PLOT, CONDITION & SUBPLOT LEVEL SUMMARY

ITEM 106R PHASE
2 Standard field plot
3 Standard field plot/FHM

ITEM 107 PLOT STATUS
1 At Least one accessible forest condition
2 No accessible forest conditions – Nonforest
3 Nonsampled
4 Landclearing
5 Intensification

ITEM 108 SAMPLE KIND
1 Initial plot establishment
2 Remeasurement national plot design
3 Replacement plot
8 Remeasurement regional fixed
9 Remeasurement prism

ITEM 112R COUNTY CORRECT?
0 No
1 Yes

ITEM 119 QA STATUS
1 Standard production plot
2 Cold check
3 Reference plot
4 Training / practice plot
5 Botched plot file
6 Blind check
7 Hot check

ITEM 120 CREW TYPE
1 Standard field crew
2 QA crew

ITEM 126R HUMAN DEBRIS
0 None
1 Noncombustible synthetic
2 Combustible synthetic
3 Combustible organic

ITEM 127 WATER ON PLOT (excluding census & non-census water, must occur on the subplot, in forest cond.)
0 None
1 Permanent streams or ponds
2 Deep swamps, bogs or marshes
3 ditch / canal
4 Temporary streams
5 Flood zones
9 Other temporary water (specify in notes)

ITEM 128, 129R & 130R HORIZONTAL DISTANCE TO ROAD / URBAN / AG.
1 100 ft or less
2 101 ft to 300 ft
3 301 ft to 500 ft
4 501 ft to 1000 ft
5 1001 ft to 1/2 mile
6 >1/2 mile to 1 mile
7 >1 mile to 3 miles
8 >3 miles to 5 miles
9 >5 miles

ITEM 131R CONTIGUOUS FOREST
0 Plot center is non-forest
1 1 - 10 acres
2 11 - 50 acres
3 51 - 100 acres
4 101 - 500 acres
5 501 - 2500 acres
6 2501 - 5000 acres
7 >5000 acres

ITEM 132 GPS UNIT
0 GPS coordinates not collected
1 Rockwell PLGR
2 Other brand capable of field averaging
3 Trimble GeoExplorer or Pathfinder Pro
4 Recreational GPS (Garmin, Magellan, etc)

ITEM 202R PRESENT LAND USE
01 Accessible timber land
02 Accessible other forest land (unproductive)
10 Other agricultural land
11 Cropland
12 Pasture (improved)
13 Idle farmland
14 Orchard
15 Christmas tree plantation
16 Maintained wildlife openings
20 Rangeland
30 Other developed
31 Cultural (business, residential, etc.)
32 Rights-of-way (road, railroad, utility line)
33 Recreation area
34 Mining
40 Other non-forest (barren land, rock)
41 Marsh
42 Beaches
91 Census water
92 Noncensus water
99 Nonsampled

ITEM 203 CONDITION CLASS STATUS
1 Accessible forest land
2 Nonforest land
3 Noncensus water
4 Census water
5 Nonsampled

ITEM 204 CONDITION NONSAMPLED REASON
01 Outside U.S. boundary
02 Denied access area
03 Hazardous situation
10 Other

ITEM 206 RESERVED STATUS
0 Not reserved
1 Reserved

ITEM 207 OWNER CLASS
11 National Forest
12 National Grassland
13 Other Forest Service
21 National Park Service
22 Bureau of Land Management
23 Fish & Wildlife Service
24 Department of Defense / Energy
25 Other Federal
31 State
32 Local (County, Municipality, etc.)
33 Other Non-Federal Public
41 Corporate
42 Non-Govt. Conservation / Natural Res. Organiz. (Nature Conservancy, Boy Scouts of Am.)
43 Unincorporated Partnerships / Associations / Clubs (4H, Hunt Clubs that own, not lease)
44 Native American (Indian) within reservation boundaries
45 Individual

ITEM 208 OWNER GROUP
10 US Forest Service
20 Other Federal
30 State & Local Government
40 Private

ITEM 209 PRIVATE OWNER INDUSTRIAL STATUS (owned by industry w/ wood processing plant)
0 Land *is not* owned by industrial owner with a wood processing plant
1 Land *is* owned by industrial owner with a wood processing plant

ITEM 213 STAND SIZE CLASS
0 Nonstocked
1 Up to 4.9" (seedlings / saplings)
2 5.0" to (8.9" softwoods) or (10.9" hardwoods)
3 (9.0" softwoods) or (11.0" hardwoods) to 19.9"
4 20.0" to 39.9"
5 40.0" plus

ITEM 214 REGENERATION STATUS
0 Natural
1 Artificial

ITEM 215 ARTIFICIAL TREE DENSITY
1 Initial density class
2 Density class 2 - density different than 1
3 Density class 3 - density different than 1 & 2

ITEM 218R STAND STRUCTURE
1 Single-storied
2 Two-storied
3 Multi-storied
4 Nonstocked

ITEM 219, 221 & 223 DISTURBANCE (one acre in size & 25% of condition)
00 None
10 Insects
20 Disease
30 Fire (crown & ground, prescribed or natural)
31 Ground fire
32 Crown fire
40 Animal (other than the following:)
41 Beaver (including flooding caused by beaver)
42 Porcupine
43 Deer / ungulate (hoofed mammal)
45 Domestic animal / livestock (includes grazing)
50 Weather (other than the following:)
51 Ice
52 Wind (includes hurricane, tornado)
53 Flooding (weather-induced)
54 Drought
60 Vegetation (suppression, competition, vines)
70 Unknown / not sure / other (include in notes)
80 Human (any significant threshold human caused damage not described in the disturbance codes above, or in the treatment codes below)

ITEM 225, 227 & 229 TREATMENT (one acre in size & 25% of condition)
00 None
10 Other cutting
11 Clearcut harvest (residual stand stocking >50%)
12 Partial harvest (high grading or selection harvest)
13 Seed-tree / shelterwood harvest
14 Commercial thinning
15 Timber stand improvement (stands less than 5")
20 Site preparation
30 Artificial regeneration (50% stocked)
40 Natural regeneration (50% stocked)
50 Other silvicultural treatment

ITEM 231 PHYSIOGRAPHIC CLASS
11 Dry tops
12 Dry slopes
13 Deep sands
19 Other xeric
21 Flatwoods
22 Rolling uplands
23 Moist slopes & coves
24 Narrow floodplains / bottomlands
25 Broad floodplains / bottomlands
29 Other mesic
31 Swamps / bogs
32 Small drains
33 Bays & wet pocosins
34 Beaver ponds
35 Cypress ponds
39 Other hydric

ITEM 232R OPERABILITY
0 No problems
1 Seasonal access due to water conditions in wet weather
2 Mixed wet & dry areas
3 Broken terrain, cliffs, gullies, etc
4 Year-round water problems
5 Slopes of 20% or more

ITEM 233R WATER SOURCE
0 None
1 Intermittent water (seasonal, defined water course)
2 Permanent streams or canals <30' wide
3 Permanent streams or canals 30' - 199' wide
4 Permanent streams or canals 200' wide or greater
5 Permanent deep swamps, bogs or marshes <4.5 acres
6 Permanent deep swamps, bogs or marshes 4.5 acres or larger
7 Permanent lakes or ponds <4.5 acres
8 Permanent lakes or ponds 4.5 acres or greater
9 Other permanent water (includes ocean, write note)

ITEM 234R DISTANCE TO WATER SOURCE
0 - 100 Taped distance to nearest foot
150 101' to 200'
250 201' to 300'
* *
950 901' to 1000'
999 None within 1000'

ITEM 236R & 237R FIRE / GRAZING (by domestic animals; must occur on the subplot in forest}
0 No evidence of fire / grazing
1 Evidence of fire / grazing

ITEM 302 SUBPLOT STATUS
1 Sampled - at least one accessible forest land cond.
2 Sampled – no accessible forest land condition
3 Nonsampled
9 Other

ITEM 303 SUBPLOT NONSAMPLED REASON
01 Outside U.S. boundary
02 Denied access
03 Hazardous situation

ITEM 310R, 312R, 314R, 316R NONNATIVE INVASIVE PLANTS
0000 None
0341 Tree of heaven
0345 Mimosa (Silktree)
0712 Royal Paulownia (princesstree)
0993 Chinaberry
0994 Popcorn tree (tallowtree)
0997 Russian Olive
2037 Silverthorn
2038 Autumn olive
2042 Winged euonymus, burning bush
2103 Chinese / European privet
2104 Japanese/glossy privet
2105 Bush honeysuckle
2113 Nandina (heavenly or sacred bamboo)
2160 Exotic roses
3026 Oriental / Asian bittersweet
3030 Exotic climbing yams - Air yam (air potato) or chinese yam
3042 Wintercreeper
3071 English ivy
3101 Japanese honeysuckle
3123 Kudzu
3211 Periwinkle
3251 Chinese / Japanese wisteria
4008 Giant reed
4051 Tall fescue
4055 Cogongrass (japgrass)
4080 Nepalese browntop
4085 Chinese silvergrass
4130 exotic bamboos
5171 Japanese climbing fern
6002 Garlic mustard
6052 Shrubby lespedeza
6053 Chinese lespedeza
6095 Tropical soda apple

FLORIDA ONLY
FL02 Australian-pine
FL03 Camphor tree
FL04 Carrotwood
FL06 Melaleuca
FL08 Schefflera
FL09 Java plum
FL11 Coral ardisia
FL25 Lantana
FL22 Surinam cherry
FL26 Common guava
FL27 Downy rose myrtle
FL28 Brazilian pepper, Florida Holly
FL29 Wetland nightshade
FL31 Rosary pea
FL35 Cat's-claw vine
FL37 Skunk vine
FL46 Napier grass
FL54 Old World climbing fern
FL56 Sword fern
FL64 Hairy indigo

ITEM 311R 313R, 315R, 317R NONNATIVE INVASIVE PERCENT COVERAGE
1 Trace <01%
2 01 - 10%
3 11 - 50%
4 51 - 90%
5 91 - 100%

ITEM 402 PLOT TYPE
1 Subplot
2 Microplot

ITEM 403R BOUNDARY STATUS
0 Delete boundary
1 Retain boundary (no changes)
2 Changed boundary
3 New boundary

ITEM 404 BOUNDARY CHANGE
0 No change
1 Real change
2 Cruiser error
3 Procedural change

DISTANCE & AZIMUTHS TO / FROM SUBPLOTS OTHER THAN PC

From	To	Azimuth	Distance
2	3	150	207.8
2	4	210	207.8
3	4	270	207.8

Minimum number of trees required for 10% stocking, by dbh class

DBH CLASS	1 ACRE	½ ACRE	1/6 ACRE
	-----NUMBER OF TREES-----		
SEEDLING	60	30	10
2	56	28	9
4	46	23	8
6	34	17	6
8	24	12	4
10	16	8	3
12	11	5	2
14	9	4	2
16	7	3	1
18	6	3	1
20	5	2	1

PHOTO NOTATIONS - Submitted by Don VanHouten - AFC

PLOT TYPE	NOTATION	Location on Photo	Plot #	Reference Angle	Course Line	Interior Angle (angle of intersection)	Starting Point Circled	Way Point Circled	Land Use	Date (mm/dd/yyyy)	Cruiser(s) Initial & #	Note Pin Prick Moved
Forest		Front	X	X	X	X	X					X
		Back	X									X
Partial		Front	X	X	X	X	X					X
		Back	X						X	X	X	X
Nonforest		Front	X	X	X	X		X				X
		Back	X						X	X	X	X
Nonsampled		Front	X	X	X	X						X
		Back	X						X	X	X	X
Intensification		Front	X									
		Back	X						X	X	X	

FOREST TYPES

WHITE PINE GROUP
Forests in which eastern white pine, red pine, or jack pine, singly or in combination, comprise a plurality of the stocking. (Common associates include hemlock, aspen, birch, and maple.)

103 Eastern white pine: Associates – pitch pine, gray birch, aspen, red maple, pin cherry, white oak, paper birch, sweet birch, yellow birch, black cherry, white ash, northern red oak, sugar maple, basswood, hemlock, northern white-cedar, yellow-poplar, white oak, chestnut oak, scarlet oak, and shortleaf pine. Sites – wide variety, but best development on well drained sands and sandy loams.

104 Eastern white pine / Eastern hemlock: Associates – beech, sugar maple, basswood, red maple, yellow birch, black cherry, white ash, paper birch, sweet birch, northern red oak, white oak, chestnut oak, yellow-poplar, and cucumbertree. Sites – wide variety but favors cool locations, moist ravines, and north slopes.

105 Eastern hemlock: Associates – beech, sugar maple, yellow birch, basswood, red maple, black cherry, white ash, white pine, paper birch, sweet birch, northern red oak, and white oak. Sites – cool locations, moist ravines, and north slopes.

SPRUCE / FIR GROUP
Forests in which spruce, or true firs, singly or in combination, comprise the plurality of the stocking. (Common associates include white cedar, tamarack, maple, birch, and hemlock.)

121 Balsam fir: Associates – black, white, or red spruce, paper or yellow birch, quaking or bigtooth aspen, beech, red maple, hemlock, tamarack, black ash, or northern white cedar. Sites – upland sites on low lying moist flats and in swamps.

123 Red Spruce: Associates – vary widely and may include red maple, yellow birch, eastern hemlock, eastern white pine, white spruce, northern white-cedar, paper birch, pin cherry, gray birch, mountain ash, beech, striped maple, sugar maple, northern red oak, red pine, and aspen. Sites – include moderately well drained to poorly drained flats and thin-slopes and on varying acidic soils in abandoned fields and pastures. This code should be used where red spruce comprises a plurality or majority of the stand's stocking but where balsam fir is either nonexistent or has very little stocking. Otherwise the plot would be coded 124, red spruce / balsam fir.

124 Red spruce / balsam fir: Associates – red maple, paper birch, white pine, hemlock white spruce, and northern white-cedar. Sites – moderately drained to poorly drained flats or on thin-soiled upper slopes.

LONGLEAF / SLASH PINE GROUP
Forests in which longleaf or slash pine, singly or in combination, comprises a plurality of the stocking. (Common associates include other southern pines, oak, and gum.)

141 Longleaf pine: Longleaf pine occurs as a pure type or comprises a majority of the trees in the overstory. Associates – slash, loblolly and shortleaf pine, southern red oak, blackjack oak, water oak, persimmon, and sweetgum. Sites – those areas that can and do burn on a periodic basis – usually occurs on middle and upper slopes with a low severity of hardwood and brush competition.

142 Slash pine: Slash pine is pure or provides a majority of the stocking. Associates – on moist sites; a wide variety of moist-site hardwoods, pond pine, and pondcypress. On dry sites; a wide variety of dry-site hardwoods, longleaf, loblolly, and sand pine. Sites – both moist and well-drained flatwoods, and bays.

LOBLOLLY / SHORTLEAF PINE GROUP
Forests in which loblolly pine, shortleaf pine, or other southern yellow pines (except slash and longleaf), singly or in combination, comprise a plurality of the stocking. (Common associates include other southern yellow pines, oak, blackgum, and sweetgum.)

161 Loblolly pine: Associates – sweetgum, southern red oak, post oak, blackjack oak, blackgum, yellow-poplar, and pond pine. Sites – upland soils with abundant moisture but good drainage and on poorly drained depressions.

162 Shortleaf pine: Associates – white oak, southern red oak, scarlet oak, black oak, hickory, post oak, blackjack oak, blackgum, red maple, pitch pine, and Virginia pine. Sites – low, well drained ridges to rocky, dry, south slopes and the better drained spur ridges on north slopes and also on old fields.

163 Virginia pine: Associates – shortleaf pine, white oak, chestnut oak, southern red oak, black oak, sweetgum, red maple, blackgum, and pitch pine. Sites – dry sites, often abandoned fields.

164 Sand pine: Sand pine occurs in pure sands or provides a majority of the stocking. Associates – dwarf live oak, dwarf post oak, turkey oak, persimmon, and longleaf pine. Sites – dry, acidic, infertile sands.

165 Table-mountain pine: Associates – chestnut oak, scarlet oak, pitch pine, and black oak. Sites – poor, dry, often rocky slopes.

166 Pond pine: Associates – slash and loblolly pine, sweetgum, sweetbay, loblolly bay, red bay, pond and baldcypress, swamp tupelo red maple and Atlantic white-cedar. Sites – low, poorly drained areas, swamps, and marshes.

167 Pitch pine: Associates – chestnut oak, scarlet oak, table-mountain pine, black oak, and blackgum. Sites – relatively infertile ridges, dry flats, and slopes.

168 Spruce pine: Spruce pine comprises a majority of the stocking. Associates – any of the moist site softwood or hardwood species. Sites – moist or poorly drained areas.

PINYON/JUNIPER GROUP

181 Eastern redcedar: Associates – gray birch, red maple, sweet birch, Virginia pine, shortleaf pine, oak. Sites – usually dry uplands and abandoned fields on limestone outcrops and other shallow soils but can grow well on good sites.

182 Rocky Mountain juniper
184 Juniper woodland

185 Pinyon juniper woodland

PONDEROSA PINE GROUP

221 Ponderosa pine

OTHER WESTERN SOFTWOOD GROUP

362 Southwestern white pine

366 Limber pine

368 Miscellaneous western softwoods

EXOTIC SOFTWOODS GROUP

381 Scotch pine: plantation type, not naturally occurring.

382 Australian-pine

383 Other exotic softwoods

384 Norway spruce: plantation type, not naturally occurring.

OAK / PINE GROUP
Forests in which hardwoods (usually upland oaks) comprise a plurality of the stocking, but in which pines comprise 25 to 50 percent of the stocking. (Common associates include gum, hickory, and yellow-poplar.)

401 Eastern white pine / northern red oak / white ash: Associates – red maple, basswood, yellow birch, bigtooth aspen, sugar maple, beech, paper birch, black cherry, hemlock, and sweet birch. Sites – deep, fertile, well-drained soil.

402 Eastern redcedar / hardwood: Associates – oak, hickory, walnut, ash, locust, dogwood, blackgum hackberry, winged elm, shortleaf pine, and Virginia pine. Sites – usually dry uplands and abandoned fields.

403 Longleaf pine / oak: Longleaf pine and scrub oaks – primarily turkey, bluejack, and dwarf post oak, comprise the type. Associates – southern scrub oaks in the understory. Sites – common on sandhills where soils are dry, infertile, and coarse textured.

404 Shortleaf pine / oak: Associates – (oaks generally include white, scarlet, blackjack, black, post, and southern red) hickory, blackgum, sweetgum, Virginia pine, and pitch pine. Sites – generally in dry, low ridges, flats, and south slopes.

405 Virginia pine / southern red oak: Associates – black oak, scarlet oak, white oak, post oak, blackjack oak, shortleaf pine, blackgum, hickory, pitch pine, table-mountain pine, chestnut oak. Sites – dry slopes and ridges.

406 Loblolly pine / hardwood: Associates – wide variety of moist and wet site hardwoods including blackgum, sweetgum, yellow-poplar, red maple, white and green ash, and American elm; on drier sites associates include southern and northern red oak, white oak, post oak, scarlet oak, persimmon, and hickory. Sites – usually moist to very moist though not wet all year but also on drier sites.

407 Slash pine / hardwood: Slash pine and a variable mixture of hardwoods comprise the type. Associates – codominant with the slash pine component are sweetbay, blackgum, loblolly-bay, pondcypress, pond pine, Atlantic white-cedar, red maple, ash, and water oak. Sites – undrained or poorly drained depressions such as bays or pocosins and along pond margins.

409 Other pine / hardwood

OAK / HICKORY GROUP
Forests in which upland oaks and hickories, singly or in combination, comprise a plurality of the stocking. The exception in these types where pine comprise 25 to 50 percent of the stocking, in which case the stand would be classified oak-pine. (Common associates include yellow-poplar, elm, maple, and black walnut.)

501 Post oak / blackjack oak: Associates – blackjack oak, hickory, southern red oak, white oak, scarlet oak, shingle oak, live oak, shortleaf pine, Virginia pine, blackgum, sourwood, red maple, winged elm, hackberry, chinkapin oak, Shumard oak, dogwood, and eastern redcedar. Sites – dry uplands and ridges.

502 Chestnut oak: Associates – scarlet oak, white oak, black oak, post oak, pitch pine, blackgum, sweetgum, red maple, red oak, shortleaf pine, and Virginia pine. Sites – rocky outcrops with thin soil, ridge tops.

503 White oak / red oak / hickory: Associates – scarlet oak, bur oak, pin oak, white ash, sugar maple, red maple, walnut, basswood, locust, beech, sweetgum, blackgum, yellow-poplar, and dogwood. Sites – wide variety of well drained upland sites.

504 White oak: Associates – black oak, northern red oak, bur oak, hickory, white ash, and yellow-poplar. Sites – scattered patches on upland loamy soils but on drier sites than type 503.

505 Northern red oak: Associates – black oak, scarlet oak, chestnut oak, and yellow-poplar. Sites – spotty distribution on ridge crests and north slopes in mountains but also found on rolling land, slopes and benches on loamy soil.

506 Yellow-poplar / white oak / northern red oak: Associates – black oak, hemlock, blackgum, and hickory. Sites – northern slopes, coves, and moist flats.

507 Sassafras / persimmon: Associates – elm, eastern redcedar, hickory, ash, sugar maple, yellow-poplar, and oaks. Sites – abandoned farmlands and old fields.

508 Sweetgum / yellow-poplar: Associates – red maple, white ash, green ash, and other moist site hardwoods. Sites – generally occupies moist, lower slopes.

509 Bur oak: Associates – northern pin oak, black oak, chinkapin oak, and eastern redcedar in northern and dry upland sites; shagbark hickory, black walnut, eastern cottonwood, white ash, American elm, swamp white oak, honey locust, and American basswood in southern and lowland sites. Sites – drier uplands to moist bottomlands with the drier uplands more common in the northern part of the range and the moist bottomlands more common in the southern part of the range.

510 Scarlet oak: Associates – black oak, southern red oak, chestnut oak, white oak, post oak, hickory, pitch pine, blackgum, sweetgum, black locust, sourwood, dogwood, shortleaf pine, and Virginia pine. Sites – dry ridges, south- or west-facing slopes and flats but often moister situations probably as a result of logging or fire.

511 Yellow-poplar: Associates – black locust, red maple, sweet birch, cucumbertree, and other moist-site hardwoods (except sweetgum, see type 508) and white oak and northern red oak (see type 503). Sites – lower slopes, northerly slopes, moist covers, flats, and old fields.

512 Black walnut: Associates – yellow-poplar, white ash, black cherry, basswood, beech, sugar maple, oaks, and hickory. Sites – coves and well-drained bottoms.

513 Black locust: Associates – many species of hardwoods and pines may occur with it in mixture, either having been planted or from natural seeding. Sites – may occur on any well-drained soil but bust on dry sites, often in old fields.

514 Southern scrub oak: This forest cover type consists of a mixture of scrub oaks that may include several of the following species: turkey oak, bluejack oak, blackjack oak, dwarf post oak, and dwarf live oak. Sites – dry sandy ridges, the type frequently develops on areas formerly occupied by longleaf pine.

515 Chestnut oak / black oak / scarlet oak: Associates – northern and southern red oaks, post oak, white oak, sourwood, shagbark hickory, pignut hickory, yellow-poplar, blackgum, sweetgum, red maple, eastern white pine, pitch pine, Table Mountain pine, shortleaf pine, and Virginia pine. Sites – dry upland sites on thin-soiled rocky outcrops on dry ridges and slopes.

519 Red maple / oak: Associates – the type is dominated by red maple and some of the wide variety of hardwood associates include upland oak, hickory, yellow-poplar, black locust, sassafras as well as softwoods like Virginia and shortleaf pine. Sites – wide variety of upland sites.

520 Mixed upland hardwoods: Associates – Any mixture of hardwoods of species typical of the upland central hardwood region, should include at least some oak. Sites – wide variety of upland sites.

OAK / GUM / CYPRESS GROUP
Bottomland forests in which tupelo, blackgum, sweetgum, oaks, or cypress, singly or in combination, comprise a plurality of the stocking except where pines comprise 25 to 50 percent in which case the stand would be classified oak-pine.

601 Swamp chestnut oak / cherrybark oak: Associates – white ash, hickory, white oak, Shumard oak, blackgum, sweetgum, southern red oak, post oak, American elm, winged elm, yellow-poplar, and beech. Sites – within alluvial flood plains of major rivers on all ridges in the terraces and on the best fine sandy loam soils on the highest first bottom ridges.

602 Sweetgum / Nuttall oak / willow oak: Associates – sugarberry, green ash, American elm, pecan, cottonwood, red maple, honeylocust and persimmon. Sites – first bottom ridges and terrace flats, except in deep sloughs, swamps and the lowest flats.

605 Overcup oak / water hickory: Associates – willow oak, American elm, green ash, hackberry, persimmon, and red maple. Sites – in South within alluvial flood plains in low, poorly drained flats with clay soils; also in sloughs and lowest backwater basins and low ridges with heavy soils that are subject to late spring inundation.

606 Atlantic white-cedar: Associates – North includes gray birch, pitch pine, hemlock, blackgum, and red maple. South includes pond pine, baldcypress, and red maple. Sites – usually confined to sandy-bottomed, peaty, interior, and river swamps, wet depressions, and stream banks.

607 Baldcypress / water tupelo: Associates – willow, red maple, American elm, persimmon, overcup oak, and sweetgum. Sites – very low, poorly drained flats, deep sloughs, and swamps wet most all the year.

608 Sweetbay / swamp tupelo / red maple: Associates – blackgum, loblolly and pond pines, American elm, and other moist-site hardwoods. Sites – very moist but seldom wet all year-shallow ponds, muck swamps, along smaller creeks in Coastal Plain.

609 Cypress: >50% stocking of Baldcypress and/or Pondcypress. Associates – Blackgum, willow, red maple, American elm, persimmon, overcup oak, and sweetgum. Sites- very low, poorly drained flats, deep sloughs, and swamps wet most all the year. Also, floodplains and stream margins.

ELM / ASH / COTTONWOOD GROUP
Bottomland forests in which elm, ash, or cottonwood, singly or in combination, comprise a plurality of the stocking. (Common associates include willow, sycamore, American beech, and maple.)

701 Black ash / American elm / red maple: Associates – silver maple, swamp white oak, sycamore, pin oak, blackgum, white ash, and cottonwood. Sites – moist to wet areas, swamps, gullies, and poorly drained flats.

702 River birch / sycamore: Associates – red maple, black willow, and other moist-site hardwoods. Sites – moist soils at edges of creeks and rivers.

703 Cottonwood: Associates – willow, white ash, green ash, and sycamore. Sites – stream banks where bare, moist soil is available.

704 Willow: Associates – cottonwood, green ash, sycamore, pecan, American elm, red maple, and boxelder. Sites – stream banks where bare, moist soil is available.

705 Sycamore / pecan / American elm: Associates – boxelder, green ash, hackberry, silver maple, cottonwood, willow, sweetgum, and river birch. Sites – bottomlands, alluvial flood plains of major rivers.

706 Sugarberry / hackberry / elm / green ash: Associates – pecan, blackgum, persimmon, honeylocust, red maple, hackberry, and boxelder. Sites – low ridges and flats in flood plains.

707 Silver maple / American elm: Silver maple and American elm are the majority species in this type. Associates – sweetgum, pin oak, swamp white oak, eastern cottonwood, sycamore, green ash, and other moist-site hardwoods, according to the region. Sites – primarily on well-drained moist sites along river bottoms and floodplains and beside lakes and larger streams.

708 Red maple / lowland: Red maple comprises a majority of the stocking. Because this type grows on a wide variety of sites over an extensive range, associates are diverse. Associates include yellow-poplar, blackgum, sweetgum, and loblolly pine. Site – generally restricted to very moist to wet sites with poorly drained soils, and on swamp borders.

709 Cottonwood / willow: Associates – white ash, green ash, sycamore, American elm, red maple, and boxelder. Sites – stream banks where bare, moist soil is available.

MAPLE / BEECH / BIRCH GROUP
Forests in which maple, American beech, or yellow birch, singly or in combination, comprise a plurality of the stocking. (Common associates include hemlock, elm, basswood, and white pine.)

801 Sugar maple / beech / yellow birch: Associates – basswood, red maple, hemlock, northern red oak, white pine, black cherry, sweet birch, American elm, rock elm, and eastern hophornbeam. Sites – fertile, moist, well-drained sites.

802 Black Cherry: Associates – sugar maple, northern red oak, red maple, white ash, basswood, sweet birch, butternut, American elm, and hemlock. Sites – fertile, moist, well-drained sites.

803 Cherry / ash / yellow-poplar: Associates – sugar maple, American beech, northern red oak, white oak, blackgum, hickory, cucumbertree, and yellow birch. Sites – fertile, moist, well-drained sites.

805 Hard maple / basswood: Associates – white ash, northern red oak, eastern hophornbeam, American elm, red maple, eastern white pine eastern hemlock. Sugar maple and basswood occur in different proportions but together comprise the majority of the stocking. Sites – fertile, moist, well-drained sites.

807 Elm / ash / locust: Associates – Locust, silver maple, boxelder, elm, red maple, green ash predominate. Sites – upland.

809 Red maple / upland: Associates – the type is dominated by red maple and some of the wide variety of northern hardwood associates include sugar maple, beech, birch, aspen, as well as some northern softwoods like white pine, red pine, and hemlock; this type is often man-made and may be the result of repeated cuttings. Sites – uplands. (See type 519 under oak / hickory group).

ASPEN/BIRCH GROUP

902 Paper birch

WESTERN OAK GROUP

925 Deciduous oak woodland: Primarily a shrub type, it often occurs in small colonies or mottes. This type is made up of Mohrs oak (also called shin oak) forms mixed stands with other oaks of this cover type. Much variation exists in the shin oak complex there may be as many as five phonological variants. Different leaf-out dates are often evident in the same stand, and acorn size is highly variable within the hybrids. Sites – Because of Mohrs oak's preference for calcareous soils, it is most common where caliche fragments are on or near the soil surface.

952 Mesquite woodland: Honey mesquite and screwbean mesquite comprise the majority of the stocking of this cover type. Honey mesquite associates, which are many, vary with climate and soils. Sites – occurs on a wide array of sites and soils, which largely regulate the rate and extent of growth and development.

955 Miscellaneous western hardwood woodlands

TROPICAL HARDWOODS GROUP

981 Sabal palm: Through most of its range sabal palm (cabbage palmetto) comprises a plurality of the stocking. Associates – Sand live oak, slash pine, live oak, laurel oak, water oak, baldcypress, southern magnolia, red maple, redbay, swamp tupelo, sweetgum, southern redcedar, and loblolly pine. In south central Florida, sabal palm grows in pure stands in wet prairie areas; in extreme southern Florida, tropical hardwoods replace temperate hardwoods as associates. Sites – can tolerate a broad range of soil pH, salinity, and drainage.

982 Mangrove: Forests in which mangrove comprises a majority of the stocking. Associates – cabbage palm (sabal palm) on some of the higher sites in the area. Sites – predominantly salt marshes; mangrove frequently develops its own island or shoreline made up of a dense mat of root structures.

989 Other tropical: This type consists of dense forests of hardwood trees and palms. Associates – gumbo-limbo, wild-tamarind, poisonwood (Florida poisonwood), pigeon-plum, black ironwood (leadwood), torchwood, lancewood, lancewood, mastic, and willow bustic, as well as more temperate live oak and red bay. Sites - Occurs on land slightly higher than surrounding fresh and saltwater marshes or on pineland.

EXOTIC HARDWOODS GROUP

991 Paulownia

992 Melaleuca

993 Eucalyptus

995 Other exotic hardwoods

CHARTS AND TABLES

HARDWOOD TREE GRADES FOR FACTORY LUMBER				
GRADE FACTOR	1	2	3	TIE & TIMBER LOGS (GRADE 4)
LENGTH OF GRADING ZONE (FEET)	BUTT 16	BUTT 16	BUTT 16	BUTT OR UPPER
LENGTH OF GRADING SECTION [A](FT)	BEST 12	BEST 12	BEST 12	8" + DIB AT TOP OF GRADING SECTION
DBH, MINIMUM (INCHES)	16[B]	13	11	NO REQUIREMENTS. NOT GRADED ON CUTTING BASIS. SOUND SURFACE DEFECTS PERMITTED: SINGLE KNOTS – ANY NUMBER, IF NONE HAS AN AVERAGE DIAMETER EXCEEDING 1/3 LOG DIAMETER AT POINT OF OCCURANCE. WHORLED KNOTS – ANY NUMBER, IF SUM OF COLLAR DIAMETERS DOES NOT EXCEED 1/3 DIAMETER AT POINT OF OCCURANCE. HOLES – ANY NUMBER NOT EXCEEDING KNOT SPECIFICATIONS, IF DO NOT EXTEND OVER 3" INTO CONTAINED TIE OR TIMBER.
DIAMETER, MINIMUM INSIDE BARK AT TOP OF GRADING SECTION (IN)	13[B] 16 20	11[C] 12	8	
CLEAR CUTTINGS (ON THE 3 BEST FACES): [D] LENGTH, MINIMUM (FEET)	7 5 3	3 3	2	
NUMBER ON FACE (MAXIMUM)	2	2 3	(E)	UNSOUND DEFECTS PERMITTED: SURFACE – ANY NUMBER & SIZE IF DO NOT EXTEND INTO CONTAINED TIE OR TIMBER, OR IF DO, EXTENT SHALL NOT EXCEED SOUND KNOT LIMITATIONS. INTERIOR – NONE EXCEPT 1 SHAKE NOT MORE THAN 1/3 WIDTH OF CONTAINED TIE OR TIMBER, & SPLIT NOT OVER 5" LONG.
* YIELD IN FACE LENGTH (MINIMUM)	5/6 (10')	4/6 (8')	3/6 (6')	
CULL DEDUCTION, INCLUDING CROOK & SWEEP BY EXCLUDING SHAKE, MAXIMUM WITHIN GRADING SECTION (%)	9	9[F]	50	SWEEP SHALL NOT EXCEED ½ SMALL END DIAMETER OR 16' LOG OR ¼ SMALL DIAMETER OF HALF LOG.

* NUMBER IN ( ) ARE ON 12' GRADING ZONE.

A WHENEVER A 14 OR 16 FOOT SECTION OF THE BUTT 16-FOOT LOG IS BETTER THAN THE BEST 12-FOOT SECTION, THE GRADE OF THE LARGER SECTION WILL BECOME THE GRADE OF THE TREE. THIS LONGER SECTION, WHEN USED, IS THE BASIS FOR DETERMINING THE GRADING FACTORS SUCH AS DIAMETER & CULL DEDUCTION.

B IN BASSWOOD & ASH, DIB AT TOP OF GRADING SECTION MUST BE 12" & DBH MUST BE 15"

C GRADE 2 TREES CAN BE 10" DIB AT TOP OF GRADING SECTION IF OTHERWISE MEETING SURFACE REQUIREMENTS FOR SMALL GRADE 1'S.

D A CLEAR CUTTING IS A PORTION OF A FACE FREE FROM DEFECTS, EXTENDING THE WIDTH OF THE FACE. A FACE IS ¼ THE SURFACE OF THE GRADING SECTION AS DIVIDED LENGHTWISE.

E UNLIMITED.

F FIFTEEN % CROOK & SWEEP OR 40% TOTAL CULL DEDUCTION IS PERMITTED IN GRADE 2 IF SIZE & SURFACE OF GRADING SECTION QUALIFY AS GRADE 1. IF ROT SHORTENS THE REQUIRED CLEAR CUTTING TO THE EXTENT OF DROPPING THE BUTT LOG TO GRADE 2, DO NOT DROP THE TREE'S GRADE TO 3 UNLESS CULL DEDUCTION FOR ROT IS GREATER THAN 40%.

SOUTHERN PINE TREE GRADES (All pines except eastern white pine; includes redcedar and cypress)			
Face length	Grade 1	Grade 2	Grade 3
16 ft. grading section (min. 12 ft)	3 or 4 clear faces*	1 or 2 clear faces*	No clear faces*

After the tentative grade is established, the tree will be *reduced one grade* for each of the following:

Sweep – Degrade any tentative grade 1 or 2 tree one grade if sweep in the grading section amounts to 3 or more inches & equals or exceeds one-fourth the log diameter

Heart Rot – Degrade any tentative grade 1 or 2 tree one grade if conks, punk knots or other evidence of advanced heart rot is found anywhere on the tree stem

Note – No tree can be degraded below grade 3 provided the total scaling deductions for sweep and/or rot do not exceed two-thirds the gross scale of the tree. Trees with total scaling deductions in excess of two-thirds are classified as rough cull and are not graded

* A face is ¼ the circumference of the 16-ft grading section and extends the full length of the grading section. Clear faces are those free from knots measuring more than ½ inch in diameter, overgrown knots of any size and holes more than ¼ inch in diameter. Faces may be rotated, if necessary, to obtain the maximum number of clear faces on the grading section.

BOARD FOOT VOLUME OF SHORT LOGS

D.I.B. Sm. End	LENGTH OF LOG OR SECTION (FT.)									
	1	2	3	4	6	8	10	12	14	16
6	1	2	2	3	5	8	10	13	16	19
7	1	3	4	5	8	12	15	19	24	28
8	2	4	6	8	12	17	22	27	33	39
9	3	5	8	10	16	22	29	36	43	51
10	3	7	10	13	21	29	37	46	55	65
11	4	9	13	17	26	36	46	57	68	80
12	5	10	16	21	32	44	57	69	83	97
13	6	13	19	25	39	53	68	83	99	115
14	8	15	23	30	46	63	80	98	117	136
16	10	20	31	41	62	84	108	131	158	181
18	13	26	40	53	81	109	139	169	200	232
20	17	33	50	67	102	137	174	212	251	290
22	21	41	62	82	125	169	214	259	306	354
24	25	50	74	99	151	203	257	311	368	424
26	29	59	88	118	179	241	304	368	435	501
28	35	69	104	138	210	281	356	430	507	584
30	40	80	120	160	243	325	411	497	585	674
32	46	92	137	183	278	373	470	568	669	770
34	52	104	156	208	316	423	534	644	758	872
36	59	117	176	235	356	477	601	725	853	981
38	66	132	197	263	398	533	672	811	954	1096
40	73	146	220	293	443	593	747	902	1060	1218

CUBIC FOOT VOLUME OF SHORT LOGS

D.I.B. Midpoint	LENGTH OF LOG OR SECTION (FT.)									
	1	2	3	4	6	8	10	12	14	16
4	0.1	0.2	0.3	0.3	0.5	-	-	-	-	-
5	0.1	0.3	0.4	0.5	0.8	1.1	1.4	1.6	1.9	2.2
6	0.2	0.4	0.6	0.8	1.2	1.6	2.0	2.4	2.7	3.1
7	0.3	0.5	0.8	1.1	1.6	2.1	2.7	3.2	3.7	4.3
8	0.3	0.7	1.0	1.4	2.1	2.8	3.5	4.2	4.9	5.6
9	0.4	0.9	1.3	1.8	2.7	3.5	4.4	5.3	6.2	7.1
10	0.5	1.1	1.6	2.2	3.3	4.4	5.5	6.5	7.6	8.7
12	0.8	1.6	2.1	3.1	4.7	6.3	7.9	9.4	11	13
14	1.1	2.1	3.2	4.3	6.4	8.6	11	13	15	17
16	1.4	2.8	4.2	5.6	8.4	11	14	17	20	22
18	1.8	3.5	5.3	7.1	11	14	18	21	25	28
20	2.2	4.4	6.5	8.7	13	18	22	26	30	35
22	2.6	5.3	7.9	11	16	21	26	32	37	42
24	3.1	6.3	9.4	13	19	25	31	38	44	50
26	3.7	7.4	11	15	22	30	37	44	52	59
28	4.3	8.6	13	17	26	34	43	51	60	68
30	4.9	9.8	15	20	30	39	49	59	69	78
32	5.6	11	17	22	34	45	56	67	78	89
34	6.3	13	19	25	38	50	63	76	88	101
36	7.1	14	21	28	42	56	71	85	99	113
38	7.9	16	24	32	47	63	79	94	110	126
40	8.7	18	26	35	52	70	87	105	122	140

PERCENT BOARD-FOOT CULL OF *HARDWOOD SAWTIMBER* BY 4-FT. SECTION & LOCATION IN THE TREE

LOG	(FT)	1st	2ed	3ed	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th
1	(16)	29	26	24	21												
1 ½	(24)	19	18	16	16	16	15										
2	(32)	15	14	13	13	12	12	11	10								
2 ½	(40)	12	12	11	11	10	10	9	9	8	8						
3	(48)	12	10	10	9	9	9	8	7	7	7	6	5				
3 ½	(56)	10	10	9	9	9	8	8	7	7	6	5	5	4	3		
4	(64)	9	9	9	8	8	7	7	7	6	6	5	5	4	4	3	3

TREE SIZE		VOLUME DISTRIBUTION									
		BOLT NUMBER									
BOLT 8'	LOG 16'	1	2	3	4	5	6	7	8	9	10
		----------PERCENT OF THE TREE VOLUME----------									
2	1	56	44								
3	1 ½	41	33	26							
4	2	33	28	22	17						
5	2 ½	27	23	19	17	14					
6	3	24	21	18	15	12	10				
7	3 ½	22	19	17	14	12	9	7			
8	4	20	18	15	13	11	9	8	6		
-	5	18	15	13	12	10	9	8	6	5	3

PERCENT BOARD-FOOT CULL OF *SOFTWOOD SAWTIMBER* BY 4-FT. SECTION & LOCATION IN THE TREE

LOG	(FT)	1st	2ed	3ed	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th
1	(16)	33	27	21	19												
1 ½	(24)	26	20	16	15	12	11										
2	(32)	21	17	14	12	10	9	9	8								
2 ½	(40)	19	15	12	10	9	8	7	7	7	6						
3	(48)	16	13	11	10	8	7	7	6	6	6	5	5				
3 ½	(56)	13	12	10	9	7	7	6	6	6	5	5	5	5	4		
4	(64)	10	9	9	8	7	7	6	6	6	5	5	5	5	4	4	4

PERCENT OF CUBIC-FOOT CULL VOLUME FOR *ALL TREES* BY 4-FT. SECTION & LOCATION IN THE TREE

HEIGHT (FT)	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th
8	57	43																
12	42	32	26															
16	30	26	23	21														
20	26	23	21	19	11													
24	24	21	18	17	10	10												
28	21	19	17	16	10	9	8											
32	20	18	16	14	10	8	7	7										
36	19	16	14	13	9	8	8	7	6									
40	17	15	13	12	9	8	7	7	6	6								
44	16	14	12	11	9	7	7	7	6	6	5							
48	15	13	12	10	8	7	7	6	6	6	5	5						
52	14	12	11	9	8	7	6	6	6	6	5	5	5					
56	13	11	10	9	8	6	6	6	6	6	5	5	5	4				
60	12	11	10	9	7	6	6	6	6	5	5	5	5	4	4			
64	11	10	9	9	7	6	6	6	5	5	5	5	5	4	4	4		
68	10	10	9	8	6	6	6	5	5	5	5	5	4	4	4	4	4	
72	10	9	9	8	6	6	6	5	5	5	4	4	4	4	4	4	4	4

SLOPE CORRECTION FORMULA

ENTER SLOPE IN DECIMAL IE. 45% AS .45 & FOLLOW FORMULA:

.45 INV (OR 2ND) TAN COS X DISTANCE = HORIZONTAL DISTANCE

- IF TRYING TO DETERMINE IF TREE IS IN OR OUT, MEASURE SLOPE & SLOPE DISTANCE. ENTER INTO FORMULA. ANSWER IS HORIZONTAL DISTANCE.
- IF TRYING TO GO A CERTAIN DISTANCE IE. 70 FEET, MEASURE SLOPE & SLOPE DISTANCE. ANSWER IS HORIZONTAL DISTANCE. SUBTRACT FROM DISTANCE YOU WANTED TO GO - GIVES SLOPE CORRECTION.

.45 INV TAN COS X 70 = HORIZONTAL DISTANCE
70 - HORIZONTAL DISTANCE = SLOPE CORRECTION

REQUIRED ITEM SUMMARIES

PLOT LEVEL DATA

MANUAL SECTION AND PLOT STATUS	STATE	CYCLE	PANEL	COUNTY	PLOT NUMBER	PHASE	PLOT STATUS	PLOT NONSAMPLED REASON	SAMPLE KIND	FIELD GUIDE VERSION	P3 ONLY: P3 HEXAGON NUMBER	P3 ONLY: P3 PLOT NUMBER	PLOT IN CORRECT COUNTY?	CURRENT DATE	PAST DATE	QA STATUS	CREW TYPE	CRUISER NUMBER	NUMBER OF ACCESSIBLE FOREST LAND CONDITIONS	NUMBER OF TREE ENTRIES	NUM BER OF PRISM POINTS REMEASURED	NUMBER OF SUBPLOT CENTERS REVERTED	HUMAN DEBRIS	WATER ON PLOT	HORIZONTAL DISTANCE TO: IMPROVED ROAD	HORIZONTAL DISTANCE TO: URBAN OR BUILT-UP LAND	HORIZONTAL DISTANCE TO: AGRICULTURAL LAND	SIZE OF CONTIGUOUS FOREST LAND	PRESENT LAND USE @ PC	CONDITION CLASS STATUS @ PC	PLOT LEVEL NOTES
Section 1	101	102R	103R	104	105	106R	107	N/A	108	109	110	111	112R	113 114 115	116R 117R 118R	119	120	121R	122R	123R	124R	125R	126R	127	128	129R	130R	131R	N/A	N/A	141
Forest	X	X	X	X	X	X	1		X	X	X	X	X	X	@	X	X	X	X	X	$	$	X	X	X	X	X	X			X
Landclearing	X	X	X	X	X	X	4		X	X	X	X	X	X	@	X	X	X		X	$										X
Section 8	801	802R	803R	804	805	806R	807	808	809	810	811	812	813R	814 815 816	817R 818R 819R	820	821	822R	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	823R	824	835
Nonforest	X	X	X	X	X	X	2		X	X	X	X	X	X	@	X	X	X											X	X	X
Nonsampled	X	X	X	X	X	X	3	X	X	X	X	X	X	X	@	X	X	X											X	X	X
Intensification	X	X	X	X	X		5			X			X	X		X	X	X											X	X	X

@ Sample Kind = 2, 8, or 9
$ Sample Kind = 9 only

⇨ **GPS must be completed for all plot types except intensifications** ⇦

CONDITION LEVEL DATA

Forest and landcleared plots only

MANUAL SECTION AND CONDITION STATUS	CONDITION CLASS NUMBER	PRESENT LAND USE	CONDITION CLASS STATUS	CONDITION NONSAMPLED REASON	RESERVED STATUS	OWNER CLASS	OWNER GROUP	PRIVATE OWNER INDUSTRIAL STATUS	TRACT SIZE (TOTAL ACRES)	TRACT SIZE (PERCENT FOREST)	FOREST TYPE	STAND SIZE CLASS	REGENERATION STATUS	ARTIFICIAL REGENERATION SPECIES	TREE DENSITY	STAND AGE	STAND STRUCTURE	DISTURBANCE	DISTURBANCE YEAR	TREATMENT	TREATMENT 1 YEAR	PHYSIOGRAPHIC CLASS	OPERABILITY	WATER SOURCE	DISTANCE TO WATER SOURCE	SITE CLASS	FIRE	GRAZING
Section 2	201	202R	203	204	206	207	208	209	210R	211R	212	213	214	215	216	217	218R	219 221 223	220 222 224	225 227 229	226 228 230	231	232R	233R	234R	235R	236R	237R
Forest	X	X	1		X	X	X	X	#	#	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Nonforest	X	X	2																									
Noncensus water	X	X	3																									
Census water	X	X	4																									
Nonsampled	X	X	5	X																								

When Private Owner Industrial Status = 0

SUBPLOT LEVEL DATA

Forest and landcleared plots

MANUAL SECTION AND SUBPLOT STATUS	SUBPLOT NUMBER	SUBPLOT STATUS	SUBPLOT NONSAMPLED REASON	SUBPLOT CENTER CONDITION	MICROPLOT CENTER CONDITION	SUBPLOT CONDITION CLASS LIST	SUBPLOT SLOPE	SUBPLOT ASPECT	SNOW/WATER DEPTH	NONNAVTIVE INVASIVE PLANTS	NONNATIVE INVASIVE PERCENT COVERAGE
Section 3	301	302	303	304	305	306	307	308	309	310 312 314 316	311 313 315 317
Sampled w/ accessible forest condition	X	1		X	X	X	X	X	X	X	X
Sample w/o accessible forest condition	X	2		X	X						
Nonsampled	X	3	X	X	X						
Replacement w/ accessible forest condition	X	9		X	X	X	X	X	X	X	X

Note: Subplot Status 9 (Replacement) is valid for Sample Kinds 2 & 8 only.

SAMPLE KINDS 1, 3 and 9

			Sample Kind 1 and 3 / Sample Kind 9 subplot trees				Sample Kind 9 prism only remeasure trees							SK 9 New Prism only trees	Sample Kind 9 subplot and prism trees			
Items required for ALL trees located on the fixed-radius subplot.		Item Number	Live sapling	Live pole	Live sawtimber	Standing dead	No status	Prism tree in landclearing/nonsampled	Live sapling	Live pole/sawtimber	Mortality sapling	Mortality pole/saw	Utilized	Live sapling/tree	Live sapling	Live pole	Live sawtimber	Standing dead/mortality prism trees
Subplot Number		502	X	X	X	X									X	X	X	X
Tree Record Number		503	X	X	X	X									X	X	X	X
Prism Pt.#/Tree #		504R					X	X	X	X	X	X	X	X	X	X	X	X
Condition Class Number		505	X	X	X	X									X	X	X	X
Azimuth		506	X	X	X	X									X	X	X	X
Horizontal Distance		507	X	X	X	X									X	X	X	X
Tree Status	Present	508	1	1	1	2									1	1	1	2
	Old microplot	509R																
	Prism	510R					0	0	1	1	2	2	3	1	1	1	1	2
	Previous	511					1	1	1	1	1	1	1		1*	1*	1*	1*
	Reconcile	512					5 - 8	7, 8, 9						2, 3*	3*	2,3 *	2,3 *	2,3 *
	Standing Dead	513				1												1
Species		514	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Diameter	Present Diameter	515	X	X	X	X			X	X				X	X	X	X	X
	Previous	516					X	X	X	X	X	X	X		@	@	@	@
	Diameter Check	517	0 or 1	0 or 1	0 or 1	0 or 1			X	X				0 or 1	X	X	X	X
	Length to Diameter Point	518	X	X	X	X			X	X				X	X	X	X	X
Tree Class		519R	X	X	X				X	X				X	X	X	X	
Crown Class		520	X	X	X										X	X	X	
Compacted Crown Ratio		522	X	X	X										X	X	X	
Tree Grade		523R			$												$	
Cull	Board Foot	524R			$												$	
	% Rotten/Missing	525		X	X					X		●		#		X	X	●
Length	Total	526	X	X	X	X			X	X				X	X	X	X	X
	Actual	527	X	X	X	X			X	X				X	X	X	X	X
	Length Method	528	X	X	X	X			X	X				X	X	X	X	X
Fusiform/Rust/Dieback		529R		X	X											X	X	
Dieback Severity		530R		X	X											X	X	
Cause of Death		531						81-83, 99			X	X	80					X
Mortality Year		532						X			X	X	X					X
Decay class		533				X												X
Utilization Class		534R						%					X					

$ Record if TREE CLASS = 2

● Record 99 if length < 5 ft, PREVIOUS DIAMETER <5.0" or cull≥ 50%; otherwise, record % rotten/missing cull. Valid codes: 00 - 49

% Record if CAUSE OF DEATH = 83

Record if DBH is >5.0 inches

* For trees that are both on the subplot and prism plot, record PREVIOUS TREE STATUS or RECONCILE, not both. If through growth or missed, record RECONCILE, otherwise, record PREVIOUS TREE STATUS. Prism points 1-3: missed live and through growth (codes 2 - 3); Prism points 4 and 5: missed live only (code 3)

@ Record if PREVIOUS STATUS = 1

ITEM 514 SPECIES

0010 fir spp.
0012 balsam fir
0016 Fraser fir
+0043 Atlantic white-cedar
0051 Arizona cypress
0057 redcedar / juniper spp.
0059 redberry juniper (w)
0061 Ashe juniper
0063 alligator juniper (w)
0066 Rocky Mount. juniper (w)
0067 southern redcedar
0068 eastern redcedar
0069 oneseed juniper (w)
0090 spruce spp.
0091 Norway spruce
0094 white spruce
0095 black spruce
0096 blue spruce
0097 red spruce
0100 pine spp.
0106 common pinyon (w)
+0107 sand pine
+0110 shortleaf pine
+0111 slash pine
0113 limber pine
0114 southwestern white pine
0115 spruce pine
+0121 longleaf pine
0122 ponderosa pine
0123 Table mountain pine
0125 red pine
0126 pitch pine
+0128 pond pine
+0129 eastern white pine
0130 Scotch pine
+0131 loblolly pine
+0132 Virginia pine
0136 Austrian-pine
0140 Mexican pinyon pine (w)
0144 Caribbean pine
0220 cypress spp.
0221 baldcypress
0222 pondcypress
0232 Florida yew
0240 Thuja spp.
0241 northern white-cedar
0250 torreya (nutmeg) spp.
0252 Florida torreya
0260 hemlock spp.
0261 eastern hemlock
0262 Carolina hemlock
0299 unknown dead conifer
0300 acacia spp.(W)
0310 maple spp.
0311 Florida maple
0313 boxelder
0314 black maple
0315 striped maple
0316 red maple
0317 silver maple
0318 sugar maple
0319 mountain maple
0320 Norway maple
0323 chalk maple
0330 buckeye/horsechestnut spp
0331 Ohio buckeye
0332 yellow buckeye
0334 Texas buckeye
0337 painted buckeye
0341 ailanthus
0345 mimosa, silktree
0350 alder spp.
0355 European alder
0356 serviceberry spp.
0367 pawpaw
0370 birch spp.
0371 yellow birch
0372 sweet birch
0373 river birch
0374 water birch
0375 paper bich
0377 Virginia roundleaf birch
0379 gray birch
0381 chittamwood/gum bumelia
0391 American hornbeam, blue beech, musclewood
0400 hickory spp.
0401 water hickory
0402 bitternut hickory
0403 pignut hickory
0404 pecan
0405 shellbark hickory
0406 nutmeg hickory
0407 shagbark hickory
0408 black hickory
0409 mockernut hickory
0410 sand hickory
0411 scrub hickory
0412 red hickory
0413 southern shagbark hickory
0420 chestnut spp.
0421 American chestnut
0422 Allegheny chinkapin
0423 Ozark chinkapin
0424 Chinese chestnut
0450 catalpa spp.
0451 southern catalpa
0452 northern catalpa
0461 sugarberry
0462 hackberry
0463 netleaf hackberry
0471 eastern redbud
0481 yellowwood
0490 dogwood spp.
0491 flowering dogwood
0500 hawthorn
0501 cockspur hawthorn
0502 downy hawthorn
0510 eucalyptus
0513 grand eucalyptus
0514 swamp mahogany
0520 persimmon spp.
0521 common persimmon
0522 Texas persimmon (W)
0531 American beech
0540 ash spp.
0541 white ash
0543 black ash
0544 green ash
0545 pumpkin ash
0546 blue ash
0547 velvet ash
0548 Carolina ash
0549 Texas ash (W)
0550 locust spp.
0551 waterlocust
0552 honeylocust
0555 loblolly-bay
0561 Ginkgo, maidenhair tree
0571 Kentucky coffeetree
0580 silverbell
0581 Carolina silverbell
0582 two-wing silverbell
0591 American holly
0600 walnut spp.
0601 butternut
0602 black walnut
0605 Texas walnut
+0611 sweetgum
+0621 yellow-poplar
0641 Osage-orange
0650 magnolia spp.
0651 cucumbertree
0652 southern magnolia
0653 sweetbay
0655 mountain magnolia
0657 pyramid magnolia
0658 umbrella magnolia
0660 apple spp.
0662 southern crabapple
0663 sweet crabapple
0664 prairie crabapple
0680 mulberry spp.
0681 white mulberry
0682 red mulberry
0684 black mulberry
0690 gum, tupelo spp.
0691 water tupelo
0692 Ogeechee tupelo
0693 blackgum (upland)
0694 lowland blackgum (swamp tupelo)
0701 eastern hophornbeam, ironwood
0711 sourwood
0712 paulownia, empress-tree
0720 bay spp.
0721 redbay
0722 water-elm, planertree
0729 sycamore spp.
0731 sycamore
0740 cottonwood, poplar spp.
0741 balsam poplar
+0742 eastern cottonwood
0743 bigtooth aspen
0744 swamp cottonwood
0745 plains cottonwood
0746 quaking aspen
0748 Rio Grande cottonwood, Fremont poplar
0749 narrowleaf poplar
0752 silver poplar
0753 Lombardy poplar
0755 mesquite spp.
0756 western honey mesquite
0757 velvet mesquite
0758 screwbean mesquite
0760 cherry and plum spp.
0761 pin cherry, fire cherry
0762 black cherry
0763 chokecherry
0766 wild plum
0771 sweet cherry, domesticated
0802 white oak
0803 Arizona white oak (w)
0804 swamp white oak
+0806 scarlet oak
0808 Durand oak
0809 northern pin oak
0810 Emery oak (w)
+0812 southern red oak
+0813 cherrybark oak
0814 Gambel oak (w)
0816 bear oak, scrub oak
+0817 shingle oak
0819 turkey oak
0820 laurel oak
0822 overcup oak
0823 bur oak
0824 blackjack oak
0825 swamp chestnut oak
0826 chinkapin oak
+0827 water oak
0828 Nuttall oak
+0830 pin oak
0831 willow oak
+0832 chestnut oak
+0833 northern red oak
0834 Shumard oak
+0835 post oak
0836 Delta post oak
+0837 black oak
0838 live oak
0840 dwarf (sand) post oak
0841 dwarf (sand) live oak
0842 bluejack oak
0843 silverleaf oak (w)
0844 Oglethorpe oak
0845 dwarf chinkapin oak
0850 oak spp.—evergreen (w)
0852 torchwood
0853 pond apple
0854 gumbo limbo
0855 shoeak spp.
0856 gray sheoak
0857 Austrailian pine
0858 camphor tree
0859 fiddlewood
0860 citrus spp.
0863 pigeon plum, tietongue
0864 soldierwood
0865 geiger tree
0866 carrotwood
0873 red stopper
0874 inkwood, butterbough
0876 strangler fig
0877 shortleaf fig, wild banyan tree
0882 blolly, beeftree
0883 manchineel
0884 false tamarind
0885 mango
0886 poisonwood
0887 fishpoison tree,
0888 schefflera, octopus tree
0890 false mastic
0891 white bully, willow bustic
0895 paradise tree
0896 java plum
0897 tamarind
0901 black locust
0906 paurotis palm
0907 silver palm
0908 coconut palm
0909 royal palm
0912 sable palmetto
0913 key thatch palm
0914 Florida thatch palm
0915 other palms
0919 western soapberry
0920 willow
0921 peachleaf willow
0922 black willow
0925 coastal plain willow
0927 white willow
0929 weeping willow
0931 sassafras
0934 mountain ash spp.
0935 American mountain-ash
0936 European mountain-ash
0940 Mahogany
0950 basswood spp.
0951 American basswood
0952 white basswood
0953 Carolina basswood
0970 elm spp.
0971 winged elm
0972 American elm
0973 cedar elm
0974 Siberian elm
0975 slippery elm
0976 September elm
0977 rock elm
0986 black mangrove
0987 buttonwood mangrove
0988 white mangrove
0989 red mangrove
0992 melaleuca
0993 chinaberry
0994 Chinese tallowtree
0995 tung-oil-tree
0996 smoketree
0997 Russian olive
0998 other/unknown
0999 unknown dead hardwood

\+ *eligible site tree species*
(w) *indicates measure @ root collar.*

TREE LEVEL SUMMARY

ITEM 508, 509R, 510R & 511 TREE STATUS

0 No status
1 Live tree
2 Dead tree
3 Utilized

ITEM 512 RECONCILE (remeasurement only)

0 New offset microplot sapling only (SK =8)
1 Ingrowth (tree has grown onto the plot)
2 Through growth (>5" on microplot only ; not tallied last survey)
3 Missed live
4 Missed dead
5 Shrank (live tree)
6 Missing
7 Cruiser error
8 Procedural change
9 Nonforest/Nonsampled

ITEM 513 STANDING DEAD

0 No – not standing dead
1 Yes – standing dead

ITEM 533 DECAY CLASS

Decay stage	Limbs & branches	Top	% bark remaining
1	All present	Pointed	100%
2	Few limbs, no fine braches	May be broken	Variable
3	Limb stubs only	Broken	Variable
4	Few or no stubs	Broken	Variable
5	None	Broken	Less than 20%

ITEM 517 DIAMETER CHECK

0 Diameter measured accurately
1 Diameter estimated
2 Diameter measured @ different location than previous survey (remeasure trees only)

ITEM 519R TREE CLASS

2 Growing stock
3 Rough cull
4 Rotten cull

ITEM 528 LENGTH METHOD

1 Total & actual lengths field measured
2 Total length est., actual length measured
3 Total & actual lengths estimated
4 Total length is generated in office, actual length measured (Standing dead with broken tops only)

ITEM 529R FUSIFORM / COMANDRA RUST & HARDWOOD DIEBACK INCIDENCE

0 None
1 Fusiform / Comandra rust (spp. 111 & 131 only)
2 Dieback (hardwoods only)

ITEM 530R DIEBACK SEVERITY

0 None
1 10-19
2 20-29
3 30-39
4 40-49
5 50-59
6 60-69
7 70-79
8 80-89
9 90-99

ITEM 531 CAUSE OF DEATH

10 Insect damage
20 Disease damage
30 Fire damage
40 Animal damage
50 Weather damage
60 Vegetation (suppression)
70 Unknown / not sure/ other
80 Silvicultural or landclearing activity
81 Live landcleared tree
82 Dead landcleared tree
83 Utilized landcleared tree
84 Nonsampled condition – status not known

ITEM 534R UTILIZATION CLASS

1 Commercial utilization
2 Non-commercial utilization

TABLE OF VARIABLE PLOT LIMITING DISTANCE RADII / SLOPE = 0
USE TABLE WITH PRISM TO DETERMINE IF TREE WAS ON PRISM PLOT

DBH	Tenths of Inch									
	0	1	2	3	4	5	6	7	8	9
	Distance in Feet									
05	07.10	07.24	07.38	07.67	07.67	07.81	07.95	08.09	08.24	08.38
06	08.52	08.66	08.80	09.09	09.09	09.23	09.37	09.51	09.66	09.80
07	09.94	10.08	10.22	10.51	10.51	10.65	10.79	10.93	11.08	11.22
08	11.36	11.50	11.64	11.93	11.93	12.07	12.21	12.35	12.50	12.64
09	12.78	12.92	13.06	13.35	13.35	13.49	13.63	13.77	13.92	14.06
10	14.20	14.34	14.48	14.77	14.77	14.91	15.05	15.20	15.34	15.48
11	15.62	15.76	15.91	14.19	16.19	16.33	16.47	16.62	16.76	16.90
12	17.04	17.18	17.32	17.61	17.61	17.75	17.89	18.04	18.18	18.32
13	18.46	18.60	18.75	19.03	19.03	19.17	19.31	19.46	19.60	19.74
14	19.88	20.02	20.17	20.45	20.45	20.59	20.73	20.88	21.02	21.16
15	21.30	21.44	21.59	21.87	21.87	22.01	22.15	22.30	22.44	22.58
16	22.72	22.86	23.01	23.29	23.29	23.43	23.57	23.72	23.86	24.00
17	24.14	24.28	24.43	24.71	24.71	24.85	24.99	25.14	25.28	25.42
18	25.56	25.70	25.85	26.13	26.13	26.27	26.41	26.56	26.70	26.84
19	26.98	27.12	27.27	27.55	27.55	27.69	27.83	27.98	28.12	28.26
20	28.40	28.54	28.69	28.97	28.97	29.11	29.25	29.40	29.54	29.68
21	29.82	29.96	30.11	30.39	30.39	30.53	30.67	30.82	30.96	31.10
22	31.24	31.38	31.53	31.81	31.81	31.95	32.09	32.24	32.38	32.52
23	32.66	32.80	32.95	33.23	33.23	33.37	33.51	33.66	33.80	33.94
24	34.08	34.22	34.37	34.65	34.65	34.79	34.93	35.08	35.22	35.36
25	35.50	35.64	35.79	36.07	36.07	36.21	36.35	36.50	36.64	36.78
26	36.92	37.06	37.21	37.49	37.49	37.63	37.77	37.92	38.06	38.20
27	38.34	38.48	38.63	38.91	38.91	39.05	39.19	39.34	39.48	39.62
28	39.76	39.90	40.05	40.33	40.33	40.47	40.61	40.76	40.90	41.04
29	41.18	41.32	41.47	41.75	41.75	41.89	42.03	42.18	42.32	42.46
30	42.60	42.74	42.89	43.17	43.17	43.31	43.45	43.60	43.74	43.88
31	44.02	44.16	44.31	44.59	44.59	44.73	44.87	45.02	45.16	45.30
32	45.44	45.59	45.73	46.01	46.01	46.15	46.30	46.44	46.58	46.72
33	46.86	47.01	47.15	47.43	47.43	47.57	47.72	47.86	48.00	48.14
34	48.28	48.43	48.57	48.85	48.85	48.99	49.14	49.28	49.42	49.56
35	49.70	49.85	49.99	50.27	50.27	50.41	50.56	50.70	50.84	50.98
36	51.12	51.27	51.41	51.69	51.69	51.83	51.98	52.12	52.26	52.40
37	52.54	52.69	52.83	53.11	53.11	53.25	53.40	53.54	53.68	53.82
38	53.96	54.11	54.25	54.53	54.53	54.67	54.82	54.96	55.10	55.24
39	55.38	55.53	55.81	55.95	55.95	56.09	56.24	56.38	56.52	56.66
40	56.80	56.95	57.23	57.37	57.37	57.51	57.66	57.80	57.94	58.08

SLOPE CORRECTION FOR SELECTED HORIZONTAL DISTANCES
(Corrections given in both horizontal distance and slope distance)

% Slope	Horizontal Distance					Horizontal Distance				
	50	60	66	70	100	50	60	66	70	100
	Feet to add in **horizontal** distance					Feet to add in **slope** distance				
5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
10	0.2	0.3	0.3	0.4	0.5	0.2	0.3	0.3	0.4	0.5
15	0.6	0.7	0.7	0.8	1.1	0.6	0.7	0.7	0.8	1.1
20	1.0	1.2	1.3	1.4	2.0	1.0	1.2	1.3	1.4	2.0
25	1.5	1.8	2.0	2.1	3.0	1.5	1.9	2.0	2.2	3.1
30	2.1	2.5	2.8	2.9	4.2	2.2	2.6	2.9	3.0	4.4
35	2.8	3.4	3.7	3.9	5.6	3.0	3.6	3.9	4.1	5.9
40	3.6	4.3	4.7	5.0	7.2	3.9	4.6	5.1	5.4	7.7
45	4.4	5.3	5.8	6.2	8.8	4.8	5.8	6.4	6.8	9.6
50	5.3	6.3	7.0	7.4	10.6	5.9	7.0	7.8	8.3	11.8
55	6.2	7.4	8.2	8.7	12.4	7.0	8.4	9.3	9.9	14.1
60	7.1	8.6	9.4	9.9	14.2	8.3	10.0	11.0	11.5	16.6
65	8.1	9.7	10.7	11.3	16.2	9.6	11.6	12.7	13.5	19.3
70	9.0	10.8	11.9	12.7	18.1	11.0	13.2	14.6	15.5	22.1
75	10.0	12.0	13.2	14.0	20.0	12.5	15.0	16.5	17.5	25.0
80	11.0	13.1	14.5	15.3	21.9	14.0	16.8	18.5	19.6	28.1
85	11.9	14.3	15.7	16.7	23.8	15.6	18.8	20.6	21.9	31.2
90	12.8	15.4	16.9	17.9	25.6	17.3	20.7	22.8	24.1	34.5
100	14.6	17.6	19.3	20.5	29.3	20.7	24.9	27.3	29.0	41.4
105	15.5	18.6	20.5	21.7	31.0	22.5	27.0	29.7	31.5	45.0
110	16.4	19.6	21.6	23.0	32.8	24.3	29.1	32.1	34.2	48.7
115	17.2	20.6	22.7	24.1	34.4	26.2	31.4	34.6	36.7	52.4
120	18.0	21.6	23.7	25.2	36.0	28.1	33.7	37.1	39.4	56.2