fatu	<i>Macaranga stipulosa</i>	54	3
7626	parasol leaf tree	<i>Macaranga tanarius</i>	54	3
7627	Macaranga thompsonii	<i>Macaranga thompsonii</i>	54	3
7638	Mallotus palauensis	<i>Mallotus palauensis</i>	54	3
7639	kamala tree	<i>Mallotus philippensis</i>	54	3
7641	mallotus	<i>Mallotus</i> spp.	54	3
7642	Mallotus tiliifolius	<i>Mallotus tiliifolius</i>	54	3
7653	manapau	<i>Mammea glauca</i>	54	3
7654	chopak	<i>Mammea odorata</i>	54	3
7655	Mammea	<i>Mammea</i> spp.	54	3
7657	kanit	<i>Mangifera minor</i>	54	3
7658	saipan mango	<i>Mangifera odorata</i>	54	3
7659	mango	<i>Mangifera</i> spp.	54	3
7660	ceara rubbertree	<i>Manihot glaziovii</i>	54	3
7661	manihot	<i>Manihot</i> spp.	54	3
7664	pani	<i>Manilkara dissecta</i>	54	3
7666	kohle	<i>Manilkara hoshinoi</i>	54	3
7671	Manilkara	<i>Manilkara</i> spp.	54	3
7672	udeuid	<i>Manilkara udoido</i>	54	3
7674	sapodilla	<i>Manilkara zapota</i>	54	3
7679	bkau, apgau	<i>Maranthes corymbosa</i>	54	3
7680	dermarm	<i>Marattia fraxinea</i>	54	3
7700	luluhtut	<i>Maytenus thompsonii</i>	54	3
7704	Medusanthera carolinensis	<i>Medusanthera carolinensis</i>	54	3
7705	matamo	<i>Medusanthera samoensis</i>	54	3
7706	Medusanthera	<i>Medusanthera</i> spp.	54	3
7709	melaleuca	<i>Melaleuca</i> spp.	54	3
7710	alom	<i>Melanolepis multiglandulosa</i>	54	3
7712	Melastoma candidum	<i>Melastoma candidum</i>	54	3
7713	Melastoma sanguineum	<i>Melastoma sanguineum</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
7716	melia	<i>Melia</i> spp.	54	3
7719	mokihana	<i>Melicope anisata</i>	54	3
7720	Ballous melicope	<i>Melicope balloui</i>	54	3
7721	uahiapele	<i>Melicope barbigera</i>	54	3
7722	Waianae Range melicope	<i>Melicope christophersenii</i>	54	3
7723	manena	<i>Melicope cinerea</i>	54	3
7724	kukaemoa	<i>Melicope clusiifolia</i>	54	3
7725	piloula	<i>Melicope cruciata</i>	54	3
7726	leiohiakaka	<i>Melicope elliptica</i>	54	3
7727	Haleakala melicope	<i>Melicope haleakalae</i>	54	3
7728	Haupa Mountain melicope	<i>Melicope haupuensis</i>	54	3
7729	mokihana kukae moa	<i>Melicope hawaiensis</i>	54	3
7730	Monoa melicope	<i>Melicope hiaakae</i>	54	3
7731	Honolulu melicope	<i>Melicope hosakae</i>	54	3
7732	Kaala melicope	<i>Melicope kaalaensis</i>	54	3
7733	Olokele Valley melicope	<i>Melicope knudsenii</i>	54	3
7734	Kaholuamanu melicope	<i>Melicope macropus</i>	54	3
7735	Makaha Valley melicope	<i>Melicope makahae</i>	54	3
7736	Molokai melicope	<i>Melicope molokaiensis</i>	54	3
7737	alani	<i>Melicope mucronulata</i>	54	3
7738	Oahu melicope	<i>Melicope oahuensis</i>	54	3
7739	Makawao melicope	<i>Melicope obovata</i>	54	3
7740	Honokahua melicope	<i>Melicope orbicularis</i>	54	3
7741	Hana melicope	<i>Melicope ovalis</i>	54	3
7742	eggshape melicope	<i>Melicope ovata</i>	54	3
7743	pale melicope	<i>Melicope pallida</i>	54	3
7744	Lihue melicope	<i>Melicope paniculata</i>	54	3
7745	boxfruit alani	<i>Melicope peduncularis</i>	54	3
7746	Kohala Summit melicope	<i>Melicope pseudoanisata</i>	54	3
7747	hairy melicope	<i>Melicope puberula</i>	54	3
7748	fourangle melicope	<i>Melicope quadrangularis</i>	54	3
7749	kapu melicope	<i>Melicope radiata</i>	54	3
7750	soopini	<i>Melicope latifolia</i>	54	3
7751	roundleaf melicope	<i>Melicope rotundifolia</i>	54	3
7752	St. Johns melicope	<i>Melicope saint-johnii</i>	54	3
7753	Mt. Kaala melicope	<i>Melicope sandwicensis</i>	54	3
7754	melicope	<i>Melicope</i> spp.	54	3
7755	volcanic melicope	<i>Melicope volcanica</i>	54	3
7756	alani wai	<i>Melicope waialealae</i>	54	3
7757	Monoa melicope	<i>Melicope wawraeana</i>	54	3
7758	kipuka pialua	<i>Melicope zahlbruckneri</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
7759	samoensis	<i>Melicytus samoensis</i>	54	3
7766	mao	<i>Melochia aristata</i>	54	3
7767	melochia	<i>Melochia</i> spp.	54	3
7769	herba del soldado	<i>Melochia umbellata</i>	54	3
7770	sayafe	<i>Melochia villosissima</i> var. <i>compacta</i>	54	3
7771	sayafe	<i>Melochia villosissima</i> var. <i>vilosissima</i>	54	3
7774	faniok	<i>Merrilliodendron megacarpum</i>	54	3
7776	fagufagu	<i>Meryta macrophylla</i>	54	3
7777	omechidel	<i>Meryta senfftiana</i>	54	3
7778	Meryta	<i>Meryta</i> spp.	54	3
7781	collina	<i>Metrosideros collina</i>	54	3
7782	ohia	<i>Metrosideros macropus</i>	54	3
7783	ohia lehua	<i>Metrosideros polymorpha</i>	54	3
7792	lehua papa	<i>Metrosideros rugosa</i>	54	3
7793	lehua	<i>Metrosideros</i> spp.	54	3
7794	lehua ahihi	<i>Metrosideros tremuloides</i>	54	3
7795	Kauai bottlebrush	<i>Metrosideros waialealae</i>	54	3
7798	ivory-nut palm	<i>Metroxylon amicarum</i>	53	3
7799	sago palm	<i>Metroxylon sagu</i>	53	3
7800	Metroxylon	<i>Metroxylon</i> spp.	53	3
7801	Orange Champak	<i>Michelia champaca</i>	54	3
7805	velvet tree	<i>Miconia calvescens</i>	54	3
7824	talafulu	<i>Micromelum minutum</i>	54	3
7831	pinnata	<i>Millettia pinnata</i>	54	3
7835	bulletwood, elengi	<i>Mimusops elengi</i>	54	3
7841	treedaisy	<i>Montanoa hibiscifolia</i>	54	3
7842	montanoa	<i>Montanoa</i> spp.	54	3
7845	Morella cerifera	<i>Morella cerifera</i>	54	3
7846	firetree	<i>Morella faya</i>	54	3
7848	bayberry	<i>Morella</i> spp.	54	3
7849	Indian mulberry	<i>Morinda citrifolia</i>	54	3
7850	ngel	<i>Morinda latibractea</i>	54	3
7851	Morinda pedunculata	<i>Morinda pedunculata</i>	54	3
7852	morinda	<i>Morinda</i> spp.	54	3
7853	noni kuahiwi	<i>Morinda trimera</i>	54	3
7855	horseradishtree	<i>Moringa oleifera</i>	54	3
7865	falseohe	<i>Munroidendron racemosum</i>	54	3
7867	strawberrytree	<i>Muntingia calabura</i>	54	3
7868	muntingia	<i>Muntingia</i> spp.	54	3
7870	Murraya koenigii	<i>Murraya koenigii</i>	54	3
7872	French plantain	<i>Musa paradisiaca</i>	52	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
7873	bungeltuu	<i>Musa coccinea</i>	52	3
7874	tama	<i>Musa nana</i>	52	3
7875	tuu banana	<i>Musa sapientum</i>	52	3
7876	meia	<i>Musa</i> spp.	52	3
7877	blantalos	<i>Musa textilis</i>	52	3
7878	tikap	<i>Musa tikap</i>	52	3
7879	fei banana	<i>Musa troglodytarum</i>	52	3
7880	Mussaenda frondosa	<i>Mussaenda frondosa</i>	54	3
7881	aloalo vao	<i>Mussaenda raiateensis</i>	54	3
7882	Mussaenda	<i>Mussaenda</i> spp.	54	3
7883	naio	<i>Myoporum sandwicense</i>	54	3
7884	myoporum	<i>Myoporum</i> spp.	54	3
7892	rodwood	<i>Myrcia</i> spp.	54	3
7894	jaboticaba	<i>Myrciaria cauliflora</i>	54	3
7899	yamamomo, strawberry tree	<i>Myrica rubra</i>	54	3
7900	sweetgale	<i>Myrica</i> spp.	54	3
7902	atoneulu	<i>Myristica hypargyraea</i>	54	3
7903	adepurot	<i>Myristica insularis</i>	54	3
7904	Myristica	<i>Myristica</i> spp.	54	3
7906	Myristica inutilis	<i>Myristica inutilis</i>	54	3
7910	forest colicwood	<i>Myrsine alyxifolia</i>	54	3
7913	summit colicwood	<i>Myrsine degeneri</i>	54	3
7914	mountain colicwood	<i>Myrsine emarginata</i>	54	3
7915	streambank colicwood	<i>Myrsine fernseei</i>	54	3
7916	Koolau Range colicwood	<i>Myrsine fosbergii</i>	54	3
7918	Wahiawa Bog colicwood	<i>Myrsine helleri</i>	54	3
7919	Kauai colicwood	<i>Myrsine kauaiensis</i>	54	3
7920	Kokee colicwood	<i>Myrsine knudsenii</i>	54	3
7921	Lanai colicwood	<i>Myrsine lanaiensis</i>	54	3
7922	kolea lau nui	<i>Myrsine lessertiana</i>	54	3
7923	Hanapepe River colicwood	<i>Myrsine mezii</i>	54	3
7924	swamp colicwood	<i>Myrsine petiolata</i>	54	3
7925	Molokai colicwood	<i>Myrsine pukooensis</i>	54	3
7926	kokea lau lii	<i>Myrsine sandwicensis</i>	54	3
7927	colicwood	<i>Myrsine</i> spp.	54	3
7928	Mt. Kahili colicwood	<i>Myrsine wawraea</i>	54	3
7929	Myrsine palauensis	<i>Myrsine palauensis</i>	54	3
7942	fao	<i>Neisosperma oppositifolia</i>	54	3
7948	afa	<i>Neonauclea forsteri</i>	54	3
7952	Rambutan	<i>Nephelium lappaceum</i>	54	3
7953	pulasan	<i>Nephelium ramboutan-ake</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
7954	maaloa	<i>Neraudia melastomifolia</i>	54	3
7958	keahi	<i>Nesoluma polynesianum</i>	54	3
7960	Hawaii olive	<i>Nestegis sandwicensis</i>	54	3
7961	nestegis	<i>Nestegis spp.</i>	54	3
7962	kalm, aralm	<i>Neuburgia celebica</i>	54	3
7964	tree tobacco	<i>Nicotiana glauca</i>	54	3
7965	tobacco	<i>Nicotiana spp.</i>	54	3
7966	smallflower aiea	<i>Nothocestrum breviflorum</i>	54	3
7967	broadleaf aiea	<i>Nothocestrum latifolium</i>	54	3
7968	longleaf aiea	<i>Nothocestrum longifolium</i>	54	3
7969	Oahu aiea	<i>Nothocestrum peltatum</i>	54	3
7970	aiea	<i>Nothocestrum spp.</i>	54	3
7971	kaala rockwort	<i>Nototrichium humile</i>	54	3
7972	Hawaii rockwort	<i>Nototrichium sandwicense</i>	54	3
7974	toechel, teuechel	<i>Nypa fruticans</i>	54	3
7977	ochna	<i>Ochna spp.</i>	54	3
7978	Thomas birds-eye bush	<i>Ochna thomasiana</i>	54	3
7980	Ochroma pyramidale	<i>Ochroma pyramidale</i>	54	3
7982	holei	<i>Ochrosia compta</i>	54	3
7983	island yellowwood	<i>Ochrosia haleakalae</i>	54	3
7984	Kauai yellowwood	<i>Ochrosia kauaiensis</i>	54	3
7985	Hawaii yellowwood	<i>Ochrosia kilaueaensis</i>	54	3
7986	yellowwood	<i>Ochrosia spp.</i>	54	3
7987	langiti	<i>Ochrosia mariannensis</i>	54	3
8000	oleandra fern	<i>Oleandra neriformis</i>	54	4
8004	olive	<i>Olea europaea</i>	54	3
8007	olive	<i>Olea spp.</i>	54	3
8008	fanuamamala	<i>Homalanthus acuminatus</i>	54	3
8009	fanuamamala	<i>Homalanthus nutans</i>	54	3
8010	Homalanthus	<i>Homalanthus spp.</i>	54	3
8011	Ophiorrhiza palauensis	<i>Ophiorrhiza palauensis</i>	54	3
8013	cochineal nopal cactus	<i>Opuntia cochenillifera</i>	54	3
8014	tuna cactus	<i>Opuntia ficus-indica</i>	54	3
8015	common pricklypear	<i>Opuntia monacantha</i>	54	3
8018	pricklypear	<i>Opuntia spp.</i>	54	3
8019	amansi, edebsungelked, necklace bead tree	<i>Ormosia calavensis</i>	54	3
8022	kesiamel	<i>Osmoxylon oliveri</i>	54	3
8023	kesiamel	<i>Osmoxylon pachyphyllum</i>	54	3
8024	Osmoxylon	<i>Osmoxylon spp.</i>	54	3
8036	miich era ngebard, guiana chestnut	<i>Pachira aquatica</i>	54	3
8044	gasu	<i>Palaquium stehlinii</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
8053	Pandanus japonicus	<i>Pandanus japonicus</i>	54	3
8054	chertochet	<i>Pandanus aimiriikensis</i>	53	3
8055	matal	<i>Pandanus cominsii</i>	53	3
8056	ongor	<i>Pandanus compressus</i>	53	3
8057	silaue	<i>Pandanus cylindricus</i>	53	3
8058	kienpel	<i>Pandanus dilatatus</i>	53	3
8059	ongor	<i>Pandanus divergens</i>	53	3
8060	pahong	<i>Pandanus dubius</i>	53	3
8061	ongor	<i>Pandanus duriocarpus</i>	53	3
8062	moak	<i>Pandanus enchabiensis</i>	53	3
8063	hara	<i>Pandanus fischerianus</i>	53	3
8064	aggag	<i>Pandanus fragrans</i>	53	3
8065	nenketak	<i>Pandanus hosinoi</i>	53	3
8066	pacheren	<i>Pandanus jaluitensis</i>	53	3
8067	buuk	<i>Pandanus kanehirae</i>	53	3
8068	siu	<i>Pandanus korrensis</i>	53	3
8069	lakatwa	<i>Pandanus lakatwa</i>	53	3
8070	erwan, jonnouia	<i>Pandanus laticanaliculatus</i>	53	3
8071	intekul, paszure	<i>Pandanus macrocephalus</i>	53	3
8072	ongor, ertochet	<i>Pandanus macrojeanneretii</i>	53	3
8073	menne	<i>Pandanus menne</i>	53	3
8074	Palaquium karrak	<i>Palaquium karrak</i>	54	3
8075	Pandanus odontoides	<i>Pandanus odontoides</i>	53	3
8076	ongor, ertochet	<i>Pandanus palawensis</i>	53	3
8077	peet	<i>Pandanus patina</i>	53	3
8078	ongor	<i>Pandanus peliliensis</i>	53	3
8079	alwan, kipal, taip	<i>Pandanus ponapensis</i>	53	3
8080	deipw, jomineia	<i>Pandanus pulposus</i>	53	3
8081	pathaplip	<i>Pandanus rectangulatus</i>	53	3
8082	fasa	<i>Pandanus reineckeri</i>	53	3
8083	magojokojok	<i>Pandanus rotundatus</i>	53	3
8084	screwpine	<i>Pandanus spp.</i>	53	3
8085	Tahitian screwpine	<i>Pandanus tectorius</i>	53	3
8086	kiparenwel	<i>Pandanus tolotomensis</i>	53	3
8087	mojel	<i>Pandanus trukensis</i>	53	3
8088	common screwpine	<i>Pandanus utilis</i>	53	3
8090	berrakelongor	<i>Pandanus variegatus</i>	53	3
8091	rauel	<i>Pangium edule</i>	54	3
8092	lonlin, lajokorer	<i>Pandanus obliquus</i>	53	3
8103	sea	<i>Parinari insularum</i>	54	3
8104	ais	<i>Parinari laurina</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
8105	Parinari	<i>Parinari</i> spp.	54	3
8107	Parkia korom	<i>Parkia korom</i>	54	3
8108	kmekumer	<i>Parkia parvifoliola</i>	54	3
8111	Jerusalem thorn	<i>Parkinsonia aculeata</i>	54	3
8112	paloverde	<i>Parkinsonia</i> spp.	54	3
8121	Peltophorum pterocarpum	<i>Peltophorum pterocarpum</i>	54	3
8123	ngis	<i>Pemphis acidula</i>	54	3
8129	Pericopsis mooniana	<i>Pericopsis mooniana</i>	54	3
8131	olomea	<i>Perrottetia sandwicensis</i>	54	3
8146	Phaleria nisidai	<i>Phaleria nisidai</i>	54	3
8151	Canary Island date palm	<i>Phoenix canariensis</i>	53	3
8152	date palm	<i>Phoenix dactylifera</i>	53	3
8153	date palm	<i>Phoenix</i> spp.	53	3
8154	date palm	<i>Phoenix sylvestris</i>	53	3
8155	Chinese photinia	<i>Photinia davidiana</i>	53	3
8157	Tahitian gooseberry tree	<i>Phyllanthus acidus</i>	54	3
8159	pamakani mahu	<i>Phyllanthus distichus</i>	54	3
8175	allspice	<i>Pimenta dioica</i>	54	3
8178	bayrumtree	<i>Pimenta racemosa</i> var. <i>grisea</i>	54	3
8180	Pimenta	<i>Pimenta</i> spp.	54	3
8181	chebouch, demailei	<i>Pinanga insignis</i>	54	3
8183	Caribbean pine	<i>Pinus caribaea</i>	51	1
8187	Mexican weeping pine	<i>Pinus patula</i>	51	1
8188	maritime pine	<i>Pinus pinaster</i>	51	1
8205	Waimea pipturus	<i>Pipturus albidus</i>	54	3
8206	soga	<i>Pipturus argenteus</i>	54	3
8207	pipturus	<i>Pipturus</i> spp.	54	3
8210	piscidia	<i>Piscidia</i> spp.	54	3
8212	Australasian catchbirdtree	<i>Pisonia brunoniana</i>	54	3
8213	grand devils-claws	<i>Pisonia grandis</i>	54	3
8214	aulu	<i>Pisonia sandwicensis</i>	54	3
8215	catchbirdtree	<i>Pisonia</i> spp.	54	3
8217	umbrella catchbirdtree	<i>Pisonia umbellifera</i>	54	3
8218	Kauai catchbirdtree	<i>Pisonia wagneriana</i>	54	3
8220	monkeypod	<i>Pithecellobium dulce</i>	54	3
8224	Mona cheesewood, Pittosporum	<i>Pittosporum monae</i>	54	3
8225	kamal	<i>Pittosporum ferrugineum</i>	54	3
8226	Hawaii poisonberry tree	<i>Pittosporum argentifolium</i>	54	3
8227	hoawa	<i>Pittosporum confertiflorum</i>	54	3
8228	Waianae Range cheesewood	<i>Pittosporum flocculosum</i>	54	3
8229	Waialeale cheesewood	<i>Pittosporum gayanum</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
8230	Koolau Range cheesewood	<i>Pittosporum glabrum</i>	54	3
8231	hoawa	<i>Pittosporum halophilum</i>	54	3
8232	Hawaii cheesewood	<i>Pittosporum hawaiiense</i>	54	3
8233	Kona cheesewood	<i>Pittosporum hosmeri</i>	54	3
8234	Kauai cheesewood	<i>Pittosporum kauaiense</i>	54	3
8235	royal cheesewood	<i>Pittosporum napaliense</i>	54	3
8236	Taiwanese cheesewood	<i>Pittosporum pentandrum</i>	54	3
8238	cheesewood	<i>Pittosporum</i> spp.	54	3
8239	cream cheesewood	<i>Pittosporum terminalioides</i>	54	3
8240	Australian cheesewood	<i>Pittosporum undulatum</i>	54	3
8241	cape cheesewood	<i>Pittosporum viridiflorum</i>	54	3
8242	alaa	<i>Planchonella garberi</i>	54	3
8243	alaa	<i>Planchonella grayana</i>	54	3
8244	alaa	<i>Planchonella linggensis</i>	54	3
8246	mamalava	<i>Planchonella samoensis</i>	54	3
8247	Planchonella	<i>Planchonella</i> spp.	54	3
8248	mamalava	<i>Planchonella torricellensis</i>	54	3
8250	Hawaii pilo kea	<i>Platydesma remyi</i>	54	3
8251	Maui pilo kea	<i>Platydesma spathulata</i>	54	3
8252	platydesma	<i>Platydesma</i> spp.	54	3
8257	golden hala pepe	<i>Pleomele aurea</i>	54	3
8258	Maui hala pepe	<i>Pleomele auwahiensis</i>	54	3
8259	Lanai hala pepe	<i>Pleomele fernaldii</i>	54	3
8260	Waianae Range hala pepe	<i>Pleomele forbesii</i>	54	3
8261	royal hala pepe	<i>Pleomele halapepe</i>	54	3
8262	Hawaii hala pepe	<i>Pleomele hawaiiensis</i>	54	3
8263	hala pepe	<i>Pleomele</i> spp.	54	3
8269	Plumeria obtusa	<i>Plumeria obtusa</i> var. <i>obtusa</i>	54	3
8271	templetree	<i>Plumeria rubra</i>	54	3
8272	Plumeria	<i>Plumeria</i> spp.	54	3
8283	bungaruau	<i>Polyscias grandifolia</i>	54	3
8284	geranium aralia	<i>Polyscias guilfoylei</i>	54	3
8285	Polyscias macgillivrayi	<i>Polyscias macgillivrayi</i>	54	3
8286	bngei	<i>Polyscias nodosa</i>	54	3
8287	tagitagi	<i>Polyscias samoensis</i>	54	3
8288	shield aralia	<i>Polyscias scutellaria</i>	54	3
8289	Polyscias	<i>Polyscias</i> spp.	54	3
8290	tava	<i>Pometia pinnata</i>	54	3
8292	kattai	<i>Ponapea hosinoi</i>	54	3
8293	Ponapea ledermanniana	<i>Ponapea ledermanniana</i>	54	3
8294	Ponapea	<i>Ponapea</i> spp.	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
8295	kisaks	<i>Pongamia pinnata</i>	54	3
8297	Abiu	<i>Pouteria caimito</i>	54	3
8298	elangel, chelangel	<i>Pouteria calcarea</i>	54	3
8299	eggfruit	<i>Pouteria campechiana</i>	54	3
8303	lalahag	<i>Pouteria obovata</i>	54	3
8304	alaa	<i>Pouteria sandwicensis</i>	54	3
8305	mammee sapote	<i>Pouteria sapota</i>	54	3
8306	pouteria	<i>Pouteria</i> spp.	54	3
8307	ahgao	<i>Premna obtusifolia</i>	54	3
8308	Premna pubescens	<i>Premna pubescens</i>	54	3
8309	aloalo	<i>Premna serratifolia</i>	54	3
8310	Premna	<i>Premna</i> spp.	54	3
8315	Hawaii pritchardia	<i>Pritchardia affinis</i>	53	3
8316	Maui pritchardia	<i>Pritchardia arecina</i>	53	3
8317	Kilauea pritchardia	<i>Pritchardia beccariana</i>	53	3
8318	Mt. Eke pritchardia	<i>Pritchardia forbesiana</i>	53	3
8319	Makaleha pritchardia	<i>Pritchardia hardyi</i>	53	3
8320	loulu lelo	<i>Pritchardia hillebrandii</i>	53	3
8321	Waianae Range pritchardia	<i>Pritchardia kaalae</i>	53	3
8322	Lanai pritchardia	<i>Pritchardia lanaiensis</i>	53	3
8323	loulu	<i>Pritchardia lanigera</i>	53	3
8324	Limahuli Valley pritchardia	<i>Pritchardia limahuliensis</i>	53	3
8325	Molokai pritchardia	<i>Pritchardia lowreyana</i>	53	3
8326	Koolau Range pritchardia	<i>Pritchardia martii</i>	53	3
8327	Alakai Swamp pritchardia	<i>Pritchardia minor</i>	53	3
8328	Kamalo pritchardia	<i>Pritchardia munroi</i>	53	3
8329	fan palm	<i>Pritchardia pacifica</i>	53	3
8330	Waioli Valley pritchardia	<i>Pritchardia perlmanii</i>	53	3
8331	Nihoa pritchardia	<i>Pritchardia remota</i>	53	3
8336	lands of papa pritchardia	<i>Pritchardia schattaueri</i>	53	3
8337	pritchardia	<i>Pritchardia</i> spp.	53	3
8338	stickybud pritchardia	<i>Pritchardia viscosa</i>	53	3
8339	poleline pritchardia	<i>Pritchardia waialealeana</i>	53	3
8341	fua lole	<i>Procris pedunculata</i>	54	4
8343	mesquite	<i>Prosopis juliflora</i>	54	3
8344	kiawe	<i>Prosopis pallida</i>	54	3
8355	strawberry guava	<i>Psidium cattleianum</i>	54	3
8356	guava	<i>Psidium guajava</i>	54	3
8365	Koolau Range wild coffee	<i>Psychotria fauriei</i>	54	3
8366	largeflower wild coffee	<i>Psychotria grandiflora</i>	54	3
8368	chimei	<i>Psychotria carolinensis</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
8369	Kauai wild coffee	<i>Psychotria greenwelliae</i>	54	3
8370	Waianae Range wild coffee	<i>Psychotria hathewayi</i>	54	3
8373	kopikoula	<i>Psychotria hawaiiensis</i>	54	3
8377	woodland wild coffee	<i>Psychotria hexandra</i>	54	3
8382	Oahu wild coffee	<i>Psychotria hexandra</i> spp. <i>ohauensis</i>	54	3
8386	milolii kopiwai	<i>Psychotria hobdyi</i>	54	3
8387	matalafi	<i>Psychotria insularum</i>	54	3
8388	kopiko kea	<i>Psychotria kaduana</i>	54	3
8390	aplohatkent	<i>Psychotria mariana</i>	54	3
8392	forest wild coffee	<i>Psychotria mariniana</i>	54	3
8393	opiko	<i>Psychotria mauiensis</i>	54	3
8398	Psychotria rhombocarpa	<i>Psychotria rhombocarpa</i>	54	3
8399	Psychotria rotensis	<i>Psychotria rotensis</i>	54	3
8400	wild coffee	<i>Psychotria</i> spp.	54	3
8401	leatherleaf wild coffee	<i>Psychotria wawrae</i>	54	3
8402	alahee	<i>Psydrax odorata</i>	54	3
8404	Kauai pteralyxia	<i>Pteralyxia kauaiensis</i>	54	3
8405	ridged pteralyxia	<i>Pteralyxia macrocarpa</i>	54	3
8406	pteralyxia	<i>Pteralyxia</i> spp.	54	3
8407	pterocarpus	<i>Pterocarpus indicus</i>	54	3
8412	Ptychococcus ledermannianus	<i>Ptychococcus ledermannianus</i>	54	3
8413	Psychotria cheathamiana	<i>Psychotria cheathamiana</i>	54	3
8415	Macarthur feather palm	<i>Ptychosperma macarthurii</i>	53	3
8416	chesdbuuch	<i>Ptychosperma palauense</i>	53	3
8418	Ptychosperma	<i>Ptychosperma</i> spp.	53	3
8424	cork oak	<i>Quercus suber</i>	54	3
8430	togo vao	<i>Rapanea myricifolia</i>	54	3
8431	poison devils-pepper	<i>Rauvolfia vomitoria</i>	54	4
8432	omechidel	<i>Rauvolfia insularis</i>	54	3
8434	devils-pepper	<i>Rauvolfia sandwicensis</i>	54	3
8435	devils-pepper	<i>Rauvolfia</i> spp.	54	3
8436	traveler's tree	<i>Ravenala madagascariensis</i>	53	3
8440	vi vao	<i>Reynoldsdia lanutoensis</i>	54	3
8442	ohe makai	<i>Reynoldsdia sandwicensis</i>	54	3
8443	reynoldsia	<i>Reynoldsdia</i> spp.	54	3
8456	Rheeda	<i>Rheedia edulis</i>	54	3
8458	mangle	<i>Rhizophora apiculata</i>	54	3
8460	Rhizophora lamarckii	<i>Rhizophora lamarckii</i>	54	3
8462	mangle hembra	<i>Rhizophora mucronata</i>	54	3
8463	mangrove	<i>Rhizophora</i> spp.	54	3
8464	Rhizophora stylosa	<i>Rhizophora stylosa</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
8465	rose myrtle	<i>Rhodomyrtus</i> spp.	54	3
8466	Rhodomyrtus tomentosus	<i>Rhodomyrtus tomentosa</i>	54	3
8467	neneleau	<i>Rhus sandwicensis</i>	54	3
8468	sumac	<i>Rhus</i> spp.	54	3
8469	tavai	<i>Rhus taitensis</i>	54	3
8472	castorbean	<i>Ricinus communis</i>	54	3
8473	ricinus	<i>Ricinus</i> spp.	54	3
8474	Rinorea carolinensis	<i>Rinorea carolinensis</i>	54	3
8480	Rollinia	<i>Rollinia deliciosa</i>	54	3
8490	Roystonea elata	<i>Roystonea elata</i>	53	3
8491	royal palm	<i>Roystonea oleracea</i>	53	3
8503	etkeam, cheskeam	<i>Samadera indica</i>	54	3
8505	raintree	<i>Samanea saman</i>	54	3
8506	raintree	<i>Samanea</i> spp.	54	3
8509	common elderberry	<i>Sambucus nigra</i>	54	3
8510	raintree	<i>Sambucus</i> spp.	54	3
8515	santol, kechapi	<i>Sandoricum koetjape</i>	54	4
8516	coastal sandalwood	<i>Santalum ellipticum</i>	54	3
8517	forest sandalwood	<i>Santalum freycinetianum</i>	54	3
8518	sandalwood	<i>Santalum album</i>	54	3
8521	Haleakala sandalwood	<i>Santalum haleakalae</i>	54	3
8522	mountain sandalwood	<i>Santalum paniculatum</i>	54	3
8525	willowleaf sandalwood	<i>Santalum salicifolium</i>	54	3
8526	sandalwood	<i>Santalum</i> spp.	54	3
8528	lonomea	<i>Sapindus oahuense</i>	54	3
8529	wingleaf soapberry	<i>Sapindus saponaria</i>	54	3
8531	soapberry	<i>Sapindus</i> spp.	54	3
8532	vitiensis	<i>Sapindus vitiensis</i>	54	3
8534	maskerekur	<i>Sapium indicum</i>	54	3
8544	uunu	<i>Sarcopygme pacifica</i>	54	3
8548	Scaevola, naupaka	<i>Scaevola cerasifolia</i>	54	3
8549	naupaka kuahiwi	<i>Scaevola chamissoniana</i>	54	3
8550	mountain naupaka	<i>Scaevola gaudichaudiana</i>	54	3
8551	forest naupaka	<i>Scaevola procera</i>	54	3
8552	naupaka	<i>Scaevola</i> spp.	54	3
8553	Schefflera kraemeri	<i>Schefflera kraemeri</i>	54	3
8555	schaefferia	<i>Schaefferia</i> spp.	54	3
8559	samoensis	<i>Schefflera samoensis</i>	54	3
8560	Toitoi	<i>Scaevola taccada</i>	54	3
8561	Peruvian peppertree	<i>Schinus molle</i>	54	3
8563	Brazilian peppertree	<i>Schinus terebinthifolius</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
8577	kuat	<i>Scyphiphora hydrophyllacea</i>	54	3
8583	poumuli	<i>Securinega flexuosa</i>	54	3
8585	poison tree	<i>Semecarpus kraemerii</i>	54	3
8586	tonget	<i>Semecarpus venenosa</i>	54	3
8588	emperor's candlesticks	<i>Senna alata</i>	54	3
8590	Gaudichauds senna	<i>Senna gaudichaudii</i>	54	3
8591	false sicklepod	<i>Senna multijuga</i>	54	3
8592	valamuelto	<i>Senna pendula</i>	54	3
8595	senna	<i>Senna septemtrionalis</i>	54	3
8596	Siamese cassia	<i>Senna siamea</i>	54	3
8598	senna	<i>Senna spp.</i>	54	3
8599	Senna sulfurea	<i>Senna sulfurea</i>	54	3
8600	glossy shower	<i>Senna surattensis</i>	54	3
8601	ukall	<i>Serianthes kanehirae</i>	54	3
8603	hayun lago, trongkon guafi	<i>Serianthes nelsonii</i>	54	3
8605	vegetable hummingbird	<i>Sesbania grandiflora</i>	54	3
8606	Egyptian riverhemp	<i>Sesbania sesban</i>	54	3
8607	riverhemp	<i>Sesbania spp.</i>	54	3
8608	Shirakiopsis indica	<i>Shirakiopsis indica</i>	54	3
8609	yellow llima	<i>Sida fallax</i>	54	3
8610	fanpetals	<i>Sida spp.</i>	54	3
8628	American black nightshade	<i>Solanum americanum</i>	54	3
8631	earleaf nightshade	<i>Solanum mauritianum</i>	54	3
8635	nightshade	<i>Solanum spp.</i>	54	3
8636	turkey berry	<i>Solanum torvum</i>	54	3
8639	mangrove	<i>Sonneratia alba</i>	54	3
8641	mamani	<i>Sophora chrysophylla</i>	54	3
8642	necklacepod	<i>Sophora spp.</i>	54	3
8643	silver bush	<i>Sophora tomentosa</i>	54	3
8644	African tuliptree	<i>Spathodea campanulata</i>	54	3
8645	spathodea	<i>Spathodea spp.</i>	54	3
8646	Spiraeanthemum samoense	<i>Spiraeanthemum samoense</i>	54	3
8649	Spondias dulcis	<i>Spondias dulcis</i>	54	3
8650	yellow mombin	<i>Spondias mombin</i>	54	3
8653	Spondias	<i>Spondias spp.</i>	54	3
8655	ngmui	<i>Stemonurus ammui</i>	54	3
8656	titmel	<i>Spondias pinnata</i>	54	3
8660	maras	<i>Soulamea amara</i>	54	3
8665	fanaio	<i>Sterculia fanaiho</i>	54	3
8667	Sterculia palauensis	<i>Sterculia palauensis</i>	54	3
8669	anthropophagorum	<i>Streblus anthropophagorum</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
8670	Hawaii roughbush	<i>Streblus pendulinus</i>	54	3
8671	streblus	<i>Streblus</i> spp.	54	3
8676	bay cedar	<i>Suriana maritima</i>	54	3
8678	mahogany	<i>Swietenia</i> spp.	54	3
8679	Honduras mahogany	<i>Swietenia macrophylla</i>	54	3
8687	chebtui, ebtui	<i>Symplocos racemosa</i>	54	3
8689	turpentine tree	<i>Syncarpia glomulifera</i>	54	3
8690	turpentine tree	<i>Syncarpia</i> spp.	54	3
8691	Miracle Berry	<i>Synsepalum dulcificum</i>	54	3
8694	watery roseapple	<i>Syzygium aqueum</i>	54	3
8695	asi	<i>Syzygium brevifolium</i>	54	3
8696	popona	<i>Syzygium carolinense</i>	54	3
8697	asi vai	<i>Syzygium clusiifolium</i>	54	3
8699	asi vai	<i>Syzygium dealatum</i>	54	3
8700	asi	<i>Syzygium inophylloides</i>	54	3
8701	Syzygium jambos	<i>Syzygium jambos</i>	54	3
8702	Malaysian apple	<i>Syzygium malaccense</i>	54	3
8703	popona	<i>Syzygium richii</i>	54	3
8704	nonu vao	<i>Syzygium samarangense</i>	54	3
8705	fena vao	<i>Syzygium samoense</i>	54	3
8706	ohia ha	<i>Syzygium sandwicense</i>	54	3
8708	syzygium	<i>Syzygium</i> spp.	54	3
8713	Tabebuia heterophylla	<i>Tabebuia heterophylla</i>	54	3
8714	pink tabebuia	<i>Tabebuia pallida</i>	54	3
8716	pink trumpet-tree	<i>Tabebuia rosea</i>	54	3
8718	trumpet-tree	<i>Tabebuia</i> spp.	54	3
8719	Tabernaemontana aurantiaca	<i>Tabernaemontana aurantiaca</i>	54	3
8722	Pulu	<i>Tabernaemontana pandacaqui</i>	54	3
8723	Tabernaemontana rotensis	<i>Tabernaemontana rotensis</i>	54	3
8737	manunu	<i>Tarenna sambucina</i>	54	3
8741	chestnutleaf trumpetbush	<i>Tecoma castanifolia</i>	54	3
8743	yellow trumpetbush	<i>Tecoma stans</i>	54	3
8744	teak	<i>Tectona grandis</i>	54	3
8745	tectona	<i>Tectona</i> spp.	54	3
8748	tropical almond	<i>Terminalia</i> spp.	54	3
8749	kehma	<i>Terminalia carolinensis</i>	54	3
8750	tropical almond	<i>Terminalia catappa</i>	54	3
8751	esemiich, chesemiich	<i>Terminalia crassipes</i>	54	3
8752	esemiich, chesemiich	<i>Terminalia edulis</i>	54	3
8753	strand tree	<i>Terminalia littoralis</i>	54	3
8755	tropical almond	<i>Terminalia kaernbachii</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
8756	East Indian almond	<i>Terminalia myriocarpa</i>	54	3
8758	malili	<i>Terminalia richii</i>	54	3
8759	talie	<i>Terminalia samoensis</i>	54	3
8770	Flynnsohe	<i>Tetraplasandra flynnii</i>	54	3
8771	Koolau Rangeohe	<i>Tetraplasandra gymnocarpa</i>	54	3
8772	Hawaii ohe	<i>Tetraplasandra hawaiensis</i>	54	3
8773	ohe ohe	<i>Tetraplasandra kavaicensis</i>	54	3
8774	ohe mauka	<i>Tetraplasandra oahuensis</i>	54	3
8775	tetraplasandra	<i>Tetraplasandra spp.</i>	54	3
8776	Mt. Waialeale ohe	<i>Tetraplasandra waialealae</i>	54	3
8777	ohe kiko ola	<i>Tetraplasandra waimeae</i>	54	3
8779	Florida clover ash	<i>Tetrazygia bicolor</i>	54	3
8784	cacao	<i>Theobroma cacao</i>	54	3
8787	Portia tree	<i>Thespesia populnea</i>	54	3
8788	thespesia	<i>Thespesia spp.</i>	54	3
8789	luckynut	<i>Thevetia peruviana</i>	54	3
8799	Timonius albus	<i>Timonius albus</i>	54	3
8800	kehn	<i>Timonius ledermanii</i>	54	3
8801	tuhke duwehte kamal	<i>Timonius ponapensis</i>	54	3
8804	glorytree	<i>Tibouchina spp.</i>	54	3
8805	princess-flower	<i>Tibouchina urvilleana</i>	54	3
8806	Timonius corymbosus	<i>Timonius corymbosus</i>	54	3
8807	Timonius mollis	<i>Timonius mollis</i>	54	3
8808	Timonius	<i>Timonius spp.</i>	54	3
8809	Timonius subauritus	<i>Timonius subauritus</i>	54	3
8810	Timonius timon	<i>Timonius timon</i>	54	3
8811	redcedar	<i>Toona spp.</i>	54	3
8812	Australian redcedar	<i>Toona ciliata</i>	54	3
8822	olona	<i>Touchardia latifolia</i>	54	3
8823	touchardia	<i>Touchardia spp.</i>	54	3
8824	velvetleaf soldierbush	<i>Tournefortia argentea</i>	54	3
8826	soldierbush	<i>Tournefortia spp.</i>	54	3
8827	magele	<i>Trema cannabina</i>	54	3
8831	oriental trema	<i>Trema orientalis</i>	54	3
8832	trema	<i>Trema spp.</i>	54	3
8837	Trichospermum ikutai	<i>Trichospermum ikutai</i>	54	3
8838	elsau, oleiulakersus	<i>Trichospermum ledermannii</i>	54	3
8839	maouli	<i>Trichospermum richii</i>	54	3
8842	limeberry	<i>Triphasia trifolia</i>	54	3
8846	faia	<i>Tristiropsis obtusangula</i>	54	3
8849	Trukia carolinensis	<i>Trukia carolinensis</i>	54	3

SPCD	COMMON_NAME	Scientific Name	SPGRPCD	MAJGRP
8856	hopue	<i>Ureria glabra</i>	54	3
8857	opuhe	<i>Ureria kaalae</i>	54	3
8858	urera	<i>Ureria spp.</i>	54	3
8863	Vavaea pauciflora	<i>Vavaea pauciflora</i>	54	3
8866	Manila palm	<i>Veitchia merrillii</i>	53	3
8868	Sterculia ponapensis	<i>Sterculia ponapensis</i>	54	3
8869	mu oil tree	<i>Vernicia montana</i>	54	3
8870	vernicia	<i>Vernicia spp.</i>	54	3
8872	bars, beokel	<i>Vitex cofassus</i>	54	3
8874	smallflower chastetree	<i>Vitex parviflora</i>	54	3
8875	chastetree	<i>Vitex spp.</i>	54	3
8876	simpleleaf chastetree	<i>Vitex trifolia</i>	54	3
8884	ateate	<i>Wedelia biflora</i>	54	3
8886	Weinmannia affinis	<i>Weinmannia affinis</i>	54	3
8889	alpine false ohelo	<i>Wikstroemia bicornuta</i>	54	3
8890	forest false ohelo	<i>Wikstroemia furcata</i>	54	3
8891	montane false ohelo	<i>Wikstroemia monticola</i>	54	3
8892	Oahu false ohelo	<i>Wikstroemia oahuensis</i>	54	3
8895	Hawaii false ohelo	<i>Wikstroemia phillyreifolia</i>	54	3
8896	Kohala false ohelo	<i>Wikstroemia pulcherrima</i>	54	3
8897	variableleaf false ohelo	<i>Wikstroemia sandwicensis</i>	54	3
8898	Skottsbergs false ohelo	<i>Wikstroemia skottsbergiana</i>	54	3
8899	false ohelo	<i>Wikstroemia spp.</i>	54	3
8900	hairy false ohelo	<i>Wikstroemia villosa</i>	54	3
8901	tallow wood	<i>Ximenia americana</i>	54	3
8903	lalanyog	<i>Xylocarpus granatum</i>	54	3
8904	leilei	<i>Xylocarpus moluccensis</i>	54	3
8905	Xylocarpus	<i>Xylocarpus spp.</i>	54	3
8907	sawtooth logwood	<i>Xylosma crenata</i>	54	3
8908	Hawaii brushholly	<i>Xylosma hawaiiensis</i>	54	3
8909	Xylosma nelsonii	<i>Xylosma nelsonii</i>	54	3
8911	Xylosma samoensis	<i>Xylosma samoensis</i>	54	3
8915	xylosma	<i>Xylosma spp.</i>	54	3
8925	kawau	<i>Zanthoxylum dipetalum</i>	54	3
8929	Hawaii pricklyash	<i>Zanthoxylum hawaiiense</i>	54	3
8930	Kauai pricklyash	<i>Zanthoxylum kauaense</i>	54	3
8933	Oahu pricklyash	<i>Zanthoxylum oahuense</i>	54	3
8936	pricklyash	<i>Zanthoxylum spp.</i>	54	3
8939	Indian jujube	<i>Ziziphus mauritiana</i>	54	3



# Appendix I: 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
<sup>a</sup> NRS-NE, <sup>b</sup> NRS-NC, <sup>c</sup> SRS, <sup>d</sup> RMRS, <sup>e</sup> PNWRS	1	National plot design consists of four 24-foot fixed-radius subplots for trees $\geq 5$ inches d.b.h., and four 6.8-foot fixed-radius microplots for seedlings and trees $\geq 1$ 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).
<sup>a</sup> NRS-NE	101	Various plot designs. Converted from Eastwide Database format, some fields may be null.
<sup>a</sup> 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 ( $\geq 5$ 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.
<sup>a</sup> NRS-NE	112	DESIGNCD 111, except that if the plot is used for growth estimates, the remeasurement of trees ( $\geq 5$ inches) is on the 24-foot-radius subplot 1 only, regardless of tree size or previous plot size or type (varied).
<sup>a</sup> NRS-NE	113	DESIGNCD 111, except that if the plot is used for growth estimates, the remeasurement of trees ( $\geq 5$ 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).
<sup>a</sup> NRS-NE	115	DESIGNCD 1. Overlaid on a FHM 4-subplot plot design. These plots are not used in change estimates.
<sup>a</sup> NRS-NE	116	DESIGNCD 1. Overlaid on 1/5 acre plot for all trees $\geq 5$ 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 ( $\geq 5$ inches), regardless of tree size or previous plot size.
<sup>a</sup> NRS-NE	117	DESIGNCD 1. Overlaid on 1/5 acre plot for all trees $\geq 5$ 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 ( $\geq 5$ inches), regardless of tree size or previous plot size.
<sup>a</sup> NRS-NE	118	DESIGNCD 1. Overlaid on 10-subplot, variable-radius design. Remeasurement of trees ( $\geq 5$ inches) on 5 of the 10 subplots; ingrowth based on trees ( $\geq 5$ inches) that grew onto five 6.8-foot radius subplots.

FIA Work Unit	Plot Design code (DESIGNCD)	Definition
<sup>b</sup> NRS-NC	301	Various plot designs. Converted from Eastwide Database format, some fields may be null.
<sup>b</sup> 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.
<sup>b</sup> NRS-NC	312	DESIGNCD 1. Initial plot establishment.
<sup>b</sup> NRS-NC	313	DESIGNCD 311. Overlaid on previous plots, no remeasurements.
<sup>b</sup> NRS-NC	314	DESIGNCD 1. Overlaid on previous plots, no remeasurements
<sup>b</sup> NRS-NC	315	DESIGNCD 311. Overlaid on same design. Only trees ≥5 inches d.b.h. are remeasured.
<sup>b</sup> NRS-NC	316	DESIGNCD 1. Overlaid on DESIGNCD 311. Only trees ≥5 inches d.b.h. are remeasured.
<sup>b</sup> 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.
<sup>b</sup> 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.
<sup>b</sup> 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.
<sup>b</sup> 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.
<sup>b</sup> 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.
<sup>b</sup> 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.
<sup>b</sup> 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.
<sup>b</sup> 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.
<sup>b</sup> 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.

<b>FIA Work Unit</b>	<b>Plot Design code (DESIGNCD)</b>	<b>Definition</b>
<sup>b</sup> 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.
<sup>b</sup> NRS-NC	328	DESIGNCD 1. Overlaid on DESIGNCD 311. All trees and saplings are remeasured.
<sup>c</sup> SRS	210	Other plot design installed by previous research stations within the 13-State Southern area not described by DESIGNCD 211-219.
<sup>c</sup> SRS	211	Ten variable-radius, 37.5 BAF points, 70 feet apart. Remeasure first 3 points of same design or new/replacement plot.
<sup>c</sup> SRS	212	Five variable-radius, 37.5 BAF points, 70 feet apart. Remeasure first 5 points of DESIGNCD 211 or new/replacement plot.
<sup>c</sup> SRS	213	Five variable-radius, 37.5 BAF points, 70 feet apart. Remeasure DESIGNCD 212.
<sup>c</sup> SRS	214	Ten variable-radius, 37.5 BAF points, 66 feet apart. Remeasure same design or new/replacement plot.
<sup>c</sup> SRS	215	Five variable-radius, 37.5 BAF points, 66 feet apart. Remeasure first 5 points of DESIGNCD 214 or new/replacement plot.
<sup>c</sup> SRS	216	Ten variable-radius, 37.5 BAF points, 66 feet apart. Remeasure DESIGNCD 215.
<sup>c</sup> 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.
<sup>c</sup> SRS	218	Remeasurement of DESIGNCD 217, point 1 only. Used only for change estimates.
<sup>c</sup> SRS	219	Three point, 2.5 BAF metric prism plot, points 25 meters apart. Remeasure same design or new/replacement plot.
<sup>c</sup> 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.
<sup>c</sup> SRS	221	DESIGNCD 220. Remeasure same design or new/replacement plot.
<sup>c</sup> SRS	222	DESIGNCD 220. Overlaid on and remeasurement of DESIGNCD 212 or 213.
<sup>c</sup> SRS	223	DESIGNCD 220. Overlaid on and remeasurement of first 5 points of DESIGNCD 214 or 216.
<sup>c</sup> SRS	230	DESIGNCD 1. Remeasurement plot not described by DESIGNCD 231-239.
<sup>c</sup> SRS	231	DESIGNCD 1. Overlaid on and remeasurement of DESIGNCD 212 or DESIGNCD 213.
<sup>c</sup> 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.

<b>FIA Work Unit</b>	<b>Plot Design code (DESIGNCD)</b>	<b>Definition</b>
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	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.
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.

FIA Work Unit	Plot Design code (DESIGNCD)	Definition
ePNWRS	555	Five 30.5 BAF points for trees $\geq 6.9$ inches and $< 35.4$ inches d.b.h.; five 55.8-foot fixed-radius plots for trees $\geq 35.4$ 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 $\geq 6.9$ inches and $< 35.4$ inches d.b.h.; five 55.8-foot fixed-radius plots for trees $\geq 35.4$ inches d.b.h.; five 10.8-foot fixed-radius plots for saplings $\geq 5$ 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 $\geq 5$ inches d.b.h.; and five 6.9-foot fixed-radius plots for saplings $\geq 1$ 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 $\geq 6.9$ inches and $< 35.4$ inches d.b.h.; three 55.8-foot fixed-radius plots for trees $\geq 35.4$ inches d.b.h.; three 10.8-foot fixed-radius plots for saplings $\geq 5$ 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 $\geq 5$ inches d.b.h.; and four 6.9-foot fixed-radius plots for saplings $\geq 1$ 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.
<sup>a</sup> NRS-NE, <sup>b</sup> NRS-NC, <sup>c</sup> SRS, <sup>d</sup> RMRS, 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).

<sup>a</sup>Northern Research Station - previously Northeastern<sup>b</sup>Northern Research Station - previously North Central

<sup>c</sup>Southern Research Station

<sup>d</sup>Rocky Mountain Research Station

<sup>e</sup>Pacific 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  $\geq 9$  inches d.b.h., hardwoods  $\geq 11$  inches d.b.h.

Poletimber-sized trees - softwoods  $\geq 5$  inches and  $< 9$  inches d.b.h., hardwoods  $\geq 5$  inches and  $< 11$  inches d.b.h.



# Appendix J: Damage Codes and Thresholds

## Appendix Contents:

<b>Code</b>	<b>Damage (common name)</b>
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 Codes and Thresholds

J-2

Code	Category	Agent	Common Name	Scientific Name	Threshold	Region
<b>00000</b>	-	-	<b>No Damage</b>	-	-	All
<b>10000</b>	<b>10</b>	<b>000</b>	<b>General Insects</b>	-	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>	-	-
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

<b>Code</b>	<b>Category</b>	<b>Agent</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Threshold</b>	<b>Region</b>
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.	<b>NRS</b>
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.	-	-
<b>11000</b>	<b>11</b>	<b>000</b>	<b>Bark Beetles</b>	-	Any evidence of a successful attack (successful attacks generally exhibit boring dust, many pitch tubes and/or fading crowns).	<b>All</b>
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>	Any occurrence.	<b>SRS</b>
11004	11	004	Jeffery 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.	<b>NRS; RMRS</b>
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.	<b>PNWRS; RMRS</b>
11010	11	010	eastern larch beetle	<i>Dendroctonus simplex</i>	-	-
11011	11	011	black turpentine beetle	<i>Dendroctonus terebrans</i>	Any evidence of a successful attack.	<b>SRS</b>
11012	11	012	red turpentine beetle	<i>Dendroctonus valens</i>	Any evidence of a successful attack.	<b>NRS</b>
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.	-	-

Code	Category	Agent	Common Name	Scientific Name	Threshold	Region
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	<i>Orthotomicus latidens</i>	<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.	<b>NRS; RMRS; SRS</b>
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	<i>Orthotomicus caelatus</i>	<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>	-	-
11039	11	039	twig beetles	<i>Pityophthorus</i> spp.	-	-
11040	11	040	foureyed 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>	-	-

<b>Code</b>	<b>Category</b>	<b>Agent</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Threshold</b>	<b>Region</b>
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 spp.</i>	-	-
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 connecinnus</i>	-	-
11053	11	053	four-eyed bark beetle	<i>Polygraphus spp.</i>	-	-
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	-	-
<b>12000</b>	<b>12</b>	<b>000</b>	<b>Defoliators</b>	-	Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected.	<b>All</b>
12001	12	001	casebearer	-	-	-
12002	12	002	leaf tier	-	-	-
12003	12	003	loopers	-	-	-
12004	12	004	needleminers	-	-	-
12005	12	005	sawflies	-	Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected.	<b>NRS</b>
12006	12	006	skeletonizer	-	-	-
12007	12	007	larger elm leaf beetle	<i>Monocesta coryli</i>	-	-
12008	12	008	spanworm	-	-	-

Code	Category	Agent	Common Name	Scientific Name	Threshold	Region
12009	12	009	webworm	-	-	-
12010	12	010	pine false webworm	<i>Acantholyda erythrocephala</i>	-	-
12011	12	011	western blackheaded budworm	<i>Adleris gloverana</i>	-	-
12012	12	012	eastern blackheaded budworm	<i>Adleris variana</i>	-	-
12013	12	013	whitefly	<i>Aleyrodoidea</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>	Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected.	<b>SRS</b>
12029	12	029	oak skeletonizer	<i>Bucculatrix ainsliella</i>	Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected.	<b>NRS</b>
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>	-	-

<b>Code</b>	<b>Category</b>	<b>Agent</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Threshold</b>	<b>Region</b>
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.	<b>NRS</b>
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.	<b>PNWRS; RMRS</b>
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.	<b>NRS</b>
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>Closterota 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.	<b>NRS</b>
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.	<b>NRS</b>
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>	-	-
12053	12	053	sycamore lace bug	<i>Corythucha ciliata</i>	-	-
12054	12	054	lace bugs	<i>Corythucha</i> spp.	-	-
12055	12	055	oak leafftier	<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>	-	-

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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 subsignaria</i>	Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ 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 tililaria</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>Fenusia pusilla</i>	-	-
12071	12	071	elm leafminer	<i>Fenusia 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>Halysidota 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>	-	-
12081	12	081	cherry scallop shell moth	<i>Hydria prunivorata</i>	Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected.	NRS
12082	12	082	fall webworm	<i>Hyphantria cunea</i>	Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected.	SRS
12083	12	083	hemlock looper	<i>Lambdina fiscellaria</i>	-	-
12084	12	084	oak looper	<i>Lambdina punctat</i>	-	-

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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 $\geq 20\%$ of the foliage with $\geq 50\%$ 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; SRS
12090	12	090	cottonwood leafminers	<i>Lyonetia</i> spp.	-	-
12091	12	091	dogwood sawfly	<i>Macremphytus tarsatus</i>	-	-
12092	12	092	rose chafer	<i>Macrodactylus subspinosus</i>	-	-
12093	12	093	eastern tent caterpillar	<i>Malacosoma americanum</i>	Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected.	NRS; SRS
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 $\geq 20\%$ of the foliage with $\geq 50\%$ 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>	-	-
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>	-	-

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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>Phylloconistis citrella</i>	-	-
12135	12	135	aspen leafminer	<i>Phylloconistis populiella</i>	-	-
12136	12	136	yellowheaded spruce sawfly	<i>Pikonema alaskensis</i>	Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected.	<b>NRS</b>
12137	12	137	tenlined June beetle	<i>Polyphylla decemlineata</i>	-	-
12138	12	138	Japanese beetle	<i>Popillia japonica</i>	-	-

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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>	Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected.	<b>SRS</b>
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 haimbachi</i>	-	-
12161	12	161	cypress looper	<i>Anacamptodes pergracilis</i>	-	-
12162	12	162	Chrysomela leaf beetle	<i>Chrysomela spp.</i>	-	-
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>	-	-
12166	12	166	New Mexico fir looper	<i>Galenara consimilis</i>	-	-

Code	Category	Agent	Common Name	Scientific Name	Threshold	Region
12167	12	167	striped alder sawfly	<i>Hemicroa crocea</i>	-	-
12168	12	168	greenstriped looper	<i>Melanoplodia imitata</i>	-	-
12169	12	169	willow leaf blotchminer	<i>Micrurapteryx salicifoliella</i>	-	-
12170	12	170	pine sawfly	<i>Neodiprion autumnalis</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.	-	-
12190	12	190	hickory tussock moth	<i>Halysidota 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>	-	-

<b>Code</b>	<b>Category</b>	<b>Agent</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Threshold</b>	<b>Region</b>
12197	12	197	winter moth	<i>Operophtera brumata</i>	Any occurrence.	<b>NRS</b>
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 $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected.	<b>NRS</b>
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 $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected.	<b>PNWRS</b>
12800	12	800	other defloater (known)	other defloater (known)	-	-
12900	12	900	unknown defoliator	unknown defoliator	-	-
<b>13000</b>	<b>13</b>	<b>000</b>	<b>Chewing Insects</b>	-	Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected.	<b>RMRS: SRS</b>
13001	13	001	grasshopper	-	-	-
13002	13	002	shorthorn grasshoppers	<i>Acrididae</i>	-	-
13003	13	003	black cutworm	<i>Agrotis ipsilon</i>	-	-
13004	13	004	Palau coconut beetle	<i>Brontispa palauensis</i>	-	-
13005	13	005	clearwinged grasshopper	<i>Camnula pellucida</i>	-	-
13006	13	006	cicadas	<i>Cicadidae</i>	Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected.	<b>SRS</b>
13007	13	007	eurytomids	<i>Eurytoma</i> spp.	-	-

<b>Code</b>	<b>Category</b>	<b>Agent</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Threshold</b>	<b>Region</b>
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 agamemnon</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	-	-
<b>14000</b>	<b>14</b>	<b>000</b>	<b>Sucking Insects</b>	-	Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected.	<b>All</b>
14001	14	001	scale insects	-	Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected	<b>NRS</b>

<b>Code</b>	<b>Category</b>	<b>Agent</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Threshold</b>	<b>Region</b>
14002	14	002	western larch woolly aphid	<i>Adelges oregonensis</i>	-	-
14003	14	003	balsam woolly adelgid	<i>Adelges piceae</i>	Any occurrence.	All
14004	14	004	hemlock woolly adelgid	<i>Adelges tsugae</i>	Any occurrence.	NRS; RMRS; SRS
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 $\geq 20\%$ of the foliage with $\geq 50\%$ 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>	-	-
14025	14	025	Egyptian fluted scale	<i>Icerya aegyptiaca</i>	-	-
14026	14	026	Lecanium scale	<i>Lecanium</i> spp.	-	-
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>	-	-

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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.	<b>NRS</b>
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>	Any damage to the terminal leader; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected.	<b>SRS</b>
14042	14	042	woolly alder aphid	<i>Paraproctiphilus 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>	-	-
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>	-	-

<b>Code</b>	<b>Category</b>	<b>Agent</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Threshold</b>	<b>Region</b>
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>Euceraphis 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>Phylloxaphis 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.	<b>PNWRS</b>
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	-	-
<b>15000</b>	<b>15</b>	<b>000</b>	<b>Boring Insects</b>	-	Any damage to the terminal leader; damage $\geq 20\%$ of the roots, stems, or branches.	<b>All</b>
15001	15	001	shoot borer	-	Any damage to the terminal leader; damage $\geq 20\%$ of the roots, stems, or branches.	<b>NRS</b>
15002	15	002	termite	-	-	-
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.	<b>NRS</b>
15005	15	005	twolined chestnut borers	<i>Agrilus bilineatus</i>	-	-

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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>Cryptophynchus 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 ≥10% of the bole circumference.	<b>NRS; SRS</b>
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.	-	-
15031	15	031	sugar maple borer	<i>Glycobius speciosus</i>	Any damage to the terminal leader; damage ≥20% of the roots, stems, or branches.	<b>NRS</b>
15032	15	032	Goes borers	<i>Goes</i> spp.	-	-
15033	15	033	pine root collar weevil	<i>Hylobius radicis</i>	-	-

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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>Magdalisa</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.	Damage to ≥10% of the bole circumference.	<b>SRS</b>
15053	15	053	cottonwood borer	<i>Plectrodera scalarator</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>Podesesia syringae</i>	-	-
15058	15	058	carpenterworm	<i>Prionoxystus robiniae</i>	-	-
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>	-	-

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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 spp.</i>	-	-
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>Vesparima novaroensis</i>	-	-
15077	15	077	sequoia pitch moth	<i>Vesparima 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>	Any occurrence.	<b>SRS</b>
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.	<b>NRS; SRS</b>
15088	15	088	hemlock borer	<i>Melanophila fulvoguttata</i>	Any damage to the terminal leader; damage ≥20% of the roots, stems, or branches.	<b>NRS</b>
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>	-	-

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15092	15	092	cypress weevil	<i>Eudociminus 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	-	-
<b>16000</b>	<b>16</b>	<b>000</b>	<b>Seed/Cone/Flower/Fruit Insects</b>	-	-	-
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>	-	-
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>	-	-

<b>Code</b>	<b>Category</b>	<b>Agent</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Threshold</b>	<b>Region</b>
16021	16	021	Dioryctria moths	<i>Dioryctria</i> spp.	-	-
16022	16	022	lodgepole cone moth	<i>Eucosma resciissoriana</i>	-	-
16023	16	023	seed chalcid	<i>Eurytomidae</i>	-	-
16024	16	024	slash pine flower thrips	<i>Gnophothrips 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>	-	-
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>	-	-

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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	-	-
<b>17000</b>	<b>17</b>	<b>000</b>	<b>Gallmaker Insects</b>	-	-	-
17001	17	001	birch budgall mite	<i>Aceria rufidis</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.	<b>NRS</b>
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>	-	-
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 piniiopsis</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>	-	-

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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	-	-
<b>18000</b>	<b>18</b>	<b>000</b>	<b>Insect Predators</b>	-	-	-
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>	-	-
<b>19000</b>	<b>19</b>	<b>000</b>	<b>General Diseases</b>	-	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
<b>20000</b>	<b>20</b>	<b>000</b>	<b>Biotic Damage</b>	-	-	-
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	-	-	-
<b>21000</b>	<b>21</b>	<b>000</b>	<b>Root/Butt Diseases</b>	-	Any occurrence.	All
21001	21	001	Armillaria root disease	<i>Armillaria</i> spp.	Any occurrence.	NRS; PNWRS; SRS
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>	-	-

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21008	21	008	Ganoderma rot of hardwoods	<i>Ganoderma lucidum</i>	Any occurrence.	<b>PNWRS</b>
21009	21	009	Ganoderma rot of conifers	<i>Ganoderma tsugae</i>	-	-
21010	21	010	Heterobasidion root disease	<i>Heterobasidion annosum</i>	Any occurrence.	<b>NRS; PNWRS; SRS</b>
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.	<b>PNWRS</b>
21015	21	015	Schweinitzii root and butt rot	<i>Phaeolus schweinitzii</i>	Any occurrence.	<b>PNWRS</b>
21016	21	016	flame tree root disease	<i>Phellinus noxious</i>	Any occurrence.	<b>PNWRS</b>
21017	21	017	laminated root rot	<i>Phellinus weiri</i>	Any occurrence.	<b>PNWRS</b>
21019	21	019	littleleaf disease/ Phytophthora root rot	<i>Phytophthora cinnamomi</i>	Any occurrence.	<b>SRS</b>
21020	21	020	Port-Orford-Cedar root disease	<i>Phytophthora lateralis</i>	Any occurrence.	<b>PNWRS</b>
21022	21	022	Pythium root rot	<i>Pythium spp.</i>	-	-
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.	<b>PNWRS</b>
21028	21	028	sudden oak death	<i>Phytophthora ramorum</i>	Any occurrence.	<b>PNWRS; SRS</b>
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>	-	-
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	-	-

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<b>22000</b>	<b>22</b>	<b>000</b>	<b>Cankers</b>	-	Any occurrence.	<b>All</b>
22005	22	005	viruses	-	-	-
22006	22	006	black knot of cherry	<i>Apiosporina morbosa</i>	Any occurrence on the bole or on branches ≤1 foot from bole; damage to ≥50% of branches.	<b>NRS; SRS</b>
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.	<b>NRS</b>
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.	<b>NRS</b>
22025	22	025	Cryptosphaeria canker of aspen	<i>Cryptosphaeria populin</i> a	-	-
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.	<b>NRS</b>
22032	22	032	pitch canker of pines	<i>Fusarium subglutinans</i>	Any occurrence.	<b>PNWRS</b>
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>	Any occurrence.	<b>SRS</b>
22038	22	038	Hypoxylon canker of aspen	<i>Hypoxylon mammatum</i>	Any occurrence.	<b>NRS</b>
22041	22	041	European larch canker	<i>Lachnellula willkommii</i>	-	-
22042	22	042	beech bark disease	<i>Nectria coccinea</i>	Any occurrence.	<b>NRS; SRS</b>
22043	22	043	Nectria canker	<i>Nectria galligena</i>	Any occurrence.	<b>NRS</b>
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 cardinale</i>	-	-

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22053	22	053	butternut canker	<i>Sirococcus clavigignenti-jugl.</i>	Any occurrence.	<b>NRS</b>
22054	22	054	maple canker	<i>Steganosporium</i> spp.	-	-
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.	<b>NRS</b>
22076	22	076	strumella canker	<i>Strumella coryneoidea</i>	Any occurrence.	<b>NRS</b>
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</i> spp.	-	-
22082	22	082	Discocainia canker	<i>Discocainia treleasei</i>	-	-
22083	22	083	red ring rot canker	<i>Phellinus pini</i> var. <i>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>	Any occurrence.	<b>SRS</b>
22087	22	087	nonrust canker	unknown	Damage ≥20% of bole circumference (in a running 3-foot section) at point of occurrence.	<b>PNWRS</b>
22300	22	300	other canker disease (known)	other canker disease (known)	-	-
22400	22	400	unknown canker disease	unknown canker disease	-	-
<b>22500</b>	<b>22</b>	<b>500</b>	<b>Stem Decay</b>	-	Any visual evidence (conks; fruiting bodies; rotten wood).	<b>All</b>
22001	22	001	heart rot	-	Any visual evidence.	<b>SRS</b>
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>	-	-

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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.	<b>PNWRS</b>
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	<i>Inonotus obliquus</i>	-	-
22044	22	044	ash heart rot	<i>Pereniporia fraxinophila</i>	-	-
22047	22	047	red heart rot	<i>Phellinus pini</i>	Any occurrence.	<b>PNWRS</b>
22048	22	048	aspen trunk rot	<i>Phellinus tremulae</i>	-	-
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>	-	-
22062	22	062	quinine fungus/brown trunk rot	<i>Fomitopsis Officinalis</i>	-	-
22063	22	063	brown cubical decay	<i>Coniophora puteana</i>	-	-
22064	22	064	tinder fungus	<i>Fomes fomentarius</i>	-	-
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>	-	-
22068	22	068	false tinder fungus	<i>Phellinus igniarius</i>	-	-
22069	22	069	robustus conk	<i>Phellinus robustus</i>	-	-
22070	22	070	yellow cap fungus	<i>Pholiota spp.</i>	-	-
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>	-	-
22800	22	800	other stem decay (known)	other stem decay (known)	-	-
22900	22	900	unknown stem decay	unknown stem decay	-	-
<b>23000</b>	<b>23</b>	<b>000</b>	<b>Parasitic/Epiphytic Plants</b>	-	Dwarf mistletoes with Hawksworth rating of $\geq 3$ ; true mistletoes or vines covering $\geq 50\%$ of crown.	<b>All</b>
23001	23	001	mistletoe	mistletoe	-	-

Code	Category	Agent	Common Name	Scientific Name	Threshold	Region
23002	23	002	parasitic plants	parasitic plants	-	-
23003	23	003	vine damage	vine damage	Vines covering ≥50% of crown.	NRS; PNWRS
23005	23	005	white fir dwarf mistletoe	<i>Arceuthobium abietinum</i> f. sp. <i>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>	Dwarf mistletoes with Hawksworth rating of ≥3; true mistletoes or vines covering ≥50% of crown.	SRS
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>	-	-
23017	23	017	southwestern dwarf mistletoe	<i>Arceuthobium vaginatum</i> subsp. <i>cryptopodium</i>	Dwarf mistletoes with Hawksworth rating of ≥3; true mistletoes or vines covering ≥50% of crown.	SRS
23018	23	018	dodder	<i>Cuscuta</i> spp.	-	-
23019	23	019	white fir mistletoe	<i>Phoradendron bolleanum</i> subsp. <i>pauciflorum</i>	-	-
23020	23	020	true mistletoe (other)	-	True mistletoe covering ≥50% of crown.	PNWRS; RMRS
23021	23	021	red fir dwarf mistletoe	<i>Arceuthobium abietinum</i> f. sp. <i>magnifica</i>	-	-
23022	23	022	juniper true mistleto	<i>Phoradendron juniperum</i>	-	-
23023	23	023	dwarf mistletoe	<i>Arceuthobium</i> spp.	Hawksworth rating of ≥3.	PNWRS; RMRS
23024	23	024	Weins dwarf mistletoe	<i>Arceuthobium abietinum</i> f. sp <i>magnifica</i>	-	-

Code	Category	Agent	Common Name	Scientific Name	Threshold	Region
<b>24000</b>	<b>24</b>	<b>000</b>	<b>Decline Complexes/Dieback/Wilts</b>	-	Damage ≥20% dieback of crown area.	<b>All</b>
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.	<b>NRS</b>
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.	<b>PNWRS</b>
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.	<b>PNWRS</b>
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.	Damage ≥20% dieback of crown area.	<b>SRS</b>
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 coeruleescens</i>	-	-
24021	24	021	oak wilt	<i>Ceratocystis fagacearum</i>	Damage ≥20% dieback of crown area.	<b>NRS</b>
24022	24	022	Dutch elm disease	<i>Ceratocystis ulmi</i>	Damage ≥20% dieback of crown area.	<b>NRS; SRS</b>
24023	24	023	bacterial wetwood	<i>Erwinia nimipressuralis</i>	-	-
24024	24	024	mimosa wilt	<i>Fusarium oxysporum</i> f. sp. <i>perniciosum</i>	-	-
24025	24	025	Verticillium wilt	<i>Verticillium albo-atrum</i>	-	-
24026	24	026	bacterial leaf scorch	<i>Xylella fastidiosa</i>	-	-

<b>Code</b>	<b>Category</b>	<b>Agent</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Threshold</b>	<b>Region</b>
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.	Damage ≥20% dieback of crown area.	<b>SRS</b>
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	-	-
<b>25000</b>	<b>25</b>	<b>000</b>	<b>Foliage Diseases</b>	-	Damage ≥20% of the foliage with ≥50% of the leaf/needle affected.	<b>All</b>
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>	Damage ≥20% of the foliage with ≥50% of the leaf/needle affected.	<b>SRS</b>
25011	25	011	Cercospora blight of juniper	<i>Cercospora sequoiae</i>	-	-
25013	25	013	large-spored spruce-laborador tea rust	<i>Chrysomyxa ledicola</i>	-	-
25014	25	014	ink spot of aspen	<i>Ciborinia whetzelii</i>	-	-
25015	25	015	pine needle rust	<i>Coleosporium</i> spp.	Damage ≥20% of the foliage with ≥50% of the leaf/needle affected.	<b>SRS</b>
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.	-	-
25019	25	019	cedar leaf blight	<i>Didymascella thujina</i>	-	-

Code	Category	Agent	Common Name	Scientific Name	Threshold	Region
25020	25	020	dogwood anthracnose	<i>Discula</i> spp.	Damage ≥20% of the foliage with ≥50% of the leaf/needle affected.	<b>SRS</b>
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.	<b>PNWRS</b>
25023	25	023	fire blight	<i>Erwinia amylovora</i>	-	-
25024	25	024	walnut anthracnose	<i>Gnomonia leptostyla</i>	Damage ≥20% of the foliage with ≥50% of the leaf/needle affected.	<b>SRS</b>
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.	<b>NRS</b>
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>	-	-
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.	<b>NRS</b>
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	<b>Stem Rusts</b>	-	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	-	-
<b>27000</b>	<b>27</b>	<b>000</b>	<b>Broom Rusts</b>	-	≥50% of crown area affected.	All
27001	27	001	spruce broom rust	<i>Chrysomyxa arctostaphyli</i>	-	-
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	-	-
<b>30000</b>	<b>30</b>	<b>000</b>	<b>Fire</b>	-	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	-	-	-
<b>41000</b>	<b>41</b>	<b>000</b>	<b>Wild Animals</b>	-	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.	<b>PNWRS; SRS</b>
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.	<b>PNWRS; RMRS</b>
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.	<b>PNWRS</b>
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.	<b>PNWRS; RMRS</b>

Code	Category	Agent	Common Name	Scientific Name	Threshold	Region
41006	41	006	porcupines	<i>Erethizon dorsatum</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.	<b>PNWRS; RMRS</b>
41007	41	007	rabbits or hares	<i>Sylvilagus</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.	<b>PNWRS</b>
41008	41	008	sapsuckers	<i>Sphyrapicus</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.	<b>RMRS; SRS</b>
41009	41	009	squirrels	<i>Sciuridae</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.	<b>PNWRS</b>
41010	41	010	woodpeckers	<i>Piciformes</i> spp.	-	-
41011	41	011	moose	<i>Alces alces</i>	-	-
41012	41	012	elk	<i>Cervus elaphus</i>	-	-

Code	Category	Agent	Common Name	Scientific Name	Threshold	Region
41013	41	013	deer	<i>Odocoileus</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.	<b>PNWRS</b>
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.	<b>PNWRS</b>
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.	<b>PNWRS</b>
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	-	-
<b>42000</b>	<b>42</b>	<b>000</b>	<b>Domestic Animals</b>	-	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.	<b>All</b>

Code	Category	Agent	Common Name	Scientific Name	Threshold	Region
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	-	-
<b>50000</b>	<b>50</b>	<b>000</b>	<b>Abiotic Damage</b>	-	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
50001	50	001	air pollutants	-	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
50002	50	002	chemical	-	Any damage to the terminal leader; damage $\geq 20\%$ of the roots, stems, or branches; damage $\geq 20\%$ of the foliage with $\geq 50\%$ of the leaf/needle affected.	NRS
50003	50	003	drought	-	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.	NRS; RMRS

Code	Category	Agent	Common Name	Scientific Name	Threshold	Region
50004	50	004	flooding/high water	-	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.	NRS; RMRS; SRS
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 $\geq 20\%$ 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
50013	50	013	wind	-	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
50014	50	014	winter injury	-	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
50015	50	015	avalanche	-	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
50016	50	016	mud-land slide	-	-	-
50017	50	017	volcano	-	-	-
50018	50	018	other geologic event	-	-	-
50019	50	019	mechanical (non-human caused)	-	-	-

Code	Category	Agent	Common Name	Scientific Name	Threshold	Region
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	-	-
<b>60000</b>	<b>60</b>	<b>000</b>	<b>Competition</b>	-	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
<b>70000</b>	<b>70</b>	<b>000</b>	<b>Human Activities</b>	-	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
70001	70	001	herbicides	-	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.	SRS
70003	70	003	imbedded objects	-	Any occurrence on the bole.	NRS; SRS

Code	Category	Agent	Common Name	Scientific Name	Threshold	Region
70004	70	004	improper planting technique	-	-	-
70005	70	005	land clearing	-	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.	SRS
70006	70	006	land use conversion	-	-	-
70007	70	007	logging 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
70008	70	008	mechanical	-	-	-
70009	70	009	pesticides	-	-	-
70010	70	010	roads	-	-	-
70011	70	011	soil compaction	-	-	-
70013	70	013	vehicle damage	-	-	-
70014	70	014	road salt	-	-	-
<b>71000</b>	<b>71</b>	<b>000</b>	<b>Harvest</b>	-	Removal of $\geq 10\%$ cubic volume.	All
71001	71	001	Woodland cutting	-	Removal of $\geq 10\%$ cubic volume.	RMRS
<b>80000</b>	<b>80</b>	<b>000</b>	<b>Multi-Damage (Insect/Disease)</b>	-	-	-
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	-	-	-

Code	Category	Agent	Common Name	Scientific Name	Threshold	Region
<b>85000</b>	<b>85</b>	<b>000</b>	<b>Invasive Plants</b>	-	-	-
<b>90000</b>	<b>90</b>	<b>000</b>	<b>Other Damages and Symptoms</b>	-	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.	All
90002	90	002	dead top		Any occurrence.	IW; NRS; PNWRS
90003	90	003	limby-wolf tree	Not recorded for non sawlog trees	Damage when board foot defect is $\geq 10\%$ .	IW
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 $\geq 10\%$ .	IW; PNWRS
90006	90	006	crook or sweep	Not recorded for non sawlog trees	Damage when board foot defect is $\geq 10\%$ .	IW; PNWRS
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.	IW; NRS; PNWRS
90010	90	010	dieback	-	Damage $\geq 20\%$ of crown affected.	IW; PNWRS; NRS
90011	90	011	open wound	-	Damage $\geq 20\%$ of bole circumference (in a running 3-foot section) at point of occurrence.	IW; PNWRS
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

Code	Category	Agent	Common Name	Scientific Name	Threshold	Region
90013	90	013	broken branches	-	Damage $\geq$ 20% of branches affected.	<b>PNWRS</b>
<b>99000</b>	<b>99</b>	<b>000</b>	<b>Unknown</b>	-	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.	<b>All</b>



# Appendix K: 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**

<b>Code</b>	<b>Severity</b>
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**

<b>Code</b>	<b>Agent</b>
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**

<b>Code</b>	<b>Severity</b>
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**

<b>Code</b>	<b>Agent</b>
36	White pine blister rust.

**Severity: White pine blister rust**

<b>Code</b>	<b>Severity</b>
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)**

<b>Code</b>	<b>Agent</b>
31	Sudden oak death symptoms.

**Severity: Sudden oak death (tanoak, coast live oak, black oak)**

<b>Code</b>	<b>Severity</b>
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	Commandra 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**

<b>Code</b>	<b>Agent</b>
32	Pitch canker (CA <i>Pinus</i> spp.).

**Severity: Pitch canker**

<b>Code</b>	<b>Severity</b>
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**

<b>Code</b>	<b>Agent</b>
46	General/other.
47	Red ring rot ( <i>Phellinus pin</i> ).
48	Indian paint rot ( <i>Echinodontium tinctorium</i> ).
49	Brown cubical rot ( <i>Phaeolus schweinitzii</i> ).

**Severity: Stem decays**

<b>Code</b>	<b>Severity</b>
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**

<b>Code</b>	<b>Agent</b>
50	Suppression.
51	Excessively deformed sapling.

**Severity: Special agents**

<b>Code</b>	<b>Severity</b>
0	Severity is not rated.

**Agent: Foliar pathogens**

<b>Code</b>	<b>Agent</b>
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**

<b>Code</b>	<b>Severity</b>
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**

<b>Code</b>	<b>Agent</b>
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**

<b>Code</b>	<b>Severity</b>
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**

<b>Code</b>	<b>Agent</b>
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**

<b>Code</b>	<b>Severity</b>
1	<20% of the crown is affected.
2	≥20% of the crown is affected or any damage to the bole.

**Agent: Physical injury**

<b>Code</b>	<b>Agent</b>
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**

<b>Code</b>	<b>Severity</b>
1	<20% of the crown is affected.
2	≥20% of the crown is affected or any damage to the bole.

**Agent: Physical defect**

<b>Code</b>	<b>Agent</b>
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**

<b>Code</b>	<b>Severity</b>
0	Severity is not rated.



# Appendix L: 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 <sup>2</sup>
33	New Hampshire	1983, 1997	2002
34	New Jersey	1987, 1999	2004
35	New Mexico	1987, 1999	2005 <sup>3</sup>
36	New York	1993	2002
37	North Carolina	1984, 1990	2002

<b>State code</b>	<b>State name</b>	<b>Date(s) of available periodic inventory data</b>	<b>Initiation of annual inventory</b>
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

<sup>1</sup>Periodic inventories were not conducted.

<sup>2</sup>Due 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 (MEASYR) is frequently different from INVYR.

<sup>3</sup>Annual 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 (MEASYR) is frequently different from inventory year (INVYR).

# Appendix M: Biomass Estimation in the FIADB

In versions prior to FIADB 4.0, a variety of regional methods were used to estimate tree biomass for live and dead trees in the TREE table. Starting in FIADB 4.0, a new nationally consistent method of estimating tree biomass was implemented. This new approach, called the component ratio method (CRM) (Heath and others 2009), involves calculating the dry weight of individual components before estimating the total aboveground or belowground biomass. The CRM approach is based on:

- converting the sound volume of wood (VOLCFSND) in the merchantable bole to biomass using a compiled set of wood specific gravities (Miles and Smith 2009) (see REF\_SPECIES table for values)
- calculating the biomass of bark on the merchantable bole using a compiled set of percent bark estimates and bark specific gravities (Miles and Smith 2009) (see REF\_SPECIES table for values)
- calculating the biomass of the entire tree (total aboveground biomass), merchantable bole (including bark), and belowground biomass, using equations from Jenkins and others (2003)
- calculating the volume of the stump (wood and bark) based on equations in Raile (1982) and converting this to biomass using the same specific gravities used for the bole wood and bark
- calculating the top biomass (tree tip and all branches) by subtracting all other biomass components from the total aboveground estimate
- calculating an adjustment factor by developing a ratio between bole biomass calculated from VOLCFSND to bole biomass using equations from Jenkins and others (2003)
- applying the adjustment factor to all tree components derived from both Jenkins and Raile

The CRM approach is based on assumptions that the definition of merchantable bole in the volume prediction equations is equivalent to the bole (stem wood) in Jenkins and others (2003), and that the component ratios accurately apply.

The tables in this appendix describe the equations used, beginning in FIADB 4.0 to estimate components of tree biomass, including stem wood (bole), top and branches combined, bark, stump, and coarse roots. Most of these components are estimated through a series of ratio equations as described by Jenkins and others (2003). Stem wood biomass is calculated directly from the sound cubic-foot volume of the tree bole, percentage of bark on the bole, and specific gravities of both wood and bark.

The individual component biomass values for bole, top, and stump are not available in FIADB for sapling-size timber tree species and all woodland tree species. Because saplings (trees from 1 to 4.9 inches d.b.h./d.r.c.) have no volume in FIADB, a ratio method was developed to compute a factor that is applied to saplings based on diameter and species, and the result is stored in DRYBIO\_SAPLING. For woodland species (trees where diameter is measured at the root collar [d.r.c.]), volume is calculated from the root collar to a 1½-inch top diameter. Because this volume accounts for a larger portion of the tree than timber species volume equations do, it was determined that the top and stump equations were not applicable to woodland species. Woodland tree volume is converted to biomass and stored in DRYBIO\_WDLD\_SPP, which is an estimate for total aboveground biomass, excluding foliage, the tree tip (top of the tree above 1½ inches in diameter), and a portion of the stump from ground to d.r.c. Therefore, only total aboveground and belowground biomass values are estimated for saplings and woodland species.

Definitions of each biomass component and the equations used to estimate the oven-dry weight in pounds are shown in appendix tables M-1 through M-4.

- Appendix table M-1 defines the columns that are stored in the TREE table, and clarifies the set of trees (species, dimensions, live or dead, etc.) that are used in each calculation.
- Appendix table M-2 defines the Jenkins component equations and explains how the equation results are used to estimate biomass. The 'Estimate name' in this table is the same name found in the coefficient definitions described in the biomass-related columns 38 to 49 of the REF\_SPECIES table.
- Appendix table M-3 contains the Jenkins equations used to estimate each biomass component. The equations use the exact coefficient column names found in the REF\_SPECIES table (for example, JENKINS\_TOTAL\_B1 in appendix table M-3 is the column name in REF\_SPECIES that holds the value of the coefficient needed in the total aboveground biomass equation). The Jenkins equations use the measured tree diameter to produce an estimate.
- Appendix table M-4 contains the actual equations used in the FIADB to estimate the biomass components stored in the TREE table. These equations are a blend of Jenkins ratios, calculated bole biomass (based on calculated volume from the TREE table), and adjustment factors. The adjustment factor is an important step because it relates measurement-based bole biomass (DRYBIO\_BOLE) to generalized equation-based bole biomass to improve or adjust the computed results of the Jenkins equations.

For more information please consult the publication by Heath and others (2009), titled *Investigation into Calculating Tree Biomass and Carbon in the FIADB Using a Biomass Expansion Factor Approach*.

**Appendix table M-1:** Definition of Biomass Components stored in the TREE table.

<b>Component</b>	<b>Column name</b>	<b>Biomass Component Definition (all are oven-dry biomass, pounds)</b>
Merchantable stem (bole)	DRYBIO_BOLE	Merchantable bole of the tree, includes stem wood and bark, from a 1-foot stump to a 4-inch top diameter. Based on VOLCFSND and specific gravity for the species. For timber species with a DIA $\geq$ 5 inches. Includes live and dead trees. (Note that VOLCFGGRS or VOLCFNET might be used after adjustment based on national averages, if VOLCFSND is not available.)
Top	DRYBIO_TOP	Top of the tree above 4 inches diameter and all branches; includes wood and bark and excludes foliage. For live and dead timber species with a DIA $\geq$ 5 inches.
Stump	DRYBIO_STUMP	Stump of the tree, the portion of a tree bole from ground to 1 foot high, includes wood and bark. For live and dead timber species with a DIA $\geq$ 5 inches.
Belowground	DRYBIO_BG	Coarse roots of trees and saplings with a DIA $\geq$ 1 inch. For timber and woodland species, and live and dead trees.
Saplings	DRYBIO_SAPLING	Total aboveground portion of live trees, excluding foliage. For timber species with a DIA $\geq$ 1 inch and $<$ 5 inches.
Woodland tree species	DRYBIO_WDLD_SPP	Total aboveground portion of a tree, excluding foliage, the tree tip (top of the tree above 1½ inches in diameter) and a portion of the stump from ground to d.r.c. For live and dead woodland species with a DIA $\geq$ 1 inch. Woodland species are identified by REF_SPECIES.WOODLAND = X. Woodland species usually have TREE.DIAHTCD = 2 and TREE.WDLDSTEM >0.

**Appendix table M-2:** Jenkins Biomass Component Equation Definitions (Refer to the REF\_SPECIES table for equation coefficients and adjustment factors).

Component	Estimate name	Definition
Total aboveground biomass	total_AG_biomass_Jenkins	Total biomass (oven-dry, pounds) of the aboveground portion of a tree. Includes stem wood, stump, bark, top, branches, and foliage.
Stem wood biomass ratio	stem_ratio	A ratio that estimates biomass of the merchantable bole of the tree by applying the ratio to total_AG_biomass_Jenkins. Includes wood only. This is the portion of the tree from a 1-foot stump to a 4-inch top diameter.
Stem bark biomass ratio	bark_ratio	A ratio that estimates biomass of the bark on the merchantable bole of the tree by applying the ratio to total_AG_biomass_Jenkins.
Foliage biomass ratio	foliage_ratio	A ratio that estimates biomass of the foliage on the entire tree by applying the ratio to total_AG_biomass_Jenkins.
Coarse root biomass ratio	root_ratio	A ratio that estimates biomass of the belowground portion of the tree by applying the ratio to total_AG_biomass_Jenkins.
Stump biomass	stump_biomass	An estimate of the stump biomass of a tree, from the ground to 1 foot high. Uses a series of equations that first estimates the inside and outside bark diameters, then estimates inside and outside bark volumes (Raile 1982). Wood and bark volumes are converted to biomass using specific gravity for the species.
Sapling biomass adjustment	JENKINS_SAPLING_ADJUSTMENT	An adjustment factor that is used to estimate sapling biomass for the tree by applying the factor to the total aboveground estimate, excluding foliage. The adjustment factor was computed as a national average ratio of the REGIONAL_DRYBIOT (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. This is used on timber and woodland species.

**Appendix table M-3:** Jenkins Biomass Equations. (Actual B1 and B2 coefficients and adjustment factors are stored in the REF\_SPECIES table.) Note: These equations are used in appendix table M-4 to estimate the biomass components stored in the TREE table.

Component	Equation
<b>total_AG_biomass_Jenkins</b> (pounds)	Total aboveground biomass, includes wood and bark for stump, bole, top, branches, and foliage. = $\exp(JENKINS\_TOTAL\_B1 + JENKINS\_TOTAL\_B2 * \ln(DIA*2.54)) * 2.2046$
<b>stem_ratio</b>	= $\exp(JENKINS\_STEM\_WOOD\_RATIO\_B1 + JENKINS\_STEM\_WOOD\_RATIO\_B2 / (DIA*2.54))$
<b>bark_ratio</b>	= $\exp(JENKINS\_STEM\_BARK\_RATIO\_B1 + JENKINS\_STEM\_BARK\_RATIO\_B2 / (DIA*2.54))$
<b>foliage_ratio</b>	= $\exp(JENKINS\_FOLIAGE\_RATIO\_B1 + JENKINS\_FOLIAGE\_RATIO\_B2 / (DIA*2.54))$
<b>root_ratio</b>	= $\exp(JENKINS\_ROOT\_RATIO\_B1 + JENKINS\_ROOT\_RATIO\_B2 / (DIA*2.54))$
<b>stem_biomass_Jenkins</b> (pounds)	= total_AG_biomass_Jenkins * stem_ratio
<b>bark_biomass_Jenkins</b> (pounds)	= total_AG_biomass_Jenkins * bark_ratio
<b>bole_biomass_Jenkins</b> (pounds)	= stem_biomass_Jenkins + bark_biomass_Jenkins
<b>foliage_biomass_Jenkins</b> (pounds)	= total_AG_biomass_Jenkins * foliage_ratio
<b>root_biomass_Jenkins</b> (pounds)	= total_AG_biomass_Jenkins * root_ratio
<b>stump_biomass_Jenkins</b> (pounds)	Volumes of wood and bark are based on diameter inside bark (DIB) and DOB equations from Raile 1982. DIB = $(DIA * RAILE\_STUMP\_DIB\_B1) + (DIA * RAILE\_STUMP\_DIB\_B2 * (4.5-HT) / (HT+1))$ DOB = $DIA + (DIA * RAILE\_STUMP\_DOB\_B1 * (4.5-HT) / (HT+1))$ Volume is estimated for 0.1ft (HT) slices from ground to 1 foot high (HT), and summed to compute stump volume. Bark_volume = Volume_outside_bark - Volume_inside_bark Bark and wood volumes are multiplied by their respective specific gravities and added together to estimate biomass.
<b>top_biomass_Jenkins</b> (pounds)	= total_AG_biomass_Jenkins - stem_biomass_Jenkins - bark_biomass_Jenkins - foliage_biomass_Jenkins - stump_biomass_Jenkins

**Appendix table M-4:** Equations used to calculate Biomass Components stored in the TREE table.

Column name	Equation (refer to appendix table M-3 for details on variables found in equations below)
-	<b>AdjFac</b> = DRYBIO_BOLE / bole_biomass_Jenkins <b>AdjFac_woodland</b> = DRYBIO_WDLD_SPP / (total_AG_biomass_Jenkins - foliage_biomass_Jenkins)
<b>DRYBIO_BOLE</b> (timber species only) (wood and bark) (see note below)	VOLUME = VOLCFSND (or VOLCFGRS, VOLCFNET that are adjusted for the percent sound) Volume = includes the volume of wood from a 1-foot stump to a 4-inch top diameter  = (VOLUME * (BARK_VOL_PCT / 100.0) * (BARK_SPGR_GREENVOL_DRYWT * 62.4)) + (VOLUME * (WOOD_SPGR_GREENVOL_DRYWT * 62.4))
<b>DRYBIO_TOP</b> (timber species only)	= top_biomass_Jenkins * <b>AdjFac</b>
<b>DRYBIO_STUMP</b> (timber species only)	= stump_biomass_Jenkins * <b>AdjFac</b>
<b>DRYBIO_SAPLING</b> (timber species only)	= (total_AG_biomass_Jenkins - foliage_biomass_Jenkins) * JENKINS_SAPLING_ADJUSTMENT
<b>DRYBIO_WDLD_SPP</b> (woodland species only)	With a few exceptions, woodland species are identified by REF_SPECIES.WOODLAND = X. Woodland species usually have TREE.DIAHTCD = 2 and TREE.WDLDSTEM >0.  For woodland species, volume equations produce volume of wood and bark, from d.r.c. to a 1½-inch top diameter, and includes branches. Biomass equations for each component are not available, therefore stem volume is converted to biomass and stored in DRYBIO_WDLD_SPP. This is an estimate of total aboveground biomass for woodland species, which includes wood and bark for the stem and branches and excludes foliage, the tree tip (top of the tree above 1½ inches in diameter), and a portion of the stump from the ground to the point of diameter measurement.  For trees with a d.r.c. ≥5 inches: VOLUME = VOLCFSND (or VOLCFGRS, VOLCFNET that are adjusted for the percent sound) VOLUME = includes the volume of wood, bark, and branches  Wood and bark volumes need to be separated before converting to biomass as follows: = (VOLUME * (BARK_VOL_PCT / 100.0) * (BARK_SPGR_GREENVOL_DRYWT * 62.4)) + ((VOLUME - (VOLUME * (BARK_VOL_PCT / 100.0))) * (WOOD_SPGR_GREENVOL_DRYWT * 62.4))  For trees with a d.r.c. <5 inches: = (total_AG_biomass_Jenkins - foliage_biomass_Jenkins) * JENKINS_SAPLING_ADJUSTMENT

Column name	Equation (refer to appendix table M-3 for details on variables found in equations below)
<b>DRYBIO_BG</b> (timber and woodland species)	= root_biomass_Jenkins * <b>AdjFac</b> (for timber spp $\geq$ 5 inches d.b.h.) = root_biomass_Jenkins * JENKINS_SAPLING_ADJUSTMENT (for timber species <5 inches d.b.h.) = root_biomass_Jenkins * <b>AdjFac_woodland</b> (for woodland species $\geq$ 1 inch d.r.c.)

Note:

If DIA  $\geq$ 5.0 and VOLCFSND >0 then VOLUME = VOLCFSND

If DIA  $\geq$ 5.0 and VOLCFSND = (0 or null) and VOLCFGRS >0 then VOLUME = VOLCFGRS \* Percent Sound

If DIA  $\geq$ 5.0 and VOLCFSND and VOLCFGRS = (0 or null) then VOLUME = VOLCFNET \* (Average ratio of cubic foot sound to cubic foot net volume, calculated as national averages by species group and diameter)



# Appendix N: 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):

- **OWNGRP: 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.
- **OWNCD: Owner class code.** The class in which the landowner (at the time of the inventory) belongs.
- **RESERVCD: Reserved from timber production.** Timber harvest may still be allowed for other land management objectives. See description for Reserved Status.
- **ADMIN\_WITHDRAWN\_CD: Administratively withdrawn from timber production.** Timber harvest may still be allowed for other land management objectives. See description for Administratively Withdrawn Status.

**Note:** Ordered by owner code, national to local, and reserve status, with actual and candidate areas grouped.

## Reserved and Administratively Withdrawn Status

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OWNGRP	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 (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 (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).

<b>OWNGRP</b>	<b>OWNCD</b>	<b>Land designation (and example)</b>	<b>RESERVCD</b>	<b>ADMIN_WITH DRAWN_CD</b>	<b>Designated by</b>	<b>Comments</b>
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 (Mt. Pleasant, VA)	1	-	Congress	Although the legislation of some NSAs do 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/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 (Limestone Jags, AK)	0	1	NFS unit	RNAs may be established through coordination with WO, but land planning done at NF level.
10	all	Roadless Area (Carribean NF, PR)	0	1	NFS unit	Roadless Rule was established through coordination with WO, but land planning and future changes are done at NF 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	<b>ALL National Park Service designations on federal land</b>	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.
20	22	Areas of Critical Environmental Concern (High Rock Canyon, NV)	0	1	BLM unit	Authorized by Congress in FLPMA to protect significant areas, designated by management units.

OWNGRP	OWNCD	Land designation (and example)	RESERVCD	ADMIN_WITH DRAWN_CD	Designated by	Comments
20	22	National Conservation Areas (Kings River, CA)	0	0	Congress	NCAs are focused on limited resources for protection, many have "multiple use" as a goal.
20	23	<b>ALL Fish and Wildlife Service designations on federal land</b>	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	USDI	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 land-owner 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 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.
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.

<b>OWNGRP</b>	<b>OWNCD</b>	<b>Land designation (and example)</b>	<b>RESERVCD</b>	<b>ADMIN_WITH DRAWN_CD</b>	<b>Designated by</b>	<b>Comments</b>
30	31	State Forests	0	0	State Forestry Dept	Usually managed by state agencies for multiple values, including production of timber products.
40	all	<b>All private lands</b>	0	0	-	All private lands, including those owned by some conservation groups, those with conservation easements, and tribal protected areas, are considered unreserved.

<sup>a</sup>No information entered.



# Appendix O: Values and Descriptions in REF\_POP\_ATTRIBUTE

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
1	Area of sampled and nonsampled land and water, in acres, within U.S. boundary.
2	Area of forest land, in acres.
3	Area of timberland, in acres.
4	Number of live trees (at least 1 inch d.b.h./d.r.c.), in trees, on forest land.
5	Number of growing-stock trees (at least 5 inches d.b.h.), in trees, on forest land.
6	Number of standing dead trees (at least 5 inches d.b.h./d.r.c.), in trees, on forest land.
7	Number of live trees (at least 1 inch d.b.h./d.r.c.), in trees, on timberland.
8	Number of growing-stock trees (at least 5 inches d.b.h.), in trees, on timberland.
9	Number of standing dead trees (at least 5 inches d.b.h./d.r.c.), in trees, on timberland.
10	Aboveground biomass of live trees (at least 1 inch d.b.h./d.r.c.), in dry short tons, on forest land.
11	Merchantable bole biomass of live trees (timber species at least 5 inches d.b.h.), in dry short tons, on forest land.
12	Merchantable bole biomass of live trees (timber species at least 5 inches d.b.h.), in dry short tons, on timberland.
13	Aboveground biomass of live trees (at least 1 inch d.b.h./d.r.c.), in dry short tons, on timberland.
14	Net merchantable bole volume of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land.
15	Net merchantable bole volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on forest land.
16	Net sawlog volume of sawtimber trees, in cubic feet, on forest land.
17	Net merchantable bole volume of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland.
18	Net merchantable bole volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland.
19	Net sawlog volume of sawtimber trees, in cubic feet, on timberland.
20	Net sawlog volume of sawtimber trees, in board feet (International ¼-inch rule), on forest land.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
21	Net sawlog volume of sawtimber trees, in board feet (International ¼-inch rule), on timberland.
22	Gross sawlog volume of sawtimber trees, in board feet (International ¼-inch rule), on forest land.
23	Gross merchantable bole volume of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land.
24	Sound merchantable bole volume of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land.
25	Average annual net growth of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land.
26	Average annual net growth of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on forest land.
27	Average annual net growth of sawtimber trees, in board feet (International ¼-inch rule), on forest land.
28	Average annual net growth of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland.
29	Average annual net growth of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland.
30	Average annual net growth of sawtimber trees, in board feet (International ¼-inch rule), on timberland.
31	Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land.
32	Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.), in trees, on forest land.
33	Average annual mortality of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on forest land.
34	Average annual mortality of sawtimber trees, in board feet (International ¼-inch rule), on forest land.
35	Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland.
36	Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.), in trees, on timberland.
37	Average annual mortality of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland.
38	Average annual mortality of sawtimber trees, in board feet (International ¼-inch rule), on timberland.
39	Average annual removals of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land.
40	Average annual removals of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on forest land.
41	Average annual removals of sawtimber trees, in board feet (International ¼-inch rule), on forest land.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
42	Average annual removals of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland.
43	Average annual removals of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland.
44	Average annual removals of sawtimber trees, in board feet (International 1/4-inch rule), on timberland.
45	Number of live seedlings (less than 1 inch d.b.h./d.r.c.), in seedlings, on forest land.
46	Number of live seedlings (less than 1 inch d.b.h./d.r.c.), in seedlings, on timberland.
47	Aboveground and belowground carbon in standing dead trees (at least 1 inch d.b.h./d.r.c.), in short tons, on forest land.
48	Aboveground carbon in live seedlings, shrubs, and bushes, in short tons, on forest land.
49	Belowground carbon in live seedlings, shrubs, and bushes, in short tons, on forest land.
50	Carbon in stumps, coarse roots, and coarse woody debris, in short tons, on forest land.
51	Carbon in litter, in short tons, on forest land.
52	Carbon in organic soil, in short tons, on forest land.
53	Aboveground carbon in live trees (at least 1 inch d.b.h./d.r.c.), in short tons, on forest land.
54	Belowground carbon in live trees (at least 1 inch d.b.h./d.r.c.) in short tons on forest land.
55	Aboveground and belowground carbon in live trees (at least 1 inch d.b.h./d.r.c.), in short tons, on forest land.
56	Top and limb biomass of live trees (timber species at least 5 inches d.b.h.), in dry short tons, on forest land.
57	Aboveground biomass of live saplings (timber species at least 1 and less than 5 inches d.b.h.), in dry short tons, on forest land.
58	Stump biomass of live trees (timber species at least 5 inches d.b.h.), in dry short tons, on forest land.
59	Belowground biomass of live trees (at least 1 inch d.b.h./d.r.c.), in dry short tons, on forest land.
60	Aboveground biomass of live trees (woodland species at least 1 inch d.r.c.), in dry short tons, on forest land.
61	Aboveground and belowground carbon in standing dead trees (at least 1 inch d.b.h./d.r.c.), in short tons, on timberland.
62	Aboveground carbon in live seedlings, shrubs, and bushes, in short tons, on timberland.
63	Belowground carbon in live seedlings, shrubs, and bushes, in short tons, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
64	Carbon in stumps, coarse roots, and coarse woody debris, in short tons, on timberland.
65	Carbon in litter, in short tons, on timberland.
66	Carbon in organic soil, in short tons, on timberland.
67	Aboveground carbon in live trees (at least 1 inch d.b.h./d.r.c.), in short tons, on timberland.
68	Belowground carbon in live trees (at least 1 inch d.b.h./d.r.c.), in short tons, on timberland.
69	Aboveground and belowground carbon in live trees (at least 1 inch d.b.h./d.r.c.) in short tons on timberland.
70	Top and limb biomass of live trees (timber species at least 5 inches d.b.h.), in dry short tons, on timberland.
71	Aboveground biomass of live saplings (timber species at least 1 and less than 5 inches d.b.h.), in dry short tons, on timberland.
72	Stump biomass of live trees (timber species at least 5 inches d.b.h.), in dry short tons, on timberland.
73	Belowground biomass of live trees (at least 1 inch d.b.h./d.r.c.), in dry short tons, on timberland.
74	Aboveground biomass of live trees (woodland species at least 1 inch d.r.c.), in dry short tons, on timberland.
75	Aboveground biomass of live trees (at least 1 inch d.b.h./d.r.c.), in dry short tons, on forest land calculated with retired regional methods.
76	Merchantable bole biomass of live trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land calculated with retired regional methods.
77	Merchantable bole biomass of live trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland calculated with retired regional methods.
78	Aboveground biomass of live trees (at least 1 inch d.b.h./d.r.c.), in dry short tons, on timberland calculated with retired regional methods.
79	Area of sampled land and water, in acres.
80	Average annual harvest removals of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land.
81	Average annual harvest removals of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on forest land.
82	Average annual harvest removals of sawtimber trees, in board feet (International ¼-inch rule), on forest land.
83	Average annual harvest removals of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland.
84	Average annual harvest removals of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland.
85	Average annual harvest removals of sawtimber trees, in board feet (International ¼-inch rule), on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
86	Average annual other removals of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land.
87	Average annual other removals of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on forest land.
88	Average annual other removals of sawtimber trees, in board feet (International 1/4-inch rule), on forest land.
89	Average annual other removals of live trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland.
90	Average annual other removals of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland.
91	Average annual other removals of sawtimber trees, in board feet (International 1/4-inch rule), on timberland.
92	Net merchantable bole volume of standing dead trees (at least 5 inches d.b.h./d.r.c.) in cubic feet on forest land.
93	Net merchantable bole volume of standing dead trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland.
94	Bark biomass of live trees (at least 1 inch d.b.h./d.r.c.), in dry short tons, on forest land.
96	Aboveground biomass of standing dead trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
97	Total carbon, in short tons, on forest land.
98	Forest carbon pool 1: live aboveground, in metric tonnes, on forest land.
99	Forest carbon pool 2: live belowground, in metric tonnes, on forest land.
100	Forest carbon pool 3: dead wood, in metric tonnes, on forest land.
101	Forest carbon pool 4: litter, in metric tonnes, on forest land.
102	Forest carbon pool 5: soil organic, in metric tonnes, on forest land.
103	Forest carbon total: all 5 pools, in metric tonnes, on forest land.
104	Total volume of FWD (small) pieces, in cubic feet, on forest land.
105	Dry weight of FWD (small) pieces, in short tons, on forest land.
106	Carbon in FWD (small) pieces, in short tons, on forest land.
107	Total volume of FWD (medium) pieces, in cubic feet, on forest land.
108	Dry weight of FWD (medium) pieces, in short tons, on forest land.
109	Carbon in FWD (medium) pieces, in short tons, on forest land.
110	Total volume of FWD (large) pieces, in cubic feet, on forest land.
111	Dry weight of FWD (large) pieces, in short tons, on forest land.
112	Carbon in FWD (large) pieces, in short tons, on forest land.
113	Number of CWD pieces, in pieces, on forest land.
114	Total volume of CWD, in cubic feet, on forest land.
115	Dry weight of CWD, in short tons, on forest land.
116	Carbon in CWD, in short tons, on forest land.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
117	Total volume of DWM piles, in cubic feet, on forest land.
118	Dry weight of DWM piles, in short tons, on forest land.
119	Carbon in DWM piles, in short tons, on forest land.
120	Total volume of FWD (all sizes) pieces, in cubic feet, on forest land.
121	Dry weight of FWD (all sizes) pieces, in short tons, on forest land.
122	Carbon in FWD (all sizes) pieces, in short tons, on forest land.
123	Total volume of DWM (FWD, CWD and piles), in cubic feet, on forest land.
124	Total dry weight of DWM (FWD, CWD and piles), in short tons, on forest land.
125	Total carbon in DWM (FWD, CWD and piles), in short tons, on forest land.
126	Area change - sampled at both inventories by remeasured plots.
127	Area change - area forest land both measurements from remeasured plots.
128	Area change - area forest land either measurement from remeasured plots.
129	Area change - area timberland both measurements from remeasured plots.
130	Area change - area timberland either measurement from remeasured plots.
131	Sound sawlog volume of sawtimber trees, in cubic feet, on forest land.
132	Sound sawlog volume of sawtimber trees, in cubic feet, on timberland.
133	Sawlog biomass of sawtimber trees, in dry short tons, on forest land.
134	Sawlog biomass of sawtimber trees, in dry short tons, on timberland.
135	Area change annual - sampled at both inventories by remeasured plots.
136	Area change annual - area forest land both measurements from remeasured plots.
137	Area change annual - area forest land either measurement from remeasured plots.
138	Area change annual - area timberland both measurements from remeasured plots.
139	Area change annual - area timberland either measurement from remeasured plots.
201	Average annual net growth of merchantable bole volume of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land.
202	Average annual net growth of merchantable bole volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on forest land.
203	Average annual net growth of sawlog volume of sawtimber trees, in board feet (International 1/4-inch rule), on forest land.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
204	Average annual net growth of sawlog volume of sawtimber trees, in cubic feet, on forest land.
205	Average annual net growth of merchantable bole volume above the sawlog of sawtimber trees, in cubic feet, on forest land.
206	Average annual net growth of merchantable bole volume of sawtimber trees, in cubic feet, on forest land.
207	Average annual net growth of merchantable bole volume of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland.
208	Average annual net growth of merchantable bole volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland.
209	Average annual net growth of sawlog volume of sawtimber trees, in board feet (International 1/4-inch rule), on timberland.
210	Average annual net growth of sawlog volume of sawtimber trees, in cubic feet, on timberland.
211	Average annual net growth of merchantable bole volume above the sawlog of sawtimber trees, in cubic feet, on timberland.
212	Average annual net growth of merchantable bole volume of sawtimber trees, in cubic feet, on timberland.
213	Average annual mortality of merchantable bole volume of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land.
214	Average annual mortality of merchantable bole volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on forest land.
215	Average annual mortality of sawlog volume of sawtimber trees, in board feet (International 1/4-inch rule), on forest land.
216	Average annual mortality of sawlog volume of sawtimber trees, in cubic feet, on forest land.
217	Average annual mortality of merchantable bole volume above the sawlog of sawtimber trees, in cubic feet, on forest land.
218	Average annual mortality of merchantable bole volume of sawtimber trees, in cubic feet, on forest land.
219	Average annual mortality of merchantable bole volume of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland.
220	Average annual mortality of merchantable bole volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland.
221	Average annual mortality of sawlog volume of sawtimber trees, in board feet (International 1/4-inch rule), on timberland.
222	Average annual mortality of sawlog volume of sawtimber trees, in cubic feet, on timberland.
223	Average annual mortality of merchantable bole volume above the sawlog of sawtimber trees, in cubic feet, on timberland.
224	Average annual mortality of merchantable bole volume of sawtimber trees, in cubic feet, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
225	Average annual removals of merchantable bole volume of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land.
226	Average annual removals of merchantable bole volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on forest land.
227	Average annual removals of sawlog volume of sawtimber trees, in board feet (International 1/4-inch rule), on forest land.
228	Average annual removals of sawlog volume of sawtimber trees, in cubic feet, on forest land.
229	Average annual removals of merchantable bole volume above the sawlog of sawtimber trees, in cubic feet, on forest land.
230	Average annual removals of merchantable bole volume of sawtimber trees, in cubic feet, on forest land.
231	Average annual removals of merchantable bole volume of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland.
232	Average annual removals of merchantable bole volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland.
233	Average annual removals of sawlog volume of sawtimber trees, in board feet (International 1/4-inch rule), on timberland.
234	Average annual removals of sawlog volume of sawtimber trees, in cubic feet, on timberland.
235	Average annual removals of merchantable bole volume above the sawlog of sawtimber trees, in cubic feet, on timberland.
236	Average annual removals of merchantable bole volume of sawtimber trees, in cubic feet, on timberland.
237	Average annual harvest removals of merchantable bole volume of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land.
238	Average annual harvest removals of merchantable bole volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on forest land.
239	Average annual harvest removals of sawlog volume of sawtimber trees, in board feet (International 1/4-inch rule), on forest land.
240	Average annual harvest removals of sawlog volume of sawtimber trees, in cubic feet, on forest land.
241	Average annual harvest removals of merchantable bole volume above the sawlog of sawtimber trees, in cubic feet, on forest land.
242	Average annual harvest removals of merchantable bole volume of sawtimber trees, in cubic feet, on forest land.
243	Average annual harvest removals of merchantable bole volume of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland.
244	Average annual harvest removals of merchantable bole volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
245	Average annual harvest removals of sawlog volume of sawtimber trees, in board feet (International 1/4-inch rule), on timberland.
246	Average annual harvest removals of sawlog volume of sawtimber trees, in cubic feet, on timberland.
247	Average annual harvest removals of merchantable bole volume above the sawlog of sawtimber trees, in cubic feet, on timberland.
248	Average annual harvest removals of merchantable bole volume of sawtimber trees, in cubic feet, on timberland.
249	Average annual other removals of merchantable bole volume of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land.
250	Average annual other removals of merchantable bole volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on forest land.
251	Average annual other removals of sawlog volume of sawtimber trees, in board feet (International 1/4-inch rule), on forest land.
252	Average annual other removals of sawlog volume of sawtimber trees, in cubic feet, on forest land.
253	Average annual other removals of merchantable bole volume above the sawlog of sawtimber trees, in cubic feet, on forest land.
254	Average annual other removals of merchantable bole volume of sawtimber trees, in cubic feet, on forest land.
255	Average annual other removals of merchantable bole volume of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland.
256	Average annual other removals of merchantable bole volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland.
257	Average annual other removals of sawlog volume of sawtimber trees, in board feet (International 1/4-inch rule), on timberland.
258	Average annual other removals of sawlog volume of sawtimber trees, in cubic feet, on timberland.
259	Average annual other removals of merchantable bole volume above the sawlog of sawtimber trees, in cubic feet, on timberland.
260	Average annual other removals of merchantable bole volume of sawtimber trees, in cubic feet, on timberland.
301	Average annual net growth of merchantable bole biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
302	Average annual net growth of merchantable bole biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
303	Average annual net growth of sawlog biomass of sawtimber trees, in dry short tons, on forest land.
304	Average annual net growth of merchantable bole biomass above the sawlog of sawtimber trees, in dry short tons, on forest land.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
305	Average annual net growth of merchantable bole biomass of sawtimber trees, in dry short tons, on forest land.
306	Average annual net growth of merchantable bole biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
307	Average annual net growth of merchantable bole biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
308	Average annual net growth of sawlog biomass of sawtimber trees, in dry short tons, on timberland.
309	Average annual net growth of merchantable bole biomass above the sawlog of sawtimber trees, in dry short tons, on timberland.
310	Average annual net growth of merchantable bole biomass of sawtimber trees, in dry short tons, on timberland.
311	Average annual net growth of aboveground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on forest land.
312	Average annual net growth of aboveground biomass of growing-stock trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
313	Average annual net growth of aboveground biomass of sawtimber trees, in dry short tons, on forest land.
314	Average annual net growth of aboveground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on timberland.
315	Average annual net growth of aboveground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
316	Average annual net growth of aboveground biomass of sawtimber trees, in dry short tons, on timberland.
317	Average annual net growth of belowground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on forest land.
318	Average annual net growth of belowground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
319	Average annual net growth of belowground biomass of sawtimber trees, in dry short tons, on forest land.
320	Average annual net growth of belowground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on timberland.
321	Average annual net growth of belowground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
322	Average annual net growth of belowground biomass of sawtimber trees, in dry short tons, on timberland.
323	Average annual net growth of stump biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
324	Average annual net growth of stump biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
325	Average annual net growth of stump biomass of sawtimber trees, in dry short tons, on forest land.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
326	Average annual net growth of stump biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
327	Average annual net growth of stump biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
328	Average annual net growth of stump biomass of sawtimber trees, in dry short tons, on timberland.
329	Average annual net growth of top and limb biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
330	Average annual net growth of top and limb biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
331	Average annual net growth of top and limb biomass of sawtimber trees, in dry short tons, on forest land.
332	Average annual net growth of top and limb biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
333	Average annual net growth of top and limb biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
334	Average annual net growth of top and limb biomass of sawtimber trees, in dry short tons, on timberland.
335	Average annual mortality of aboveground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on forest land.
336	Average annual mortality of aboveground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
337	Average annual mortality of aboveground biomass of sawtimber trees, in dry short tons, on forest land.
338	Average annual mortality of aboveground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on timberland.
339	Average annual mortality of aboveground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
340	Average annual mortality of aboveground biomass of sawtimber trees, in dry short tons, on timberland.
341	Average annual mortality of belowground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on forest land.
342	Average annual mortality of belowground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
343	Average annual mortality of belowground biomass of sawtimber trees, in dry short tons, on forest land.
344	Average annual mortality of belowground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on timberland.
345	Average annual mortality of belowground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
346	Average annual mortality of belowground biomass of sawtimber trees, in dry short tons, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
347	Average annual mortality of merchantable bole biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
348	Average annual mortality of merchantable bole biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
349	Average annual mortality of merchantable bole biomass of sawtimber trees, in dry short tons, on forest land.
350	Average annual mortality of merchantable bole biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
351	Average annual mortality of merchantable bole biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
352	Average annual mortality of merchantable bole biomass of sawtimber trees, in dry short tons, on timberland.
353	Average annual mortality of sawlog biomass of sawtimber trees, in dry short tons, on forest land.
354	Average annual mortality of sawlog biomass of sawtimber trees, in dry short tons, on timberland.
355	Average annual mortality of merchantable bole biomass above the sawlog of sawtimber trees, in dry short tons, on forest land.
356	Average annual mortality of merchantable bole biomass above the sawlog of sawtimber trees, in dry short tons, on timberland.
357	Average annual mortality of stump biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
358	Average annual mortality of stump biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
359	Average annual mortality of stump biomass of sawtimber trees, in dry short tons, on forest land.
360	Average annual mortality of stump biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
361	Average annual mortality of stump biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
362	Average annual mortality of stump biomass of sawtimber trees, in dry short tons, on timberland.
363	Average annual mortality of top and limb biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
364	Average annual mortality of top and limb biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
365	Average annual mortality of top and limb biomass of sawtimber trees, in dry short tons, on forest land.
366	Average annual mortality of top and limb biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
367	Average annual mortality of top and limb biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
368	Average annual mortality of top and limb biomass of sawtimber trees, in dry short tons, on timberland.
369	Average annual removals of aboveground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on forest land.
370	Average annual removals of aboveground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
371	Average annual removals of aboveground biomass of sawtimber trees, in dry short tons, on forest land.
372	Average annual removals of aboveground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on timberland.
373	Average annual removals of aboveground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
374	Average annual removals of aboveground biomass of sawtimber trees, in dry short tons, on timberland.
375	Average annual removals of belowground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on forest land.
376	Average annual removals of belowground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
377	Average annual removals of belowground biomass of sawtimber trees, in dry short tons, on forest land.
378	Average annual removals of belowground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on timberland.
379	Average annual removals of belowground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
380	Average annual removals of belowground biomass of sawtimber trees, in dry short tons, on timberland.
381	Average annual removals of merchantable bole biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
382	Average annual removals of merchantable bole biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
383	Average annual removals of merchantable bole biomass of sawtimber trees, in dry short tons, on forest land.
384	Average annual removals of merchantable bole biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
385	Average annual removals of merchantable bole biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
386	Average annual removals of merchantable bole biomass of sawtimber trees, in dry short tons, on timberland.
387	Average annual removals of sawlog biomass of sawtimber trees, in dry short tons, on forest land.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
388	Average annual removals of sawlog biomass of sawtimber trees, in dry short tons, on timberland.
389	Average annual removals of merchantable bole biomass above the sawlog of sawtimber trees, in dry short tons, on forest land.
390	Average annual removals of merchantable bole biomass above the sawlog of sawtimber trees, in dry short tons, on timberland.
391	Average annual removals of stump biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
392	Average annual removals of stump biomass growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
393	Average annual removals of stump biomass of sawtimber trees, in dry short tons, on forest land.
394	Average annual removals of stump biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
395	Average annual removals of stump biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
396	Average annual removals of stump biomass of sawtimber trees, in dry short tons, on timberland.
397	Average annual removals of top and limb biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
398	Average annual removals of top and limb biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
399	Average annual removals of top and limb biomass of sawtimber trees, in dry short tons, on forest land.
400	Average annual removals of top and limb biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
401	Average annual removals of top and limb biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
402	Average annual removals of top and limb biomass of sawtimber trees, in dry short tons, on timberland.
403	Average annual harvest removals of aboveground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on forest land.
404	Average annual harvest removals of aboveground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
405	Average annual harvest removals of aboveground biomass of sawtimber trees, in dry short tons, on forest land.
406	Average annual harvest removals of aboveground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on timberland.
407	Average annual harvest removals of aboveground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
408	Average annual harvest removals of aboveground biomass of sawtimber trees, in dry short tons, on timberland.
409	Average annual harvest removals of belowground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on forest land.
410	Average annual harvest removals of belowground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
411	Average annual harvest removals of belowground biomass of sawtimber trees, in dry short tons, on forest land.
412	Average annual harvest removals of belowground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on timberland.
413	Average annual harvest removals of belowground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
414	Average annual harvest removals of belowground biomass of sawtimber trees, in dry short tons, on timberland.
415	Average annual harvest removals of merchantable bole biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
416	Average annual harvest removals of merchantable bole biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
417	Average annual harvest removals of merchantable bole biomass of sawtimber trees, in dry short tons, on forest land.
418	Average annual harvest removals of merchantable bole biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
419	Average annual harvest removals of merchantable bole biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
420	Average annual harvest removals of merchantable bole biomass of sawtimber trees, in dry short tons, on timberland.
421	Average annual harvest removals of sawlog biomass of sawtimber trees, in dry short tons, on forest land.
422	Average annual harvest removals of sawlog biomass of sawtimber trees, in dry short tons, on timberland.
423	Average annual harvest removals of merchantable bole biomass iabove the sawlog of sawtimber trees, in dry short tons, on forest land.
424	Average annual harvest removals of merchantable bole biomass above the sawlog of sawtimber trees, in dry short tons, on timberland.
425	Average annual harvest removals of stump biomass iof trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
426	Average annual harvest removals of stump biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
427	Average annual harvest removals of stump biomass of sawtimber trees, in dry short tons, on forest land.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
428	Average annual harvest removals of stump biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
429	Average annual harvest removals of stump biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
430	Average annual harvest removals of stump biomass of sawtimber trees, in dry short tons, on timberland.
431	Average annual harvest removals of top and limb biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
432	Average annual harvest removals of top and limb biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
433	Average annual harvest removals of top and limb biomass of sawtimber trees, in dry short tons, on forest land.
434	Average annual harvest removals of top and limb biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
435	Average annual harvest removals of top and limb biomass of growing-stock trees (at least 5 inches d.b.h., in dry short tons, on timberland.
436	Average annual harvest removals of top and limb biomass of sawtimber trees, in dry short tons, on timberland.
437	Average annual other removals of aboveground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on forest land.
438	Average annual other removals of aboveground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
439	Average annual other removals of aboveground biomass of sawtimber trees, in dry short tons, on forest land.
440	Average annual other removals of aboveground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on timberland.
441	Average annual other removals of aboveground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
442	Average annual other removals of aboveground biomass of sawtimber trees, in dry short tons, on timberland.
443	Average annual other removals of belowground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on forest land.
444	Average annual other removals of belowground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
445	Average annual other removals of belowground biomass of sawtimber trees, in dry short tons, on forest land.
446	Average annual other removals of belowground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
447	Average annual other removals of belowground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
448	Average annual other removals of belowground biomass of sawtimber trees, in dry short tons, on timberland.
449	Average annual other removals of merchantable bole biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
450	Average annual other removals of merchantable bole biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
451	Average annual other removals of merchantable bole biomass of sawtimber trees, in dry short tons, on forest land.
452	Average annual other removals of merchantable bole biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
453	Average annual other removals of merchantable bole biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
454	Average annual other removals of merchantable bole biomass of sawtimber trees, in dry short tons, on timberland.
455	Average annual other removals of sawlog biomass of sawtimber trees, in dry short tons, on forest land.
456	Average annual other removals of sawlog biomass of sawtimber trees, in dry short tons, on timberland.
457	Average annual other removals of merchantable bole biomass above the sawlog of sawtimber trees, in dry short tons, on forest land.
458	Average annual other removals of merchantable bole biomass above the sawlog of sawtimber trees, in dry short tons, on timberland.
459	Average annual other removals of stump biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
460	Average annual other removals of stump biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
461	Average annual other removals of stump biomass of sawtimber trees, in dry short tons, on forest land.
462	Average annual other removals of stump biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
463	Average annual other removals of stump biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
464	Average annual other removals of stump biomass of sawtimber trees, in dry short tons, on timberland.
465	Average annual other removals of top and limb biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
466	Average annual other removals of top and limb biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
467	Average annual other removals of top and limb biomass of sawtimber trees, in dry short tons, on forest land.
468	Average annual other removals of top and limb biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
469	Average annual other removals of top and limb biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
470	Average annual other removals of top and limb biomass of sawtimber trees, in dry short tons, on timberland.
510	Aboveground biomass of live trees (at least 1 inch d.b.h./d.r.c), in green short tons, on forest land.
511	Merchantable bole biomass of live trees (timber species at least 5 inches d.b.h.), in green short tons, on forest land.
512	Merchantable bole biomass of live trees (timber species at least 5 inches d.b.h.), in green short tons, on timberland.
513	Aboveground biomass of live trees (at least 1 inch d.b.h./d.r.c), in green short tons, on timberland.
533	Sawlog biomass of sawtimber trees, in green short tons, on forest land.
534	Sawlog biomass of sawtimber trees, in green short tons, on timberland.
556	Top and limb biomass of live trees (timber species at least 5 inches d.b.h.), in green short tons, on forest land.
557	Aboveground biomass of live saplings (timber species at least 1 and less than 5 inches d.b.h.), in green short tons, on forest land.
558	Stump biomass of live trees (timber species at least 5 inches d.b.h.), in green short tons, on forest land.
560	Aboveground biomass of live trees (woodland species at least 1 inch d.r.c.), in green short tons, on forest land.
570	Top and limb biomass of live trees (timber species at least 5 inches d.b.h.), in green short tons, on timberland.
571	Aboveground biomass of live saplings (timber species at least 1 and less than 5 inches d.b.h.), in green short tons, on timberland.
572	Stump biomass of live trees (timber species at least 5 inches d.b.h.), in green short tons, on timberland.
574	Aboveground biomass of live trees (woodland species at least 1 inch d.r.c.), in green short tons, on timberland.
575	Aboveground biomass of live trees (at least 1 inch d.b.h./d.r.c), in green short tons, on forest land calculated with retired regional methods.
576	Merchantable bole biomass of live trees (at least 5 inches d.b.h./d.r.c), in green short tons, on forest land calculated with retired regional methods.
577	Merchantable bole biomass of live trees (at least 5 inches d.b.h./d.r.c), in green short tons, on timberland calculated with retired regional methods.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
578	Aboveground biomass of live trees (at least 1 inch d.b.h./d.r.c.), in green short tons, on timberland calculated with retired regional methods.
594	Bark biomass of live trees (at least 1 inch d.b.h./d.r.c.), in green short tons, on forest land.
601	Average annual net growth of merchantable bole carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
602	Average annual net growth of merchantable bole carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
603	Average annual net growth of sawlog carbon in sawtimber trees, in short tons, on forest land.
604	Average annual net growth of merchantable bole carbon above the sawlog in sawtimber trees, in short tons, on forest land.
605	Average annual net growth of merchantable bole carbon sawtimber trees, in short tons, on forest land.
606	Average annual net growth of merchantable bole carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
607	Average annual net growth of merchantable bole carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
608	Average annual net growth of sawlog carbon in sawtimber trees, in short tons, on timberland.
609	Average annual net growth of merchantable bole carbon above the sawlog of sawtimber trees, in short tons, on timberland.
610	Average annual net growth of merchantable bole carbon in sawtimber trees, in short tons, on timberland.
611	Average annual net growth of aboveground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on forest land.
612	Average annual net growth of aboveground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
613	Average annual net growth of aboveground carbon in sawtimber trees, in short tons, on forest land.
614	Average annual net growth of aboveground carbon in trees (at least 1 inch d.b.h./d.r.c.), in short tons, on timberland.
615	Average annual net growth of aboveground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
616	Average annual net growth of aboveground carbon in sawtimber trees, in short tons, on timberland.
617	Average annual net growth of belowground carbon in trees (at least 1 inch d.b.h./d.r.c.), in short tons, on forest land.
618	Average annual net growth of belowground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
619	Average annual net growth of belowground carbon in sawtimber trees, in short tons, on forest land.
620	Average annual net growth of belowground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on timberland.
621	Average annual net growth of belowground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
622	Average annual net growth of belowground carbon in sawtimber trees, in short tons, on timberland.
623	Average annual net growth of stump carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
624	Average annual net growth of stump carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
625	Average annual net growth of stump carbon in sawtimber trees, in short tons, on forest land.
626	Average annual net growth of stump carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
627	Average annual net growth of stump carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
628	Average annual net growth of stump carbon in sawtimber trees, in short tons, on timberland.
629	Average annual net growth of top and limb carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
630	Average annual net growth of top and limb carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
631	Average annual net growth of top and limb carbon in sawtimber trees, in short tons, on forest land.
632	Average annual net growth of top and limb carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
633	Average annual net growth of top and limb carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
634	Average annual net growth of top and limb carbon in sawtimber trees, in short tons, on timberland.
635	Average annual mortality of aboveground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on forest land.
636	Average annual mortality of aboveground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
637	Average annual mortality of aboveground carbon in sawtimber trees, in short tons, on forest land.
638	Average annual mortality of aboveground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on timberland.
639	Average annual mortality of aboveground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
640	Average annual mortality of aboveground carbon in sawtimber trees , in short tons, on timberland.
641	Average annual mortality of belowground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on forest land.
642	Average annual mortality of belowground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
643	Average annual mortality of belowground carbon in sawtimber trees, in short tons, on forest land.
644	Average annual mortality of belowground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on timberland.
645	Average annual mortality of belowground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
646	Average annual mortality of belowground carbon in sawtimber trees, in short tons, on timberland.
647	Average annual mortality of merchantable bole carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
648	Average annual mortality of merchantable bole carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
649	Average annual mortality of merchantable bole carbon in sawtimber trees, in short tons, on forest land.
650	Average annual mortality of merchantable bole carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
651	Average annual mortality of merchantable bole carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
652	Average annual mortality of merchantable bole carbon in sawtimber trees in short tons, on timberland.
653	Average annual mortality of sawlog carbon in sawtimber trees, in short tons, on forest land.
654	Average annual mortality of sawlog carbon in sawtimber trees, in short tons, on timberland.
655	Average annual mortality of merchantable bole carbon above the sawlog of sawtimber trees, in short tons, on forest land.
656	Average annual mortality of merchantable bole carbon above the sawlog of sawtimber trees, in short tons, on timberland.
657	Average annual mortality of stump carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
658	Average annual mortality of stump carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
659	Average annual mortality of stump carbon in sawtimber trees, in short tons, on forest land.
660	Average annual mortality of stump carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
661	Average annual mortality of stump carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
662	Average annual mortality of stump carbon in sawtimber trees, in short tons, on timberland.
663	Average annual mortality of top and limb carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
664	Average annual mortality of top and limb carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
665	Average annual mortality of top and limb carbon in sawtimber trees, in short tons, on forest land.
666	Average annual mortality of top and limb carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
667	Average annual mortality of top and limb carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
668	Average annual mortality of top and limb carbon in sawtimber trees, in short tons, on timberland.
669	Average annual removals of aboveground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on forest land.
670	Average annual removals of aboveground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
671	Average annual removals of aboveground carbon in sawtimber trees, in short tons, on forest land.
672	Average annual removals of aboveground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on timberland.
673	Average annual removals of aboveground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
674	Average annual removals of aboveground carbon in sawtimber trees, in short tons, on timberland.
675	Average annual removals of belowground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on forest land.
676	Average annual removals of belowground carbon in growing-stock trees (at least 5 inches d.b.h., in short tons, on forest land.
677	Average annual removals of belowground carbon in sawtimber trees, in short tons, on forest land.
678	Average annual removals of belowground carbon inf trees (at least 1 inches d.b.h./d.r.c.), in short tons, on timberland.
679	Average annual removals of belowground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
680	Average annual removals of belowground carbon in sawtimber trees, in short tons, on timberland.
681	Average annual removals of merchantable bole carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
682	Average annual removals of merchantable bole carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
683	Average annual removals of merchantable bole carbon in tsawtimber trees, in short tons, on forest land.
684	Average annual removals of merchantable bole carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
685	Average annual removals of merchantable bole carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
686	Average annual removals of merchantable bole carbon in sawtimber trees, in short tons, on timberland.
687	Average annual removals of sawlog carbon in sawtimber trees, in short tons, on forest land.
688	Average annual removals of sawlog carbon in sawtimber trees, in short tons, on timberland.
689	Average annual removals of merchantable bole carbon above the sawlog of sawtimber trees, in short tons, on forest land.
690	Average annual removals of merchantable bole carbon above the sawlog of sawtimber trees, in short tons, on timberland.
691	Average annual removals of stump carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
692	Average annual removals of stump carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
693	Average annual removals of stump carbon in sawtimber trees, in short tons, on forest land.
694	Average annual removals of stump carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
695	Average annual removals of stump carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
696	Average annual removals of stump carbon in sawtimber trees, in short tons, on timberland.
697	Average annual removals of top and limb carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
698	Average annual removals of top and limb carbon in grow-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
699	Average annual removals of top and limb carbon in sawtimber trees, in short tons, on forest land.
700	Average annual removals of top and limb carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
701	Average annual removals of top and limb carbon in grow-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
702	Average annual removals of top and limb carbon in tsawtimber trees, in short tons, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
703	Average annual harvest removals of aboveground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on forest land.
704	Average annual harvest removals of aboveground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
705	Average annual harvest removals of aboveground carbon in sawtimber trees, in short tons, on forest land.
706	Average annual harvest removals of aboveground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on timberland.
707	Average annual harvest removals of aboveground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
708	Average annual harvest removals of aboveground carbon in sawtimber trees, in short tons, on timberland.
709	Average annual harvest removals of belowground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on forest land.
710	Average annual harvest removals of belowground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
711	Average annual harvest removals of belowground carbon in sawtimber trees, in short tons, on forest land.
712	Average annual harvest removals of belowground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on timberland.
713	Average annual harvest removals of belowground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
714	Average annual harvest removals of belowground carbon in sawtimber trees, in short tons, on timberland.
715	Average annual harvest removals of merchantable bole carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
716	Average annual harvest removals of merchantable bole carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
717	Average annual harvest removals of merchantable bole carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
718	Average annual harvest removals of merchantable bole carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
719	Average annual harvest removals of merchantable bole carbon in sawtimber trees, in short tons, on timberland.
720	Average annual harvest removals of sawlog carbon in sawtimber trees, in short tons, on forest land.
721	Average annual harvest removals of sawlog carbon in sawtimber trees, in short tons, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
722	Average annual harvest removals of merchantable bole carbon in sawtimber trees , in short tons, on forest land.
723	Average annual harvest removals of merchantable bole carbon above the sawlog of sawtimber trees, in short tons, on forest land.
724	Average annual harvest removals of merchantable bole carbon above the sawlog of sawtimber trees, in short tons, on timberland.
725	Average annual harvest removals of stump carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
726	Average annual harvest removals of stump carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
727	Average annual harvest removals of stump carbon in sawtimber trees, in short tons, on forest land.
728	Average annual harvest removals of stump carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
729	Average annual harvest removals of stump carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
730	Average annual harvest removals of stump carbon in sawtimber trees, in short tons, on timberland.
731	Average annual harvest removals of top and limb carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
732	Average annual harvest removals of top and limb carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
733	Average annual harvest removals of top and limb carbon in sawtimber trees, in short tons, on forest land.
734	Average annual harvest removals of top and limb carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
735	Average annual harvest removals of top and limb carbon in grow-stocking trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
736	Average annual harvest removals of top and limb carbon in sawtimber trees, in short tons, on timberland.
737	Average annual other removals of aboveground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on forest land.
738	Average annual other removals of aboveground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
739	Average annual other removals of aboveground carbon in sawtimber trees, in short tons, on forest land.
740	Average annual other removals of aboveground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on timberland.
741	Average annual other removals of aboveground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
742	Average annual other removals of aboveground carbon in sawtimber trees, in short tons, on timberland.
743	Average annual other removals of belowground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on forest land.
744	Average annual other removals of belowground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
745	Average annual other removals of belowground carbon in sawtimber trees, in short tons, on forest land.
746	Average annual other removals of belowground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on timberland.
747	Average annual other removals of belowground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
748	Average annual other removals of belowground carbon in sawtimber trees, in short tons, on timberland.
749	Average annual other removals of merchantable bole carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
750	Average annual other removals of merchantable bole carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
751	Average annual other removals of merchantable bole carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
752	Average annual other removals of merchantable bole carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
753	Average annual other removals of merchantable bole carbon in sawtimber trees, in short tons, on forest land.
754	Average annual other removals of merchantable bole carbon in sawtimber trees, in short tons, on timberland.
755	Average annual other removals of sawlog carbon in sawtimber trees, in short tons, on forest land.
756	Average annual other removals of sawlog carbon in sawtimber trees, in short tons, on timberland.
757	Average annual other removals of merchantable bole carbon above the sawlog of sawtimber trees, in short tons, on forest land.
758	Average annual other removals of merchantable bole carbon above the sawlog of sawtimber trees, in short tons, on timberland.
759	Average annual other removals of stump carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
760	Average annual other removals of stump carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
761	Average annual other removals of stump carbon in sawtimber trees, in short tons, on forest land.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
762	Average annual other removals of stump carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
763	Average annual other removals of stump carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
764	Average annual other removals of stump carbon in sawtimber trees, in short tons, on timberland.
765	Average annual other removals of top and limb carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
766	Average annual other removals of top and limb carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
767	Average annual other removals of top and limb carbon in sawtimber trees, in short tons, on forest land.
768	Average annual other removals of top and limb carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
769	Average annual other removals of top and limb carbon in growing-stock trees (at least 5 inches d.b.h., in short tons, on timberland).
770	Average annual other removals of top and limb carbon in sawtimber trees, in short tons, on timberland.
901	Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.), in trees, on forest land.
902	Average annual mortality of growing-stock trees (at least 5 inches d.b.h.), in trees, on forest land.
903	Average annual mortality of sawtimber trees, in trees, on forest land.
904	Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.), in trees, on timberland.
905	Average annual mortality of growing-stock trees (at least 5 inches d.b.h.), in trees, on timberland.
906	Average annual mortality of sawtimber trees, in trees, on timberland.
907	Average annual removals of trees (at least 5 inches d.b.h./d.r.c.), in trees, on forest land.
908	Average annual removals of growing-stock trees (at least 5 inches d.b.h.), in trees, on forest land.
909	Average annual removals of sawtimber trees, in trees, on forest land.
910	Average annual removals of trees (at least 5 inches d.b.h./d.r.c.), in trees, on timberland.
911	Average annual removals of growing-stock trees (at least 5 inches d.b.h.), in trees, on timberland.
912	Average annual removals of sawtimber trees, in trees, on timberland.
913	Average annual harvest removals of trees (at least 5 inches d.b.h./d.r.c.), in trees, on forest land.
914	Average annual harvest removals of growing-stock trees (at least 5 inches d.b.h.), in trees, on forest land.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
915	Average annual harvest removals of sawtimber trees, in trees, on forest land.
916	Average annual harvest removals of trees (at least 5 inches d.b.h./d.r.c.), in trees, on timberland.
917	Average annual harvest removals of growing-stock trees (at least 5 inches d.b.h.), in trees, on timberland.
918	Average annual harvest removals of sawtimber trees, in trees, on timberland.
919	Average annual other removals of trees (at least 5 inches d.b.h./d.r.c.), in trees, on forest land.
920	Average annual other removals of growing-stock trees (at least 5 inches d.b.h.), in trees, on forest land.
921	Average annual other removals of sawtimber trees, in trees, on forest land.
922	Average annual other removals of trees (at least 5 inches d.b.h./d.r.c.), in trees, on timberland.
923	Average annual other removals of growing-stock trees (at least 5 inches d.b.h.), in trees, on timberland.
924	Average annual other removals of sawtimber trees, in trees, on timberland.
1201	Average annual gross growth of merchantable bole volume of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land.
1202	Average annual gross growth of merchantable bole volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on forest land.
1203	Average annual gross growth of sawlog volume of sawtimber trees, in board feet (International 1/4-inch rule), on forest land.
1204	Average annual gross growth of sawlog volume of sawtimber trees, in cubic feet, on forest land.
1205	Average annual gross growth of merchantable bole volume above the sawlog of sawtimber trees, in cubic feet, on forest land.
1206	Average annual gross growth of merchantable bole volume of sawtimber trees, in cubic feet, on forest land.
1207	Average annual gross growth of merchantable bole volume of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland.
1208	Average annual gross growth of merchantable bole volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland.
1209	Average annual gross growth of sawlog volume of sawtimber trees, in board feet (International 1/4-inch rule), on timberland.
1210	Average annual gross growth of sawlog volume of sawtimber trees, in cubic feet, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
1211	Average annual gross growth of merchantable bole volume above the sawlog of sawtimber trees, in cubic feet, on timberland.
1212	Average annual gross growth of merchantable bole volume of sawtimber trees, in cubic feet, on timberland.
1301	Average annual gross growth of merchantable bole biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
1302	Average annual gross growth of merchantable bole biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
1303	Average annual gross growth of sawlog biomass of sawtimber trees, in dry short tons, on forest land.
1304	Average annual gross growth of merchantable bole biomass above the sawlog of sawtimber trees, in dry short tons, on forest land.
1305	Average annual gross growth of merchantable bole biomass of sawtimber trees, in dry short tons, on forest land.
1306	Average annual gross growth of merchantable bole biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
1307	Average annual gross growth of merchantable bole biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
1308	Average annual gross growth of sawlog biomass of sawtimber trees, in dry short tons, on timberland.
1309	Average annual gross growth of merchantable bole biomass above the sawlog of sawtimber trees, in dry short tons, on timberland.
1310	Average annual gross growth of merchantable bole biomass of sawtimber trees, in dry short tons, on timberland.
1311	Average annual gross growth of aboveground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on forest land.
1312	Average annual gross growth of aboveground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
1313	Average annual gross growth of aboveground biomass of sawtimber trees, in dry short tons, on forest land.
1314	Average annual gross growth of aboveground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on timberland.
1315	Average annual gross growth of aboveground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
1316	Average annual gross growth of aboveground biomass of sawtimber trees, in dry short tons, on timberland.
1317	Average annual gross growth of belowground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on forest land.
1318	Average annual gross growth of belowground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
1319	Average annual gross growth of belowground biomass of sawtimber trees, in dry short tons, on forest land.
1320	Average annual gross growth of belowground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on timberland.
1321	Average annual gross growth of belowground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
1322	Average annual gross growth of belowground biomass of sawtimber trees, in dry short tons, on timberland.
1323	Average annual gross growth of stump biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
1324	Average annual gross growth of stump biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
1325	Average annual gross growth of stump biomass of sawtimber trees, in dry short tons, on forest land.
1326	Average annual gross growth of stump biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
1327	Average annual gross growth of stump biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
1328	Average annual gross growth of stump biomass of sawtimber trees, in dry short tons, on timberland.
1329	Average annual gross growth of top and limb biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
1330	Average annual gross growth of top and limb biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
1331	Average annual gross growth of top and limb biomass of sawtimber trees, in dry short tons, on forest land.
1332	Average annual gross growth of top and limb biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
1333	Average annual gross growth of top and limb biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
1334	Average annual gross growth of top and limb biomass of sawtimber trees, in dry short tons, on timberland.
1601	Average annual gross growth of merchantable bole carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
1602	Average annual gross growth of merchantable bole carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
1603	Average annual gross growth of sawlog carbon in sawtimber trees, in short tons, on forest land.
1604	Average annual gross growth of merchantable bole carbon above the sawlog of sawtimber trees, in short tons, on forest land.
1605	Average annual gross growth of merchantable bole carbon in sawtimber trees, in short tons, on forest land.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
1606	Average annual gross growth of merchantable bole carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
1607	Average annual gross growth of merchantable bole carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
1608	Average annual gross growth of sawlog carbon in sawtimber trees, in short tons, on timberland.
1609	Average annual gross growth of merchantable bole carbon above the sawlog of sawtimber trees, in short tons, on timberland.
1610	Average annual gross growth of merchantable bole carbon in sawtimber trees, in short tons, on timberland.
1611	Average annual gross growth of aboveground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on forest land.
1612	Average annual gross growth of aboveground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
1613	Average annual gross growth of aboveground carbon in sawtimber trees, in short tons, on forest land.
1614	Average annual gross growth of aboveground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on timberland.
1615	Average annual gross growth of aboveground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
1616	Average annual gross growth of aboveground carbon in sawtimber trees, in short tons, on timberland.
1617	Average annual gross growth of belowground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on forest land.
1618	Average annual gross growth of belowground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
1619	Average annual gross growth of belowground carbon in sawtimber trees, in short tons, on forest land.
1620	Average annual gross growth of belowground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on timberland.
1621	Average annual gross growth of belowground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
1622	Average annual gross growth of belowground carbon in sawtimber trees, in short tons, on timberland.
1623	Average annual gross growth of stump carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
1624	Average annual gross growth of stump carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
1625	Average annual gross growth of stump carbon in sawtimber trees, in short tons, on forest land.
1626	Average annual gross growth of stump carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
1627	Average annual gross growth of stump carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
1628	Average annual gross growth of stump carbon in sawtimber trees, in short tons, on timberland.
1629	Average annual gross growth of top and limb carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
1630	Average annual gross growth of top and limb carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
1631	Average annual gross growth of top and limb carbon in sawtimber trees, in short tons, on forest land.
1632	Average annual gross growth of top and limb carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
1633	Average annual gross growth of top and limb carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
1634	Average annual gross growth of top and limb carbon in sawtimber trees, in short tons, on timberland.
2201	Average annual net change of merchantable bole volume of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on forest land.
2202	Average annual net change of merchantable bole volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on forest land.
2203	Average annual net change of sawlog volume of sawtimber trees, in board feet (International 1/4-inch rule), on forest land.
2204	Average annual net change of sawlog volume of sawtimber trees, in cubic feet, on forest land.
2205	Average annual net change of merchantable bole volume above the sawlog of sawtimber trees, in cubic feet, on forest land.
2206	Average annual net change of merchantable bole volume of sawtimber trees, in cubic feet, on forest land.
2207	Average annual net change of merchantable bole volume of trees (at least 5 inches d.b.h./d.r.c.), in cubic feet, on timberland.
2208	Average annual net change of merchantable bole volume of growing-stock trees (at least 5 inches d.b.h.), in cubic feet, on timberland.
2209	Average annual net change of sawlog volume of sawtimber trees, in board feet (International 1/4-inch rule), on timberland.
2210	Average annual net change of sawlog volume of sawtimber trees, in cubic feet, on timberland.
2211	Average annual net change of merchantable bole volume above the sawlog of sawtimber trees, in cubic feet, on timberland.
2212	Average annual net change of merchantable bole volume of sawtimber trees, in cubic feet, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
2301	Average annual net change of merchantable bole biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2302	Average annual net change of merchantable bole biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
2303	Average annual net change of sawlog biomass of sawtimber trees, in dry short tons, on forest land.
2304	Average annual net change of merchantable bole biomass above the sawlog of sawtimber trees, in dry short tons, on forest land.
2305	Average annual net change of merchantable bole biomass of sawtimber trees, in dry short tons, on forest land.
2306	Average annual net change of merchantable bole biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
2307	Average annual net change of merchantable bole biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
2308	Average annual net change of sawlog biomass of sawtimber trees, in dry short tons, on timberland.
2309	Average annual net change of merchantable bole biomass above the sawlog of sawtimber trees, in dry short tons, on timberland.
2310	Average annual net change of merchantable bole biomass of sawtimber trees, in dry short tons, on timberland.
2311	Average annual net change of aboveground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2312	Average annual net change of aboveground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
2313	Average annual net change of aboveground biomass of sawtimber trees, in dry short tons, on forest land.
2314	Average annual net change of aboveground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on timberland.
2315	Average annual net change of aboveground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
2316	Average annual net change of aboveground biomass of sawtimber trees, in dry short tons, on timberland.
2317	Average annual net change of belowground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2318	Average annual net change of belowground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
2319	Average annual net change of belowground biomass of sawtimber trees, in dry short tons, on forest land.
2320	Average annual net change of belowground biomass of trees (at least 1 inches d.b.h./d.r.c.), in dry short tons, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
2321	Average annual net change of belowground biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
2322	Average annual net change of belowground biomass of sawtimber trees, in dry short tons, on timberland.
2323	Average annual net change of stump biomass iof trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2324	Average annual net change of stump biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
2325	Average annual net change of stump biomass iof sawtimber trees, in dry short tons, on forest land.
2326	Average annual net change of stump biomass iof trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
2327	Average annual net change of stump biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
2328	Average annual net change of stump biomass i of sawtimber trees, in dry short tons, on timberland.
2329	Average annual net change of top and limb biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2330	Average annual net change of top and limb biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land.
2331	Average annual net change of top and limb biomass of of sawtimber trees, in dry short tons, on forest land.
2332	Average annual net change of top and limb biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
2333	Average annual net change of top and limb biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland.
2334	Average annual net change of top and limb biomass iof sawtimber trees, in dry short tons, on timberland.
2601	Average annual net change of merchantable bole carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
2602	Average annual net change of merchantable bole carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
2603	Average annual net change of sawlog carbon in sawtimber trees, in short tons, on forest land.
2604	Average annual net change of merchantable bole carbon above the sawlog of sawtimber trees, in short tons, on forest land.
2605	Average annual net change of merchantable bole carbon in sawtimber trees, in short tons, on forest land.
2606	Average annual net change of merchantable bole carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
2607	Average annual net change of merchantable bole carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
2608	Average annual net change of sawlog carbon in sawtimber trees, in short tons, on timberland.
2609	Average annual net change of merchantable bole carbon iabove the sawlog of sawtimber trees, in short tons, on timberland.
2610	Average annual net change of merchantable bole carbon in sawtimber trees, in short tons, on timberland.
2611	Average annual net change of aboveground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on forest land.
2612	Average annual net change of aboveground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
2613	Average annual net change of aboveground carbon in sawtimber trees, in short tons, on forest land.
2614	Average annual net change of aboveground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on timberland.
2615	Average annual net change of aboveground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
2616	Average annual net change of aboveground carbon in sawtimber trees, in short tons, on timberland.
2617	Average annual net change of belowground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on forest land.
2618	Average annual net change of belowground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
2619	Average annual net change of belowground carbon in sawtimber trees, in short tons, on forest land.
2620	Average annual net change of belowground carbon in trees (at least 1 inches d.b.h./d.r.c.), in short tons, on timberland.
2621	Average annual net change of belowground carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
2622	Average annual net change of belowground carbon in sawtimber trees, in short tons, on timberland.
2623	Average annual net change of stump carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
2624	Average annual net change of stump carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
2625	Average annual net change of stump carbon in sawtimber trees, in short tons, on forest land.
2626	Average annual net change of stump carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
2627	Average annual net change of stump carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
2628	Average annual net change of stump carbon in sawtimber trees, in short tons, on timberland.
2629	Average annual net change of top and limb carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
2630	Average annual net change of top and limb carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on forest land.
2631	Average annual net change of top and limb carbon in sawtimber trees, in short tons, on forest land.
2632	Average annual net change of top and limb carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
2633	Average annual net change of top and limb carbon in growing-stock trees (at least 5 inches d.b.h.), in short tons, on timberland.
2634	Average annual net change of top and limb carbon in sawtimber trees, in short tons, on timberland.
2635	Average annual net growth of aboveground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2636	Average annual net growth of aboveground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
2637	Average annual mortality of aboveground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2638	Average annual mortality of aboveground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
2639	Average annual net growth of belowground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2640	Average annual net growth of belowground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
2641	Average annual mortality of belowground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2642	Average annual mortality of belowground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
2643	Average annual net growth of aboveground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
2644	Average annual harvest removals of belowground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
2645	Average annual harvest removals of belowground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
2646	Average annual net growth of aboveground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
2647	Average annual net growth of belowground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
2648	Average annual net growth of belowground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
2649	Average annual harvest removals of aboveground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2650	Average annual harvest removals of aboveground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
2651	Average annual harvest removals of belowground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2652	Average annual gross growth of aboveground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2653	Average annual gross growth of aboveground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
2654	Average annual harvest removals of belowground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
2655	Average annual other removals of aboveground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
2656	Average annual other removals of aboveground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
2657	Average annual other removals of belowground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
2658	Average annual mortality of aboveground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
2659	Average annual mortality of aboveground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
2660	Average annual other removals of belowground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
2661	Average annual gross growth of belowground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2662	Average annual gross growth of belowground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
2663	Average annual mortality of belowground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
2664	Average annual mortality of belowground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
2665	Average annual other removals of aboveground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2666	Average annual gross growth of aboveground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
2667	Average annual other removals of aboveground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
2668	Average annual other removals of belowground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2669	Average annual other removals of belowground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.

<b>Attribute Number (ATTRIBUTE_NBR)</b>	<b>Attribute Description (ATTRIBUTE_DESCR)</b>
2670	Average annual removals of aboveground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
2671	Average annual removals of aboveground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
2672	Average annual removals of belowground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
2673	Average annual removals of belowground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
2674	Average annual removals of aboveground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2675	Average annual removals of aboveground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
2676	Average annual removals of belowground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2677	Average annual removals of belowground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
2678	Average annual harvest removals of aboveground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
2679	Average annual harvest removals of above ground carbonin trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
2680	Average annual net change of aboveground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2681	Average annual net change of aboveground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
2682	Average annual net change of belowground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on forest land.
2683	Average annual net change of belowground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland.
2684	Average annual net change of aboveground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
2685	Average annual gross growth of aboveground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
2686	Average annual net change of aboveground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
2687	Average annual gross growth of belowground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
2688	Average annual gross growth of belowground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.
2689	Average annual net change of belowground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on forest land.
2690	Average annual net change of belowground carbon in trees (at least 5 inches d.b.h./d.r.c.), in short tons, on timberland.