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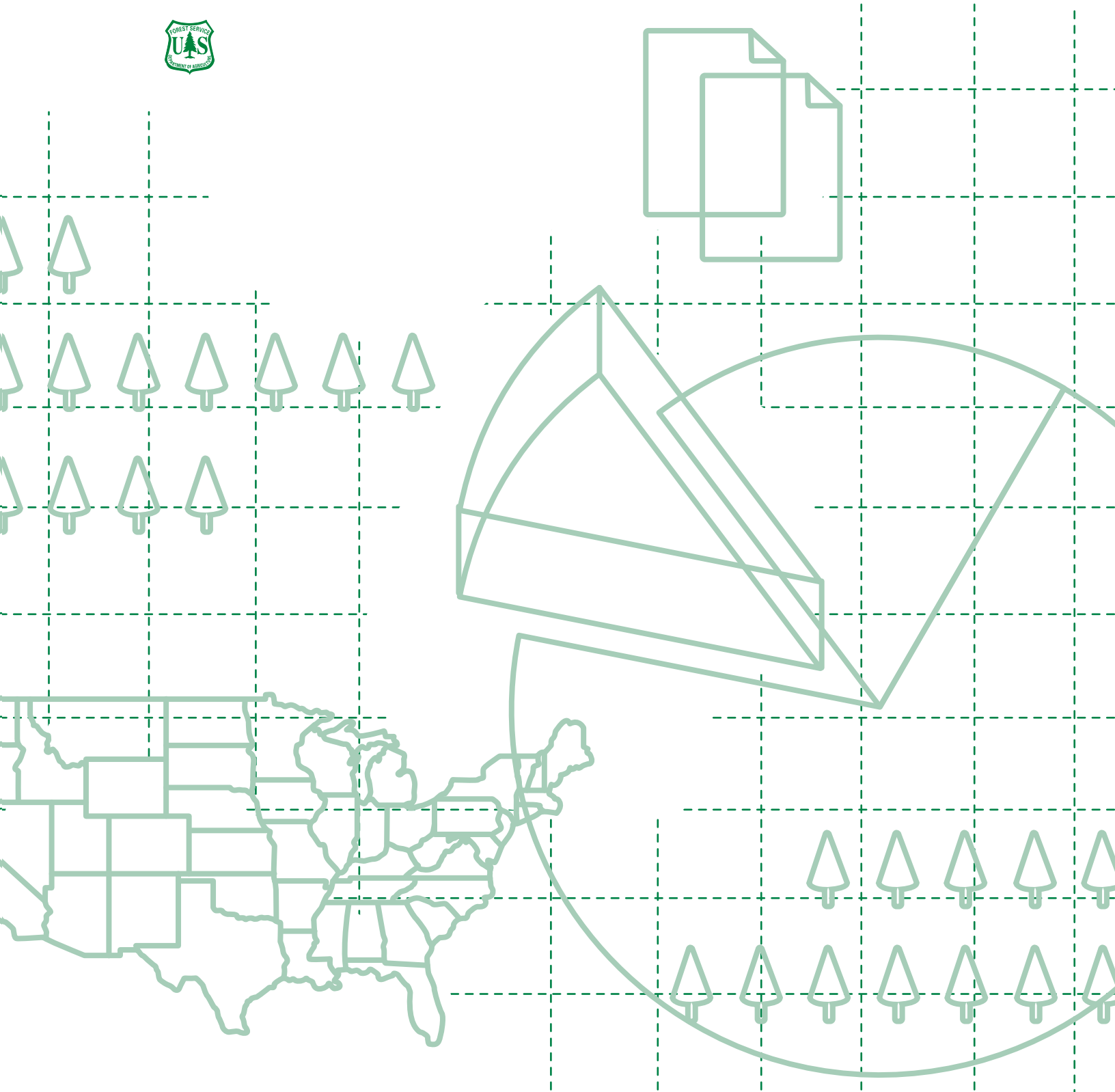
North Central
Research Station

General
Technical Report
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The 2002 RPA Plot Summary Database Users Manual

Patrick D. Miles, John S. Vissage, and W. Brad Smith



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Describes the structure of the RPA 2002 Plot Summary database and provides information on generating estimates of forest statistics from these data. The RPA 2002 Plot Summary database provides a consistent framework for storing forest inventory data across all ownerships across the entire United States. The data represents the best available data as of October 2001.

KEY WORDS: RPA, inventory, forest statistics, information management, data processing

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Foreword

Forest Inventory and Analysis (FIA) is a continuing endeavor mandated by Congress in the Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 and the McSweeney-McNary Forest Research Act of 1928. FIA's primary objective is to determine the extent, condition, volume, growth, and depletions of timber on the Nation's forest land. RPA reports are generated every 5 years. This manual describes the database used to produce the tables in the report entitled "Forest Resources of the United States, 2002" (Smith *et al.*).

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Chapter 1 – The RPA Database

The original RPA Plot Summary database format was developed in 1987 to meet RPA reporting requirements (Waddell *et al.* 1989). At that time computer resources were at a premium and the cost of data storage was prohibitive. For these and other reasons, data were summarized and stored at the plot level rather than the tree level even though individual tree data existed for most of the forest area of the United States.

Beginning in 1995 the FIA program began collecting tree information on all forest land across the entire Nation. Once tree data are available for all States, the Forest Inventory and Analysis Database (FIADB) will be the primary database for reporting RPA statistics. The FIADB (Miles *et al.* 2001) contains all plot and tree measurements collected by the FIA program — not just data summarized to the plot level. Although the RPA Summary Database is able to report the volume of softwoods, the FIADB, with its tree data, can report the volume of softwoods by individual tree characteristics such as species and diameter class. Although not as flexible as the FIADB, the RPA Plot Summary Database is much easier to work with and is the only format available for exploring long-term trends in the forest resources of the United States.

Data for the 2002 RPA were gathered from several different sources (appendix A). Tree data were available for the 48 coterminous States and southeast Alaska, but not for Hawaii or interior Alaska. Data were collected primarily by FIA units except for some of the lands administered by the National Forest System in California, Colorado, Idaho, Nevada, Oregon, Washington, and Wyoming.

Data in RPA Plot Summary Database format are available through the Internet at <http://www.fia.fs.fed.us>. This is the Internet address for the Forest Inventory and Analysis national program and should remain unchanged for the immediate future. On this page there is a link to “Online databases.” Also available at this Web site will be instructions for obtaining a CD-ROM containing the RPA Plot Summary Database and a Windows™ based program called the RPA Data Wiz. The RPA Data Wiz program allows users to easily generate reports and graphics on the forest resources of the United States.

Chapter 2 provides detailed documentation of the database. Chapter 3 presents algorithms on how to compute estimates of area; current timber volume; biomass; number of trees; average annual growing-stock growth; and mortality. Timber removals estimates for the RPA are derived from timber product output studies (Johnson 2001).

Chapter 2 – Database Structure

There are two tables in the RPA Database (RPA_PLOT2002 and SPDBH_2002). The format of these tables is presented in the following pages. For each column or variable in a table, there is a section that describes the unabbreviated name and other details of the variable. Coded items also include a list of the codes and their meanings.

The RPA_PLOT2002 table provides information about a condition. In 95 percent of cases a sample plot will have one condition. Sample plots will have multiple conditions only when there is a discrete change in one of the following landscape attributes: land use, reserved status, ownership group, forest type, stand-size class, stand origin, and stand density.

Data for the 1987 and 1992 RPA Assessments were submitted in similar formats. Beginning with the 1997 RPA Assessment, data were usually converted to this format from tree-level databases such as the Eastwide (Hansen *et al.* 1992), Westwide (Woudenberg and Farrenkopf 1995), or FIADB. For the 2002 RPA Assessment, all of the data except for interior Alaska and Hawaii were derived from data in FIADB format (see appendix A). Appendix B contains information on state, survey unit, and county codes.

The SPDBH_2002 table contains tree species group volume information summarized at the State level by ownership and diameter classes. This table is used solely to produce reports on species group volumes by State, ownership class, and diameter class. Appendix C contains a listing of the species group names and how they were derived from the FIADB.

Plot Table (Oracle table name is RPAPLOT_2002)

	Column name	Oracle data type	Value or unit of measure	Key data item
1.	PID	NUMBER (8)	Number	
2.	RECNUM	NUMBER (13)	PLOT	X
3.	YEAR	NUMBER (4)	Year (YYYY)	
4.	RSID	NUMBER (2)	Coded	
5.	INVSOURCE	NUMBER(1)	Coded	
6.	SRCDATE	NUMBER (4)	Year (YYYY)	
7.	STATE	NUMBER (2)	Coded	
8.	STATEABB	VARCHAR (2)	Coded	
9.	SUBREGION	NUMBER (1)	Coded	
10.	RPA_REGION	NUMBER (1)	Coded	
11.	RPA_SUBREGION	NUMBER (1)	Coded	
12.	ADMINFOR	NUMBER (2)	Coded	
13.	ADMINFORU	NUMBER (4)	Coded	

(table continued on next page)

Plot Table (Oracle table name is RPAPLOT_2002) continued

	Column name	Oracle data type	Value or unit of measure	Key data item
14.	LANDCC	NUMBER (2)	Coded	
15.	RESERCLASS	NUMBER (1)	Coded	
16.	SPCLASS	NUMBER (2)	Coded	
17.	FORCODE	NUMBER (1)	Coded	
18.	OWNGROUP	NUMBER (2)	Coded	
19.	OWNER	NUMBER (2)	Coded	
20.	AEF	NUMBER (8)	Acres	
21.	VEF	NUMBER (7)	Number	
22.	FORTYPE	NUMBER (3)	Coded	
23.	LOCALTYPE	NUMBER (3)	Coded	
24.	STANDORIGIN	NUMBER (2)	Coded	
25.	SSCLASS	NUMBER (1)	Coded	
26.	STDIAM	NUMBER (5,2)	Coded	
27.	AGECLASS	NUMBER (3)	Years	
28.	STOCKPC	NUMBER (2)	Coded	
30.	LOCALINF01	NUMBER (1)	Coded	
31.	LOCALINF02	NUMBER (1)	Coded	
32.	LOCALINF03	NUMBER (1)	Coded	
33.	LOCALINF04	NUMBER (1)	Coded	
34.	LOCALINF05	NUMBER (1)	Coded	
35.	LOCALINF06	NUMBER (1)	Coded	
36.	BDFTSW	NUMBER (6)	Number	
37.	BDFTHW	NUMBER (6)	Number	
38.	BDFT	NUMBER (6)	Number	
39.	BDFTSW__LOCAL	NUMBER (6)	Number	
40.	BDFTHW__LOCAL	NUMBER (6)	Number	
41.	BDFT__LOCAL	NUMBER (6)	Number	
42.	LOCAL_RULE	NUMBER (2)	Coded	
43.	CUBICSW	NUMBER (5)	Number	
44.	CUBICHW	NUMBER (5)	Number	
45.	CUBIC	NUMBER (5)	Number	
46.	CULLSW	NUMBER (4)	Number	
47.	CULLHW	NUMBER (4)	Name	
48.	CULL	NUMBER (4)	Number	
49.	DEADSW	NUMBER (4)	Number	

(table continued on next page)

Plot Table (Oracle table name is RPAPLOT_2002) continued

	Column name	Oracle data type	Value or unit of measure	Key data item
50.	DEADHW	NUMBER (4)	Number	
51.	DEAD	NUMBER (4)	Number	
52.	MORTSW	NUMBER (4)	Number	
53.	MORTHW	NUMBER (4)	Number	
54.	MORT	NUMBER (4)	Number	
55.	GROWTHSW	NUMBER (4)	Number	
56.	GROWTHHW	NUMBER (4)	Number	
57.	GROWTH	NUMBER (4)	Number	
58.	COUNTY	NUMBER (3)	Coded	
59.	CONDITION	NUMBER (1)	Coded	
60.	TSOURCE	NUMBER (2)	Coded	
61.	BIOBOLESW	NUMBER (6)	Number	
62.	BIOBOLEHW	NUMBER (7)	Number	
63.	BIOBOLE	NUMBER (7)	Number	
64.	BIOSAPSSW	NUMBER (6)	Number	
65.	BIOSAPSHW	NUMBER (6)	Number	
66.	BIOSAPS	NUMBER (6)	Number	
67.	BALIVE	NUMBER (9,1)	Number	
68.	LAT	NUMBER (6,2)	Degrees	
69.	LON	NUMBER (6,2)	Degrees	
70.	CONDPROP	NUMBER (5,4)	Number	
71.	FHMHEXID	NUMBER (6)	Coded	
72.	BALIVE_5	NUMBER (9,1)	Number	
73.	TPA_5	NUMBER (9,3)	Number	
74.	DWD	NUMBER (9,3)	Number	
75.	TPA_1	NUMBER (9,3)	Number	
76.	STDIAM_1	NUMBER (5,2)	Number	
77.	ECOSUBCD	VARCHAR2 (6)	Coded	
78.	CONGCD	NUMBER (4)	Coded	
79.	BIOSTUMPTOPSW	NUMBER (6)	Number	
80.	BIOSTUMPTOPHW	NUMBER (7)	Number	
81.	BIOSTUMPTOP	NUMBER (7)	Number	
82.	BIOSALVDEADSW	NUMBER (6)	Number	
83.	BIOSALVDEADHW	NUMBER (6)	Number	
84.	BIOSALVDEAD	NUMBER (6)	Number	

1. **PID** Plot ID. Only used in Hawaii. Used to tie plot back to original field plot data.

2. **RECNUM** Record number. Unique plot identifier. Record numbers for the 48 contiguous States and southeast Alaska were generated by combining State, unit, county, plot, and condition information to form a unique identifier. RECNUM= (state*100000000000) + (unit*1000000000) + (county*1000000) + (plot*10) + condition.

3. **YEAR** RPA Year. This is set to 2002 for all records in the 2002 RPA plot summary database.

4. **RSID** Region or station identification number. This coded value identifies which of the 16 locations submitted the record.

Code	Region or Station	Code	Region or Station
1	Region 1	9	Region 9
2	Region 2	10	Region 10
3	Region 3	22	Rocky Mountain Research Station
4	Region 4	23	North Central Research Station
5	Region 5	24	Northeastern Research Station
6	Region 6	26	Pacific Northwest Research Station
7	Bureau of Land Management (Oregon)	27	Alaska – PNW Research Station
8	Region 8	33	Southern Research Station

5. **INVSOURCE** Source of the inventory data. A coded value identifying the source of the data. Record sources include variations of original inventory data and inventory data updated by bookkeeping or projection. Code 1 is used for all State inventories in the 2002 RPA except for parts of Alaska and Hawaii.

Code	Description
1	PLOT LEVEL - Original Eastwide/Westwide or FIADB format
2	PLOT LEVEL - Updated Eastwide/Westwide standard format
3	PLOT LEVEL - Original inventory data
4	PLOT LEVEL - Updated inventory data
5	STAND LEVEL - Original inventory data
6	STAND LEVEL - Updated inventory data
7	STRATUM LEVEL - Original inventory data
8	STRATUM LEVEL - Updated inventory data

6. SRCDATE Source date. The year the field plot was measured.

7. STATE State code. The State in which the plot is located.

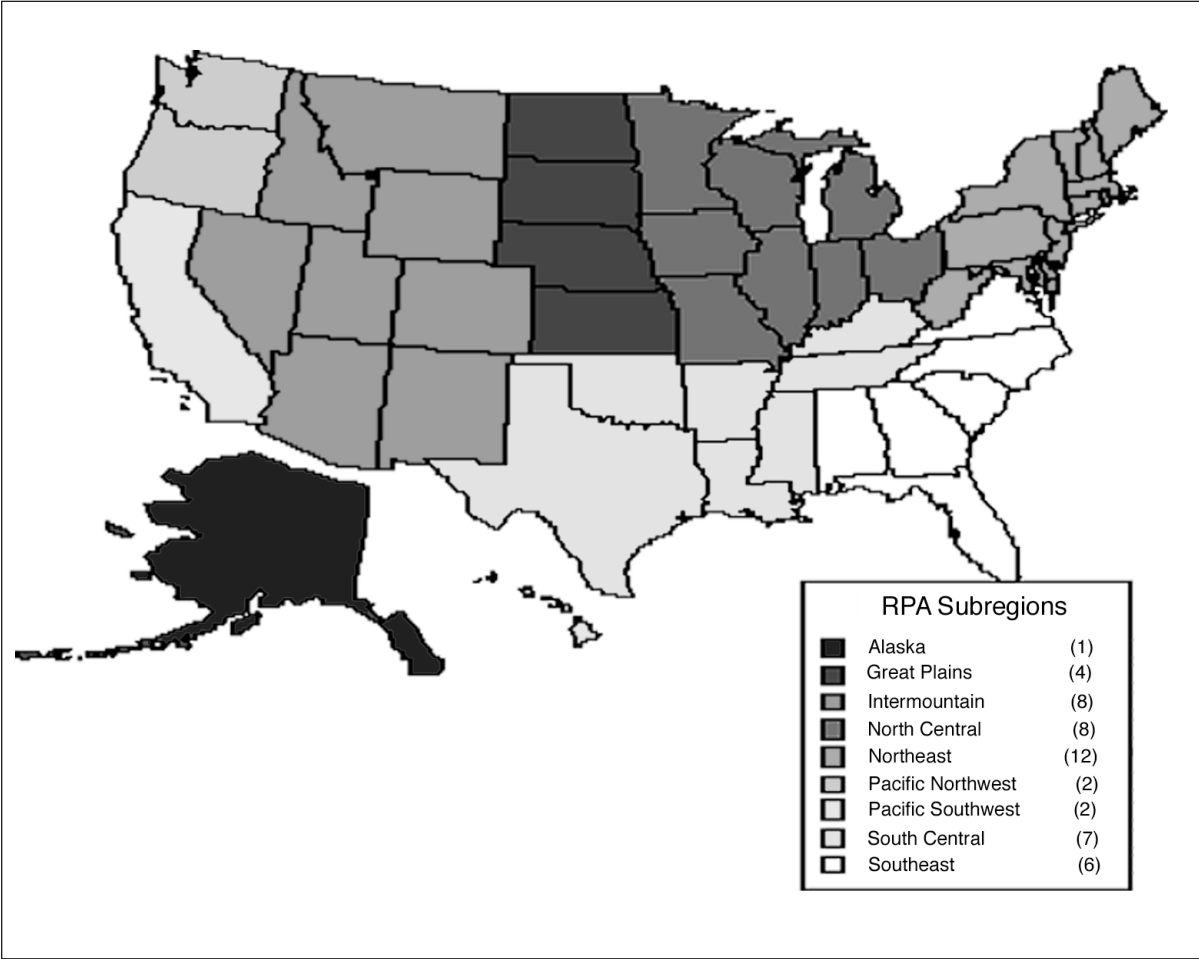
Code	Stateabb	State Name	Code	Stateabb	State Name
01	AL	Alabama	29	MO	Missouri
02	AK	Alaska	30	MT	Montana
04	AZ	Arizona	31	NE	Nebraska
05	AR	Arkansas	32	NV	Nevada
06	CA	California	33	NH	New Hampshire
08	CO	Colorado	34	NJ	New Jersey
09	CT	Connecticut	35	NM	New Mexico
10	DE	Delaware	36	NY	New York
11	DC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

8. STATEABB State abbreviation. Two-character identifier for each State (see above).

9. SUBREGION Subregion code. The subregion code is always equal to 1 except in Alaska, Oregon, South Dakota, and Washington where values of 2 (East) and 3 (West) are used.

10. RPA_REGION RPA Region. Grouping of States into four regions (Northern=1, Southern=2, Rocky Mountain=3, and Pacific Coast=4) for reporting purposes (see definition and map for RPA_SUBREGION below)

11. RPA_SUBREGION RPA Subregion. Grouping of States into nine subregions for reporting purposes. Subregions 1 and 2 belong in the Northern Region, subregions 3 and 4 belong in the Southern Region, subregions 5 and 6 belong in the Rocky Mountain Region, and Regions 7, 8, and 9 belong in the Pacific Coast Region.



12. ADMINFOR

Administrative forest. A two-digit code identifying the administrative forest within a region where the inventoried land is located.

Region	Adminfor	National Forest Name	Region	Adminfor	National Forest Name
0	00	Non-national forest	3	05	Coronado
1	02	Beaverhead	3	06	Gila
1	03	Bitterroot	3	07	Kaibab
1	04	Idaho Panhandle	3	08	Lincoln
1	05	Clearwater	3	09	Prescott
1	08	Custer	3	10	Santa Fe
1	09	Deerlodge	3	12	Tonto
1	10	Flathead	3	99	Other R3
1	11	Gallatin	4	01	Ashley
1	12	Helena	4	02	Boise
1	14	Kootenai	4	03	Bridger-Teton
1	15	Lewis and Clark	4	05	Caribou
1	16	Lolo	4	06	Challis
1	17	Nez Perce	4	07	Dixie
1	20	Cedar River NGL	4	08	Fishlake
1	21	Little Missouri NGL	4	09	Humboldt
1	22	Sheyenne NGL	4	10	Manti-La Sal
1	24	Grand River NGL	4	12	Payette
1	99	Other R1	4	13	Salmon
2	02	Bighorn	4	14	Sawtooth
2	03	Black Hills	4	15	Targhee
2	04	Grand Mesa-	4	17	Toiyabe
		Uncompahgre-Gunnison	4	18	Uinta
2	06	Medicine Bow	4	19	Wasatch-Cache
2	07	Nebraska	4	20	Desert Range Exp St
2	09	Rio Grande	4	99	Other R4
2	10	Arapaho-Roosevelt	5	01	Angeles
2	11	Routt	5	02	Cleveland
2	12	Pike and San Isabel	5	03	Eldorado
2	13	San Juan	5	04	Inyo
2	14	Shoshone	5	05	Klamath
2	15	White River	5	06	Lassen
2	17	Cimarron NGL	5	07	Los Padres
2	18	Commanche NGL	5	08	Mendocino
2	19	Pawnee NGL	5	09	Modoc
2	20	Oglala NGL	5	10	Six Rivers
2	21	Buffalo Gap NGL	5	11	Plumas
2	22	Fort Pierre NGL	5	12	San Bernardino
2	23	Thunder Basin NGL	5	13	Sequoia
2	99	Other R2	5	14	Shasta-Trinity
3	01	Apache-Sitgreaves	5	15	Sierra
3	02	Carson	5	16	Stanislaus
3	03	Cibola	5	17	Tahoe
3	04	Coconino	5	19	Lake Tahoe Basin

(table continued on next page)

Region	Adminfor	National Forest Name	Region	Adminfor	National Forest Name
5	99	Other R5	8	09	Ouachita
6	01	Deschutes	8	10	Ozark and St. Francis
6	02	Fremont	8	11	NFS in North Carolina
6	03	Gifford Pinchot	8	12	Francis Marion-Sumter
6	04	Malheur	8	13	NFS in Texas
6	05	Mt. Baker-Snoqualmie	8	14	Jefferson
6	06	Mt. Hood	8	16	Caribbean
6	07	Ochoco	8	99	Other R8
6	08	Okanogan	9	02	Chequamegon
6	09	Olympic	9	03	Chippewa
6	10	Rogue River	9	04	Huron-Manistee
6	11	Siskiyou	9	05	Mark Twain
6	12	Siuslaw	9	06	Nicolet
6	14	Umatilla	9	07	Ottawa
6	15	Umpqua	9	08	Shawnee
6	16	Wallowa-Whitman	9	09	Superior
6	17	Wenatchee	9	10	Hiawatha
6	18	Willamette	9	11	Hoosier
6	20	Winema	9	18	Wayne
6	21	Colville	9	19	Allegheny
6	99	Other R6	9	20	Green Mountain
8	01	NFS in Alabama	9	21	Monongahela
8	02	Daniel Boone	9	22	White Mountain
8	03	Chattahoochee-Oconee	9	99	Other R9
8	04	Cherokee	10	02	Tongass-Stikine
8	05	NFS in Florida	10	03	Tongass-Chatham
8	06	Kisatchie	10	04	Chugach
8	07	NFS in Mississippi	10	05	Tongass-Ketchikan
8	08	George Washington	10	99	Other R10

13. ADMINFORU

Administrative Unit. A four-digit code identifying the National Forest Service Region/Forest where the inventoried land is located. The first two digits are the region code and the second two digits are the forest code (for codes see ADMINFOR above).

14. LANDCC

Land Use Class. Indicates the basic land cover.

Code	Description
-1	Denied access/hazardous/not in sample.
20	Forest land: Forest land is defined as lands with at least a stocking of 10 (or at least 5 percent cover in chaparral type) of live forest trees of any size, or formerly having such tree cover, and not currently developed for nonforest use. The minimum area for classification of forest land is usually 1 acre with a minimum width of 120 feet stem-to-stem. Forested strips must be at least 120 feet wide for a continuous length of at least 363 feet to meet the acre threshold. Unimproved roads and trails as well as clearings in forest areas are classified as forest if less than 120 feet wide or smaller than 1 acre.
60	Nonforest land: Land that has never supported forests or land formerly forested but now developed for uses such as agriculture (including Christmas tree plantations, orchards, nurseries, and agroforestry), residences, commerce, industry, city parks, or improved roads. If located within forest areas, unimproved roads and nonforested strips must be more than 120 feet wide. Clearings and other openings in a forest area must be more than 1 acre to qualify as nonforest land.
91	Census water: Streams, sloughs, estuaries, and canals more than 200 feet wide, and lakes, reservoirs, and ponds more than 4.5 acres in size (1990 census definition).
92	Noncensus water: Streams, sloughs, estuaries, and canals between 30 and 200 feet, and lakes, reservoirs, and ponds between 1 and 4.5 acres in area. This definition was used in the 1990 census and applied when the data became available. Earlier inventories defined noncensus water differently.

15. RESERCLASS

Reserved class. Reserved land is land withdrawn by law(s) prohibiting the management of the land for wood products.

Code	Description
1	Unreserved forest land: All private forest lands; and public forest lands where the harvest of trees is not prohibited by statute or administrative regulation.
2	Non-National Forest System reserved forest land: Lands that have statutory or administrative restrictions prohibiting the harvest of trees. Examples include forest land within national parks, monuments, national wilderness preservation system areas outside the national forests, State parks.
3	National Forest System reserved forest land/non-wilderness: (Not used in 2002 RPA) In 1997, this code was used to identify all reserved or withdrawn National Forest System forest lands not within the national wilderness preservation system. Examples include primitive areas, scenic research areas, scenic areas, wild and scenic rivers, recreation areas, game refuges, monument areas, and historic areas.
4	National Forest System reserved forest land: National Forest System forest lands that have statutory or administrative restrictions prohibiting the harvest of trees. Examples include land within the national wilderness preservation system or State-designated wilderness areas.

16. SPCLASS

Site productivity class. A classification of forest land in terms of inherent capacity to grow crops of industrial wood. The class identifies the average potential growth in cubic feet/acre/year and is based on the culmination of mean annual increment of fully stocked natural stands.

Code	Description
1	225-999 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	< 20 Cubic feet/acre/year
8	Unproductive timberland

17. FORCODE

Forest land code. Used to differentiate between productive/unproductive and reserved/nonreserved forest land.

Code	Description
0	Nonforest
1	Productive non-reserved forest land (Timberland)
2	Productive reserved forest land
3	Unproductive non-reserved forest land
4	Unproductive reserved forest land

18. OWNGROUP

Ownership group. A broad grouping of ownership classes.

Code	Recreation Use
1	National forest land: Federal lands designated by Executive order or statute as national forests or purchase units, and other lands under the administration of the Forest Service including experimental areas and Bankhead-Jones Title III lands.
2	Other public land: Publicly owned lands other than national forest lands.
3	Forest industry land: Lands owned by companies or individuals operating wood-using plants (includes Indian lands if they qualify as industry).
4	Nonindustrial private land: All private lands except those owned by forest industry (includes nonindustrial Indian lands).
5	Unknown ownership: Owner group not recorded.

19. OWNER

Owner class code. Indicates the class in which the landowner (at the time of the inventory) belongs.

Code	Owner
11	National forest
12	Bureau of Land Management. Federal lands administered by the Bureau of Land Management, U.S. Department of the Interior.
14	Other Federal agencies: Federal lands other than lands administered by the Forest Service or BLM.
15	State: Lands owned by State governments, or lands leased by State governmental units for more than 50 years.
16	County and municipal: Lands owned by county or municipal agencies, or lands leased by these agencies for more than 50 years.
20	Forest industry: Lands owned by companies, tribes, or individuals operating wood-using plants.
60	Other private – corporate: Lands owned by private corporations other than forest industry.
70	Other private – individual: Lands owned by individuals, including farmers.
80	Other private-corporate-leased: Lands owned by corporations but leased to forest industry.
90	Other private-individual-leased: Lands owned by individuals but leased to forest industry.
99	Unknown: Ownership not recorded or unavailable. This code is legal for nonforest land and water cover classes only.

20. AEF

Area Expansion Factor. The number of acres the sample plot represents for making current estimates of area. The sum of AEF over all plot records for a particular State will closely match the area reported for that State by the Bureau of Census in 1990.

21. VEF

Volume Expansion Factor. The number of acres the sample plot represents for making current estimates of volume and biomass.

22. FORTYPE

Forest type group. The forest cover type of the inventoried stand, based on the tree species forming a plurality of the stocking within the stand. The first digit of this three-digit code represents either eastern (1) or western (2) type groups. The second and third digits are the historic RPA forest type codes.

Code	Forest Type Group Name	Code	Forest Type Group Name
100	White - red - jack pine	210	Ponderosa pine
110	Spruce - fir	220	Western white pine
120	Longleaf - slash pine	230	Fir - spruce
130	Loblolly - shortleaf pine	240	Hemlock - Sitka spruce
140	Oak - pine	250	Larch
150	Oak - hickory	260	Lodgepole pine
160	Oak - gum - cypress	270	Redwood
170	Elm - ash - cottonwood	280	Other hardwoods
180	Maple - beech - birch	290	Unclassified and other forest types
190	Aspen - birch	293	Pinyon - juniper
198	Other forest types	297	Chaparral
199	Nonstocked	299	Nonstocked
200	Douglas-fir		

23. LOCALTYPE

Local forest type. Available for every State except Hawaii and interior Alaska.

EASTERN FOREST TYPES

100	WHITE-RED-JACK PINE TYPE GROUP	120	LONGLEAF-SLASH PINE TYPE GROUP
101	Jack pine	121	Longleaf pine
102	Red pine	122	Slash pine
103	White pine		
104	White pine - hemlock	130	LOBLOLLY-SHORTLEAF PINE TYPE GROUP
105	Hemlock	131	Loblolly pine
211	Ponderosa pine	132	Shortleaf pine
		133	Virginia pine
110	SPRUCE-FIR TYPE GROUP	134	Sand pine
111	Balsam fir	135	Eastern redcedar
112	Black spruce	136	Pond pine
113	Red spruce - Balsam fir	137	Spruce pine
114	Northern white-cedar	138	Pitch pine
115	Tamarack	139	Table-mountain pine
116	White spruce		

(table continued on next page)

EASTERN FOREST TYPES (continued)

140	OAK-PINE TYPE GROUP	170	ELM-ASH-COTTONWOOD TYPE GROUP
141	White pine - northern red oak - white ash	171	Black ash - American elm - Red maple
142	Eastern redcedar - hardwood	172	River birch - sycamore
143	Longleaf pine - scrub oak	173	Cottonwood
144	Shortleaf pine - oak	174	Willow
145	Virginia pine - southern red oak	175	Sycamore - pecan - American elm
146	Loblolly pine - hardwood	176	Red maple-lowland
147	Slash pine - hardwood	179	Mixed lowland hardwoods
149	Other oak - pine		
		180	MAPLE-BEECH-BIRCH TYPE GROUP
150	OAK-HICKORY TYPE GROUP	181	Sugar maple - beech - yellow birch
151	Post oak, black oak or bear oak	182	Black cherry
152	Chestnut oak	183	Black walnut
153	White oak - red oak - hickory	184	Red maple-northern hardwoods
154	White oak	187	Red maple-upland
155	Northern red oak	188	Northern hardwood-reverting field
156	Yellow poplar - white oak - northern red oak	189	Mixed northern hardwoods
157	Southern scrub oak		
158	Sweetgum - yellow poplar	190	ASPEN-BIRCH TYPE GROUP
159	Mixed hardwoods	191	Aspen
		192	Paper birch
160	OAK-GUM-CYPRESS TYPE GROUP	194	Balsam poplar
161	Swamp chestnut oak - cherrybark oak		
162	Sweetgum - Nuttall oak - willow oak	198	OTHER FOREST TYPES
163	Sugarberry - American elm - green ash		
165	Overcup oak - water hickory	199	NONSTOCKED
166	Atlantic white cedar		
167	Baldcypress - water tupelo		
168	Sweetbay - swamp tupelo - red maple		
169	Palm-mangrove-other tropical		

WESTERN FOREST TYPES

200	DOUGLAS-FIR TYPE GROUP	220	WESTERN WHITE PINE TYPE GROUP
201	Douglas-fir	221	Western white pine
202	Douglas-fir - Western hemlock		
203	Port-Orford-cedar - Douglas-fir	230	FIR-SPRUCE TYPE GROUP
		116	White spruce (in Alaska)
210	PONDEROSA PINE TYPE GROUP	231	White fir and grand fir
211	Ponderosa pine	232	Red fir
212	Jeffrey pine	234	Pacific silver fir - hemlock
213	Ponderosa pine - sugar pine - fir	235	Engelmann spruce
		236	Engelmann spruce - subalpine fir

(table continued on next page)

WESTERN FOREST TYPES (continued)

240	HEMLOCK-SITKA SPRUCE TYPE GROUP	290	OTHER FOREST TYPES
241	Western redcedar		(includes Arizona cypress-western juniper)
242	Sitka spruce	112	Black spruce (in Alaska)
247	Mountain hemlock - subalpine fir	291	Coulter pine
248	Western hemlock	292	Digger pine - oak
		294	Knobcone pine
250	LARCH TYPE GROUP	295	Bristlecone pine
255	Larch - Douglas-fir	296	Whitebark pine
256	Grand fir - larch - Douglas-fir	298	Limber pine
257	Ponderosa pine - larch - Douglas-fir		
		293	PINYON-JUNIPER
260	LOGGEPOLE PINE TYPE GROUP	297	CHAPARRAL
261	Lodgepole pine	299	NONSTOCKED
270	REDWOOD TYPE GROUP		
271	Redwood		
280	OTHER HARDWOODS TYPE GROUP		
281	Red alder		
282	Poplar - birch		
283	Aspen		
284	California black oak		
285	Cottonwood - willow		
286	Canyon live oak		
287	Oak - Madrone		
288	Other oaks		
289	Ohia		
192	Paper birch		

24. **STANDORIGIN** Stand origin code. Method of stand regeneration for the trees in the condition. An artificially regenerated stand is established by planting or artificial seeding.

Code	Stand origin
-1	Unknown
1	Natural stands
2	Clear evidence of artificial regeneration

25. SSCLASS

Stand-size class code. Classification of the predominant (based on stocking) diameter class of live trees within the condition. Large diameter trees are at least 11.0 inches diameter for hardwoods and at least 9.0 inches diameter for softwoods. Medium diameter trees are at least 5.0 inches diameter but not as large as large diameter trees. Small diameter trees are less than 5.0 inches diameter. Chaparral communities, land consisting of chaparral with all live stocking less than 10 and at least 5 percent, are considered nonstocked.

Code	Stand-size class
-1	Unknown (only allowed for nontimberland plots)
1	Nonstocked: Forest land with all live stocking less than 10
2	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
3	Medium diameter: Stands with an all live stocking of at least 10 (base 100); with more than 50 percent of the stocking in medium and large diameter trees; and with the stocking of large diameter trees less than the stocking of medium diameter trees
4	Large diameter: Stands with an all live stocking of at least 10 (base 100); with more than 50 percent of the stocking in medium and large diameter trees; and with the stocking of large diameter trees equal to or greater than the stocking of medium diameter trees

26. STDIAM

Mean stand diameter. Value of the mean stand diameter of the main stand (which is composed of all trees ≥ 5 " d.b.h.). Estimated by calculating the quadratic mean diameter (except for Hawaii and interior Alaska).

27. AGECLASS

Stand age. Average total age, to the nearest year, of the trees (plurality of all live trees not overtopped) in the predominant stand-size class of the condition, determined using local procedures. Age is difficult to measure and therefore stand age may have large measurement errors. Nonstocked stands are recorded as 0. Any inventory dated 1995 or later will contain stand ages recorded to the nearest year. For some older inventories, stand age was recorded in 10- or 20-year classes (CT, DE, KY, MD, NH, PA, RI, VT, and WV) for stands less than 100 years old, 20-year age classes for stands between 100 and 200 years, and 100-year age classes for stands older than 200 years. The value recorded is the midpoint of the age class. Mixed age classes were allowed in older inventories (AR, CT, KY, LA, ME, MA, MS, NH, NY, OH, OK, PA, RI, TX, VT, and WV) and were assigned a value of -999.

28. STOCKPC Percent stocking class. A coded value indicating the percent stocking class for growing stock in the stand; the 10-percent interval classes range from nonstocked to 100 percent stocking, relative stocking basis. All 10 codes were used for Hawaii and interior Alaska. Only codes 1, 3, 5, 7, 9, and -1 were used for the 48 contiguous States and southeast Alaska (the STOCKPC data for these States came from the GSSTKCD variable in the FIADB, which has fewer classes than STOCKPC). For the 48 contiguous States and southeast Alaska, a code of 1 is equivalent to Nonstocked, 3 Poorly stocked, 5 Medium stocked, 7 Fully stocked, 9 Overstocked, and -1 Data unavailable.

29. TREATOPP Treatment opportunity class code. Identifies the physical opportunity to improve stand conditions by applying management practices. This variable is mandatory for nonindustrial private timberland but may not be available for other ownerships. No values available for AL, AZ, CO, HI, ID, MT, NM, NV, SC, TN, UT, and WY.

Code	Treatment opportunity class
1	Regeneration without site preparation: The area is characterized by the absence of a manageable stand because of inadequate stocking of growing stock. Growth will be much below the potential for the site if the area is left alone. Prospects are not good for natural regeneration. Artificial regeneration will require little or no site preparation.
2	Regeneration with site preparation: The area is characterized by the absence of a manageable stand because of inadequate stocking of growing stock. Growth will be much below the potential for the site if the area is left alone. Either natural or artificial regeneration will require site preparation.
3	Stand conversion: The area is characterized by stands of undesirable, chronically diseased, or off-site (found where not normally expected) species. Growth and quality will be much below the potential for the site if the area is left alone. The best prospect is to convert the area to a different forest type or species.
4	Thinning seedlings and saplings: The stand is characterized by a dense stocking of growing stock. Stagnation appears likely if left alone. Stocking must be reduced to help crop trees attain dominance.
5	Thinning poletimber: The stand is characterized by a dense stocking of growing stock. Stocking must be reduced to prevent stagnation or to confine growth to selected, high-quality crop trees.
6	Other stocking control: The stand is characterized by an adequate stocking of seedlings, saplings, and poletimber growing stock, mixed with competing vegetation either overtopping or otherwise inhibiting the development of crop trees. The undesirable material must be removed to release overtopped trees, to prevent stagnation, or to improve composition, form, or growth of the residual stand.
7	Other intermediate treatments: The stand would benefit from other special treatments, such as fertilization to improve the growth potential of the site, and pruning to improve the quality of individual crop trees.
8	Clearcut harvest: The area is characterized by a mature or overmature sawtimber stand of sufficient volume to justify a commercial harvest. The best prospect is to harvest the stand and regenerate.

- 9 Partial cut harvest: The stand is characterized by poletimber- or sawtimber-size trees with sufficient merchantable volume for a commercial harvest, which will meet intermediate stand treatment needs or prepare the stand for natural regeneration. The stand is of a favored species composition and may be even- or uneven-aged. Included are such treatments as commercial thinning, seed tree, or shelterwood regeneration, and use of the selection system to maintain an uneven-aged stand.
 - 10 Salvage harvest: The stand is characterized by excessive damage to merchantable timber because of fire, insects, disease, wind, ice, or other destructive agents. The best prospect is to remove damaged or threatened material.
 - 11 No treatment: No silvicultural treatment is needed.
 - 1 Not available/unclassified.
-

- 30. LOCALINF01 Local info 1. Only used in Hawaii. Class codes of 0 and 7.
- 31. LOCALINF02 Local info 2. Only used in Hawaii. Class codes of 0 and 9.
- 32. LOCALINF03 Local info 3. Only used in Hawaii. Class codes of 0, 3, and 7.
- 33. LOCALINF04 Local info 4. Only used in Hawaii. Class codes of 0, and 8.
- 34. LOCALINF05 Local info 5. Not used.
- 35. LOCALINF06 Local info 6. Not used.
- 36. BDFTSW Softwood board foot volume (International 1/4-inch rule). The net volume/acre (board feet) of softwood growing stock. Trees must be ≥ 9 inches d.b.h. The minimum saw log top is 7 inches diameter outside bark. Available only for timberland plots.
- 37. BDFTHW Hardwood board foot volume (International 1/4-inch rule). The net volume/acre (board feet) of hardwood growing stock. Trees must be ≥ 11 inches d.b.h. The minimum saw log top is 9 inches diameter outside bark. Available only for timberland plots.

38. **BDFT** Board foot volume (International 1/4-inch rule). The net volume/acre (board feet) of softwood and hardwood growing stock. Available only for timberland plots.
39. **BDFTSW_LOCAL** Softwood board foot volume (local rule). The net volume/acre (board feet) of softwood growing stock. Not used in the 2002 RPA.
40. **BDFTHW_LOCAL** Hardwood board board foot volume (local rule). The net volume/acre (board feet) of softwood growing stock. Not used in the 2002 RPA.
41. **BDFT_LOCAL** Board foot volume (local rule). The net volume/acre (board feet) of softwood and hardwood growing stock. Not used in the 2002 RPA.
42. **LOCAL_RULE** Local Board foot rule. Identifies the rule used for the local volume estimation. Not used in the 2002 RPA.

Code	Local rule
1	Scribner - long log
2	Scribner - short log
3	Doyle
4	International 1/8"
5	local cubic

43. **CUBICSW** Softwood cubic foot volume. Net volume/acre (cubic feet) of softwood growing stock. Trees must be ≥ 5 inches d.b.h., to a minimum 4-inch diameter outside bark. Available for all forest land plots. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land).
44. **CUBICHW** Hardwood cubic foot volume. Net volume/acre (cubic feet) of hardwood growing stock. Trees must be ≥ 5 inches d.b.h., to a minimum 4-inch diameter outside bark. Available for all forest land plots. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land).

45. **CUBIC** Cubic foot volume. Net volume/acre (cubic feet) of hardwood growing stock. Trees must be ≥ 5 inches d.b.h., to a minimum 4- inch diameter outside bark. Available for all forest land plots. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land).
46. **CULLSW** Softwood live cull volume. Net volume/acre (cubic feet) of live cull softwood trees; trees must be ≥ 5 inches d.b.h. Available for all forest land plots. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land).
47. **CULLHW** Hardwood live cull volume. Net volume/acre (cubic feet) of live cull hardwood trees; trees must be ≥ 5 inches d.b.h. Available for all forest land plots. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land).
48. **CULL** All live cull volume. Net volume/acre (cubic feet) of all live cull trees; trees must be ≥ 5 inches d.b.h. Available for all forest land plots. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land).
49. **DEADSW** Salvable dead softwood. Net volume/acre (cubic feet) of merchantable sound dead softwood trees – merchantability determined by regional standards. Available for all forest land plots. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land).
50. **DEADHW** Salvable dead hardwood. Net volume/acre (cubic feet) of merchantable sound dead hardwood trees – merchantability determined by regional standards. Available for all forest land plots. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land).
51. **DEAD** Salvable dead. Net volume/acre (cubic feet) of merchantable sound dead trees – merchantability determined by regional standards. Available for all forest land plots. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land).

52. **MORTSW** Softwood mortality. Volume/acre (cubic feet) of annual mortality of softwood growing stock; trees must be ≥ 5 inches d.b.h. Available only for timberland plots.
53. **MORTHW** Hardwood mortality. Volume/acre (cubic feet) of annual mortality of hardwood growing stock; trees must be ≥ 5 inches d.b.h. Available only for timberland plots.
54. **MORT** Mortality. Volume/acre (cubic feet) of annual mortality of growing-stock trees; trees must be ≥ 5 inches d.b.h. Available only for timberland plots.
55. **GROWTHSW** Net annual softwood growth. Net annual growth/acre (cubic feet) of softwood growing stock. Net growth is gross growth minus mortality minus negative cull increment plus positive cull increment. Negative cull increment occurs when growing-stock trees at time zero are reclassified as cull trees at time one. Positive cull increment is when trees classified as cull at time zero are reclassified as growing stock at time one. Available only for timberland plots.
56. **GROWTHHW** Net annual hardwood growth. Net annual growth/acre (cubic feet) of hardwood growing stock. Net growth is gross growth minus mortality minus negative cull increment plus positive cull increment. Negative cull increment occurs when growing-stock trees at time zero are reclassified as cull trees at time one. Positive cull increment is when trees classified as cull at time zero are reclassified as growing stock at time one. Available only for timberland plots.
57. **GROWTH** Net annual growth. Net annual growth/acre (cubic feet) of softwood growing stock. Net growth is gross growth minus mortality minus negative cull increment plus positive cull increment. Negative cull increment occurs when growing-stock trees at time zero are reclassified as cull trees at time one. Positive cull increment is when trees classified as cull at time zero are reclassified as growing stock at time one. Available only for timberland plots.
58. **COUNTY** County code. The identification number for a county, parish, watershed, borough, or similar governmental unit in a State. FIPS codes from the Bureau of the Census, 1990, are used if a single county is represented. See appendix B for specific codes. Note: A county code of 0 was allowed in Alaska, and all of Hawaii was given a county code of 1.

59 CONDITION

Condition number. Unique identifying number assigned to each condition on a plot. Condition is defined by owner group class, reserved status, and land class. Differences in broad forest type, stand size, stand origin, and stand density further define condition for forest land. Mapped nonforest conditions are also assigned numbers. The condition at the center of subplot one is given condition number 1. Other conditions on the plot are assigned numbers sequentially. Once a number has been assigned, the number is reused whenever that same condition is encountered on the plot.

60. TSOURCE

Source of volume data. Identifies whether data source for volume record (trees, stands, etc.) is based on observed or modeled tree d.b.h.

Code Source of volume data

- 0 Nonforest land.
- 1 Observed from tree data (All timberland plots are based on observed tree data).
- 2 Used for unproductive forest land or reserved forest land plots where no tree data were available. Plots with a value of 2 for TSOURCE have imputed values for the following variables: cubic, cubicsw, cubichw, cullsw, cullhw, cull, deadsw, deadhw, dead, biobolesw, biobolehw, biobole, biosapssw, biosapshw, biosaps, balive. These variables were assigned the average values from similar plots (unproductive plots were matched with unproductive plots and reserved plots were matched with reserved plots where the plots had the same first two characters for the ECOSUBCD variable). A minimum of five plots having the same ECOSUBCD string through two characters was required for the plot to be assigned a TSOURCE code of 2. This plot failed the requirements to receive a TSOURCE code of 3.
- 3 Used for unproductive forest land or reserved forest land plots where no tree data were available. Plots with a value of 3 for TSOURCE have imputed values for the following variables: cubic, cubicsw, cubichw, cullsw, cullhw, cull, deadsw, deadhw, dead, biobolesw, biobolehw, biobole, biosapssw, biosapshw, biosaps, balive. These variables were assigned the average values from similar plots. (Unproductive plots were matched with unproductive plots and reserved plots were matched with reserved plots where the plots had the same first three characters for the ECOSUBCD variable.) A minimum of five plots having the same ECOSUBCD string through three characters was required for the plot to be assigned a TSOURCE code of 3. This plot failed the requirements to receive a TSOURCE code of 4.
- 4 Used for unproductive forest land or reserved forest land plots where no tree data were available. Plots with a value of 4 for TSOURCE have imputed values for the following variables: cubic, cubicsw, cubichw, cullsw, cullhw, cull, deadsw, deadhw, dead, biobolesw, biobolehw, biobole, biosapssw, biosapshw, biosaps, biostumptopsw, biostumptophw, biostumptop, balive. These variables were assigned the average values from similar plots. (Unproductive plots were matched with unproductive plots and reserved plots were matched with reserved plots where the plots had the same first four characters for the ECOSUBCD variable.) A minimum of five plots having the same ECOSUBCD string through four characters was required for the plot to be assigned a TSOURCE code of 4. This plot failed the requirements to receive a TSOURCE code of 5.
- 5 Used for unproductive forest land or reserved forest land plots where no tree data were available. Plots with a value of 5 for TSOURCE have imputed values for the following variables: cubic, cubicsw, cubichw, cullsw, cullhw, cull, deadsw, deadhw, dead, biobolesw, biobolehw, biobole, biosapssw, biosapshw, biosaps, balive. These variables were assigned the average

values from similar plots. (Unproductive plots were matched with unproductive plots and reserved plots were matched with reserved plots where the plots had the same first five characters for the ECOSUBCD variable.) A minimum of five plots having the same ECOSUBCD string through five characters was required for the plot to be assigned a TSOURCE code of 5. This plot failed the requirements to receive a TSOURCE code of 6.

- 6 Used for unproductive forest land or reserved forest land plots where no tree data were available. Plots with a value of 2 for TSOURCE have imputed values for the following variables: cubic, cubicsw, cubichw, cullsw, cullhw, cull, deadsw, deadhw, dead, biobolesw, biobolehw, biobole, biosapssw, biosapshw, biosaps, balive. These variables were assigned the average values from similar plots. (Unproductive plots were matched with unproductive plots and reserved plots were matched with reserved plots where the plots had the same first two characters for the ECOSUBCD variable.) A minimum of five plots having the same ECOSUBCD string through six characters was required for the plot to be assigned a TSOURCE code of 6.
- 96 Hawaii. Values for variables biosapssw, biosapshw, and biosaps were imputed based on the average ratio of biostumptop to biobole for the lower 48 States. Individual tree data were unavailable for computing trees per acre and basal area variables.
- 97 Interior Alaska. Values for variables cubic, cubicsw, cubichw, cullsw, cullhw, cull, deadsw, deadhw, dead, biobolesw, biobolehw, biobole, biosapssw, biosapshw, biosaps, and balive were imputed from information contained on six plots measured in the Northwest Territories.
- 98 Productive reserved plots that did not meet requirements for codes 1 through 6. They received the average values from all other productive reserved plots that were measured in this State or neighboring States (a minimum of five plots was required to develop the average).
- 99 Unproductive plots that did not meet requirements for codes 1 through 6. They received the average values from all other unproductive plots that were measured in this State or neighboring States (a minimum of five plots was required to develop the average). Exception for Florida (332 plots). Information for these 332 plots was derived from publication by Neal Cost (1982) on unproductive forest land.
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61. **BIOBOLESW** Softwood biomass in the bole. Total gross biomass (including bark) in dry pounds per acre of all live softwood trees 5 inches d.b.h. or larger from a 1-foot stump to a minimum 4-inch top diameter outside bark of the central stem. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forestland). Available for all forest land plots.

62. **BIOBOLEHW** Hardwood biomass in the bole. Total gross biomass (including bark) in dry pounds per acre of all live hardwood trees 5 inches d.b.h. or larger from a 1-foot stump to a minimum 4-inch top diameter outside bark of the central stem. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land). Available for all forest land plots.

63. **BIOBOLE** Biomass in the bole. Total gross biomass (including bark) in dry pounds per acre of all live trees 5 inches d.b.h. or larger from a 1-foot stump to a minimum 4-inch top diameter outside bark of the central stem. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land). Available for all forest land plots.
64. **BIOSAPSSW** Softwood sapling biomass. Total gross aboveground biomass (including bark) in dry pounds per acre of all live softwood trees from 1 to 5 inches d.b.h., including tops and limbs. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land). Available for all forest land plots.
65. **BIOSAPSHW** Hardwood sapling biomass. Total gross aboveground biomass (including bark) in dry pounds per acre of all live hardwood trees from 1 to 5 inches d.b.h., including tops and limbs. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land). Available for all forest land plots.
66. **BIOSAPS** Sapling biomass. Total gross aboveground biomass (including bark) in dry pounds per acre of all live trees from 1 to 5 inches d.b.h., including tops and limbs. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land). Available for all forest land plots.
67. **BALIVE** Basal area (sq.ft./ac.) of all live trees 1 inch and larger in diameter. Only calculated when TSOURCE=1. Diameters are usually measured at breast height except for certain woodland species where diameters are measured at the root collar. Available for forest land plots.

68. **LAT** Latitude NAD 83 datum (not available for public distribution due to privacy policy). Due to the Privacy Amendment: H.R.3423 Department of the Interior and Related Agencies Appropriations Act, 2000 (November 17, 1999) latitude and longitude are zeroed out. For internal FIA users the approximate latitude of the plot in decimal degrees to the nearest 100 seconds (0.028 degrees). The precision of this item along the meridian is ± 1542 m at latitude 45 degrees north. A value of -1 means that latitude was not recorded. However, in some cases the county centroid may be entered when the actual location is not available. Actual plot locations cannot be released.
69. **LON** Longitude NAD 83 datum (not available for public distribution due to privacy policy). Due to the Privacy Amendment: H.R.3423 Department of the Interior and Related Agencies Appropriations Act, 2000 (November 17, 1999) latitude and longitude are zeroed out. For internal FIA users the approximate longitude of the plot in decimal degrees to the nearest 100 seconds (0.028 degrees). The precision of this item along the parallel is ± 1094 m at latitude 45 degrees. A value of -1 means that longitude was not recorded. However, in some cases the county centroid may be entered when the actual location is not available.
70. **CONDPROP** Condition proportion. Proportion of the plot in the condition. Values of 1 indicate that the plot was not mapped. Values of less than 1 indicate that data for this record came from a mapped portion of a plot.
71. **FHMHEXID** Forest Health Monitoring hexagon identifier. Number of the hexagon wherein the plot resides. FHM hexagons are approximately 160,000 acres in size.
72. **BALIVE_5** Basal area (sq.ft./ac.) of all live trees 5 inches and larger in diameter. Only calculated when TSOURCE=1. Diameters are usually measured at breast height except for certain woodland species where diameters are measured at the root collar.
73. **TPA_5** Number of live trees per acre 5 inches in diameter and larger. Only calculated when TSOURCE=1. Diameters are usually measured at breast height except for certain woodland species where diameters are measured at the root collar.
74. **DWD** Down woody debris. Not populated.

75. **TPA_1** Number of live trees per acre 1 inch in diameter and larger. Only calculated when TSOURCE=1. Diameters are usually measured at breast height except for certain woodland species where diameters are measured at the root collar.
76. **STDIAM_1** Quadratic mean stand diameter using all live trees over 1 inch in diameter. Only calculated when TSOURCE=1.
77. **ECOSUBCD** Ecological subsection code. An area of similar surficial geology, lithology, geomorphic process, soil groups, subregional climate, and potential natural communities. Subsection boundaries usually correspond with discrete changes in geomorphology. Subsection information is used for broad planning and assessment. Subsection codes may consist of up to six characters and were developed by the Forest Service as part of the National Hierarchical Framework of Ecological Units.
78. **CONGCD** Congressional District code for the 107th Congress (2001-2002). A territorial division of a State from which a member of the U.S. House of Representatives is elected. There are 435 congressional districts in the United States apportioned to the States based on population; each State receives at least one congressional district. The Congressional District code assigned to a plot (regardless of when it was measured) is for the most recent Congress. 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.
79. **BIOSTUMPTOPSW** Biomass in the stump and tops of live softwood trees 5 inches in diameter and larger. Difference between total dry biomass and merchantable drybiomass on live trees 5 inches in diameter and larger. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forestland). Available for all forest land plots.
80. **BIOSTUMPTOPHW** Biomass in the stump and tops of live hardwood trees 5 inches in diameter and larger. Difference between total dry biomass and merchantable dry biomass on live trees 5 inches in diameter and larger. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land). Available for all forest land plots.

81. **BIOSTUMPTOP** Biomass in the stump and tops of live trees 5 inches in diameter and larger. Difference between total dry biomass and merchantable dry biomass on live trees 5 inches in diameter and larger. Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land). Available for all forest land plots.
82. **BIOSALVDEADSW** Total gross biomass oven-dry weight for salvable dead softwood trees. The total aboveground biomass of a sample tree 5.0 inches in diameter or larger, including all tops and limbs (but excluding foliage). Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land). Available for all forest land plots.
83. **BIOSALVDEADHW** Total gross biomass oven-dry weight for salvable dead hardwood trees. The total aboveground biomass of a sample tree 5.0 inches in diameter or larger, including all tops and limbs (but excluding foliage). Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land). Available for all forest land plots.
84. **BIOSALVDEAD** Total gross biomass oven-dry weight for salvable dead trees. The total aboveground biomass of a sample tree 5.0 inches in diameter or larger, including all tops and limbs (but excluding foliage). Values are imputed where the value of the variable TSOURCE is not equal to 1 (TSOURCE may not be equal to 1 for some reserved and unproductive forest land). Available for all forest land plots.

Species Diameter Class Table (Oracle table name is SPDBH2002)

	Column name	Oracle data type	Value or unit of measure	Key data item
1.	SRID	NUMBER		
2.	STATE	NUMBER	Coded	X
3.	STATEABB	VARCHAR2(2)		
4.	RSID	NUMBER	Coded	X
5.	SUBREGION	NUMBER		
6.	RPA_REGION	NUMBER		
7.	RPA_SUBREGION	NUMBER		
8.	YEAR	NUMBER		
9.	OWNGROUP	NUMBER	Coded	X
10.	OWNN	VARCHAR2(16)		
11.	DBHCODE	NUMBER	Coded	X
12.	DCN	VARCHAR2(22)		
13.	NVGSESW	NUMBER		
14.	NVGSLSL	NUMBER		
15.	NVGSLSH	NUMBER		
16.	NVGSOTYP	NUMBER		
17.	NVGSEWRD	NUMBER		
18.	NVGSJACK	NUMBER		
19.	NVGSSPFR	NUMBER		
20.	NVGSEHEM	NUMBER		
21.	NVGSCYPR	NUMBER		
22.	NVGSOTESW	NUMBER		
23.	NVBFESW	NUMBER		
24.	NVBFSLGSL	NUMBER		
25.	NVBFSLSH	NUMBER		
26.	NVBFOTYP	NUMBER		
27.	NVBFEWRD	NUMBER		
28.	NVBFJACK	NUMBER		
29.	NVBFSPFR	NUMBER		
30.	NVBFHEM	NUMBER		
31.	NVBFYPR	NUMBER		
32.	NVBFOTESW	NUMBER		
33.	NVGSEHW	NUMBER		
34.	NVGSSWOK	NUMBER		
35.	NVGSSROK	NUMBER		
36.	NVGSOWOK	NUMBER		
37.	NVGSOROK	NUMBER		
38.	NVGSICK	NUMBER		
39.	NVGSYBIR	NUMBER		

(table continued on next page)

Species Diameter Class Table (Oracle table name is SPDBH2002) continued

	Column name	Oracle data type	Value or unit of measure	Key data item
40.	NVGSHMAP	NUMBER		
41.	NVGSSMAP	NUMBER		
42.	NVGSBECH	NUMBER		
43.	NVGSSGUM	NUMBER		
44.	NVGSBGUM	NUMBER		
45.	NVGSASH	NUMBER		
46.	NVGSBASS	NUMBER		
47.	NVGSYPOP	NUMBER		
48.	NVGSECOAS	NUMBER		
49.	NVGSBWAL	NUMBER		
50.	NVGSBCHR	NUMBER		
51.	NVGSOTEHW	NUMBER		
52.	NVBFHWH	NUMBER		
53.	NVBFHWOK	NUMBER		
54.	NVBFROK	NUMBER		
55.	NVBFOWOK	NUMBER		
56.	NVBFOROK	NUMBER		
57.	NVBFHICK	NUMBER		
58.	NVBFYBIR	NUMBER		
59.	NVBFHMAP	NUMBER		
60.	NVBFMAP	NUMBER		
61.	NVBFBECH	NUMBER		
62.	NVBFSGUM	NUMBER		
63.	NVFBFGUM	NUMBER		
64.	NVBFASH	NUMBER		
65.	NVFBASS	NUMBER		
66.	NVBFYPOP	NUMBER		
67.	NVBFECOAS	NUMBER		
68.	NVFBWAL	NUMBER		
69.	NVFBCHR	NUMBER		
70.	NVBFOTEHW	NUMBER		
71.	NVGSWSW	NUMBER		
72.	NVGSDOUG	NUMBER		
73.	NVGSPDJEFF	NUMBER		
74.	NVGSFIR	NUMBER		
75.	NVGSWHEM	NUMBER		
76.	NVGSSUGAR	NUMBER		
77.	NVGSWWPN	NUMBER		
78.	NVGSRDWD	NUMBER		

(table continued on next page)

Species Diameter Class Table (Oracle table name is SPDBH2002) continued

	Column name	Oracle data type	Value or unit of measure	Key data item
79.	NVGSITKA	NUMBER		
80.	NVGSENGEL	NUMBER		
81.	NVGSWLARCH	NUMBER		
82.	NVGSINCEN	NUMBER		
83.	NVGSLODGE	NUMBER		
84.	NVGSWRCED	NUMBER		
85.	NVGSOTWSW	NUMBER		
86.	NVGSWHW	NUMBER		
87.	NVGSWCOAS	NUMBER		
88.	NVGSALDER	NUMBER		
89.	NVGSWOK	NUMBER		
90.	NVGSOTWHW	NUMBER		
91.	NVBFWSW	NUMBER		
92.	NVBFDOUG	NUMBER		
93.	NVBFPDJEFF	NUMBER		
94.	NVBFfir	NUMBER		
95.	NVBFWHEM	NUMBER		
96.	NVBFsUGAR	NUMBER		
97.	NVBFWWPN	NUMBER		
98.	NVBFrdWD	NUMBER		
99.	NVBFsITKA	NUMBER		
100.	NVBFENGEL	NUMBER		
101.	NVBFwLARCH	NUMBER		
102.	NVBFINCEN	NUMBER		
103.	NVBFLODGE	NUMBER		
104.	NVBFwRCED	NUMBER		
105.	NVBFOTWSW	NUMBER		
106.	NVBFwHW	NUMBER		
107.	NVBFwCOAS	NUMBER		
108.	NVBFALDER	NUMBER		
109.	NVBFwOK	NUMBER		
110.	NVBFOTWHW	NUMBER		

1. SRID Station/Region ID number. Not used.

2. STATE State. The State in which the plot is located. Two-digit FIPS code.

- 3. STATEABB State abbreviation. Two-character State abbreviation.

- 4. RSID Region or station identification number. This coded value uniquely identifies each of the 16 locations contributing data to the RPA Database. This ID can be used as a reference key to delete an entire set of data from the aggregated database, to update a particular RSID database, to retrieve a database, or to produce a summary report for individual regions or stations.

- 5. SUBREGION The subregion code indicates geographic location (east or west) within four States (Alaska, Oregon, South Dakota, and Washington).

- 6. RPA_REGION RPA Region. Grouping of States into four regions for reporting purposes.

- 7. RPA_SUBREGION RPA Subregions. Grouping of States into nine subregions for reporting purposes. Subregions 1 and 2 belong in the Northern Region, subregions 3 and 4 belong in the Southern Region, subregions 5 and 6 belong in the Rocky Mountain Region, and Regions 7, 8, and 9 belong in the Pacific Coast Region.

- 8. YEAR RPA Year. This is set to 2002 for all records in the 2002 RPA plot summary database.

- 9. OWNGROUP Ownership group. A broad grouping of ownership classes.

Code	Recreation Use
1	National forest land: Federal lands designated by Executive order or statute as national forests or purchase units, and other lands under the administration of the Forest Service including experimental areas and Bankhead-Jones Title III lands.
2	Other public land: Publicly owned lands other than national forest lands.
3	Forest industry land: Lands owned by companies or individuals operating wood-using plants (includes Indian lands if they qualify as industry).
4	Nonindustrial private land: All private lands except those owned by forest industry (includes nonindustrial Indian lands).

- 10. OWNN Owner name. Not applicable. Value is set to "own_name" for all records.

- 11. DBHCODE Diameter class code.

DBHcode	Diameter class name
1	5.0-6.9
2	7.0-8.9
3	9.0-10.9
4	11.0-12.9
5	13.0-14.9
6	15.0-16.9
7	17.0-18.9
8	19.0-20.9
9	21.0-28.9
10	29.0+
11	All d.b.h. classes

12. DCN Diameter class name.
13. NVGSESW Net volume growing-stock all eastern softwoods. Includes species groups: NVGSLGSL, NVGSLBSH, NVGSOTYP, NVGSEWRD, NVGSJACK, NVGSSPFR, NVGSEHEM, NVGSCYPR, NVGSOTESW
14. NVGSLGSL Net volume growing-stock longleaf and slash pines.
15. NVGSLBSH Net volume growing-stock loblolly and shortleaf pines.
16. NVGSOTYP Net volume growing-stock other yellow pines.
17. NVGSEWRD Net volume growing-stock white and red pines.
18. NVGSJACK Net volume growing-stock jack pine.
19. NVGSSPFR Net volume growing-stock spruce and balsam fir.
20. NVGSEHEM Net volume growing-stock eastern hemlock.
21. NVGSCYPR Net volume growing-stock cypress.
22. NVGSOTESW Net volume growing-stock other eastern softwoods.
23. NVBFESW Net volume sawtimber all eastern softwoods. Includes species groups: NVBFLGSL, NVBFLBSH, NVBFOTYP, NVBFWRD, NVBFJACK, NVBFSPFR, NVBFHEM, NVBFCYPR, NVBFOTESW

- 24. NVBFLGSL Net volume sawtimber longleaf and slash pines.
- 25. NVBFLBSH Net volume sawtimber loblolly and shortleaf pines.
- 26. NVBFOTYP Net volume sawtimber other yellow pines.
- 27. NVBFEWRD Net volume sawtimber white and red pines.
- 28. NVBFJACK Net volume sawtimber jack pine.
- 29. NVBFSPFR Net volume sawtimber spruce and balsam fir.
- 30. NVBFEHEM Net volume sawtimber eastern hemlock.
- 31. NVBFCYPR Net volume sawtimber cypress.
- 32. NVBFOTESW Net volume sawtimber other eastern softwoods.
- 33. NVGSEHW Net volume growing-stock all eastern hardwoods. Includes species groups:
NVGSSWOK, NVGSSROK, NVGSOWOK, NVGSOROK, NVGSHICK,
NVGSYBIR, NVGSHMAP, NVGSSMAP, NVGSBECH, NVGSSGUM, NVGSBGUM,
NVGSASH, NVGSBASS, NVGSYPOP, NVGSECOAS, NVGSBWAL, NVGSBCHR,
NVGSOTEHW
- 34. NVGSSWOK Net volume growing-stock select white oak.
- 35. NVGSSROK Net volume growing-stock select red oak.
- 36. NVGSOWOK Net volume growing-stock other white oak.
- 37. NVGSOROK Net volume growing-stock other red oak.
- 38. NVGSHICK Net volume growing-stock hickory.
- 39. NVGSYBIR Net volume growing-stock yellow birch.
- 40. NVGSHMAP Net volume growing-stock hard maple.
- 41. NVGSSMAP Net volume growing-stock soft maple.

42. NVGSBECH Net volume growing-stock beech.
43. NVGSSGUM Net volume growing-stock sweetgum.
44. NVGSBGUM Net volume growing-stock tupelo and black gum.
45. NVGSASH Net volume growing-stock ash.
46. NVGSBASS Net volume growing-stock basswood.
47. NVGSYPOP Net volume growing-stock yellow-poplar.
48. NVGSECOAS Net volume growing-stock cottonwood and aspen.
49. NVGSBWAL Net volume growing-stock black walnut.
50. NVGSBCHR Net volume growing-stock black cherry.
51. NVGSOTEHW Net volume growing-stock other eastern hardwoods.
52. NVBFEHW Net volume sawtimber all eastern hardwoods. Includes species groups:
NVBFSWOK, NVBFSROK, NVBFOWOK, NVBFOROK, NVBFHICK, NVBFYBIR,
NVBFHMAP, NVBFSMAP, NVBFBECH, NVBFSGUM, NVBFBGUM, NVBFASH,
NVBFBASS, NVBFYPOP, NVBFECOAS, NVBFBWAL, NVBFBCHR,
NVBFOTEHW
53. NVBFSWOK Net volume sawtimber select white oak.
54. NVBFSROK Net volume sawtimber select red oak.
55. NVBFOWOK Net volume sawtimber other white oak.
56. NVBFOROK Net volume sawtimber other red oak.
57. NVBFHICK Net volume sawtimber hickory.
58. NVBFYBIR Net volume sawtimber yellow birch.
59. NVBFHMAP Net volume sawtimber hard maple.

- 60. NVBFSMAP Net volume sawtimber soft maple.
- 61. NVBFBECH Net volume sawtimber beech.
- 62. NVBFSGUM Net volume sawtimber sweetgum.
- 63. NVBFBGUM Net volume sawtimber tupelo and black gum.
- 64. NVBFASH Net volume sawtimber ash.
- 65. NVBFBASS Net volume sawtimber basswood.
- 66. NVBFYPOP Net volume sawtimber yellow-poplar.
- 67. NVBFECOAS Net volume sawtimber cottonwood and aspen.
- 68. NVBFBWAL Net volume sawtimber black walnut.
- 69. NVBFBCHR Net volume sawtimber black cherry.
- 70. NVBFOTEHW Net volume sawtimber other eastern hardwoods.
- 71. NVGSWSW Net volume growing-stock all western softwoods. Includes species groups:
NVGSDOUG, NVGSPDJEFF, NVGSFIR, NVGSWHEM, NVGSSUGAR,
NVGSWWPN, NVGSRDWD, NVGSSITKA, NVGSENGEL, NVGSWLARCH,
NVGSINCEN, NVGSLODGE, NVGSWRCED, NVGSOTWSW
- 72. NVGSDOUG Net volume growing-stock Douglas fir.
- 73. NVGSPDJEFF Net volume growing-stock ponderosa and Jeffrey pine.
- 74. NVGSFIR Net volume growing-stock true fir.
- 75. NVGSWHEM Net volume growing-stock western hemlock.
- 76. NVGSSUGAR Net volume growing-stock sugar pine.
- 77. NVGSWWPN Net volume growing-stock western white pine.

78. NVGSRDWD	Net volume growing-stock redwood.
79. NVGSSITKA	Net volume growing-stock sitka spruce.
80. NVGSENGEL	Net volume growing-stock Engelmann and other spruces.
81. NVGSWLARCH	Net volume growing-stock western larch.
82. NVGSINCEN	Net volume growing-stock incense cedar.
83. NVGSLODGE	Net volume growing-stock lodgepole pine.
84. NVGSWRCED	Net volume growing-stock western red cedar.
85. NVGSOTWSW	Net volume growing-stock other western softwoods.
86. NVGSWHW	Net volume growing-stock all western hardwoods. Includes species groups: NVGSWCOAS, NVGSALDER, NVGSWOK, NVGSOTWHW
87. NVGSWCOAS	Net volume growing-stock cottonwood and aspen.
88. NVGSALDER	Net volume growing-stock red alder.
89. NVGSWOK	Net volume growing-stock oak.
90. NVGSOTWHW	Net volume growing-stock other western hardwoods.
91. NVBFWSW	Net volume sawtimber all western softwoods. Includes species groups: NVBFDOUG, NVBFPDJEFF, NVBFFIR, NVBFWHEM, NVBFSUGAR, NVBFWWPN, NVBFRDWD, NVBFSITKA, NVBFENGEL, NVBFWLARCH, NVBFINCEN, NVBFLODGE, NVBFWRCED, NVBFOTWSW
92. NVBFDOUG	Net volume sawtimber Douglas-fir.
93. NVBFPDJEFF	Net volume sawtimber ponderosa and Jeffrey pine.
94. NVBFFIR	Net volume sawtimber true fir.
95. NVBFWHEM	Net volume sawtimber western hemlock.

96. NVBFSUGAR Net volume sawtimber sugar pine.
97. NVBFWWPN Net volume sawtimber western white pine.
98. NVBFRDWD Net volume sawtimber redwood.
99. NVBFSITKA Net volume sawtimber Sitka spruce.
100. NVBFENGEL Net volume sawtimber Engelmann and other spruces.
101. NVBFWLARCH Net volume sawtimber western larch.
102. NVBFINCEN Net volume sawtimber incense cedar.
103. NVBFLODGE Net volume sawtimber lodgepole pine.
104. NVBFWRCED Net volume sawtimber western red cedar.
105. NVBFOTWSW Net volume sawtimber other western softwoods.
106. NVBFWHW Net volume sawtimber all western hardwoods. Includes species groups:
NVBFWCOAS, NVBFALDER, NVBFWOK, NVBFOTWHW
107. NVBFWCOAS Net volume sawtimber cottonwood and aspen.
108. NVBFALDER Net volume sawtimber red alder.
109. NVBFWOK Net volume sawtimber oak.
110. NVBFOTWHW Net volume sawtimber other western hardwoods.

Chapter 3 – Algorithms for Summarizing Data

Data in the RPADB were designed for easy use with most database management systems, statistical packages, and other data summary software. Data are typically provided as comma-delimited ASCII files. Database management systems that support hierarchical data structures, as well as those based on the relational model, can easily process RPADB files. Chapter 2 should give the user of almost any software package the information needed to input an RPADB file into a processing system.

The procedures or algorithms used to compute population estimates are provided in tables 1 through 6. Those familiar with the relational data model and the standard Structured Query Language (SQL) database language available in many database management systems will find it easy to load RPADB files into one of these systems and to retrieve information from a loaded database.

ALGORITHMS FOR POPULATION ESTIMATES

All the variables used in these algorithms are defined in Chapter 2.

Table 1. Algorithms for calculating area estimates. Use the RPA_PLOT2002 table.

Units	Type	Calculation	Requirements
Acres	Area of all land and noncensus water	Sum(aef)	landcc in (20,60,92)
Acres	Area of forest land	Sum(aef)	landcc=20
Acres	Area of timberland	Sum(aef)	forcode=1

To calculate the area of all land and noncensus water for the State of Alabama:

```
Select Sum(aef)
```

```
From rpa_plot2002
```

```
Where state=1 and landcc in (20,60,92)
```

To calculate the area of forestland for the State of Alabama:

```
Select Sum(aef)
```

```
From rpa_plot2002
```

```
Where state=1 and landcc in (20)
```

To calculate the area of timberland for the State of Alabama:

```
Select Sum(aef)
```

```
From rpa_plot2002
```

```
Where state=1 and landcc in (20) and splclass in (1,2,3,4,5,6) and reserclass=1
```

or, you could also use the following retrieval to calculate the area of timberland for Alabama:

```
Select Sum(aef)
From rpa_plot2002
Where state=1 and forcode=1
```

Table 2. Algorithms for calculating numbers of trees. Use the RPA_PLOT2002 table.

Units	Type	Calculation	Requirements
Trees	Number of all live trees 5 inches and larger on timberland	Sum(vef*tpa_5)	Forcode=1 Note: Not available for Hawaii and interior Alaska.
Trees	Number of all live trees 1 inches and larger on timberland	Sum(vef*tpa_1)	Forcode=1 Note: Not available for Hawaii and interior Alaska.

To calculate the number of all live trees 5 inches d.b.h. and larger on timberland in Minnesota:

```
Select Sum(vef*tpa_5)
From rpa_plot2002
Where state=27 and forcode=1
```

To calculate the number of all live trees 1 inch d.b.h. and larger on timberland in Minnesota:

```
Select Sum(vef*tpa_1)
From rpa_plot2002
Where state=27 and forcode=1
```

Table 3. Algorithms for calculating volumes. Use the RPA_PLOT2002 table.

Units	Type	Calculation	Requirements
Cuft	Merchantable volume of growing-stock trees on timberland	Sum(vef*cubic)	Forcode=1
Cuft	Merchantable volume of cull trees on timberland	Sum(vef*cull)	Forcode=1
Cuft	Merchantable volume of growing-stock trees on forest land	Sum(vef*cubic)	Landcc=20
Cuft	Merchantable volume of cull trees on forest land	Sum(vef*cull)	Landcc=20
Cuft	All live volume on forest land	Sum(vef*(cubic+cull))	Landcc=20
Cuft	Salvable dead volume on timberland	Sum(vef*dead)	Forcode=1
Bdft	Merchantable volume of sawtimber trees on timberland	Sum(vef*bdft)	Forcode=1

To calculate merchantable volume of growing-stock trees on timberland in Minnesota:

```
Select Sum(vef*cubic)
From rpa_plot2002
Where state=27 and forcode=1
```

To calculate merchantable volume of cull trees on timberland in Minnesota:

```
Select Sum(vef*cull)
From rpa_plot2002
Where state=27 and forcode=1
```

To calculate merchantable volume of growing-stock trees on forest land in Minnesota:

```
Select Sum(vef*cubic)
From rpa_plot2002
Where state=27 and landcc=20
```

To calculate merchantable volume of cull trees on forest land in Minnesota:

```
Select Sum(vef*cull)
From rpa_plot2002
Where state=27 and landcc=20
```

To calculate merchantable volume of sawtimber trees on timberland in Minnesota:

```
Select Sum(vef*bdf)
From rpa_plot2002
Where state=27 and forcode=1
```

Table 4. Algorithms for estimating net average annual growth and average annual mortality. Use the RPA_PLOT2002 table.

Units	Type	Calculation	Requirements
Cuft/year	Net annual merchantable growth of growing-stock trees on timberland	Sum(vef*growth)	
Cuft/year	Annual merchantable mortality of growing-stock trees on timberland	Sum(vef*mort)	

To calculate net annual merchantable growth of growing-stock trees on timberland in Minnesota:

```
Select Sum(vef*growth)
From rpa_plot2002
Where state=27
```


To calculate annual merchantable mortality of growing-stock trees on timberland in Minnesota:

```
Select Sum(vef*mort)
From rpa_plot2002
Where state=27
```

Table 5. Algorithms for estimating biomass. Use the RPA_PLOT2002 table.

Units	Type	Calculation	Requirements
Ovendry lbs.	Gross biomass of all live trees on timberland	Sum(vef*(biobole+biosaps+biostumptop))	Forcode=1
Ovendry lbs.	Merchantable biomass of all live trees on timberland	Sum(vef*biobole)	Forcode=1
Ovendry lbs.	Gross biomass of all live trees on forest land	Sum(vef*(biobole+biosaps+biostumptop))	Landcc=20
Ovendry lbs.	Merchantable biomass of all live trees on forest land	Sum(vef*biobole)	Landcc=20

To calculate aboveground gross biomass of all live trees (excluding foliage) on timberland in Minnesota:

```
Select Sum(vef*(biobole+biosaps+biostumptop))
From rpa_plot2002
Where state=27 and forcode=1
```

To calculate aboveground merchantable biomass of all live trees (excluding foliage) on timberland in Minnesota:

```
Select Sum(vef*(biobole))
From rpa_plot2002
Where state=27 and forcode=1
```

To calculate aboveground gross biomass of all live trees (excluding foliage) on forest land in Minnesota:

```
Select Sum(vef*(biobole+biosaps+biostumptop))
From rpa_plot2002
Where state=27 and landcc=20
```

To calculate aboveground merchantable biomass of all live trees (excluding foliage) on forest land in Minnesota:

```
Select Sum(vef*(biobole))
From rpa_plot2002
Where state=27 and landcc=20
```

Table 6. Algorithms for estimating growing-stock volumes on timberland by species group and diameter class. Uses the SPDBH2002 Table.

Units	Type	Calculation	Requirements
Cuft	Merchantable volume of growing-stock trees on timberland	Sum(NVGSESW+NVGSEHW+NVGSWSW+NVGSWHW)	Dbhcode<>11
Bdft	Merchantable volume of sawtimber trees on timberland	Sum(NVBFESW+NVBFEHW+NVBFWSW+NVBFWHW)	Dbhcode<>11
Cuft	Merchantable volume of longleaf and slash pine growing-stock trees from 5 to 6.9 inches d.b.h. on national forest timberland	Sum(NVGS LGSL)	Dbhcode=1 and Owngroup=1
Bdft	Merchantable volume of longleaf and slash pine sawtimber trees from 11 to 12.9 inches d.b.h. on national forest timberland	Sum(NVBF LGSL)	Dbhcode=4 and Owngroup=1

To calculate merchantable volume of growing-stock trees on timberland in Minnesota:

Select Sum(NVGSESW+NVGSEHW+NVGSWSW+NVGSWHW)

From SPDBH2002

Where state=27 and Dbhcode<>11

To calculate merchantable volume of sawtimber trees on timberland in Minnesota:

Select Sum(NVBFESW+NVBFEHW+NVBFWSW+NVBFWHW)

From SPDBH2002

Where state=27 and Dbhcode<>11

Literature Cited

- Cost, Noel D.; McClure, Joe P. [1983]. Multiresource inventories: techniques for estimating biomass on a statewide basis, 1982. Res. Pap. SE-228. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Research Station. 31 p.
- Hansen, Mark H.; Frieswyk, Thomas; Glover, Joseph F.; Kelly, John F. 1992. The Eastwide forest inventory data base: users manual. Gen. Tech. Rep. NC-151. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 48 p.
- Johnson, Tony G. 2001. United States timber industry—an assessment of timber product output and use, 1996. Gen. Tech. Rep. SRS-45. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 145 p.
- Miles, Patrick D.; Brand, Gary J.; Alerich, Carol L.; Bednar, Larry F.; Woudenberg, Sharon W.; Glover, Joseph F.; Ezzell, Edward N. 2001. The forest inventory and analysis database: database description and users manual version 1.0. Gen. Tech. Rep. NC-218. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 130 p.
- Smith, W. Brad; Miles, Patrick D.; Vissage, John S. 2004. Forest resources of the United States, 2002. Gen. Tech. Rep. NC-241. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 137 p.
- Waddell, K.L.; Oswald, D.D.; Powell, D.S. 1989. Forest statistics of the United States, 1987. Resour. Bull. PNW-168. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 106 p.
- Woudenberg, Sharon W.; Farrenkopf, Thomas O. 1995. The Westwide forest inventory data base: user's manual. Gen. Tech. Rep. INT-GTR-317. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 67 p.

Appendix A

SOURCES OF 2002 RPA DATA

State	Year	Format	Submitting Unit
Alabama	2000	FIADB	Southern Research Station
Alaska	1998	FIADB/RPADB	FIADB 31 million acres of forest land in southeast Alaska were measured by the Pacific Northwest FIA; RPA Summary DB format 96 million acres of interior Alaska
Arizona	1999	FIADB	Rocky Mountain Research Station
Arkansas	1995	FIADB	Southern Research Station
California	1994	FIADB	8.1 million acres of forest land were measured by the Pacific Northwest FIA; Region 5 measured 9.6 million acres; and Region 6 measured 0.6 million acres.
Colorado	1983	FIADB	6.2 million acres of forest land were measured by the Rocky Mountain FIA; Region 2 measured 5.5 million acres
Connecticut	1998	FIADB	Northeastern Research Station
Delaware	1999	FIADB	Northeastern Research Station
District of Columbia	2002	FIADB	Southern Research Station
Florida	1995	FIADB	Southern Research Station
Georgia	1997	FIADB	Southern Research Station
Hawaii		RPADB	Pacific Northwest Research Station
Idaho	1991	FIADB	Rocky Mountain Research Station
Illinois	1998	FIADB	North Central Research Station
Indiana	1998	FIADB	North Central Research Station
Iowa	1990	FIADB	North Central Research Station
Kansas	1994	FIADB	North Central Research Station
Kentucky	1988	FIADB	Southern Research Station
Louisiana	1991	FIADB	Southern Research Station
Maine	1995	FIADB	Northeastern Research Station
Maryland	1999	FIADB	Northeastern Research Station
Massachusetts	1998	FIADB	Northeastern Research Station
Michigan	1993	FIADB	North Central Research Station
Minnesota	1990	FIADB	North Central Research Station
Mississippi	1994	FIADB	Southern Research Station
Missouri	1989	FIADB	North Central Research Station
Montana	1989	FIADB	Rocky Mountain Research Station
Nebraska	1994	FIADB	North Central Research Station

(table continued on next page)

State	Year	Format	Submitting Unit
Nevada	1989	FIADB	Rocky Mountain Research Station
New Hampshire	1997	FIADB	Northeastern Research Station
New Jersey	1999	FIADB	Northeastern Research Station
New Mexico	1999	FIADB	Rocky Mountain Research Station
New York	1993	FIADB	Northeastern Research Station
North Carolina	1990	FIADB	Southern Research Station
North Dakota	1995	FIADB	North Central Research Station
Ohio	1993	FIADB	Northeastern Research Station
Oklahoma	1993	FIADB	Southern Research Station
Oregon	1992	FIADB	9.8 million acres of forest land measured by the Pacific Northwest FIA; 14.0 million were measured by Region 6
Pennsylvania	1989	FIADB	Northeastern Research Station
Rhode Island	1998	FIADB	Northeastern Research Station
South Carolina	2000	FIADB	Southern Research Station
South Dakota	1995	FIADB	0.6 million acres of forest land were measured by the North Central FIA (1995); 1.0 million acres by the Rocky Mountain FIA
Tennessee	1999	FIADB	Southern Research Station
Texas	1992	FIADB	Southeast and northeast Texas were inventoried by the Southern FIA; West Texas was estimated using remotely sensed data (AVHRR)
Utah	1995	FIADB	Rocky Mountain Research Station
Vermont	1997	FIADB	Northeastern Research Station
Virginia	1992	FIADB	Southern Research Station
Washington	1991	FIADB	11.4 million acres of forest land were measured by the Pacific Northwest FIA; 5.9 million acres were measured by Region 6
West Virginia	1989	FIADB	Northeastern Research Station
Wisconsin	1996	FIADB	North Central Research Station
Wyoming	1984	FIADB	5.1 million acres of forest land were measured by the Rocky Mountain FIA; 0.6 million acres were measured by Region 2

Addresses of USDA Forest Service Research Stations with responsibilities for forest inventories in the United States and their area of responsibility

Address	Area of responsibility
Northeastern Research Station 11 Campus Boulevard Newtown Square, PA 19073	Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, and West Virginia
North Central Research Station 1992 Folwell Avenue St. Paul, MN 55108	Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, and Wisconsin
Southern Research Station 4700 Old Kingston Pike. Knoxville, TN 37919	Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and Puerto Rico
Pacific Northwest Research Station Forestry Sciences Laboratory 620 SW Main, Suite 400 Portland, OR 97205	Alaska, California, Hawaii, Oregon, and Washington
Rocky Mountain Research Station Forestry Sciences Laboratory 507 25th Street Ogden UT 84401	Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming

Addresses of National Forest System Regional Offices in the United States

Address	Region	Location of national forests
Forest Service, USDA Northern Region Federal Building 200 E. Broadway PO Box 7669 Missoula, MT 59807	Region 1	Montana, northern Idaho, North Dakota, and northwestern South Dakota
Forest Service, USDA Rocky Mountain Region 740 Simms St P.O. Box 25127 Lakewood, CO 80225-0127	Region 2	Colorado, Kansas, Nebraska, South Dakota, and eastern Wyoming
Forest Service, USDA Southwestern Region 333 Broadway SE Albuquerque, NM 87102	Region 3	Arizona and New Mexico
Forest Service, USDA Intermountain Region Federal Building 324 25th Street Ogden, UT 84401	Region 4	Southern Idaho, Nevada, Utah, and western Wyoming

Forest Service, USDA Pacific Southwest Region 1323 Club Drive Vallejo, CA 94592	Region 5	California
Forest Service, USDA Pacific Northwest Region 333 S.W. 1st Avenue P.O. Box 3623 Portland, OR 97208	Region 6	Oregon and Washington
Forest Service, USDA Southern Region 1720 Peachtree Road, N.W. Atlanta, GA 30309	Region 8	Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, Tennessee, Texas, Virginia, West Virginia, and Puerto Rico
Forest Service, USDA Eastern Region 310 West Wisconsin Avenue, Suite 500 Milwaukee, WI 53203	Region 9	Connecticut, Delaware, Illinois, Indiana, Iowa Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey New York, Ohio, Pennsylvania, Rhode Island, Vermont, West Virginia, and Wisconsin
Forest Service, USDA Alaska Region P.O. Box 21628 Juneau, AK 99802-1628	Region 10	Alaska

For additional information, contact the Internet sites for the regional offices through the USDA Forest Service home page: <http://www.fs.fed.us>. The forest management staff in each regional office manages timber inventories conducted by the region.

Appendix B – State, Survey Unit, and County Codes

01	Alabama	05	North Central	201	Prince of Wales-Outer Ketchikan Census Area
01	Southwest-South	009	Blount	220	Sitka Borough
003	Baldwin	015	Calhoun	231	Skagway-Yakutat-Angoon Census Area
039	Covington	019	Cherokee	240	Southeast Fairbanks Census Area
053	Escambia	027	Clay	261	Valdez-Cordova Census Area
097	Mobile	029	Cleburne	270	Wade Hampton Census Area
129	Washington	037	Coosa	280	Wrangell-Petersburg Census Area
02	Southwest-North	043	Cullman	290	Yukon-Koyukuk Census Area
023	Choctaw	055	Etowah		
025	Clarke	073	Jefferson	04	Arizona
035	Conecuh	111	Randolph	01	Southern
091	Marengo	115	St. Clair	003	Cochise
099	Monroe	117	Shelby	009	Graham
119	Sumter	121	Talladega	011	Greenlee
131	Wilcox	127	Walker	012	La Paz
		133	Winston	013	Maricopa
03	Southeast	06	North	019	Pima
001	Autauga	033	Colbert	021	Pinal
005	Barbour	049	DeKalb	023	Santa Cruz
011	Bullock	059	Franklin	027	Yuma
013	Butler	071	Jackson	02	Northern
017	Chambers	077	Lauderdale	001	Apache
021	Chilton	079	Lawrence	005	Coconino
031	Coffee	083	Limestone	007	Gila
041	Crenshaw	089	Madison	015	Mohave
045	Dale	095	Marshall	017	Navajo
047	Dallas	103	Morgan	025	Yavapai
051	Elmore				
061	Geneva	02	Alaska	05	Arkansas
067	Henry	01	Alaska	01	South Delta
069	Houston	013	Aleutians East Borough	001	Arkansas
081	Lee	016	Aleutians West Census Area	017	Chicot
085	Lowndes	020	Anchorage Borough	041	Desha
087	Macon	050	Bethel Census Area	069	Jefferson
101	Montgomery	060	Bristol Bay Borough	077	Lee
109	Pike	070	Dillingham Census Area	079	Lincoln
113	Russell	090	Fairbanks North Star Borough	085	Lonoke
123	Tallapoosa	100	Haines Borough	095	Monroe
04	West Central	110	Juneau Borough	107	Phillips
007	Bibb	122	Kenai Peninsula Borough	117	Prairie
057	Fayette	130	Ketchikan Gateway Borough		
063	Greene	150	Kodiak Island Borough		
065	Hale	164	Lake and Peninsula Borough		
075	Lamar	170	Matanuska-Susitna Borough		
093	Marion	180	Nome Census Area		
105	Perry	185	North Slope Borough		
107	Pickens	188	Northwest Arctic Borough		
125	Tuscaloosa				

02 North Delta

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

03 Southwest

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

04 Ouachita

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

05 Ozark

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

06 California**01 North Coast**

015 Del Norte
 023 Humboldt
 045 Mendocino
 097 Sonoma

02 North Interior

035 Lassen
 049 Modoc
 089 Shasta
 093 Siskiyou
 105 Trinity

03 Sacramento

007 Butte
 011 Colusa
 017 El Dorado
 021 Glenn
 033 Lake
 055 Napa
 057 Nevada
 061 Placer

063 Plumas
 067 Sacramento
 091 Sierra
 101 Sutter
 103 Tehama
 113 Yolo
 115 Yuba

04 Central Coast

001 Alameda
 013 Contra Costa
 041 Marin
 053 Monterey
 069 San Benito
 075 San Francisco
 079 San Luis Obispo
 081 San Mateo
 083 Santa Barbara
 085 Santa Clara
 087 Santa Cruz
 095 Solano
 111 Ventura

05 San Joaquin

003 Alpine
 005 Amador
 009 Calaveras
 019 Fresno
 029 Kern
 031 Kings
 039 Madera
 043 Mariposa
 047 Merced
 051 Mono
 077 San Joaquin
 099 Stanislaus
 107 Tulare
 109 Tuolumne

06 Southern

025 Imperial
 027 Inyo
 037 Los Angeles
 059 Orange
 065 Riverside
 071 San Bernardino
 073 San Diego

08	Colorado			12	Florida
01	Northern Front Range	103	Rio Blanco	01	Northeastern
013	Boulder	113	San Miguel	001	Alachua
019	Clear Creek	05	Eastern	003	Baker
035	Douglas	001	Adams	007	Bradford
039	Elbert	005	Arapahoe	019	Clay
041	El Paso	009	Baca	023	Columbia
047	Gilpin	011	Bent	029	Dixie
059	Jefferson	017	Cheyenne	031	Duval
065	Lake	025	Crowley	035	Flagler
069	Larimer	031	Denver	041	Gilchrist
093	Park	061	Kiowa	047	Hamilton
119	Teller	063	Kit Carson	067	Lafayette
		073	Lincoln	075	Levy
02	Southern Front Range	075	Logan	079	Madison
015	Chaffee	087	Morgan	083	Marion
023	Costilla	089	Otero	089	Nassau
027	Custer	095	Phillips	107	Putnam
043	Fremont	099	Prowers	109	St. Johns
055	Huerfano	115	Sedgwick	121	Suwannee
071	Las Animas	121	Washington	123	Taylor
101	Pueblo	123	Weld	125	Union
		125	Yuma	127	Volusia
03	West Central			02	Northwestern
003	Alamosa	09	Connecticut	005	Bay
021	Conejos	01	State	013	Calhoun
037	Eagle	001	Fairfield	033	Escambia
049	Grand	003	Hartford	037	Franklin
051	Gunnison	005	Litchfield	039	Gadsden
053	Hinsdale	007	Middlesex	045	Gulf
057	Jackson	009	New Haven	059	Holmes
079	Mineral	011	New London	063	Jackson
097	Pitkin	013	Tolland	065	Jefferson
105	Rio Grande	015	Windham	073	Leon
107	Routt			077	Liberty
109	Saguache	10	Delaware	091	Okaloosa
111	San Juan	01	State	113	Santa Rosa
117	Summit	001	Kent	129	Wakulla
04	Western	003	New Castle	131	Walton
007	Archuleta	005	Sussex	133	Washington
029	Delta			03	Central
033	Dolores	11	District of Columbia	009	Brevard
045	Garfield			017	Citrus
067	La Plata			027	DeSoto
077	Mesa			049	Hardee
081	Moffat			053	Hernando
083	Montezuma			055	Highlands
085	Montrose			057	Hillsborough
091	Ouray				

061	Indian River	175	Laurens	095	Dougherty
069	Lake	179	Liberty	125	Glascok
081	Manatee	183	Long	133	Greene
093	Okeechobee	191	McIntosh	141	Hancock
095	Orange	209	Montgomery	145	Harris
097	Osceola	229	Pierce	153	Houston
101	Pasco	251	Screven	159	Jasper
103	Pinellas	267	Tattnall	163	Jefferson
105	Polk	271	Telfair	169	Jones
111	St. Lucie	279	Toombs	171	Lamar
115	Sarasota	283	Treutlen	177	Lee
117	Seminole	299	Ware	181	Lincoln
119	Sumter	305	Wayne	189	McDuffie
		309	Wheeler	193	Macon
				197	Marion
04	Southern			207	Monroe
011	Broward	02	Southwestern	211	Morgan
015	Charlotte	007	Baker	215	Muscogee
021	Collier	017	Ben Hill	225	Peach
025	Dade	019	Berrien	231	Pike
043	Glades	027	Brooks	235	Pulaski
051	Hendry	071	Colquitt	237	Putnam
071	Lee	075	Cook	239	Quitman
085	Martin	081	Crisp	243	Randolph
087	Monroe	087	Decatur	245	Richmond
099	Palm Beach	093	Dooly	249	Schley
		099	Early	259	Stewart
		131	Grady	261	Sumter
13	Georgia	155	Irwin	263	Talbot
01	Southeastern	173	Lanier	265	Taliaferro
001	Appling	185	Lowndes	269	Taylor
003	Atkinson	201	Miller	273	Terrell
005	Bacon	205	Mitchell	289	Twiggs
025	Brantley	253	Seminole	293	Upton
029	Bryan	275	Thomas	301	Warren
031	Bulloch	277	Tift	303	Washington
039	Camden	287	Turner	307	Webster
043	Candler	315	Wilcox	317	Wilkes
049	Charlton	321	Worth	319	Wilkinson
051	Chatham				
065	Clinch	03	Central		
069	Coffee	009	Baldwin	04	North Central
091	Dodge	021	Bibb	011	Banks
101	Echols	023	Bleckley	013	Barrow
103	Effingham	033	Burke	045	Carroll
107	Emanuel	035	Butts	059	Clarke
109	Evans	037	Calhoun	063	Clayton
127	Glynn	053	Chattahoochee	067	Cobb
161	Jeff Davis	061	Clay	077	Coweta
165	Jenkins	073	Columbia	089	DeKalb
167	Johnson	079	Crawford	097	Douglas

105	Elbert	15	Hawaii	053	Jerome
113	Fayette	01	State	059	Lemhi
117	Forsyth	001	Hawaii	063	Lincoln
119	Franklin	003	Honolulu	065	Madison
121	Fulton	005	Kalawao	067	Minidoka
135	Gwinnett	007	Kauai	071	Oneida
139	Hall	009	Maui	077	Power
143	Haralson			081	Teton
147	Hart			083	Twin Falls
149	Heard	16	Idaho		
151	Henry	01	Northern		
157	Jackson	009	Benewah	17	Illinois
195	Madison	017	Bonner	01	Southern
199	Meriwether	021	Boundary	003	Alexander
217	Newton	035	Clearwater	055	Franklin
219	Oconee	049	Idaho	059	Gallatin
221	Oglethorpe	055	Kootenai	065	Hamilton
223	Paulding	057	Latah	069	Hardin
233	Polk	061	Lewis	077	Jackson
247	Rockdale	069	Nez Perce	087	Johnson
255	Spalding	079	Shoshone	127	Massac
285	Troup			145	Perry
297	Walton	02	Southeastern	151	Pope
		001	Ada	153	Pulaski
05	Northern	003	Adams	157	Randolph
015	Bartow	015	Boise	165	Saline
047	Catoosa	027	Canyon	181	Union
055	Chattooga	039	Elmore	193	White
057	Cherokee	045	Gem	199	Williamson
083	Dade	073	Owyhee		
085	Dawson	075	Payette	02	Claypan
111	Fannin	085	Valley	005	Bond
115	Floyd	087	Washington	013	Calhoun
123	Gilmer			023	Clark
129	Gordon	03	Southwestern	025	Clay
137	Habersham	005	Bannock	027	Clinton
187	Lumpkin	007	Bear Lake	033	Crawford
213	Murray	011	Bingham	035	Cumberland
227	Pickens	013	Blaine	047	Edwards
241	Rabun	019	Bonneville	049	Effingham
257	Stephens	023	Butte	051	Fayette
281	Towns	025	Camas	061	Greene
291	Union	029	Caribou	079	Jasper
295	Walker	031	Cassia	081	Jefferson
311	White	033	Clark	083	Jersey
313	Whitfield	037	Custer	101	Lawrence
		041	Franklin	117	Macoupin
		043	Fremont	119	Madison
		047	Gooding	121	Marion
		051	Jefferson	133	Monroe

135 Montgomery
159 Richland
163 St. Clair
173 Shelby
185 Wabash
189 Washington
191 Wayne

03 Prairie

001 Adams
007 Boone
009 Brown
011 Bureau
015 Carroll
017 Cass
019 Champaign
021 Christian
029 Coles
031 Cook
037 DeKalb
039 De Witt
041 Douglas
043 DuPage
045 Edgar
053 Ford
057 Fulton
063 Grundy
067 Hancock
071 Henderson
073 Henry
075 Iroquois
085 Jo Daviess
089 Kane
091 Kankakee
093 Kendall
095 Knox
097 Lake
099 La Salle
103 Lee
105 Livingston
107 Logan
109 McDonough
111 McHenry
113 McLean
115 Macon
123 Marshall
125 Mason
129 Menard
131 Mercer
137 Morgan

139 Moultrie
141 Ogle
143 Peoria
147 Piatt
149 Pike
155 Putnam
161 Rock Island
167 Sangamon
169 Schuyler
171 Scott
175 Stark
177 Stephenson
179 Tazewell
183 Vermilion
187 Warren
195 Whiteside
197 Will
201 Winnebago
203 Woodford

18 Indiana

01 Lower Wabash

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

02 Knobs

013 Brown
019 Clark
025 Crawford
037 Dubois
043 Floyd
061 Harrison
071 Jackson
093 Lawrence
105 Monroe
109 Morgan
117 Orange

119 Owen
123 Perry
143 Scott
147 Spencer
173 Warrick
175 Washington

03 Upland Flats

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

04 Northern

001 Adams
003 Allen
005 Bartholomew
007 Benton
009 Blackford
011 Boone
015 Carroll
017 Cass
023 Clinton
031 Decatur
033 De Kalb
035 Delaware
039 Elkhart
045 Fountain
049 Fulton
053 Grant
057 Hamilton
059 Hancock
063 Hendricks
065 Henry
067 Howard
069 Huntington
073 Jasper
075 Jay
081 Johnson
085 Kosciusko
087 Lagrange
089 Lake
091 La Porte
095 Madison
097 Marion

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

149 Pottawatomie
161 Riley
177 Shawnee
197 Wabaunsee
201 Washington
209 Wyandotte

02 Southeastern

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

03 Western

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

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

21 Kentucky

01 Eastern

071 Floyd
095 Harlan
119 Knott

131 Leslie
133 Letcher
159 Martin
193 Perry
195 Pike

02 Northern Cumberland

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

03 Southern Cumberland

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

04 Bluegrass

005 Anderson
011 Bath
015 Boone
017 Bourbon
021 Boyle
023 Bracken
037 Campbell
041 Carroll
049 Clark
067 Fayette
069 Fleming
073 Franklin
077 Gallatin
079 Garrard

081	Grant	047	Christian	055	Lafayette
097	Harrison	055	Crittenden	057	Lafourche
103	Henry	059	Daviess	077	Pointe Coupee
111	Jefferson	061	Edmonson	089	St. Charles
113	Jessamine	101	Henderson	093	St. James
117	Kenton	107	Hopkins	095	St. John the Baptist
137	Lincoln	141	Logan	097	St. Landry
151	Madison	149	McLean	099	St. Martin
161	Mason	171	Monroe	101	St. Mary
167	Mercer	177	Muhlenberg	109	Terrebonne
173	Montgomery	183	Ohio	113	Vermilion
181	Nicholas	213	Simpson	121	West Baton Rouge
185	Oldham	219	Todd	125	West Feliciana
187	Owen	225	Union		
191	Pendleton	227	Warren	03	Southwest
201	Robertson	233	Webster	003	Allen
209	Scott			011	Beauregard
211	Shelby	07	Western	019	Calcasieu
215	Spencer	007	Ballard	039	Evangeline
223	Trimble	035	Calloway	043	Grant
229	Washington	039	Carlisle	053	Jefferson Davis
239	Woodford	075	Fulton	059	La Salle
		083	Graves	069	Natchitoches
05	Pennyroyal	105	Hickman	079	Rapides
001	Adair	139	Livingston	085	Sabine
027	Breckinridge	143	Lyon	115	Vernon
029	Bullitt	145	McCracken		
045	Casey	157	Marshall	04	Southeast
053	Clinton	221	Trigg	033	East Baton Rouge
057	Cumberland			037	East Feliciana
085	Grayson			063	Livingston
087	Green	22	Louisiana	091	St. Helena
091	Hancock	01	North Delta	103	St. Tammany
093	Hardin	025	Catahoula	105	Tangipahoa
099	Hart	029	Concordia	117	Washington
123	Larue	035	East Carroll		
155	Marion	041	Franklin	05	Northwest
163	Meade	065	Madison	013	Bienville
169	Metcalfe	067	Morehouse	015	Bossier
179	Nelson	083	Richland	017	Caddo
199	Pulaski	107	Tensas	021	Caldwell
207	Russell	123	West Carroll	027	Claiborne
217	Taylor			031	De Soto
231	Wayne	02	South Delta	049	Jackson
		001	Acadia	061	Lincoln
06	Western Coalfield	005	Ascension	073	Ouachita
003	Allen	007	Assumption	081	Red River
009	Barren	009	Avoyelles	111	Union
031	Butler	045	Iberia	119	Webster
033	Caldwell	047	Iberville	127	Winn

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

04 Southern Lower Peninsula

005 Allegan
 015 Barry
 021 Berrien
 023 Branch
 025 Calhoun
 027 Cass
 037 Clinton
 045 Eaton
 049 Genesee
 057 Gratiot
 059 Hillsdale
 063 Huron
 065 Ingham
 067 Ionia
 075 Jackson
 077 Kalamazoo
 081 Kent
 087 Lapeer
 091 Lenawee
 093 Livingston
 099 Macomb
 115 Monroe
 117 Montcalm
 121 Muskegon
 125 Oakland
 139 Ottawa
 145 Saginaw
 147 St. Clair
 149 St. Joseph
 151 Sanilac
 155 Shiawassee
 157 Tuscola
 159 Van Buren
 161 Washtenaw
 163 Wayne

27 Minnesota

01 Aspen-Birch

017 Carlton
 031 Cook
 071 Koochiching
 075 Lake
 137 St. Louis

02 Northern Pine

001 Aitkin
 005 Becker
 007 Beltrami

021 Cass
 029 Clearwater
 035 Crow Wing
 057 Hubbard
 061 Itasca
 077 Lake of the Woods
 087 Mahanomen
 135 Roseau
 159 Wadena

03 Central Hardwood

003 Anoka
 009 Benton
 019 Carver
 025 Chisago
 037 Dakota
 041 Douglas
 045 Fillmore
 049 Goodhue
 053 Hennepin
 055 Houston
 059 Isanti
 065 Kanabec
 079 Le Sueur
 095 Mille Lacs
 097 Morrison
 109 Olmsted
 111 Otter Tail
 115 Pine
 123 Ramsey
 131 Rice
 139 Scott
 141 Sherburne
 145 Stearns
 153 Todd
 157 Wabasha
 163 Washington
 169 Winona
 171 Wright

04 Prairie

011 Big Stone
 013 Blue Earth
 015 Brown
 023 Chippewa
 027 Clay
 033 Cottonwood
 039 Dodge
 043 Faribault
 047 Freeborn

051 Grant
 063 Jackson
 067 Kandiyohi
 069 Kittson
 073 Lac qui Parle
 081 Lincoln
 083 Lyon
 085 McLeod
 089 Marshall
 091 Martin
 093 Meeker
 099 Mower
 101 Murray
 103 Nicollet
 105 Nobles
 107 Norman
 113 Pennington
 117 Pipestone
 119 Polk
 121 Pope
 125 Red Lake
 127 Redwood
 129 Renville
 133 Rock
 143 Sibley
 147 Steele
 149 Stevens
 151 Swift
 155 Traverse
 161 Waseca
 165 Watonwan
 167 Wilkin
 173 Yellow Medicine

28 Mississippi

01 Delta

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

02 North			
003 Alcorn	045 Hancock	091 Howell	
009 Benton	047 Harrison	119 McDonald	
013 Calhoun	059 Jackson	145 Newton	
015 Carroll	065 Jefferson Davis	153 Ozark	
017 Chickasaw	067 Jones	209 Stone	
019 Choctaw	073 Lamar	213 Taney	
025 Clay	077 Lawrence	215 Texas	
033 DeSoto	091 Marion	225 Webster	
043 Grenada	109 Pearl River	229 Wright	
057 Itawamba	111 Perry		
071 Lafayette	131 Stone	03 Northwestern Ozarks	
081 Lee	147 Walthall	015 Benton	
087 Lowndes	153 Wayne	029 Camden	
093 Marshall	05 Southwest	039 Cedar	
095 Monroe	001 Adams	059 Dallas	
097 Montgomery	005 Amite	085 Hickory	
105 Oktibbeha	021 Claiborne	105 Laclede	
107 Panola	029 Copiah	125 Maries	
115 Pontotoc	037 Franklin	131 Miller	
117 Prentiss	049 Hinds	141 Morgan	
137 Tate	063 Jefferson	161 Phelps	
139 Tippah	085 Lincoln	167 Polk	
141 Tishomingo	089 Madison	169 Pulaski	
145 Union	113 Pike	185 St. Clair	
155 Webster	157 Wilkinson		
161 Yalobusha		04 Prairie	
		001 Adair	
03 Central	29 Missouri	003 Andrew	
007 Attala	01 Eastern Ozarks	005 Atchison	
023 Clarke	017 Bollinger	007 Audrain	
061 Jasper	023 Butler	011 Barton	
069 Kemper	035 Carter	013 Bates	
075 Lauderdale	055 Crawford	021 Buchanan	
079 Leake	065 Dent	025 Caldwell	
099 Neshoba	093 Iron	033 Carroll	
101 Newton	123 Madison	037 Cass	
103 Noxubee	149 Oregon	041 Chariton	
121 Rankin	179 Reynolds	045 Clark	
123 Scott	181 Ripley	047 Clay	
127 Simpson	187 St. Francois	049 Clinton	
129 Smith	203 Shannon	053 Cooper	
159 Winston	221 Washington	057 Dade	
	223 Wayne	061 Daviess	
04 South		063 DeKalb	
031 Covington	02 Southwestern Ozarks	075 Gentry	
035 Forrest	009 Barry	077 Greene	
039 George	043 Christian	079 Grundy	
041 Greene	067 Douglas	081 Harrison	
		083 Henry	
		087 Holt	

095	Jackson	201	Scott	03	Western
097	Jasper	207	Stoddard	039	Granite
101	Johnson	219	Warren	061	Mineral
103	Knox	510	St. Louis city	063	Missoula
107	Lafayette			081	Ravalli
109	Lawrence				
111	Lewis	30	Montana	04	West Central
113	Lincoln	01	Northwestern	007	Broadwater
115	Linn	029	Flathead	013	Cascade
117	Livingston	047	Lake	043	Jefferson
121	Macon	053	Lincoln	045	Judith Basin
127	Marion	089	Sanders	049	Lewis and Clark
129	Mercer			059	Meagher
137	Monroe	02	Eastern	077	Powell
147	Nodaway	003	Big Horn	107	Wheatland
159	Pettis	005	Blaine		
163	Pike	009	Carbon	05	Southwestern
165	Platte	011	Carter	001	Beaverhead
171	Putnam	015	Chouteau	023	Deer Lodge
173	Ralls	017	Custer	031	Gallatin
175	Randolph	019	Daniels	057	Madison
177	Ray	021	Dawson	067	Park
195	Saline	025	Fallon	093	Silver Bow
197	Schuyler	027	Fergus		
199	Scotland	033	Garfield		
205	Shelby	035	Glacier	31	Nebraska
211	Sullivan	037	Golden Valley	01	Eastern
217	Vernon	041	Hill	001	Adams
227	Worth	051	Liberty	011	Boone
		055	McCone	019	Buffalo
05	Riverborder	065	Musselshell	021	Burt
019	Boone	069	Petroleum	023	Butler
027	Callaway	071	Phillips	025	Cass
031	Cape Girardeau	073	Pondera	027	Cedar
051	Cole	075	Powder River	035	Clay
069	Dunklin	079	Prairie	037	Colfax
071	Franklin	083	Richland	039	Cuming
073	Gasconade	085	Roosevelt	041	Custer
089	Howard	087	Rosebud	043	Dakota
099	Jefferson	091	Sheridan	047	Dawson
133	Mississippi	095	Stillwater	051	Dixon
135	Moniteau	097	Sweet Grass	053	Dodge
139	Montgomery	099	Teton	055	Douglas
143	New Madrid	101	Toole	059	Fillmore
151	Osage	103	Treasure	061	Franklin
155	Pemiscot	105	Valley	063	Frontier
157	Perry	109	Wibaux	065	Furnas
183	St. Charles	111	Yellowstone	067	Gage
186	Ste. Genevieve	113	Yellowstone National Park	073	Gosper
189	St. Louis			077	Greeley

079	Hall	069	Garden	03	Southern
081	Hamilton	071	Garfield	001	Belknap
083	Harlan	075	Grant	005	Cheshire
087	Hitchcock	085	Hayes	011	Hillsborough
093	Howard	089	Holt	013	Merrimack
095	Jefferson	091	Hooker	015	Rockingham
097	Johnson	101	Keith	017	Strafford
099	Kearney	103	Keya Paha	019	Sullivan
109	Lancaster	105	Kimball		
119	Madison	107	Knox		
121	Merrick	111	Lincoln	34	New Jersey
125	Nance	113	Logan	01	State
127	Nemaha	115	Loup	001	Atlantic
129	Nuckolls	117	McPherson	003	Bergen
131	Otoe	123	Morrill	005	Burlington
133	Pawnee	135	Perkins	007	Camden
137	Phelps	149	Rock	009	Cape May
139	Pierce	157	Scotts Bluff	011	Cumberland
141	Platte	161	Sheridan	013	Essex
143	Polk	165	Sioux	015	Gloucester
145	Red Willow	171	Thomas	017	Hudson
147	Richardson	183	Wheeler	019	Hunterdon
151	Saline			021	Mercer
153	Sarpy			023	Middlesex
155	Saunders	32	Nevada	025	Monmouth
159	Seward	01	Nevada	027	Morris
163	Sherman	001	Churchill	029	Ocean
167	Stanton	003	Clark	031	Passaic
169	Thayer	005	Douglas	033	Salem
173	Thurston	007	Elko	035	Somerset
175	Valley	009	Esmeralda	037	Sussex
177	Washington	011	Eureka	039	Union
179	Wayne	013	Humboldt	041	Warren
181	Webster	015	Lander		
185	York	017	Lincoln		
		019	Lyon	35	New Mexico
02	Western	021	Mineral	01	Northwestern
003	Antelope	023	Nye	001	Bernalillo
005	Arthur	027	Pershing	006	Cibola
007	Banner	029	Storey	028	Los Alamos
009	Blaine	031	Washoe	031	McKinley
013	Box Butte	033	White Pine	039	Rio Arriba
015	Boyd	510	Carson City	043	Sandoval
017	Brown			045	San Juan
029	Chase			049	Santa Fe
031	Cherry	33	New Hampshire	055	Taos
033	Cheyenne	02	Northern	061	Valencia
045	Dawes	003	Carroll		
049	Deuel	007	Coos		
057	Dundy	009	Grafton		

02	Northeastern	099	Seneca	079	Putnam
007	Colfax	117	Wayne	081	Queens
019	Guadalupe	121	Wyoming	085	Richmond
021	Harding	123	Yates	087	Rockland
033	Mora			095	Schoharie
037	Quay	03	Western Adirondack	103	Suffolk
047	San Miguel	035	Fulton	105	Sullivan
057	Torrance	043	Herkimer	111	Ulster
059	Union	049	Lewis	119	Westchester
		065	Oneida		
03	Southwestern	04	Eastern Adirondack	37	North Carolina
003	Catron	031	Essex	01	Southern Coastal Plain
013	Dona Ana	041	Hamilton	017	Bladen
017	Grant	113	Warren	019	Brunswick
023	Hidalgo			047	Columbus
029	Luna	05	Southwest Highlands	051	Cumberland
051	Sierra	003	Allegany	061	Duplin
053	Socorro	009	Cattaraugus	079	Greene
		013	Chautauqua	085	Harnett
04	Southeastern	101	Steuben	093	Hoke
005	Chaves			101	Johnston
009	Curry	06	South-Central Highlands	103	Jones
011	DeBaca	007	Broome	105	Lee
015	Eddy	015	Chemung	107	Lenoir
025	Lea	017	Chenango	125	Moore
027	Lincoln	023	Cortland	129	New Hanover
035	Otero	025	Delaware	133	Onslow
041	Roosevelt	077	Otsego	141	Pender
		097	Schuyler	153	Richmond
36	New York	107	Tioga	155	Robeson
01	Adirondack	109	Tompkins	163	Sampson
019	Clinton			165	Scotland
033	Franklin	07	Capitol District	191	Wayne
045	Jefferson	001	Albany		
		021	Columbia	02	Northern Coastal Plain
089	St. Lawrence	057	Montgomery	013	Beaufort
		083	Rensselaer	015	Bertie
02	Lake Plain	091	Saratoga	029	Camden
011	Cayuga	093	Schenectady	031	Carteret
029	Erie	115	Washington	041	Chowan
037	Genesee			049	Craven
051	Livingston	08	Catskill-Lower Hudson	053	Currituck
053	Madison	005	Bronx	055	Dare
055	Monroe	027	Dutchess	065	Edgecombe
063	Niagara	039	Greene	073	Gates
067	Onondaga	047	Kings	083	Halifax
069	Ontario	059	Nassau	091	Hertford
073	Orleans	061	New York	095	Hyde
075	Oswego	071	Orange	117	Martin
				127	Nash

131	Northampton	021	Buncombe	057	Mercer
137	Pamlico	023	Burke	059	Morton
139	Pasquotank	027	Caldwell	061	Mountrail
143	Perquimans	039	Cherokee	063	Nelson
147	Pitt	043	Clay	065	Oliver
177	Tyrrell	075	Graham	067	Pembina
187	Washington	087	Haywood	069	Pierce
195	Wilson	089	Henderson	071	Ramsey
		099	Jackson	073	Ransom
03	Piedmont	111	McDowell	075	Renville
001	Alamance	113	Macon	077	Richland
003	Alexander	115	Madison	079	Rolette
007	Anson	121	Mitchell	081	Sargent
025	Cabarrus	173	Swain	083	Sheridan
033	Caswell	175	Transylvania	085	Sioux
035	Catawba	189	Watauga	087	Slope
037	Chatham	193	Wilkes	089	Stark
045	Cleveland	199	Yancey	091	Steele
057	Davidson			093	Stutsman
059	Davie			095	Towner
063	Durham	38	North Dakota	097	Traill
067	Forsyth	01	Eastern	099	Walsh
069	Franklin	001	Adams	101	Ward
071	Gaston	003	Barnes	103	Wells
077	Granville	005	Benson	105	Williams
081	Guilford	007	Billings		
097	Iredell	009	Bottineau		
109	Lincoln	011	Bowman	39	Ohio
119	Mecklenburg	013	Burke	01	South-Central
123	Montgomery	015	Burleigh	001	Adams
135	Orange	017	Cass	015	Brown
145	Person	019	Cavalier	025	Clermont
149	Polk	021	Dickey	053	Gallia
151	Randolph	023	Divide	071	Highland
157	Rockingham	025	Dunn	079	Jackson
159	Rowan	027	Eddy	087	Lawrence
161	Rutherford	029	Emmons	131	Pike
167	Stanly	031	Foster	141	Ross
169	Stokes	033	Golden Valley	145	Scioto
171	Surry	035	Grand Forks		
179	Union	037	Grant	02	Southeastern
181	Vance	039	Griggs	009	Athens
183	Wake	041	Hettinger	073	Hocking
185	Warren	043	Kidder	105	Meigs
197	Yadkin	045	LaMoure	115	Morgan
		047	Logan	127	Perry
04	Mountains	049	McHenry	163	Vinton
005	Alleghany	051	McIntosh	167	Washington
009	Ashe	053	McKenzie		
011	Avery	055	McLean		

03	East-Central	06	Northwestern	115	Ottawa
013	Belmont	003	Allen	135	Sequoyah
019	Carroll	011	Auglaize		
031	Coshocton	021	Champaign		Unsampled counties
059	Guernsey	033	Crawford	003	Alfalfa
067	Harrison	039	Defiance	007	Beaver
075	Holmes	041	Delaware	009	Beckham
081	Jefferson	051	Fulton	011	Blaine
111	Monroe	063	Hancock	015	Caddo
119	Muskingum	065	Hardin	017	Canadian
121	Noble	069	Henry	019	Carter
157	Tuscarawas	083	Knox	025	Cimarron
		091	Logan	027	Cleveland
04	Northeastern	095	Lucas	031	Comanche
005	Ashland	101	Marion	033	Cotton
007	Ashtabula	107	Mercer	035	Craig
029	Columbiana	117	Morrow	037	Creek
035	Cuyahoga	123	Ottawa	039	Custer
043	Erie	125	Paulding	043	Dewey
055	Geauga	137	Putnam	045	Ellis
077	Huron	143	Sandusky	047	Garfield
085	Lake	147	Seneca	049	Garvin
093	Lorain	149	Shelby	051	Grady
099	Mahoning	159	Union	053	Grant
103	Medina	161	Van Wert	055	Greer
133	Portage	171	Williams	057	Harmon
139	Richland	173	Wood	059	Harper
151	Stark	175	Wyandot	063	Hughes
153	Summit			065	Jackson
155	Trumbull			067	Jefferson
169	Wayne	40	Oklahoma	069	Johnston
		01	Southeast	071	Kay
05	Southwestern	005	Atoka	073	Kingfisher
017	Butler	013	Bryan	075	Kiowa
023	Clark	023	Choctaw	081	Lincoln
027	Clinton	029	Coal	083	Logan
037	Darke	061	Haskell	085	Love
045	Fairfield	077	Latimer	087	McClain
047	Fayette	079	Le Flore	093	Major
049	Franklin	089	McCurtain	095	Marshall
057	Greene	121	Pittsburg	099	Murray
061	Hamilton	127	Pushmataha	103	Noble
089	Licking			105	Nowata
097	Madison	02	Northeast	107	Okfuskee
109	Miami	001	Adair	109	Oklahoma
113	Montgomery	021	Cherokee	111	Okmulgee
129	Pickaway	041	Delaware	113	Osage
135	Preble	091	McIntosh	117	Pawnee
165	Warren	097	Mayes	119	Payne
		101	Muskogee	123	Pontotoc

125	Pottawatomie	04	Blue Mountains	117	Tioga
129	Roger Mills	001	Baker	121	Venango
131	Rogers	023	Grant	123	Warren
133	Seminole	025	Harney		
137	Stephens	045	Malheur	07	Southwestern
139	Texas	049	Morrow	009	Bedford
141	Tillman	059	Umatilla	013	Blair
143	Tulsa	061	Union	021	Cambria
145	Wagoner	063	Wallowa	051	Fayette
147	Washington			111	Somerset
149	Washita				
151	Woods	42	Pennsylvania	08	Northeastern/Pocono
153	Woodward	00	South Central	015	Bradford
		043	Dauphin	025	Carbon
41	Oregon	055	Franklin	037	Columbia
00	Northwest	057	Fulton	069	Lackawanna
005	Clackamas	061	Huntingdon	079	Luzerne
007	Clatsop	067	Juniata	089	Monroe
009	Columbia	087	Mifflin	093	Montour
027	Hood River	099	Perry	097	Northumberland
047	Marion	109	Snyder	103	Pike
051	Multnomah	119	Union	107	Schuylkill
053	Polk			115	Susquehanna
057	Tillamook	05	Western	127	Wayne
067	Washington	003	Allegheny	131	Wyoming
071	Yamhill	005	Armstrong		
		007	Beaver	09	Southeastern
01	West Central	019	Butler	001	Adams
003	Benton	039	Crawford	011	Berks
039	Lane	049	Erie	017	Bucks
041	Lincoln	059	Greene	029	Chester
043	Linn	063	Indiana	041	Cumberland
		073	Lawrence	045	Delaware
02	Southwest	085	Mercer	071	Lancaster
011	Coos	125	Washington	075	Lebanon
015	Curry	129	Westmoreland	077	Lehigh
019	Douglas			091	Montgomery
029	Jackson	06	North Central/Allegheny	095	Northampton
033	Josephine	023	Cameron	101	Philadelphia
		027	Centre	133	York
03	Central	031	Clarion		
013	Crook	033	Clearfield		
017	Deschutes	035	Clinton	44	Rhode Island
021	Gilliam	047	Elk	01	State
031	Jefferson	053	Forest	001	Bristol
035	Klamath	065	Jefferson	003	Kent
037	Lake	081	Lycoming	005	Newport
055	Sherman	083	Mc Kean	007	Providence
065	Wasco	105	Potter	009	Washington
069	Wheeler	113	Sullivan		

45 South Carolina

01 Southern Coastal Plain

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

02 Northern Coastal Plain

015 Berkeley
019 Charleston
025 Chesterfield
027 Clarendon
031 Darlington
033 Dillon
041 Florence
043 Georgetown
051 Horry
055 Kershaw
061 Lee
067 Marion
069 Marlboro
079 Richland
085 Sumter
089 Williamsburg

03 Piedmont

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

087 Union
091 York

46 South Dakota

01 Eastern

003 Aurora
005 Beadle
007 Bennett
009 Bon Homme
011 Brookings
013 Brown
015 Brule
017 Buffalo
021 Campbell

023 Charles Mix

025 Clark
027 Clay
029 Codington
031 Corson
035 Davison
037 Day
039 Deuel
041 Dewey
043 Douglas
045 Edmunds

049 Faulk
051 Grant
053 Gregory
055 Haakon
057 Hamlin
059 Hand
061 Hanson
065 Hughes
067 Hutchinson
069 Hyde
071 Jackson
073 Jerauld
075 Jones
077 Kingsbury
079 Lake
083 Lincoln
085 Lyman
087 McCook
089 McPherson
091 Marshall
095 Mellette
097 Miner
099 Minnehaha
101 Moody

105 Perkins
107 Potter
109 Roberts
111 Sanborn
115 Spink
117 Stanley
119 Sully
121 Todd
123 Tripp
125 Turner
127 Union
129 Walworth
135 Yankton
137 Ziebach

02 Western

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

47 Tennessee

01 West

017 Carroll
023 Chester
033 Crockett
045 Dyer
047 Fayette
053 Gibson
069 Hardeman
075 Haywood
077 Henderson
079 Henry
095 Lake
097 Lauderdale
109 McNairy
113 Madison
131 Obion
157 Shelby
167 Tipton
183 Weakley

02 West Central

005 Benton
039 Decatur

071	Hardin	177	Warren	373	Polk
081	Hickman	185	White	403	Sabine
083	Houston			405	San Augustine
085	Humphreys	05	East	407	San Jacinto
099	Lawrence	001	Anderson	455	Trinity
101	Lewis	009	Blount	457	Tyler
135	Perry	011	Bradley	471	Walker
161	Stewart	019	Carter	473	Waller
181	Wayne	025	Claiborne		
		029	Cocke	02	Northeast
03	Central	057	Grainger	001	Anderson
003	Bedford	059	Greene	037	Bowie
015	Cannon	063	Hamblen	063	Camp
021	Cheatham	065	Hamilton	067	Cass
027	Clay	067	Hancock	073	Cherokee
031	Coffee	073	Hawkins	159	Franklin
037	Davidson	089	Jefferson	183	Gregg
041	DeKalb	091	Johnson	203	Harrison
043	Dickson	093	Knox	213	Henderson
055	Giles	105	Loudon	315	Marion
087	Jackson	107	McMinn	343	Morris
103	Lincoln	121	Meigs	347	Nacogdoches
111	Macon	123	Monroe	365	Panola
117	Marshall	139	Polk	387	Red River
119	Maury	143	Rhea	401	Rusk
125	Montgomery	145	Roane	419	Shelby
127	Moore	155	Sevier	423	Smith
147	Robertson	163	Sullivan	449	Titus
149	Rutherford	171	Unicoi	459	Upshur
159	Smith	173	Union	467	Van Zandt
165	Sumner	179	Washington	499	Wood
169	Trousdale				
187	Williamson				Unsampled counties
189	Wilson			003	Andrews
		48	Texas	007	Aransas
04	Plateau	01	Southeast	009	Archer
007	Bledsoe	005	Angelina	011	Armstrong
013	Campbell	071	Chambers	013	Atascosa
035	Cumberland	185	Grimes	015	Austin
049	Fentress	199	Hardin	017	Bailey
051	Franklin	201	Harris	019	Bandera
061	Grundy	225	Houston	021	Bastrop
115	Marion	241	Jasper	023	Baylor
129	Morgan	245	Jefferson	025	Bee
133	Overton	289	Leon	027	Bell
137	Pickett	291	Liberty	029	Bexar
141	Putnam	313	Madison	031	Blanco
151	Scott	339	Montgomery	033	Borden
153	Sequatchie	351	Newton	035	Bosque
175	Van Buren	361	Orange	039	Brazoria

041	Brazos	149	Fayette	269	King
043	Brewster	151	Fisher	271	Kinney
045	Briscoe	153	Floyd	273	Kleberg
047	Brooks	155	Foard	275	Knox
049	Brown	157	Fort Bend	277	Lamar
051	Burleson	161	Freestone	279	Lamb
053	Burnet	163	Frio	281	Lampasas
055	Caldwell	165	Gaines	283	La Salle
057	Calhoun	167	Galveston	285	Lavaca
059	Callahan	169	Garza	287	Lee
061	Cameron	171	Gillespie	293	Limestone
065	Carson	173	Glasscock	295	Lipscomb
069	Castro	175	Goliad	297	Live Oak
075	Childress	177	Gonzales	299	Llano
077	Clay	179	Gray	301	Loving
079	Cochran	181	Grayson	303	Lubbock
081	Coke	187	Guadalupe	305	Lynn
083	Coleman	189	Hale	307	McCulloch
085	Collin	191	Hall	309	McLennan
087	Collingsworth	193	Hamilton	311	McMullen
089	Colorado	195	Hansford	317	Martin
091	Comal	197	Hardeman	319	Mason
093	Comanche	205	Hartley	321	Matagorda
095	Concho	207	Haskell	323	Maverick
097	Cooke	209	Hays	325	Medina
099	Coryell	211	Hemphill	327	Menard
101	Cottle	215	Hidalgo	329	Midland
103	Crane	217	Hill	331	Milam
105	Crockett	219	Hockley	333	Mills
107	Crosby	221	Hood	335	Mitchell
109	Culberson	223	Hopkins	337	Montague
111	Dallam	227	Howard	341	Moore
113	Dallas	229	Hudspeth	345	Motley
115	Dawson	231	Hunt	349	Navarro
117	Deaf Smith	233	Hutchinson	353	Nolan
119	Delta	235	Irion	355	Nueces
121	Denton	237	Jack	357	Ochiltree
123	DeWitt	239	Jackson	359	Oldham
125	Dickens	243	Jeff Davis	363	Palo Pinto
127	Dimmit	247	Jim Hogg	367	Parker
129	Donley	249	Jim Wells	369	Parmer
131	Duval	251	Johnson	371	Pecos
133	Eastland	253	Jones	375	Potter
135	Ector	255	Karnes	377	Presidio
137	Edwards	257	Kaufman	379	Rains
139	Ellis	259	Kendall	381	Randall
141	El Paso	261	Kenedy	383	Reagan
143	Erath	263	Kent	385	Real
145	Falls	265	Kerr	389	Reeves
147	Fannin	267	Kimble	391	Refugio

393	Roberts	011	Davis	003	Bennington
395	Robertson	029	Morgan	007	Chittenden
397	Rockwall	033	Rich	021	Rutland
399	Runnels	035	Salt Lake	025	Windham
409	San Patricio	043	Summit	027	Windsor
411	San Saba	045	Tooele		
413	Schleicher	049	Utah	51	Virginia
415	Scurry	051	Wasatch	01	Coastal Plain
417	Shackelford	057	Weber	001	Accomack
421	Sherman			025	Brunswick
425	Somervell	02	Uinta	033	Caroline
427	Starr	009	Daggett	036	Charles City
429	Stephens	013	Duchesne	041	Chesterfield
431	Sterling	047	Uintah	053	Dinwiddie
433	Stonewall			057	Essex
435	Sutton	03	Central	073	Gloucester
437	Swisher	023	Juab	081	Greensville
439	Tarrant	027	Millard	085	Hanover
441	Taylor	031	Piute	087	Henrico
443	Terrell	039	Sanpete	093	Isle of Wight
445	Terry	041	Sevier	095	James City
447	Throckmorton	055	Wayne	097	King and Queen
451	Tom Green			099	King George
453	Travis	04	Eastern	101	King William
461	Upton	007	Carbon	103	Lancaster
463	Uvalde	015	Emery	115	Mathews
465	Val Verde	019	Grand	119	Middlesex
469	Victoria	037	San Juan	127	New Kent
475	Ward			131	Northampton
477	Washington	05	Southwestern	133	Northumberland
479	Webb	001	Beaver	149	Prince George
481	Wharton	017	Garfield	159	Richmond
483	Wheeler	021	Iron	175	Southampton
485	Wichita	025	Kane	181	Surry
487	Wilbarger	053	Washington	183	Sussex
489	Willacy			193	Westmoreland
491	Williamson			199	York
493	Wilson	50	Vermont	550	Chesapeake city
495	Winkler	02	Northern	650	Hampton city
497	Wise	005	Caledonia	700	Newport News city
501	Yoakum	009	Essex	800	Suffolk city
503	Young	011	Franklin	810	Virginia Beach city
505	Zapata	013	Grand Isle		
507	Zavala	015	Lamoille	02	Southern Piedmont
		017	Orange	007	Amelia
		019	Orleans	011	Appomattox
		023	Washington	019	Bedford
49	Utah			029	Buckingham
01	Northern	003	Southern	031	Campbell
003	Box Elder	001	Addison	037	Charlotte
005	Cache				

049	Cumberland	027	Buchanan	790	Staunton city
067	Franklin	035	Carroll	820	Waynesboro city
083	Halifax	051	Dickenson	830	Williamsburg city
089	Henry	063	Floyd	840	Winchester city
111	Lunenburg	071	Giles		
117	Mecklenburg	077	Grayson		
135	Nottoway	105	Lee	53	Washington
141	Patrick	121	Montgomery	05	Puget Sound
143	Pittsylvania	155	Pulaski	029	Island
145	Powhatan	167	Russell	033	King
147	Prince Edward	169	Scott	035	Kitsap
		173	Smyth	053	Pierce
03	Northern Piedmont	185	Tazewell	055	San Juan
003	Albemarle	191	Washington	057	Skagit
009	Amherst	195	Wise	061	Snohomish
013	Arlington	197	Wythe	073	Whatcom
047	Culpeper				
059	Fairfax		Unsampled cities	06	Olympic Peninsula
061	Fauquier	510	Alexandria city	009	Clallam
065	Fluvanna	515	Bedford city	027	Grays Harbor
075	Goochland	520	Bristol city	031	Jefferson
079	Greene	530	Buena Vista city	045	Mason
107	Loudoun	540	Charlottesville city	067	Thurston
109	Louisa	560	Clifton Forge city		
113	Madison	570	Colonial Heights city	07	Southwest
125	Nelson	580	Covington city	011	Clark
137	Orange	590	Danville city	015	Cowlitz
153	Prince William	595	Emporia city	041	Lewis
157	Rappahannock	600	Fairfax city	049	Pacific
177	Spotsylvania	610	Falls Church city	059	Skamania
179	Stafford	620	Franklin city	069	Wahkiakum
		630	Fredericksburg city		
04	Northern Mountains	640	Galax city	08	Central
005	Alleghany	660	Harrisonburg city	001	Adams
015	Augusta	670	Hopewell city	003	Asotin
017	Bath	678	Lexington city	005	Benton
023	Botetourt	680	Lynchburg city	013	Columbia
043	Clarke	683	Manassas city	019	Ferry
045	Craig	685	Manassas Park city	021	Franklin
069	Frederick	690	Martinsville city	023	Garfield
091	Highland	710	Norfolk city	025	Grant
139	Page	720	Norton city	043	Lincoln
161	Roanoke	730	Petersburg city	051	Pend Oreille
163	Rockbridge	735	Poquoson city	063	Spokane
165	Rockingham	740	Portsmouth city	065	Stevens
171	Shenandoah	750	Radford city	071	Walla Walla
187	Warren	760	Richmond city	075	Whitman
		770	Roanoke city		
05	Southern Mountains	775	Salem city	09	Inland Empire
021	Bland	780	South Boston city	007	Chelan

017 Douglas
037 Kittitas
039 Klickitat
047 Okanogan
077 Yakima

54 West Virginia

02 Northeastern

001 Barbour
003 Berkeley
007 Braxton
023 Grant
027 Hampshire
031 Hardy
033 Harrison
037 Jefferson
041 Lewis
057 Mineral
065 Morgan
071 Pendleton
075 Pocahontas
077 Preston
083 Randolph
091 Taylor
093 Tucker
097 Upshur
101 Webster

03 Southern

005 Boone
015 Clay
019 Fayette
025 Greenbrier
039 Kanawha
045 Logan
047 McDowell
055 Mercer
059 Mingo
063 Monroe
067 Nicholas
081 Raleigh
089 Summers
109 Wyoming

04 Northwestern

009 Brooke
011 Cabell
013 Calhoun
017 Doddridge
021 Gilmer

029 Hancock
035 Jackson
043 Lincoln
049 Marion
051 Marshall
053 Mason
061 Monongalia
069 Ohio
073 Pleasants
079 Putnam
085 Ritchie
087 Roane
095 Tyler
099 Wayne
103 Wetzel
105 Wirt
107 Wood

55 Wisconsin

01 Northeastern

037 Florence
041 Forest
067 Langlade
069 Lincoln
075 Marinette
078 Menominee
083 Oconto
085 Oneida
115 Shawano
125 Vilas

02 Northwestern

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

03 Central

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

04 Southwestern

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

05 Southeastern

009 Brown
015 Calumet
021 Columbia
025 Dane
027 Dodge
029 Door
039 Fond du Lac
045 Green
047 Green Lake
055 Jefferson
059 Kenosha
061 Kewaunee
071 Manitowoc
079 Milwaukee
087 Outagamie
089 Ozaukee
101 Racine
105 Rock

117	Sheboygan	021	Bayamon	119	Rio Grande
127	Walworth	023	Cabo Rojo	121	Sabana Grande
131	Washington	025	Caguas	123	Salinas
133	Waukesha	027	Camuy	125	San German
139	Winnebago	029	Canovanas	127	San Juan
		031	Carolina	129	San Lorenzo
		033	Catano	131	San Sebastian
56	Wyoming	035	Cayey	133	Santa Isabel
01	Western	037	Ceiba	135	Toa Alta
013	Fremont	039	Ciales	137	Toa Baja
017	Hot Springs	041	Cidra	139	Trujillo Alto
023	Lincoln	043	Coamo	141	Utua
029	Park	045	Comerio	143	Vega Alta
035	Sublette	047	Corozal	145	Vega Baja
037	Sweetwater	049	Culebra	147	Vieques
039	Teton	051	Dorado	149	Villalba
041	Uinta	053	Fajardo	151	Yabucoa
		054	Florida	153	Yauco
02	Central and Southeastern	055	Guanica		
001	Albany	057	Guayama		
003	Big Horn	059	Guayanilla		
007	Carbon	061	Guaynabo		
009	Converse	063	Gurabo		
015	Goshen	065	Hatillo		
019	Johnson	067	Hormigueros		
021	Laramie	069	Humacao		
025	Natrona	071	Isabela		
027	Niobrara	073	Jayuya		
031	Platte	075	Juana Diaz		
033	Sheridan	077	Juncos		
043	Washakie	079	Lajas		
		081	Lares		
03	Northeastern	083	Las Marias		
005	Campbell	085	Las Piedras		
011	Crook	087	Loiza		
045	Weston	089	Luquillo		
		091	Manati		
		093	Maricao		
72	Puerto Rico	095	Maunabo		
01	Puerto Rico	097	Mayaguez		
001	Adjuntas	099	Moca		
003	Aguada	101	Morovis		
005	Aguadilla	103	Naguabo		
007	Aguas Buenas	105	Naranjito		
009	Aibonito	107	Orocovis		
011	Anasco	109	Patillas		
013	Arecibo	111	Penuelas		
015	Arroyo	113	Ponce		
017	Barceloneta	115	Quebradillas		
019	Barranquitas	117	Rincon		

Appendix C – Species group names and crosswalk to FIADB.

Species group name	Crosswalk from FIADB to SPDBH2002 table	Variable suffix
Longleaf and slash pines	spgrpcd=1	lgsl
Loblolly and shortleaf pines	spgrpcd=2	lbsh
Other yellow pines	spgrpcd=3	otyp
Eastern white and red pines	spgrpcd=4	ewrd
Jack pine	spgrpcd=5	jack
Spruce and balsam fir	spgrpcd=6	spfr
Eastern hemlock	spgrpcd=7	ehem
Cypress	spgrpcd=8	cypr
Other eastern softwoods	spgrpcd=9	otesw
Douglas-fir	spgrpcd=10	doug
Ponderosa and Jeffrey pines	spgrpcd=11	pdjeff
True fir	spgrpcd=12	fir
Western hemlock	spgrpcd=13	whem
Sugar pine	spgrpcd=14	sugar
Western white pine	spgrpcd=15	wwpn
Redwood	spgrpcd=16	rdwd
Sitka spruce	spgrpcd=17	sitka
Engelmann and other spruces	spgrpcd=18	engel
Western larch	spgrpcd=19	wlarch
Incense-cedar	spgrpcd=20	incen
Lodgepole pine	spgrpcd=21	lodge
Western redcedar	spgrpcd=22	wrced
Western woodland softwoods	spgrpcd=23	N/A
Other western softwoods	spgrpcd=24	otwsw
Select white oaks	spgrpcd=25	swok
Select red oaks	spgrpcd=26	srok
Other white oaks	spgrpcd=27	owok
Other red oaks	spgrpcd=28	orok
Hickory	spgrpcd=29	hick
Yellow birch	spgrpcd=30	ybir
Hard maple	spgrpcd=31	hmap
Soft maple	spgrpcd=32	smap
Beech	spgrpcd=33	bech
Sweetgum	spgrpcd=34	sgum
Tupelo and blackgum	spgrpcd=35	bgum
Ash	spgrpcd=36	ash

(table continued on next page)

Species group name	Crosswalk from FIADB to SPDBH2002 table	Variable suffix
Cottonwood and aspen	spgrpcd=37	ecoas
Basswood	spgrpcd=38	bass
Yellow-poplar	spgrpcd=39	ypop
Black walnut	spgrpcd=40	bwal
Black cherry	spgrpcd=41 and spcd=762	bchr
Other eastern hardwoods	spgrpcd=41,42,43 but not spcd=762	otehw
Cottonwood and aspen	spgrpcd=44	wcoas
Red alder	spgrpcd=45	alder
Oak	spgrpcd=46	wok
Other western hardwoods	spgrpcd=47,48	otwhw

MISSION STATEMENT

We believe the good life has its roots in clean air, sparkling water, rich soil, healthy economies and a diverse living landscape. Maintaining the good life for generations to come begins with everyday choices about natural resources. The North Central Research Station provides the knowledge and the tools to help people make informed choices. That's how the science we do enhances the quality of people's lives.

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www.ncrs.fs.fed.us

